

# Training Systems





Subject to technical and formal modifications

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# Welcome to Elabo

## Trust

Educating young people is a responsible task; they place their trust in their instructors. Through the competence they develop they will contribute to the country's prosperity. We at Elabo are very much aware of this responsibility. Many of us have completed our studies in electrical engineering and have become passionately committed to this field.

## Performance

In our age, the field of electronics and electrical engineering is under extreme pressure to perform. Almost all technical products and processes are supported by electrical solutions and are dependent on their quality. Innovation cycles are ever faster, and training must keep pace. At Elabo, we've been used to this kind of pressure, and that for a long time. For over three decades, Elabo has been among the leading training lab outfitters – and among the top European suppliers of industrial testing systems and quality labs in the field of electrical engineering.

## Cost-effectiveness





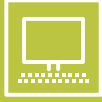





You want your trainees, apprentices and students to receive the best education possible. So you are looking for efficiency: success in teaching must be achieved using solutions that are also intelligent from an economic perspective. Meeting this challenge has been the source of Elabo's growth.


## Partnership


In many projects for outstanding training providers we have perfected the ability to design high-quality systems in such a way that they are cost-effective in the long term as well. Our products and services are proof of this ability. We invite you to see for yourself. Are you looking for a partner for your training lab? We're always there for you.

# Elabo EducationSystems



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 = may be used  
in networks

 = Transponders

# 10 decisive reasons for all-in-one solutions from Elabo

1



**The complete range. Elabo offers everything you need for modern training**

Elabo offers training facilities for all products that have their place in the equipment of professional, functional training rooms and in carrying out modern, successful instruction for occupations in the field of electrical engineering. Elabo services, too, define industry standards. If calibration is required, for example, or if a device proves defective, Elabo could help you out, i.e. we can even provide a loan appliance on request. that will be fully compatible with the customer's electronics. For Germany, also a free pick-up and delivery service is offered.

> See for yourself on pages 6–7

2



**Elabo solutions are a model of professionalism and, at the same time, embody what is new and exciting.**

New developments in technology and teaching are quickly met by Elabo with solutions – hardware and software, teaching materials and services – for training in the electrical trades. Elabo is also continually expanding its equipment to meet the needs of new professions. All components mesh seamlessly; software and teaching aids are perfectly coordinated.

> See for yourself on pages 8–9

3



**The systems offer tremendous flexibility and outstanding handling. Superior usability**

Elabo's systems are designed to be modular and can be easily adapted to changes in training concepts. They make it easy for instructors to concentrate on their core mission – teaching. All operating functions are largely intuitive or can be learned quickly and easily. The instruments and furnishings are comfortable to use; adjustments to new standards are uncomplicated and can be carried out quickly. And above all: Elabo devices and furnishings are compact and take up little space. They can also be disassembled, easily transported and stowed without taking up too much space.

> See for yourself on pages 10–11

4



**Perfect working conditions. Optimal learning environment. High motivation**

Apprentices, trainees and students love Elabo training rooms. For practical exercises, all instruments are close at hand, with most of them literally within reach. The intelligent use of space provides generous work surfaces. As in a cockpit, appliances are form-fitted into superstructures. The groundbreaking cable management system means that there are no cables to become tangled with test subjects. The well-thought out Elabo design is characterized by the technical and aesthetical signature of its shapes and colors, a look that can be found in top companies in the industry. This high professional standard gives trainees a good feeling about their career choice and clearly contributes to their motivation.

> See for yourself on pages 12–13

5



**Convincing ease of handling. Optimal environment for teachers, trainers and instructors**

With Elabo EducationSystems, instructors can design advanced and professionally meaningful instruction that is relevant to future practice. The modern teaching materials reinforce instructors' authority as transmitters of valuable knowledge. At Elabo seminars, they can update their knowledge of the latest technology and modifications of standards. With the control functions of Elabo software and network technology they can confront problems efficiently and independently. Grading is supported by (automatically generated) documentation of apprentices', trainees' and students' achievements in practical instruction.

> See for yourself on pages 14–15

**6**

**Maximum net training time.  
Optimal teaching**

Elabo EducationSystems help instructors decisively supervise net teaching time at an above-average high level. Instructors can prepare technical demonstrations before the lesson and easily transfer them on mobile demo units to the classroom. Before the lesson the instructor enters the settings of student devices on the trainer terminal. Trainees have almost all the necessary instruments at hand, hardly anything has to be carried from one place to another. Measuring devices can be integrated in the workstation and are immediately ready to function. The instructor quickly identifies and locates on the instructor's central monitor technical faults on student stations; problems are immediately corrected with the instructor's assistance and explanations.

> See for yourself on pages 16–17

**7**

**Protecting trainees' health  
and reducing risks**

The consistent protection of the trainee practiced by Elabo sets standards. Sources of danger are reduced to an absolute minimum. Current-carrying cables and terminals are hidden to the maximum extent. There are no sharp edges and corners. Movable elements, specifically in the lowering mechanisms, are provided with automatic shut-off. Great value is placed on the health impact of materials used. We regularly conduct allergen tests for our customers. We also pay attention to the high environmental impact of materials and processes. Resource consumption has been systematically reduced over the years.

> See for yourself on pages 18–19

**8**

**Preventing vandalism by  
intelligent prevention**

Elabo EducationSystems are designed so that damage caused by mischief and adolescent vandalism is kept as low as possible. The surfaces are ink repellent and can be cleaned easily. Scribbles for the most part can be easily removed. The coating material of surfaces is hard. It takes a great deal of force to produce scratches. The destructive energy of sheer boredom is not strong enough. They are also protected against acid and heat. Power supply, measuring and test devices are almost without joints and are integrated in the superstructures so as to be theft-proof. Willfully triggered errors can be quickly identified and located using network engineering and software.

> See for yourself on pages 20–21

**9**

**Economy. Efficiency.  
Useful for years to come**

When seen over a very long period of time, Elabo EducationSystems are examples of cost-effectiveness. The price-to-performance ratio sets benchmarks. Configurations can be customized at any time with little effort on modified general setups. The post-sales warranty ensures that detachable and spare parts are always available for many years. The products withstand school use without difficulty even after a long time. The amount of care needed is minimal. Repairs are needed only very rarely. > See for yourself on pages 22–23

> See for yourself on pages 22–23

**10**

**Elabo Practical Expertise  
Real-life experience for  
future careers**

The products in the Elabo EducationSystems program clearly reflect our experience gathered in the area of education. Moreover, our know-how in electronic hardware and electrical engineering has secured us an excellent reputation in the industry. Our customers appreciate how we keep our expertise up to date with top-rate performance and continually develop training resources using the latest specialist know-how.

> See for yourself on pages 24–25

## Our complete line Everything that falls under modern training technology

Elabo offers training equipment and all products and services needed to equip professional and functional training rooms and to allow modern and successful teaching in the electrical professions.



### Table systems

**Flexibility. Sustainability.  
Superior Handling**

Elabo table systems form the basis for the design. They offer generous, easily useable work surfaces. They support superstructures with electronic devices, experimental fields, suspended floor units, and lighting devices. Given many available variations, they can be adjusted at any time to meet changing requirements.

> [More on pages 27–44](#)



### Superstructures

**Clear structures.  
Greatest packing density**

Elabo superstructures positively integrate electronic devices and support secure cable accommodation, offer additional storage features, and much more. One version is placed directly on the table surface. In the second version, the superstructures are positioned on columns above the table surface, thereby increasing the table surface's utilization.

> [More on pages 45–58](#)



### Teaching Materials

**Tools. Training Sessions.  
Good Didactic Quality**

Elabo puts all necessary teaching materials at your disposal. All teaching materials are compatible with the software and hardware. If desired, we customize training contents, schedules and goals. We develop teaching concepts in cooperation with specialist partners, prepare the teachware and compile the materials for trainees and students.

> [More on pages 119–124](#)



### Experiment mounts

**Versatile. Perfect  
for Hands-on Learning**

Elabo experiment mounts facilitate the setup of experiments with electronic and electrical components. They allow attendees to learn in real-life situations. Elabo experiment mounts receive all teaching materials available in the market.

> [More on pages 125–136](#)



### Mobile Furniture

**More Useable Space.  
More Flexibility in Classes**

Elabo mobile units can be used in a great many ways. Depending on the situation, they expand the useable surface on the student and master desks. They are used both for trainers' presentations and trainees' experiments. Our range includes also special versions.

> [More on pages 137–154](#)





### Lowering mechanisms

**Overview. Safety. Maximum room utilization**

Superstructures are lowered using Elabo's lowering mechanisms. The superstructures with the devices are just as quickly extended again – the theory table becomes an experiment table for the practical lesson.

> [More on pages 59–74](#)

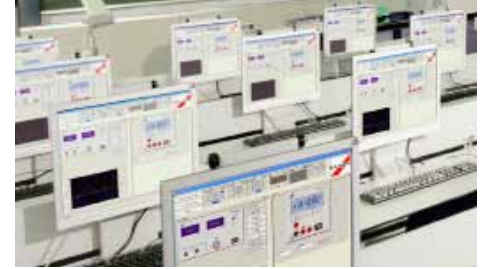


### Plug-in modules + electronics

**Precise. Reliable. Very user-friendly**

Elabo power and voltage supply as well as measuring and testing devices are integrated into superstructures as plug-in modules. This produces learning stations with all the functions relevant for training. The plug-ins are available in two systems: 3 HU and 6 HU.

> [More on pages 75–108](#)



### Virtual Equipment

**Connect. Control. Configure optimally**

Elabo offers the software and network technology necessary for advanced training required in the electrical trades. This virtual equipment provides decisive assistance in controlling and monitoring activities in the training room. Besides, learning quality is tangibly improved.

> [More on pages 109–118](#)



### Storage

**Systematic order. Stable protection**

Elabo supports space-saving and safe placement of all equipment, devices and personal belongings with a versatile range of containers and suspended floor units, storage cabinets and wall units. They meet technical training requirements and stand the test of everyday school use. A broad spectrum of organizer elements such as recesses especially for training boxes as well as recess inserts and slotted mats to push in experimental boards ensure neatness and optimal use of space.

> [More on pages 155–180](#)



### Accessories

**From a single source. Design right to the last detail**

Everything that is meaningful for designing a training lab is available in Elabo's product line – that is, even chairs and lamps, beamers, projection walls, organizers for cabinets and drawers, measuring line holders, and even consumables – in brief: we provide whatever you need.

> [More on pages 181–196](#)



### Advice + Services

**Conceiving. Planning. Perfect functionality in continuous use**

Our customers are always optimally looked after. We support our customers from our first assessment of your needs to the design or expansion of your training installations. Our advice builds on our extensive experience. We support execution with intelligent financing concepts. Our assembly service guarantees quick and problem-free installations. Care and maintenance services are available to customers throughout the entire product life-cycle. A toll-free support number is available throughout Germany to respond to your questions: 0800-35 22 646. Please call our service hotline for care and maintenance services: +49(0)7951-307 202.

> [More on pages 197–198](#)

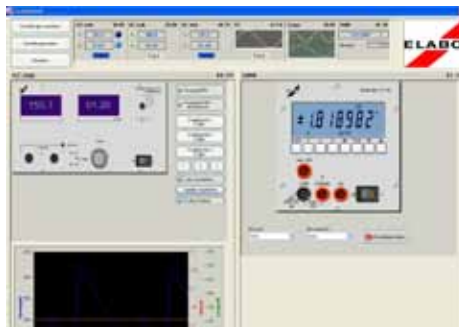
## A Trendsetter for the Industry. Always the Latest State of the Art

Elabo is one of the leading partners in training the electrical engineering and electronics trades Europe-wide. In this dynamic professional field, Elabo, through its innovative and practice-oriented systems and concepts, has for several decades been setting the benchmarks for professionalism. Elabo responds immediately to current developments in technology and teaching with practice-oriented solutions.



### High quality instruction – supported on special software for electrical training

Software technology is changing the world. Elabo offers training equipment with solutions which offer completely new possibilities in practical and experimental teaching facilities. The system is divided into different sections. For example, safety devices can be monitored, lowering technology controlled, and tables released through schoolroom management. In particular, Elabo software additionally supports the teacher in running a modern classroom and provides trainees and students with specific functional scope. By doing this, the programmable measurement and test process controls represent a core teaching function (with a selection of suitable devices, implementation of the sequence through storage of measurement results, and export into a generally acceptable data format, such as Excel).



### Feeling the Pulse of Progress: Interactive User Interface

Optimum configuration of the Human Interface is today considered to be one of the determining means for increasing systems' fitness for purpose and efficiency for daily use. Elabo introduces progressive interface concepts into the training world. All electrical devices used are shown true-to-life on the monitor. They show the current functional status and can be operated both by touch screen and with a mouse. With drag and drop, pull down, and several additional features, it meets those Windows standards which today determine the working world in industry.



### A pioneer in the comprehensive support of training installations

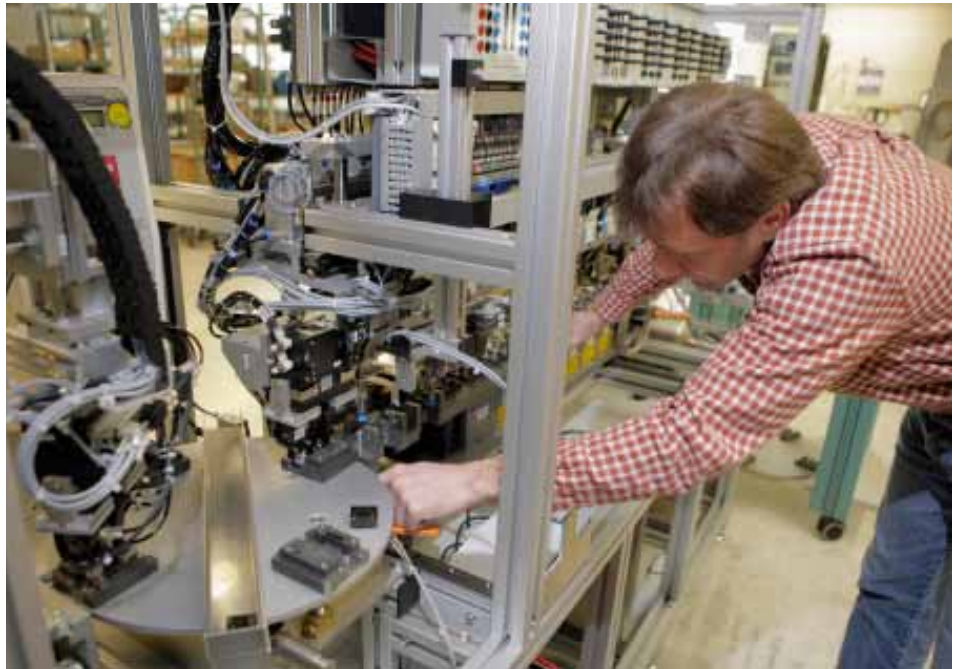
Elabo is the leader in comprehensive support of training installations in electronics and electrical engineering. Elabo was the first company to combine a complete product line of specialty furniture and electrical devices and accessories with comprehensive training materials and continuing education events for trainees. Elabo already recognized 37 years ago how institutional and operational training were getting closer to each other. Ever since that time, Elabo's training systems have been internationally successful.



### Pioneering network technology

Networking determines developments in electronics and in all related areas. As a pioneer in the training market, Elabo introduced Ethernet network technologies to interconnect student and teacher work spaces into one system. Ethernet can also be implemented as a teaching and experimental network, for example in conjunction with communications technology training. The system is openly configured and enables integration into third party devices. This local network can be integrated into larger environments, for example into a school's entire network.





### **New career profiles, new study programs, new teaching materials**

Wherever new training options emerge, Elabo is at the forefront with innovative solutions. Examples are automation technology and drive technology, micro-controller technology, network systems, protective measures and much more. Due to its work for industrial companies which are market leaders, for example in the TestSystems area, Elabo is able to recognize technical trends and the definition of new career profiles from their earliest beginnings. Recognition of the latest trends is transformed into new systems, new teaching materials and seminars for instructors.



### **Electronic equipment. Adapted for education**

Elabo is a long-standing supplier of electronic and electrical equipment for training systems adapted to the special requirements of company-based training. The 110 and 210 system ranges were ground-breaking innovations. The Elabo 3 HU system with its high packing density, great flexibility and compact design currently sets the standards in the training market. The high efficiency of Elabo electronics never fails to impress. The low heat emission of the equipment is remarkable. It is fully enclosed and does not require a fan, so that noise emissions are very low. As there is no need for ventilation slots, no dust or dirt is carried inside, which helps functional stability.



### **Flexibility and effective equipment protection: lowering technology**

Elabo is one of the pioneers in introducing lowering technology into company-based training. Elabo is still setting standards with electromotive drives, remote controls and sensitive automatic shut-down devices.

## Great Flexibility. Superb Handling. Outstanding Practicality

The systems made by Elabo are extremely practical and can be put to a variety of uses. They have a modular design and can be adapted to changes in educational ideas at any time. They enable instructors to concentrate on their main task, i.e. teaching. All user functions are largely intuitive or quick and easy to learn. The equipment and furniture is convenient to use, and adjustments to new uses are easy and quick to implement. The efficiency of Elabo systems is based on unique and wide-ranging practical experience.



### Highly flexible use of space

Elabo EducationSystems allow classrooms to have a multifunctional set-up and be rearranged into specialized training rooms at short notice. Classrooms can be transformed in seconds – using lowering technology and experimental frames – into customized rooms for practical training. Demo trolleys with prepared presentations can be used to demonstrate control technology, mechatronics or communication technology, for example. When the teacher and students leave the room, it returns to being the multifunctional room it was before. This means that completely different disciplines can be taught in the rooms without the effort of rearranging things or loss of time.



### Quick and convenient configuration

Elabo system modules allow a highly customized design of teaching desks and trainee or student desks. Tables connected together are frequently rearranged. Extensive adaptations to new requirements and innovative teaching concepts can be implemented at any time. For example, standard desks from the InForm system can later be extended with floor units, superstructures and inserts.



### Simple addition or exchange of units and equipment

Changes do not cause any problem. Examples of this are the exchange of inserts in the superstructures: an easy and straightforward process. The equipment is usually inserted as modules on guide rails. The network connecting plug is integrated into the rear wall, allowing quick connection without tools to the cable harness which is installed as standard.



### Open system

Elabo EducationSystems are compatible so that existing equipment can normally be integrated without difficulty. For example, teaching materials from almost all recognized suppliers can be used in Elabo experimental frames. Likewise, electronic measurement and test devices and other instruments/equipment from third party manufacturers can be incorporated in Elabo systems. They can also be connected to the Elabo EHP Net using standard interfaces. Elabo components are compatible with one another and together produce perfectly functioning systems.



### Moveable and space-saving

Floor space and usable space in training centers are valuable, in the classroom just as much as in storage rooms. Elabo makes sure of a high degree of space-saving efficiency in the design of all furniture, instruments and equipment. Even really large installation cubicles can be folded up to save space and hardly need any room for storage. Cabinets and InForm furniture can also be disassembled into individual components for relocation or if they are temporarily not required and can be stored away compactly.

## Perfect Working conditions. Optimal learning environment. High motivation

Elabo EducationSystems make a targeted contribution to creating an absorbing and motivating learning environment. The functionally and ergonomically optimized equipment focuses the attention of the trainees on what is important. The space-saving intelligent solutions which keep traffic in the classroom to a minimum also encourage concentration and contribute to a very good learning environment, even in very full classrooms.



### Generous workroom for every trainee

The space around the trainee is used to great effect and to its limits, quite literally – the surface on the table as well as the airspace around it. Equipment and test rigs are distributed intelligently on superstructures with inserts and on the table top, on experimental frames and on mobile equipment. No demotivating clutter, no risk that wires can be damaged accidentally.



### Everything under control. Without problems

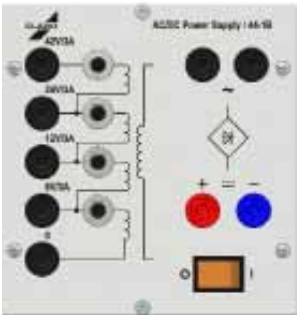
Seeking and finding straight away. Elabo EducationSystems offer a high degree of organization, which all trainees can easily understand; intuitively, they'll find what they need quickly, in real time. Most tools are situated within easy reach in their workplace – in the floor unit or container, in the superstructure or on mobile equipment.



### Working tirelessly with the use of ergonomic quality

The ergonomics of Elabo products support concentration. The superstructures and inserts are placed where they can be best seen. The experimental frames supply neat installations, which make connections clear and, to a large extent, prevent mistakes. Buttons and switches are handy, tools come easily to hand. The chairs conform to the bodily frame of young people, and support fatigue-free sitting.





**Easy to learn, simple to handle**

All Elabo equipment is largely intuitive. The trainees and students learn quickly how to operate it; for example, on the inserts, they will find again the symbols that they already know from displays of connection diagrams.



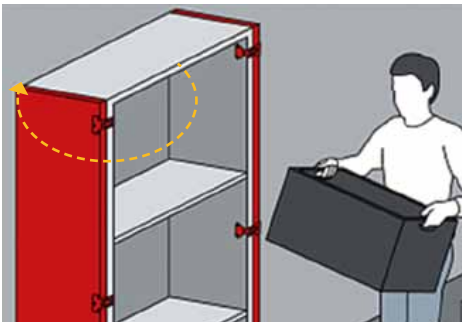
**A harmonious image, free from needless complications**

The power supply units and the measuring instruments and testing sets are integrated positively in inserts, conforming to a large clear surface. Running through standpipes and the Orga Panel, wires take the shortest path to the devices and to the objects on the experimental frames. Embedded in such a consistent manner, the wires are almost invisible.



**Clear organization, carefully planned actions**

The clear organization of the superstructures and inserts, the intuitive shelving in the cabinets, floor units and auxiliary cabinets, as well as the extraordinary range of organizer elements (drawer and cabinet dividers, anti-slip mats etc.) all support a greatly differentiated, neat organization in all storage containers from Elabo. Concise organization indicates technical competence and encourages carefully planned actions.



**Relaxed Movement**

Concentrated mind, flowing movements. Many, partly unobtrusive details serve to create stimulating rhythm in the space and to promote relaxed concentration. The cabinets are a good example: the opening angle of their doors reaches 270° so the open door doesn't take up space. These fine details calm the flow of movements. When you're rather cramped for space, this has an especially important effect.



**Tranquility is the key to strength and concentration**

Distracting noises are systematically eliminated. Drawers run smoothly and noiselessly. Rubber profiles in the cabinets provide quiet opening and closing of the doors. For additional sound insulation the H-sections of the experimental benches can be optionally supplied with brush strips. Also the colours and the styling are "quiet", metaphorically speaking, completely oriented to support concentration and tranquillity. The entire Elabo interior gives you the feeling that stillness is anticipated and concentration supported.



**Motivating Professionalism**

The well planned concept of Elabo EducationSystems largely matches the standards that apply in industry. Elabo has decisively influenced those standards. Interested students immediately notice this highly professional level. The most rationally organized technology and the modern, technical aesthetics, as well as the harmonious language of the colours and designs are also to be found in top-flight companies. This expert quality speaks volumes of our competence, gives the trainees anticipation of their professional future and motivates them tangibly.

## Outstanding Competence. Optimum support for teachers, trainers and lecturers

Elabo EducationSystems help structure a substantial, progressive and expert class. It is characterized by a clever reference to future practice, for example, in industry. The modern teaching materials strengthen the authority of the teachers as mediators of highly valuable knowledge. They update their knowledge to the latest technology and changes of standards at Elabo seminars. Using control functions of Elabo software and network technology, they assert themselves solidly and confidently against unruly attendees. They substantiate marks convincingly with (automatically generated) documents of the performances of the trainees and students in the practical training courses.



### **Persuasion through authoritative expertise**

Expertise serves instructors as a foundation for gaining the trust of students. Elabo is their dependable partner. Elabo will provide high-quality, up-to-date instructional material, giving teachers the means for creating instructive, interesting and exciting classes. In addition, Elabo will provide seminars and training courses to help instructors update their expertise; they will be well informed as to the latest technological developments as well as standards and guidelines.



### **Lively presentation of teaching material**

A lesson that is easy to understand makes for a more successful instructor. That is why teachers like using Elabo's demonstration objects. Teachers can explain complicated interrelations in a way that is easy to understand by using Elabo's interesting experiment configurations, switches, and measuring devices, allowing instructors to hold the attention of their students and be able to sensibly direct it.





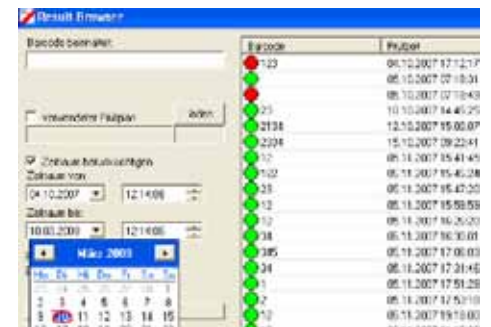
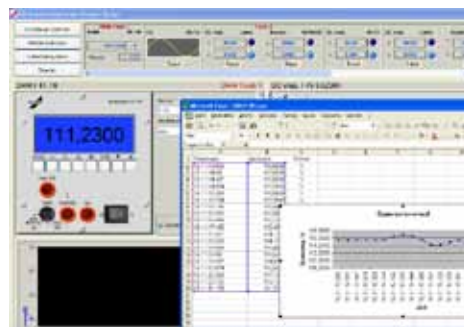
**Getting to the point without delay**

Idleness stifles the willingness to concentrate. That is why Elabo systematically supports trainers and teachers to lead compact training courses free from interference. The software and network technology is an important aid. For example, the instructors can pre-adjust all equipment of the trainees with the experimental station configurator; “boring” pre-adjusting tasks of the pupils are things of the past. The Elabo mobile equipment is a further concept building block that has proved to be optimal and allows the installation of experimental demonstrations before the training begins. When the training class begins, the demo trolley is brought to the classroom, and the attention of the trainees is immediately turned to the new technical installation.

**Central Control of Classes**

Trainers and teachers are supposed to be put in a position to capture the attention of the trainees and to review and control their activities. Demo objects help in this, because they are so designed that they can be presented centrally and can still be perfectly identified from the remotest part of a class room.

On the other hand, from their position, teachers have an overview of what is happening in the attendees’ places, directly on their screen, via Elabo EHP NeT. In this way, they are able to recognise faulty developments early and to intervene. If attendees encounter problems, trainers can in some cases identify the complications on their screen and give feedback and help without delay. Finally, by means of a track and trace device, they are able to detect quickly the person who is playing silly games with the emergency off-switch.



**Teaching quality by means of precise documentation**

The learning interest of the trainees and students is often greatest immediately after a successful or failed experiment. Trainers and teachers need qualified data concerning the settings, processes and measured results for the informed analysis and explanation of what has happened. This data supplies them with automatic documentation that is part of the Elabo EHP software.

**Authority through defensible evaluation**

Grading student performance during practical experiments can be easily done without any additional effort using a valid and transparent basis, since all work is precisely documented and archived. Even months after the experiments have been carried out, it is still possible to reconstruct and evaluate how successful every trainee was while allowing for significantly more confidence when grading and greater trust in an evaluation’s objectivity.

## Maximum Net Learning Time. Highly successful learning

Time is very valuable especially during a training course. The subjects are very demanding and the time available is usually tight. Every minute needs to be used to its utmost to present and expand the subject at hand. The complete Elabo System is designed to save time in all possible details both in large conceptual elements and in smaller details, bringing about significant cumulative time savings.



### Short distances save time

Instruction is usually in the work place and any walking detracts from instruction time, which is why Elabo conceived of its range of storage systems to allow instructors to keep as much material as possible directly at the workstations. Short distances save time and help increase instructional productivity.



### Immediately available

The superstructures are special conceptual elements for the storage of required tools at the Learner Desk. The installation of integrated power supply and measuring devices can be firmly integrated for permanent use, thus keeping the amount of time students spend walking around, connecting and configuring devices at the beginning of class to a minimum.



### Greater efficiency through perfect preparation

Configuring every individual student workstation for a special program of experiments takes a lot of time if the trainees have to do it themselves. However, they will not have to since the instructor can use Elabo EHP Software and network technology to centrally and quickly configure the stations before the beginning of class and thus avoid trainee errors when configuring the stations and attempts to provoke a failure.



### Easy to learn user concepts

The inserts included with the devices are clearly designed and user-friendly. Their use is quickly learned and easily remembered. Uncertainties, operating errors, and questions rarely come up.



**Mobility prevents additional work 1 – for instructors**

Instructors have a tight schedule. Demonstrations, which are often needed, only have to be installed once if they are mounted on mobile demonstration trolleys. After their use they can be stored in the instruction materials room and no longer block the classroom.



**Mobility prevents additional work 2 –for trainees**

The trainees also have a similar advantage. If they are to work on an experimental configuration over several class periods, then the experiments will be mounted on mobile instruction trainers (MIT); after class they are then taken to storage areas where they can be retrieved for the next class, thus avoiding repeated mounting and dismounting.



**Bugs quickly removed**

Bugs can never be entirely avoided. However, Elabo EHP can be used to very quickly identify and immediately remove any bugs created by user errors, even during the experiments.



**Quickly started, quickly stopped**

Quick-lock systems on the cabinets and other storage equipment and the central release of the devices help each class begin and conclude quickly.



**Protection of measuring technology**

Sensitive measuring technology is protected by fuses. Trainee mistakes when configuring an experiment can destroy a fuse. Precious time is then spent replacing the fuse to allow the device to be used in class again. Elabo avoids such disruptions by making sure that the software strictly limits the power output from the mains, so that it meets the requirements of the experiment. The amperage remains below the maximum value set for the measurement range. In the case of faulty experiment configurations, the current remains below the tripping level of the fuse. Preventing the defect, no time is wasted replacing the fuse.

## Minimizing risks Optimizing health protection

Safety and personal protection are of the utmost importance. Elabo does everything it can to prevent potential risks to the trainees and the instructors created by electricity, mechanical parts and other objects in the class laboratory.



### Preventing mechanical injuries

There are no sharp edges and corners with Elabo fixtures. Movable elements – especially lowering technology elements – are equipped with an automatic shut-off and release that reacts in fractions of a second if the hand of a trainee is at risk danger to be jammed.



### Excluding contact with live wires/ components

Elabo offers measuring lines exclusively in safety design with rigid insulation. This precaution prevents any contact with contact surfaces when removing plugs and helps avoid accidents. The electrical wiring is protected as far as possible and installed hidden. Injuries that could occur from damages to live / voltage cables are thus prevented in an effective way.



### Stop! Emergency shut-off

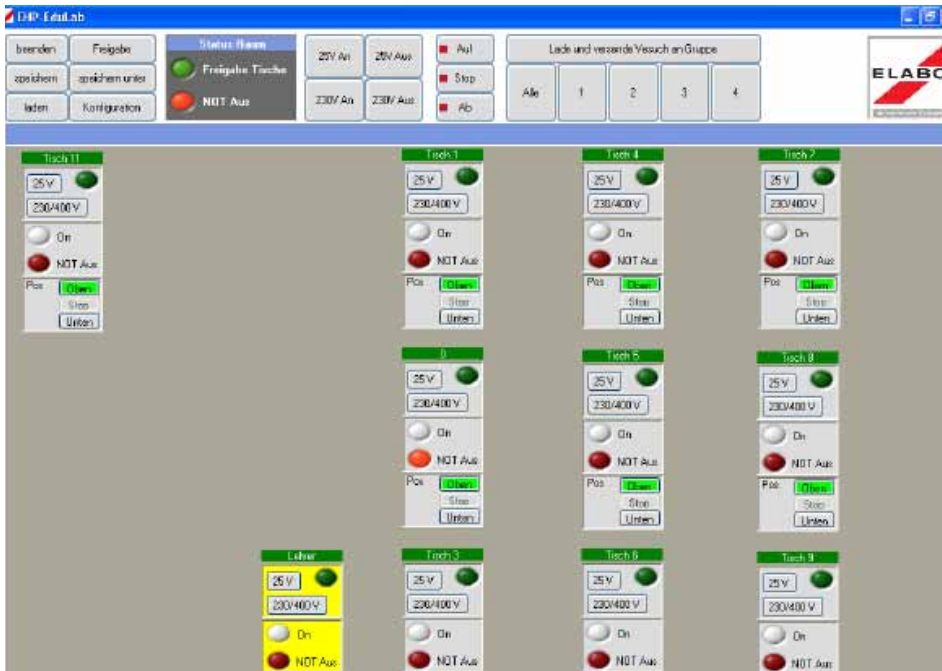
When operating errors or other malfunctions of electrical devices occur – regardless where – then there is always the emergency power-off switch as a last resort. It is clearly marked and always placed within reach.



### Certified safety

Safety is a central criterion when developing and producing products. To assure reliably high safety standards, Elabo cooperates closely with external partners also when testing products. Proof for that are the GS (Device Safety) certificates for tested safety.





**Health protection: spotting and identifying sources of danger immediately**

The Elabo EHP software provides an additional level of safety. Should an electrical malfunction occur at one of the trainee’s places, it immediately shows on the instructor’s monitor. The place is exactly identified; the instructor or teacher can act immediately, offer support if required and prevent physical damage through fast reaction.



**Protecting allergy sufferers**

Elabo uses materials that have been tested by renowned institutes for their compatibility with allergy sufferers. In particular, we abstain from using polycyclic aromatic hydrocarbons (according to requirement ZEK-01-208).

## Stop vandalism. Intelligent prevention

Elabo supports consequent approaches against vandalism. Suitable measures make it more difficult to destroy the school's property; on the other hand, subsequent expenses for damage that may still have incurred are kept low. In that way Elabo effectively prevents damage to the training facilities.



### Identification of disturbers

Disturbing is fun? Willful interruptions of the lessons through provoked technical malfunctions of devices and connections can be exactly pinpointed via network technology. The culprits face immediate consequences. The foreseeable failure diminishes considerably the number of those who might feel like disturbing classes. Modern Elabo software can, for example, help identify immediately at which working place disturbances of experimental set-ups were triggered and where obstructions of the lessons were provoked.



### Systematic resistance

Table and cabinet surfaces are especially frequently victims of negligent treatment or intentional damages. The surfaces of Elabo equipment are not easily impressed: they can be cleaned easily and thoroughly and, in addition, they are scratch-proof and shock and heat resistant. It would indeed require brutal energy to leave lasting impressions (table surfaces according to DIN EN 438).



### No target for "practical jokes"

We experience it again and again: a closet door becomes the target of some foolishness. The doors of Elabo's cabinets are extremely solid. And also their opening angle is 270°. Thus to break off hinges accidentally or willfully is made impossible and they will no longer be the target for such pranks.





### Protection of electrical devices

Electrical devices protect themselves against destruction. For example, power supply units are protected against short circuits by monitoring their output parameter and by resetting their output signal in case of a malfunction.



### Safely "embedded"

Whatever "stands around" can be stolen easily. The integration of power supply, measuring and testing devices in super-structures is not only for ergonomic purposes but also protects these devices. This protection extends to every detail. The frontal panels are fastened with bolts welded to the rear side; from the front side they cannot be disconnected at all. The attempt to pry them loose will be easily detected before any mischief can be done.



### Preventing so-called "petty offenses"

Most trainees who steal tools, devices or material used in class, do so by belittling it as a minor offense. There is a wide spectrum of highly effective locking systems for Elabo lockers. In addition, they are equipped with a three point locking mechanism (via a lock bar) that provides a flush lock. To open the doors with a pry bar would only succeed using massive force. The violent character of such intentions becomes obvious – and those "who just want to swipe something casually" will think better of it.

### Prevent access altogether

The ultimate protection for all electric devices is the lowering technology. In a lowered position the devices cannot be soiled, damaged or removed. Even after years, they come up from their slot in professional cleanliness just at the teacher's push of a button.

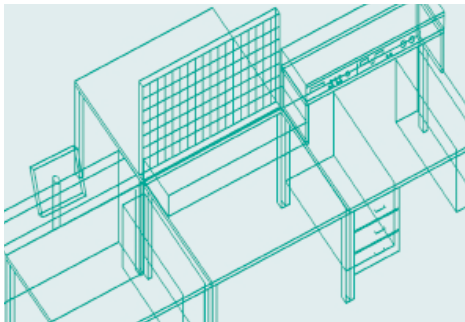
## Economical. Efficiency for years to come

Elabo EducationSystems are functional, ergonomically advanced, and very long lasting. It is possible to reproduce innovative technological developments and changes in industry. The instruments and furniture can easily withstand the various stresses and strains of everyday school life. Very little maintenance is required. Repairs are only needed rarely, even after very long use. And Elabo equipment still makes an excellent impression after many years of operation. It is representative of the high quality of the education you offer to your trainees and students.



### Consistent Precision

Elabo electrical equipment is famed for being trouble-free and long lasting. The consistent precision of the measurement and testing equipment is truly impressive. In the event of any deviations the Elabo calibration service will come to make corrections right away.



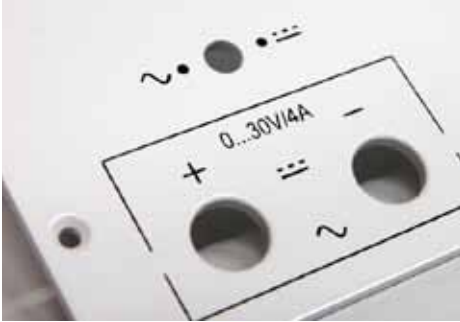
### Open to the Challenges of the Future

Elabo EducationSystems stand for modular equipment concepts. They are so universal that they can be used, with the exception of only a few specialist products, in most fields of electronics and electrical engineering. They are also modular systems, meaning that configurations can be easily changed and extended at any time. This supports adaptation to new teaching contents and innovative teaching concepts. This typical Elabo flexibility makes your equipment fulfil its purpose for many years to come.



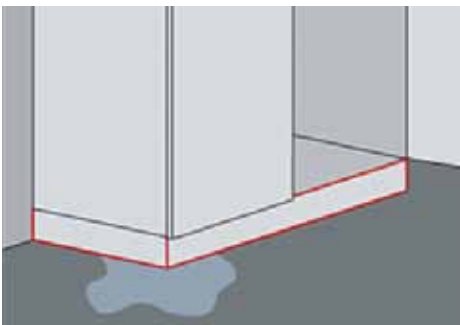
### Measuring up to Change

The furniture has no problem withstanding change, including frequent configuration changes. For most alterations screw connections are made to metal bases – they cannot break off like screws in wood could but rather remain stable in the long term.



### **Lasting Usefulness. Down to the last Detail**

Long-term suitability for use sometimes depends on individual characteristics that are not noticeable at first. For example: labeling of functions on electronic equipment must be extremely long lasting to be useful in the long term. This is why Elabo prints the labeling on panels using silk-screen methods and powder-coats the panels using a stoving process. The combination of silk-screen printing and powder stoving makes the labeling uniquely resistant to abrasion.



### **Awareness of Everyday Stress and Strain**

Many structural elements show how consistent knowledge of practical situations can be used to ensure durability. For example, the cabinets have an extremely large opening angle, which protects the hinges from breakage. Cabinets are also fitted with shockproof corners and edges reinforced with special edge veneer. The bases are joined together with waterproof glue; contact with liquids – such as what happens typically during room cleaning – will not harm them. Careful preventative measures pay off.



### **Smart in the Long Term**

Hardly any signs of usage can be found on equipment and furniture. For example the surfaces are easy to maintain and repel dirt and paint. They are resistant to shocks, cutting and scratching as well as heat and acids. Because of these properties Elabo equipment still looks impressive and retains its high quality.

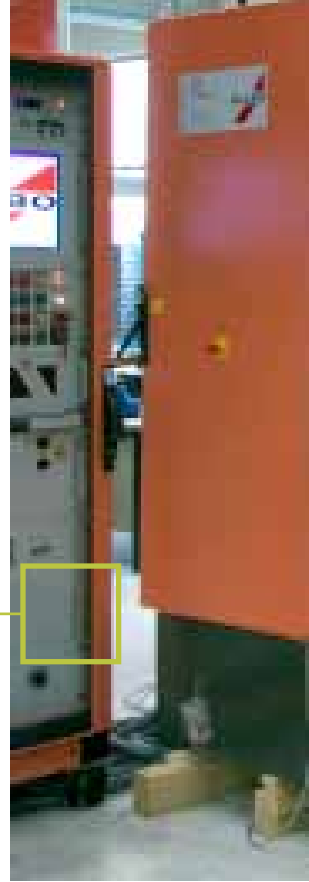


### **Reasonably priced Replacement and Replenishment**

Typical wear and tear parts can be replaced easily and at a low cost. Table edges, for example, take a lot of punishment in everyday school life. Chair backs are banged against them and some trainees scrape them when lost in thought. The edges can be replaced very easily and at a remarkably low cost. Our customers can also rely on the fact that all products will still be available if they wish to replace Elabo products in a few years. That we guarantee, and for many years to come.

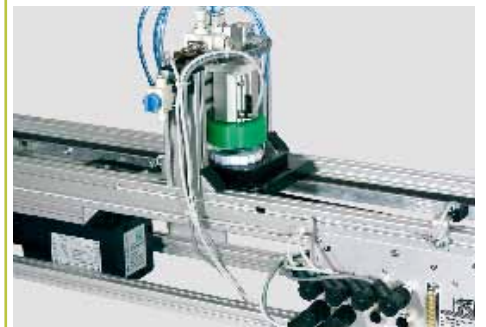
## Practical competence. Successful wherever trainees and students carve out their careers

In demanding industrial projects which are under a lot of pressure to succeed Elabo uses the lessons learned in training on a daily basis. The large, complex systems for production-integrated quality assurance and fully automated product testing are a good example for this. The professional competence that is proven here and our extensive experience form the basis for the extraordinary quality, intelligence and practicality of Elabo EducationSystems.



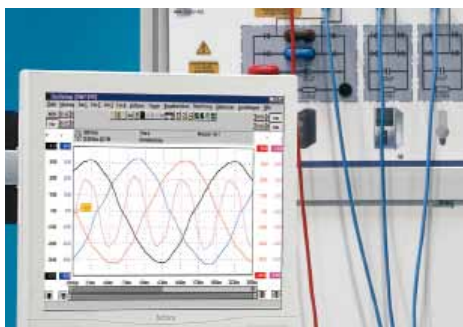
### Control Technology

Control technology is the central intelligence unit that records signals, makes conclusions and sends commands to drives, sensors and transportation systems. Programmable logic controllers (PLCs) are also important in training. Elabo test systems that are used in large-scale serial production, for example, regulate the handling of test candidates and automatic contacting, two very complicated procedures in fast processes.



### Automation Technology

Automation technology has a decisive influence on productivity, both in production and in quality assurance with test systems. Automation defines repeated procedures exactly as programmed processes, often with optional variations. It organizes the perfect coordination of electronic and mechanical components. Industrial reality shapes demands on training.



**Measurement and Testing Technology**

Measurement and testing technology accompanies all training. Values – amperage, voltage and resistance – are recorded in order to evaluate functions and deduce appropriate regulation. In Elabo test systems safety and function testing is a component in almost all systems. Many systems also carry out automated checking of product aesthetics: they automatically control the placement of operating instructions, measure joints or test the light intensity of displays.



**Drive Technology**

Various drive technologies are used to transfer objects, for example DC and AC motors, servo and multiphase motors. Whether simple controls are sufficient or complex drive management is necessary also depends on how precisely the object must be positioned. The greatest possible precision is often decisive for test systems, for example for the integration of robots.



