



**graubner**

*Play Stations for Developing the Senses  
according to Hugo Kükelhaus*

**Richter Spielgeräte GmbH**



## Play Stations for Developing the Senses

The equipment in this catalogue was created to help people of all ages discover and rediscover their senses – sight, hearing, touch and smell. By enjoying these play stations for the senses either individually or collectively, one can learn to fully appreciate those senses and marvel at the capabilities of the human body.

In a modern, virtual world it is vital that we pay special attention to the development of perceptive skills and senses of children. As children lose natural opportunities for play, there is a need to stimulate the link between sensory perception and the natural world by offering environments wherein children can develop their abilities and test their powers in relation to the world around them.

These sensory experiences, encountered through play, experience or discovery, have importance for people of all ages and abilities. Adults facing degeneration of faculties due to under stimulation also need a challenge to the senses. In addition, they offer excellent opportunities for interaction between generations and between children of different abilities.

We are not experts in disability issues but our experience with these play stations has led us to believe that the sensory promotion that they offer can be particularly important in this field. Alone or accompanied by a carer, new sensations can be experienced, and the chance to reach the full potential for those with special perception is attainable.

Promotion of the senses is also important when they are fading with age. For example, scent can arouse memories as can sounds making access to this type of equipment an important part of retaining quality of life in older years.

The idea of illustrating these phenomena in an experimental zone for developing the senses was conceptualised by the German writer, sociologist, architect, philosopher and artist Hugo Kükelhaus (1900 -1984). Following this collaboration with Wolfram Graubner, in a carpentry workshop in the Black Forest, led to further development of the first play stations for public areas.

In 2005, after many years working together in the distribution of Graubner equipment throughout the world, Richter Spielgeräte acquired manufacturing rights and continues to develop Play stations for Developing the Senses.

Hugo Kükelhaus has been published many times in the German language, but little can be read from or about him in English. The only known English publication is "Inhuman Architecture" (2007, Studio Naqshbandi, India), a translation of "Unmenschliche Architektur" (Gaia Verlag Köln, Germany).

**graubner** play stations in art museums:

Haus der Kunst, Munich, 1999  
Martin Gropius Haus, Berlin, 2000  
Osthaus-Museum, Hagen, 1988 and 1994 etc.

If you wish to find further information, please contact us at Richter Spielgeräte GmbH.

Frasdorf, April 2017

Richter Spielgeräte GmbH  
Simsseestraße 29  
D-83112 Frasdorf  
Phone +49-8052/17980  
Fax +49-8052/4180  
info@richter-spielgeraete.de  
www.richter-spielgeraete.de

Frage  
nach dem Durch-  
gang;

Wo ist der  
"rote Faden",  
der alles zu-  
sammen hält?

Antwort:

Der rote Faden  
ist man selbst.

Es ist der Organismus als  
Ganzes der die Organe zu-  
sammen hält. Solange ich den  
"roten Faden" statt in mir selbst,  
woanders suche, lebe ich nur brüch-  
stückhaft mit mir selbst...

A question emerging after the passage: Where is the central thread with which everything is held together? Answer: You yourself are the central thread. It is the organism as a whole which holds together the organs. As long as I don't search for the central thread in myself but someplace else, I live only partly with myself...

Hugo Kükelhaus



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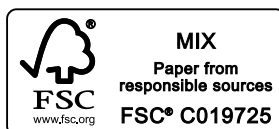
## **Experience of smell**

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We love nature!  
FSC®-certified GardaPat 13 Kiara paper was  
used for this catalogue.



## Planning information

Creating environmental structures for people places high demands especially on the planners. Because the *graubner* play stations are not play equipment in the usual sense, there are the following things which should be observed.

### For the assessment of the acoustic effects the following 3 ranges apply:

- strong
- medium
- soft

Notes which are loud, high, hard or shrill are considered more disturbing than deep, quiet, soft and gentle notes.

### For assessment of vulnerability to vandalism we have chosen the following terms:

- not vulnerable (comparable to playground durability)
- slightly vulnerable (depending on location, particularly in areas which are obscured from view)
- vulnerable (material necessary for function, e.g. glass in the optical play stations)

### For assessment of planning according to EN 1176 we have chosen the following terms:

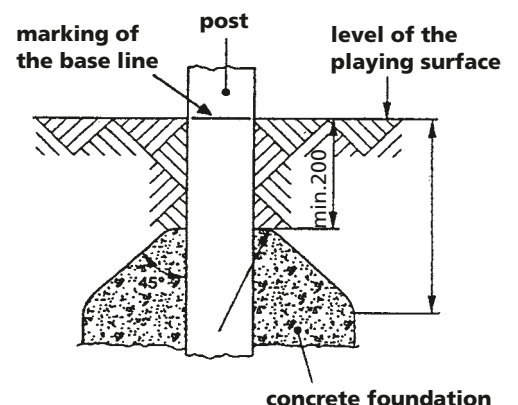
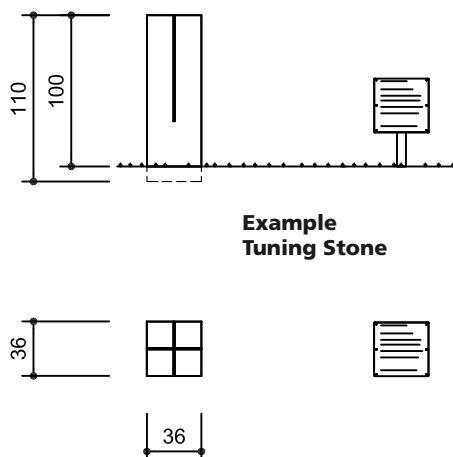
- standard-compliant (by installation of the play stations the EN 1176 guidelines apply)
- has been completed (TÜV certificate does exist)
- not necessary (as not within the scope of the standard)

### Notes on installation:

For assembly of our play stations the following measurements for the top edge of the foundation are valid:

- Experience stations made of wood: 20 cm under the ground level area
- Experience stations made of metal: 10 cm under the ground level area (exceptions: Conference and Echo Game - 20 cm)
- Experience stations made of stone: 10 cm under the ground level area
- Experience stations with high construction demands 40 cm under the ground level area

For play stations which are covered by EN 1176, the foundations must be constructed according to the requirements of the standard (EN1176, 4.2.14 Foundations), as a rule 40 cm under the ground level area, or for conical shaped models 20 cm under the ground level area, see sketch. Please refer to our installation instructions for exact installation heights.



**Notes regarding the suitability for indoors/outdoors:**

If play stations are to be installed indoors it is necessary to check if the equipment can be left unmodified. This is possible for those which are only installed to a depth of 10 cm. If a special equipment height or a special foot construction is desired, this should be communicated to us at the time of preparing the tender. The equipment will then be manufactured as a special design (identified with an "S" in front of the order number).

**Notes on wheelchair accessibility of play situations:**

If play stations are to be used by people in wheelchairs, the height of some play stations needs to be adjusted.

We use the following reference dimensions for wheelchair users:

eye height: 125 cm

Of course, eye height can be varied from 120 - 140 cm for different sized wheelchair users.

**Notes on necessity for explanation boards:**

Explanation boards on support posts are included in delivery for some play stations where the phenomenon is not apparent at first glance. For the remaining play stations we offer explanation boards at an additional charge.

**For assessment of supervision we have chosen the following terms:**

- absolutely necessary

The Stone Pendulum may only be delivered together with an anchor chain to limit the swinging movements if it is to be installed in an unsupervised area. Supervisors can release this chain with a key.

- necessary

- recommended

- not necessary

Alongside our production craftspeople, our team in Frasdorf is made up of landscape architects, architects and technicians whose many years of experience in development, construction and planning make it possible for us to playfully demonstrate natural phenomenon. We would be pleased to advise you on the planning of fields of play and experience according to Hugo Kükelhaus as well as provide support with any technical questions.

And to summarise:

"Room to play, room to play:

That is the secret."

Hugo Kükelhaus



**living with time**

**playing with time**

**experiencing time**

**Experience of time**

Alongside the rational interaction with time, the time of day, there is another more primal form of time pulsating through life. This appears when people become totally immersed in an activity, completely lose themselves in the moment and the passage, rhythm and intervals of time simply flow by.

Time, like other phenomena, appears as a polar experience in people's lives. Both modern quantum mechanics and the fairy tale of the hare and the tortoise show that time is not a line between now and later, but spaces of time. These can be inflated like a balloon to extend relaxation or even boredom or shrunk to create chaos, rush and stress.

We don't know very much about the origin of time as the foundation of our existence. Like all perception, time can only be experienced by being seen as a whole. You need to take time out to be able to hear a melody out of the sum of the individual notes or a rhythm from the sum of individual beats.

Fascinating experiences of time are created by the infinite variety of rhythms in the Impulse Spheres.

A quick spin of the Turning Circle transforms an arrangement of symmetrical layers into chaos that reorders itself in pulsating movements as it slows down.

At the Three-Frequency Pendulum, harmonic vibrations can be experienced.

*Es ist der Organismus als Ganzes der die Organe zusammenhält. Solange ich den "roten faden" statt in mir, sondern suche leblich nur bestückhafte mit mir selbst ...*

"We need to take our time in order to achieve something good. The time we devote to something is the measure of our love for it. In a sense, time is love and without love, no work can flourish."

Hugo Kükelhaus, "Become a Carpenter"



**Function and Play value**

Nine freely suspended spheres are hung in a row, touching each other. If the first one is pulled back and released to collide with the others, something truly amazing can be experienced. The impact force of the sphere travels unseen through the whole row of spheres until it finds its opposite number, the last sphere, which is forced outwards and, with almost equal energy, returns to collide with the row of spheres. The procedure is repeated until the force is dissipated. One or more spheres can be used to create endless variations and number games in a variety of rhythms. The laws of elasticity and energy can be experienced.

**Suitable**

- for public buildings
- reception areas, training and recreational areas of companies, seminar centres, hospitals, therapy gardens, zoological and botanical gardens

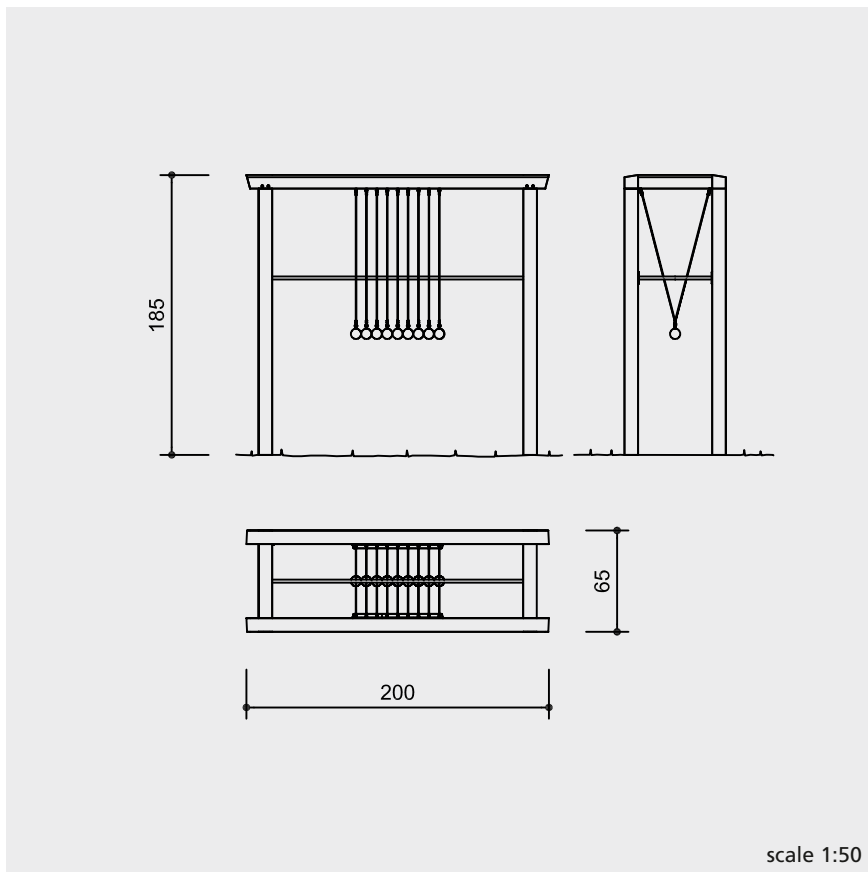


**Impulse Spheres**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	medium
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.11000



### Technical information

frame made oak

only wood joints in accordance with traditional carpentry

suspended on stainless steel cable

fastening of suspension frame using adjustable attachments

high-quality, specially hardened stainless spheres (Ø 70 mm), for optimum impulse

limiting bar made of stainless steel

### Dimensions

(small deviations possible)

height	1.85 m
length	2.00 m
width	0.65 m
weight	80 kg

### Components

1 complete piece of equipment with 9 stainless steel spheres

### Installation information

Recommended space  
4.05 x 3.00 m

Foundations  
2 items 40 x 100 x 40 cm  
excavation depth 60 cm

#### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

**Frame also available in stainless steel.**



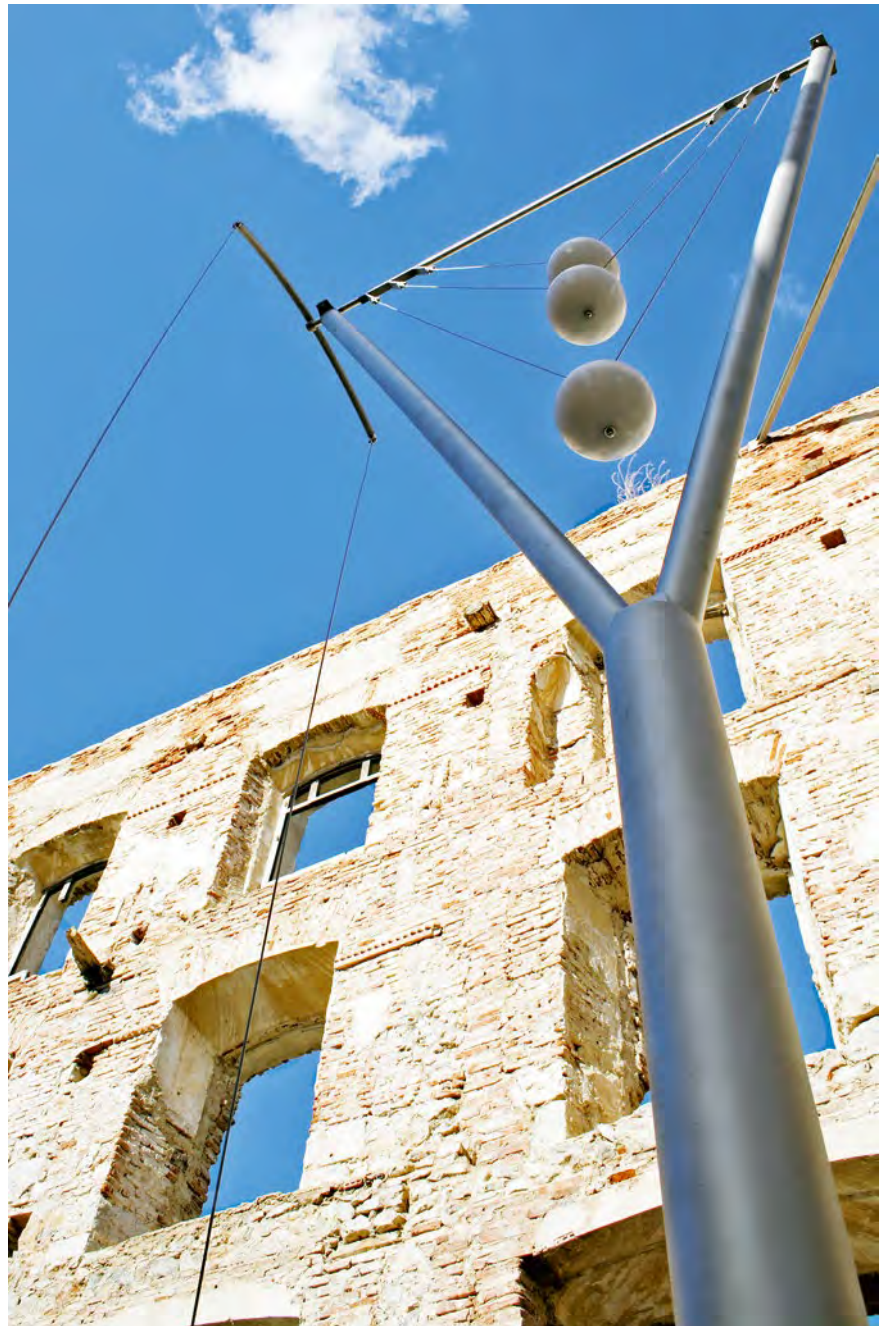
10.11000

**Function and Play value**

Three pendulums with spherical weights are suspended from a common axis high above the heads of the observers. The axis can be set in motion at any velocity by a rope according to the belfry principle. The correct rhythm for pulling the string and controlling the turning velocity of the axis making the spheres swing one after the other, can be found by careful trial and error. The length of the pendulum arms determines the amount of vibration and has been designed in a way that the result is a harmonic, integral relationship between the vibrations. In the same way that the tones of 3 different bells ringing together results in an accord the spheres also meet repeatedly for a short moment in a vibrational pattern. This moment is especially fascinating for the observer.

**Suitable**

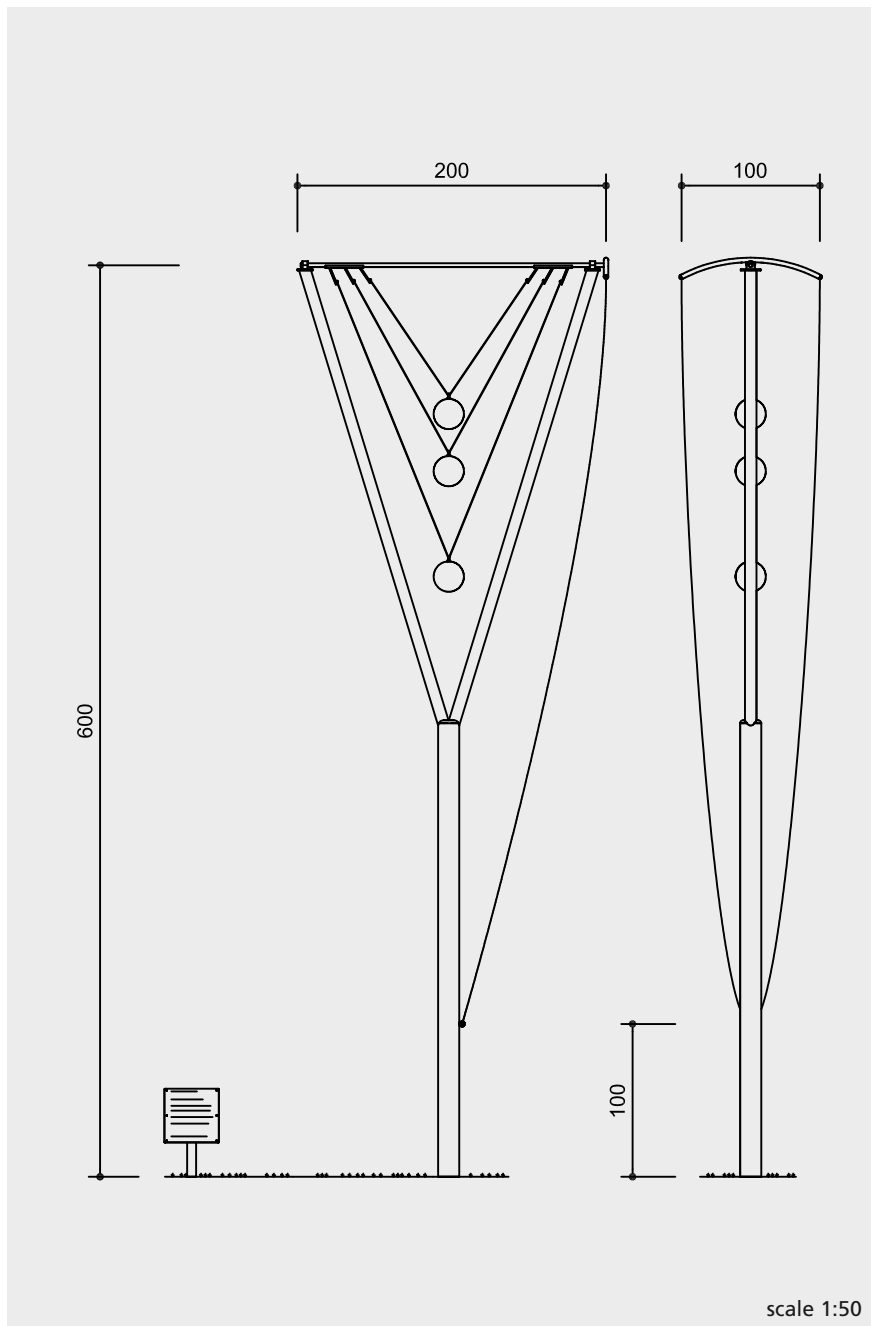
- pedestrian areas
- parks



**Three-Frequency Pendulum**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible





### Technical information

frame made of stainless steel

surface blasted with glass beads

three heavy plastic spheres, suspended separately on stainless steel cable, to be set in motion by a bow with rope

support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	6.00 m
width	2.00 m
depth including bow with rope	1.00 m
weight	170 kg

### Components

- 1 complete piece of equipment with foundation anchor
- 1 Explanation Board with support

### Installation information

Recommended space  
5.00 x 3.00 m

Foundations  
1 item 130 x 130 x 70 cm reinforced  
blinding layer  
1 item 130 x 130 x 5 cm  
total excavation depth 115 cm  
Explanation Board  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.12100

**Function and Play value**

Turning the disc sets two differently coloured sands in motion and these then trickle through fine funnel openings like blood through veins and heart. As a rule, like goes to like, like things join together: large to large, heavy to heavy. Mountains and valleys, shot through by regular two-coloured layers form on one side, while the other side shows increasing waves of erosion. A stimulating experience as a result of the formation of continually new patterns. Just a gentle turn of the disc is enough to change the picture into ever new and flowing forms, each unique and fleeting. Whole landscapes and aesthetic patterns appear in the sand. Turning the disc too fast results in chaos. However, if the disc is left to trickle while stationary, new structures form.