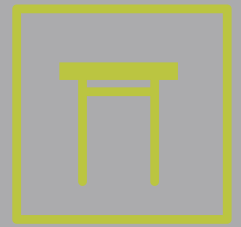
**Safety Technology**

The emergency OFF button: a symbol for safety technology. An indispensable element that protects people and machines. It is also very important in education. Various complexities of safety technology are used in practice, from simple relay switches to opto-electronic protection equipment and failsafe bus systems.





# Table systems



**Elabo table systems can be linked together into expansive arrangements. The cable management system ensures central control of power supply and data networking.**



**Elabo tables form the basic module for training workstations. They are a stable basis for all kinds of suspended floor units and superstructure additions.**



**The measure of flexibility: the InForm column has notches all around – eight in total – on which the inserts, shelves, lamps and much more can be mounted.**



## Table systems

### The perfect Basis for Modern Specialist Teaching

Elabo Table Systems form the basis for electronics classrooms. They ensure spacious, usable work surfaces and also act as support for superstructures with electronic equipment and for experiment fields, suspended floor units and lighting elements. In InForm and EcoTec<sup>SP</sup> Elabo offers two – combinable – systems that provide the perfect solution for almost all demands.



A frame forms the central support of the Elabo Table Systems. The table legs are fastened to the frame by a screw which is guided within a bushing: the connection is as solid as a welded joint, yet it may be dismantled at any time.



The table carries it all. Thanks to being fastened to the table top (or the frame, respectively) the floor remains free, which is of great advantage for thorough room cleaning.

#### Table Frame System

The core element of the Elabo Table Systems, both in the InForm and the EcoTec program, is its welded steel frame made of square pipe.

The frame is screwed to the table top and the table legs. A solid connection is guaranteed, which facilitates optimal load distribution and ensures stable positioning.

The screw connections may be undone at any given time and therefore offer great flexibility for changes in configuration, also facilitating transport when moving to another location is required.

Other components, such as floor units, for example, may be adapted to accommodate the frame.

#### The Table Top

Elabo table tops are made of robust 30mm thick particle board, and together with the frame provide maximum load distribution of an outstanding 200 kg. They have a 0.8mm thick, very hard, abrasion-resistant plastic coating.

The table surface is made of slightly textured non-glare material, which for short periods of time can withstand up to 180° and is resistant to organic solvents, weak acid or base substances, as well as petrol (gasoline) and oil.

Its impact-resistant edge band makes the edges highly resistant to daily stress and demands.

#### Optimal for Fastening Accessories

To the left and the right of the front edge is a table top overhang sufficient for attaching accessories, such as additional lamps or vises, in an easy and unproblematic manner.

#### Replaceable front edge

During training practice the frontal edges are subject to above-average wear, therefore they are made of particularly stress resistant, non-slip material. They may be replaced with one single, cost-effective piece, resulting in only a minor expense.

Between the edge of the table top and the support system an overhang has been provided to permit the secure attachment of tools, such as a vise, for example, or other tools or devices.



Elabo table top surfaces are extraordinarily tough. The frontal edges of the Table top which are subject to particular stress may be replaced in a cost-effective manner provided by EcoTec and InForm.



Elabo table Systems provide a professional appearance in training rooms and offer a maximum amount of variability. Configurations of the most versatile setups are available.



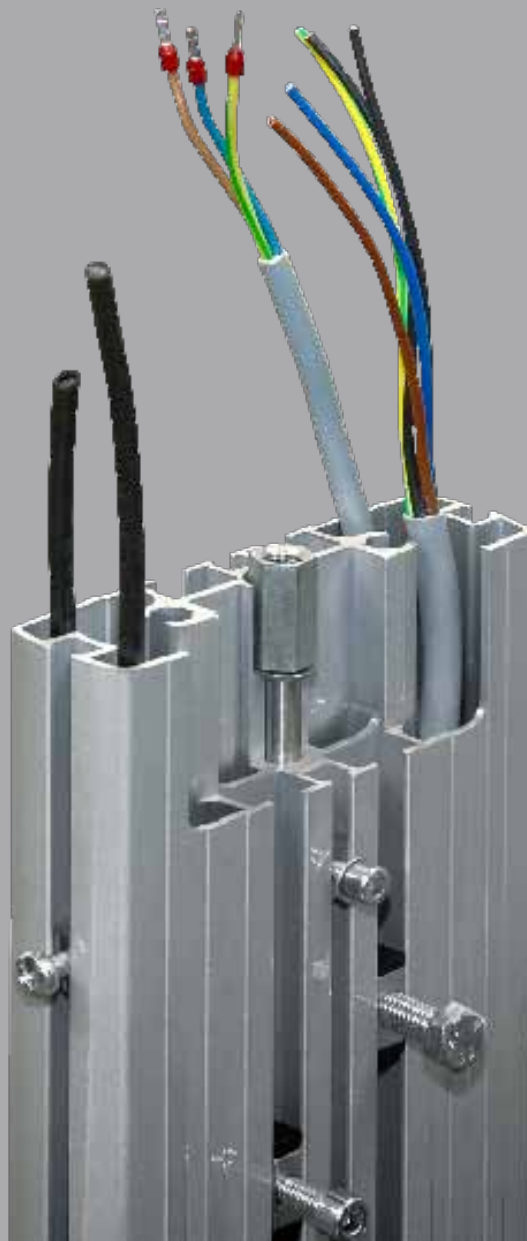
## Table systems

### International Benchmark for Variability

#### The multi-functional InForm Section

The InForm System's most essential structural characteristic is its multi-functional aluminum extrusion-press section. It is very light-weight, absolutely corrosion-resistant and, while especially stable, it is capable of withstanding great loads. At the two narrow sides the section has a notch, while the broad sides have three notches. Adjustable nuts (M4 to M8) which fit into the notches permit attachment of the most varied type of components in freely selectable positions which may be changed at any time.

The InForm profile column offers maximum versatility. The 8 notches allow for the movement of adjustable nuts and permit fastening of all types of devices. The profile section is made of corrosion resistant aluminum extrusion-press material.



#### Connecting the Sections

The basic version of the InForm section matches the length of the table leg. However, the sections can be solidly connected with attachment bolts and threaded rods. With the aid of these sectional connectors additional structures may be added on securely whenever necessary.

Equipped in this way, the InForm section supports the table top and all structural parts, add-ons, compartments, cable brackets and lamps, as well as a wide variety of hardware.

#### Changing the Table Legs

In the case of row or corner structures the front table legs may be moved back without any additional hardware to accommodate better legroom. This is a standard feature.

#### Compensation for Uneven Floor Surfaces

If the InForm sections are used as table legs, the sections are equipped with a height adjustment feature; this will enable you to compensate for even the most drastic uneven floor conditions.

#### Integrated Cable Management

Another special feature of Elabo InForm products is their consistent cable management. The section's two hollow chambers can accommodate wires and cables, which means they are securely stowed away in vertical space in order to prevent



Cables are well secured and do not impede work processes, although they are accessible at nearly any given spot of the table.

InForm and Eco Tec products are easily interchangeable. Special adaptors provide a secure connection.

damage. To guide the cables in horizontal applications the InForm Table System has a standard cable compartment provided in the rear. Here connector strips may be blind installed. Moreover, this area will receive surplus cable which would otherwise create disarray and/or hazardous conditions. Especially designed hardware may help lead cables securely across several adjoining rows of tables.

The table top is equipped with a flap to permit easy access to the cable compartment. This flap includes a clever pivoting mechanism and may be opened even when devices and/or material are covering part of it. A brush strip at the rear end of the flap ensures that the cables can be guided in and out of the compartment and across the entire length of the table.



InForm table legs can be variably attached in various positions. This way, if needed, more leg space can be created.

### Special Features of Eco Tec<sup>SP</sup>

The core elements of the Eco Tec<sup>SP</sup> System are the table frame and the table legs made of square steel pipe. The frame's pipe diameter is 40 x 25 mm, the longitudinal bars have a diameter of 40 x 40mm.

Eco Tec<sup>SP</sup> does not employ aluminum profile sections but square steel pipe with a diameter of 50 x 50mm for the table legs; as with the InForm components they are bolted down on a steel frame (not permanently welded).

As a standard feature, the table legs are adjustable in height, so the working level (height) can be adjusted from 740 to 800 mm. Through this height adjustment feature any amount of unevenness in the floor may be compensated by the table legs.

The frame is made to permit adding a cable compartment for improved cable management, which may be installed to be optionally accessed from the front or back.

### Flexibility through Compatibility

InForm and Eco Tec may be connected interchangeably. Corresponding connectors ensure a solid connection of the individual components.



Just a few movements allow you to make height adjustments to Eco Tec tables.



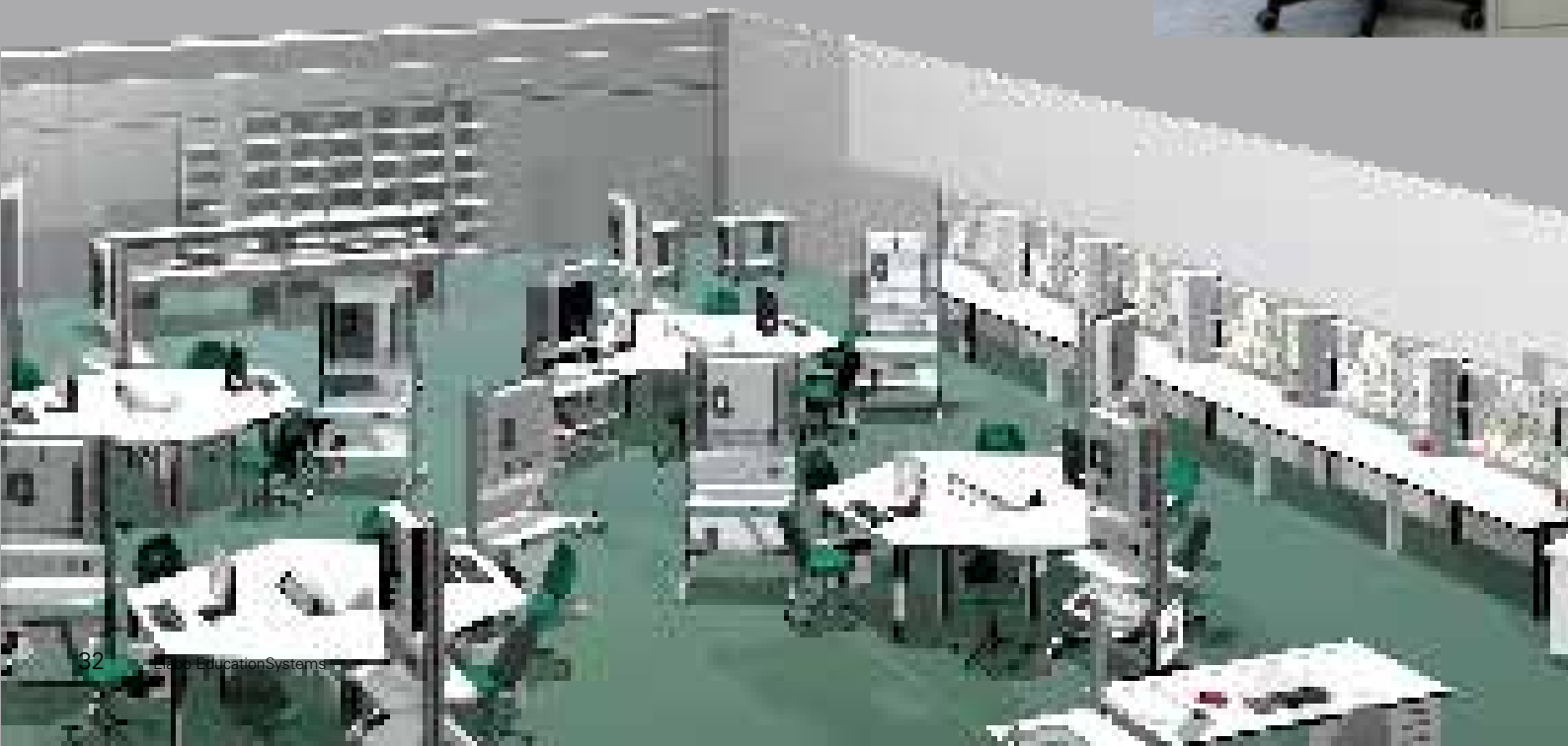


## Table systems

### Overview. Highest Professionalism in Training

Elabo Table Systems will allow you to take all conceivable special arrangements of a training facility into consideration. Even the most diverse educational concepts may be easily realized with Elabo.

A considerable share of this lies in the modular construction of Elabo Table Systems: they provide enormous flexibility and support the most variable table positioning. They may be set up individually, in a chain, a line, in U formation, in circular segments, with circular and other forms. To make this possible the Elabo product line offers a multitude of adapter components and pertinent hardware. The tables facilitate numerous configurations which correspond precisely to the required configurations with floor units, with superstructures consisting of inserts, shelving and experimentation boards, with PCs and monitors, lighting and much more. Highest professionalism in training is what Elabo and its partners stand for.





Many different industry sectors such as electrical engineering and electronics also provide training in the basics of mechanics and metal working. For these applications the comprehensive assortment of Elabo products can offer appropriate workplace configurations as well.





## Table systems

### Expandable Modules This may also interest you...

Elabo Tables are the central element of the highly flexible Elabo System. Its modular components allow you to find your own optimal solution tailored to your particular requirements.



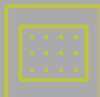
**Superstructures** offer additional storage areas and integrate power supply equipment as well as measuring and test devices. The table surface is thus left free for working with the test objects.  
> [More on page 45](#)



**Inserts and electronic devices** with power/voltage supply equipment and testing and measuring devices from Elabo are integrated as modules into the superstructures.  
> [More on page 75](#)



**The lowering technology** makes it possible to quickly and reliably lower the superstructures. The classrooms can thus be converted quickly from theoretical to practical instruction and back again to theoretical instruction.  
> [More on page 59](#)



**Experiment frames** from Elabo accept test setups with electronic and electrical components. All teaching aids currently available on the market can be used in them.  
> [More on page 125](#)



**Floor units and organizer elements** support the organized storage of a wide range of teaching materials directly at the student's workplace.  
> [More on page 155](#)



You can obtain **chairs** and all accessories from Elabo. Solutions from a single source.  
> [More on page 181](#)

# Paint finishes/colours, surfaces and materials



Elabo powder coats the frames and legs of its table systems.

## Paint finishes of table frames

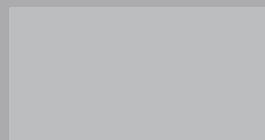
All visible metal parts are powder-coated by Elabo. Because of this extremely robust, scratch-proof and durable coating the Elabo system furniture enjoys excellent long-term protection and looks almost new even after a long time. Special colours are available on request.

### InForm



Fire red RAL 3000  
Colour variant fr

### EcoTec SP

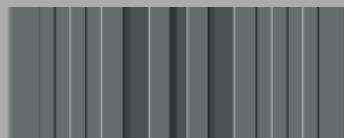


Light grey RAL 7035  
Colour variant lg

Elabo generally uses electrically conducting powder coatings for its tables and InForm sections. As a result, an important requirement for ESD capability is routinely met.



Sapphire blue RAL 5003  
Colour variant sb



Basalt grey RAL 7012  
Colour variant bg



White aluminium RAL 9006  
Colour variant wa



Light grey RAL 7035  
Colour variant lg








Table top with removable front edge for InForm und EcoTec



Multiplex top

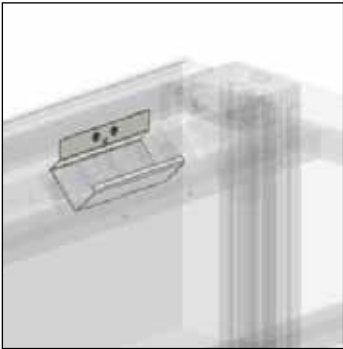


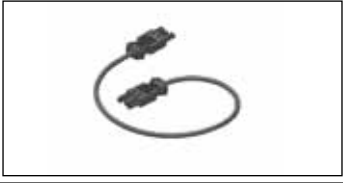

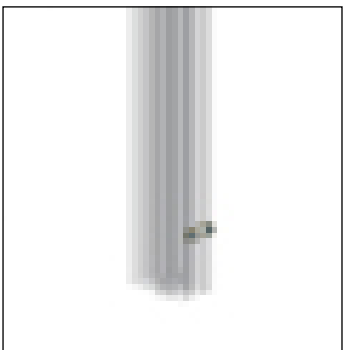


## InForm

		Technical specifications	W x D x H	Article Number
<b>System table with lowerable flap and cable trough</b>  <b>Table top fitted at the front with a replaceable FlexiLine edge</b>		Table top faced with HPL (high pressure laminate), 30 mm thick  Usable height of cable trough 110 mm Table top supported by robust apron frame of FE tubing  Table legs made of extruded aluminium with multi-groove profiling, containing two separate cable chambers. The front table legs can be set back to give more leg space.	1200 850 750 1200 950 750 1500 850 750 1500 950 750 1600 850 750 1600 950 750 1800 850 750 1800 950 750 2000 850 750 2000 950 750	70-1C ZFQ 70-3C ZFQ 70-1B ZFQ 70-3B ZFQ 70-1D ZFQ 70-3D ZFQ 70-1A ZFQ 70-3A ZFQ 70-1G ZFQ 70-3G ZFQ
		Table top faced with HPL, 30 mm thick Usable height of cable trough 110 mm Table top supported by robust apron frame of FE tubing  Table legs made of extruded aluminium with multi-groove profiling, containing two separate cable chambers. The front table legs can be set back to give more leg space.  Table top faced with HPL, 30 mm thick Usable height of cable trough 110 mm	1200 850 750 1200 950 750 1500 850 750 1500 950 750 1600 850 750 1600 950 750 1800 850 750 1800 950 750 2000 850 750 2000 950 750	70-1C ZF2 70-3C ZF2 70-1B ZFQ 70-3B ZFQ 70-1D ZF2 70-3D ZF2 70-1A ZF2 70-3A ZF2 70-1G ZF2 70-3G ZF2
<b>System table</b>  <b>Table top fitted at the front with a replaceable FlexiLine edge</b>		Table top supported by robust subframe of FE tubing  Table legs made of extruded aluminium with multi-groove profiling, containing two separate cable chambers. The front table legs can be set back to give more leg space.	1200 850 750 1200 950 750 1500 850 750 1500 950 750 1600 850 750 1600 950 750 1800 850 750 1800 950 750 2000 850 750 2000 950 750	70-1C ZF1 70-3C ZF1 70-1B ZFQ 70-3B ZFQ 70-1D ZF1 70-3D ZF1 70-1A ZF1 70-3A ZF1 70-1G ZF1 70-3G ZF1
<b>Cable channel covers</b>		For covering the ends of the cable channel	121 1.5 105	78-1N
		For connecting two cable troughs in the case of table rows	70 52 150	78-1Q
<b>Table foot bracket</b>		InForm table foot bracket (pair) for fastening system tables to the floor. Colour: black.	30 60 35	78-1G





# InForm Accessories

		Technical specifications	W x D x H	Article Number
<b>Plug socket bracket for cable trough</b>		Plug socket bracket for installation in the cable trough	160 85 50	75-8T
<b>Plug strip System 60</b>		3 x shockproof safety sockets Plastic strip with mains input plug and direct bridged mains System GST-18 output socket Sockets rotated 45° for angled plug. Colour: black	225 60 50	C1-8A
<b>Connection cable</b>		3-pole connection cable, cross section 1.5 mm <sup>2</sup> for mains power connection and for connecting the socket strips		
				
<b>Socket set for cable trough</b>				
		Socket set consisting of: 2 x socket brackets for cable trough 2 x socket strip with 3 x shockproof safety sockets 1 x shockproof connection cable, 3 m 1 x connecting cable, 1.5 or 2.5 m		
		for table widths up to 1500 mm		81-2X Z01
		for table widths 1600 mm and above		81-2X Z02
<b>Connector fitting</b>		InForm connector fitting (pair) for table rows  Colour: Light grey	58 2 20	78-1H



# Table systems

## EcoTec<sup>SP</sup>





		Technical specifications	W x D x H	Article Number
<b>Table frame</b>		Frame for EcoTec <sup>SP</sup> work tables and laboratory tables, preset at 750 mm (without table top), apron frame made of welded square/ rectangular steel tube 40 x 20 mm, 40 x 40 and 40 x 25 height-adjustable legs made of square steel tube 50 x 50 mm	1190 750 750 1190 850 750 1490 750 750 1490 850 750 1590 750 750 1590 850 750 1790 750 750 1790 850 750 1990 750 750 1990 850 750	E1-1S E1-1L E1-1R E1-1K E1-1Q E1-1J E1-1P E1-1H E1-1N E1-1G
<b>Table top with replaceable edge</b>		Table top with 15 mm thick, ergonomically shaped, replaceable edge (FlexilLine edge) in black  Particle board with 0.8 mm thick, very hard and abrasion-resistant plastic coating. Surface slightly structured and glare-free, heat-resistant for a short period of time up to 180°C, resistant to organic solvents, weak acids and caustic solutions, as well as (petrol) gasoline and oil.	1200 800 30 1200 900 30 1500 800 30 1500 900 30 1600 800 30 1600 900 30 1800 800 30 1800 900 30 2000 800 30 2000 900 30	E2-1S E2-1L E2-1R E2-1K E2-1Q E2-1J E2-1P E2-1H E2-1N E2-1G
<b>Cable trough</b>		Sheet steel cable trough for mounting beneath the table top. Usable depth 82 mm Usable height 75 mm including two strain relief elements on the outside, left and right.		
		For table width 1200 mm For table width 1500 mm For table width 1600 mm For table width 1800 mm For table width 2000 mm	1080 85 110 1380 85 110 1480 85 110 1680 85 110 1880 85 110	E4-8E E4-8D E4-8C E4-8B E4-8A
<b>Table leg holder</b>		For securing the table to the floor. Plastic sleeve for screwing to the floor. The EcoTec <sup>SP</sup> table leg can then simply be inserted into the sleeve.		E4-9G
<b>Table row connector</b>		Table row connector for a combination of two EcoTec <sup>SP</sup> work tables with increased leg space.  Set consisting of: 1 supporting leg, electrically conductive, with flange panel H = 710-770 mm pre-set at 750 mm 2 table connection brackets and 2 corner closures		E4-9A


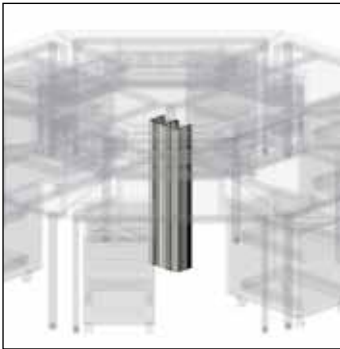


# Table accessories

		Technical specifications	W x D x H	Article Number
<b>Replacement for detachable edge</b>		<p>Removable edge for replacing damaged table edges.                      The edge is anti-static and non-conductive.                      Material: Hard PVC.                      Colour: Black.</p> <p>The edge is prepared for direct replacement.</p>	2000 15 30 1800 15 30 1600 15 30 1500 15 30 1200 15 30	81-6K B2000 81-6K B1800 81-6K B1600 81-6K ZB1500 81-6K B1200
<b>Brush strip</b>		<p>Supplied by the meter                      Brush length 25 mm                      Use for:                      - Vertical channel, inside                      - Orga panel</p>	1000 25	81-6L
		<p>Supplied by the meter                      Brush length 35 mm                      Use for:                      - Cable flap on table                      - Vertical channel, face</p>	1000 35	81-6M
<b>InForm section adapter</b>		<p>Adapter (pair) for mounting InForm vertical sections on EcoTec<sup>SP</sup> lab tables or any other work surface.</p>	34 123 44	78-2F



## System tables




		Technical specifications	W x D x H	Article Number
<b>Conference table</b>		Conference table with 19 mm thick melamine-faced, fine-structured particle board. A 2 mm thick plastic edge strip protects the table top against impact. Colour of the table top and frame: Light grey 7035 Shape: rectangular	1600 800 720	08-1A
		Shape: rectangular	1200 800 720	08-1B
		Shape: square Design as above, however Shape: trapezoidal	800 800 720	08-1C
		With one multiplex-table top 40 mm thick, 6 sheet steel floor units with 2 steel drawers 100 mm, 2 steel drawers 150 mm, 1 steel drawer 200 mm and central locking system. RAL 7035 light grey	800/1600 800 720	08-1D
<b>Hexagonal work bench</b>		Trapezoidal table EcoTec <sup>SP</sup> -design pre-set at 780 mm, welded metal apron frame consisting of 40 x 40 mm square steel tube, height-adjustable legs made of 50 x 50 mm square steel tube.	2491 2164 840	03-6A
<b>Octagonal work bench consisting of: Trapezoidal table</b>		With a 40 mm thick, multi-ply laminated work bench top made of beech veneers. The surface is sanded and given a clear varnish coating.	1300/637 800 750	01-1B Z

		Technical specifications	W x D x H	Article Number
<b>Roller container</b>		Roller container with 1 pull-out shelf, 3 HE 1 Orga sheet steel drawer, 6 HE, and central locking, 4 casters as well as covering top.	420 620 625	71-1L
<b>Alu cable channel</b>		Alu cable channel for simple routing of the cables from the floor to the cable channel. On the inside, the Alu channel has an attachment groove for simple mounting of attachment clips. The cover consists of a front panel which can be removed from the front.  Suitable for table 01-1L-Z.	115 120 880	01-8S Z
<b>Corner superstructure</b>		Corner superstructure, octagonal. Special design: For accepting insert panels 8 x 3 HE / 84 HP. Top cover of superstructure 30 mm thick, removable.	1638.4 1638.4 950	40-OJ Z
<b>Three-phase current</b>		Fuse and switch unit. 3-phase, with key feeler 24 HP Euro insert panel Equipment: 1 key-operated push button switch I/O, black 1 motor protection switch 10 ... 16 A with undervoltage release 3 external conductor control lights	121.9 128.5	42-OU.3







## System tables

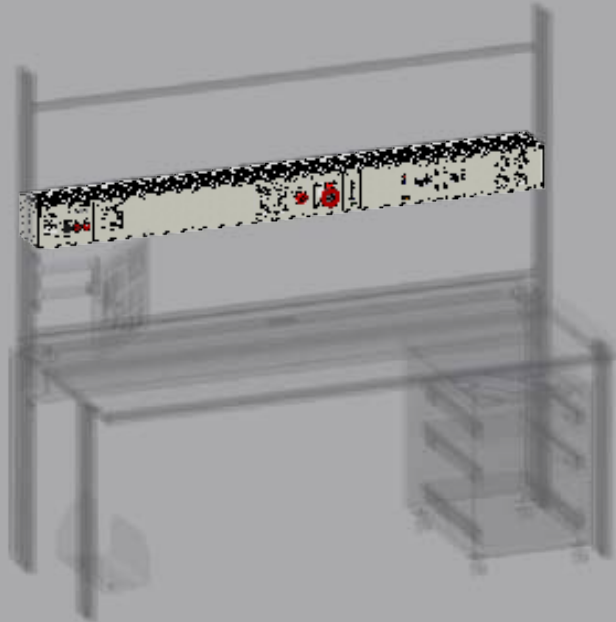
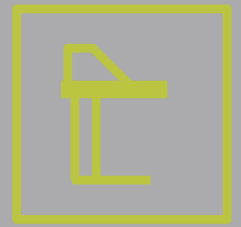
		Technical specifications	W x D x H	Article Number
<b>Mains power</b>		AC-power supply, single-phase, Mains power 1/N/PE~ 50 Hz 230V / 16A Euro insert panel 24 HP at 4 shockproof safety sockets	121.9    128.5	44-1L.3
<b>Mains voltage</b>		Mains voltage 3/N/PE~ 50 Hz 400V / 16A, 24 HP Euro insert panel at 5-pole 400V / 16A CEE socket, red, and at 5 safety-type lab jacks.	121.9    128.5	44-2C.3Z001
<b>Emergency Off</b>		Emergency-OFF switch for the training area. 12 HP Euro-insert panel, provided with: 1 Emergency-OFF switch, with detent and yellow signal ring, unwired.	60.9    128.5	44-1J.3Z701

# Tiled tables

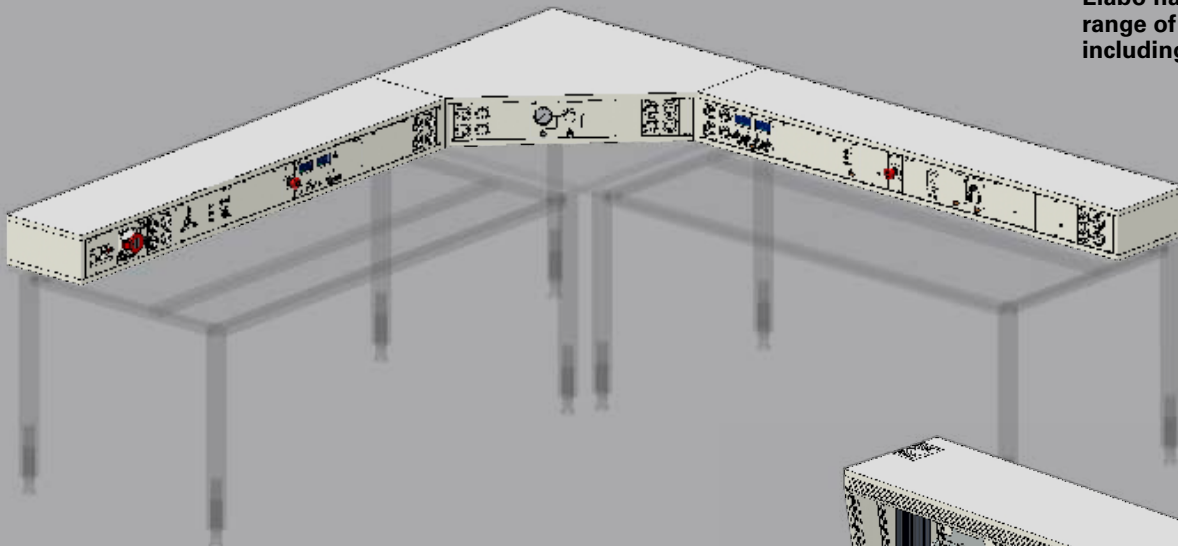
		Technical specifications	W x D x H	Article Number
<b>EcoTec<sup>SP</sup> Tiled Table</b>		<p>EcoTec<sup>SP</sup> work table and lab table, complete with tiled table top, red/brown tiles, and an all-round beaded edge, preset to a height of 900 mm</p> <p>Welded steel tube apron frame made of 40 x 20 rectangular steel tubing, height-adjustable legs made of 50 x 50 square steel tubing.</p> <p>Metal parts powder-coated RAL 7035.</p>	2000 750 900	E1-1N Z
<b>InForm Tiled Table</b>		<p>InForm system table tiled with red/brown tiles and with an all-round beaded edge.</p> <p>Under the table the robust apron frame is made of FE tubing.</p> <p>Table legs made of extruded aluminium sections with multi-groove profiling and with two separate cable channels on the inside.</p> <p>Height: 750 mm.</p>	2000 800 750	70-1G Z



# Superstructures



The very compact Alu channel accepts the power supply, carries various accessory elements and has grooves that accept experiment boards



Elabo has an highly versatile range of superstructures including corner units.



Elabo also offers the option of installing the 3 HU or 6 HU superstructures upright in order to provide maximum table surface.



## Superstructures

**System variety.  
The optimal solution for every need.**

Elabo superstructures integrate electronic devices with a positive fit. They support the safe mounting of cables, offer additional storage possibilities, and much more. Elabo superstructures are available both in EcoTec and in InForm versions.



A superstructure that can be simultaneously equipped and used from two sides is a special feature of the EcoTec system. In many cases, this solution makes it easier to optimize the use of space and is in addition of economic interest.



Corner superstructures are also available in the EcoTec programme. They are used when an additional experiment station is to be created at abutting tables.



EcoTec superstructures are available in various sizes and are mounted directly on the table.



### **EcoTec. Compact and varied**

EcoTec superstructures are placed directly on the table surface. The bottom walls of the EcoTec superstructures are provided with cable feed-throughs so that cables can be run, for example, from the cable compartment below them.

With the exception of the 3 HE Light superstructures, the fronts are inclined so that operating and reading functions are simplified.

If needed, the cover panels of the superstructures can be provided with screw threads for the mounting of experiment frames.

EcoTec superstructures come in many variants, also as column-mounted and as corner superstructures, for example. A maximum amount of space can be saved by using the versions that can be equipped on both sides.

### **InForm. Freedom for committed experimentation**

InForm superstructures are typically positioned above the table top, between two vertical sections, slightly higher than at eye level. This increases the usable area of the table and creates free space for experiments. In order to place the equipment and devices optimally in the field of vision of the user, the front of the superstructure is ergonomically inclined. In each case, a basic support is mounted beneath the superstructures. This basic support provides a great amount of stability and permits a wide range of accessories to be carried. Among other things, workplace lights, socket strips, etc. can be attached directly to the basic support. The cabling runs inside the vertical sections and, if necessary, via additional vertical channels that can be mounted laterally on the respective vertical sections.

One of the special features of the Elabo InForm superstructures is the Orga panel. The panel accepts the cables that run between the measuring devices on the superstructures and the objects being measured. The cables are organized by cable racks inside the panel. The brush strip at the front of the panel allows cables to pass through at any desired point. The panel is located at the bottom of the superstructures and can be pulled out like a drawer. It runs smoothly in linear sliding guides attached to the basic support. The Orga panel is lockable.

### **The Alu channel. Effective and useful.**

The section channel, made of aluminium, is an elementary and very practical superstructure element in the Elabo line of equipment. It carries mainly the power supply and, if necessary, the connections to the data network. On its top side and on its underside, the Alu-channel is provided in each case with two guide grooves into which accessories – such as mobile lights – and also experiment boards can be fitted. In this way, the power supply is directly integrated into the testing area. Among other things, this guarantees the shortest possible cable paths.



# Superstructures

Transparent structures.  
Maximum packing density



InForm superstructures are positioned above the table top between the vertical sections. This significantly increases the useful area of the tables.

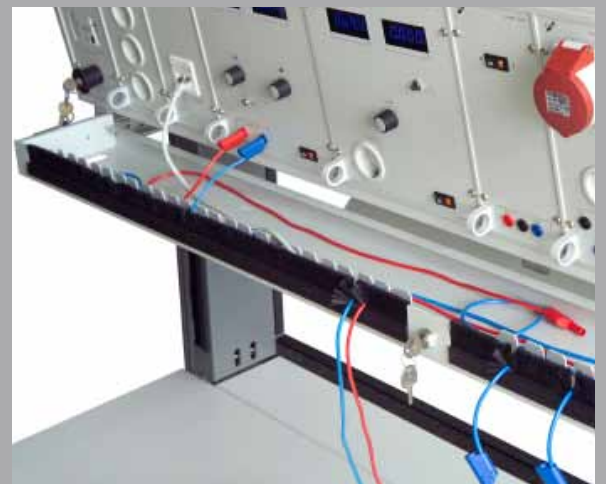


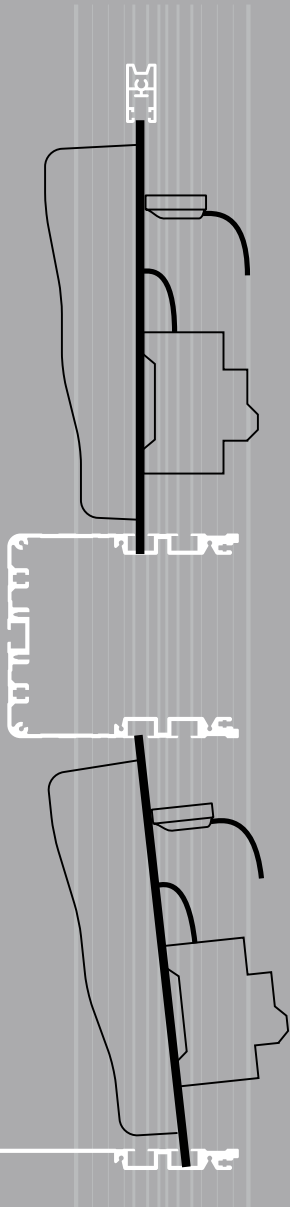
### Superstructures are compatible with the 19" system

Elabo superstructures that comply with the 19" standard can be supplied. Devices from the 3 HU and the 6 HU system can be integrated into the 19" technology, and special assembly carriers are available for that purpose. Devices from other manufacturers can also be used with the 19" system.



Vertical channels and the Orga panel are examples of the exemplary InForm cable management. The vertical channels carry additional power and data cables, well protected, vertically into the superstructures. The Orga panel carries them in the horizontal plane; cables can be removed and inserted at any point in the panel.





### Maximum packing density

In order to permit the maximum possible number of devices and components to be integrated into the inserts, Elabo uses not only the 6 HU grid but also the 3 HU system, which differentiates much more precisely. Both can be combined with each other, and in this way almost no unused inner spaces exist between the measuring and power supply devices, connections and switches. No other concept achieves such a large number of equipment items in the smallest possible space.

### Rapid insertion of the devices: Plug and play.

6 HU-inserts can be inserted directly into the superstructure. Corresponding guide rails help to insert the devices and to establish the connections. The electrical contact is made automatically via the pre-mounted plugs and the bus system that are included in the scope of delivery.



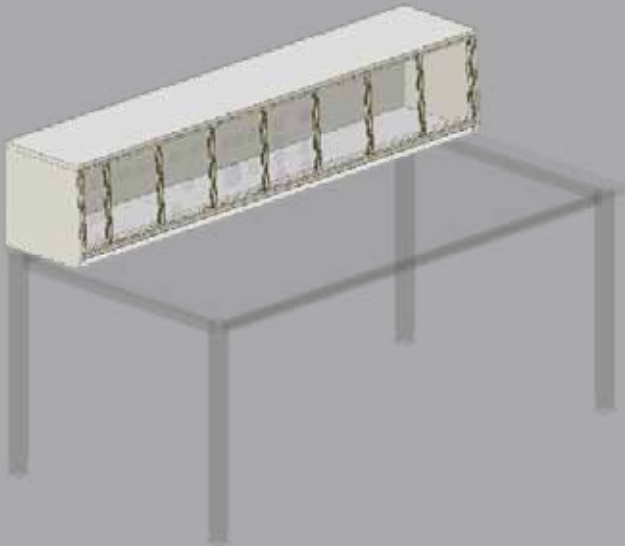
Central power supply: The Alu channel is provided in each case at its upper side and its underside with two grooves in which experiment boards can be fitted. The power supply is thus located in the direct vicinity of the test objects.

The basic support guarantees the high degree of rigidity of the InForm superstructures. It accepts socket strips, workplace lights and the Orga panel. Two cable flaps on the rear side are used for transverse cable guidance.



# Superstructures

Elabo superstructures are central components of the extremely flexible Elabo system. Together with other modular components they create for you an individual user-optimized solution.



In its superstructures Elabo links the 6 HU grid with the 3 HU grid. This unique concept permits optimum use of the available space for employing measuring and power supply devices. The result is: the maximum possible packing density.



The integrated power supply cable harness is a standard fitting in Elabo superstructures. In conjunction with the guide rails, which are also standard delivery items, devices are installed using the comfortable plug and play principle. Superstructures are optionally fitted with data buses; they support the use of networking technology and are state of the art.

## Structures Materials and paints/colours

### Materials

The basic material of which the Elabo EcoTec and InForm superstructures are made up is a fine particle board coated on both sides with melamine resin and protected all round with edge strips.

Depending on the system, either a welded front frame or a grid section is installed in the front part of the superstructure. Both are used for mounting the devices and at the same time eliminate gaps at the front of the superstructure.

The Alu-channel consists of a powder-coated die cast, extruded aluminium section.

### Colours

The colours of the wooden superstructures are:  
Body: Light grey RAL 7035  
Installation frame: Light grey RAL 7035

The colours of the Alu-channel:  
Light grey RAL 7035  
Basalt grey: RAL 7012

# Expandable Modules

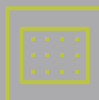
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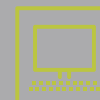
**Table systems** are the intelligent supports of all superstructures. The InForm and EcoTec system environments offer a wide range of excellent variants for modern efficient instruction and training.  
> [More on page 27](#)



**inserts and electronic devices** from Elabo, such as measuring devices and power supply devices, are specifically matched to the superstructures and allow optimal use of the 3 HU and 6 HU system grid.  
> [More on page 75](#)



**Experiment carriers** are the platform for practice-oriented tests and experiments. They are directly connected to the superstructures and together with them form an effective functional and space-saving unit.  
> [More on page 125](#)



**Virtual Equipment** from Elabo provides the network technology and switches that are integrated into the superstructures.  
> [More on page 109](#)



**Lowering technology** allows the superstructures to be lowered so that they disappear into solid compartments. In this way, the technical equipment is protected and the classroom can be used not only for experiments but also for teaching theory.  
> [More on page 59](#)

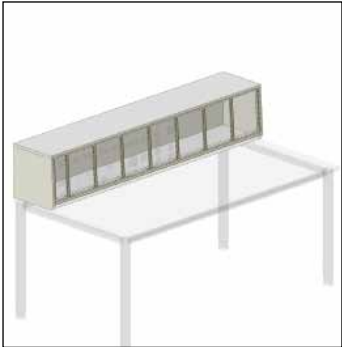

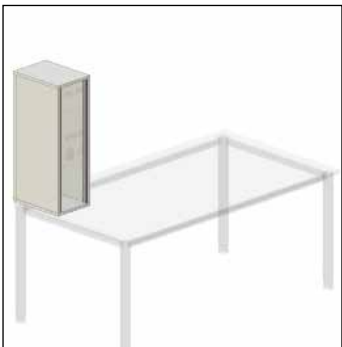



There is a wide range of **accessories** available for the superstructures: socket inserts for supplying power to portable devices, mains connection cables, measurement cable holders for mounting on the vertical sections, and much more.  
> [More on page 181](#)

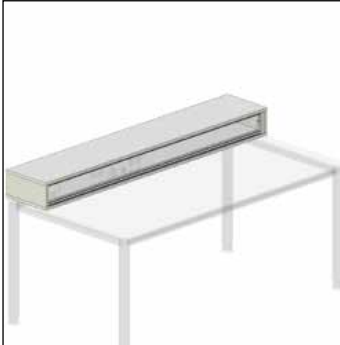
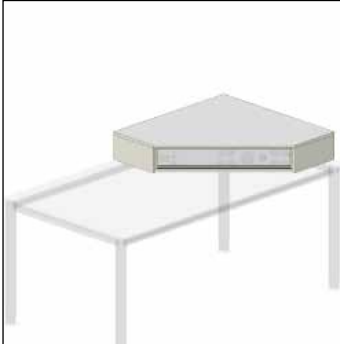

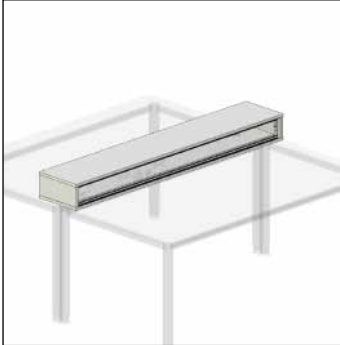




## 6 HU systems



		Technical specifications	W x D x H	Article Number
<b>Table-mounted superstructure</b>		<p>The body is made of 19 mm thick three-ply particle board. Surfaces coated with melamine resin. With factory-integrated mains power bus, insert rails and plug connectors.</p> <p>For accepting 16 inserts with 1 WU or correspondingly fewer with 2 WU and 4 WU.</p>	2000 320/340 350	30-0G
		For accepting 15 WU	1800 320/340 350	30-0A
		For accepting 13 WU	1600 320/340 350	30-0H
		For accepting 12 WU	1500 320/340 350	30-0B
		For accepting 10 WU	1200 320/340 350	30-0C
<b>Corner superstructure</b>		<p>Corner superstructure for corner solutions, as a single superstructure or for table islands comprising 4 tables and for an octagonal arrangement made up of 4 corner superstructures.</p> <p>With factory-integrated mains power bus, insert rails and plug connectors. For accepting 8 WU.</p>	660 x 660 116 315	30-0M
<b>Vertical superstructure</b>		<p>Vertical superstructure for training areas next to experiment walls. With factory-integrated mains power bus, insert rails and plug connectors.</p> <p>For accepting 3 x 2 WU.</p>	275 380 835	30-0P
<b>Table superstructure for mounting on vertical sections</b>		<p>The body is made of 19 mm thick three-ply particle board. The surfaces are coated with melamine resin. With factory-integrated mains power bus, insert rails and plug connectors. The 2 mm thick aluminium rear wall is removable.</p> <p>For accepting 16 inserts with 1 WU or correspondingly fewer with 2 WU and 4 WU.</p>	2000 320/369 350	74-4G
		For accepting 15 WU	1800 320/369 350	74-4A
		For accepting 13 WU	1600 320/369 350	74-4D
		For accepting 12 WU	1500 320/369 350	74-4B
		For accepting 9 WU	1200 320/369 350	74-4C

# 3 HU systems





		Technical specifications	W x D x H	Article Number
<b>3 HU table superstructure for mounting on table</b>		Table superstructure with straight front. The table superstructure is designed to accept Elabo cassettes 3 HU in a 5.08 mm division grid. Third-party products can also be integrated. The body is made of 19 mm thick three-ply particle board.		
		For accepting 384 HP	2000 320 171	40-0N
		For accepting 342 HP	1800 320 171	40-0P
		For accepting 304 HP	1600 320 171	40-0Q
		For accepting 282 HP	1500 320 171	40-0R
		For accepting 222 HP	1200 320 171	40-0S
<b>3 HU corner superstructure for mounting on table</b>		3 HU / 156 HP table superstructure with straight front for corner solutions as single superstructure or for table islands.	900 900 171	40-0L
<b>3 HU table superstructure for mounting on vertical sections</b>		Table superstructure with straight front for mounting on vertical sections. The table superstructure is designed to accept Elabo 3 HU cassettes in a 5.08 mm division grid. Third-party products can also be integrated.		
		For accepting 376 HP,	2000 320 171	74-2P
		For accepting 336 HP,	1800 320 171	74-2Q
		For accepting 296 HP,	1600 320 171	74-2R
		For accepting 276 HP,	1500 320 171	74-2S
		For accepting 216 HP,	1200 320 171	74-2T
<b>3 HU table superstructure, equippable on both sides, for mounting on table</b>		3 HU table superstructure, 2 x 384 HP with straight front. The table superstructure can be equipped on both long sides with 3 HU insert panels in a 5.08 mm division grid. Third party products can also be integrated. The body is made of 19 mm thick three-ply particle board.	2000 400 171	40-0T
		3 HU table superstructure, 2 x 342 HP	1800 400 171	40-0U
		3 HU table superstructure, 2 x 304 HP	1600 400 171	40-0V
		3 HU table superstructure, 2 x 282 HP	1500 400 171	40-0W
		3 HU table superstructure, 2 x 222 HP	1200 400 171	40-0X
		Note: Insert cassettes cannot be installed on both sides.		