**Suitable**

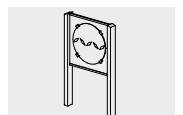
- for public buildings
- reception areas, training and recreational areas of companies
- seminar centres, hospitals, doctor's surgeries, therapy gardens, zoological and botanical gardens



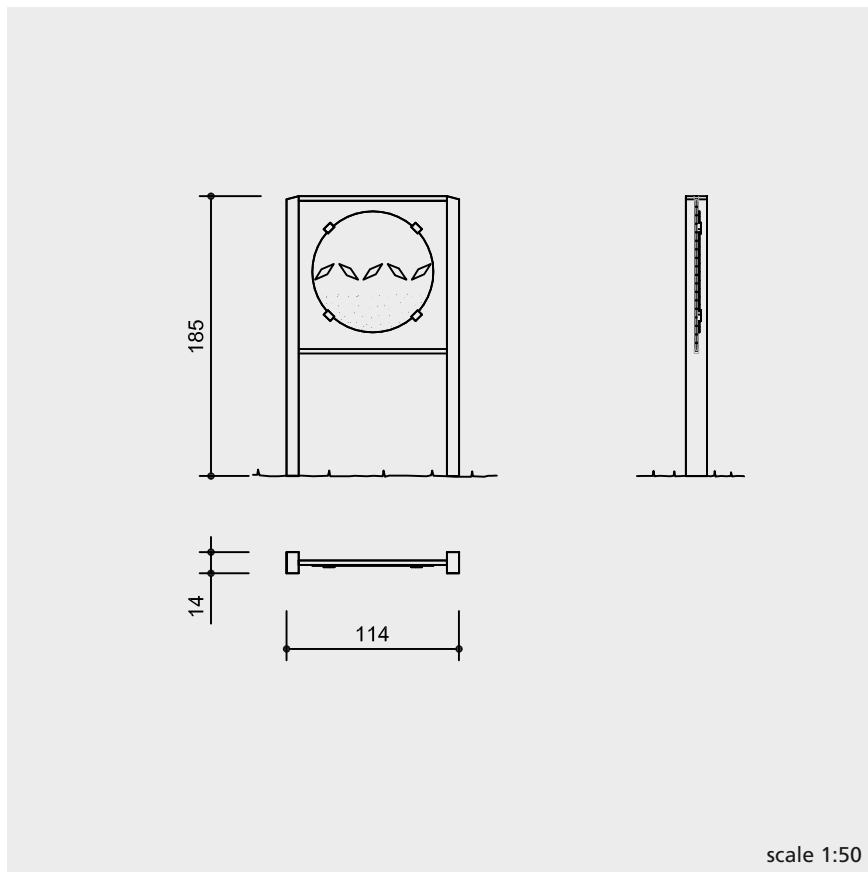
10.13500 for wall attachment

**Turning Circle**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.13100



### Technical information

frame made oak

impact- and weather-resistant acrylic glass held in four corrosion-proof bearings

large-diameter board with thick, transparent and completely non-smear UV-proof outer disc

condensation in disc interior precluded

### Dimensions

(small deviations possible)

height	1.85 m
width	1.14 m
depth	0.14 m
board	1.00 x 1.00 m
turning disc	Ø 0.86 m
weight	90 kg
with packaging material	100 kg

### Components

1 support frame with installation plate  
1 turning circle

### Installation information

Recommended space  
3.00 x 2.00 m

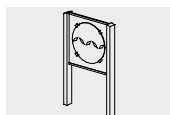
Foundations  
2 items 40 x 40 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

**Turning Circle also available for wall attachment Order No. 10.13500 or with frame made of stainless steel Order No. 10.13105.**



10.13100



## living with patterns

### playing with patterns

### experiencing patterns

#### Experience of patterns

The primordial motion of living things is best illustrated in water. The motion of waves, meanders and spiralling whirlpools are formed out of the interaction and rhythms of currents. The pattern of time causes the spatial arrangement of water movements to change.

This motion appears to be inscribed in the shape of shells, in bones, ears, the larynx, noses and in the interior of heart and brain. They are also inscribed as a part of our primeval memory of our creation of embryonic gesticulation in the form of unconscious patterns of perception. Observing inward and outward rolls, spirals of double spirals is a moving experience. In the Whirlpool Column, primal motion can be simulated with childlike simplicity.

The currents which are formed in flowing water by the obstacles of the pattern board and disc are diverse and beautiful to watch.

The Virbela Basins create pulsation patterns in a play stream. The Virbela Prototype allows you to create your own flow patterns by experimenting. Standing waves develop naturally in water and in the air. The Leonardo Table takes up on the idea of the water experiments carried out by Leonardo da Vinci.

The large Double Helix offers a basic visual game. The eye produces involuntarily "memory pictures" and the observer believes he perceives a motion that actually is not there.

"The human being is complete as he is; but this finished form is a result of motion. This finished form sprang from primal shapes which form and fade away. It is not the moving object that originates from the object at rest but it is the object at rest that originally came from the moving object."

Theodor Schwenk, Herrischried  
(The Sensitive Chaos)





Order No. 10.15005 with support post made of stainless steel

**Function and Play value**

Water can be found in the space within a transparent board where small particles create clear patterns. The board can be very easily set into a gentle pendulum motion due to the large, heavy counterweights. This rhythm effect causes designs to form. Water currents which collide into a wall create waves whose structure resembles sand on the bottom of the ocean. It can be clearly seen how the water flows around the obstacles and flows more quickly through the narrow canals. Typical flowing patterns build up in front of obstacles and in the water eddy behind them.

The slow progress of this activity requires patience and encourages the observer to watch attentively. We experience time through daily rhythm, e.g. the rhythm of day and night. The rhythm of the currents is an expression of time which can be directly experienced. And it is in this way that the game taps into people's natural rhythm and moods.

**Suitable**

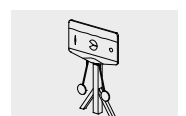
- for public buildings
- reception areas, training and recreational areas of companies, seminar centres, hospitals, therapy gardens, zoological and botanical gardens, museums



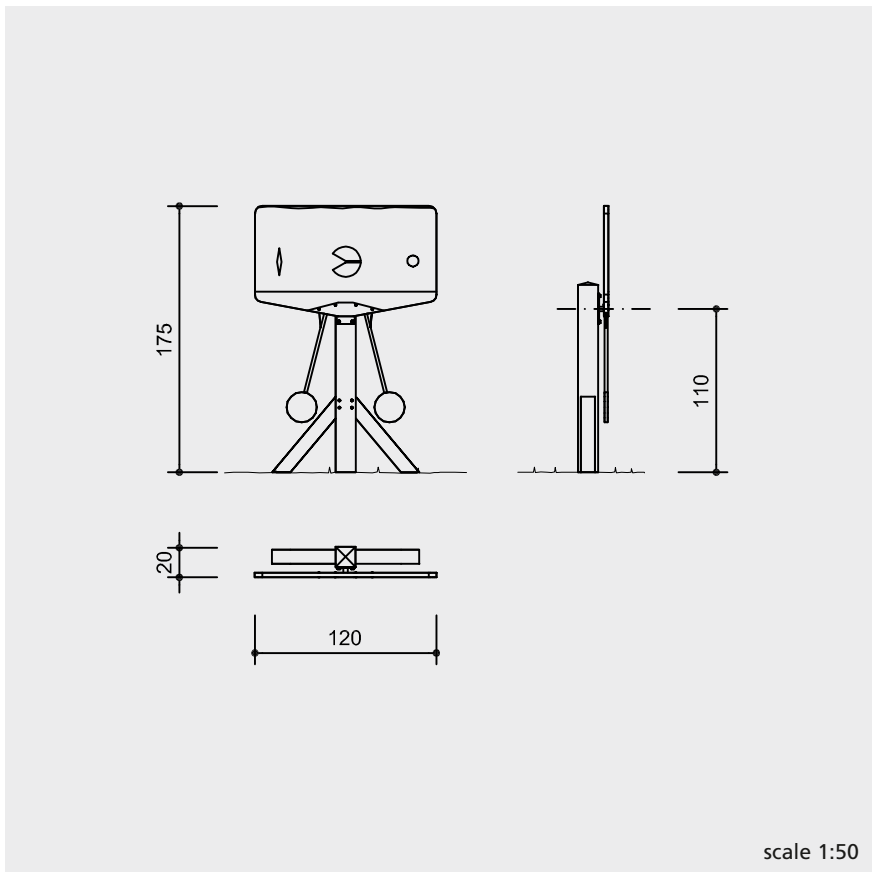
Order No. 10.15500 for wall attachment

**Pattern Board**  
*graubner* Play Stations for  
Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.15000



### Technical information

frame made oak

extremely impact-resistant acrylic  
double screen

### ball bearing

low-maintenance, easily replaceable  
ball bearings made of stainless steel,  
smooth running for extended motion  
with limited swing range



special algae-free glycol mixture as  
high-contrast flow liquid, frostproof to  
approx. - 20° C

### Dimensions

(small deviations possible)

height	1.75 m
width	1.20 m
depth	0.20 m
weight	60 kg
with packing	
material	100 kg

For more detailed explanation of the  
quality characteristics see price list.

### Components

- 1 pattern board
- 1 rack

### Installation information

Recommended space  
3.00 x 3.00 m

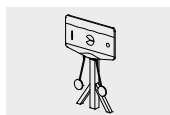
Foundations  
2 items 50 x 30 x 30 cm  
excavation depth 50 cm  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**

Technical changes reserved.

**Equipment also available with stand  
posts made of stainless steel (Order  
No. 10.15005) or for wall attachment  
(Order No. 10.15500).**



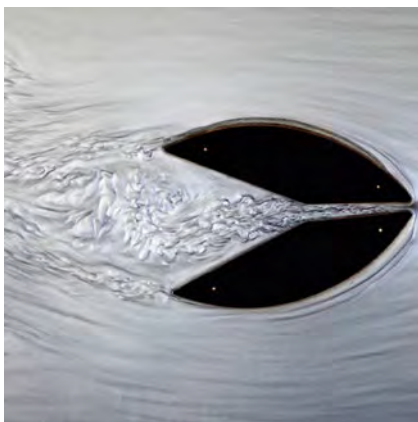
10.15000

**Function and Play value**

By turning this water-filled body around in various directions the flow creates fast or slow moving patterns. The gap between two boards is filled with water containing tiny particles which clearly highlight the patterns. The disc can be moved and turned in all three dimensions. The effect of the universal joint mounting is an experience in itself for many. There are four obstacles inside the disc; the liquid flows over or through them. Typical flowing patterns build up in front of obstacles and in the eddy behind them with shapes forming in a symmetrical inward and outward spiral movement. The trapped air bubbles are a further element which demonstrates the effect of opposing forces on a shapeable body.

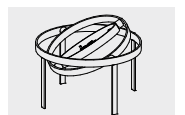
**Suitable**

- for public buildings
- reception areas, training and recreational areas of companies, seminar centres, hospitals, therapy gardens, zoological and botanical gardens, museums

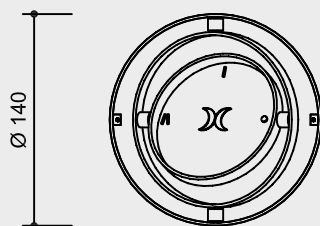
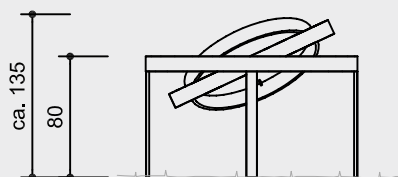


**Pattern Disc**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.15100



scale 1:50

### Technical information

frame made of aluminium

extremely impact-resistant acrylic  
double screen

special algae-free glycol mixture as  
high-contrast flow liquid, frostproof to  
approx. - 20° C

maintenance-free stainless steel bearing

bearing of the screen decelerated to  
avoid the turning movement being  
started too fast

### Dimensions

(small deviations possible)

frame	Ø 1.40 m
total height approx.	1.35 m
frame height	0.80 m
disc	Ø 0.90 m
weight	65 kg

### Components

1 complete piece of equipment

### Installation information

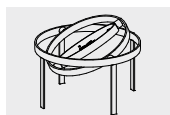
Recommended space  
circle diameter 4.00 m

Foundations  
4 items 30 x 30 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**

Technical changes reserved.



10.15100

**Function and Play value**

In every watercourse the observer is confronted with a great variety of wave shapes, flow patterns and eddies which are often accompanied by typical water sounds. When the basic shapes meet they form a variety of wave patterns. The Leonardo Table is a polished, slightly inclined stone platter which has a thin film of water flowing over it. A number of variously shaped obstacles can be placed in this flow. In the wake of the obstacles turbulent, swirling currents appear. It is possible to observe the eddies; the fine structures can be made visible if a little dust is thrown on the water. The obstacles on the Leonardo Table can be pushed against the flow. By changing the flow rate also the frequency with which the eddy loosens itself from the obstacles changes. The eddies caused by the turbulence then become even smaller.