## System 3 HU


		Technical specifications	W x D x H	Article Number
<b>3 HU aluminium power supply channel for mounting on table</b>		Extruded aluminium channel for accepting Elabo 3 HU insert panels system. The aluminium channel possesses at its upper and lower sides two attachment grooves and one attachment groove at the rear. Using sliding blocks, it is possible to attach other accessories at any point. For attaching the insert panels, the aluminium channel is provided at the front with two continuous grid strips with M 2.5 threads at spacings of 5.08 mm. A cable harness to supply power to the installed devices is supplied as a standard item.		
		for accepting 388 HP incl. compensating panel 14 mm	2000 160 142	40-4Y
		for accepting 348 HP incl. compensating panel 17 mm	1800 160 142	40-4A
		for accepting 308 HP incl. compensating panel 20 mm	1600 160 142	40-4D
		for accepting 288 HP incl. compensating panel 22 mm	1500 160 142	40-4B
		for accepting 228 HP incl. compensating panel 27 mm	1200 160 142	40-4C
<b>Aluminium power supply channel 3 HU for mounting on vertical sections</b>		for accepting 372 HP incl. compensating panel 25 mm	1928 160 142	75-4E.3
		for accepting 332 HP incl. compensating panel 28 mm	1728 160 142	75-4A.3
		for accepting 294 HP incl. compensating panel 21 mm	1528 160 142	75-4D.3
		for accepting 276 HP incl. compensating panel 13 mm	1428 160 142	75-4B.3
		for accepting 216 HP incl. compensating panel 18 mm	1128 160 142	75-4C.3
<b>Cover strip</b>		Cover strip suitable for groove width 8,4 mm in the 3 HE aluminium channel  Colour: Black	9 7 2000	81-6N
<b>Compensating strip</b>		Compensating strip for groove in the 3 HE aluminium channel, for height adjustment when inserting training boards.  Colour: Black	17.5 6 1915	81-6P

# Height sections, basic support, Orga panel





		Technical specifications	W x D x H	Article Number
Vertical sections for 3 HU system Extruded aluminium channel		Vertical sections (2) for 3 HU extruded aluminium channel	34 123 729	78-2E ZH729
		Vertical sections for 6 HU system	34 123 850	74-4X ZH850
Vertical sections for 6 HU system		Vertical sections (2) for 3 HU cassette superstructure with basic support unit and Orga panel.	34 123 707	74-2X ZH707
		Vertical sections for 3 HU system	34 123 707	74-2X ZH707
Basic support unit for 6 HU or 3 HU system		For mounting under InForm table superstructures. Can be equipped with the Elabo Orga panel.	1928 314 58	75-8E
		Basic support unit Orga Panel	1728 314 58	75-8A
		Basic support unit Orga Panel	1528 314 58	75-8D
		Basic support unit Orga Panel	1428 314 58	75-8B
		Basic support unit Orga Panel	1128 314 58	75-8C
Orga panel		Orga Panel used only in conjunction with the basic support unit. Design: - Brush strip on front edge of panel - Easily accessible and pulled out using a recessed grip - Pull-out length 150 mm when fully extended	1844 314 52.5	75-8F
		Orga Panel	1644 314 52.5	75-8G
		Orga Panel	1444 314 52.5	75-8H
		Orga Panel	1344 314 52.5	75-8J
		Orga Panel	1044 314 52.5	75-8K



## Accessories

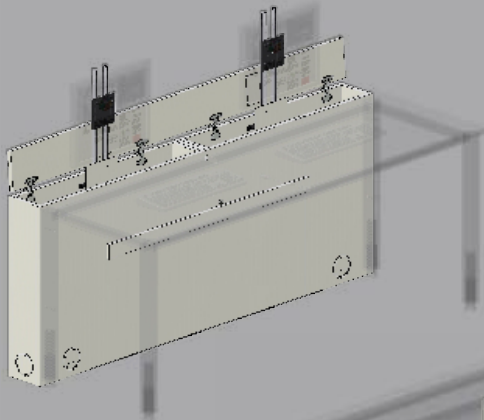
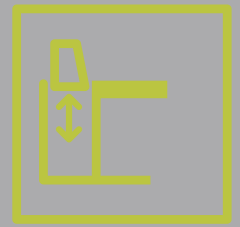
		Technical specifications	W x D x H	Article Number
<b>Workplace light</b>		Light source: 2 x 36 W Connection: 230-240 V / 50/60 Hz / IP 20 Parabolic grid, including two fluorescent lamps, electronic ballast unit, Tilt angle: 0° - 35° Illumination intensity: Emin: 417 lx, Em: 655 lx, Emax: 843 lx	909	75-8L
<b>Installation kit</b>		Installation kit for workplace light 75-BL.		75-8M
<b>Socket strip</b>		3 x shockproof safety sockets Plastic strip with mains input plug and direct bridged mains output socket System GST-18. Sockets rotated 45° for angled plug. Colour: black.		C1-8A
<b>Socket mounting bracket</b>		Socket mounting bracket suitable for C1-8A basic support unit. Possible positions: left, centre, right.		75-8S
<b>Power supply cable</b>		Power supply cable for basic support unit and Orga-panel, wired to power supply panel Cable length: L = 500 mm  Three-pole cable with 1.5 mm <sup>2</sup> cross section.		C1-8V Z01



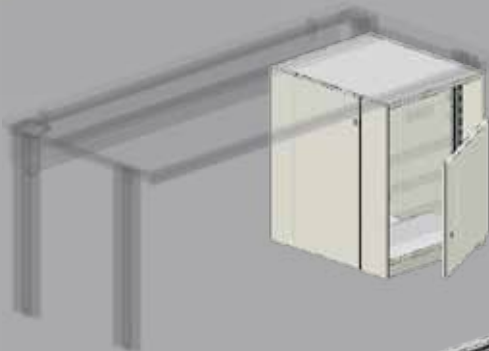
		Technical specifications	W x D x H	Article Number
<b>Power connection cable</b>		Power connection cable for connecting two System GST 18 socket strips		
		Length 1000 mm		C1-8W ZL100
		Length 1500 mm		C1-8W ZL150
		Length 2500 mm		C1-8W ZL250
<b>Basic support unit - set</b>		Sockets and light set consisting of: Workplace light 75-8L including installation kit 75-8M - 2 x socket strips each with 3 x shockproof safety sockets C1-8A - 2 x socket mounting brackets for basic support unit 75-8S - 1 x power supply cable, shockproof, for socket strip 2 m - 1x connection cable 2.5 m		
		Note: Only partial equipping is possible in the case of tables less than 1500 mm wide.		
		for table widths up to 1500 mm		81-2Y Z01
		for table widths 1600 mm and above		81-2Y Z02
<b>Vertical channel</b>		Vertical channel for installation at the rear of the InForm multi-grooved extruded aluminium section. On both sides, provided laterally with brush segments for cable guidance. Made from powder-coated sheet metal, including installation material.	120 51.5 394	75-8Q ZH729
<b>Vertical channel</b>		Additional vertical channel for mounting laterally on the InForm multi-grooved aluminium section. On both sides, provided laterally with brush segments for cable guidance. Made of powder-coated sheet metal. Fits under basic support unit 75-8A-E, including installation material.		75-8P



# Lowering technology



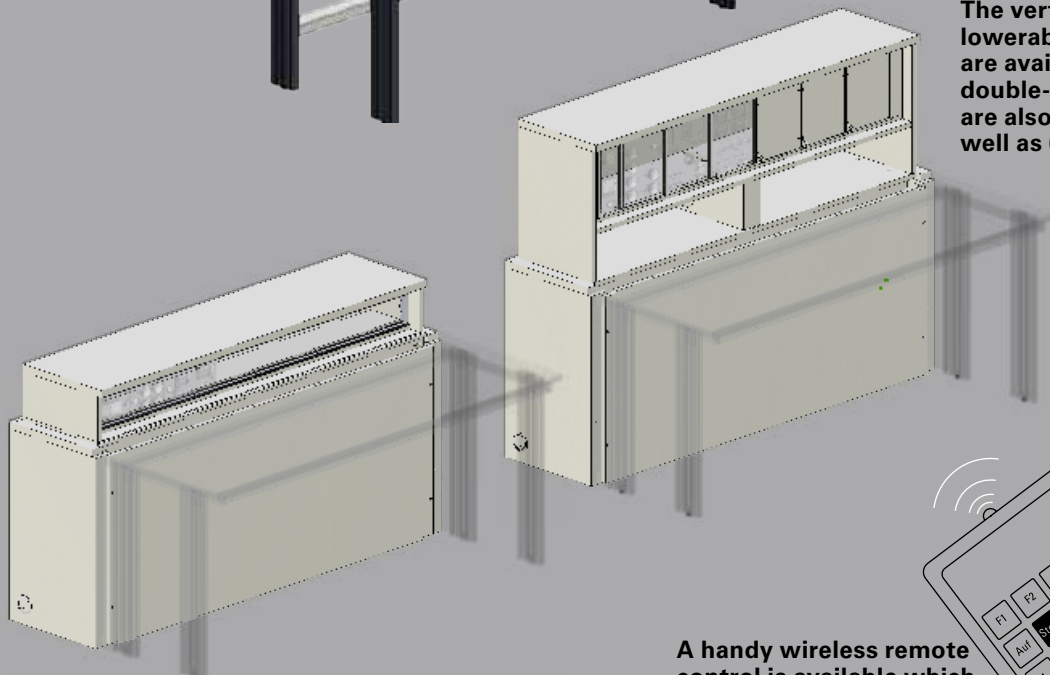
**Elabo lowering technology satisfies a very wide range of requirements. For IT applications there is a special version with lowerable TFT monitors.**



**In-room power distributors house the central fuse protection for entire classrooms and also accommodate the control for the lowering mechanism.**

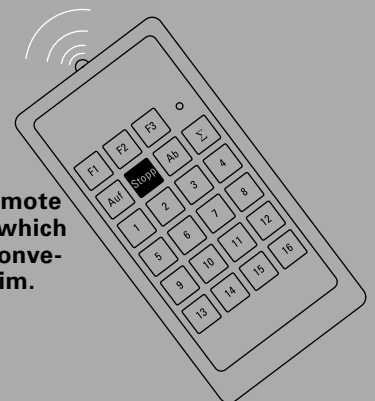


**Tables equipped with electric motor-driven fold-away mechanisms (3 HU system) are very compactly dimensioned.**



**The vertically raisable and lowerable superstructures are available in single- or double-stage versions and are also fitted with 3 HU as well as 6 HU grids.**

**A handy wireless remote control is available which the instructor can conveniently carry with him.**





## Lowering technology

**Clear overview. Safety.  
Maximum use of space**

With Elabo's lowering technology superstructures can be brought into view or made to disappear again. A theory table can be quickly converted into an experiment table for practical instruction. And directly following the practical training for electrical trades, completely different training topics can be dealt with in the same room. This considerably increases the versatility and usability of the classrooms.



### Equipment immediately available

The superstructures move up and down in less than 20 seconds. At the start of the practical instruction session all the instruments are very quickly available without a lot of time having to be spent collecting them together, connecting them up and adjusting them. Shut-down is just as compact. This guarantees the maximum net amount of study time.



### Superstructure variants

The basic variant of the lowerable superstructures is the superstructure (System 6 HU and 3 HU) carrying a single-row of equipment and devices. A two-level variant is also available which also contains a shelf compartment in addition to the area containing the electronic devices. The shelf area can be used as a place for additional measuring devices, or it can also be used as a storage area.

### 3 HU fold-away technology

As an alternative to the vertically raisable and lowerable superstructure, Elabo also supplies a variant that can be folded up and down. In this case, an electric motor drives a superstructure that is attached to hinges and pivots the structure upwards out of the table. In this version as well, the fold-away technology ensures ergonomically optimal operation of the installed electrical devices.

### Special version for IT

For IT instruction Elabo has developed a lowerable superstructure which – instead of the inserts grid or shelves – incorporates

mountings for TFT monitors. They meet the VESA standard. The body of the lowering assembly is an independent element that be attached to already existing tables.

### Satisfying individual customer wishes

There is hardly any limit to the spectrum of special versions that can be offered on request. In many cases designs are needed with special dimensions. But there are also concepts that can only be manufactured in response to individual orders. For example, lowerable superstructures with rear and side walls made of plexiglas are requested in those cases where, despite having large superstructures, the classroom should be transparent and the view of the student's desk should not be completely blocked.



Lowerable superstructures are supplied with a central control system housed in a cabinet with the classroom power supply system. A compact wireless remote control which the instructor carries with him is optionally available.

Superstructures that can be raised and lowered in one or two stages are available from Elabo. They can be raised so precisely that the upper level is fully accessible while the second level – containing for example the electrical devices – remains hidden.

Elabo lowering technology comes in two forms that help tailor the equipping of the classroom to exactly meet individual requirements. In the first variant the complete superstructure moves vertically up and down. In the second variant, the superstructure pivots up and down around an axis of rotation. This fold-away method is ideal for raising/lowering very compact superstructures.



Elabo can provide individually tailored designs at any time, such as special dimensions or also special concepts, for example a lowerable superstructure made of plexiglas. The latter is a frequently requested item because of its transparency.



The IT version is one of the special designs of lowerable superstructures available from Elabo: TFT monitors disappear in space-saving fashion into the body of the lowering assembly. In addition there is room for a keyboard and mouse.





## Lowering technology

### Well thought-out solutions and very reliable technology

Lowering technology offers users an enormous amount of flexibility. However, it does require that all the components are exactly matched to each other. Elabo is a pioneer in this field. The mechanical guidance and the drive technology mesh so perfectly with each other that practically no wear is caused. It has been shown that the lowerable superstructures are still working without problems even after 15 years and more of operation.

#### Compatible with the 19" system

Lowerable superstructures that meet the international 19" standard can be obtained from Elabo. Using the assembly carriers provided, devices from the 3 HU and the 6 HU system can also be integrated into the 19" technology. Various other manufacturers also offer devices for the 19" concept and they can likewise be integrated into the lowerable superstructures from Elabo



The lowerable superstructures, together with their technology, are housed in their own separate assembly. In order to ensure that the body of the lowering assembly and the table together have the usual standard proportions on which spatial planning is based, Elabo offers add-on tables in special dimensions.

The lowering technology is based on a very high safety standard. The automatic sensor-controlled shut-off mechanism ensures that no injuries are caused by moving parts.



### Connection to the table system

The body of the lowering assembly is connected directly to the system table (InForm or EcoTec) and is screwed firmly to it at defined interfaces. Both elements are joined to one another without any steps or gaps and together they form a very stable, generously dimensioned working area.

### Drive technology

Depending on the load factor, one or two electric motors, which are linked via a connecting rod, provide the drive for the lowering system. The drive is controlled by an electronic system developed by Elabo.

### Prevention of injury

For the protection of the operator, Elabo equips all its vertical lowering systems with a shut-off strip with positively guided safety contacts. Once the strip is triggered, the superstructure stops moving downwards within fractions of a second and moves upwards again. This reliably prevents objects (or in the worst case, a hand) from becoming caught. The process is electronically controlled.

### Classroom power supply

The classroom power supply cabinet is part of the lowering technology. The lowering mechanism on each individual table, or on all tables simultaneously, can be controlled via an operating panel fitted with up/stop/down buttons.

A key-operated switch in the classroom power supply cabinet turns on the power supply for the entire room. Here all the tables are centrally fuse-protected (one fuse per table, single or three-phase, depending on the power level). This is also where the EMERGENCY OFF switch is located. When the EMERGENCY OFF switch is operated a space contactor automatically shuts off the power to the entire room.

### Colours and materials

The superstructures and the body of the containers are made of fine particle boards, coated on both sides with melamine resin. The standard paint finish in which they are supplied is light grey RAL 7035. This is a colour that looks professional and meets practical requirements.



The classroom power supply cabinet also contains the control system for the lowering technology.



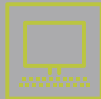
# Lowering technology

## Expandable Modules This may also interest you...

Elabo lowering technology considerably increases the usability of your classrooms. You can create your own totally application-optimized solution by making use of further modular components.



**Inserts and electronic devices** from Elabo, such as measuring devices and power supply devices, are ideally suited for teaching purposes, retain a high degree of accuracy and have a long service life. They are specifically matched to the lowerable and also the fixed superstructures.  
> [More on page 75](#)



**Virtual Equipment** from Elabo provides the network technology and switches that are integrated into the lowerable superstructures. Using Module 4Room of the Elabo software EHP EduLab you can not only control individual workplaces, as well as all workplaces together, but you can also individually define and programme different groups.  
> [More on page 109](#)



**Storage containers** ensure neatness and good order in the classroom. Floor units, in particular the special PC floor units from Elabo, are very often requested for use in conjunction with the lowerable systems. They are lockable and equipped with an efficient ventilation system.  
> [More on page 155](#)



**Superstructures** in a wide range of variants are often required especially for the instructor tables. Elabo offers them in the 3 HU and 6 HU systems, which can be combined with each other  
> [More on page 45](#)



The wide range of **modular table systems** from Elabo perfectly rounds off the equipment needed in the classrooms.  
> [More on page 27](#)


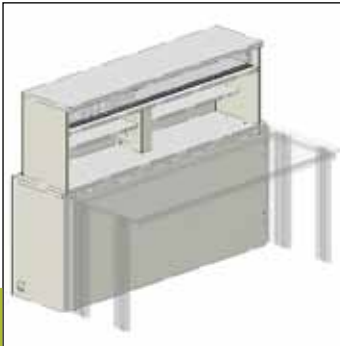


**Chairs** of high ergonomic quality promote concentration and help ensure that students remain attentive for long periods of time.  
> [More on page 181](#)





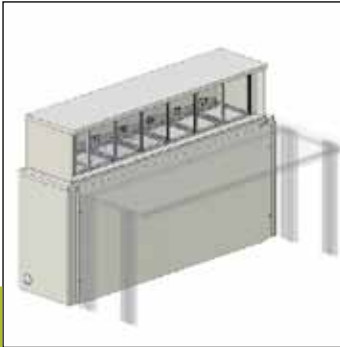
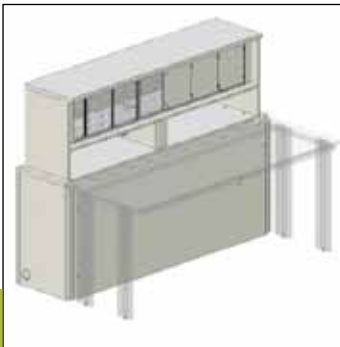


## 3 HU Lowering technology System

		Technical specifications	W x D x H	Article Number
<b>Lowerable table superstructures</b> <b>1-tier</b>		Lowering mechanism, with superstructure that is vertically extended by electric motor drive, and with a safety shut-off strip. For accepting 3 HU Euro inserts. Prepared for addition of an EcoTec <sup>SP</sup> or InForm system table. Height of superstructure body in raised state: 1000 mm		
		For accepting 360 HP	2000 432 780	A4-1A
		For accepting 318 HP	1800 432 780	A4-1B
		For accepting 282 HP	1600 432 780	A4-1C
		For accepting 258 HP	1500 432 780	A4-1D
		For accepting 198 HP	1200 432 780	A4-1E
<b>Lowerable table superstructures</b> <b>2-tier</b>		Lowering mechanism, with superstructure that is vertically extended by electric motor drive, and with a safety shut-off strip. 1st tier: For accepting 3 HU Euro inserts. 2nd tier: Shelf element with central wall and shelf panels. Prepared for addition of an EcoTec <sup>SP</sup> or InForm system table. Height of superstructure body in raised state: 1st tier: 1000 mm 2nd tier: 1340 mm		
		For accepting 360 HP	2000 432 780	A4-2A
		For accepting 318 HP	1800 432 780	A4-2B
		For accepting 282 HP	1600 432 780	A4-2C
		For accepting 258 HP	1500 432 780	A4-2D
		For accepting 198 HP	1200 432 780	A4-2E



# Lowering technology System 6 HU

## Add-on tables

		Technical specifications	W x D x H	Article Number
<b>Lowerable table superstructures</b> <b>1-tier</b>		Lowering mechanism, with superstructure that is vertically extended by electric motor drive, and with a safety shut-off strip. For accepting 6 HU Euro inserts. Prepared for addition of an EcoTec <sup>SP</sup> or InForm system table. Height of superstructure body in raised state: 1135 mm		
		For accepting 15 WU	2000 432 780	A5-1A
		For accepting 13 WU	1800 432 780	A5-1B
		For accepting 12 WU	1600 432 780	A5-1C
		For accepting 11 WU	1500 432 780	A5-1D
		For accepting 8 WU	1200 432 780	A5-1E
<b>Lowerable table superstructures</b> <b>2-tier</b>		Lowering mechanism, with superstructure that is vertically extended by electric motor drive, and with a safety shut-off strip. 1st tier: For accepting System 6 HU inserts 2nd tier: Shelf element with central wall and shelf panels. Prepared for addition of an EcoTec <sup>SP</sup> or InForm system table. Height of superstructure body in raised state: 1st tier: 1135 mm 2nd tier: 1340 mm		
		For accepting 15 WU	2000 432 780	A5-2A
		For accepting 13 WU	1800 432 780	A5-2B
		For accepting 12 WU	1600 432 780	A5-2C
		For accepting 11 WU	1500 432 780	A5-2D
		For accepting 8 WU	1200 432 780	A5-2E
<b>Add-on tables with lowering technology for 3 HU and 6 HU System</b>		EcoTec <sup>SP</sup> add-on table prepared for connecting to lowering mechanism types of the A4... and A5... series. Table frame with welded steel tube apron frame and screw-attached steel tube table legs 50 x 50 mm. Table top 30 mm thick, with replaceable front edge.	2000 668 780	A2-1A
			1800 668 780	A2-1B
			1600 668 780	A2-1C
			1500 668 780	A2-1D
			1200 668 780	A2-1E
		InForm add-on table prepared for connecting to lowering mechanism types of the A4... and A5... series. Table frame with welded steel tube apron frame and screw-attached aluminium table legs 50 x 50 mm. Table top 30 mm thick, with replaceable front edge.	2000 668 780	A2-2A
			1800 668 780	A2-2B
			1600 668 780	A2-2C
			1500 668 780	A2-2D
			1200 668 780	A2-2D





## 3 HU fold-away system technology

		Technical specifications	W x D x H	Article Number
<b>InForm tables with fold-away mechanism 3 HU System</b>		InForm system table including electric motor-driven fold-out superstructure. For accepting 3 HU Euro inserts. Height of body of superstructure in the folded-out state: 970 mm.		
		For accepting 342 HP	2000 850 780	A7-1A
		For accepting 300 HP	1800 850 780	A7-1B
		For accepting 264 HP	1600 850 780	A7-1C
		For accepting 240 HP	1500 850 780	A7-1D
		For accepting 180 HP	1200 850 780	A7-1E
<b>Trapezoidal table with fold-away mechanism 3 HU System</b>		EcoTec trapezoidal table including electric motor-driven fold-out extruded aluminium channel for accepting 3 HE insert panels. Equipment width: 142 HP Including industrial cable drag chains for improved cable feeding. Height of superstructure in folded-out state: 970 mm.	1400/700 600 780	A7-1M
<b>Trapezoidal table</b>		EcoTec trapezoidal table . Welded steel tube apron frame made of 40 x 25 mm, 40 x 40 mm rectangular steel tubing. Height-adjustable table legs made of 50 x 50 mm square steel tubing. Height pre-set to 780 mm. Table top 30 mm thick.	1400/700 600 780	A7-1P


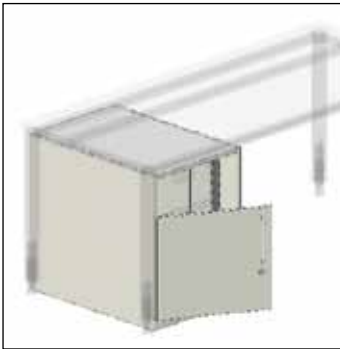


# TFT lowering technology

## Add-on tables





	Technical specifications	W x D x H	Article Number
<b>Lowering unit for IT training</b> 	<p>Lowering mechanism with electric motor-driven vertically raisable and lowerable TFT monitor brackets and storage areas for mouse and keyboard.</p> <p>Floor-mounted wooden body 19 mm thick with automatically actuated covering flap. Controlled via cable remote control, attached to the unit. Monitor mounted with VESA adaptation 75 x 75 mm or 100 x 100 mm for TFT sizes up to 19 inches, with a maximum depth of 80 mm. Body of unit has integrated cable admission inlet for routing of cables.</p> <p>Student versions:</p>		
	Lowering system body for 2 TFT monitors	2000 170 750	A8-1A
	Lowering system body for 2 TFT monitors	1800 170 750	A8-1B
	Lowering system body for 1 TFT monitor	900 170 750	A8-1F
	Teacher versions:		
	Lowering system body for 1 TFT monitor Monitor positioning optional left, centre, right	1800 170 750	A8-1BZ
	Optional lock for electrical locking of the TFT cover flap.		A9-1A
<b>Add-on tables for TFT unit</b> 	<p>EcoTec<sup>SP</sup> add-on table prepared for connecting to lowering mechanism types with TFT monitor brackets.</p> <p>Table frame with welded steel tube apron frame and screw-attached steel tube table legs 50 x 50 mm.</p> <p>Table top 30 mm thick with replaceable front edge.</p>		
	Add-on table	2000 630 750	A1-2A
	Add-on table	1800 630 750	A1-2B
	Add-on table	900 630 750	A1-2F



## Classroom power supply

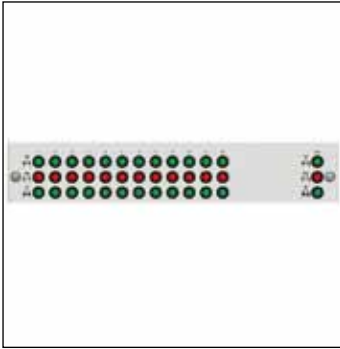
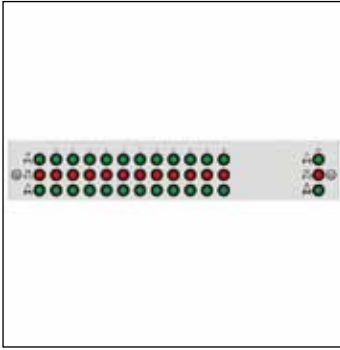


		Technical specifications	W x D x H	Article Number
<b>Floor unit</b> <b>Classroom power supply</b> <b>EcoTec<sup>SP</sup></b>		Floor unit prepared for accepting the 19" / 14 HU grid system. With front leaf doors shortened at the top, right-hung, with lock. The floor unit is divided in depth by a central panel. The rear compartment is used as connecting space for the cables and wires which are wired to terminal blocks. Access via leaf door in left side wall, lockable.	525 750 710	A7-8C
<b>Floor unit</b> <b>Classroom power supply</b> <b>EcoTec<sup>SP</sup></b>		Floor unit prepared for accepting the 19" / 14 HU grid system. With front leaf doors shortened at the top, left-hung, with lock. The floor unit is divided in depth by a central panel. The rear compartment is used as connecting space for the cables and wires which are wired to terminal blocks. Access via leaf door in right side wall, lockable.	525 750 710	A7-8D
<b>Floor unit</b> <b>Classroom power supply</b> <b>InForm</b>		Floor unit prepared for accepting the 19" / 13 HU grid system. With front leaf doors shortened at the top, right-hung, with lock. The floor unit is divided in depth by a central panel. The rear compartment is used as connecting space for the cables and wires which are wired onto terminal blocks. Access via leaf door in left side wall, lockable.	525 620 680	A7-8F
			525 720 680	A7-8G
			525 820 680	A7-8H
<b>Floor unit</b> <b>Classroom power supply</b> <b>InForm</b>		Floor unit prepared for accepting the 19" / 13 HU grid system. With front leaf doors shortened at the top, left-hung, with lock. The floor unit is divided in depth by a central panel. The rear compartment is used as connecting space for the cables and wires which are wired to terminal blocks. Access via leaf door in right side wall, lockable.	525 620 680	A7-8J
			525 720 680	A7-8K
			525 820 680	A7-8L

# Insert panels 19"

		Technical specifications	W x H	Article Number
<b>Main power supply unit</b>		<p>Elabo 19" / 4 HU insert panel, main power supply unit usable for 1/N/PE ~ 50 Hz 230 V or 3/N/PE ~ 50 Hz 230/400 V 45...63 A. For switching on and protecting the classroom power supply. Wiring via block terminals.</p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>1 FI residual current circuit breaker 4p63A selective, Rated leakage current &lt;= 300 mA,</li> <li>1 motor protection switch 45...63 A with undervoltage release,</li> <li>1 key switch I/O,</li> <li>1 automatic circuit breaker 1p6AB,</li> <li>1 emergency-OFF switch (acting on the motor protection switch)</li> </ul> <p>3-phase indicator lights.</p>	483 177	68-1K.3
<b>Main power supply unit</b>		<p>Elabo 19" / 4 HU insert panel, main power supply unit usable for 1/N/PE ~ 50 Hz 230 V or 3/N/PE ~ 50 Hz 230/400 V 45...63 A. For switching on and protecting the classroom power supply. Wiring via block terminals.</p> <p>Equipment:</p> <ul style="list-style-type: none"> <li>1 FI residual current circuit breaker 4p63A selective, Type B, AC/DC sensitive for smooth DC fault currents &lt;= 300 mA,</li> <li>1 motor protection switch 45...63 A with undervoltage release,</li> <li>1 key switch I/O,</li> <li>1 automatic circuit breaker 1p6AB,</li> <li>1 emergency-off switch (acting on the motor protection switch)</li> </ul> <p>3-phase indicator lights.</p>	483 177	68-1K.3Z008
<b>Circuit protection unit Alternating current</b>		<p>19" / 4 HU insert panel Circuit protection unit for 1-pole power supply to student's table. With cut-out and lettering to accept a maximum of 21 x 1-pole automatic circuit breakers. Empty spaces are provided with covers. The panel is pre-wired to terminal blocks.</p> <p>z = Please state the number of automatic circuit breakers required.</p>	483 177	68-1L.3Z1..
<b>Circuit protection unit Three-phase current</b>		<p>19" / 8 HU insert panel Circuit protection unit for 3-pole power supply to student's table. With cut-out and lettering to accept a maximum of 21 x 3-pole automatic circuit breakers. Empty spaces are provided with covers. The panel is pre-wired to terminal blocks.</p> <p>z = Please state the number of automatic circuit breakers required.</p>	483 354.8	68-1M.3Z3..



## Lowering mechanism controls

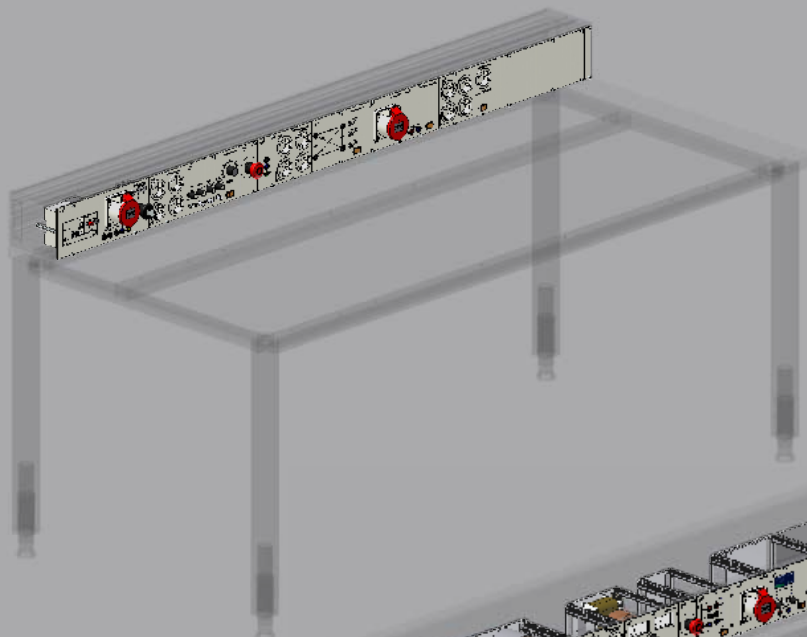
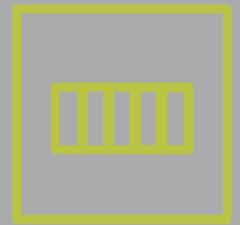
		Technical specifications	W x D x H	Article Number
<b>Central up/down control for lowerable superstructures</b>		<p>Operating panel with push buttons for up/stop/down control of lowerable superstructures 19" / 2 HU insert panel Depending on the lowerable superstructures provided, 3 push buttons are installed per table. Using a group function, all lowerable superstructures can be jointly controlled.</p> <p>z = Please state the number of operating buttons required for the lowering mechanism.</p>	B = 483 H = 88.1	68-1X.3Z..
<b>Central up/down control for fold-away mechanism</b>		<p>Operating panel with push buttons for up/stop/down control of fold-away superstructures 19" / 2 HU insert panel Depending on the lowerable superstructures provided, 3 push buttons are installed per table. Using a group function, all fold-away superstructures can be jointly controlled.</p> <p>z = Please state the number of operating buttons required for the folding mechanism.</p>	B = 483 H = 88.1	68-1X.3Z4..
<b>Local up/down control with key for lowering mechanisms</b>		<p>Individual control up/down with key switch on table. Installed in plastic housing.</p> <p>(Not usable for TFT technology)</p>	104 51 68	A7-8S
<b>Blank panel</b>		19" / 1 HU blank panel	B =483 H = 43.6	51-1A.3
		19" / 1 HU blank panel with ventilation slots	B =483 H = 43.6	51-1L.3
		19" / 2 HU blank panel	B =483 H = 88.1	51-1B.3
		19" / 3 HU blank panel	B =483 H = 132.5	51-1C.3
		19" / 4 HU blank panel	B =483 H = 177	51-1E.3
		19" / 6 HU blank panel	B =483 H = 266	51-1D.3



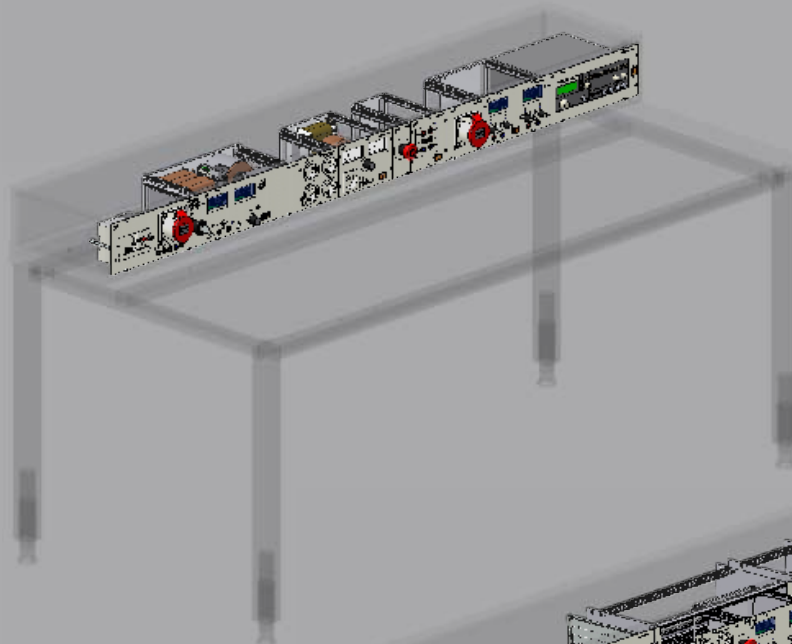
		Technical specifications	W x D x H	Article Number
<b>Wireless up/down control Transmitter</b>		<p>Wireless remote control for the lowering mechanisms. Hand-held transmitter for remote operation of up to 48 receivers, singly or in groups. In each case, 16 receivers are combined in one group.</p> <p>There are 3 groups.</p>		68-1Y Z01
<b>Wireless up/down control Receiver</b>		<p>Wireless remote control for the lowering mechanisms. Receiver for lowering mechanism on each table, installed in the body of the lowering system.</p>		68-1Y Z02
<b>Network module for controlling lowering mechanism</b>	 	<p>Base network module with in each case 8 digital outputs and inputs for the following applications:</p> <ul style="list-style-type: none"> <li>- Enable power supply / enable table</li> <li>- Actuation of EMERGENCY-Off</li> <li>- Control of lowering mechanism</li> </ul> <p>Note: For the necessary control software, see the chapter on Virtual Equipment.</p>		N3-2A



# Electronics

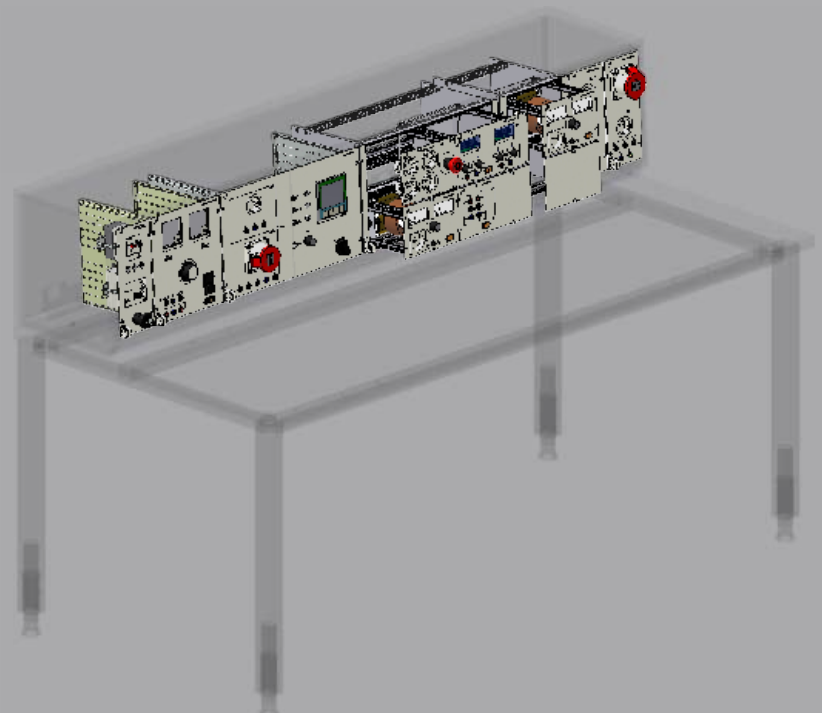


Using 3 HU insert panels from Elabo, aluminium channels and similar are equipped with simple basic power supply devices as well as with DC stabilizers and multimeters (both are also available as remote controlled versions).



Most users equip an Elabo superstructure with the following standard items: a main power control panel, a central superstructure fuse system (with connection to the emergency-off), safety-type shockproof sockets and power supply inserts (e.g. AC and DC voltage supply), as well as measuring inserts. Over and above that, there are practically no limits on how to customize the set-up.

The superstructures may also be equipped with insert panels and high-performance inserts. For this purpose people prefer to use the larger 6 HU system into which – by means of assembly supports – devices from the more finely structured 3 HU system can also be integrated.





## Precise. Reliable. Very user-friendly

With inserts from Elabo electrical instruments can be integrated in modular fashion into superstructures. The range extends from simple insert panels to inserts with remote-controlled power supply and measuring devices. It comprises all the items of equipment that are logically required for training in a wide range of electrical professions. Highly compact electrical engineering study stations can thus be created in an extremely efficient way.



Intelligent mains power control panels from Elabo: they can be switched in two stages. In the first stage safe low-voltage devices are activated. In the second stage, devices that deliver mains voltage at the outlet are energized. By implementing many such well thought-out solutions, derived from practical experience, Elabo helps ensure greater safety during the training procedures.

### Measuring and testing devices

The measuring and testing devices are the core of the inserts. They are characterized by their accuracy and they consistently provide high measuring precision over a large number of years.

### Power supply devices

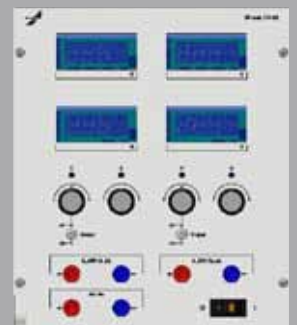
The current/voltage supply devices (AC/DC) are available in analog and digital versions. They are equipped with reverse polarity protection and short-circuit resistance.