**Suitable**

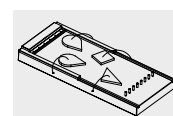
- for water play areas



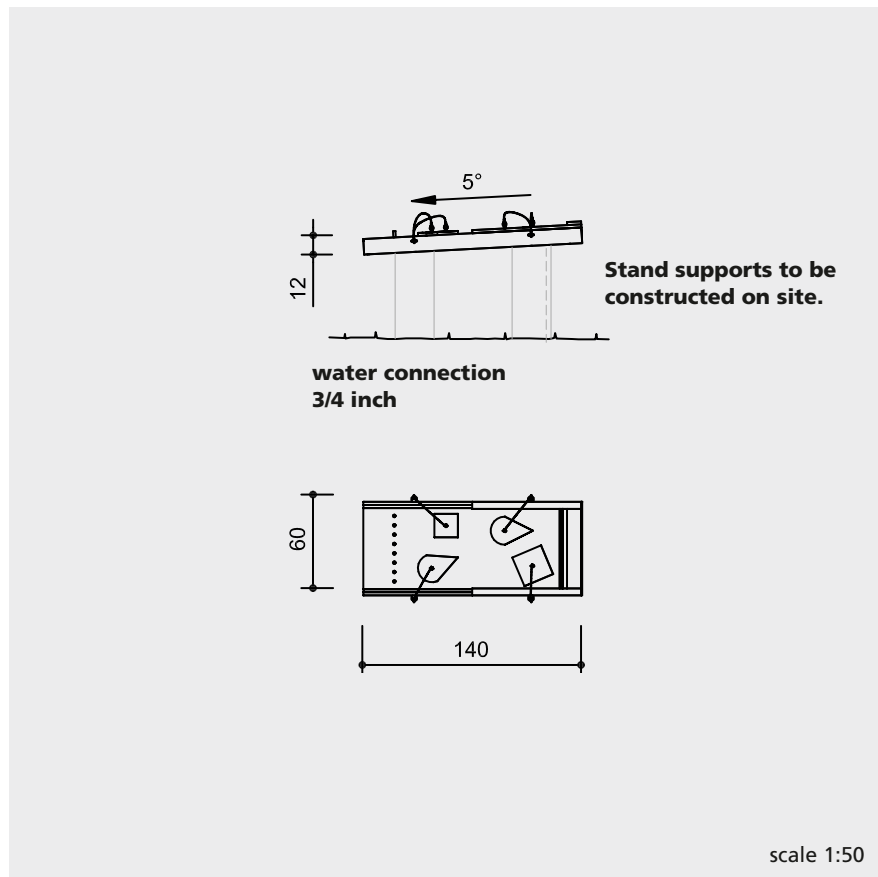
The picture shows a special version.

**Leonardo Table**  
**graubner** Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.16100



**Technical information**

polished and weather-resistant granite platter

four differently formed flow obstacles for creating flow patterns, fixed with stainless steel cables

other metal parts and water distribution made of stainless steel

**Dimensions**

(small deviations possible)

height	0.12 m
length	1.40 m
width	0.60 m
weight	350 kg

**Components**

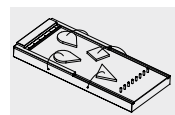
- 1 granite platter
- 4 flow obstacles including fastening material

**Installation information**

Recommended space  
3.00 x 2.00 m

**Stand supports and water connections to be constructed on site according to manufacturer's specifications.**

**Attention!**  
Exact measurements may vary, for all installation dimensions refer to current installation instructions.  
Technical changes reserved.



**10.16100**



**Function and Play value**

Screw-like and spiralling movements naturally occur in nature. It takes practice to recognize these complex current forms, for example in a whirlpool. To perceive, this means to intuitively recognize the pre-historic conditions under which mankind developed. Those who turn the hand-crank at this play station experience two interrelated forces and can experience the principle behind a vortex. With increasing acceleration the impeller creates a whirlpool which can be very clearly seen in the water filled cylinder. While a vortex funnel forms downwards, the water flowing in the opposite direction creates a counter vortex in the cylinder. The turning motion from top to bottom causes a sucking effect which draws the water upwards. The water mass which forms a vortex funnel rotates in a spiralling shape in two directions creating its own counter movement.

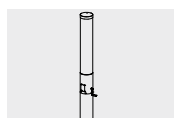
**Suitable**

- for water play areas
- swimming pools
- technical museums
- reception areas of companies
- parks, nature reserves, botanical gardens

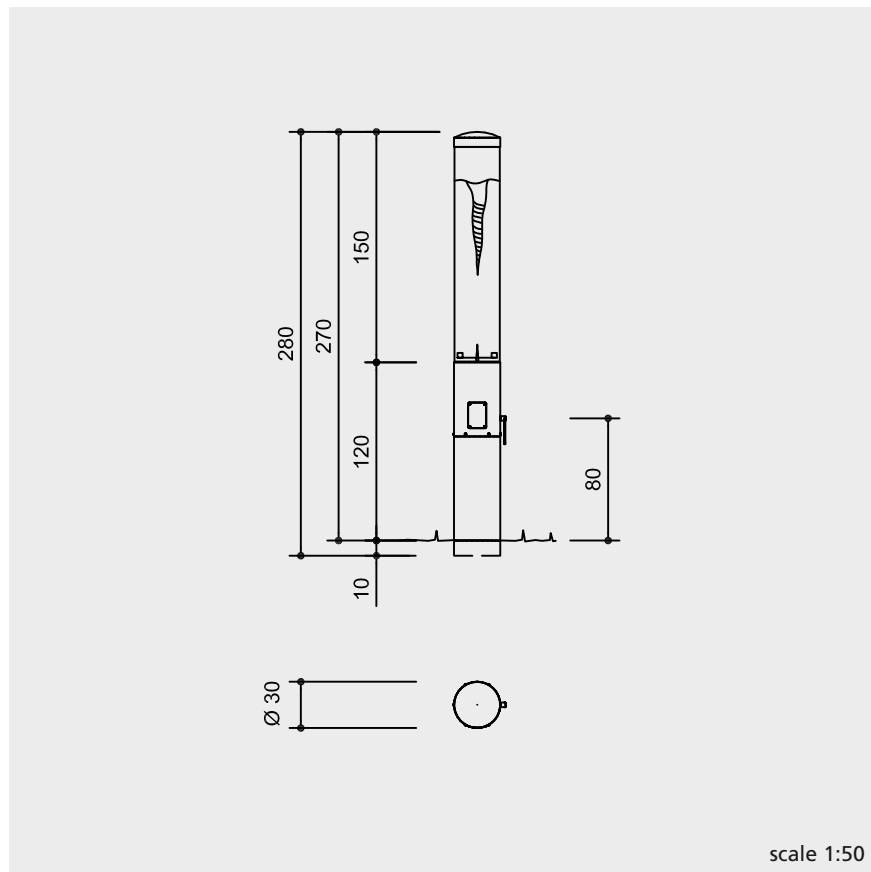


**Whirlpool Column**  
**Whirlpool Column with Lighting**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.17000/10.17500



**Technical information**

large thick-walled whirlpool cylinder of extremely impact-resistant acrylic glass

special algae-free glycol mixture, frostproof to approx. - 20° C

support column made of stainless steel

low-maintenance gear with freewheel turning handle against anti-kickback device

**Order No. 10.17500  
Whirlpool Column with Lighting**

technical details as described before, but in addition with internal LED lighting at the base of the whirlpool cylinder, power generation by dynamo, illumination only during rotational movement

**Dimensions**

(small deviations possible)

height	2.70 m
diameter	0.30 m
weight	100 kg
incl. water and packaging material	210 kg

**Components**

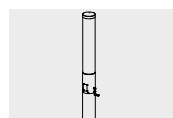
- 1 whirlpool column
- 3 canisters with 20 l glycol mixture each

**Installation information**

Recommended space circle diameter 3.00 m

Foundations  
1 item 50 x 50 x 60 cm  
excavation depth 70 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



10.17000/10.17500

**Function and Play value**

The Virbela Prototype allows you to experience the rhythmic, pulsating flow of water, just like it occurs in natural streams, by moving the semicircular obstacles to the correct position in relation to each other. The characteristic flow of the water with its spiral-shaped, rhythmical movements can be created by the Virbela Prototype when the pipe sections are moved into various positions along the guideways. Just like the flow of a stream the water begins to meander to and fro and leaves trails behind it. The path of the meandering trails can be seen clearly. If you put these obstacles at certain places, the beginning and end of the trails touch and the water flows on with rhythmic movements.

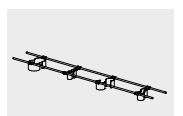
**Suitable**

- water play areas
- zoological and botanical gardens parks

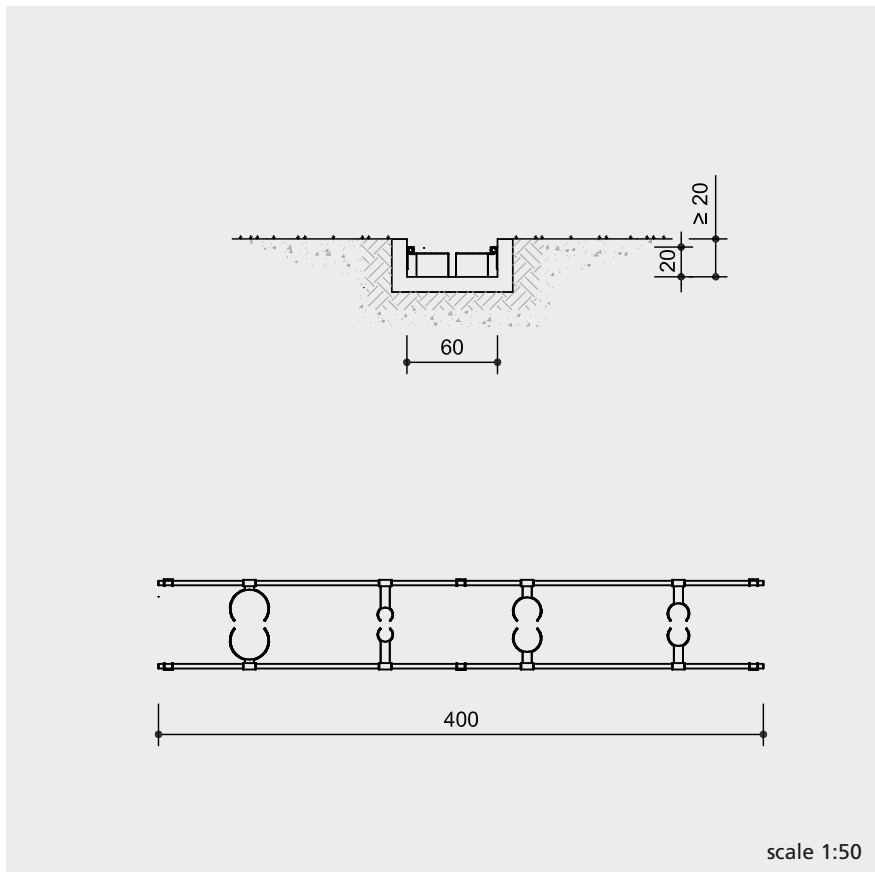


**Virbela Prototype**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.18500



**Technical information**

all stainless steel equipment

movable flow obstacles designed according to the laws of flow

**Dimensions**

(small deviations possible)

height 0.20 m  
 length 4.00 m  
 width 0.60 m

**Stream bed**

height min. 0.20 m  
 length 4.00 m  
 width 0.60 m

**Flow obstacle**

diameter 0.10 - 0.25 m  
 weight 40 kg

scale 1:50

**Components**

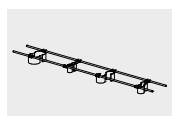
8 flow obstacles with 2 guideways and fastening material for installation into a stream bed prepared on site

**Installation information**

Recommended space  
 4.00 x 2.60 m

Foundations  
 depends on the layout of the entire site

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.



10.18500

**Function and Play value**

By turning the Double Helix, the outer and the inner spiral, which are connected to each other, move in a way that we perceive it as an upward and downward movement. Furthermore, the shadow of the double screw is seen as contra-rotating. In fact however, the turning movement takes place at the same level, i.e. every point on the double spiral remains at the same height. As with the pendulum, but here in a circulating movement, we experience the universal principle that in every rise a fall is inherent and vice versa.

**Suitable**

- as orientation point in open areas
- for parks
- reception areas, zoological and botanical gardens

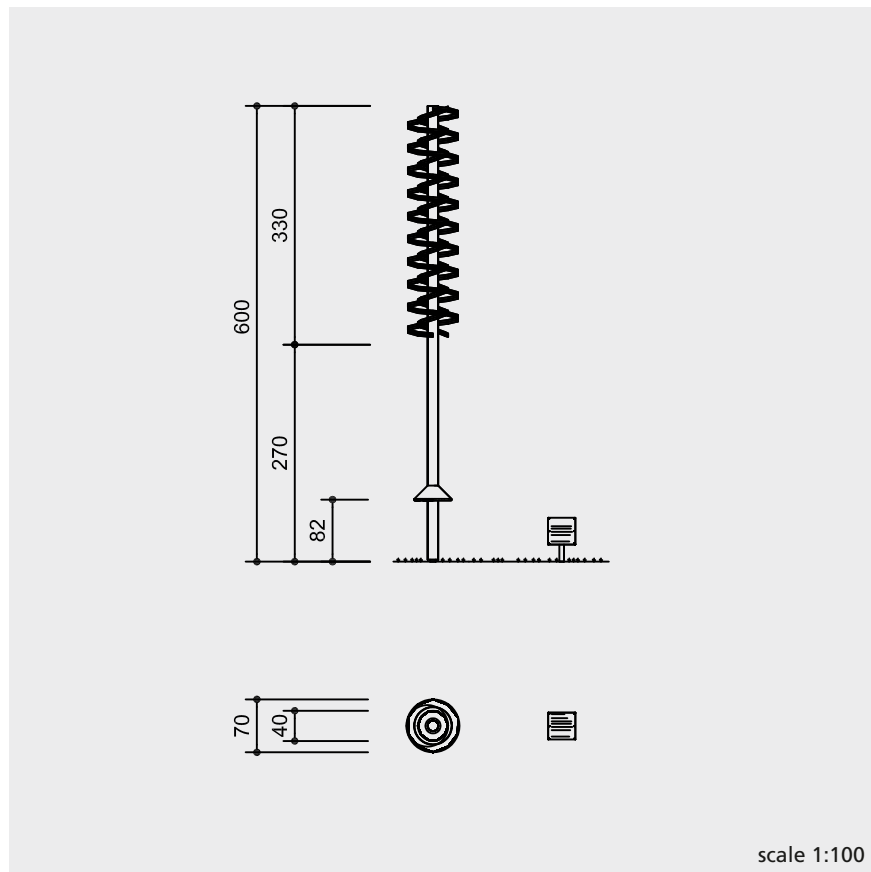


**Double Helix**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.19200



### Technical information

all stainless steel equipment

sturdy pivot bearing with lubricating nipple

handwheel for starting circular motion

Support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	6.00 m
diameter	0.70 m
weight	270 kg

### Components

- 1 complete piece of equipment with foundation anchor
- 1 Explanation Board with support

### Installation information

Recommended space  
circle diameter 3.00 m

- Foundations
- 1 item 130 x 130 x 70 cm reinforced
  - blinding layer
  - 1 item 130 x 130 x 5 cm
  - total excavation depth 115 cm
- Explanation Board
- 1 item 40 x 40 x 40 cm
  - excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

**Double Helix also available in smaller version (Order No. 10.19300) for suspension.**



10.19200

## living with light

### playing with light

#### experiencing light

#### Experience of light

Light is a primordial element of life. We perceive it as the spatial relationship between the illuminating and the illuminated objects. In addition to the spatial experience of objects, periods like days and years are characterised by light and colour images.

The substantive connection between people, the eye and the sun, is expressed in moods and physical reactions which are affected by light and shade as well as colours.

The activating energy of light becomes clear in experiments with the big magnifying lens.

The most beautiful colours can be produced with the prisms at the point where light and dark meet.

The spectrum of colours at the edges of a translucent stone is amazing.

The three-dimensional, spatial sight and complementary colours which the eye forms for itself when observing different patterns on the Rotating Discs are sign posts to the basic principles of creation.

The mysteries of the whole, created through symmetry of the individual parts in the Kaleidoscope and Octascope, are beautiful and pleasurable.

In the Walk-in Kaleidoscope people are faced with an unusual perspective of themselves.

"I cannot call upon logical elements to defend my convictions, except possibly my little finger, sole and weak testimony of a view deeply held by me."

Albert Einstein





**Function and Play value**

The observer gently spins the disc and then takes a step back. Looking at the disc the eye actively and automatically creates complementary and polar counter images. The sense of sight thus fulfils a basic principle of nature: maintaining the unity in a variety of perceptions, and thus through this unity maintaining the diversity. As a result of the turning motion of the Rotating Discs, observers see a dynamic penetration of the light and dark rotating parts. This creates surprising, colourful light phenomena.

**Suitable**

- for public buildings
- reception areas, training and recreational areas of companies, seminar centres, hospitals, therapy gardens, zoological and botanical gardens, museums, pedestrian areas, foyers, museums

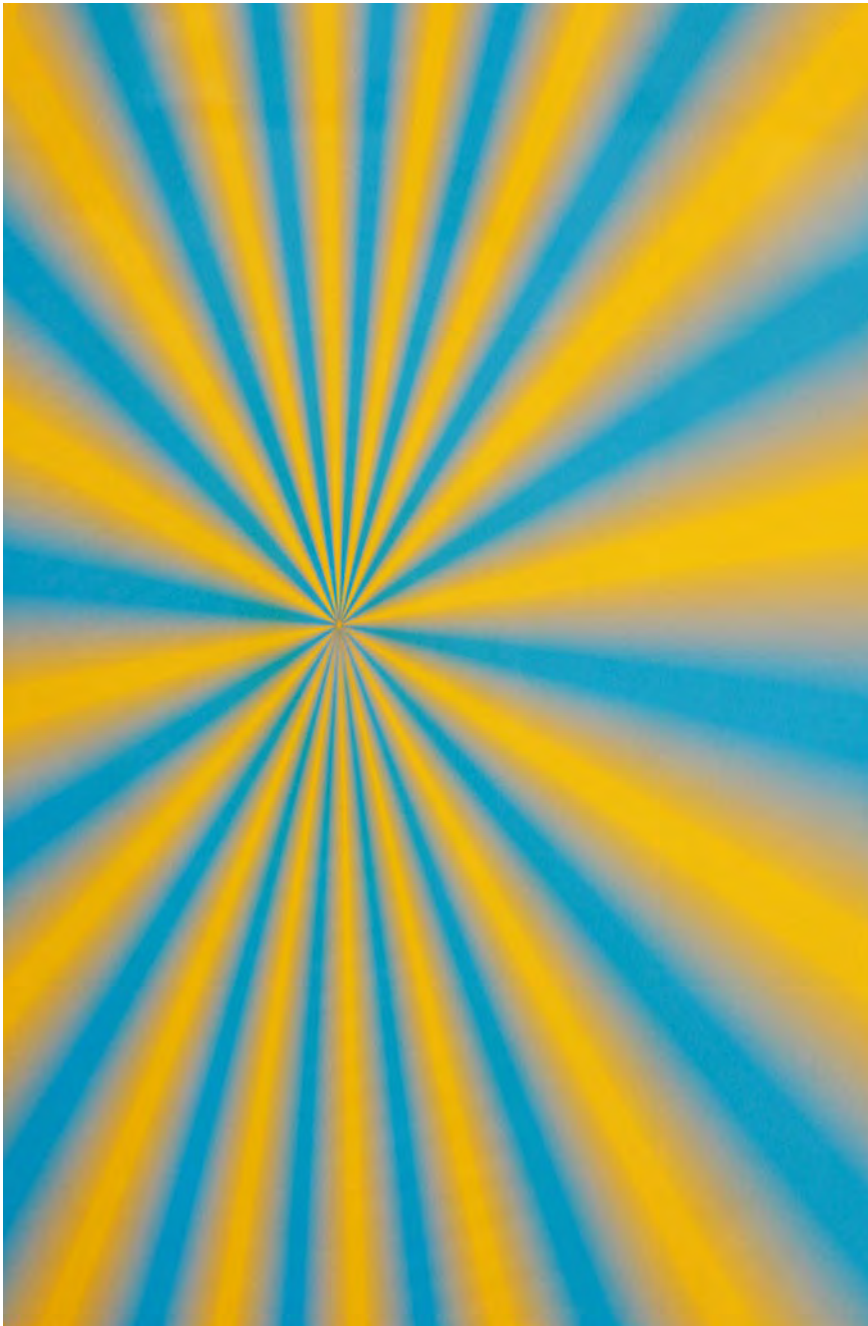


**Rotating Discs**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.22100 - 10.22850



**Colour Disc**

The disc is divided into blue and yellow sectors. Turning creates not only a mixture of colours, but also the colour green and after that the complementary colour red. The observer experiences the effect of colour as a physical, non-material appearance.



*Spiral for wall attachment*



*Funnel for wall attachment*



*Pulsation for wall attachment*



10.22100 - 10.22850

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Design W. Graubner according to H. Kükelhaus

**Funnel**

Turning the disc slowly creates the impression of a rotating cone and funnel, around which there are regular black and white stripes. The impression remains unchanged even if the observer looks at it from different angles. The reason is that the eye seeks a virtual centre in the asymmetrical pattern. However, it can only achieve this by creating a third dimension, namely perspective, thus making the cone or funnel appear three-dimensional.



**Spiral**

When the observer turns the disc clockwise, the spiral appears to expand further and further. Turning the disc the opposite way forms a continually deepening funnel. The eye attempts to compensate the one-sidedness of the rotation by involuntarily jumping from one spiral line to the next. This counteraction has the effect of appearing to slow down the rotation and make the funnel grow larger. The complementary colours appear on the borders of the black pattern. If the gaze is diverted from the disc then it appears as if the entire surroundings expand or contract in contrast to the image last seen on the disc - as if in slow motion - resulting in great astonishment. The eye "compensates". By seeing the complementary colours, a fundamental principle of light becomes visible: colour as the dynamic penetration of dark and light in the form of black and white spiral lines.



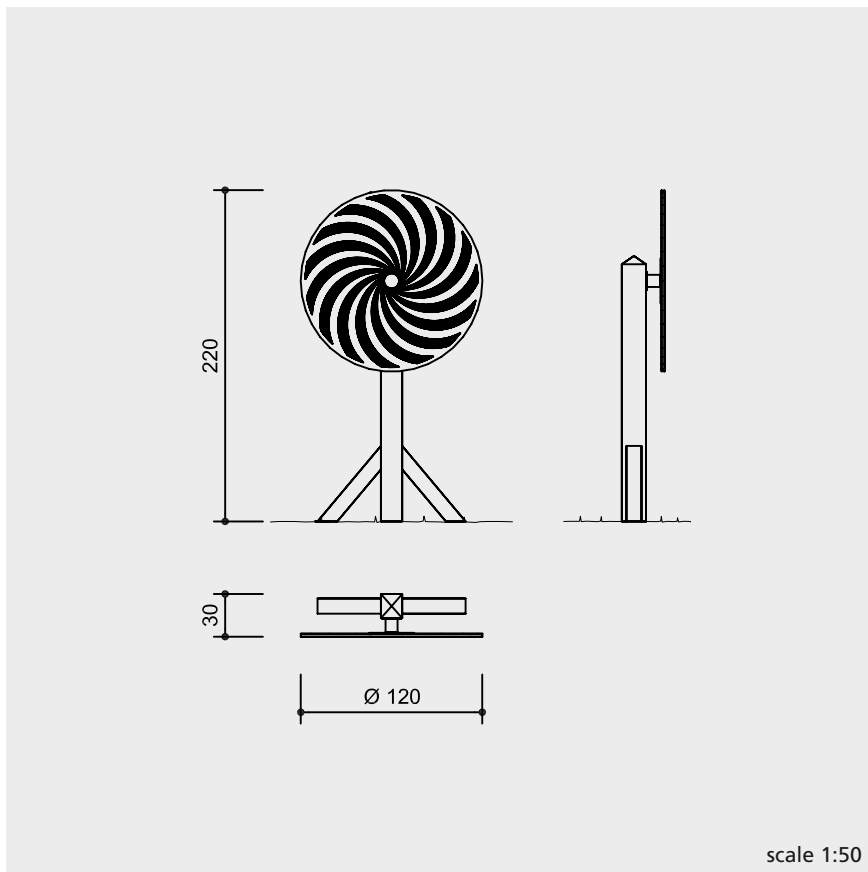
**Pulsation**

Here the eye perceives a pulsating physical motion similar to breathing in and out. The square and circle play around each other, pulling together and drawing outwards.