### Rapid installation and replacement

The inserts can be rapidly replaced at any time. The mains connection plug, which permits contact to be quickly made with the integrated mains cable harness without the need for any tools, is installed in the respective rear wall. The partially integrated guide rails facilitate the replacement process.



Insert panels from Elabo perform a very wide range of functions. The ones shown here can be used for connecting up devices with connection plugs or for drawing mains voltage by means of safety-type laboratory plugs for the experimental test set-ups.



Regulatable voltage supply systems are essential for practical technical instruction. Elabo offers single or dual-voltage stabilizers which can be optionally equipped with an Ethernet interface.

Elabo offers the complete range of equipment needed for instruction purposes – for example high-grade devices such as function generators, multimeters and oscilloscopes, as well as simple power supply devices for AC and DC, and the standard types of equipment from connection jacks to soldering stations. All from one single source.



### Switchable to mains or low voltage

A great deal of emphasis is placed on safety. For example, Elabo power control panels can be switched to mains and/or low voltage. This ensures that the students are provided only with low voltage for certain training exercises. Accidents and mishandling are largely eliminated in this way.

### Electronics for the 19" system

On request, Elabo can supply electronic devices for the 19" grid. In the case of the smaller 3 HU devices, assembly supports are available that allow them to be used in the 19" grid. In this way, they can also be integrated into the superstructures of other manufacturers which are designed for the 19" grid.



Data integration and networking are becoming increasingly important for training purposes. By means of the digital multimeter measured values can be transmitted via interfaces to the PC. The Elabo test software performs automatic record-keeping.

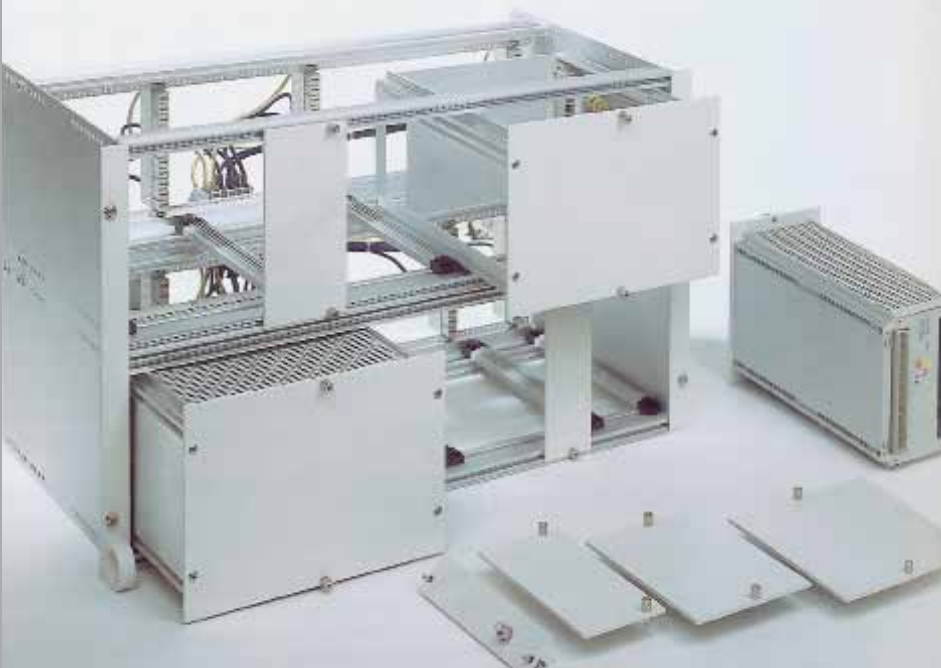


Elabo also offers oscilloscopes for those experiments in which it is necessary to display the course of voltages and currents over periods of time. The devices may be operated directly through the front operating panels, but remote control via a network is also possible.

### Extract from the comprehensive range of equipment available:

- Mains power control panels
- Socket panels
- Low-voltage power supply units
- Continuity testers
- Soldering stations
- Networking and interface connections
- Pneumatics
- AC supply units, single-phase, three-phase
- DC stabilizers, single/dual
- Fixed voltage sources
- Combined AC and DC supply units
- Multimeters
- Oscilloscopes
- Frequency generators





## Construction details

There are two design options available: the 6 HU and 3 HU systems. Due to size the 6 HU system is used mainly for heavy-duty requirements. The 3 HU system however is for applications with smaller outputs and compact construction.

There are different grid widths depending on the system. This is depicted in width units (WU) in the 6 HU system. A width unit is equal to 111.5 mm. Plug-in modules are available in grid widths 1, 2, and 4. The plug-in depth is 260 mm. The number of the plug-in modules to be equipped conforms to the width of the assembly.

The international euro-cassette 3 HU system standardized as per DIN 41494 has, in comparison to the 6 HE system, significantly smaller unit dimensions. The height of the boards and plug-in modules in 3 HU is fixed, corresponding to a total height of 133.35 mm. The widths are classified in horizontal pitches (HP) of 5.08 mm. Elabo supplies devices with horizontal pitches of 4, 6, 8.12, 18, 24, 36, 42, 48, 52, 60 and 66.

It is possible to combine the 3 HU system in superstructures of the 6 HU system in simple component racks. So both systems can be combined optimally with each other. This produces a unique equipment density.

In both the 3 HU system and the 6 HU system insert panels are available for simpler applications and complex plug-in modules for mounting the correspondingly higher number of equipment. The plug-in modules have side parts that are used for fastening and mounting individual components. Both variants contain the required terminals for your system.

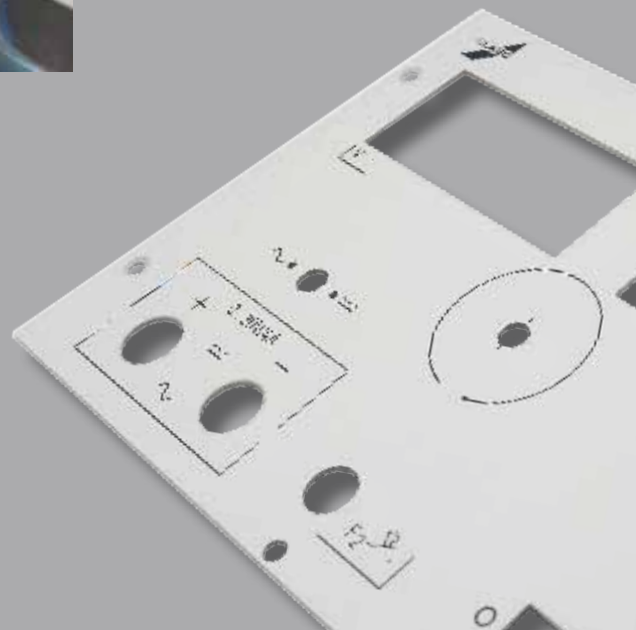


Elabo plug-in modules can be combined in such an extraordinarily sophisticated and space-saving manner. The extremely high equipment density that can be attained makes it possible to design every training station in a compact manner with optimal equipment.

Component racks are an important element for the precise and solid integration of the 3HU technology into the 6HU grid.



The pre-installed power cable assembly significantly simplifies the mounting and replacement of devices. The devices come with a connector plug. In this manner contact happens automatically upon insertion. Sporadically used high-grade devices are often used in industry only where they are acutely needed – our uncomplicated assembly and disassembly technology makes it possible. Giving customers flexibility is a typical quality of Elabo.





# Expandable Modules

## This may also interest you...

### Quality in the long term

Elabo durability and reliability are evident from many details - from the indestructible electrical parts to the abrasion-resistant labels of front panels. The design of the plug-in modules – with fastenings that cannot be removed from the front – also stands for an outstanding service life.

### Paints/colours and material

Front panels are made of 3 mm hard aluminum. By default they come in light gray RAL 7035.

### Electronics for the 19" System

Elabo supplies electronic devices in the 19" grid upon request. For the smaller 3 HU devices racks are available which you can use for the 19". They can also be integrated in superstructures of various other manufacturers designed in the 19" technology.

The design, material and machining of devices support the consistency practiced by Elabo in things durable. The front panels, for example, are made of 3 mm thick aluminum which is very stable and completely non-corrosive. They are inserted flush into the superstructures. Fastening screws that invite unauthorized handling are hidden. The surfaces have a scratch-proof powder coating. Due to the screen print application the labels and symbols are second to none in abrasion-resistance.

So you can use the devices without difficulty even after many years.



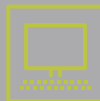
**Superstructures** integrate and protect power supply as well as measuring and testing devices. The table area remains free for work with test objects. Elabo offers superstructures in the 3 HU and 6 HU systems which can be combined with each other.

> More on page 45



**Lowering mechanisms** allow superstructures to disappear into solid containers. This protects the equipment, and the experiment room can also be used as a theory room.

> More on page 59



**Virtual Equipment** from Elabo provides the technology that integrates devices into a network. The Elabo software, EHP EduLab, supports classes with the most modern resources. All student stations can be centrally monitored and activated, among other things, using this software.

> More on page 109



**Teaching aids** for all requirements in training in the electrical trades and professions has been offered by Elabo for more than 30 years. The core equipment is formed by boards fitted with original industrial samples and circuit diagrams as well as safe connections. They authentically simulate a practical work situation.

> More on page 119



**Table systems** in Elabo's modular variety form the basis of state-of-the-art training rooms.

> More on page 27












**Accessories** for electronics are available in many forms: measurement line holders for mounting on vertical sections and measurement lines, power supply cables, socket assemblies for supplying portable devices and many more.

> More on page 181













## 6 HU System Insert Panels

		Technical specifications	W x H	Article Number
<b>Fault current circuit breaker Alternating current, Type A</b>		Insert panel 1 WU, Equipment: 1 fault current circuit breaker 2-pole type A, nominal current 25 A, nominal fault current 30 mA..	111.5 266	32-0K.3
<b>Fault current circuit breaker Alternating current, Type B</b>		Insert panel 1 WU, Equipment: 1 fault current circuit breaker 2-pole type B sensitive to all current types for smooth fault currents 30 mA, nominal current 25 A..	111.5 266	32-0L.3
<b>Fault current circuit breaker Rotary current, Type A</b>		Insert panel 1 WU, Equipment: 1 fault current circuit breaker 4-pole type A, nominal current 25 A, nominal fault current 30 mA.	111.5 266	32-0M.3
<b>Fault current circuit breaker Rotary current, Type B</b>		Insert panel 1 WU, Equipment: 1 fault current circuit breaker 4-pole type B, sensitive to all current types for smooth fault currents 30mA, nominal current 25 A.	111.5 266	32-0N.3
<b>Circuit breaker unit Alternating current with voltage selection Fault current circuit breaker Type B</b>		Insert panel 1 WU, Circuit breaker and switch unit single phase with key switch for two circuits. position I "low voltage" position II "low voltage and mains voltage" Equipment: 1 key switch 0/I/II, black, removable in any position 1 motor circuit breaker 10...16 A with undervoltage release 1 outer conductor indicator light 1 signal light "mains voltage"	111.5 266	32-0V.3





		Technical specifications	W x H	Article Number
<b>Circuit breaker unit Rotary current with voltage selection</b>		Insert panel 1 WU Circuit breaker and switch unit 3-phase with key switch for two circuits position I "low voltage" position II "low voltage and mains voltage" Equipment: 1 key switch 0/I/II, black, removable in any position 1 motor circuit breaker 10...16 A with under-voltage release 3 outer conductor indicator lights 1 signal light "mains voltage"	111.5 266	32-0W.3
<b>Circuit breaker unit Alternating current with remote control voltage selection</b>		Insert panel 1 WU, Circuit breaker and switch unit single phase for two circuits position I "low voltage" position II "low voltage and mains voltage" Controls via Ethernet node (required separately) Equipment: 1 illuminated release button 1 contactor, 1 outer conductor indicator light 1 signal light ~25 V, 1 signal light 3~400 V	111.5 266	32-0P.3
		Suitable network module For description see virtual equipment		N3-2A
<b>Circuit breaker unit Rotary current with remote control voltage selection</b>		Insert panel 1 WU, Circuit breaker and switch unit 3-phase for two circuits position I "low voltage" position II "low voltage and mains voltage" Controls via Ethernet node (required separately) Equipment: 1 illuminated release button 1 contactor 3 outer conductor indicator lights 1 signal light ~25 V 1 signal light 3~400 V	111.5 266	32-0Q.3
		Suitable network module For description see virtual equipment		N3-2A
<b>Shockproof sockets</b>		Insert panel 1 WU, Equipment: 4 shockproof sockets  Optionally available with switch	111.5 266	32-1J.3

## 6 HU System Insert Panels

		Technical specifications	W x H	Article Number
<b>Shockproof sockets with safety lab jacks</b>		Insert panel 1 WU, Equipment: 3 shockproof sockets 3 safety lab jacks (L1, N, PE)  Optionally available with mains switch	111.5 266	32-1M.3
<b>Shockproof sockets with safety lab jacks</b>		Insert panel 1 WU, Equipment: 3 shockproof sockets 5 safety lab jacks (L1, L2, L3, N, PE)  Optionally available with mains switch	111.5 266	32-1M.3Z605
<b>Shockproof sockets with emergency OFF</b>		Insert panel 1 WU, Equipment: 1 unwired emergency OFF switch 2 shockproof sockets  Optionally available with emergency OFF visualization via Elabo EHP software  Optionally available with mains switch	111.5 266	32-1P.3
<b>CEE socket</b>		Insert panel 1 WU, Equipment: 1 CEE socket 1 shockproof socket 5 safety lab jacks (L1, L2, L3, N, PE)  Optionally available with mains switch	111.5 266	32-1L.3
<b>Ungrounded alternating current</b>		Insert panel 1 WU, Equipment: 1 socket without protective ground contact for drawing alternating current 230 V / 230 VA 1 shockproof socket 1 equipment circuit breaker 1 illuminated rocker switch	111.5 266	32-1S.3Z301




		Technical specifications	W x H	Article Number
<b>Low voltage Alternating current, ungrounded</b>		Insert panel 1 WU, low voltage ungrounded, AC 2, 4, 6, 8, 10, 12 V / 10A Equipment: 4 safety lab jacks for drawing low alternating currents 3 equipment circuit breakers 1 illuminated rocker switch	111.5 266	32-1E.3
<b>Low voltage Alternating current, ungrounded</b>		Insert panel 1 WU, low voltage ungrounded, AC 6, 12, 18, 24, 36, 42 V/3A Equipment: 4 safety lab jacks for drawing low alternating currents 3 equipment circuit breakers 1 illuminated rocker switch	111.5 266	32-1F.3
<b>Low voltage Rotary current, ungrounded</b>		Insert panel 1 WU, Rotary low voltage ungrounded, 3-23/40 V / 3 A at safety lab jacks Equipment: 4 safety lab jacks for drawing rotary voltage 3 equipment circuit breakers 3 outer conductor indicator lights 1 circuit breaker	111.5 266	32-1G.3
<b>Continuity tester</b>		Insert panel 1 WU, with two continuity testers Equipment: 1 electronic, high ohm continuity tester to a maximum of 5 MOhm 1 low-ohm continuity tester 1 bulb, optical display 4 safety lab jacks 1 illuminated rocker switch	111.5 266	32-1B.3
<b>Soldering station</b>		Insert panel 1 WU, with temperature-controlled soldering station 80 W, manufacturer: Ersa temperature range: 150-400 °C steplessly adjustable and electronically controlled. Equipment: 1 shockproof socket 1 soldering iron 810 CDJ 1 storage stand A41 1 illuminated rocker switch	111.5 266	32-1W.3

## 6 HU System Insert Panels




		Technical specifications	W x H	Article Number
<b>Soldering station</b>		Insert panel 1 WU, with electronically regulated soldering station 80 W, manufacturer: Weller. On delivery, soldering tip is potential free temperature range: up to 450°C steplessly adjustable Equipment: 1 LED for optical monitoring 1 shockproof socket 1 soldering iron 1 storage stand 1 illuminated rocker switch	111.5 266	32-1Y.3
<b>Pole selector</b>		Insert panel 1 WU, 15 unwired safety lab jacks as selectable poles labeled 1 to 15	111.5 266	32-1U.3
<b>Data socket for Communication technology</b>		Insert panel 1 WU, UAE 8/8(8/8) Cat.6, unwired	111.5 266	32-1U.3Z607
<b>Compressed air supply</b>		Insert panel 1 WU, quick connect NW5 for plastic hose 6/4	111.5 266	32-1U.3Z004



# 6 HU System Plug-ins

		Technische Daten	W x D x H	Article Number
<b>AC supply with analog displays, ungrounded</b>		Insert 2 WU, AC supply 0...260 V / 3 A, Alternating current ungrounded with analog displays Equipment: 1 analog voltage meter 1 analog current meter 1 socket without protective ground contact 1 equipment circuit breaker 1 illuminated rocker switch	229 260 266	35-2E.3
<b>AC supply with digital displays, ungrounded</b>		Insert 2 WU, AC supply 0...260 V / 3 A, Alternating current ungrounded with digital displays Equipment: 1 digital voltage meter 1 digital current meter 1 socket without protective ground contact 1 equipment circuit breaker 1 illuminated rocker switch	229 260 266	35-3E.3
<b>AC stabilizer ungrounded with digital displays</b>		Insert 2 WU, AC stabilizer 1.5...260 V / 5 A, ungrounded, electromechanical stabilization and digital displays Equipment: 1 digital voltage meter 1 digital current meter can be switched to power measurement 1 socket without protective ground contact can be switched to 2 safety lab jacks 1 output on / off 1 equipment circuit breaker 1 illuminated rocker switch	229 260 266	35-5H.3
		Optional interface for inserts, system 6 HU/19" interface type: Ethernet The interface connections are located on the back of the equipment. Incl. 2 m patch cable		N3-3S Z102

## 6 HU System Plug-ins

		Technical specifications	W x D x H	Article Number
<b>AC supply rotary current with multifunctional display and interface</b>		Insert 4 WU, AC supply 3~ 0...230 / 400 V 5A electromechanical setting of rotary voltage not ungrounded with multifunction display and mains voltage. Two Ethernet interfaces are included for remote control. Equipment: 1 multifunction display 1 potentiometer to select voltage 1 CEE socket 5 safety lab jacks 1 shockproof socket 3 safety lab jacks 3 equipment circuit breakers 3 outer conductor indicator lights 1 circuit breaker	464 260 266	36-5A.3Z102
<b>AC/DC supply Alternating current</b>		Insert 2 WU, AC/DC supply 0...260 Veff/3 A and AC/DC 0...50 Veff/10 A, direct and alternating current ungrounded with analog displays, Effective ripple of direct current: ca. 48% Equipment: 1 analog voltage meter 1 analog current meter 6 safety lab jacks 1 rotary knob to set current 1 switch from alternating to direct voltage 1 changeover switch 50 V / 260 V 2 equipment circuit breakers 1 illuminated rocker switch	229 260 266	35-0K.3
<b>AC/DC supply Rotary current</b>		Insert 4 WU, with steplessly adjustable, not ungrounded rotary current and direct current with 5% residual ripple Equipment: 1 analog voltage meter 3 analog current meters 1 rotary knob to set current 1 switch for rotary or direct current 1 current measurement changeover switch 1 x 5-pole CEE socket 1 shockproof socket for variable current 1 shockproof socket for mains voltage 5 safety lab jacks 2 safety lab jacks for DC voltage 1 ground wire lab jacks 3 equipment circuit breakers 3 outer conductor indicator lights 1 x 4-pole circuit breaker	464 260 266	36-1A.3

**AC/DC supply  
for energy column**



**Technical specifications**

**W x D x H**

**Article Number**

Universal power supply AC/DC only for installation in energy column 30-0P, 2 x 2 WU inserts system 6 HU above one another, ungrounded voltages: AC/DC 0...25 Veff/10 A. Not ungrounded voltages: AC/DC 0...260 Veff/ 2 A, DC 230 Veff / 2 A

229 532


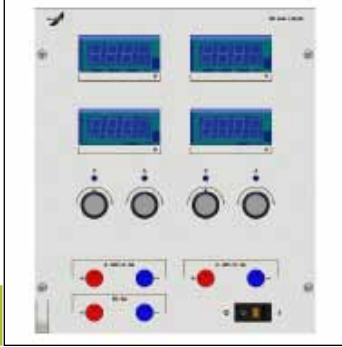
35-0P.3

**Equipment:**




- 1 3-pole control unit
- 1 FI-circuit breaker
- 1 emergency OFF button
- 5 safety lab jacks
- 3 protective ground contact sockets
- 1 key switch to select drawing of all currents
- 1 OFF button
- 3 indicator lights to display all voltage
- 1 indicator lights to display low voltage
- 3 thermomagnetic circuit breakers
- 1 micro-fuse
- 4 safety lab jacks
- 2 safety lab jacks for drawing direct current
- 2 safety lab jacks for drawing alternating current
- 4 safety lab jacks
- 1 ground wire jack

Note: when fault current circuit breakers are used in classrooms and experiments, VDE 0100 section 723.4 must be observed!




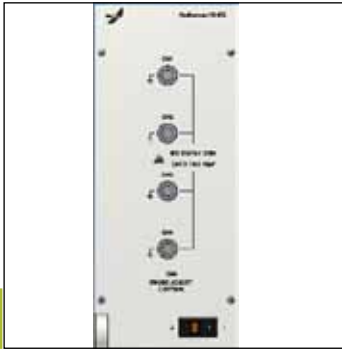
## 6 HU System Plug-ins

		Technical specifications	W x D x H	Article Number
DC stabilizer		Insert 2 WU, DC stabilizer 0...30 V / 0...3 A With 4-digit digital displays and 10-gear potentiometer. Preset for voltage and current limitation. Output can be switched off  Interference voltage at output: 1 mV Transient time: typically 50, maximum 100 μs Temperature coefficient: 0.01% / °C Load balancing 0.015 %	229 260 266	34-4B.3
		Option Interface for System 6 HU/19" inserts interface type: Ethernet The interface connections are located on the back of the equipment. Incl. 2 m patch cable		N3-3S Z102
DC stabilizer		Insert 2 WU, DC stabilizer 2 x 0...30 V / 2 x 0...3 A with 4-digit digital displays and 10-gear potentiometer. Preset for voltage and current limitation. Fixed voltage +5 V / 3 A Output can be switched off  Interference voltage at output: 1 mV Transient time: typically 50, maximum 100 μs Temperature coefficient: 0.01% / °C Load balancing 0.015 %	229 260 266	34-4U.3
		Option Interface for double System 6 HU/19" equalizer Interface type: 2x Ethernet The interface connections are located on the back of the equipment. incl. 2 x 2 m patch cable		N3-3T Z102

# 6 HU System Insert Panels


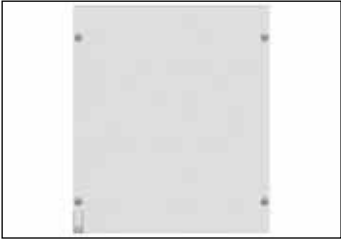



		Technical specifications	W x H	Article Number
<b>DC stabilizer</b>		Insert panel 1 WU, DC stabilizer $\pm 15\text{ V} / 1\text{ A}$ and $+5\text{ V} / 3\text{ A}$	111.5 266	32-1D.3
<b>DC stabilizer</b>		Insert panel 1 WU, DC stabilizer, Mains switch with synchronized output voltage $5\text{ V} / 5\text{ A}$ . Outputs fed to 2 safety lab jacks. Specification: output power: $25\text{ W}$ , residual ripple: $80\text{ mVp-p}$ , output tolerance: $\pm 2.0\%$ , input regulation: $\pm 0.5\%$ , load regulation: $\pm 1.0\%$ , overload protection: hiccup mode	111.5 266	32-5M.3
<b>DC stabilizer</b>		Insert panel 1 WU, DC stabilizer, Mains switch with synchronized output voltage $24\text{ V} / 6\text{ A}$ , Outputs fed to 2 safety lab jacks. Specification: output power: $150\text{ W}$ , residual ripple: $150\text{ mVp-p}$ , output tolerance: $\pm 1.0\%$ , input regulation: $\pm 0.5\%$ , load regulation: $\pm 0.5\%$ , overload protection	111.5 266	32-5P.3

## 6 HU System Insert Panels


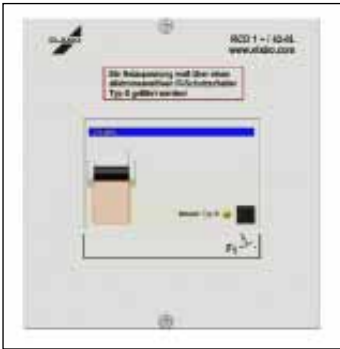


		Technical specifications	W x H	Article Number
<b>Digital multimeter</b>		Insert panel 1 WU, Digital multimeter 3 3/4-digit LCD with mains adaptor for mains operation. Measurement ranges: DC 400 mV, 4 V, 40 V, 400 V, 1000 V 400 $\mu$ A, 4 mA, 40 mA, 400 mA, 2000 mA, 20 A AC 400 mV, 4 V, 40 V, 400 V, 750 V 400 $\mu$ A, 4 mA, 40 mA, 400 mA, 2000 mA, 20 A R 400 W, 4 kW, 40 kW, 400 kW, 4 MW, 40 MW C 4 nF, 40 nF, 400 nF, 4 $\mu$ F, 40 $\mu$ F F 4 kHz ... 4MHz Basic accuracy: +/- 0.5% v:M: + 4-digit 0.1%; Operation type Continuity check; duty cycle check; logic test; data hold; peak hold	111.5 266	32-2H.3Z006
<b>Oszilloskop</b>		Insert panel 3 WU (+1 WU), Digital real time oscilloscope Delivery includes Blank panel 31-1 A. Tektronix TDS 2002 General: - colour display (1/4 VGA LCD) - Digital Real Time (DRT) - 60 MHz - 1 GS/s sampling rate/channel - two input channels - external triggering - Flank and video trigger - Trigger view - Cursor measurement with readout - Set up memory - Reference curve memory - Auto set up - Vector or point representation - Menu-led measurement processes With USB interface on the back	464 266	35-4P.3Z103
<b>Oszilloskop</b>	 	Insert panel 1 WU, 2/4-channel PC-oscilloscope with Ethernet interface. The PC digital oscilloscope is simple to use and is operated entirely via the included software. Technical specifications: Bandwidth: 150 MHz Channels: 2 channels, class 1, total mass Vertical: 2.5 mV/div - 100 V/div, to 250 V/div with Y-elongation Time bases 35 ranges from 1 ns/div to 200 s/div Trigger: Auto, Triggered, Single Shot Trigger source: CH1, CH2, EXT, mains. Type: Flank, Impulse width or display Mains supply: 100 - 230 V/AC 47 - 63 Hz Optionally available: Differential voltage sensors		
		2-channel PC-oscilloscope		35-4Q.3Z102
		4-channel PC-oscilloscope		35-4R.3Z102






# 6 HU System Plug-ins



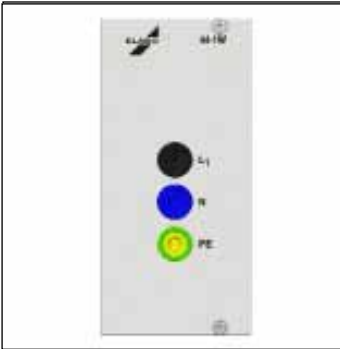
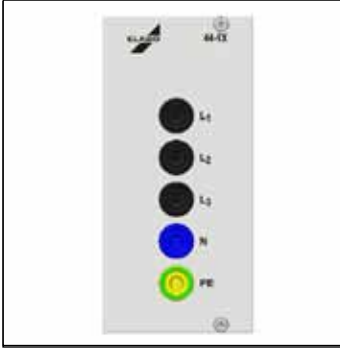
		Technical specifications	W x D x H	Article Number
Blank panel		Blank panel 1 WU	111.5 266	31-1A.3
		Blank panel 2 WU	229 266	31-1B.3
		Blank panel 4 WU	464 266	31-1C.3
Mounting rack		Mounting rack 2 WU, 2 x 3 HU / 2 x 36 HP	229 260 266	31-4A.3
		Mounting rack 4 WU, 2 x 3 HU / 2x 84 HP	464 260 266	31-4B.3

## 3 HU System Insert Panels

		Technical specifications	W x H	Article Number
<b>Fault current circuit breaker Alternating current, Type A</b>		Insert panel 18 HP, Fault current circuit breaker 1/N/PE~ 50 Hz 230 V 16 A, Equipment: 1 fault current circuit breaker 2-pole, type A, nominal current 25 A, nominal fault current 30 mA	91.4 128.5	42-0K.3
<b>Fault current circuit breaker Alternating current, Type B</b>		24 HP insert panel, Fault current circuit breaker 1/N/PE~ 50 Hz 230 V 16 A, Equipment: 1 fault current circuit breaker 2-pole, type B, sensitive to all current types for smooth fault currents 30 mA, nominal current 25 A	121.9 128.5	42-0L.3
<b>Fault current circuit breaker Rotary current, Type A</b>		24 HP insert panel, Fault current circuit breaker 3/N/PE ~ 50 Hz 400 V 16 A, Equipment: 1 fault current circuit breaker 4-pole, type A, nominal current 25 A, nominal fault current 30 mA	121.9 128.5	42-0M.3
<b>Fault current circuit breaker Rotary current, Type B</b>		24 HP insert panel, Fault current circuit breaker 3/N/PE ~ 50 Hz 400 V 16 A, Equipment: 1 fault current circuit breaker 4-pole, type B, sensitive to all current types for smooth fault currents 30 mA, nominal current 25 A.	121.9 128.5	42-0N.3


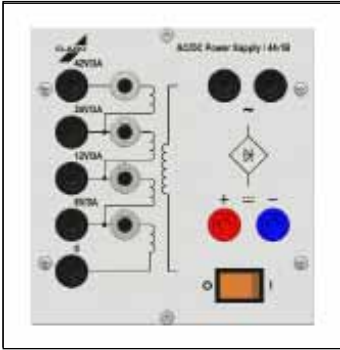
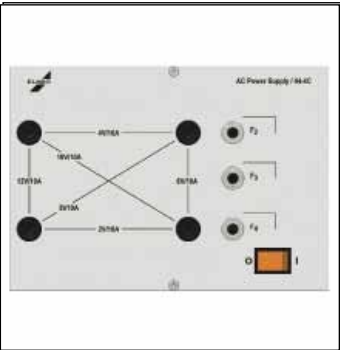
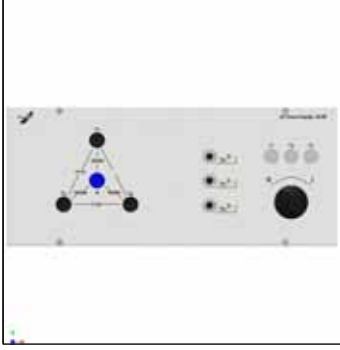
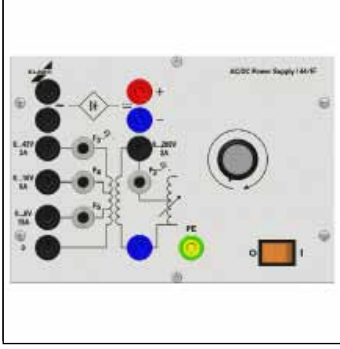
		Technical specifications	W x H	Article Number
<b>Circuit breaker unit Alternating current with voltage selection</b>		36 HP insert panel, Circuit breaker and switch unit single phase with key switch for release of two circuits position I "low voltage" position II "low voltage and mains voltage" 1/N/PE-50Hz 230 V 16 A Equipment: 1 automatic circuit breaker, single pole C 16 A 1 key button I/0/II, black 1 off button 2 contactors 1 signal light 'experiment equipment activated' including second mains cable harness	121.9 128,5	42-0V.3
<b>Circuit breaker unit Rotary current with voltage selection</b>		36 HP insert panel, Circuit breaker and switch unit 3 phase with key switch to release two circuits position I "low voltage" position II "low voltage and mains voltage" 3/N/PE-50Hz 400 V 16 A Equipment: 1 automatic circuit breaker, 3-pole C 16 A 1 key button I/0/II, black 1 off button 2 contactors 3 outer conductor indicator lights 1 signal light 'experiment equipment activated' 2 including second mains cable harness	182.9 128.5	42-0W.3
<b>Circuit breaker unit Alternating current with remote control voltage selection</b>		36 HP insert panel, Circuit breaker and switch unit Single phase release of voltages via Ethernet node Release I "low voltage" Release II "mains voltage" 1/N/PE-50Hz 230 V 16 A Equipment: 1 automatic circuit breaker, single pole C 16 A 2 contactors 1 outer conductor indicator light 1 signal light 'experiment equipment activated' 1 illuminated button for switching on voltage including second mains cable harness	121.9 128.5	42-0P.3
		Suitable network module For description see virtual Equipment		N3-2A

## 3 HU System Insert Panels






		Technical specifications	W x B x H	Article Number
<b>Circuit breaker unit</b> <b>Rotary current with remote control voltage selection</b>		36 HP insert panel, Circuit breaker and switch unit 3-phase, Release of voltage via Ethernet node Release I "low voltage" Release II "mains voltage" 1/N/PE-50Hz 400 V 16 A Equipment: 1 automatic circuit breaker 3-pole C 16 A 2 contactors 3 external conductor indicator lights 1 signal light 'experiment equipment activated' 1 illuminated switch for switching to current including second mains cable harness	182,9 128,5	42-0Q.3
		Suitable network module For description see Virtual Equipment		N3-2A
<b>Shockproof sockets</b>		24 HP insert panel, Equipment: 4 shockproof sockets.  Optionally available with mains switch	121,9 128,5	44-1L.3
<b>Safety lab jacks</b>		12 HP insert panel, mains voltage, 1/N/PE ~ 50 Hz, Equipment: 3 safety lab jacks (L1, N, PE)  Optionally available with mains switch	60,4 128,5	44-1W.3
<b>Safety lab jacks</b>		12 HP insert panel, mains voltage, 3/N/PE ~ 50 Hz 230 / 400 V Equipment: 5 safety lab jacks (L1, L2, L3, N, PE)  Optionally available with mains switch	60,4 128,5	44-1X.3

		Technical specifications	W x D x H	Article Number
<b>Emergency shutdown</b>		<p>12 HP insert panel, Unconnected emergency shutdown switch.</p> <p>Equipment: 1 emergency OFF switch with detent and yellow signal ring.</p> <p>Including 2 switch contacts for visualization using Elabo EHP Software</p> <p>Necessary network module see virtual equipment</p>	60.9 196 128.5	44-1J.3Z701
<b>Emergency OFF</b>		<p>12 HP insert panel, Unconnected key emergency OFF</p> <p>Equipment: 1 key emergency OFF with yellow signal ring</p>	60.9 196 128.5	44-1J.3Z702
<b>CEEE Socket</b>		<p>24 HP insert panel, mains voltage, 3/N/PE ~ 50 Hz 230 / 400 V, 16A an 1 CEE socket.</p> <p>Optionally available with mains switch</p>	121.6 128.5	44-2C.3



## Euro-Cassettes and Insert Panels System 3 HU

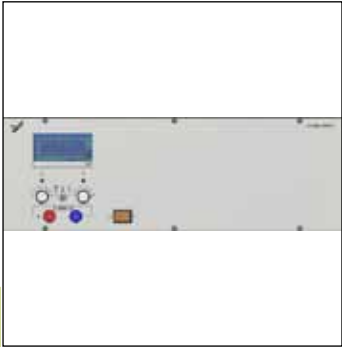

		Technical specifications	W x D x H	Article Number
<b>Ungrounded alternating current</b>		36 HP cassette, Alternating current ungrounded 230 V / 230 VA and mains voltage 1/N/PE ~ 50 Hz 230 V 16 A. Equipment: 3 shockproof sockets, 1 illuminated rocker switch, 1 transformer with separate coils, 1 equipment circuit breaker TMT1A, 1 toggle switch, 1 socket without protective ground contact (for ungrounded current), 2 safety lab jacks.	182,9 128,5 196	44-1C.3Z301
<b>Low voltage Alternating current, ungrounded</b>		24 HP cassette Low alternating current ungrounded, AC 6, 12, 24, 42 V / 3 A. An additional freely switchable bridge rectifier is installed.	121,9 196 128,5	44-1B.3
<b>Low voltage Alternating current, ungrounded</b>		36 HP insert panel, Low alternating current, ungrounded 2, 4, 6, 8, 10, 12 V / 10 A Equipment: 1 illuminated rocker switch 1 transformer with separate coils 3 thermo-magnetic equipment circuit breakers 4 safety lab jacks	B 182,9 H 128,5	44-4C.3
<b>Low voltage Rotary current, ungrounded</b>		60 HP insert panel , rotary current supply, AC 3-10/17, 3 V 5A, ungrounded. Equipment: 1 rotary switch I/O, 3 glow lights, 1 rotary current transformer with micro-circuit breakers, 3 equipment circuit breakers TMT3A, 4 safety lab jacks.	B 304,8 H 128,5	44-4E.3
<b>Alternating voltage</b>		36 HP cassette, Alternating current 0..260 V/ 2 A not ungrounded. Low alternating currents ungrounded 0...6 V / 15 A, 0...18 V / 6 A and 0...42 V / 3 A. Also an additional, freely switchable bridge rectifier is fitted. Ripple of direct voltage approx. 48 % eff.	182,9 196 128,5	44-1F.3



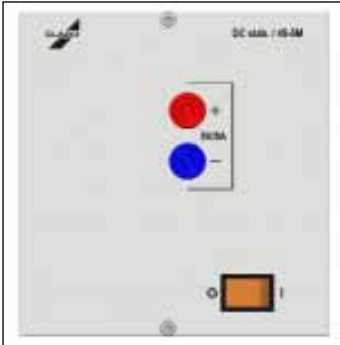
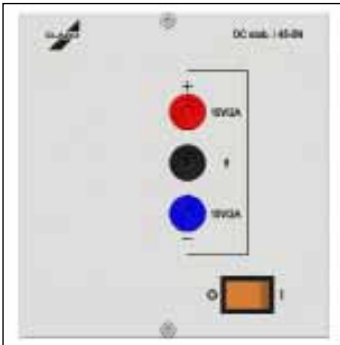
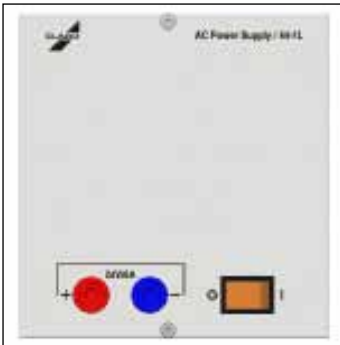


		Technical specifications	W x D x H	Article Number
<b>Alternating and direct voltage</b>		52 HP cassette, Alternating and direct current ungrounded. 0...260 Veff / 3 A (AC/DC) or 0...50 Veff / 10 A (AC/DC) with analog display instruments residual ripple with DC ca. 48%	264.2 196 128.5	44-1P.3
<b>AC stabilizer, ungrounded</b>		66 HP cassette, AC stabilizer with ungrounded alternating current 2...260 V/2 A electromechanical stabilization with delay regulator and set value potentiometer 1 x 4-digit digital voltage display 1 X 4-digit digital current display Can be switched to effective power	335.2 196 128.5	44-5M.3
		Optional Interface for System 3HU inserts, incl. 12HP blank panel and 2 m patch cable interface type: 1x Ethernet The interface connections are on the back of the equipment.  Note: the interface is fitted at the side of the base equipment. This widens the equipment by 12 HP.		N3-4S.3Z102
<b>Adjustable DC stabilizer</b>		24 HP cassette, DC stabilizer 0...30 V / 2 A with digital display 0...30 V/A switchable and 10-gear potentiometer. Preset for voltage and current limitation.	121.9 196 128.5	45-1Y.3
		Optional Interface for System 3 HU inserts, incl. 12 HP blank panel and 2 m patch cable interface type: 1x Ethernet The interface connections are on the back of the equipment.  Note: the interface is fitted at the side of the base equipment. This widens the equipment by 12 HP.		N3-4S.3Z102



## Euro-Cassettes and Insert Panels System 3 HU

		Technical specifications	W x D x H	Article Number
Adjustable DC stabilizer		<p>36 HP cassette DC stabilizer 2 x 0...15 V / 2 x 0...2 A with switchable 4-digit digital display and 10-gear potentiometer. pre-set for voltage and current limitation. Output can be switched off. The devices can be operated in serial or parallel connection. Interference voltage at output: 1 mV Transient time: typically 50, maximally 100 µs Temperature coefficient: 0,01% / °C Load equilization 0,015 %</p>	182.9 196 128.5	45-1U.3
		<p>Optional interface for System 3 HU double stabilizer incl. 12 HP blank panel and 2 x 2 m patch cable interface type: 2 x Ethernet The interface connections are at the back of the device. The interface is fitted at the side of the base equipment. This way the device is widened by 12 HP.</p>		N3-4T.3Z102
Adjustable DC stabilizer		<p>42 HP cassette DC stabilizer 2 x 0...30 V / 2 x 0...2 A with switchable 4-digit digital display and 10-gear potentiometer. Pre-set for voltage and current limitation. Output can be switched off. The devices can be operated in serial or parallel connection. Interference voltage at output: 1 mV Transient time: typically 50, maximally 100 µs Temperature coefficient: 0,01% / °C Load equilization 0,015 %</p>	213.3 196 128.5	45-0K.3
		<p>Optional interface for System 3 HU double stabilizer incl. 12 HP blank panel and 2 x 2 m patch cable interface type: 2 x Ethernet The interface connections are at the back of the device.  Note: The interface is fitted at the side of the base equipment. This way the device is widened by 12 HP.</p>		N3-4T.3Z102



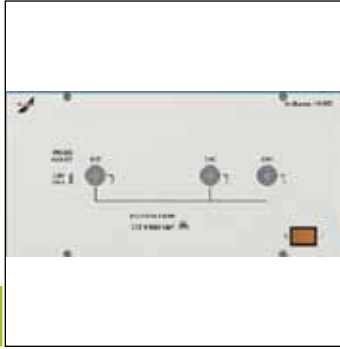
		Technical specifications	W x H	Article Number
Adjustable DC stabilizer		<p>76 HP insert  DC stabilizer 0...30 V / 2 x 0...2 A  with switchable 4-digit digital display  and 10-gear potentiometer.  Pre-set for voltage and current limitation.  Output can be switched off.  Interference voltage at output: 1 mV  Transient time: typically 50,  maximally 100 µs  Temperature coefficient: 0,01% / °C  Load equilization 0,015 %</p>	386.1 128.5	45-1Y.3Z801
		<p>Optional interface for 3HU insert panels  incl. 2 m patch cable  interface type: Ethernet  The interface connections are at the back of  the device.</p>		N3-4P Z102
Adjustable DC stabilizer		<p>84 HP insert  DC stabilizer 2 x 0...30 V / 2 x 0...2 A  with switchable 4-digit digital display  and 10-gear potentiometer.  Pre-set for voltage and current limitation.  Output can be switched off.  The devices can be operated in serial or  parallel connection.  Interference voltage at output: 1 mV  Transient time: typically 50, maximally  100 µs  Temperature coefficient: 0,01% / °C  Load equilization 0,015 %</p>	426.7 128.5	45-5U.3Z801
		<p>Optional interface for  System 3 HU insert panels  incl. 2 x 2 m patch cable  interface type: 2 x Ethernet  The interface connections are at the back of  the device.</p>		N3-4Q Z102