**Rotating Discs**  
*graubner* Play Stations for  
 Developing the Senses



10.22100 - 10.22850



**Technical information**

- frame made of oak
- maintenance-free ball bearing (for enduring motion)
- flange and fastening screws made of stainless steel
- supports made of special plastic
- large-format patterned disc with sufficient motion mass
- precise black and white or coloured print with weather-resistant, special protective paint
- anti-glare surface

**Dimensions**

(small deviations possible)

- height 2.20 m
- depth 0.30 m
- disc Ø 1.20 m
- weight 80 kg

**Components**

- 1 wooden frame
- 1 disc with pattern and bearing, fastening material included

**Installation information**

Recommended space  
6.00 x 2.50 m

Foundations  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm  
2 items 30 x 50 x 30 cm  
excavation depth 50 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.  
**Equipment also available with stainless steel stand post or for wall attachment (see table).**

Order No.	item	motive
10.22100	Spiral with support post made of wood	
10.22105	Spiral with support post of stainless steel	
10.22150	Spiral for wall attachment	
10.22200	Funnel with support post made of wood	
10.22205	Funnel with support post of stainless steel	
10.22250	Funnel for wall attachment	
10.22300	Pulsation with support post made of wood	
10.22305	Pulsation with support post of stainless steel	
10.22350	Pulsation for wall attachment	
10.22400	Colour disc with support post made of wood	
10.22405	Colour disc with support post of stainless steel	
10.22450	Colour disc for wall attachment	
10.22500	Funnel 2 with support post made of wood	
10.22505	Funnel 2 with support post of stainless steel	
10.22550	Colour disc for wall attachment	
10.22600	Pulsation 2 with support post made of wood	
10.22605	Pulsation 2 with support post of stainless steel	
10.22650	Pulsation 2 for wall attachment	
10.22700	Pulsation 3 with support post made of wood	
10.22705	Pulsation 3 with support post of stainless steel	
10.22750	Pulsation 3 for wall attachment	
10.22800	Spiral 2 with support post made of wood	
10.22805	Spiral 2 with support post of stainless steel	
10.22850	Spiral 2 for wall attachment	



10.22100 - 10.22850

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**Function and Play value**

Originally, in Greek, kaleidoscope meant „beautiful picture viewer“. It is fascinating seeing the images created by the Kaleidoscope. Symmetry as a word and a concept - the basic pattern of perception - becomes visible by the images created by the axis of reflection. This reflection causes moving, transparent small coloured parts to converge from two sides. This symmetry is visually not only simple duplication, but increases the impression of a whole new and complete figure. This wholeness is the open secret. The perception awakens the power of fantasy in both children and adults. A stream of ever-changing and never-repeated constellations is created with a handful of materials - a series of coincidences in the truest sense of the word. The smallest movement, the slightest turn when looking into the Kaleidoscope, and the whole picture changes.

The view through the Octascope focuses on the world. As with the Kaleidoscope, the reflection causes a symmetry thus creating new shapes and arrangements by the turning of mirrors when the Octascope is manipulated.

**Suitable**

- for parks, pedestrian areas, hospitals, zoological and botanical gardens
  - public buildings, school, research institutions
- The telescope is particularly suitable for lookout points and special viewing areas.



10.23100 Kaleidoskope



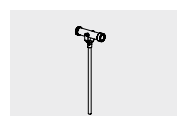
10.24100 Oktascope

**Kaleidoscope  
Octascope  
Telescope**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible

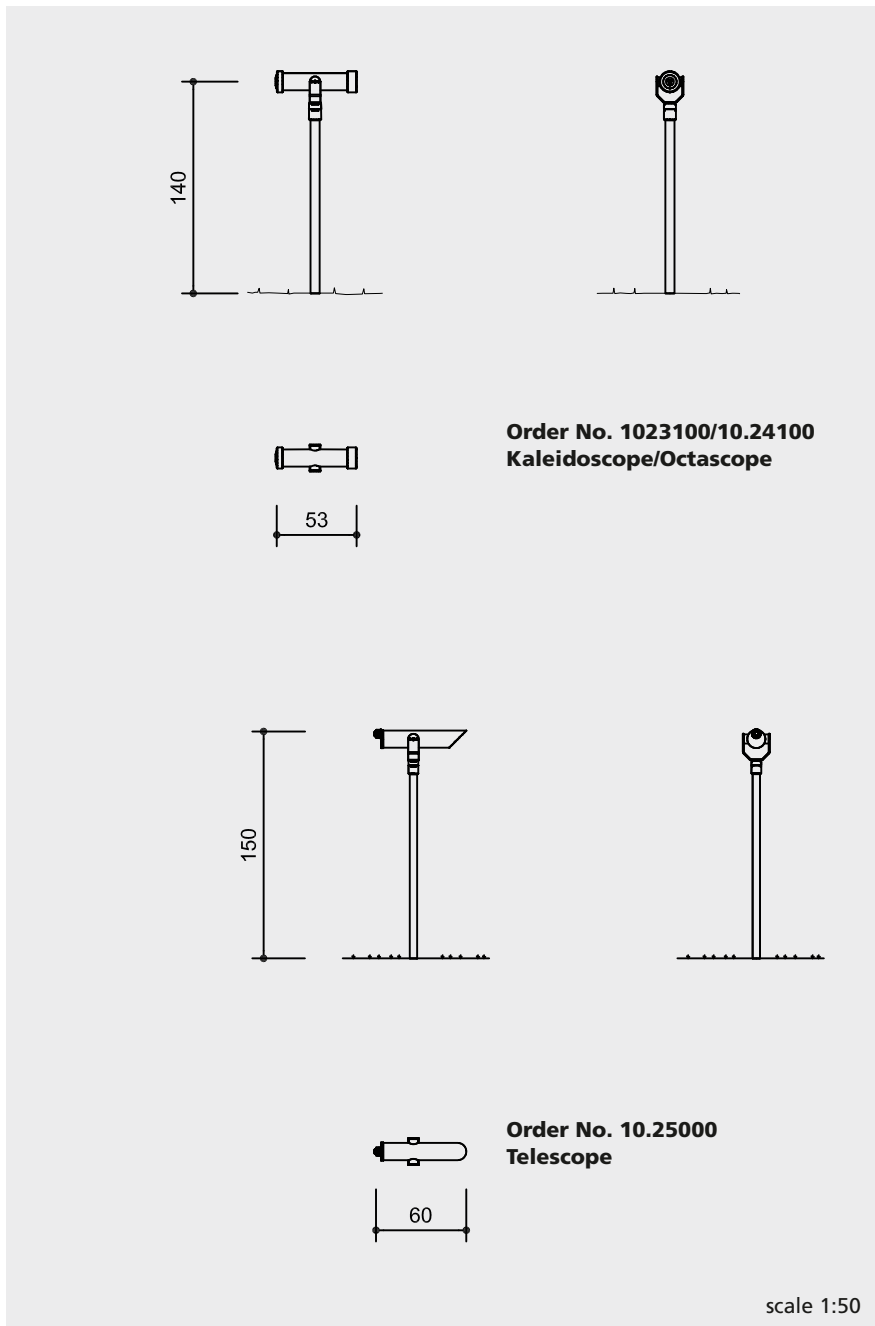


10.25000



10.23100/10.24100

Design W. Graubner according to H. Kükelhaus



**Technical information**

housing and foot made of stainless steel/Aluminium eloxadized

object holder and lens made of glass, permanently elastic and therefore shock-proof mounted, rotatable in all directions with integrated braking

**Kaleidoscope**

floating in fluid are carefully chosen glass pieces which are otherwise only used in art glazing and whose light effects are far superior to plastic glazing

**Octascope**

with large lens in optical quality, safety glass

**Telescope**

magnification 15 times

**Dimensions**

(small deviations possible)

height	1.40/1.50 m
length	0.53/0.60 m
lens	Ø 0.12 m
weight	35 kg

scale 1:50

**Components**

1 complete piece of equipment

**Installation information**

Recommended space  
circle diameter 3.00 m

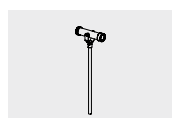
Foundations  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

**Equipment also available as group equipment with four kaleidoscope heads and illumination for inner area, Order No. 10.23300.**



10.23100/10.24100



10.25000

**Function and Play value**

An all-round view of the individual, mirrored multiple times, is an experience that is very well suited for the centre of a labyrinth or the end of an experience path. Initially we produced mirrors exclusively from polished sheets of stainless steel.

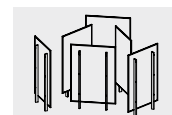
**Suitable**

- for parks
- seminar centres, zoos, museums



**Walk-in Kaleidoscope**  
*graubner* Play Stations for  
 Developing the Senses

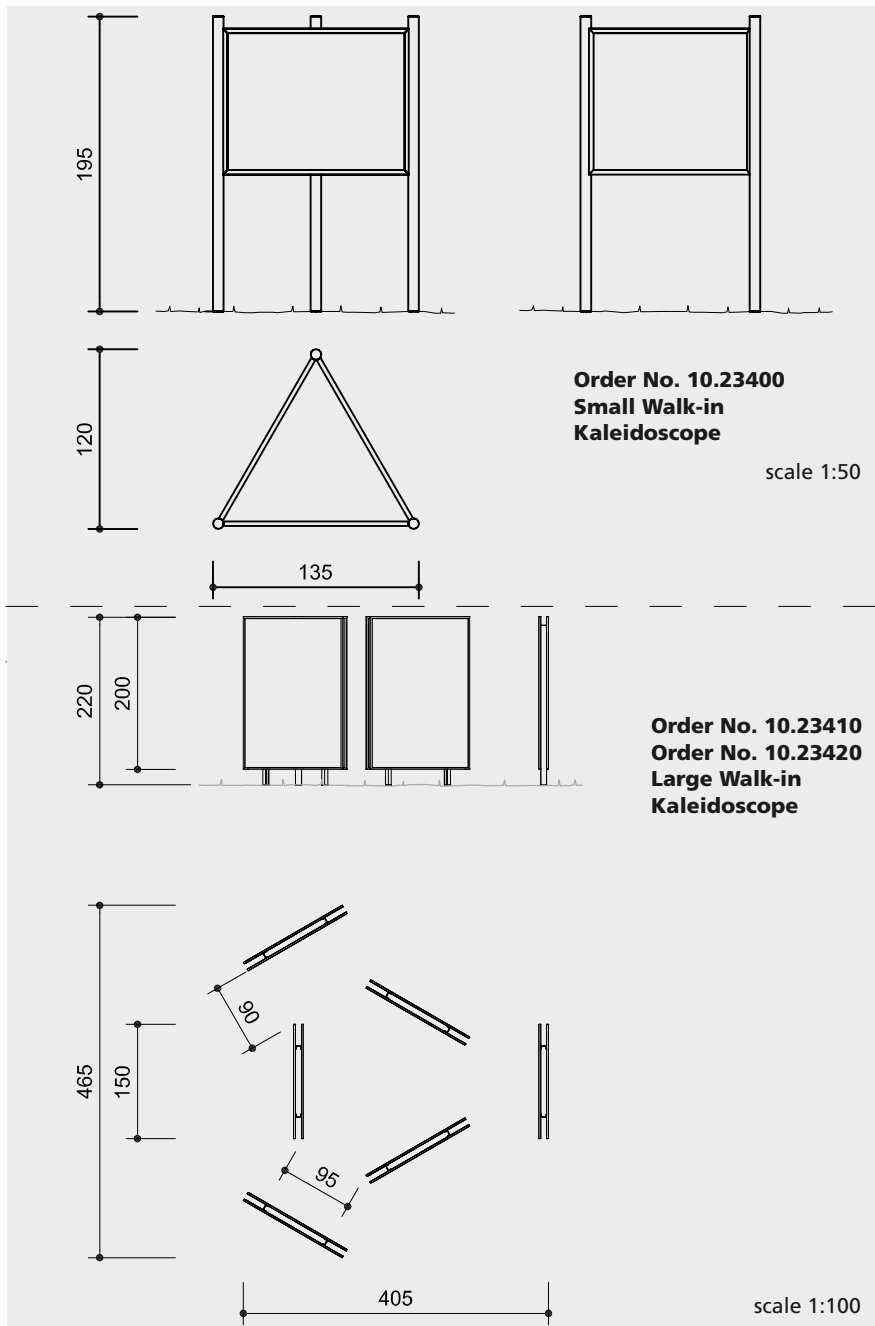
Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.23410/10.23420



10.23400



**Technical information**

**Order No. 10.23400**

frame made of stainless steel

surface blasted with glass beads

panels made of special laminated wood

inside high-gloss finished stainless steel mirrors, mounted in stainless steel profiles

**Order No. 10.23410/10.23420**

hot-dip galvanised support construction

high-gloss polished stainless steel mirrors bonded flexibly to water-proof laminated panels, mounted in anodised aluminium profiles

**Dimensions**

(small deviations possible)

**Order No. 10.23400**

height 1.95 m  
length 1.35 m  
weight 120 kg

**Order No. 10.23410/10.23420**

for each wall element  
height 2.20 m  
width 1.50 m  
weight 500/700 kg

**Components**

**Order No. 10.23400**

1 complete piece of equipment  
mirror-finished on the inside

**Order No. 10.23410/10.23420**

6 wall elements mirror-finished on  
one or both sides

**Installation information**

Recommended space

**Order No. 10.23400**

3.30 x 3.10 m

**Order No. 10.23410/10.23420**

circle diameter 5.00 - 6.00 m

Foundations

**Order No. 10.23400**

3 items 30 x 30 x 40 cm

excavation depth 60 cm

**Order No. 10.23410/10.23420**

12 items 60 x 40 x 40 cm

excavation depth 60 cm

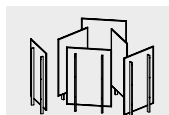
**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.23400



10.23410/10.23420

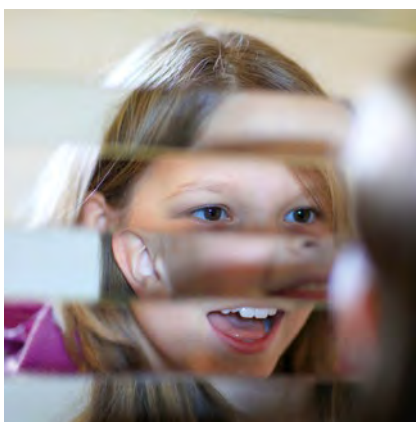


**Function and Play value**

Your own reflection is interrupted by the gaps between the strips of mirror in such a way that you can look at yourself with the eyes of the person opposite you. You and a second person stand at arm's length on either side of the equipment. You now sink your head or stretch up a little until the two faces in the mirror fit together. You can now see, e.g. the other person's hair, your own forehead, the other person's eyes, and your own nose, and so on. The mirror mixes up the faces in such a way that you can see with the other person's eyes. This is a self-explanatory game for young and old and one which promotes integration and cooperation.

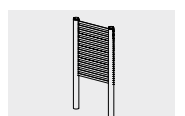
**Suitable**

- for indoors and outdoors, as a game situated at the side of a path in a park for passers-by, or in pedestrian zones

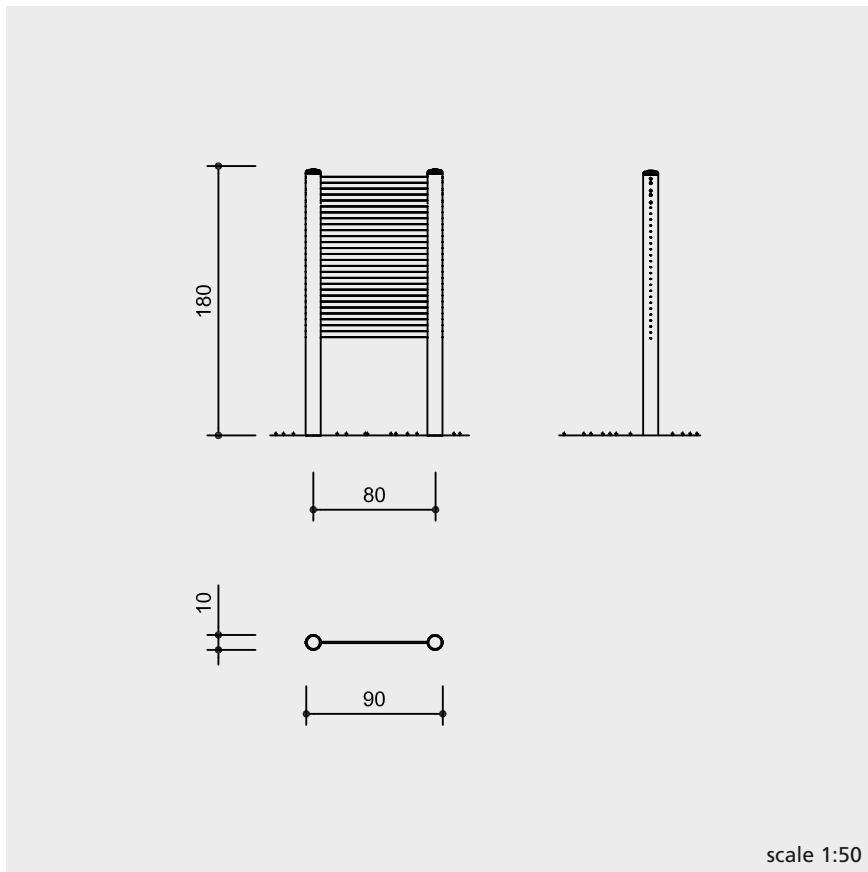


**Striped Mirror**  
*graubner* Play Stations for  
Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.23500



### Technical information

equipment made of stainless steel

mirror made of double-sided high gloss polished stainless steel

individual strips can be replaced

### Dimensions

(small deviations possible)

height	1.80 m
width	0.90 m
depth	0.10 m
weight	50 kg

### Components

1 Striped Mirror

### Installation information

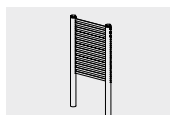
Recommended space  
3.00 x 2.00 m

Foundations  
2 items 50 x 50 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.23500

**Function and Play value**

If you look through the prism in daylight the most wonderful colours can be seen: red, orange, yellow, green, blue, indigo, violet. Smaller dark objects in the surrounding area appear to be totally colourful, lines look as if they are curved, and, in the boundary between sunlit and shadowed areas, coloured fringes appear. Because the light does not pass through the prism in a straight line it is possible to transpose the image of the dark surface over that of the light surface by turning the prism. The brightness of light and the shadows of dark are seen as the source of all colour appearances. Behind this appearance lies the unending chain of causes and preconditions of light. The effect that looking through the prism has on people is up to the individual person. This is all about the relationship of people to colours. The figure on the explanation board includes in delivery makes it easier to find the optimal spot.

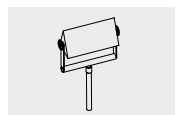
**Suitable**

- educational institutes, schools, kindergartens, academies of arts, seminar centres
- zoological and botanical gardens, parks

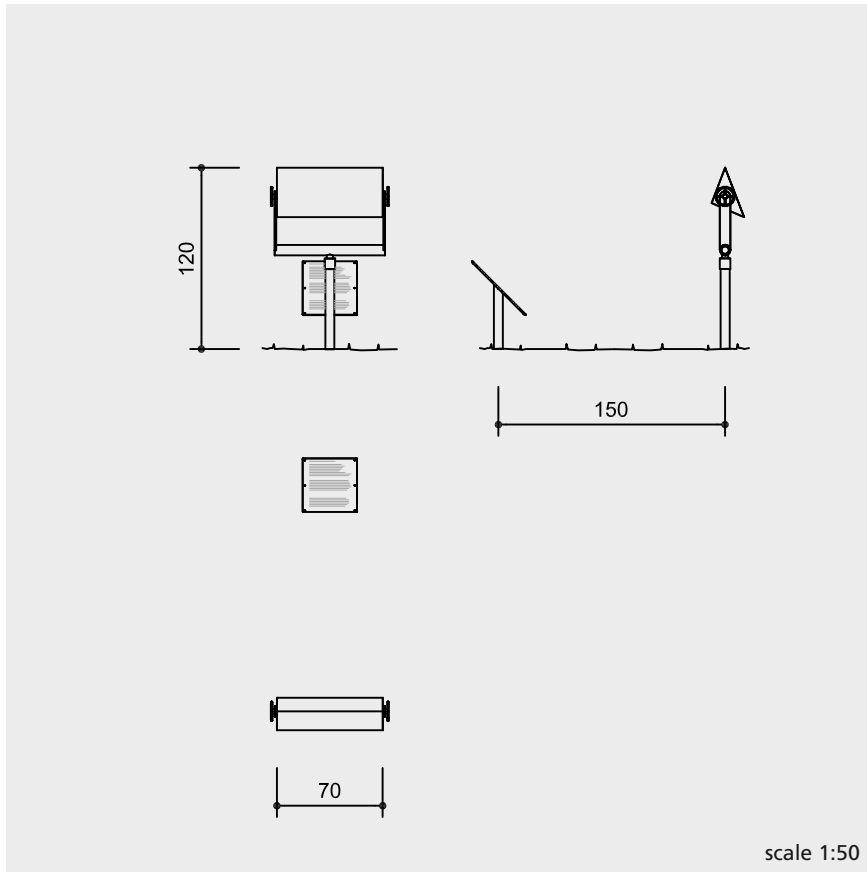


**Water Prism**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.31000



### Technical information

equipment made of stainless steel

large-format acrylic glass prism on vertically and horizontally rotatable stainless steel support

special algae-free glycol mixture, frostproof to approx. - 20 ° C

support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	1.20 m
prism	0.70 x 0.35 x 0.25 m
weight	80 kg

### Components

- 1 complete piece of equipment
- 1 Explanation Board with support

### Installation information

Recommended space  
circle diameter 3.00 m

Foundations  
2 items 40 x 40 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.31000

**Function and Play value**

If you look through the prism in daylight, the most wonderful colours can be seen: red, orange, yellow, green, blue, indigo, violet. Smaller dark objects in the surrounding area appear to be totally colourful, lines look as if they are curved, and, in the boundary between sunlit and shadowed areas, coloured fringes appear. Because the light does not pass through the prism in a straight line, it is possible to transpose the image of the dark surface over that of the light surface by turning the prism. The brightness of light and the shadows of dark are seen as the source of all colour appearances. Behind this appearance lies the unending chain of causes and preconditions of light.