## 3 HU System Insert Panels

		Technical specifications	W x D x H	Article Number
<b>Mains switch</b>		24 HP cassette, switch mains adaptor with synchronized output voltage 5 V / 5 A. Outputs fed to 2 safety lab jacks. Specification: output power: 25 W, residual ripple: 80 mVp-p, output tolerance: $\pm 2.0\%$ , input regulation $\pm 0.5\%$ , load regulation: $\pm 1.0\%$ , overload protection: Hiccup mode.	B 121.9 H 128.5	45-5M.3
		24 HP insert panel, switch mains adaptor with synchronized output voltage $\pm 15\text{ V} / 2\text{ A}$ . Outputs fed to 3 safety lab jacks. Specification: output power: 2 x 30 W, residual ripple: 120 mVp-p, output tolerance: $\pm 1.0\%$ , input control: $\pm 0.5\%$ , load control: $\pm 0.5\%$ , overload protection: Hiccup mode.	B 121.9 H 128.5	45-5N.3
		24 HP insert panel, switch mains adaptor with synchronized output voltage 24 V / 6 A, output power: 150 W, residual ripple: 150 mVp-p, output tolerance: $\pm 1.0\%$ , input control: $\pm 0.5\%$ , load control: $\pm 0.5\%$ , overload protection.	B 121.9 H 128.5	45-5P.3
<b>Continuity tester</b>		12 HP cassette, Continuity check electronic (acoustic)	60.9 196 128.5	42-1F.3
<b>AF test device</b>		24 HP cassette, NF-test equipment with signal tracker, Demodulator for amplitude modulated signals. Loudspeaker 3 W / 100 Hz... 15 kHz, Load resistances 4 - 8 - 16 Ohm / 25 W	121.9 196 128.5	43-1F.3





		Technical specifications	W x D x H	Article Number
<b>Digital multimeter</b>		24 HP insert panel, Digital multimeter 4 1/2-digit with manual range selection Technical specifications: Direct voltage Ranges 200 mV, 2 V, 20 V, 200 V, 2000 V Alternating current (effective value) Ranges 200 mV, 2 V, 20 V, 200 V, 2000 V Overload protection up to max. 1000 V Direct current Ranges 200 µA, 2 mA, 20 mA, 200 mA, 2 A, 20 A Alternating current (effective value) Ranges 200 µA, 2 mA, 20 mA, 200 mA, 2 A, 20 A Resistances Ranges 200 Ohm, 2 kOhm, 20 kOhm, 200 kOhm, 2000 kOhm, 20 MOhm"	121.9 196 128.5	41-1N.3
		Optional Interfaces		
		RS 232		N3-4P Z101
		Ethernet incl. 2 m patch cable		N3-4P Z102
		USB		N3-4P Z103
<b>Function generator</b>		36 HP insert panel, Function generator 0.2 Hz...2 MHz Technical specifications: Mains: 230 V ±10 % / 49-61 Hz. Frequency control via potentiometer with scale and rotary switch in six decade ranges. Frequency ranges: 20/200 Hz, 2/20/200 kHz, 2 MHz Signal forms: Sine, triangle, square Sine distortion factor: <1.5% to 100 kHz, <5% to 2 MHz Output amplitude: U <sub>ss</sub> : max. 20 V idling type. 10 V on 50 Ohm Output is secured against idling and short circuit, Attenuator -20dB via BNC socket. DC-offset can be activated: 0 to ±10 V settings External wobbling: Modulation input VCO 0...5 V for frequency modulation 100:1 Input impedance approx. 17 kOhm	182.9 128.5	43-1V.3

## 3 HU System Insert Panels

		Technical specifications	W x D x H	Article Number
<b>Function generator</b>		<p>Cassette 60 HP, with LCD display, frequency display and amplitude (pp or rms)</p> <p>Signal form: sine, square, triangle</p> <p>Function generator 0.03 Hz...3 MHz</p> <p>Frequency counter up to 120 MHz</p> <p>Amplitude: 2 mV to 10 V<sub>ss</sub> on 50/600 Ohm (2 mV to 20 V<sub>ss</sub> without load)</p> <p>Output 50 Ohm, 600 Ohm</p> <p>Attenuation: 0,-20,-40 or -60 dB</p> <p>Sweep via external controls</p>	305 196 128.5	43-1W.3
<b>Function generator</b>		<p>60 HP cassette, Function generator 0.01 Hz...20 MHz with frequency counter.</p> <p>Signal form: sine, square, triangle positive and negative impulses</p> <p>Sine, square: 0.01 Hz ... 20 MHz</p> <p>Triangle: 0.01 Hz ... 1 MHz</p> <p>Amplitude: 5 mV to 10 V<sub>ss</sub> on 50/600 Ohm (5 mV up to 20 V<sub>ss</sub> without load)</p> <p>Integrated sweep, linear or logarithmic</p> <p>Single sweep triggering (manual, external, remote controlled)</p> <p>Input via rotary encoder or numerical keys or via ELABO EHP software.</p> <p>With 4-line illuminated display.</p> <p>Variants:</p>	305 196 128.5	
		Function generator with RS 232 interface		43-1U.3Z101
		Function generator with Ethernet-interface		43-1U.3Z102
		Function generator with USB interface		43-1U.3Z103
<b>Oscilloscope</b>		<p>52 HP insert panel, 2-channel PC-oscilloscope with Ethernet-interface.</p> <p>The PC digital oscilloscope is simple to use and is operated entirely via the included software</p> <p>Technical specifications:</p> <p>Bandwidth: 150 MHz</p> <p>Channels: 2 Channels, class 1, total mass</p> <p>Vertical: 2.5 mV/div - 100 V/div, to 250 V/div with Y-elongation</p> <p>Time bases: 35 ranges of 1 ns/div to 200 s/div</p> <p>Trigger: Auto, triggered, single shot, Trigger source: CH1, CH2, EXT, mains.</p> <p>Type: Flank, impulse width or delay</p> <p>Mains power supply: 100 - 230 V/AC 47 - 63 Hz</p> <p>Optionally available: Differential voltage sensors</p>	264.2 210 128.5	41-1Q.3Z102







# Euro-Cassettes System 3 HU






		Technical specifications	W x D x H	Article Number
<b>Oscilloscope</b>		<p>52 HP insert panel, 4-channel PC-oscilloscope with Ethernet interface.</p> <p>The PC digital oscilloscope is simple to use and is operated entirely via the included software.</p> <p>Technical specifications: Bandwidth: 150 MHz Channels: 4 Channels, class 1, total mass Vertical: 2.5 mV/div - 100 V/div, to 250 V/div with Y-elongation Time bases: 35 ranges of 1 ns/div to 200 s/div Trigger: Auto, triggered, single shot Trigger source: CH1, CH2, CH3, CH4, EXT, mains. Type: Flank, impulse width or delay Mains power supply: 100 - 230V/AC 47 - 63 Hz</p> <p>Optionally available: Differential voltage sensors</p>	264.2 210 128.5	41-1R.3Z102
<b>Soldering station</b>		<p>18 HP cassette, Soldering station 80W temperature controlled soldering iron 820 CDJ and depositing stand A 41.</p>	91.4 196 128.5	46-1A.3
		<p>18 HP cassette, Analog soldering station 80W. Analog control electronics for soldering tools up to 80 W, temperature range 150°C - 450°C, temperature control by rotary potentiometer. With 80 W Silver Line soldering iron WSP 80 and soldering tip LT B and a safety depositing stand WPH 80, Manufacturer: Weller WS 81.</p>	91.4 196 128.5	46-1H.3
<b>Soldering/final soldering station</b>		<p>36 HP cassette, Multifunctional soldering and de-soldering station comprising: - ERSA soldering station DIGITAL 2000 A complete with soldering iron power tool 24 V/80 W and storage stands OA 42. - ERSA de-soldering station DIGITAL 2000 A with vacuum unit with de-soldering tool X-Tool 24 V / 2 x 60 W and depositing stand OA 44.</p>	182.9 196 128.5	46-1M.3



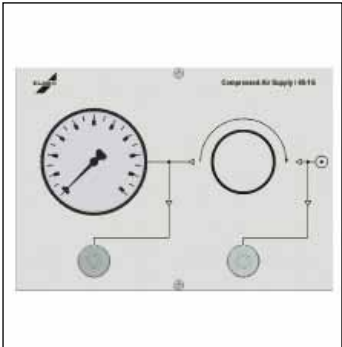

## 3 HU System Insert Panels

		Technical specifications	W x B x H	Article Number
<b>Pole selector</b>		18 HP insert panel, 9 safety lab jacks as selectable poles, 6 jacks labeled 1...6, 3 jacks labeled A, B, C, 2 BNC integrated jacks 50 Ohm. All unwired.	91.4 128.5	46-1D.3
<b>Supply strip</b>		6 HP supply strip, interface field LPT parallel. Equipment: 1 Sub-D plug-in connector 25-pole female with approx. 3 m connector wire and mating plug.	30.2 128.5	46-7A.3
		6 HP supply strip, interface field COM / RS232 serial. Equipment: 1 sub-D plug-in connector 25-pole male with approx. 3 m connector wire and mating plug	30.2 128.5	46-7B.3
		6 HP supply strip, interface field COM / RS232 serial. Equipment: 1 sub-D plug-in connector 9-pole male with approx. 3 m connector wire and mating plug	30.2 128.5	46-7C.3
		6 HP supply strip, interface field VGA. Equipment: 1 sub-D plug-in connector 15-pole HD male with approx. 3 m connector wire and mating plug	30.2 128.5	46-7D.3

		Technical specifications	W x H	Article Number
(Supply strip continued)		6 HP supply strip, interface field DVI-I. Equipment: 1 DVI-I plug-in connector female with approx. 3 m connector wire and mating plug	30.2 128.5	46-7E.3
		6 HP supply strip, interface field USB. Equipment: 2 USB-plug-in connectors type A female with approx. 3 m connector wire and mating plug.	30.2 128.5	46-7F.3
		6 HP supply strip, interface field PS/2. Equipment: 2 PS/2 Mini-DIN 6-pol. plug-in connectors female with approx. 3 m connector wire and mating plug.	30.2 128.5	46-7G.3
		6 HP supply strip, interface field Audio L - Audio R. Equipment: 2 Cinch plug-in connector red and white female with approx. 2.5 m connector wire and mating plug.	30.2 128.5	46-7H.3


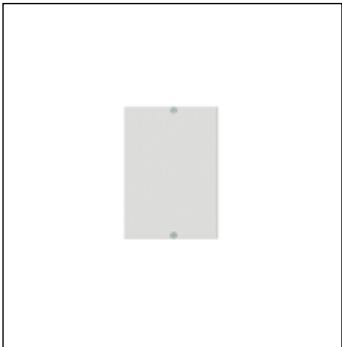
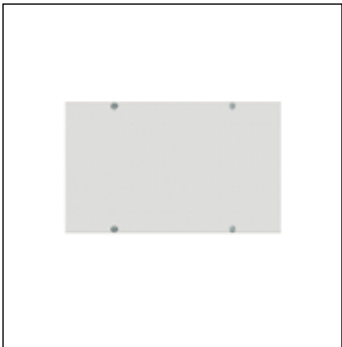
## 3 HU System Insert Panels

		Technical specifications	W x B x H	Article Number
(Supply strip continued)		6 HP supply strip, interface field Audio. Equipment: 1 jack socket 3.5 mm Stereo with approx. 3 m connector wire and mating plug.	30.2 128.5	46-7J.3
		6 HP supply strip, interface field FireWire. Equipment: 1 plug-in connector IEEE-1394 6-pole with approx. 3 m connector wire and mating plug.	30.2 128.5	46-7K.3
		HP supply strip 6, interface field RJ45 network jack. Equipment: 1 RJ45 jack 8-pole for plugging on both sides.	30.2 128.5	46-7L.3
		6 HP supply strip, interface field S-VHS. Equipment: 1 PS/2 Mini-DIN 4-pole plug-in connector female with approx. 2 m connector wire and mating plug.	30.2 128.5	46-7M.3
		6 HP supply strip, interface field IEEE-488 / GPIB. Equipment: 1 IEEE-488 Centronics 24-pole female with 2 m connector wire and mating plug.	30.2 128.5	46-7N.3

		Technical specifications	W xH	Article Number
(Supply strip continued)		6 HP supply strip, BNC interface. Equipment: 2 BNC integrated sockets 50 Ohm, can be plugged on both sides.	30.2 128.5	46-7P.3
<b>Compressed air supply</b>		6 HP compressed air supply, 1 quick connection coupling NW 5 1/8" including 1 plug-on cap NW 5 for plastic hose 6/4	30.4 128.5	48-1K.3
<b>Compressed air supply</b>		36 HP insert panel, Compressed air supply unit 0.5...10 bar. Equipment: 1 pressure reduction valve, 1 manometer 0...10 bar, Kl. 2.5, 1 single hand quick closure NW 2.5 Extraction of unreduced compressed air max. 12 bar, 1 single handed quick closure NW 2.5 Withdrawal of compressed air as setting 0...10 bar, 1 plug-on cap NW 2.5	182.9 128.5	48-1G.3
<b>Potential equalization</b>		6 HP potential equalization, 1 plug-on connector for potential equalization POAG-ID6, unwired	30,4 128,5	46-1D.3Z840

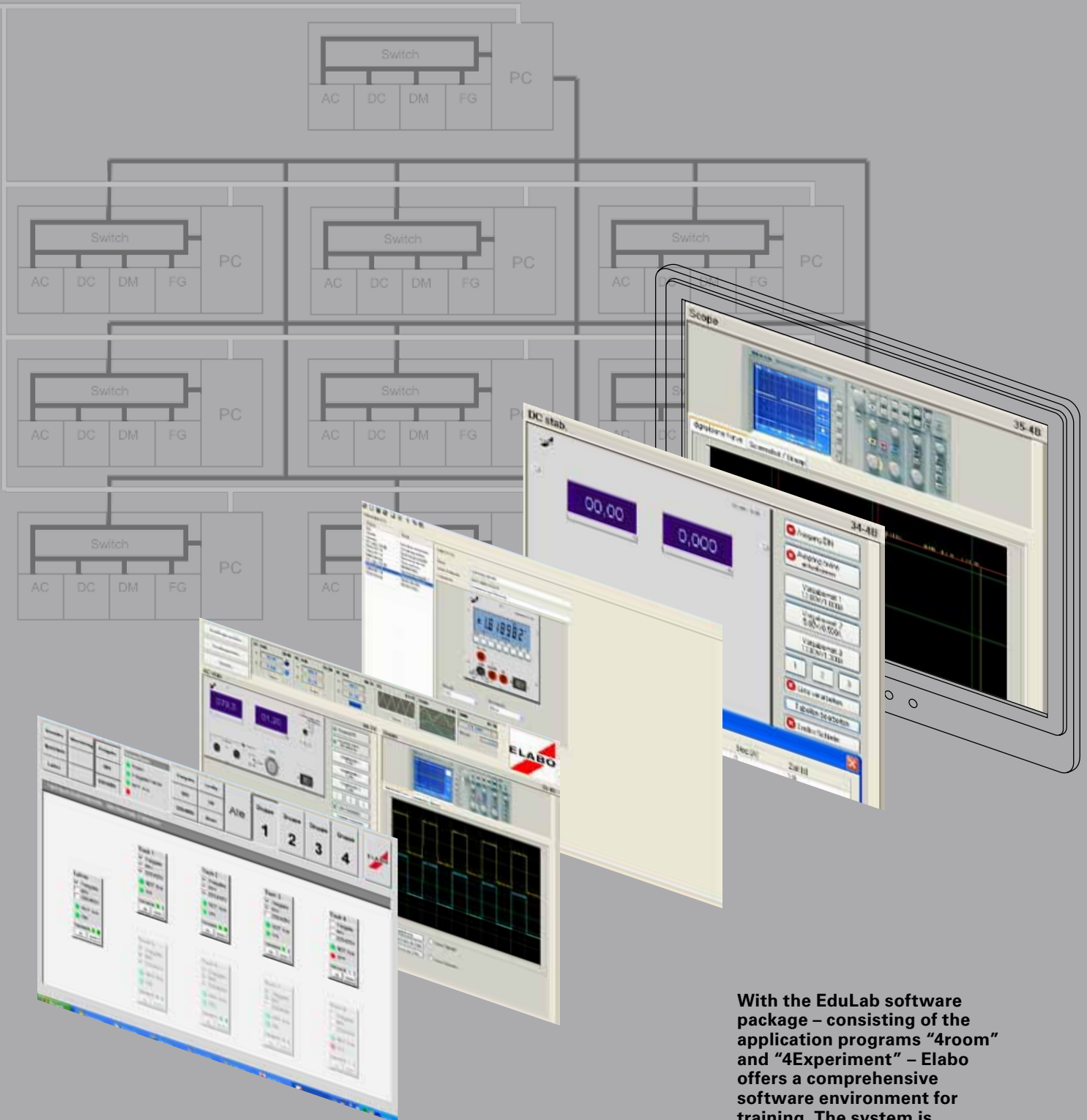
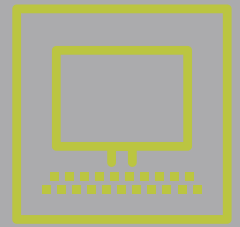


## 3 HU System Insert Panels

		Technical specifications	W x B x H	Article Number
Blank panel		Blank panel 4 HP	20.3 128.5	40-1H.3
		Blank panel 6 HP	30,4 128.5	40-1G.3
		Blank panel 8 HP	40.5 128.5	40-1J.3
		Blank panel 12 HP	60.9 128.5	40-1A.3
		Blank panel 18 HP	91.4 128.5	40-1B.3
		Blank panel 24 HP	121.9 128.5	40-1C.3
		Blank panel 36 HP	182.9 128.5	40-1D.3
		Blank panel 42 HP	213.3 128.5	40-1E.3
		Blank panel 48 HP	243,8 128.5	40-1F.3
		Blank panel 60 HP	304,8 128.5	40-1K.3
		Blank panel 96 HP	487,6 128.5	40-1L.3



# Virtual Equipment



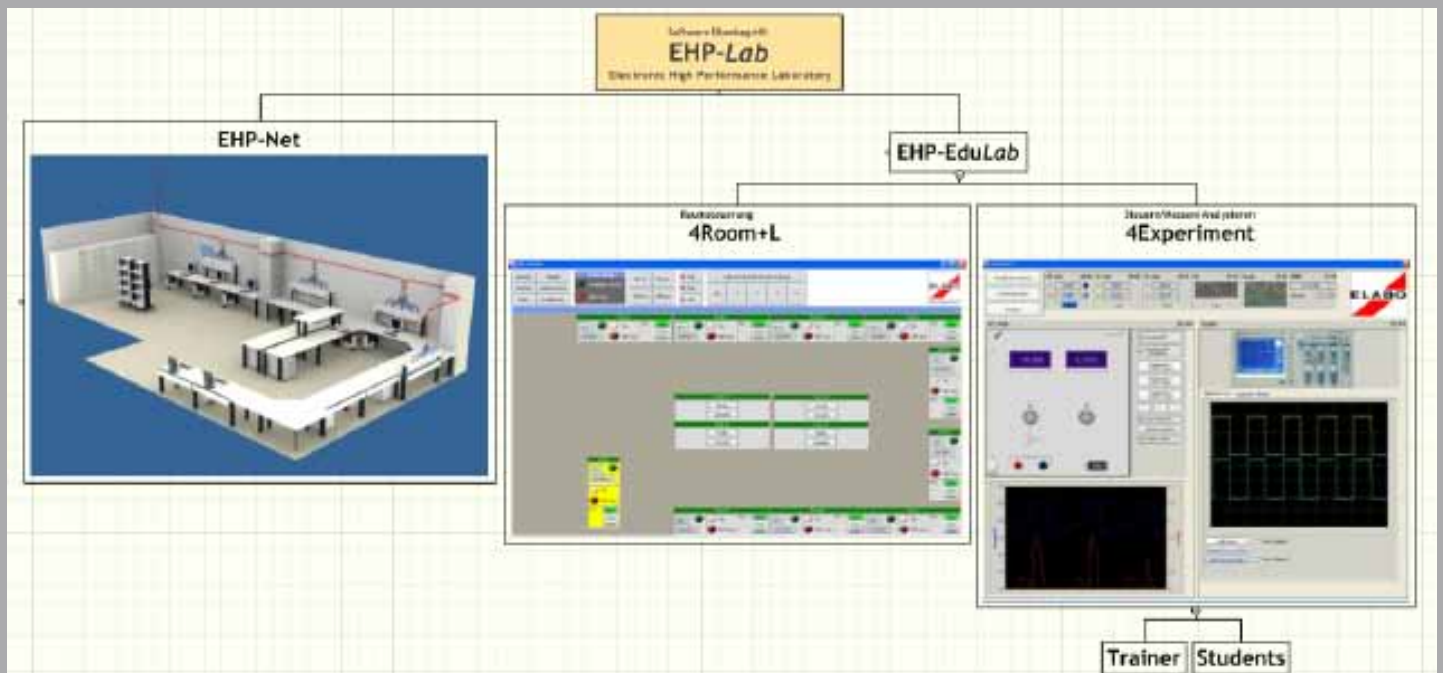
With the EduLab software package – consisting of the application programs “4room” and “4Experiment” – Elabo offers a comprehensive software environment for training. The system is rounded out by the groundbreaking Elabo network technology and corresponding interfaces.



# Virtual Equipment

## Connect. Control. Optimize Design

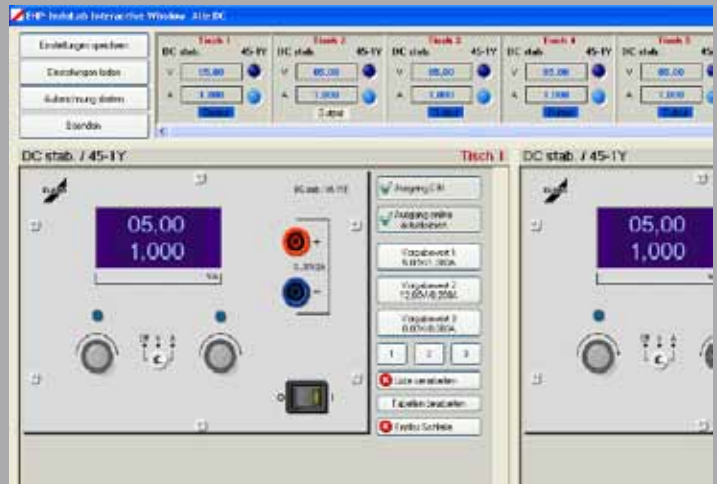
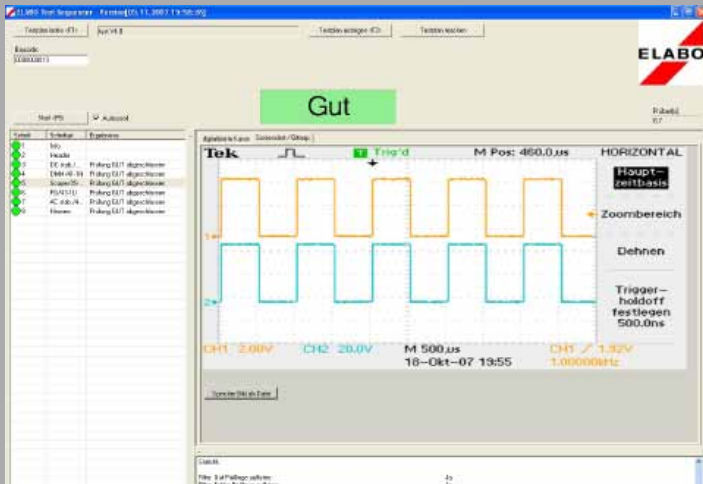
Elabo offers the virtual equipment necessary for today's advanced training in electrical trades. It essentially consists of three components: the EHP-Lab Elabo software package, the network technology as well as the device interfaces. This system is a decisive factor in helping design the events in the classroom so they become interesting and well-grounded, and efficiently monitor and control these events. This significantly increases the intensity of the lesson and the quality of learning.



Elabo is a leader in the use of comprehensive networked software solutions in the educational sphere. The system consists of the Elabo EHP EduLAB application software, the Elabo EHP-Net network software and interfaces for measuring and supply devices. The application software consists of the powerful 4Experiment module that contains all teaching functions, as well as the 4Room control module that controls room equipment (power/voltage supply, table lowering technology, among other things).

Elabo software solutions have been successfully used in industry before special teaching adaptations were developed and introduced for training. The functions for automated test procedures with precise documentation of measured values, for example, streamlines work in the quality assurance laboratory at a high level. Just like professional in daily practice, students and trainees test and analyze the quality of electronic devices using the Elabo software system.

Trainers can activate each learner station in their focus directly from their central station and enter there the settings needed for the upcoming experiment. This rules out students exercising control over the values. In addition, the trainer sees whether students are actually working with the devices provided.



## Elabo EHP EduLab. The structure of the system

The system consists of the two elements – Elabo EHP EduLab and Elabo EHP Net. EduLab, in turn, consists of “4Room” – the basic version is used for table release with 2 voltage levels – and the powerful “4Experiment” program with modules for teachers and students.

## Benefits for instructors and students

- The complete package 4Experiment module
- The 4Experiment module “Trainer” provides teachers with versatile equipment for structuring their lessons. Among other things, it allows:
- the central preconfiguration of visualization and control of student stations (for trainees or students)
  - graphical representation of the room with the name of the student for each station
  - table release and control of lowerable tables
  - release, remote control and blocking of access to devices
  - overview of the functional status of devices and the situation at student stations
  - programming and documentation of experiments and tests
  - analysis and processing of captured data
  - activation of the emergency stop monitor function with signal follow-up

- The 4Experiment module “Student” allows students:
- to use measuring and testing devices with pertinent software
  - to program recurrent testing processes
  - to record the characteristic curve of experimental arrangements, components, etc.
  - to use the Ethernet as learning content
  - to document the process of experiments and their results
  - to analyze captured data and interpret them according to the teaching program.

## Demand-related configurations

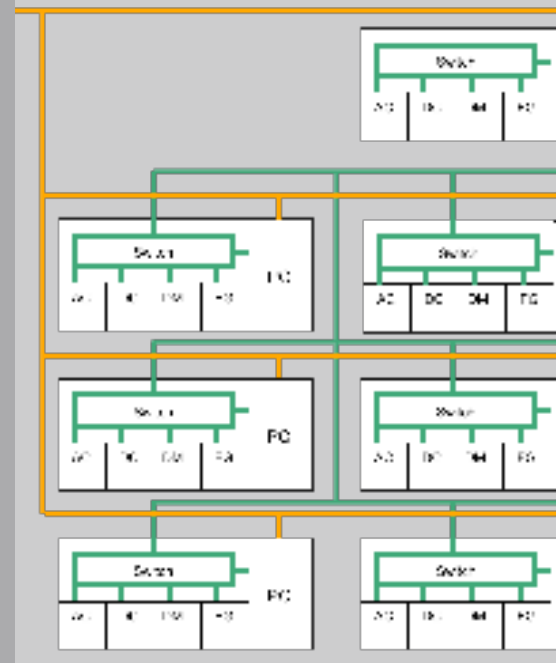
The package is smartly structured and supports differentiated solutions depending on individual requirements. This way, for example, it is possible for individual teacher station versions to be realized just as easily as complex systems in which devices in student stations, even when they are not PC-equipped, can be centrally monitored and controlled.



# Virtual Equipment

## Networked into a quality system

Technical progress today heavily relies on cross-linking in information and communications technology. With Elabo this groundbreaking technology is used simultaneously for structuring the lesson and as subject matter. With Elabo the setup and operation of networks are easily solved.



### Networking with Elabo EHP Net

In a sense Elabo EHP Net is the nervous system of the body of a lesson using virtual means. Thanks to this technology, AC and DC power and voltage supply, digital multimeters, oscilloscopes with and without operating elements, as well as frequency generators can be linked through a network. The system is open, which means that devices from other manufacturers can also be integrated.

The networking takes place in the background. There are no cables in front of front panels. The accidental disturbance of the network and unauthorized access are prevented or this risk is at least significantly reduced.

The network using Elabo EHP can be built up in several segments such as, for example, the School Network and the Room Network. Coordination is via switches, some of which are designed as intelligent hubs. Switches that can be configured in this manner form virtual networks with one another. This way, different segments can be firewalled and unauthorized log-in prevented.

### Network interfaces

Elabo offers an extensive range of communication-enabled devices which can be equipped with network interfaces. Upgrades for power and voltage supply as well as measuring and testing devices is available from 2005 onwards.

### Ethernet technology

Elabo EHP utilizes Ethernet technology. It can integrate an almost unlimited number of components - there is virtually no limit to upgrading. Ethernet technology is considered groundbreaking and is preferred both in measuring technology and in industry.



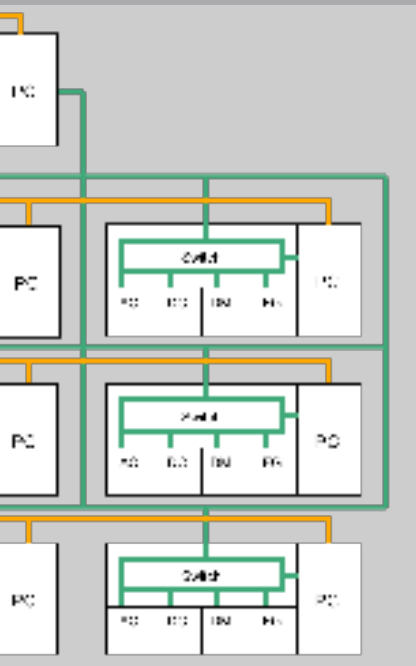
= use in networks possible

Network engineering today is a core technology on which almost all information and communications technology depend. With Elabo EHP EduLab, network engineering can be made the subject of learning. The possibility to set up an experiment network can prove very helpful to a descriptive lesson.



# Expandable Modules

This may also interest you...



With Elabo EHP-Net all devices and PCs are integrated with each other into a complex network. A special feature is that a special ● experiment network can be set up which is hermetically shielded from ● the school network. Interference on the school network, both unintentional and wilful, is consistently prevented.



**Inserts and electronic devices** by Elabo such as measuring and supply devices form the basic technical elements for the technically sophisticated lesson. Most of them have communication capability and can be outfitted with networking interfaces.  
[> More on page 75](#)



**Table systems** in the modular number of Elabo form the foundation of professional training rooms.  
[> More on page 27](#)



**Superstructures** integrate and protect power supply as well as measuring and testing devices. By default they are equipped with a electric power system and can be configured with an optional data bus. Upon request, Elabo uses here the most modern fiber optic technology.  
[> More on page 45](#)





**The teaching material** of Elabo and its partners and the Elabo EHP EduLab software harmonize perfectly with each other as complementary components. The lesson reaches a level which was almost impossible before these technical innovations  
[> More on page 119](#)



**Lowering mechanisms** let the superstructures disappear into solid compartments. The technology is optimally protected from dirtying and the experiment space becomes more flexible and can be used, for example, as a theory space.  
[> More on page 59](#)



## Software packages



	Technical specifications	Article Number
<p><b>EHP</b>  <b>-EduLab</b>  <b>4 Experiments solo</b></p> 	<p>ELABO software package            Operating system: Windows XP + Vista</p> <p>ELABO software significantly simplifies remote control of ELABO power supply and test equipment. The equipment can be selected and all parameters set using an easy-to-operate user interface. A further significant benefit is the option of activating measurement data logging. This means the recorded data can be analyzed at any time. The software is also ideal for continuous tests. Adjustable set value and time parameters guarantee optimal testing operations.</p> <p>The basic package contains an interactive interface for the individual power supply and test units and an automated test run.</p>	<p>N1-1B</p>
<p><b>EHP</b>  <b>-EduLab</b>  <b>4 Experiments</b></p> 	<p>ELABO software education package for Windows XP + Vista includes:            Education Release / Trainer            Education Release / Student</p>	<p>N1-3A</p>
<p><b>- Trainer</b></p>	<p>ELABO Education Release administration software / Trainer            Operating system: Windows XP + Vista</p> <p>The comprehensive Software package includes all the functions which are required for controlling and monitoring a classroom or laboratory.</p> <p>Everything is contained in the basic package, from the simple release of the workstations right up to the graphical overview of the classroom. In addition, from a central position the teacher can access the screens at the student workstations. In order to simplify the control and configuration of the classrooms, the ELABO software provides the option of combining several workstations in groups and then controlling them together. All important functions and switching statuses are displayed graphically on the central PC. Likewise, using the room configuration, the teacher can also lock equipment at the student workstations or limit the output voltages. This function is very useful for tests with sensitive components in order to protect them from overvoltage.</p> <p>Further options: (Hardware required)            Emergency stop visualization            Control and display of units with lowering technology            Voltage release</p> <p>The Software package also contains the comprehensive ELABO EHP InduLab Software as standard. This gives the teacher remote control of all the interface devices included in the trainer workbench.</p>	<p>N1-3L</p>

	Technical specifications	Article Number
<p><b>- Students</b></p>	<p>ELABO Education Release software / Student Operating system: Windows XP + Vista</p> <p>The ELABO EHP InduLab Software significantly simplifies the remote control of ELABO power supply and test equipment. The equipment can be selected and all parameters set using an easy-to-operate user interface.</p> <p>A further significant benefit is the option of activating measurement data logging. This means the recorded data can be analyzed at any time. The software is also ideal for continuous tests.</p> <p>Adjustable set value and time parameters guarantee optimal testing operations. The basic package contains an interactive interface for the individual power supply and test units and an automated test run.</p> <p>In combination with the Training Administration software the teacher can configure the student workbenches centrally.</p>	<p>N1-3S</p>
<p><b>EHP</b> <b>-EduLab 4 Room + L</b></p>	<div data-bbox="379 891 785 1243" data-label="Image"> </div> <p>ELABO Administration software Room control Operating system: Windows XP + Vista</p> <p>The Software package includes all the functions which are required for controlling and monitoring a classroom or laboratory.</p> <p>Everything is contained in the basic package, from the simple release of the workstations right up to the graphical overview of the classroom.</p> <p>In order to simplify the control and configuration of the classrooms, the ELABO Software provides the option of combining several work stations in groups and then controlling them together. All important functions and switching statuses are displayed graphically on the central PC. These are:</p> <ul style="list-style-type: none"> <li>Emergency stop visualization</li> <li>Room release</li> <li>Voltage release 50 V</li> <li>Voltage release 230 V/400 V</li> <li>Remote control and display of ELABO lowering technology</li> </ul> <p>Note: Use of the software requires the relevant hardware.</p>	<p>N1-5A</p>

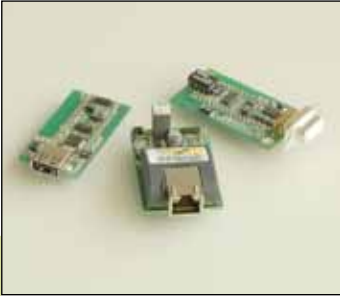
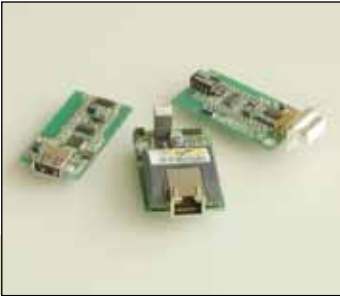




## Network equipment



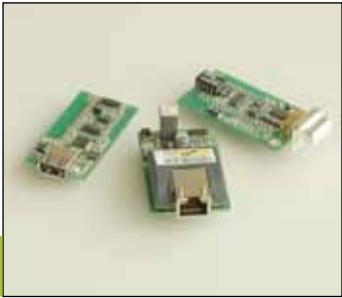





	Technical specifications	Article Number
<p><b>Superstructure network</b></p>  	<p>Superstructure network Basic Industrial standard 8-way switch Power supply unit Cable set -for incorporation in Elabo superstructures</p>	<p>N3-1A</p>
<p><b>Superstructure network</b></p>  	<p>Superstructure network with VLAN Industrial standard 8-way switch for VLAN Power supply unit Cable set -for incorporation in Elabo superstructures</p>	<p>N3-1V</p>
<p><b>Superstructure network</b></p>  	<p>Superstructure network with WLAN -Access point 8-way switch incl. WLAN Power supply unit Cable set -for incorporation in Elabo superstructures</p>	<p>N3-1W</p>
<p><b>Network module</b></p>  	<p>Network module Basis with 8 digital inputs and outputs for the following applications: Workstation group release / workstation release Recording emergency stop activation Table lowering control</p> <p>Note: Essential control software: see section on Virtual Equipment</p> <hr/> <p>Network module Basis with 8 digital inputs and outputs for the following applications: Workstation group release / workstation release Recording emergency stop activation</p> <p>Note: Essential control software: see section on Virtual Equipment</p>	<p>N3-2A</p> <hr/> <p>N3-2C</p>

# 6 HU interface system

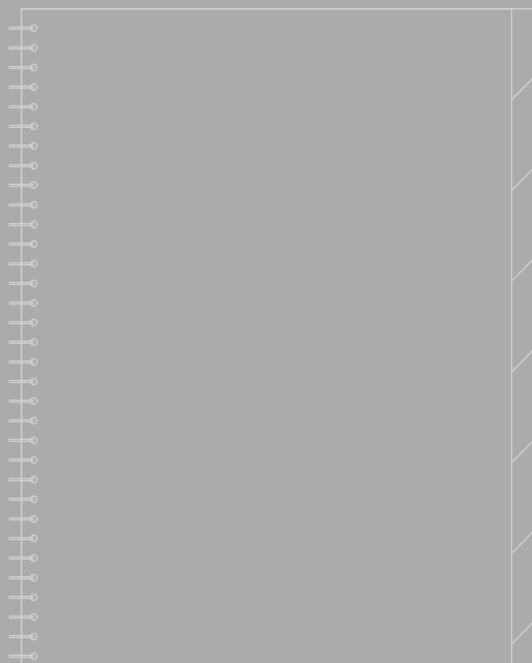
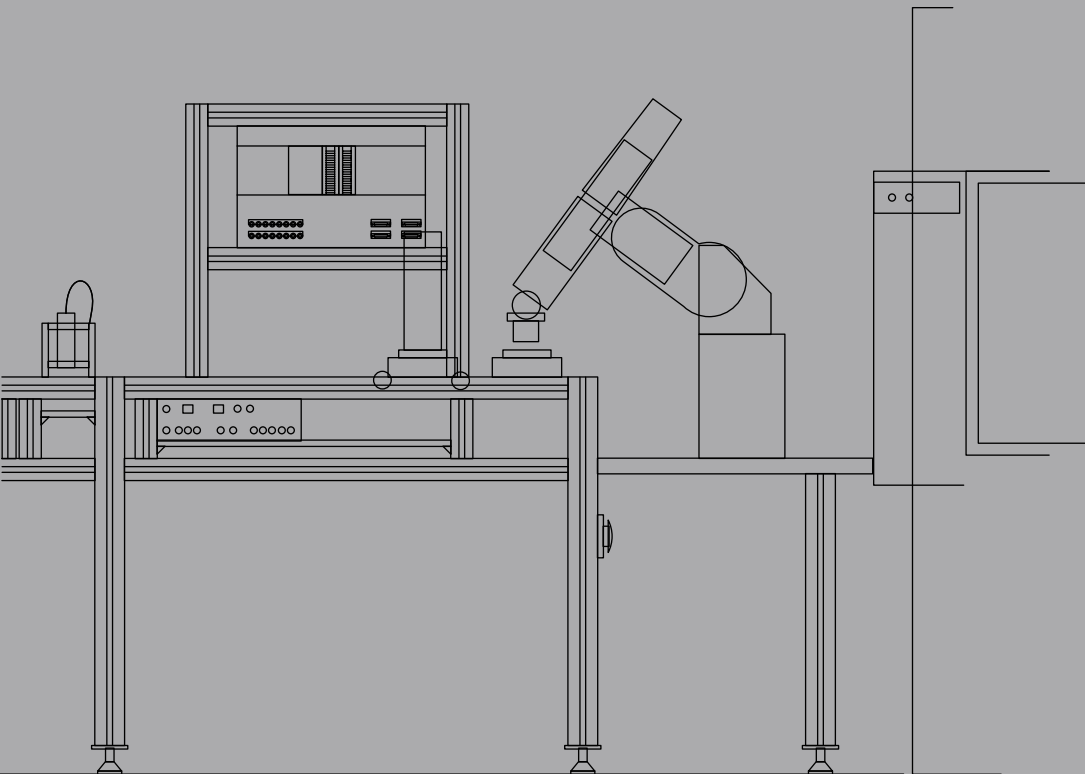
		Technical specifications	Article Number
<b>6 HU plug-in, single</b>		Interface for 6 HU/19" plug-in system Interface type: RS232 The interface connections are located on the rear of the module.	N3-3S Z101
		Interface type: Ethernet incl. 2 m patch cable	N3-3S Z102
		Interface type: USB	N3-3S Z103
<b>6 HU plug-in, double</b>		ELABO Option Interface for double 6 HU / 19" stabilizer system Interface type: 2x RS232 The interface connections are located on the rear of the module.	N3-3T Z101
		Interface type: 2 x Ethernet incl. 2 x 2m patch cables	N3-3T Z102
		Interface type: 2 x USB	N3-3T Z103



## Interface system 3 HE

		Technical specifications	Article Number
<b>3 HU board unit, single</b> 		ELABO Option Interface for board system 3 HU Interface type: RS232 The interface connections are located on the rear of the module.	N3-4P Z101
		Interface type: Ethernet incl. 2 m patch cable	N3-4P Z102
		Interface type: USB	N3-4P Z103
<b>3 HU board unit, double</b> 		ELABO Option Interface for double board 3 HU Interface type: 2 x RS232 The interface connections are located on the rear of the module.	N3-4Q Z101
		Interface type: 2 x Ethernet incl. 2 x 2m patch cables	N3-4Q Z102
		Interface type: 2x USB	N3-4Q Z103
<b>3 HU cassettes, single</b> 		ELABO Option Interface for Plug-in System 3 HU incl. front panel 12 HP Interface type: RS232 The interface connections are located on the rear of the module.  Note: The interface is positioned on the side of the basic unit This means that the unit is 12 HP wider.	N3-4S.3Z101
		Interface type: Ethernet incl. front panel 12 HP and 2 m patch cable	N3-4S.3Z102
		Interface type: USB incl. front panel 12 HP	N3-4S.3Z103
<b>3 HU cassettes, double</b> 		ELABO Option Interface for double stabiliser system 3 HU incl. front panel 12 HP Interface type: 2 x RS232 The interface connections are located on the rear of the module.  Note: The interface is positioned on the side of the basic unit This means that the unit is 12 HP wider.	N3-4T.3Z101
		Interface type: 2 x Ethernet incl. front panel 12 HP and 2 x 2 m patch cables	N3-4T.3Z102
		Interface type: 2 x USB incl. front panel 12 HP	N3-4T.3Z103

# Teaching Materials





# Teaching Materials

## Tools. Trainings. Excellence in teaching

Good, up to date, subject-specific quality. Well thought out. Complete programme. Can be applied immediately. And all from a single source. These are the demands that are made of Elabo teaching materials and training tools. Our clients put their trust in our experience. We accept the challenge and support German and international training facilities with didactic packages. For comprehensive training of the many different electronics professions and complete coverage of fields of learning.



The teaching materials include clearly laid out descriptions to aid students with their experiments, which is an appreciable aid in learning success later on. All the functions and connections are marked optically and arranged in a way that is easily understood by schoolchildren and students.

The short connections to the supply equipment mean that there are no cables to spoil the view, making the experiments readily comprehensible. The clear structures make it much easier for teachers to check correct assembly and to quickly help the students if any errors are found – e.g. in the wiring.

### Teachware

Experience and professionalism always pay off: Elabo users purchase complete lesson concepts from us with all the necessary teaching materials, all compiled by experts in teaching these subjects.

### Didactic Teaching Materials

The teaching materials build the core, both in relation to the specific subject and the education theory: the boards with original industrial materials mounted on them, with clear, realistic symbols and circuit diagrams and secure connections simulate practical experience in an authentic way.

The training boards are hung in the experiment frames. Equipment modules and other circuit components are pre-mounted simply on the boards without the use of tools. The electrical connections are usually fed to sockets so that a circuit structure can be produced with safe laboratory cables and without tools.

### Experiment Boxes

Experiment boxes are transparent mounts for installation materials and construction elements. These can be positioned as desired on a perforated metal panel using grid nibs. This allows the creation of flexible circuits of all kinds.

The technocards are a great aid for trouble-free teaching. They contain important information on the function and handling of various elements, e.g. PLC control. Technocards have the same format as the board to which they are allocated and are inserted into the frame together with the board.



### Materials for Trainees

The schoolchildren or students are given exercises that correspond to real work situations, worked experiments and a series of experiments with circuit diagrams and technical documentation on the construction components.

### Available as Print or Digital Versions

The subject-specific contents, safety notes and didactic recommendations are summarized in printed or digital manuals, whichever form is most suitable for the user.

### Seminars and Training Sessions for Teachers

Technical progress in electronics is advancing fast. Norms and guidelines are being revised. Knowledge must always be brought into line with current levels. Elabo supports teachers and trainers with seminars and training sessions to further develop their practical competence.



Well-organized and compiled documentation is available for each teaching topic. Many of the exercises are collected into projects. There are versions of the documentation for students and for teachers. The students are also given instructions on how to use the Internet as a modern source of information on construction components and the way they function. This provides them with methods for professional information gathering in practice.

Elabo teaching materials are designed for flexibility and long-term use. This is why complex teaching items have a modular structure. This allows the teacher to cover various technical concepts, for example in sensor technology, control engineering and interface technology. The adaptation of new components also allows continual alignment with current technical standards.



Experiment boxes are important components in Elabo's range of teaching materials. Original components from industrial applications – for example light switches – are installed in transparent, plexiglas boxes, making the connections and functions easy to see but keeping them protected from dirt and damage.

Elabo supports teachers with a continually supplemented programme of seminars, e.g. on the topics: automation engineering, drive technology, safety technology, building communications, micro-controller technology, network systems and protective measures.





# Teaching Materials

## Versatile, completely up to date Range of Topics

Elabo teaching materials are the perfect support for training in the various sectors of electronics. They also cover various levels of complexity: resistance, operational amplifiers and circuit breakers, switching actuators, microprocessors and programmable logic controllers (PLC). The spectrum of topics is extremely wide.



### Safety Technology

Elabo supplies equipment and materials for teaching the various levels of complexity in safety technology. The programme ranges from instruction in safety technology using contactors and safety relays through to safety technology with optical systems and opto-electronic protection equipment and its muting. The challenging programmes turn their attention to the error-free bus system AS-I amongst other things.

### Automation Technology

Automation technology is one of the most challenging applications in electronics. The lesson modules deal with all three modes of automated systems: the 'install' mode, which concentrates on the adjustment and coordination of parts and movements in relation to one another (before initial operation and after component changes), the 'manual' mode, which is used, for example, during testing and the 'automatic' mode in which the system runs continuously and controls itself.

Some topics in the training projects are: pallet and buffer support, positioning a tool on a transfer system, initial operation with service operation, speed monitoring and monitoring and control using a touch panel. This is where Elabo tables are used, fitted with specialized track systems. They are used to mount miniature models that are used to simulate different types of automated processes.

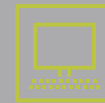


Expandable  
Modules and other  
topics that might be  
interesting...



### Control Technology

Control technology is a basic subject for nearly all lessons in electrics. The range of topics includes manually operated switches and contactors and deals, for example, with compact controls (Logo) and particularly with programmable logic controllers (PLC). The trainees and students develop hallway and staircase lighting and motor controls in compact experiments. Some complex exercises are carried out within the projects such as conveyor belt controls, analogue value processing and field bus systems.



**Virtual Equipment** by Elabo provides network technology with switches that are integrated into the coverable superstructures. Using the 4Room module in the Elabo Software EHP EduLab you can not only select individual or all positions but also individually define and programme various groups.  
> [More on page 109](#)



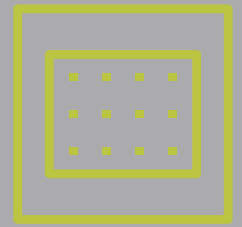
**Inserts and Electronic Equipment** by Elabo, such as measurement equipment and power supply units, form the technical basis element for challenging specialist teaching. Most can communicate and can be equipped with interfaces for networking.  
> [More on page 75](#)



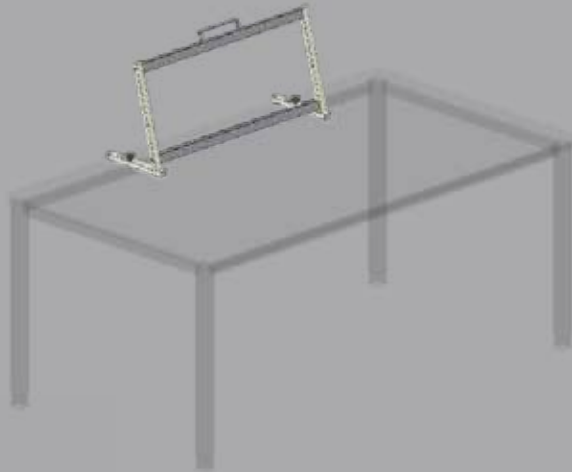
**Experiment Mounts** are platforms for practical experiments. They connect directly with the superstructures to form an effective, functional and space-saving unit.  
> [More on page 125](#)



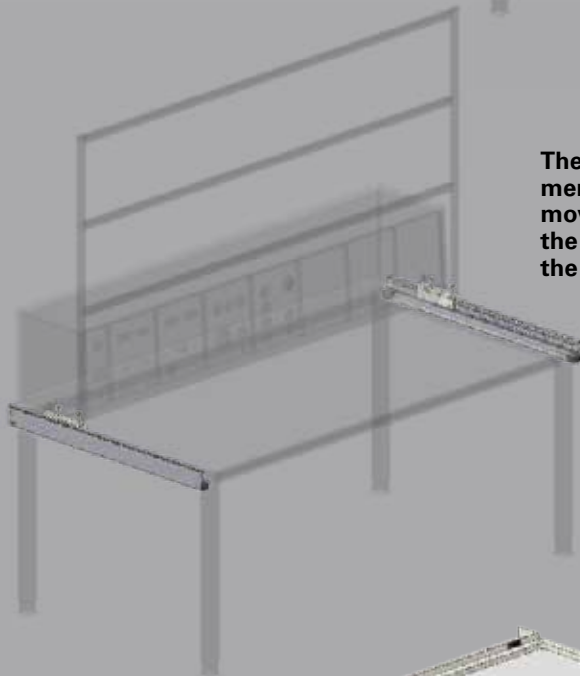
# Experiment Mounts



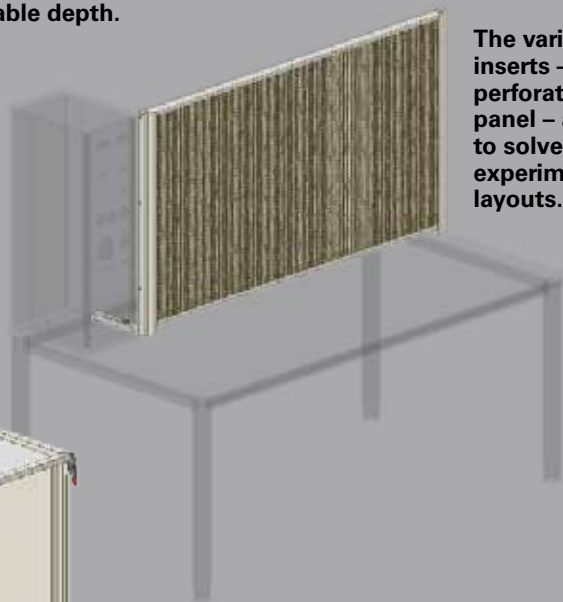
The portable Elabo experiment frames can be used on any table.



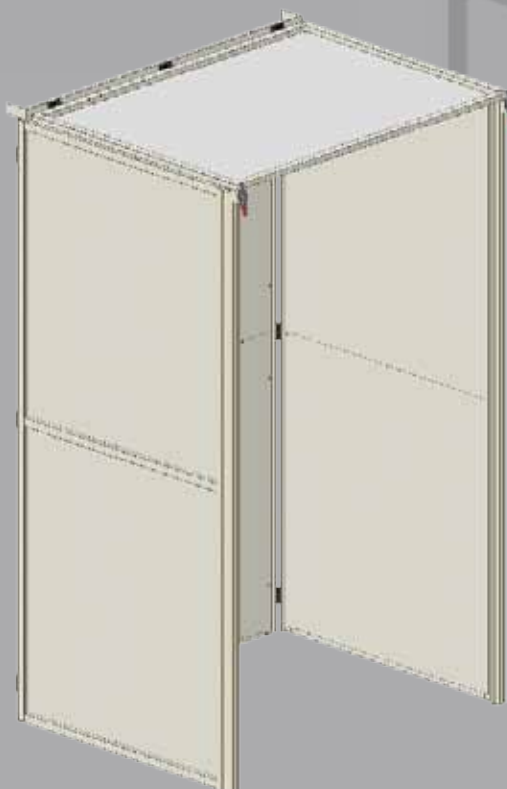
The double row Elabo experiment frames are mounted and moveable; this system allows the depth to be adjusted across the entire table depth.



The various frame inserts – here the perforated metal panel – allow students to solve most of the experiments and layouts.



Building installations are simulated in the installation cabin. It can be folded and thus stored compactly while not in use.





## Experiment Mounts

**Very realistic. Perfect for learning from a practical example**

Students collect practical experience on electro-technical tasks using Elabo experiment mounts. The experiment mount makes the experiment structure highly visible and allows perfect accessibility. The table remains free for tools, didactic literature and notes. It is suitable for use with all standard teaching materials. Special demonstration elements for teachers are included in the range. All standard teaching equipment can be used on the frames and boards.



Experiment elements can be mounted on the perforated metal panels quickly and easily. The experiment layouts are clear. At the same time the transparency helps to achieve a light classroom and a good classroom atmosphere. The perforated panels are perfect for installations that are used repeatedly for practical teaching – as here safety technology with light barriers. The perforated panel with the installation is removed from the frame for compact storage and re-used as necessary.





Elabo experiment frames are flexible mounts for insert elements like mounting sections and perforated panels. They are used for the installation of experiment setups and for hanging training boards.

Elabo Experiment mounts are an economic solution that ensures maximum flexibility and an orderly, clear workplace.



### Flexible Application

The experiment frames can accommodate all application mounts such as boards and perforated panels. Depending on the design and width the experiment frames are freestanding or fixed to a table top, screwed onto the superstructure, demo mobiles or MTL mobiles. Portable versions are also available in which the experiment frames are mounted on rollers that are fastened with clamping bolts for easily release.

### Perforated Metal Plates

Perforated metal panels permit the free and flexible setup of circuit and measurement tasks. They hang inside the experiment frame. A version with legs allows direct mounting on tables, superstructures and mobiles.

With its square perforations and with additional mounting material the perforated panels can also be used to set up practical exercises with standard surface mounting and installation material.

### Wooden Walls

Wooden walls made of lumbar-core plywood are very well suited for training the use of screws, clips and nails in electronic installations. They can accommodate entire installations and can be hung in the experiment frame.

### Installation Cabin

Special installation cabins are used to simulate building electrics. The cabin comprises two sidewalls, one back wall and a ceiling, each made of perforated metal panels. It can be quickly built and dismantled and uses very little space when stored.



Pre-installed VDE (Association of German Electricians) measurement units mean that Elabo can be used for training in the model case 'Electrical Installation in a Detached House'. The students take all the necessary measurements and record them correctly.





# Experiment Mounts

## Detail qualities – aligned to the requirements in practical lessons

Elabo experiment mounts were produced based on extensive experience gathered while training apprentices in skilled trades. Numerous structural solutions testify to a differentiated knowledge of circumstances in real teaching situations and practical requirements.

Depth adjustment means that the experiment frame can be quickly moved from the working position to the 'parking position'. As can be seen here it is also possible to move the frame above a setup.



### Adjusting the Depth of the Experiment Frame

The adjustable depth of the experiment frame achieves an ideal combination of ergonomics and space-saving: if work is carried out on a board that is hung in the frame the entire experiment mount can be moved forwards to the front of the table – to the best position for the user to grip it with a relaxed posture that allows better concentration. The frame is locked using two tension screws. If no work is currently being carried out on the frame, then it can be pushed back to clear the table for other work.

Using special Elabo anchor bolts, regular Spax screws can be used for attaching the experiment objects on the slotted sheet. Almost any element can be attached with them. Once the experiment is over, the anchor bolts are removed; no holes remain.



### Universal Application

The experiment frames are designed to accommodate boards in standard DIN A4 format. Thus they can also be used with products from other manufacturers.

### Sound Proofing

The H-sections on the experiment boards are also available with brush strips in order to achieve the quietest classroom possible. They compensate for the movement of the board in the rail on the frame. It is possible to use boards from various manufacturers of teaching materials but the operating elements can make a noise during use. The brush strips have the advantage of flexibility and eliminate most of the disadvantages.



Quieter classrooms promote a concentrated working atmosphere. Elabo supports consistent sound proofing with various elements such as the optional brush strip.



## Expandable Modules

### This may also interest you...



**Teaching Materials** made by Elabo and its partners are developed to fit Elabo experiment mounts. When combined they form a didactically excellent, professional and lastingly useful unit.

> [More on page 119](#)



**Inserts and Electronic Equipment** by Elabo, such as measurement equipment and power supply units form the technical basis element for challenging specialist teaching with experiment mounts.

> [More on page 75](#)



**Superstructures** integrate and protect the power supply and measurement and testing equipment; the power supply network is included in the scope of delivery. The superstructures are positioned on tables and also used to mount experiment frames.

> [More on page 45](#)



**Table Systems** from the range of Elabo modules form the basis for subject-specific classrooms. Experiment mounts can be fitted on them simply and exactly.

> [More on page 27](#)

### Structural Characteristics, Materials and Colours

The experiment frame is available with 1, 2 or 3 rows.

The side sections of the experiment frame are L-shaped square piping with a section of 30 x 20 mm. A nut in the short legs enables adjustment of the position on the surface. Knurled M6 screws ensure quick and easy depth adjustment and dismantling of the experiment frame.

The H-shaped cross connection between the side elements consists of an anodised aluminium section. The two nuts allow fast and flexible use of the training board.





The perforated metal frames are made of 1.5 mm steel sheet. The square perforations on the panels are vertical and each perforation is 5 x 10 mm with a strip width of 3 mm.

The steel frames on the experiment mounts and the perforated metal walls are light grey RAL 7035 powder-coated.







## Experimental frames

		Technical specifications	W x D x H	Article Number
<b>Experimental frame 1 tier free-standing</b>		H-section frame 1 tier DIN A4, angled backwards at 15°	850 260 380	60-1Q
<b>Experimental frame 2 tiers free-standing</b>		H-section frame 2 tiers DIN A4, free-standing with T feet	850 310 700	60-1R
<b>H-section frame 1 tier for mounting on superstructure</b>		H-section frame 1 tier DIN A4, 2 H-sections L1900	1960 250 365	60-1A ZB196
		H-section frame 1 tier DIN A4, 2 H-sections L1700	1760 250 365	60-1A ZB176
		H-section frame 1 tier DIN A4, 2 H-sections L1500	1560 250 365	60-1A ZB156
		H-section frame 1 tier DIN A4, 2 H-sections L1400	1460 250 365	60-1B ZB146
		H-section frame 1 tier DIN A4, 2 H-sections L1100	1160 250 365	60-1C ZB116
<b>H-section frame 1 tier for table mounting</b>		H-section frame 1 tier DIN A4, 2 H-sections L1930	1990 250 365	60-1A ZB199
		H-section frame 1 tier DIN A4, 2 H-sections L1730	1790 250 365	60-1A ZB179
		H-section frame 1 tier DIN A4, 2 H-sections L1530	1590 250 365	60-1A ZB159
		H-section frame 1 tier DIN A4, 2 H-sections L1430	1490 250 365	60-1B ZB149
		H-section frame 1 tiers DIN A4, 3 H-sections L1130	1190 250 365	60-1C ZB119
<b>H-section frame 2 tiers for mounting on superstructure</b>		H-section frame 2 tiers DIN A4, 3 H sections L1900	1960 250 685	60-1D ZB196
		H-section frame 2 tiers DIN A4, 3 H-sections L1700	1760 250 685	60-1D ZB176
		H-section frame 2 tiers DIN A4, 3 H-sections L1500	1560 250 685	60-1D ZB156
		H-section frame 2 tiers DIN A4, 3 H-sections L1430	1460 250 685	60-1E ZB146
		H-section frame 2 tiers DIN A4, 3 H-sections L1130	1160 250 685	60-1F ZB116

		Technical specifications	W x D x H	Article Number
<b>H-section frame 2 tiers for table mounting</b>		H-section frame 2 tiers DIN A4, 3 H-sections L1930	1990 250 685	60-1D ZB199
		H-section frame 2 tiers DIN A4, 3 H-sections L1730	1790 250 685	60-1D ZB179
		H-section frame 2 tiers DIN A4, 3 H-sections L1530	1590 250 685	60-1D ZB159
		H-section frame 2 tiers DIN A4, 3 H-sections L1430	1490 250 685	60-1E ZB149
		H-section frame 2 tiers DIN A4, 3 H-sections L1130	1190 250 685	60-1F ZB146
<b>H-section frame 3 tiers for mounting on superstructure</b>		H-section frame 3 tiers DIN A4, 4 H-sections L1900	1960 250 1005	60-1H ZB196
		H-section frame 3 tiers DIN A4, 4 H-sections L1700	1760 250 1005	60-1H ZB176
		H-section frame 3 tiers DIN A4, 4 H-sections L1500	1560 250 1005	60-1H ZB156
		H-section frame 3 tiers DIN A4, 4 H-sections L1400	1460 250 1005	60-1J ZB146
		H-section frame 3 tiers DIN A4, 4 H-sections L1100	1160 250 1005	60-1K ZB116
<b>H-section frame 3 tiers for table mounting</b>		H-section frame 3 tiers DIN A4, 4 H-sections L1930	1990 250 1005	60-1H ZB199
		H-section frame 3 tiers DIN A4, 4 H-sections L1730	1790 250 1005	60-1H ZB179
		H-section frame 3 tiers DIN A4, 4 H-sections L1530	1590 250 1005	60-1H ZB159
		H-section frame 3 tiers DIN A4, 4 H-sections L1430	1490 250 1005	60-1J ZB149
		H-section frame 3 tiers DIN A4, 4 H-sections L1130	1190 250 1005	60-1K ZB119
<b>H-section frame for table mounting 2 tiers DIN A4, suitable for energy columns type 30-OP</b>		H-section frame 2 tiers DIN A4 (for energy columns), 3 H-sections L1650	1710 250 835	60-1L ZB171
		H-section frame 2 tiers DIN A4 (for energy columns), 3 H-sections L1450	1510 250 835	60-1L ZB151
		H-section frame 2 tiers DIN A4 (for energy columns), 3 H-sections L1250	1310 250 835	60-1M ZB131
		H-section frame 2 tiers DIN A4 (for energy columns), 3 H-sections L1150	1210 250 835	60-1M ZB121

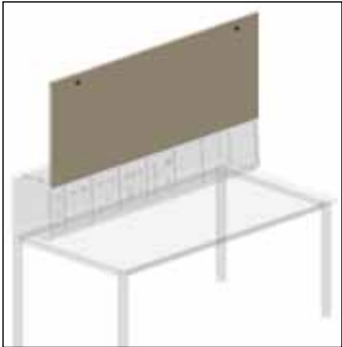




## Metal patchboard frames

		Technical specifications	W x D x H	Article Number
<b>Metal patchboard frames</b>		Elabo metal patchboard frame, table width 2000 mm	1990 250 685	60-2D ZB199
		Elabo metal patchboard frame, table width 1800 mm	1790 250 685	60-2D ZB179
		Elabo metal patchboard frame, table width 1600 mm	1590 250 685	60-2D ZB159
		Elabo metal patchboard frame, table width 1500 mm	1490 250 685	60-2E ZB149
<b>Metal patchboard frame combined with energy column</b>		Elabo metal patchboard frames, suitable for table width of 2000 mm, with energy column type 30-OP	1710 250 835	60-2L ZB171
		Elabo metal patchboard frames, suitable for table width of 1800 mm, with energy column type 30-OP	1510 250 835	60-2L ZB151
		Elabo metal patchboard frames, suitable for table width of 1600 mm, with energy column type 30-OP	1310 250 835	60-2M ZB131
		Elabo metal patchboard frames, suitable for table width of 1500 mm, with energy column type 30-OP	1210 250 835	60-2M ZB121
<b>Metal patchboard walls for H-section frames</b>		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1DZB196	1895 45 687	60-3D ZB196
		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1DZB176	1695 45 687	60-3D ZB176
		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1DZB156	1495 45 687	60-3D ZB156
		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1EZB146	1395 45 687	60-3E ZB146
		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1FZB116	1095 45 687	60-3F ZB116
		<b>Metal patchboard wall for H-section frame combined with energy column</b>		Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1LZB171, table width 2000 mm
Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1MZB151, table width 1800 mm	1445 45 837	60-3M ZB151		
Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1MZB131, table width 1600 mm	1245 45 837	60-3M ZB131		
Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1MZB121, table width 1500 mm	1145 45 837	60-3N ZB121		
Elabo removable metal patchboard wall, suitable for hanging in experimental frame 60-1MZB91, table width 1200 mm	845 45 837	60-3P ZB91		


# Wooden walls

## Installation cubicles



		Technical specifications	W x D x H	Article Number
<b>Wooden panel for hanging in H-section frames</b>		Elabo experimental wooden panel, for hanging in experimental frames, table width 2000 mm	1960 19 685	60-4D ZB196
		Elabo experimental wooden panel, for hanging in experimental frames, table width 1800 mm	1760 19 685	60-4D ZB176
		Elabo experimental wooden panel, for hanging in experimental frames, table width 1600 mm	1560 19 685	60-4D ZB156
		Elabo experimental wooden panel, for hanging in experimental frames, table width 1500 mm	1460 19 685	60-4E ZB1460
		Elabo experimental wooden panel, for hanging in experimental frames, table width 1200 mm	1160 19 685	60-4F ZB1160
<b>Installation cubicle for wall mounting</b>		<p>Elabo installation cubicle for carrying out practical installation exercises. The installation panels have a mesh of 5 x 10 mm so that the installation materials can be mounted in any way desired.</p> <p>When not in use, the cubicles can simply be folded up and stored with minimum space requirement.</p> <p>The entire cubicle is powder-coated in light grey RAL 7035. Mounting accessories are included for fixing to the wall.</p> <p>The installation cubicle can also be supplied as a free-standing unit.</p>	1200 1000 2000	60-5B
<b>InForm clip-in frame section</b>		InForm removable wall frame consisting of two aluminium sections with mounting fixtures		
		for table width 2000 mm	1928 18 35	76-1Y
		for table width 1800 mm	1728 18 35	76-1A
		for table width 1600 mm	1528 18 35	76-1K
		for table width 1500 mm	1428 18 35	76-1B
		for table width 1200 mm	1128 18 35	76-1C



## Accessories

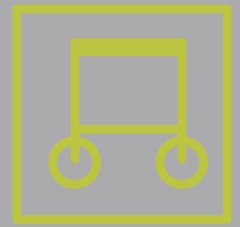
		Technical specifications	W x D x H	Article Number
<b>Variable depth adjustment</b>		Elabo ball bearing sliding frame for depth adjustment of experimental frames on tables with a depth of 800 mm upwards		60-6A ZT80
		Elabo ball bearing sliding frame for depth adjustment of experimental frames on tables with a depth of 900 mm upwards		60-6A ZT90
		Elabo ball bearing sliding frame for depth adjustment of experimental frames on tables with a depth of 1000 mm upwards		60-6A ZT100
<b>Mounting accessories Set 1</b>		Set 1 consisting of: 100 plugs 5 x 5 mm, 50 Spax screws 3.5 x 12 mm, 30 Spax screws 3.5 x 20 mm, 20 Spax screws 3.5 x 30 mm		65-2D
<b>Mounting accessories Set 2</b>		Set 2 consisting of: 100 plugs 5 x 10 mm, 50 Spax screws 3.5 x 12 mm, 30 Spax screws 3.5 x 20 mm, 20 Spax screws 3.5 x 30 mm		65-2E
<b>Elabo brush strips</b>		Brush strips for inserting into H-sections for sound insulation during switching exercises using experimental boards. Each H-section requires two brush strips per tier. (price per metre)  Please specify required length or experimental frame type.		65-2R
<b>Special plugs</b>		Special plastic plugs 5 x 5 mm, 100 per pack		65-2F
		Special plastic plugs 5 x 10 mm, 100 per pack		65-2G



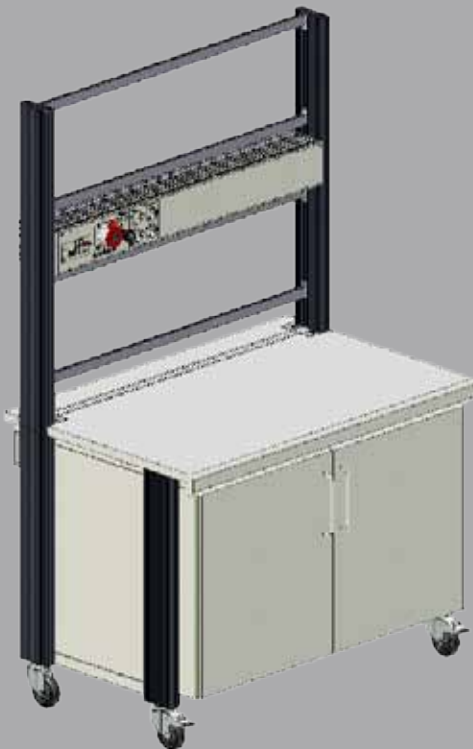
	Technical specifications	W x D x H	Article Number
<b>Elabo Spax screws</b> 	Spax screws 3.5 x 12 mm, 100 per pack		65-2H
	Spax screws 3.5 x 20 mm, 100 per pack		65-2J
	Spax screws 3.5 x 30 mm, 100 per pack		65-2K
<b>Removable metal patchboard</b> 	Removable metal patchboard for H-section frame 1 tier A4.  Two twist locks are located at the upper edge of the metal patchboard for securing in place. The metal patchboard with 5 x 10 mm rectangular mesh and a 3 mm web is powder-coated in light grey.	580 5 29	65-2S



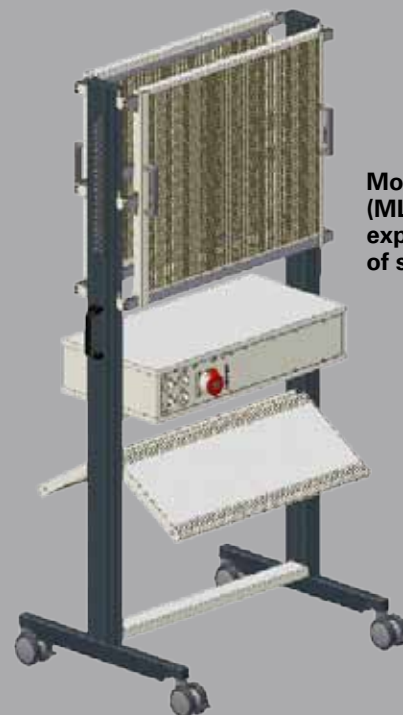
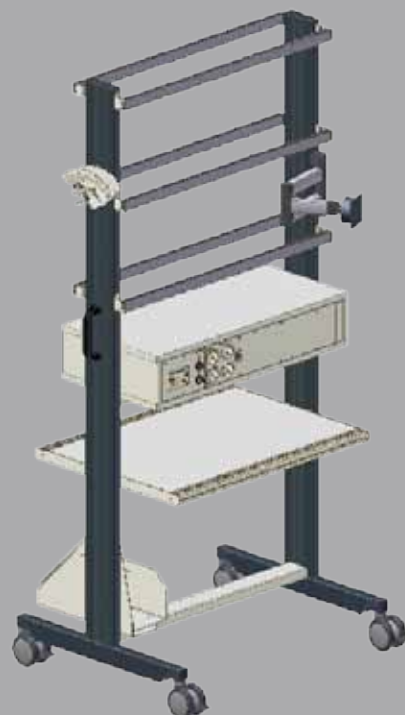
# Mobile Furniture



**Mobile furniture for automated technology. The table top is equipped with a T-Nut section for the attachment of automated components – such as transfer systems or handling units**



**Demo mobile units are used for demonstration of circuit designs and similar, before the whole class.**



**Mobile Learning Trainers (MLT) expand the experimental field of students.**



## Mobile Furniture

### Greater Usable Surface. More Variety in Class

Elabo mobile units are of modular design; they can be supplied in very individual styles. The mobile units are highly mobile and extraordinarily variable; the most varied teaching material and equipment can be attached to them. The mobile units support teachers in structuring a lively, professional and very concrete class. They offer students, as required, a welcome expansion of their work surface. Depending on the type, mobile units can match movable tables, containers and wall systems or tool carriers; a large range of tasks can be covered with this selection.

Clarity raises the learning success considerably. The display models for the training course are installed on demo mobiles before class begins. In this way, an uninterrupted learning period is achieved.



Profile boards enable the precise installation of automated components. By installing them on linked mobile units, they can be developed, built up and used in several classes.

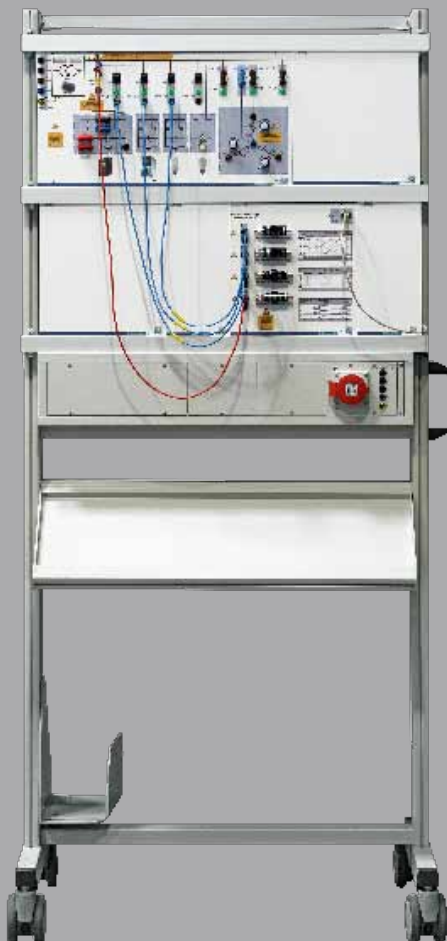
#### Demo mobile units for teachers

Important teaching contents are imparted with particular effectiveness by using sample configurations. In order to use the learning time of the students to the maximum, pilot experiments are prepared with circuits and measuring instruments outside of classes in the staff room, and are then brought out to the training area – on Elabo mobile demo units. Mobile demo units are available as floor units with lockable drawers, or a cabinet with folding doors, as well as superstructures and experimental frames, unless modified individually by the customer.

After the demonstration, the class room is freed again for other training courses, but the pilot experiment can be removed from the room on the mobile unit and be used again in a later training class.



Movable Storage Space: Training boards can be stored in the mobile unit, secure from damage. Thus, they are always at hand if the test is modified or amplified during the demonstration.



### The Mobile Learning Trainer

Elabo has developed the Mobile Learning Trainer (MLT) for students. They build experiments and circuits on it, test them and put them into operation. Generally, MLT has shelving, a superstructure with electric plug-ins for voltage supply, as well as experimental frames. Optionally, PC brackets can be fitted, instead of shelves. In some cases, floor units are also required. The compact, slim structure is typical of their design; in this way, in normal room conditions, they can be moved easily between the rows of tables. Setup and take-down at the beginning and end of classes can be carried out swiftly.

On Mobile Learning Trainers (MLT) students practise on real test rigs. The MLT can be fully equipped with electric appliances (AC and DC), which makes it movable and independent of electronics tables.

### Special mobile units for the automated technology class

There are special solutions in the Elabo range for different fields of expertise. The mechatronics panel is an example of a special solution. The solution is also very well suited to automation technology classes. The presentation of conveyor system is an important subject in automation technology training. The special Elabo mobile units used for this purpose are equipped with a large section panel, on which a great variety of experimental models can be mounted in any position desired. In this way it is possible to reconstruct conveyor systems with the greatest variety of degrees of automation, in a manner that is true to life.





# Mobile Furniture

## Long lasting solutions for intelligent mobility

The mobile units distinguish themselves by an abundance of interesting detail ideas derived from practical experience. Their construction is also especially practice-orientated: the mobile units are very stable; screwing and twisting on a training item causes hardly any vibrations. Mobile units cope without problem with the strains of classroom activity; the bearing parts are of a very robust construction, and surfaces are solid and scratch-resistant.

Large mounting surfaces can be assembled and linked together quickly and without complication, with mobile experiment mounts.



### InForm: the perfect basis for demo mobile units and MLTs

The mobile demo units and MLTs are based on the Elabo InForm System with InForm aluminium extrusion section. Depending on assembly variations, the respective vertical side sections are expanded upwards. Storage elements, supply conduits, experimental frames or even perforated metal walls can be inserted between the vertical sections. Also, further accessories, such as handles, wire holders, monitor swivel arms and PC brackets can be mounted laterally on the vertical sections without problem. Their positions can be steplessly varied.

### Mobile and manageable

The mobile units are equipped with four double swivel casters, the two front casters being lockable in position. The casters have a diameter of 100 mm, so that door thresholds present no barrier.



The integrated power supply on the mobile boards shortens the paths of wires, increases clarity and raises safety levels.

With the Elabo Mediamobile, every available space can be utilized without problem, as long as there is enough room, for presentations with video and other projectors. Also the screen for the projector is integrated in the mobile unit. Intelligent folding mechanisms ensure that the mobile unit when being transported is compact in size, and doors and narrow corridors present no obstacle.



### Mounts for large experiments

Mobility produces flexibility. If especially large experiment or demonstration platforms are needed, several mobile units can be linked together. For instance, if complex conveying processes are to be simulated, the large experimental field is critical for replicating operational reality.

### Power supplies

A special 3 HU supply conduit can be integrated between the experimental frames. It supplies the Training boards with power. Short and direct connections make the test rigs neater and increase safety.



Four casters with a diameter of 100 mm allow to move the mobile unit around with ease.



# Expandable Modules

## This may also interest you...

The InForm column is ideal for attaching all kinds of supports, devices and accessories.



**Teaching materials** of the highest quality are offered by Elabo for all requirements in training for the electrical trades. Boards with pre-assembled original industrial material and circuit diagrams as well as secure connections are the core of the teaching materials. They simulate practical life in authentic ways. Elabo mobile units are exceptionally well suited for supporting educational experiments.  
[> More on page 119](#)



**Inserts and electronic devices** with Elabo power supply units and testing and measuring devices form the ideal set-up for professional experiments on mobile units with experiment mounts.  
[> More on page 75](#)

### Materials and colours

#### InForm table top and table edges

The table tops of mobile units have a standard thickness of 30 mm and are laminated.

On the front, they are equipped with a removable edge. The three other edges of the board have an edge band with a thickness of 3 mm.

The table top surface has a very hard and abrasion-resistant plastic coat of 0.8 mm thickness. It is resistant to heat (up to 180°C for short periods), resistant to organic solvents, weak acids and bases, such as petrol (gasoline) and oil.

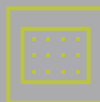
Colour: Light grey

#### The colours of the InForm Mobile Units

Light grey RAL 7035 colour variant lg  
 Basalt grey RAL 7012 colour variant bg  
 White aluminium RAL 9006 colour variant wa  
 Flame red RAL 3000 colour variant fr  
 Sapphire RAL 5003 colour variant sb

#### The mechatronics mounting panel

The section panel is made of anodized aluminium with T nuts in a 25 mm grid for universal insertion of automation models.



**Experiment mounts** are the platform for true-to-life experiments. They are installed directly on the mobile unit and, with them, form a valuable, training unit that efficiently saves space.  
[> More on page 125](#)



**Elabo table systems** in their various modules form the basis of state-of-the-art training rooms. They carry superstructures with inserts; mobile units are generally used as a supplement to the tables to expand the work space.

[> More on page 27](#)







**Superstructures** protect the electronic components. They offer additional storage, and integrate power supply, measurement and testing devices. The surface of the table remains free for work with the experimental objects.

[> More on page 45](#)



## Demonstration-cart Demonstration-cart accessories



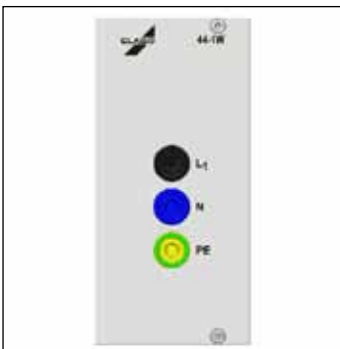
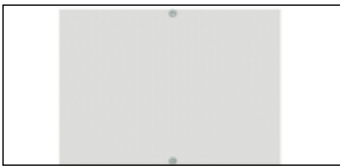
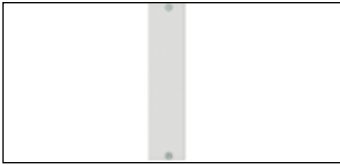
		Technical specifications	W x D x H	Article Number
<b>InForm demo table, mobile</b>		InForm demo table with flap, cable compartment, stiffening flange trough and double swivel casters with D = 100 mm. The two front casters can be locked. Underneath the table top there is a lockable floor unit with 3 Orga drawers and storage tray.	1200 800 895	77-7A
<b>InForm demo table, mobile</b>		InForm demo table, mobile, with flap cable compartment, H-bar and double swivel casters with D = 100 mm. The two front casters can be locked. Underneath the table top there is a lockable leaf door cabinet with middle wall and panel floors with grooved mats for DIN A4 experiment panels, mounted on two levels.	1200 800 895	77-7C
<b>Superstructures</b>		InForm superstructure frame for 2-level DIN A4 experimental panels. Adapted to InForm demo table	1200 123 874	77-7G
<b>Superstructures</b>		InForm superstructure frame for 2-level DIN A4 experimental panels. With 42-0F.3, 2 x 44-1L.3 power supply and empty panels. 3 m connector cable for rotary current with 16 A, Cekon plug and cable holder. With 3 HU / 215 HP channel system, equipped with 42-0F.3, 2 x 44-1L.3 and empty panels. Adapted to InForm demo table	1200 123 1024	77-7H

		Technical specifications	W x D x H	Article Number
<b>Demonstration-mobil 5</b>				
- Basis-Mobile		InForm basic mobile unit with large storage surface	800 700 1030	77-5A
- Vertical sections		InForm vertical sections (2) for extension of basic mobile unit	34 123 700	77-5C
- Clip-in frame		InForm clip-in frame section (1) for width of mobile unit of 860mm	786 18 35	77-5W
- Clip-in perforated panel		Clip-in perforated panel adapted for experiment frames on InForm bi. mobile units	766 45 687	77-5X
- InForm function tray		InForm function tray (cannot be inclined)	B786 T600	77-5F
		InForm function tray (inclined)	786 340 208	77-5G






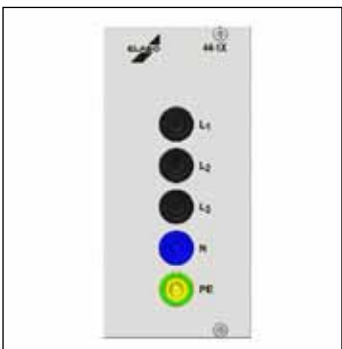
## Demonstration-cart

		Technical specifications	W x D x H	Article Number
<b>Demonstration-Mobile 9</b>		InForm basic mobile unit with large storage surface	860 700 1030	77-5A
- Basic-Mobile				
- Vertical Sections		InForm Vertical Sections (2) for extension of basic mobile unit	34 123 700	77-5C
- Clip-In Frame Section		InForm Clip-In Frame Section (1) for width of mobile unit of 860 mm	786 18 35	77-5W
- Clip-In Patchboard		Clip-In Patchboard adapted for hanging into experiment frames of InForm bi. Mobile units	766 45 687	77-5X
- Alu-Section Channel		3 HU/144 HP InForm supply channel system, connector cable with shockproof plug incl. compensation panel	786 160 142	77-5T Z01



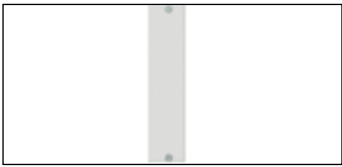



		Technical specifications	W x D x H	Article Number
- Mains Panel		<p>AC power-on 3 HU / 24 HP, 1/N/PE ~ 50 Hz 230 V 16 A, Euro insert panel, Equipped with: 1 FI 2-pole safety circuit breaker, 25 A nominal current, 30 mA nominal error current, 1 1-pole safety automaton, C 16 A, 1 key ON feeler, 1 OFF feeler, 1 contactor, 1 external conductor control light.</p> <p>Important: when using error current safety devices in classrooms and experimental rooms, VDE 0100, Part 723.4 must be complied with!</p>	B 121.9 H 128.5	42-0B.3
- Mains		<p>1-phase AC-supply, Euro 24 HP insert panel, Mains 1/N/PE~ 50 Hz 230 V / 16A on 4 shockproof outlets</p>	B 121.9 H 128.5	44-1L.3
- Safety lab jacks		<p>Mains voltage 12 HP, 1/N/PE ~ 50 Hz, Equipped with: 12 HP mains voltage, 1/N/PE ~ 50 Hz, Equipped with: 3 safety lab jacks</p>	B 60,4 H 128.5	44-1W.3
- Empty panels		36 HP / 3HU empty panel	B 182.9 H 128.5	40-1D.3
		6 HP / 3HU empty panel	B 30,4 H 128.5	40-1G.3



## Demo Trolley






		Technical specifications	W x D x H	Article Number
(Demonstration Mobile Unit 9, continued) Alternative:  - 3 HU table superstructure system		Alternative  3 HU table superstructure system, can be equipped on both sides with 2 x 144 HP. Corpus in floor with pull relief for mains connector,	786 160 142	77-5T Z03
- Mains Panel		Rotary current mains panel, ELABO 48 HP Euro insert panel Equipped with: 1 error current circuit breaker, 4 poles, type A, 25 A nominal current, 30 mA nominal error current, 1 3-pole B 16 A safety automat, 1 key ON feeler 1 OFF feeler 1 contactor 3 external conductor control lights  Important: when using error current safety devices in classrooms and experimental rooms, VDE 0100, Part 723.4 must be complied		42-0H.3
- Shockproof outlets		1-phase AC supply, 24 HP Euro insert panel, mains 1/N/PE- 50 Hz 230 V / 16A on 4 shockproof outlets		44-1L.3
- Safety lab jacks		12 HP mains voltage 3/N/PE ~ 50 Hz 230 / 400 V Equipped with: 5 safety lab jacks		44-1X.3


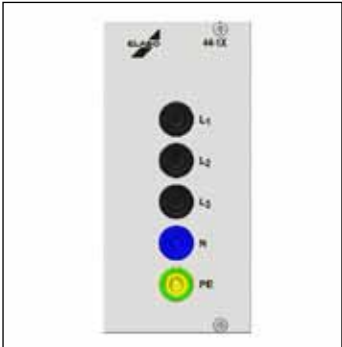
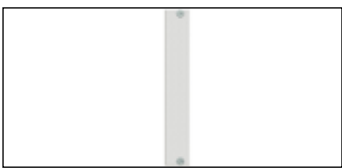

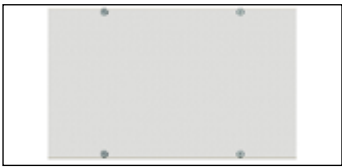
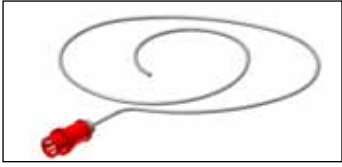



		Technical specifications	W x D x H	Article Number
- CEE outlet		24 HP mains voltage, 3/N/PE ~ 50 Hz 230 / 400 V, 16A on 1 CEE outlet.		44-2C.3
- Empty panel		36 HP / 3 HU empty panel		40-1D.3
		6 HP / 3 HU empty panel		40-1G.3
<b>Demonstration-cart MLT 1</b>				
- InForm Basic mobil		InForm basic mobile unit with transverse bar, with 4 caster brakes, diameter of casters D = 100 mm, without storage surface, only transverse bar for improved leg space. Inside width between sections: 806 mm.	880 700 1030	77-5A Z162354
- Vertical sections		InForm vertical sections (2) for extension of basic mobile unit	34 123 900	77-5C ZH900
- Stiffening flange		InForm accessories. Stiffening flange for InForm mobile unit, built as support console for 3 HU superstructure, with hole for mains connection adapted for 77-5H Z01 superstructure.	806 75 32	77-5V Z01





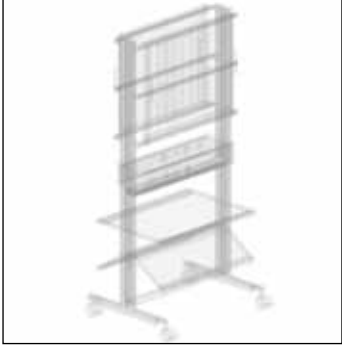


## Demonstration trolley


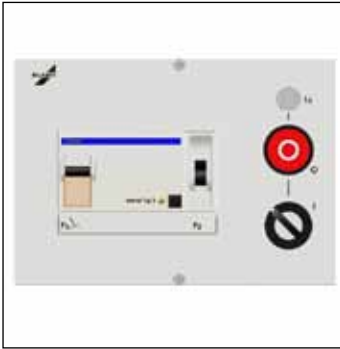


		Technical specifications	W x D x H	Article Number
(Demonstration trolley MLT 1 continued)		InForm inclined function tray	805 342 208	77-5G Z162354
- Inclined function tray				
- clip-in frame section		InForm clip-in frame section (1) for width of mobile unit of 880 mm, with special-reception lateral parts, so that the clip-in frame section can move farther forward. This way, deep learner boards can be inserted on both sides. Outer depth distance between front side and rear side of clip-in frame section: 220 mm.	874 18 35	77-5W Z162354
- Handle		InForm accessories. Black plastic handle for InForm mobile unit.	L 170	78-4U
- Table superstructure		3 HU table superstructure system both sides, can be equipped with 2 x 144 HP. Corpus in floor with pull relief for mains connector. Special depth: 240 mm, for mounting between InForm vertical section on 77-5A Z162354 mobile unit, height-adjustable.	806 240 171	77-5H Z01
- Shockproof plugs		1-phase AC supply, 24 HP Euro insert panel, mains 1/N/PE- 50 Hz 230 V / 16A on 4 Shockproof plugs	B 121.9 H 128.5	44-1L.3

		Technical specifications	W x D x H	Article Number
- CEE Steckdose		24 HP mains voltage, 3/N/PE ~ 50 Hz 230 / 400 V, 16A on 1 CEE plug.	B 121.6 H 128.5	44-2C.3
- Safety lab jacks		12 HP mains voltage 3/N/PE ~ 50 Hz 230 / 400 V Equipped with: 5 safety lab jacks (L1, L2, L3, N, PE)	B 60.4 H 128.5	44-1X.3
- Empty panel		4 HP empty panel	B 20.3 H 128.5	40-1H.3
		36 HP empty panel	B 182.9 H 128.5	40-1D.3
		42 HP empty panel	B 213.3 H 128.5	40-1E.3
- Mains connection		Mains connection 2.5 m 5 x 2.5 mm <sup>2</sup> with 5 p. 400V 16A Cekon plug		83-2C
- Clip-in perforated panel		Clip-in perforated panel suited for inserting into experiment frame on InForm bi. mobile units	766 45 687	77-5X



## Demonstration trolley

		Technical specifications	W x D x H	Article Number
<b>Demonstration trolley MLT 2</b> - InForm basic mobile		InForm basic mobile unit with transverse bar, with 4 caster brakes, caster diameter: 100 mm, without storage surface, only transverse bar for greater leg space. Inner distance between sections: 806 mm.	880 700 1030	77-5A Z162354
- Vertical sections		InForm vertical sections (2) for extension of basic mobile unit	34 123 900	77-5C ZH900
- Stiffening flange		InForm accessory. Stiffening flange for InForm mobile unit, as support console for 3 HU superstructure, with hole for mains connector, adapted for 77-5H Z02 superstructure (holes)	806 75 32	77-5V Z162354
- Clip-in frame		InForm clip-in frame section (1) for width of mobile unit of 880 mm, with special reception lateral parts for InForm section.	874 18 35	77-5W Z162354
- Handle		Black plastic handle for InForm mobile units	L = 170	78-4U

		Technical specifications	W x D x H	Article Number
- Table superstructure		InForm 3 HU mobile unit superstructure system, can be equipped on both sides with 2 x 144 HP. For mounting between InForm vertical sections on mobile unit, height-adjustable. Can be equipped on both sides with Elabo insert panels. Alternatively, inserts on one side and empty panels on opposite side.	806 240 171	77-5H Z01
- Circuit Breaker Unit AC		AC power-on field 1/N/PE ~ 50 Hz 230 V 16 A Equipped with: 1 2-pole fault current circuit breaker, type B, all-current sensitive for smooth 30 mA DC fault currents 25 A nominal current 1 safety automat, 1 pole, C 16 A 1 key ON feeler 1 OFF feeler 1 contactor, 1 external conductor control light	B182.9 H128.5	42-0C.3
- Shockproof plugs		24 HP Euro insert panel 1/N/PE~ 50 Hz 230 V / 16A mains on 4 shockproof plugs. W = 121.9 mm, H = 128.5 mm Equipped with: 4 shockproof plugs	B 293 H 110	44-1L.3
- Interface		3 HU/6 HP supply bar Interface mains box W = 30.2 mm, H = 128.5 mm Equipped with: 18-pole RJ45 jack, connectable on two sides, 3m patch cable	B 146 H 110	46-7L.3



## Demonstration trolley

		Technical specifications	W x D x H	Article Number
(Demonstration trolley MLT 2, continued)		36 HP empty panel	B 182,9 H 128,5	40-1D.3
- AC Supply		42 HP empty panel	B 213,3 H 128,5	40-1E.3
- Mains connection		Mains connection 2.5 m 3 x 1.5 mm <sup>2</sup> with shockproof plug		83-2A
- Function tray		Function tray, large Non inclinable	B 806 H600	77-5F ZB806
- PC- holder		InForm PC-holder, made of 4 mm aluminium sheet, for assembly on left side of table leg. The holder can be adjusted to PCs of different widths between 160 and 220 mm.	220 400 300	78-3V
- TFT swivel arm		InForm double TFT swivel arm, height-adjustable assembly to front and side of the InForm system section. For 75/100 x 75/100 mm VESA-attachment, Colour: black Load capacity up to 10 kg Swivel range 105 to 480 mm		78-3Z





# Mechatronics trolley

## Accessories

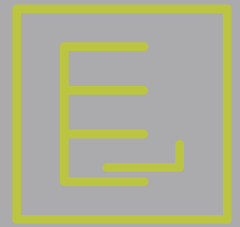
		Technical specifications	W x D x H	Article Number
<b>Mechatronics trolley</b> - Stand-by trolley		Mechatronics stand-by trolley with PT25 T-nut aluminium profile panel (25 mm grid) for universal reception of automation models	800 750 895	70-1U ZMCHA01
- Floor unit		InForm floor unit for mechatronics stand-by trolley, with 2-leaf doors, lock and grooved mats floor for storage of DIN A4 experimental panels on two levels.	640 660 661	70-1U ZMCHAUS01
- Cable suspension		Triple cable suspension	220 50 120	83-6K
<b>Measuring Line Holder</b>		Measurement line for assembly on wall and vertical sections	380 200 25	83-6J



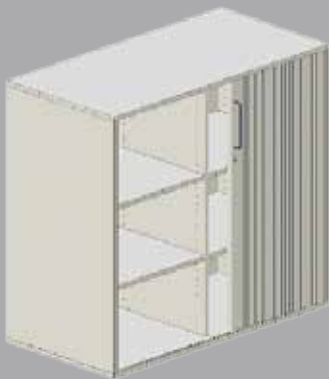
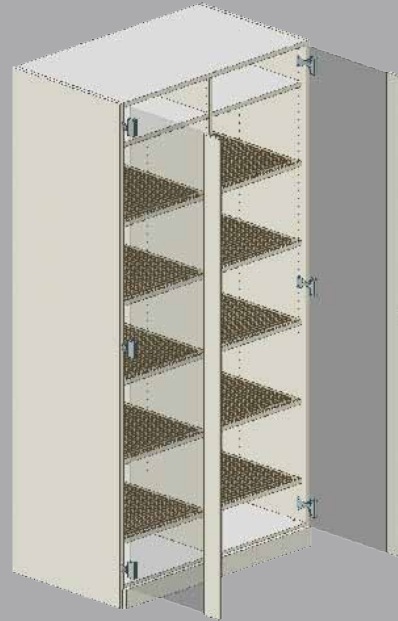
## Demonstration trolley accessories

		Technical specifications	W x D x H	Article Number
<b>Table socket</b>		Table socket strip (six outlets) with switch, 1.5 m cable, Colour: white	290 50 42	81-2C Z01
<b>Mounting panels</b>		Mounting panels (2) for 81-2C/D table outlets incl. attachment material		81-2E

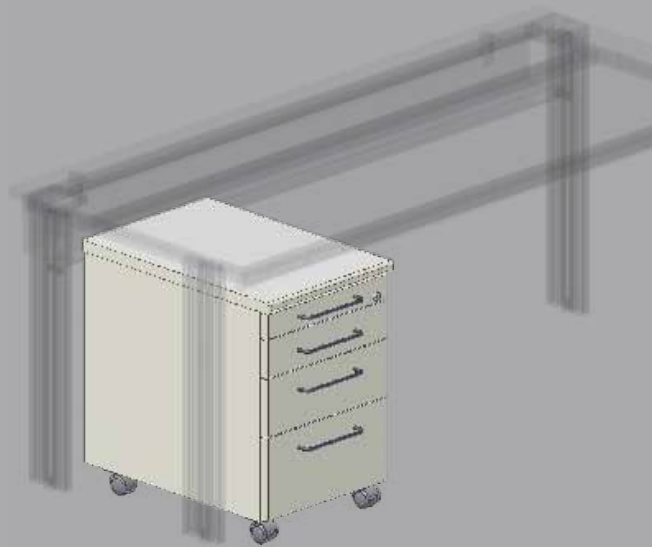
# Storage



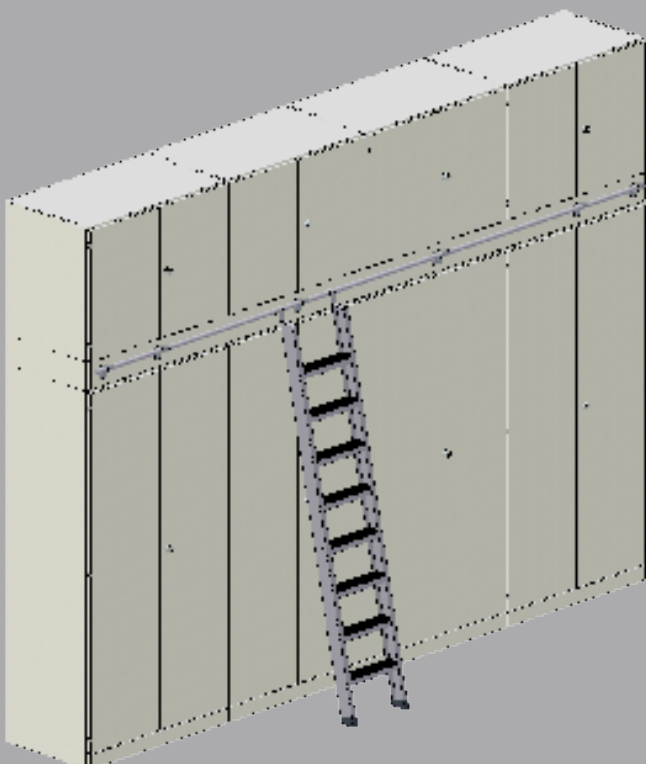
Elabo has large, attractive, and very durable cabinets, which are also very stable even when they stand alone. Their design and features predestine them for the creation of clear, transparent order. In addition, a wide range of organizational elements are available, like grooved mats which can be used to safely store training boards.



The storage cabinets have significant storage capacity. They are often used as an end element for rows of tables and to demarcate conference niches.



Floor units offer practical storage possibilities directly at students' work stations – the Learner Desk. Floor units can be attached to tables or equipped with wheels and be used as mobile containers.



Elabo cabinets can be set up in rows of varying length. Even the height of add-on elements can be individually enlarged, making it possible for them to rise with millimeter precision up to the ceiling, making wall units into perfect room partitions.



## Storage

### Systematic Order. Reliable Protection

Elabo offers an unusually large range for the practical storage from containers to wall units, providing perfectly ordered storage for equipment and materials, making sure that they are easily available during instruction. They also provide protection against dirt and dust as well as against unpermitted removal. The product range corresponds to the requirements for specialized instruction and has proven itself in the instructional routine.

Elabo storage cabinets are used to keep things like instructional material as close as possible to the location where it will be needed.



#### Cabinets and Wall Units

Elabo has developed modular cabinet technology, allowing for the individual cabinets to be equipped with single and double folding doors. In addition it is also possible to construct long wall units. The modules allow for the insertion of only one instead of the normal two walls between two cabinet segments and thus save money.

It is also possible to use the wall units to partition a room. The cabinets are available in 600 mm laboratory units and 440 mm office units. Should a height of 2045 mm be insufficient, add-on elements of up 980 mm or individually dimensioned elements reaching up to the ceiling can be installed on the cabinets.



The drawers in the Elabo floor units are very solid and quiet. The bottom drawer can be completely pulled out in standard units. There is also the option of having all drawers with the ability to be completely pulled out.

#### Storage cabinets

Elabo storage cabinets can be installed with folding doors, sliding doors, or roller shutters. There are versions with drawers as well as suspension file racks. The storage cabinets are available in three widths and two heights. All versions are lockable. The lower storage cabinets are generally placed directly adjacent to tables allowing for an expansion of work surface in addition to an extension of storage space. Two storage cabinets set up opposite one another are often connected by a somewhat larger counter to form a conference area. The higher variants are also used as partitions or to demarcate a conference zone.

Elabo cabinets are highly functional with technical aesthetic designs giving instruction areas a modern and professional air. They can be designed to meet individual requirements, both in terms of length and height.



PCs play more and more of an important role in the classroom. Elabo's PC floor units assure safe, ergonomically designed storage.

### Floor Units

Elabo's floor units are available in rolling and mounted versions. Drawers of various heights are available to suit the size of the equipment and materials to be stored. The bottom drawer can generally be pulled out entirely, making it much easier to reach objects at the back of the drawer. There is also the option of equipping all of the drawers to be pulled out entirely.

### Individual customer solutions

We offer special solutions for special requirements, such as those for the creation of ESD versions in accordance with IEC61340-5-1 and variants with sliding and roller shutter doors and lots of other versions for individual tasks such as those for the transport of perforated panel walls.



### Dual Floor Units for Dual Purposes

Divided floor units are available in our product range for workstations which are designed for two students allowing both students have their own storage space directly at their workstation and each has its own individual lock.

### PC Floor Unit

Elabo offers lockable PC floor units for the safe storage of PCs, which are then firmly fastened to the tables. They have ventilation holes, which help prevent heat build-up and increase the lifespan of the electronic equipment. Side access doors ease the connection of cables.



Elabo has implemented a large number of designs for individualized customer solutions. The transport mobile for perforated panel walls with installed test arrangements is one example. By being kept at a distance from one another during transport the walls will not damage one another.



## Storage

### Ordering systems with differentiated structures

Even the cabinet interiors of Elabo's cabinets, storage and floor units illustrate their practical competency. The systems are designed to make order intuitive when it comes to the elements, since order is the first requirement for concentrated, efficient instruction with minimal loss of time.



The shelves can be fixed at intervals of 32mm. Shelves are mounted to prevent them from being accidentally removed along with equipment.



You can also order pull-outs and drawers with dividers. This way things are stored in an organized manner in a small space



Glass doors allow instructors to immediately see what has been removed from the cabinets and correspondingly what has yet to be returned.



To avoid damaging the grooved mats when the training boards are stowed in the special cabinets they are embedded in the shelves creating a much more stable hold than simply gluing them in place.

### Trusses and Shelves

The various cabinets are sub-divided with shelves. Both metal and wood versions of the trusses are available allowing adjustments to the various required loads. The shelves can be placed at various heights above one another (interval: 32 mm)

### Well-designed Organizational Elements

The unusually versatile spectrum of organizational elements (drawers and cabinet partitions, grooved mats, etc.) support a very differentiated, clearly ordered set up in all storage containers. It is possible to place dividers or entire storage containers in the drawers, thus allowing for maintenance of order in the drawers even when they are slammed shut. At the same time the structure created by the organizational elements allows for the optimal utilization of the storage area.

### Special Features for Training Boards

Elabo provides ready-made cabinets with grooved mats both above and below for the storage of training boards. The boards can simply be pushed between the shelves, allowing several boards to be stored safely in tight spaces. The grooved mats can be purchased as an accessory.

### Wider Opening Angles

The cabinet and storage cabinet doors have an opening angle of up to 270°, meaning that the door does not extend into the room. The large opening angle also helps prevent accidental or intentional breaking of the hinges.

Full length glass cabinet doors are available for laboratory equipment. The glass doors are made from 4 mm-thick toughened safety glass. Glass doors create transparency. Aside from a small section covering the closing mechanism, you can see into the entire cabinet. The instructors do not have to open the doors to see whether elements have been removed or are still in use, and can also see which material might need to be ordered.



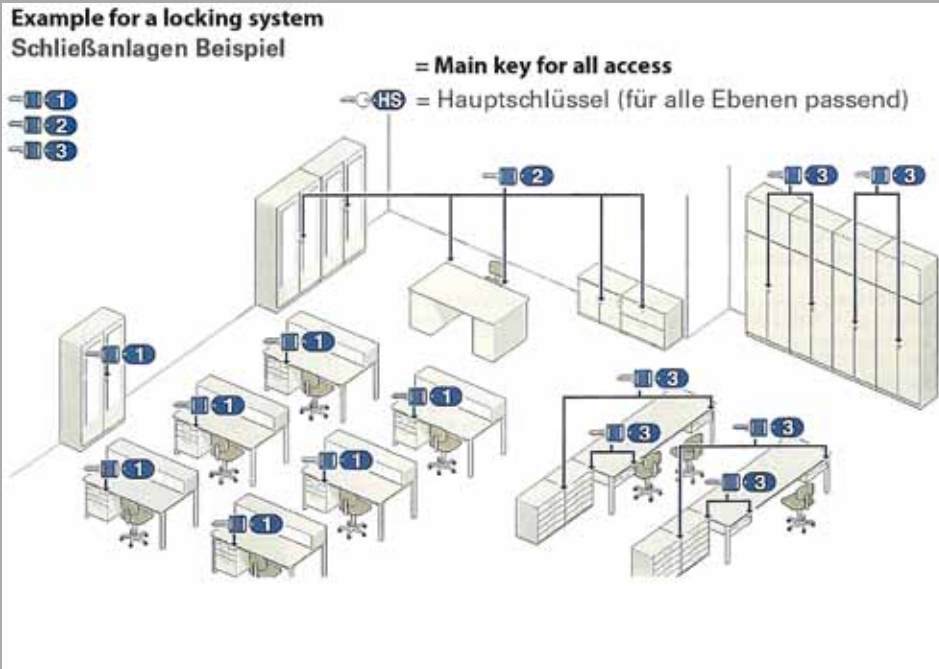
Continuous seals on the doors assure that they close and open softly and protect the contents from dust.





# Storage

Elabo generally provides collapsible safety keys for its cabinet mechanical locks.



Elabo locking systems allow for highly differentiated access possibilities.



## Locking Systems

All storage furniture from Elabo is lockable. There are locking systems available, which allow for the assignment of various access rights (e.g. to lockers, floor units or shelves). There are both conventional, purely mechanical versions as well as electronic solutions where the activation of the cylinder locks is carried out by a transponder via a radio remote control system.

Elabo does not equip its locks with rigid keys but exclusively with collapsible keys, since extruding keys can lead to painful injuries. In addition collapsible keys are less subject to rough blows and are far less likely to be broken off. The keys can thus remain in the lock after opening with no fear of injury.

In addition to standard keys, Elabo also offers the option locking via a remote transponder system. Every student will receive a transponder at the beginning of the school year. All locks and transponders including the storage system in the class rooms are administered with software. Every individual transponder can be granted or denied access to the cabinets. Should a transponder be lost then that transponder will be deleted in the software, thus avoiding the expensive exchange of locks.



Transponders allow for the remote opening and locking of cabinets. If a transponder is lost, the software will prevent possible abuse.

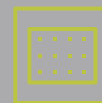
## Expandable modules. This may also interest you...



**Table systems** from Elabo combine with the other storage elements to provide the basic equipment of a properly furnished instruction room. The InForm and Eco Tec systems offer a wide variety of excellent, high-quality variants for modern, efficient instruction. It allows for the simple and precise mounting of experimental configurations and top pieces.  
> [More on pages 27](#)



**Superstructures** provide additional trays and integrate electricity supply along with measuring and testing equipment. The table surface thus remains free for work with the experimental subjects.  
> [More on pages 45](#)



**Experimental configurations** from Elabo record experimental configurations with electronic and electro-technical objects. All standard teaching materials can be used with them. They can be mounted on Elabo tables, top pieces, and carts.  
> [More on pages 125](#)



**Sockets and electronic devices** with current/voltage supply equipment as well as testing and measuring equipment from Elabo are integrated like building blocks in the top pieces.  
> [More on pages 75](#)

### Reliable quality

A typical trait of Elabo storage systems are their long lifespan. Reinforcement with special adhesives creates tough corners and edges. The bases are glued with water-tight adhesives which are in no way affected by contact with moisture like that from the cleaning crews. Solid surfaces help prevent traces of wear and tear. The quality of the equipment in instructional spaces is impressively durable.



### Materials and Colors

Every cabinet frame, door and drawer front is made from 19 mm multi-layered particle board. The surfaces are fronted with light grey RAL 7035 melamine resin. The backs are 8 mm thick and fastened with bolts to the frame. They are fronted on both sides with melamine resin. All cut edges are coated with 2 mm thick, impact proof plastic adhesives.





**Chairs** as well as a complete choice of accessories is available from Elabo: Total solutions from a single source.  
> [More on pages 181](#)






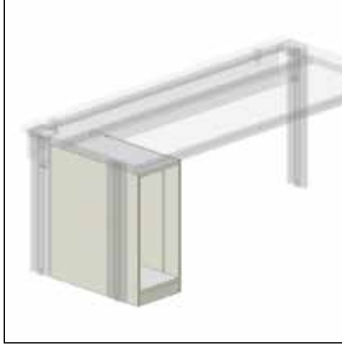
**Mobile furniture** increase flexibility in practical lessons. The bear experimental configurations and expand tables with more working space, which can be used whenever necessary.  
> [More on pages 137](#)



## Drawer Units InForm + EcoTec









Drawer Unit	Technical specifications	W x D x H	Article Number
	Drawer Unit with: 1 storage drawer with section tray, 1 organizer steel drawer 3 HU, 1 organizer steel drawer 6 HU and central lock	420 620 541	71-1C
	Drawer Unit with: 1 storage drawer with section tray, 1 organizer steel drawer 3 HU, 1 organizer steel drawer 6 HU and central lock.	420 820 541	71-2C
	Drawer Unit with equipment from top to bottom: 1 organizer steel drawer 3 HU with lock for the 1st and 2nd drawers, 1 organizer steel drawer 2 HU, 1 partition between user 1 – user 2, 1 organizer steel drawer 3 HU with lock for 3rd and 4th drawers, 1 organizer steel drawer 2 HU. All drawers with telescoping slides, each pair of drawers lockable with single lock with different numbers.	420 620 560	71-1F ZX02
	Drawer unit with equipment from top to bottom: 1 organizer steel drawer 3 HU with lock for the 1st and 2nd drawers, 1 organizer steel drawer 2 HU, 1 partition between user 1 – user 2, 1 organizer steel drawer 3 HU with lock for 3rd and 4th drawers, 1 organizer steel drawer 2 HU. All drawers with telescoping slides, each pair of drawers lockable with single lock with different numbers.	420 820 560	71-2F ZX02
	Drawer Unit with: 1 storage drawer with section tray, 1 organizational steel drawer 2 HU and central lock.	420 620 191	71-1A
	Drawer Unit with: 1 storage drawer with section tray, 1 organizer steel drawer 2 HU and central lock.	420 820 191	71-2A

# PC receptors


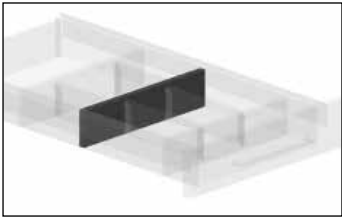
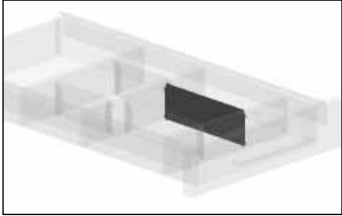
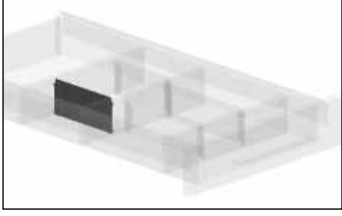
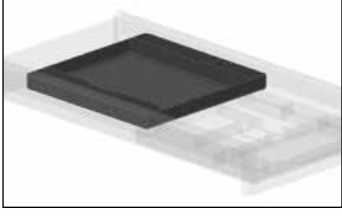

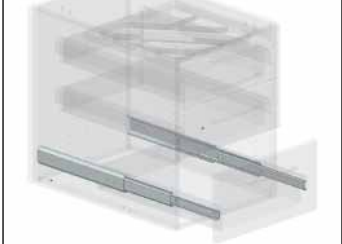
		Technical specifications	W x D x H	Article Number
<b>PC-Floor Unit InForm</b>  <b>with front doors</b>		PC housing, door left, Right mounted, table depth 800/900	300 600 680	71-1R
		PC housing, door left, Right mounted, table depth 1000	300 800 680	71-2R
		PC housing, door left, Right mounted, table depth 800/900 With lockable front doors	300 600 680	71-1T
		PC housing, door left, Right mounted, table depth 1000 With lockable front doors	300 800 680	71-2T
<b>PC-Floor Unit EcoTec</b>		Eco Tec PC housing, door left, Mounted on the right of the table	300 600 710	71-1R ZH71
		Eco Tec PC housing, door left, Mounted to the right With lockable front doors	300 600 710	71-1T TH71
<b>PC-Floor Unit InForm</b>  <b>with front doors</b>		InForm PC housing, door right, Mounted to the left	300 600 680	71-1S
		InForm PC housing, door right, Mounted to the left	300 800 680	71-2S
		InForm PC housing, door right Mounted to the left With lockable front doors	300 620 680	71-1U
		InForm PC housing, door right Mounted to the left With lockable front doors	300 820 680	71-2U
<b>PC-Floor Unit EcoTec</b>		EcoTec PC housing, door right Mounted to the left	300 600 650	71-1S ZH71
		EcoTec PC housing, door right Mounted to the left With lockable front doors	300 620 710	71-1U ZH71



## PC-Stands Mobile storage containers

		Technical specifications	W x D x H	Article Number
<b>PC-Stand InForm right</b>		InForm PC stand, in 4mm aluminium sheet, for attachment to table leg on the right side.  The stand can be adjusted to hold PCs with widths from 160 to 220 mm.	220 400 300	78-3W
		InForm PC stand, in 4mm aluminium sheet, for attachment to table leg on the left side.  The stand can be adjusted to hold PCs with widths from 160 to 220 mm.	220 400 300	78-3V
<b>PC-Stand</b>		PC stand Universal for PCs with a maximum width of 240 mm and/or height of 510 mm. Made of stable rectangular 40 x 15 mm and 40 x 12 mm tubing, which can be slotted into one another to fit the required clamp area. Adjustment without tools using 4 star grip screws M6. Steel piping painted light grey RAL7035.	190 250 530	A9-2A
<b>Mobile storage container</b>	 	With: 1 storage drawer with section tray, 1 Orga steel sheet drawer 3 HU, 1 Orga steel sheet drawer 6 HU and central locking, Four pivoting casters and cover panel.	420 600 626	71-1L
<b>Mobile storage container</b>	 	With: 1 storage drawer with section tray, 1 Orga steel sheet drawer 2 HU, 1 Orga steel sheet drawer 3 HU and central locking, Four pivoting casters and cover panel.	420 600 626	71-1M
<b>Mobile storage container</b>	 	With: 1 storage drawer with section tray, 3 Orga steel sheet drawers 2 HU, 1 Orga steel sheet drawer 3 HU and central locking, Four pivoting casters and cover panel.	420 600 626	71-1N

# Accessories

		Technical specifications	W x D x H	Article Number
<b>Depth slide</b>		Guide slide for installation on the table frame, either left, right or centrally for floor units 02-4/8, suitable for table depth 900 mm.	454 455 90	02-4W Z
		Guide slide for installation on the table frame, either left, right or centrally for floor units 02-4/8, suitable for table depth 1000 mm.	454 455 90	02-4V Z
<b>Partition wall</b>		Metal partition wall in black for horizontal drawer partitioning.	326 10 76	07-7A
<b>Compartment separator</b>		Compartment separator, A5, metal, black	210 1 72	07-7D
<b>Compartment separator</b>		Compartment separator, A6, metal, black	150 1 72	07-7E
<b>Tray insert</b>		Tray insert, plastic with 4 sections, black	325 325 40	07-7M
<b>Tray insert</b>		Plastic divider tray with 9 compartments, black	325 325 40	07-7N
<b>Full telescopic pullout</b>		Telescopic pullout for all floor unit drawers with a usable depth of 490 mm.		07-9A
		Telescopic pullout for all floor unit drawers with a usable depth of 690 mm.		07-9B

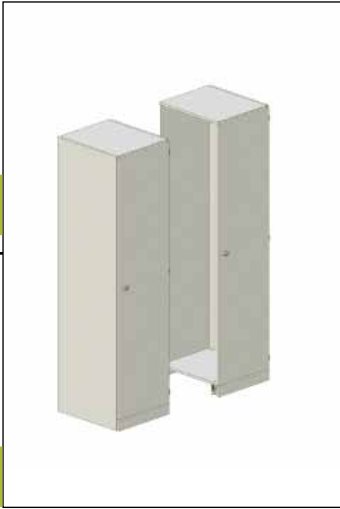







## Floor units Accessories





		Technical specifications	W x D x H	Article Number
<b>Moulded tray</b>		Polystyrene moulded tray with 20 sections	326 470 35	07-8A
<b>Moulded tray</b>		Polystyrene moulded tray with 11 sections	326 470 35	07-8B
<b>Moulded tray</b>		Polystyrene moulded tray with 9 sections for any combination of tools	326 470 35	07-8C
<b>Moulded tray</b>		Polystyrene moulded tray with 8 sections to store tools	326 470 35	07-8D
<b>Moulded tray</b>		Polystyrene moulded tray with 5 sections to store tools	326 470 35	07-8E
<b>Moulded tray insert</b>		Polystyrene moulded tray insert with 5 sections. Can be added to a moulded tray in drawers with 690 mm usable depth	326 205 35	07-8G

# Vertical Cabinets

		Technical specifications	W x D x H	Article Number
<b>Vertical cabinet, single door - basic element</b>		Basic element fitted with a leaf door on the right and knob with safety lock	519 600 2045	07-1A
<b>Vertical cabinet, single door - add-on element</b>		Add-on element fitted with a leaf door on the right and knob with safety lock	500 600 2045	07-1E
<b>Vertical cabinet, single glass door - basic element</b>		Basic element fitted with a full glass door with edge trim on the right and knob with safety lock	519 600 2045	07-1B
<b>Vertical cabinet, single glass door - add-on element</b>		Add-on element fitted with a full glass door with edge trim and knob with safety lock	500 600 2045	07-1F



## Vertical cabinets









		Technical specifications	W x D x H	Article Number
<b>Vertical cabinet, double door</b> - basic element		Basic element fitted with 2-leaf doors and knob with safety lock	1019 600 2045	07-1C
<b>Vertical cabinet, double door</b> - add-on element		Additional element fitted with 2-leaf doors and knob with safety lock	1000 600 2045	07-1G
<b>Vertical cabinet, double glass doors</b> - basic element		Basic element fitted with two full glass doors with edge trim and knob with safety lock	1019 600 2045	07-1D
<b>Vertical cabinet, double glass doors</b> - add-on element		Add-on element fitted with two full glass doors with edge trim and knob with safety lock	1000 600 2045	07-1H

# Top Elements

		Technical specifications	W x D x H	Article Number
<b>Basic top element</b> <b>Single door</b>		Basic top element with 1-leaf door on the right with knob	519 600 980*	07-1J
		<b>Basic top element</b> <b>Single door</b>	Add-on top element with 1-leaf door on the right with knob	500 600 980*
<b>Basic top element</b> <b>Double doors</b>		Basic top element with 2-leaf doors with knob	1019 600 980*	07-1K
		<b>Basic top element</b> <b>Double doors</b>	Add-on top element with 2-leaf doors with knob	1000 600 980* *) max.



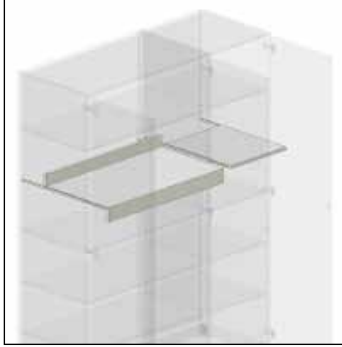



## Complete Cabinets

		Technical specifications	W x D x H	Article Number
<b>Complete cabinet with shelves</b>	 	Complete cabinet with 2 leaf doors with safety lock and 5 adjustable shelves	1019 600 2045	07-1V
<b>Complete cabinet with shelves</b>	 	Complete cabinet with 2 full glass doors with safety lock and 5 adjustable shelves	1019 600 2045	07-1V Z01
<b>Complete cabinet with grooved mats</b>	 	Complete cabinet with 2 leaf doors with safety lock and central wall. This central wall prevents sagging in wide shelves. The scope of delivery includes 4 shelves with grooved mats on one side and 8 shelves with grooved mats on both sides. This gives you 2 x 5 levels for DIN A4 experiment panels. The grooved mats are angled and protected with 2 mm edge band. This protects the grooved mats from damage when the experiment panels are inserted.	1019 600 2045	07-1W
<b>Complete glass cabinet</b>	 	Complete cabinet with 2 full glass doors with safety lock and central wall. With 4 shelves with grooved mats on one side and 8 shelves with grooved mats on both sides in 2 x 5 levels for DIN A4 experiment panels.	1019 600 2045	07-1W Z01

# Vertical cabinets

## Accessories



		Technical specifications	W x D x H	Article Number
<b>Central wall</b>		Central wall for vertical cabinets	T540	07-1P
<b>Shelves</b>		Shelf 19 mm thick	480 540 19	07-2A
		Shelf 19 mm thick	980 540 19	07-2L
		Shelf 25 mm thick	980 540 25	07-2M
<b>Steel Shelves</b>		Steel sheet shelf 25 mm thick, load capacity 100 kg	480 540 25	07-2U
		Steel sheet shelf 25 mm thick, load capacity 100 kg	980 540 25	07-2W
<b>Pullout shelf</b>		Pullout shelf 19 mm thick	480 540 19	07-2B
<b>Shelf with full telescopic pullout</b>		Shelf with full telescopic pullout	980 540 19	07-2P







## Vertical cabinets Accessories

		Technical specifications	W x D x H	Article Number
<b>Shelf with groove mats</b>		Shelf, 19 mm thick with grooved mats on one side (10 mm thick)	480 540 19	07-2C
		Shelf, 19 mm thick with grooved mats on both sides	480 540 19	07-2D
<b>Grooved mats</b>		Grooved mat, grey, loose, for attachment to shelves	480 540	07-9E
<b>Drawers</b>		Drawer with roller guide, 4/5 pullout	480 505 95	07-2E
		ORGA steel drawer with full telescopic pullout, clear drawer dimensions: w=905 mm, d=490 mm, h=85 mm  Suitable for vertical cabinets with a width of 1019/1000 mm	955 515 90	07-2Q
<b>Hanger rail</b>		Chrome-plated oval pipe hanger rail with attachment element for cabinets with a grid width of 500 mm	B 480	07-2F
		Chrome-plated oval pipe hanger rail with attachment element for cabinets with a grid width of 1000 mm	B 980	07-2S

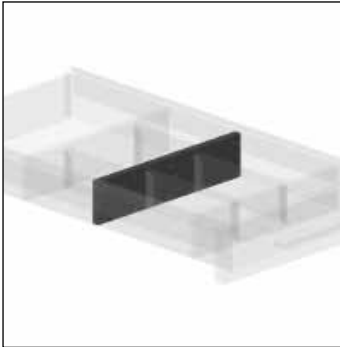
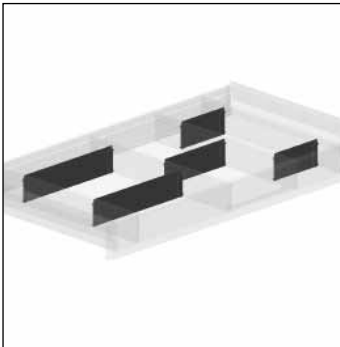

	Technical specifications	W x D x H	Article Number
<b>Roller stool</b> 	Roller stool, steel with 3 retractable spring-loaded swivel casters, black	Ø 290/440 mm, H = 420 mm	07-9Q
<b>Guide pipe for ladder</b> 	Guide pipe for ladder rail. The guide pipe is attached between the base and top cabinets on an additional element between the cabinets. Please state Z=length	L = 1000	07-9K Z
<b>Light metal ladder with 7 steps</b>	Light metal ladder with 7 steps, length 2100 mm, secured at the top against unintentional detachment. TÜV tested, with rollers. Rollers are blocked upon pressure to ensure stable position in use.		07-9M
<b>Light metal ladder with 8 steps</b>	Light metal ladder with 8 steps, length 2280 mm, removable, suitable for insertion into the ladder guide rail.		07-9N



## Vertical cabinets Locks


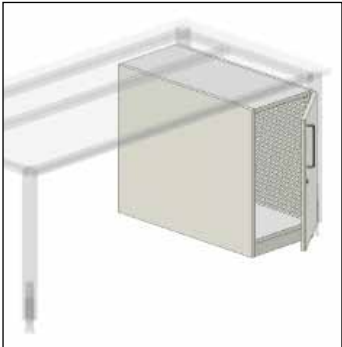




		Technical specifications	W x D x H	Article Number
<b>Lock</b>		Safety lock with locking rod for top elements		07-9D
<b>Main Key</b>		Main safety key for entire locking system		07-9C
<b>Transponder</b>		<p>Digital locking system with lock plan software for remote opening and locking of cabinets, floor units and doors, and to enable electronics superstructures. If necessary the entire building locking technology can be integrated so that gates, entrance doors, cabinets etc. can be enabled and opened.</p> <p>To rule out abuse, communication between the digital components is carried out using an ever-changing crypto-code. The transmitter is simply held near the receiver and the locking or opening movement initiated at the push of a button. Lost transmitters can simply be blocked in the software so there is no need to exchange the entire locking system. It is also possible to give time-dependent authority, enabling better access control. The possibility of creating groups simplifies configuration in the lock plan software.</p>		07-9T Z

# Accessories for vertical cabinet drawers

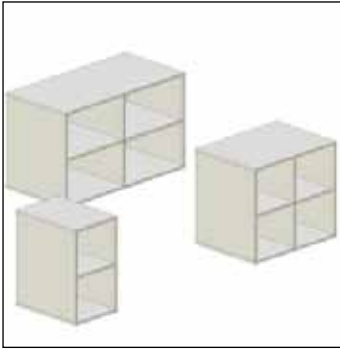
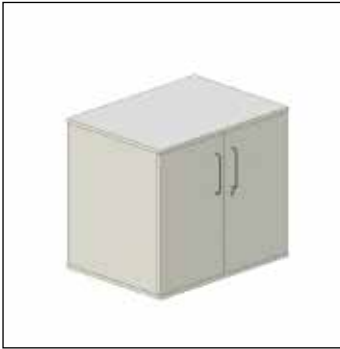



		Technical specifications	W x D x H	Article Number
<b>Partition wall</b>		Metal partition wall in black for horizontal drawer partitioning.	326 10 76	07-7A
		Metal partition wall in black for horizontal drawer partitioning.	489 10 76	07-7B
<b>Compartment separator</b>		Compartment separator, A4, black metal	310 1 72	07-7C
		Compartment separator, A5, black metal	210 1 72	07-7D
		Compartment separator, A6, black metal	150 1 72	07-7E
<b>Lochrasterleisten</b>		Orgaline grid rail (pair), metal, powder-coated, black with wide drawers with 6 grid clips for side cabinets B820	689 4 84	07-7F
		Orgaline grid rail (pair), metal, powder-coated, black with wide drawers with 6 grid clips for side cabinets B1000 and vertical cabinets	889 1 84	07-7G
		Orgaline grid rail (pair), metal, powder-coated, black with wide drawers with 6 grid clips for side cabinets B1200	1089 1 84	07-7H



## Tray Cabinets Accessories




		Technical specifications	W x D x H	Article Number
<b>Tray cabinet for experiment boxes - basic element</b>		Basic element with 2-leaf doors, knob and safety lock.	774 680 2045	67-1A
<b>Tray cabinet for experiment boxes - add-on element</b>		Add-on element with 2-leaf doors, knob and safety lock.  Interior side walls with guide grooves to hold storage trays (2 deep)	755 680 2045	67-1B
<b>Floor unit with section trays</b>		ELABO floor unit with section trays.  Leaf doors on right or left with safety lock. Structure has guide grooves on right and left. For the storage of a maximum of 10 polystyrene moulded trays (experiment boxes, tools, installation material etc.)  Leaf doors right:	B = 370 mm, H = 680 mm, T = nach Tischtiefe	
		For table depths 800/850 mm		67-1D X01
		For table depths 900/950 mm		67-1D X02
		For table depths 1000/1050 mm		67-1D X03
		Leaf doors left:		
		For table depths 800/850 mm		67-1E X01
For table depths 900/950 mm	67-1E X02			
For table depths 1000/1050 mm	67-1E X03			
<b>Tray insert</b>		Tray insert for the storage of experiment boxes (10 sections)	310 700 35	67-2A
<b>Section tray insert</b>		Section tray insert for the storage of installation material (13 sections)	310 700 35	67-2B
<b>Section tray insert</b>		Section tray insert for the storage of tools (12 sections)	310 700 35	67-2C
<b>Section tray insert</b>		Section tray insert Universal for the storage of measurement equipment, small parts etc. (4 sections)	310 700 35	67-2D

# Side cabinets




		Technical specifications	W x D x H	Article Number
<b>Side shelves</b>		Shelf unit with 1 shelf, suitable for DIN A4 folders on 2 levels	420 600 720	08-2A
		Shelf unit with central wall and 2 shelves for DIN A4 folders on 2 levels	820 600 720	08-2B
		Shelf unit with central wall and 2 shelves for DIN A4 folders on 2 levels	1200 600 720	08-2C
<b>Side cabinet with leaf doors</b>		Side cabinet with 2 leaf doors, 2 shelves, central wall and safety lock	820 600 720	08-2D
<b>Side shelf units</b>		Side cabinet shelf unit with 2 shelves, suitable for DIN A4 folders on 3 levels	420 600 1100	08-3A
		Side cabinet shelf unit with central wall and 4 shelves, suitable for DIN A4 folders on 3 levels	820 600 1100	08-3B
		Side cabinet shelf unit with central wall and 4 shelves, suitable for DIN A4 folders on 3 levels	1200 600 1100	08-3C
<b>Side cabinet with sliding doors</b>		Side cabinet element with sliding doors, central wall, 2 shelves and safety lock	820 600 720	08-2E
		Side cabinet element with sliding doors, central wall, 2 shelves and safety lock	1200 600 720	08-2F
<b>Side cabinet with sliding doors</b>		Side cabinet element with sliding doors, central wall, 4 shelves and safety lock	820 600 1100	08-3E
		Side cabinet element with sliding doors, central wall, 4 shelves and safety lock	1200 600 1100	08-3F



## Side cabinets




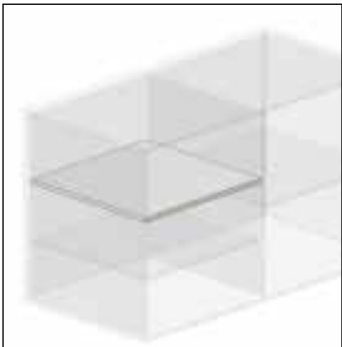

		Technical specifications	W x D x H	Article Number
<b>Side cabinet with horizontal shutters</b>		Side cabinet element with horizontal shutter, central wall, 2 shelves and safety lock	820 600 720	08-2G
		Side cabinet element with horizontal shutter, central wall, 2 shelves and safety lock	1200 600 720	08-2H
<b>Side cabinet with horizontal shutters</b>		Side cabinet element with horizontal shutter, central wall, 4 shelves and safety lock	820 600 1100	08-3G
		Side cabinet element with horizontal shutter, central wall, 4 shelves and safety lock	1200 600 1100	08-3H
<b>Side cabinet with hanging file rails</b>		Side cabinet element with 2 pullout hanging file rails with lock to hold 2 DIN A4 hanging file rails horizontally. In the event that it is not possible to safely screw the side cabinet element to a wall or the floor, the maximum load capacity of a pullout hanging file rail is 20 kg because of possible risk of tipping.	820 600 720	08-2J
		Side cabinet element with 2 pullout hanging file rails with lock to hold 3 DIN A4 hanging file rails horizontally. In the event that it is not possible to safely screw the side cabinet element to a wall or the floor, the maximum load capacity of a pullout hanging file rail is 20 kg because of possible risk of tipping.	1200 600 720	08-2K



		Technical specifications	W x D x H	Article Number
<b>Side Cabinet with drawers</b>		Side cabinet with drawers 1 Orga sheet steel drawer 3 HU, 2 Orga sheet steel drawers 4 HU and central lock	420 600 720	08-2M
			820 600 720	08-2R
			1200 600 720	08-2U
<b>Side Cabinet with drawers</b>		Side cabinet with drawers 1 Orga sheet steel drawer 3 HU, 1 Orga sheet steel drawer 2 HU, 2 Orga sheet steel drawers 3 HU and central lock	420 600 720	08-2N
			820 600 720	08-2S
			1200 600 720	08-2V
<b>Side Cabinet with drawers</b>		Side cabinet with drawers 1 Orga sheet steel drawer 3 HU, 4 Orga sheet steel drawers 2 HU and central lock	420 600 720	08-2P
			820 600 720	08-2T
			1200 600 720	08-2W

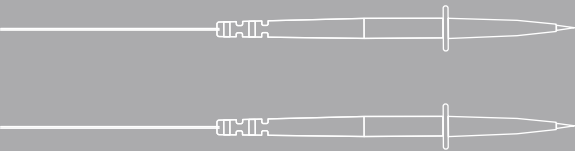
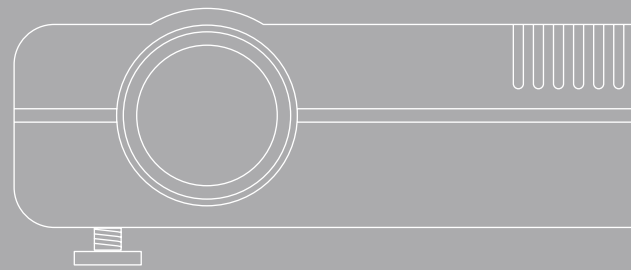
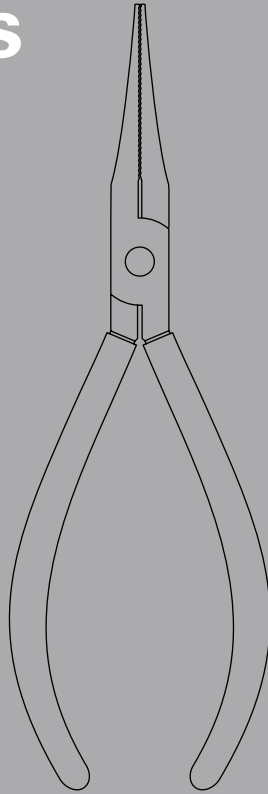


## Side cabinets Accessories

		Technical specifications	W x D x H	Article Number
<b>Cabinet base 30 mm</b>		Cabinet base for side cabinets 08-2/3.	420 600 30	08-4A
		Cabinet base for side cabinets 08-2/3.	820 600 30	08-4B
		Cabinet base for side cabinets 08-2/3.	1200 600 30	08-4C
<b>Cabinet base 80 mm</b>		Cabinet base for side cabinets 08-2/3.	420 600 80	08-4R
		Cabinet base for side cabinets 08-2/3.	820 600 80	08-4S
		Cabinet base for side cabinets 08-2/3.	1200 600 80	08-4T
<b>Storage slide element</b>		Storage slide element with one slide-in	420 600 19	08-4E
		Storage slide element with one slide-in	820 600 19	08-4F
		Storage slide element with two slide-in	1200 600 19	08-4G
<b>Cover panel for side cabinets</b>		Cover panel	426 610 30	08-4K
		Cover panel	826 610 30	08-4L
		Cover panel	1206 610 30	08-4M
<b>Additional shelf</b>		Shelf, 19 mm thick for side cabinets B=420/820 mm	380 520 19	08-5A
		Shelf, 19 mm thick for side cabinets B=1200 mm	570 520 19	08-5C
		Shelf, 19 mm thick for side cabinet 08-2D	380 540 19	08-5E
		Shelf, 19 mm thick for side cabinet 08-2G	340 480 19	08-5B
		Shelf, 19 mm thick for side cabinet 08-2H/3H	530 480 19	08-5D



# Accessories





## Accessories

### Consistent solutions right into the smallest detail

All from one shop. The harmonious matching of all components results in perfect overall quality. For this reason, Elabo takes care of everything that is useful and sensible in the equipment of a training lab - chairs and lighting, beamers, projection screens, organizers in cabinets and drawers, as well as consumables and much more. We take care that each product meets our clients' requirements for their training operations. In order to do this, we profit from the experience of manufacturers many of whom are market leaders in their industry segment. With this one-shop offer we save our clients time spent in research and sourcing. And we make sure that the result is at par with what you expect from your investment.

Measurement lines and cables for lessons can be obtained from Elabo as well as various cable brackets for their neat placement, including those that are attached in cabinets and on cabinet doors. The brackets and their fastenings are very robust and durable, withstanding the stresses of daily use.



#### Tool kits

Hand tools are used in the daily teaching routine. They are put to intensive use and must withstand a lot of wear and tear. The Elabo program offers tool kits that are specially designed for training. They come in a specially molded tray whose dimensions correspond to those of the drawers in the floor units and can be directly inserted into them.

#### Cables and brackets

The Elabo product line includes measurement lines exclusively of the safety type with a rigid bushing. With this precaution, any accidental contact with live surfaces when pulling out the plugs is prevented. All Elabo devices are prepared for this and are equipped with safety lab sockets. Our program includes a large variety of suitable measurement line holders for adequately storing the measurement lines. Orderly storage keeps the cables from getting entangled and thus saves time.

The Elabo product range includes tool kits for all manual tasks in the lesson. They are placed in trays, making it immediately apparent when something is missing.



## Chairs

Chairs are an important equipment element. Elabo makes use of the expertise of renowned manufacturers like Interstuhl. They guarantee the quality necessary to be compliant with valid standards. Our product line includes a broad spectrum of chairs, from rigid designs to shock-absorbing, individually adjustable swivel chairs

with casters, movable backrests and armrests. All are characterized by their convincing ergonomic design. The ergonomic quality greatly impacts on students' concentration and ability to absorb knowledge and the performance of teachers who are intensely challenged during the long hours in classes.



If computers are used, TFT monitors offer significant advantages when designing spacious working areas. The optimal solution involves fastening the monitors on the supporting frame. The Elabo monitor holder in combination with the InForm profile column is the ideal solution. They are easy to assemble; the catches keep the monitors performing reliably even under load, and they can withstand rough handling.





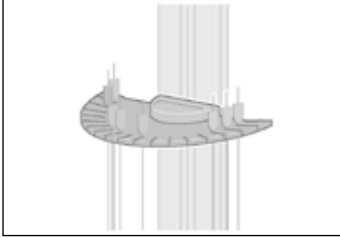


## Projection and media technology

Projection installations have a special place in the training given in modern media technologies but sometimes also in other teaching areas. Elabo supplies the entire spectrum, from projectors of all performance levels with matching projection screens, to wireless display technologies. In addition, special mobile media units are available in which the entire projection technology can be compactly installed and moved around on wheels.

Chairs have a much greater effect on the ability to concentrate and readiness to learn than is commonly assumed. Elabo therefore offers its customers chairs from well-known manufacturers which stand for quality and ergonomics.




## Connector cables, Measurement line holders


		Technical specifications	W x D x H	Article Number
<b>Mains cable</b>		Mains cable 2.5 m 3 x 1.5 mm <sup>2</sup> with shockproof plug		83-2A
		Mains cable 2.5 m 5 x 2.5 mm <sup>2</sup> with 5-pin Cekon plug 400 V 16 A		83-2C
<b>Measurement line holder</b>		Measurement line holder, mobile with small parts tray	600 600 1600	83-6R
<b>Measurement line holder</b>		Measurement line holder, mobile to receive 2 x 66 safety measurement lines, diameter D= 8 mm	600 600 1600	83-6S
<b>Measurement line holder</b>		Measurement line holder for mounting on walls and vertical sections	380 200 25	83-6J

		Technical specifications	W x D x H	Article Number
<b>Cable hanging device</b>		Cable hanging device, 3 sections	220 50 120	83-6K
<b>Combination line holder</b>		Combination line holder with small parts tray, suitable for wall mounting	600 230 200	83-6M
<b>Storage tray</b>		Storage tray	390 80 45	83-6L
<b>Combination line holder</b>		Combination line holder, mobile, with small parts storage tray, 5-leg base with five swivel casters.	600 600 1600	83-6P
<b>Measurement line holder</b>		Swivel and pivot measurement line holder combined with cable hanging device. The semi-circular measurement line holder is made of powder-coated aluminium sheet with 12 insert grooves in various widths. The plastic tray is for the storage of small parts and probe tips.  Can be mounted forwards or sideways.	380 450 240	77-5P Z01








## Measurement lines, Probe tips

		Technical specifications	W x D x H	Article Number
<b>Measurement line holder</b>		Swivel and pivot measurement line holder made of powder-coated aluminium sheeting. 30 grooves can take laboratory and connection lines with various line diameters. The plastic tray is for the storage of small parts and probe tips.  Can be mounted on front or side.	380 450 170	77-5Q Z01
<b>Set of measurement lines</b>		Set of SLK 425-Si measurement lines with 66 safety measurement lines comprising of: Length    150 100 75    50 cm red            1    2    3    5 blue          2    2    4    5 black         2    5 12 19 yellow/green 1    1    1    1 Total         6 10 20 30		83-5A ZSW
<b>Measurement line</b>		Safety measurement line 150 cm, with 4 mm plug with rigid sleeve Colour: black		83-5A ZSW
		Length 100 cm		83-5B ZSW
		Length 75 cm		83-5C ZSW
		Length 50 cm		83-5D ZSW
		Safety measurement line 150 cm, with 4 mm plug with rigid sleeve, Colour: red		83-5A ZRT
		Length 100 cm		83-5B ZRT
		Length 75 cm		83-5C ZRT
		Length 50 cm		83-5D ZRT
		Safety measurement line 150 cm, with 4 mm plug with rigid sleeve, Colour: blue		83-5A ZBL
		Length 100 cm		83-5B ZBL
		Length 75 cm		83-5C ZBL
		Length 50 cm		83-5D ZBL
		Safety measurement line 150 cm, with 4 mm plug with rigid sleeve, Colour: yellow/green		83-5A ZGG
Length 100 cm		83-5B ZGG		
Length 75 cm		83-5C ZGG		
Length 50 cm		83-5D ZGG		


	Technical specifications	W x D x H	Article Number
<b>Push and clamp adapter</b> 	Pair of push and clamp adapters for 4 mm safety plug system, clamping area 0.5-2.5 mm <sup>2</sup> , 1 piece each in black and red		83-3A
<b>Alligator clip</b>	Pair of AK2B alligator clips for 4 mm safety plug system. Length: 81 mm, clamping area 11 mm <sup>2</sup> , 1 piece each in black and red.		83-3B
<b>Clip-on probe tips</b>	Pair of clip-on probe tips for 4 mm safety plug system. Length: 155 mm, shaft approx. 60 mm, 1 piece each in black and red.		83-3C
<b>Attachment probe tips</b>	Pair of attachment probe tips for 4 mm safety plug system. Length: 140 mm, shaft approx. 96 mm, 1 piece each in black and red.		83-3D
<b>Tappers</b>	Pair of tappers with claw pair for 4 mm safety plug system. Length: 130 mm, shaft 96 mm, 1 piece each in black and red.		83-3E
	Pair of tappers with hook clip for 4 mm safety plug system. Length: 99 mm, shaft 73 mm, 1 piece each in black and red.		83-3F








## Projectors and Screens

		Technische Daten	B x H	Best.-Nr.
<b>Projector</b>		Projector, brightness: 2000 ANSI, Resolution: SVGA 800 x 600		83-9A
		Projector, brightness: 3000 ANSI, Resolution: XGA 1024 x 768		83-9B
<b>Screen</b>		Screen blind, 1800 x 1800, for wall and ceiling installation, black, optically opaque backing, can be locked at various sizes for different formats.  White casing.	1780 1780	83-9C
<b>Motorized screen</b>		Motorized screen blind, 1800 x 1800, for wall and ceiling installation, black, optically opaque backing, can be locked at various sizes for different formats. White casing, extra quiet 230 V 50 Hz motor including remote control	1800 1800	83-9D
<b>Ceiling attachment for projector</b>		Universal ceiling attachment for projectors, steplessly variable height setting from 40 to 70 cm. Cable through cable channel, secured against falling, integrated ball joint enables projector to be angled horizontally and vertically. Optimum equipment ventilation with spacer bolts. Maximum weight 25 kg		83-9E
<b>Wall attachment for projector</b>		Universal wall holder for projectors. Maximum weight 10 kg, vertical angle adjustment up to 20°, swivel to 360°.		83-9F

# Writing boards

	Technical specifications	W x H	Article Number
<p><b>Folding writing board</b></p> 	<p>Mobile folding chalk board            Central area: width=1500, height=1000 mm            Wings: width=750, height=1000 mm            Lift height: 1700...2300 mm            Board colour green, for use with chalk</p>		83-8U Z01
	<p>Mobile folding writing board            Central area: width=1500, height=1000 mm            Wings: width=750, height=1000 mm            Lift height: 1700...2300 mm            Board colour white gloss, for use with whiteboard pens</p>		83-8U
	<p>Folding writing board for wall mounting            Central area: width=1500, height=1000 mm            Wings: width=750, height=1000 mm            Board colour white gloss, for use with whiteboard pens</p>		83-8U Z02
	<p>Folding chalk board for wall mounting            Central area: width=1500, height=1000 mm            Wings: width=750, height=1000 mm            Board colour green, for use with chalk</p>		83-8U Z03

## Tools

		Technical specifications	W x D x H	Article Number
<b>Wall board drawing instruments</b>		7-piece wall board drawing instrument set, comprising of: 1 instrument panel, white plastic 1 60° set square, white 1 45° set square, white 1 180° protractor, white 1 compass with degree ring, white 1 ruler 100 cm, white 1 pointer, 100 cm, white		83-8V
<b>Electronics tool set</b>		26-piece tool set 'Electronics', in a polystyrene tray with 8 sections (07-8D)	470 330 35	81-8C
<b>Universal tool set</b>		23-piece tool set 'Universal' in a polystyrene tray with 9 sections (07-8C)	470 330 35	81-8F
<b>Mechanics tool set</b>		23-piece tool set 'Mechanics' in a polystyrene tray with 5 and 9 sections (07-8E and 07-8C)	470 330 35	81-8D
<b>Ball joint vise</b>		ELABO jointed vise with ball joint, can be pivoted in all directions and locked in any position, suitable for screwing to worktables		81-7A

# Vises

		Technical specifications	W x D x H	Article Number
<b>Fixed clamp -Vario</b>		Vario clamp with exchangeable screw-on work heads. 5-piece range comprising: clamp foot with ball joint, vise clamps made of plastic, adjustable blank holder, universal clamping plate, angle adapter		81-7B
<b>Jointed vise</b>		Clamped vise with ball joint, can be swivelled in all directions and fixed in any position, suitable for attachment to tabletops using suction foot.		81-7F
<b>Parallel vise</b>		Parallel vise, forged steel with surface-hardened clamp sides, 125 mm, clamp width 125 mm.		81-7K
<b>Height adjustment device for vise</b>		Height adjustment device for 81-7K vise, steplessly variable height adjustment through 215 mm, using gas pressure spring. Vise can be turned 360°.		81-7L
<b>Height adjustment device for vise</b>		Angle and height-adjustable device with retraction mechanism including parallel vise with 120 mm clamps. Vise can be swivelled 360° and height can be steplessly adjusted through 150 mm.		81-7F ZKLAPP-MECH





## Power Table Sockets



		Technical specifications	W x D x H	Article Number
<b>Shockproof sockets</b>		2 shockproof table sockets with hinged cover, integrated and wired into surface of table structure. Installation on the left, centre or right.		81-2J
<b>Cable admission box</b>		2-part cable admission box, D=80 mm, installation on the left, centre or right.		81-2K ZTEXT
<b>Triple table socket strip</b>		Triple table socket strip with mounting holes, 1.5 m cable White		81-2B Z01
		Triple table socket strip with mounting holes, 5.0 m cable White		81-2B Z02
<b>Triple table socket strip</b> <b>Multiple (6) table socket strip</b>		Multiple (6) table socket strip with switch, 1.5 m cable, White		81-2C Z01
		Multiple (6) table socket strip with switch, 5.0 m cable, White		81-2C Z02





# Chairs

		Technical specifications	W x D x H	Article Number
<b>Swivel chair with continuous contact backrest</b>		Upholstered swivel chair Basic4, soft double casters for hard floors, steplessly adjustable seat height with gas spring, additional variable basic seat height setting, low, continuous contact backrest, height adjustable with grid mechanism. Seat height: 400-520 mm Seat width: 450 mm Seat depth: 410 mm Backrest height: 430 mm Five-leg under-frame: black, Fabric cover: black, with low, continuous contact backrest		S1-1T
		As above, except Five-leg under-frame: light grey Fabric cover: black, with low, continuous contact backrest		S1-1F
		As above, except Five-leg under-frame: black Fabric cover: dark blue, mottled, with low, continuous contact backrest		S1-1D
		As above, except Five-leg under-frame: light grey Fabric cover: dark blue, mottled, with low, continuous contact backrest		S1-1B
<b>Armrest</b>		Armrest, black, closed for basic swivel chairs, suitable for retrofitting		S1-6C
			Armrest, light grey, closed for basic swivel chairs, suitable for retrofitting	

## Chairs

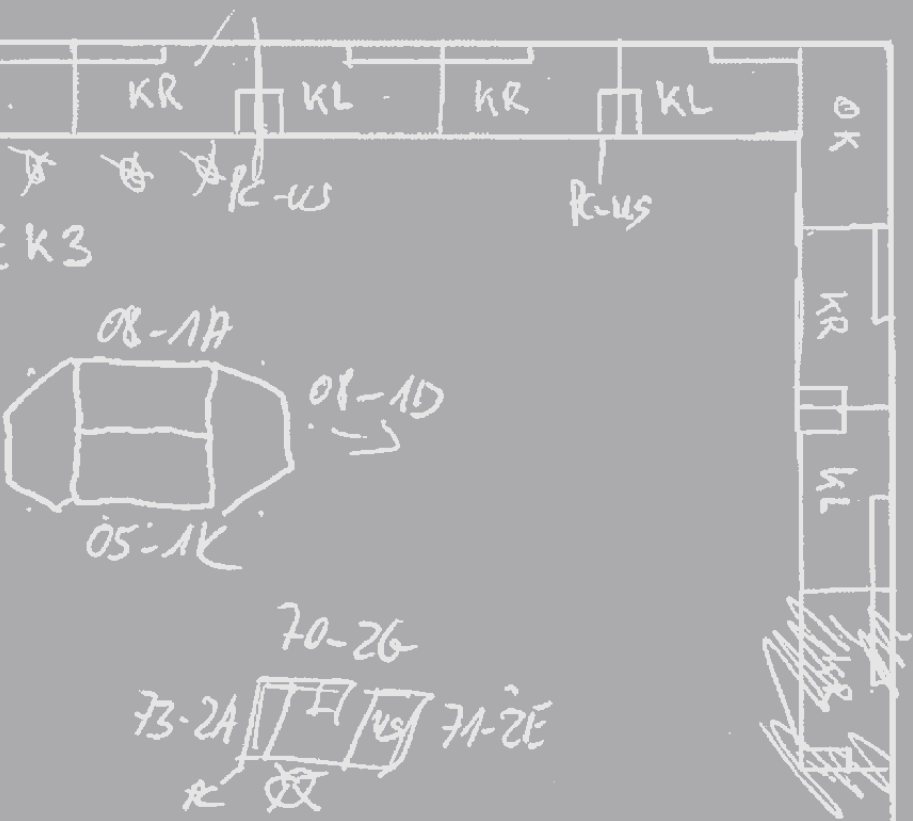
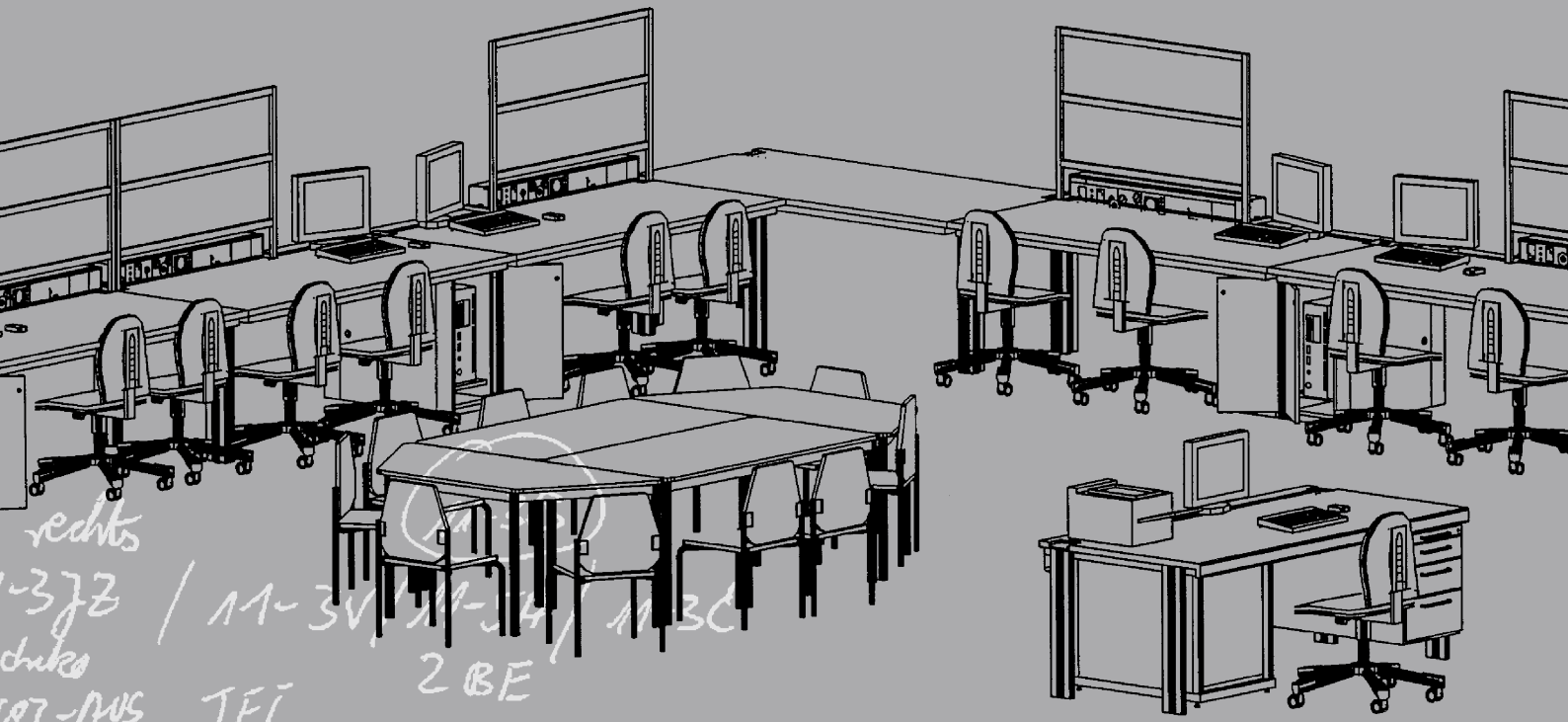
		Technical specifications	W x D x H	Article Number
<b>Air cushion stacking chair</b>		<p>Air cushion stacking chair, seat and backrest made of double-wall blown PP, air cushion effect through perforated seat surface, under-structure made of flat oval steel pipe, hard gliders for carpeting, colour of fabric cover: dolphin grey, colour of frame: ice grey, height of seat: 460 mm, width of seat: 420 mm, depth of seat: 410 mm.</p>		S4-1A
		<p>Air cushion stacking chair, seat and backrest made of double-wall blown PP, air cushion effect through perforated seat surface, under-structure made of flat oval steel pipe, hard gliders for carpeting, colour of fabric cover: dolphin grey, colour of frame: ice grey, height of seat: 460 mm, width of seat: 420 mm, depth of seat: 410 mm.</p>		S4-1E
<b>Air cushion swivel chair</b>		<p>Air cushion swivel chair, seat and backrest made of double-wall blown PP, air cushion effect through perforated seat surface, Height adjustment through pneumatic spring hard casters for carpeting, colour of upholstery: dolphin grey, colour of frame: ice grey, height of seat: 420 - 450 mm, width of seat: 420 mm, depth of seat 410 mm.</p>		S4-1K
		<p>Air cushion swivel chair, seat and backrest made of double-wall PP, air cushion effect through perforated seat surface, Height adjustment through pneumatic spring hard casters for carpeting, colour of upholstery: dolphin grey, colour of frame: ice grey, height of seat: 420 - 450 mm, width of seat: 420 mm, depth of seat 410 mm.</p>		S4-1P

# TFT monitor support

TFT Ball Head	Technical specifications	W x D x H	Article Number	
	<p>Inform TFT Ball Head, for height-variable mounting on front and side of the Inform System Section.</p> <p>For VESA Attachment 75 x 75 mm, Black, Max. Load 12 kg</p>		78-3X	
TFT Swivel Arm		<p>Inform double TFT Swivel Arm for height-variable mounting on front and side of the Inform System Section.</p> <p>Für VESA Attachment 75/100 x 75/100 mm, Colour: black. Max. load 10 kg. Swivel range 105 to 480 mm.</p>		78-3Z



# Customer Care and Services



# Customer Care and Services

## Perfect Customer Care – Right from the start !

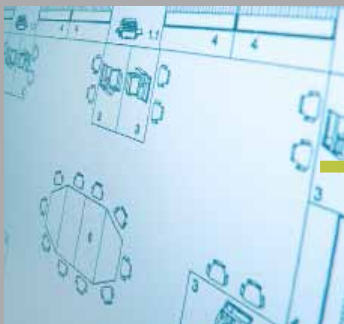
Anytime you are facing challenges at the training lab, we are here for you! After nearly four decades of setting up training lab facilities we know what matters most! Therefore we can offer you complete professional solutions from one source and will do everything to support a perfect the learning environment – and take the burden from you. For years and even decades to come we will support your ongoing operations in all of your tasks and address all of the questions you may have to face.

### **Conception and Planning** **Custom made** **The solution for your training concept**

In collaboration with you we make sure that the equipment of your training lab is tailored to your educational goals in the best possible way. We will see to it that, whenever you so desire, the training subjects are consistently covered and the various guidelines (VOL, VOB, EN, ROHS, WEEE, etc.) are reliably complied with. We are at your disposal even before concrete ideas about the future equipment of your training lab have emerged, and offer you competent advice and consultation services as early as the solution-oriented exploratory phase. We identify your

precise requirement profile and together with you we define your training lab design concept. We find solutions for spatial planning, develop electrical plans and strive to define the best data network and networking technologies. We relieve you of the burdens of the planning phase, from material planning and scheduling to parts lists and delivery of the product.

In larger training labs, competent configurations of student stations and, in fact, of the whole spatial design, can result in enormous advantages in terms of training quality and the efficient use of your training equipment. Our experience and know-how is at our clients' disposal through our Integrated Configuration Service (IK).



Elabo offers customers comprehensive and, above all, individual consultation for the creation of complete concepts. All relevant points are systematically addressed right in the preparatory phase. The result: our customers receive an integrated system including graphic design solutions

for monitoring the entire class, individual monitoring of components and a detailed description of individual technical specifications. New constructions also include cable guide plans which make electrical installations considerably easier.

On-site installation requires precise planning. The precision of the preparations guarantees the scheduled execution and creates maximum reliability for the benefit of our customers.

The checklist includes sections for:
 

- Eintrag (Entry) with fields for Firma, Ort, and Anrede.
- Abbildung (Drawing) with checkboxes for 'Abbildung vorhanden' and 'Abbildung nicht vorhanden'.
- Material (Material) with checkboxes for 'Material vorhanden' and 'Material nicht vorhanden'.
- Montage (Assembly) with checkboxes for 'Montage durchgeführt' and 'Montage nicht durchgeführt'.
- Abnahme (Acceptance) with checkboxes for 'Abnahme durchgeführt' and 'Abnahme nicht durchgeführt'.
- Signature fields for 'Montagearbeiter', 'Hausmeister/Platzwart', and 'Anspruchsberechtigter vor Ort'.



Experienced experts from the Elabo Assembly Service at work.

**Assembly and Implementation: reaching new solutions without problems**

We will do our best to let our customers experience the value of their investment quickly and without complications. In our dialogue with you we determine delivery times and make sure these are met with accuracy. Whenever feasible the products are laid out in a manner so simple that the user may set them up onsite quickly and easily with the aid of our easy-to-understand assembly instructions included in the shipment. Many modules come pre-assembled. For highly complex training systems we recommend to our customers that they make use of our Elabo Assembly Service. This service determines on site conditions such as unloading conditions, door and stairway dimensions, electrical power supply and possibly pressurized air supply connections at the installation site, etc. For more comprehensive projects the components are packaged pre-designated to the respective rooms where they will be set up. Structural systems and slide-in features are pre-wired and tested during the manufacturing process, which subsequently requires the least amount of time for the customer on site. The Elabo Training Systems are then tested for quality and functionality at the designated installation site in the training lab facility itself. Approval is documented. This is how Elabo assumes responsibility for a good start at the destination and relieves its clients from all risk (risk transfer). The Elabo Assembly Service is happy to support you also during times of reorganization and/or relocation.

**Life-Cycle Services – Maximum Use Far beyond one day**

Elabo Life Cycle Services. During the entire period of use – estimated at 15 to 20 years – you may experience the best possible utilization. Several special services are available to fulfill this purpose. Repairs are rare, but if they should occur, our service will be on site right away. Over long periods of use the precision of measurements may be compromised. Elabo’s Calibration Service will restore the desired measure of precision. During this time we install replacement equipment. In the event that more equipment or more systems are required for a period of time, our rental service is there to assist you.





## Elabo. Competence in electrical engineering and electronics

# The Company Elabo

The name is a message: "Elabo" is derived from "Electro Laboratory". As early as at the foundation of the company in 1972, a clear commitment to core competence was professed. Elabo sets benchmarks for technical workstation systems in the areas of electronics and electrical engineering, fully automated and semi-automated industrial test systems as well as for training systems for professions in the varied competence field of electronics.

For more than three decades, the company has been a pacesetter of progress in these fields. Both in the products for our clients as well as in-house we apply the latest technologies such as digital imaging systems, network and fiber-optic cable technologies.



Matured competence: For more than 35 years Elabo has been the no. 1 supplier of electrical training lab equipment.



Extraordinary know-how that proves itself daily in industry. Elabo facilities like the one depicted here – carrying out safety and function tests and conducting optical surveillance of the test object and the indicating instruments at three stations – make Elabo a popular partner of leading companies.



**Capable and committed: our employees**

The position of Elabo as market leader is to a large extent the result of the competence and commitment of our employees. Engineers, technicians and computer scientists, machine fitters, craftsmen, sales specialists and merchants, logisticians and many more are employed here. Many of them have been with the company for a long time. Others have joined us in more recent times, even in order to introduce particular knowledge. Most of all, expertise in software and network matters has gained major importance for Elabo over a short time.

**Always close to our clients**

Elabo has a comprehensive distribution and service network throughout Germany. Subsidiaries and partners are established in almost all the countries of Europe. Elabo is also active in the Middle East and the Far East, in North Africa and North America.

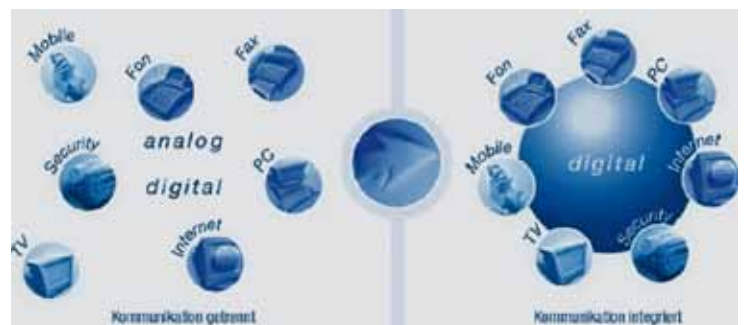
The company's place of business is Crailsheim in southern Germany, at the intersection of the autoroutes Nuernberg – Heilbronn and Wuerzburg – Ulm.

**Part of euromicron. A dynamically growing group of companies**

Elabo is a company of the euromicron Group. The dynamically growing group of companies develops and produces network system components (including fiber-optic cable technology) as well as safety engineering, and implements turn-key solutions in these fields.



Elabo is ISO EN DIN 9001:2000 certified. The award of this certificate confirms that the company has developed a modern quality management and consistently puts it into practice. Elabo thereby complies with the same high standards which modern big industry is held to.



**euromicron**  
Aktiengesellschaft

# Our range of services

Elabo develops from practical experience for practical life, paying close attention to our clients' individual requirements. In all there are seven areas of application in which this policy is successfully implemented.



## Elabo EducationSystems

Elabo sets the standard all over Europe in the development and equipment of electrical laboratories for training in schools, universities, institutions and companies. The laboratories and systems are used in the areas of electronics, electrical engineering, mechatronics, communications technology and related professions.



## Elabo LaboratorySystems

For the qualified equipment of electrical laboratories, Elabo offers an exemplary and versatile range of products and services. The laboratory solutions are employed in industry – in the areas of quality assurance, research and development, in trials and in prototyping – as well as in small and medium-sized operations and in many other electrical engineering application environments.



## Elabo TestSystems

Elabo TestSystems is a leading supplier of fully automated and semi-automated installations that are employed in standard inspection of electric safety as well as in electric and non-electric functions. Valuable handling technology as well as the most up to date sensors and network technology have been implemented. For large industrial projects, individual production stages and the conveying technology are also often integrated.



### Elabo WorkshopSystems

In service and repair shops, Elabo workstation systems are employed for the care and maintenance of electronic devices. They stand out for the broad range of electronic equipment and very practice-oriented technical furniture.



### Elabo ProcessControlSystems

Elabo ProcessControlSystems serve for monitoring and controlling in energy technology, in data centers and the financial sector, as well as in rail, road and air traffic. There are also used in the manufacturing industry and likewise in hospitals and the police in various countries.



### Elabo AssemblySystems

Quality assurance is an increasingly important theme in assembly. Elabo has developed an assembly system program that supports the direct integration of testing and inspection stations into the assembly process. Monitoring consequently takes place immediately at the place where mistakes can occur. The system program is employed in manual and in semi-automated manufacturing.



### Elabo Electronic

Elabo electronic devices provide Elabo's clients with testing and measuring instruments, with electricity / power supply devices as well as with network and software solutions that meet their particular requirements. The systems are partly sourced in the global market and then adapted, but various hardware and software systems, if there are currently no appropriate solutions available in the market, are also developed and manufactured by Elabo itself.



## Our Production. Rising to the Demands of Our Time

Elabo combines modern industrial production methods with highly individualized solutions in accordance with a client's order.

Production must find a balance between the conflicting priorities of high quality and cost reduction – we achieve both aims by using integrated production management. Integration begins in our own operations and is based on the latest technology. Corresponding equipment is available. Thus production is directly linked to development and construction via CAD/CIM.



### Challenges to Production Technology

In many cases we produce the most difficult, most specialized elements and products ourselves. For example we manufacture the innovative, fully automated testing systems in our own special engineering department. Adaptation and contact technology together with test frames are a particular challenge; often the highest level of mechanical precision is required.

We also produce our own high quality electronics equipment and develop the software ourselves, e.g. to control the equipment and systems.

### Partners for Efficiency and Quality

However for standardized processing of metal sheeting or wood we can hardly surpass the quality produced by specialist companies – the supplier market has enormously developed in recent years. We cannot compete with their advantageous cost structures for the production of large quantities. For this reason we choose the best suppliers as long-term partners. This intelligent partnership benefits our clients in more than one way.





### Quality Assurance and Partners

Quality assurance is a crucial task. Elabo's competence and efficiency in this sector is one of the reasons why Elabo is so respected. As a manufacturer of industrial test systems we apply in our own products the methods and technologies that we realize for our clients.

Our partners and suppliers are integrated into the quality assurance network, which means that customers always receive systems with standardized precision, high resilience and our proverbial longevity.

### Installation at the Client's Premises

Elabo believes that a product is only really finished once the client has put it into operation and is completely satisfied with its performance. That is why the final stage of manufacture is the installation and initial operation of the system. This is often carried out at the client's premises. It is a key element of our quality assurance process.





# Elabo. Competent in electrical engineering and electronics





## From our List of References

### Training centres:

Knorr Bremse Systeme für Nutzfahrzeuge GmbH Aldersbach  
Maschinenbauschule Ansbach  
OSZ Energietechnik Berlin  
A & D analoges und digitales Schulungszentrum GmbH Berlin  
Berliner Stadtreinigungsbetriebe Ausbildungszentrum Berlin  
Hahn-Meitner-Institut Schülerlabor Berlin  
OSZ Versorgungstechnik Max-Taut-Schule Berlin  
Berufsbildende Schulen II Axel-Bruns-Schule Celle  
Gewerbliche Berufsschule Crailsheim  
Staatl. Berufsschule 1 Deggendorf  
Berufsb. Schule des Kreises Detmold / Felix Fechenbach Kolleg  
Staatl. Berufs-/Fachoberschule Erlangen  
Heinz-Nixdorf-Berufskolleg Essen  
Robert-Bosch-Berufskolleg Dortmund  
Staatl. Berufsschulen Freising, Lindau, Ingolstadt  
Eduard-Spranger-Schule Hamm  
Wilhelm-Maybach-Schule Heilbronn  
Staatl. Berufsschulzentrum Ilmenau  
Meisterschule für Handwerker Kaiserslautern  
Werner-von-Siemens-Schule FB Elektrotechnik Köln  
Berufliches Schulzentrum 7 Elektrotechnik Leipzig Städt.  
Berufsschule Nürnberg  
Hochtaunusschule HTS Oberursel  
Berufliches Schulzentrum für Technik Riesa  
Berufsbildende Schulen Fredenberg Salzgitter  
Berufsbildungs- und Technologiezentrum Straubing  
Staatl. Feintechnergewerkschule Villingen-Schwenningen  
Friedrich-Schriedel-Schule Wangen  
Staatl. Fachoberschule und Berufsoberschule Weilheim i. OB  
Staatl. Gewerbliche Technische Berufsbildende Schule Weimar  
Berufsschulzentrum Zwickau

### Technical Colleges:

Amberg/Weiden, Ansbach, Augsburg, Berlin, Biberach,  
Brandenburg, Deggendorf, Elmshorn, Emden, Esslingen,  
Flensburg, Frankfurt, Gelsenkirchen, Heide, Heilbronn,  
Ingolstadt, Karlsruhe, Kiel, Lausitz, Lübeck, Mittweida,  
München, Niederrhein, Nordhausen, Osnabrück, Regensburg,  
St. Augustin, Schmalkalden, Stralsund, Ulm, Wedel, Wies-  
baden, Wolfenbüttel, Würzburg, Zittau

### Colleges for Advanced Technical Training:

Braunau Österreich,  
Klagenfurt Österreich

### Institutes of Technology:

RWTH Aachen, Leipzig, Saarbrücken,  
Wismar

### Technology Colleges:

Berlin, Chemnitz, Clausthal-Zellerfeld,  
Darmstadt, Dresden,  
Graz Österreich, Ilmenau, München

### Technology Colleges:

Abba Saudi Arabien, Al Hofuf Saudi Arabien

### Universities:

Augsburg, Bremen, Brescia Italien, Dortmund, Duisburg/  
Essen Erlangen, Freiburg, Frankfurt, Gießen, Göttingen,  
Halle, Hamburg, Heidelberg, Karlsruhe, Kassel, Magdeburg,  
Mainz, Mannheim, Navarra Spain, Rostock, Stuttgart,  
Trier, Tübingen, Zwickau

Staatliche Fachoberschule Erlangen  
Gesamthochschule Kassel  
Rheinhold-Würth-Hochschule Künzelsau



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Training | Measuring | Testing | Assembling | Controlling



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