**Suitable**

- educational institutes, schools, kindergartens, academies of arts, seminar centres
- zoological and botanical gardens, parks

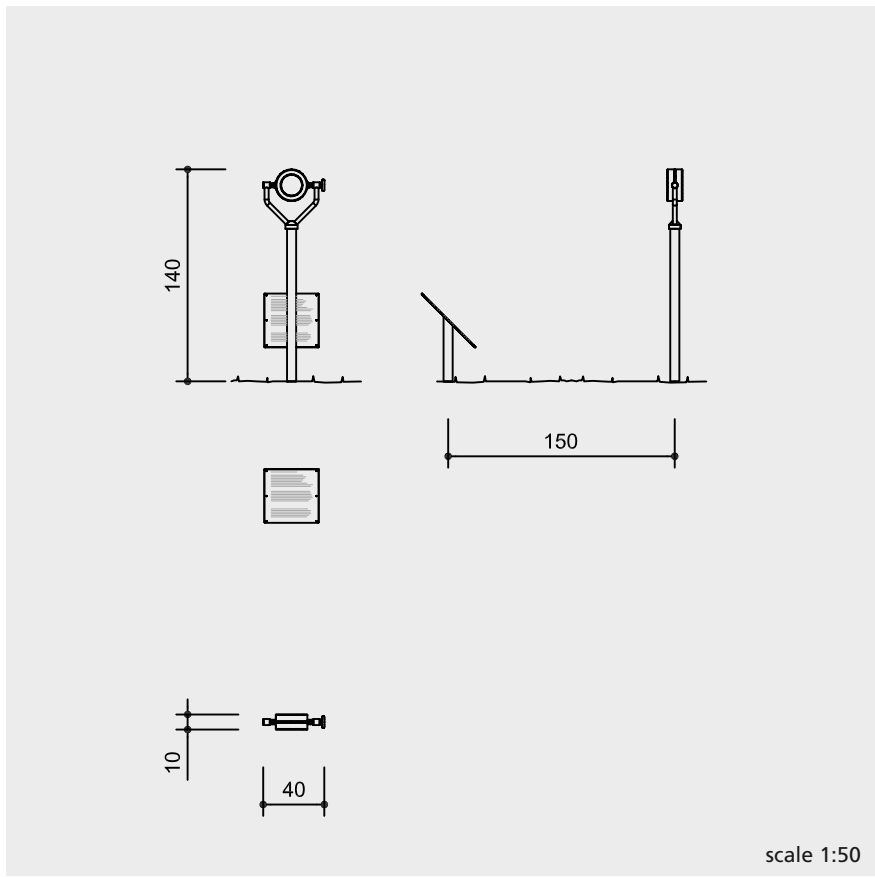


**Glass Prism**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.31100



**Technical information**

equipment made of stainless steel/  
aluminium

solid ground glass prism held between  
two safety glass screens, rotatable and  
pivotable in all directions, in stainless  
steel support

support for Explanation Board made of  
stainless steel

**Dimensions**

(small deviations possible)

height	1.40 m
prism	
edge length	0.10 m
weight	30 kg
with packaging	
material	45 kg

**Components**

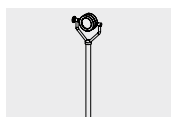
- 1 complete piece of equipment
- 1 Explanation Board with support

**Installation information**

Recommended space  
circle diameter 3.00 m

Foundations  
2 items 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**  
Technical changes reserved.



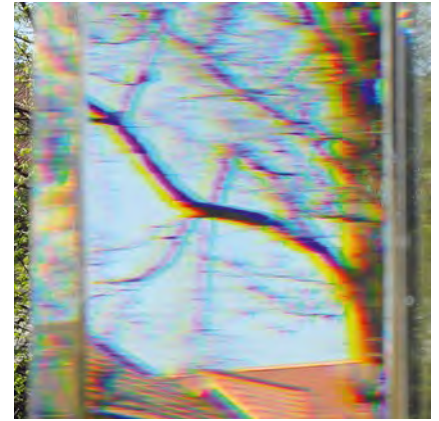
10.31100

**Function and Play value**

The vertical prism refracts incident light visibly around the corner. You can see this by the fact that when you look through it, you don't see what is in front of you, but rather people or objects which are in another place. At the same time the white light is also split into the colours of the rainbow and these do not all travel around the corner at the same angle, creating the effect that the people and objects have a coloured ring around them. As you walk around the vertical prism, the colours change and green and purple also appear. The prism column is a welcome addition to our prism family because here several people can observe the phenomenon from various angles and also perhaps observe each other at the same time.

**Suitable**

- for indoors and outdoors, in particular for places, promenades and parks where lots of people gather together

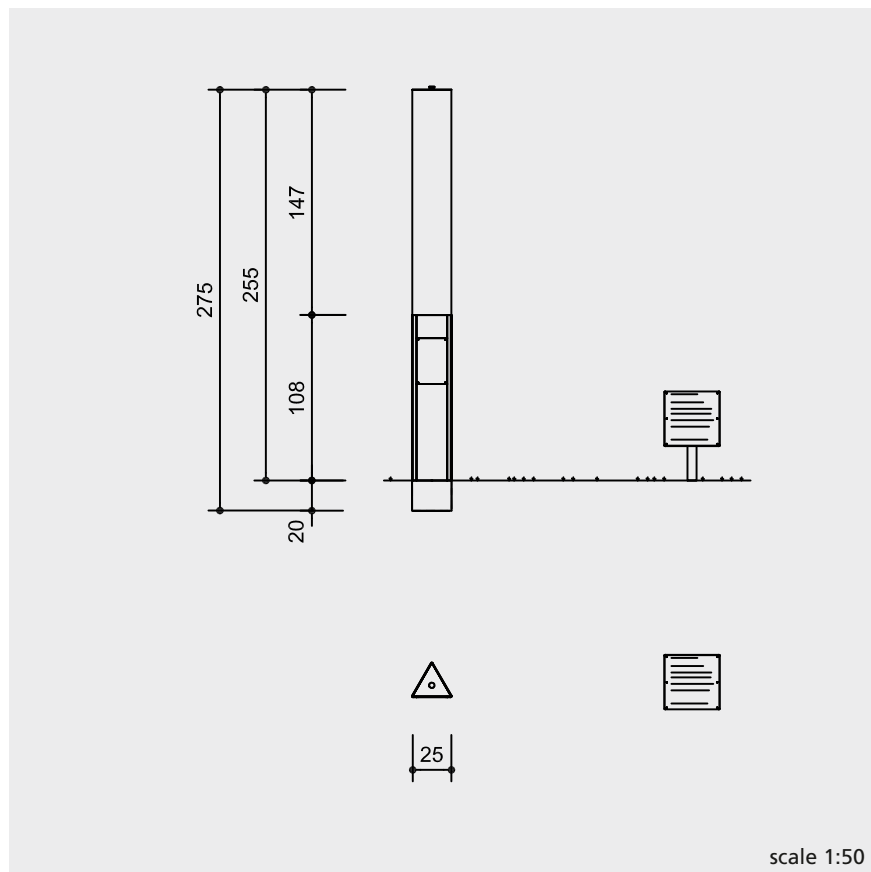


**Prism Column**  
*graubner* Play Stations for  
Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.31200



**Technical information**

equipment made of stainless steel and large-format acrylic glass prism

special algae-free glycol mixture, frostproof to approx. - 20 ° C

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

height	2.55 m
angle	0.25 m
weight	100 kg

**Components**

- 1 Prism Column
- 1 Explanation Board with support

**Installation information**

Recommended space  
circle diameter 3.00 m

- Foundations
- 1 item 60 x 60 x 40 cm  
excavation depth 60 cm
  - Explanation Board
  - 1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
Exact measurements may vary, for all installation dimensions refer to current installation instructions.  
Technical changes reserved.



10.31200



**Function and Play value**

Experience the energy of sunlight. As soon as the sunlight encounters resistance or impermeability, it is converted into warmth which we notice on our skin, for example.

Sunlight is collected in the 30 cm magnifying lens and is concentrated to a beam. The rougher and darker the material that it encounters, the more the rays are converted to heat. This can be experienced by carefully placing the hand behind the lens. Even wood can be scorched at the focal point.

**Suitable**

- for educational institutes
- botanical gardens, parks



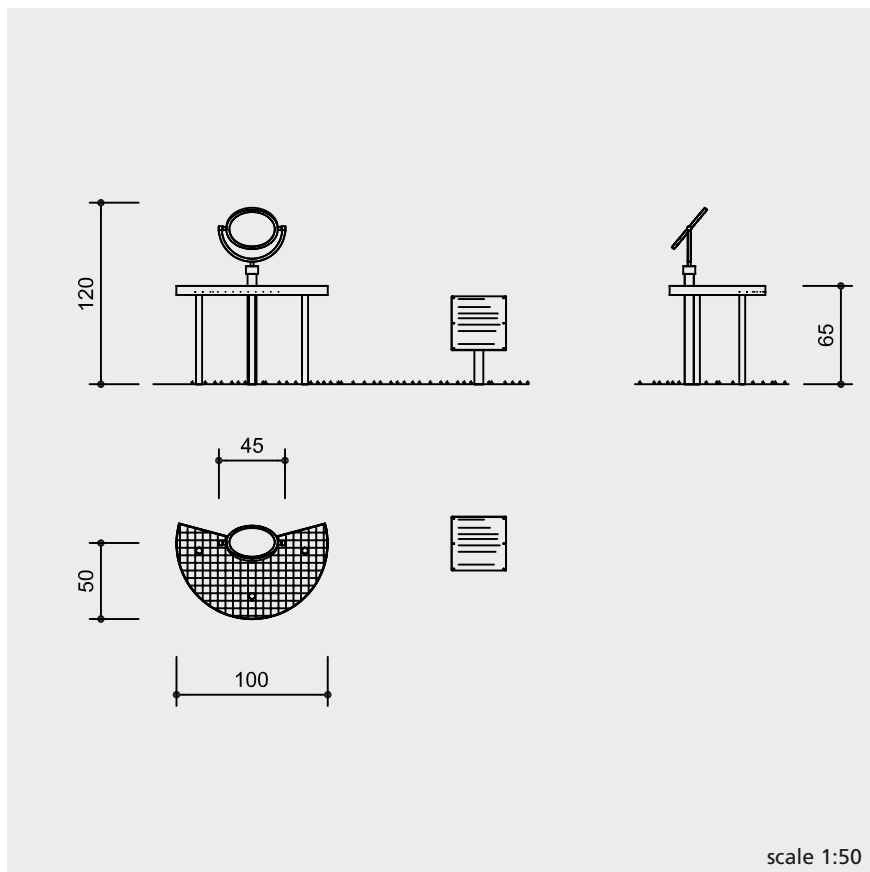
The picture shows the magnifying lens without table.

**Magnifying Lens**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	absolutely necessary can generate considerable heat
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.32000



### Technical information

equipment made of stainless steel

universal joint support made of stainless steel, rotatable and pivotable in all directions, maintenance-free bearings

large-sized optical plano-convex collection lens made of shatter-proof acrylic glass

support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	1.20 m
lens	Ø 0.30 m
weight	75 kg

### Components

- 1 complete piece of equipment with table
- 1 Explanation Board with support

### Installation information

Recommended space  
circle diameter 3.00 m

Foundations

#### Magnifying Lens

1 item 40 x 40 x 40 cm  
excavation depth 60 cm

#### Table

3 items 30 x 30 x 40 cm  
excavation depth 60 cm

#### Explanation Board

1 item 40 x 40 x 40 cm  
excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.32000

**Function and Play value**

The double refractive feldspar has a special status among stones. Light is refracted into the spectral colours by means of polarisation at the inner layers and not like in a prism by reflection at the edges. This apparition of colours is caused when light falls on to the transparent stone and, upon closer observation, is refracted into the magnificent colours of the rainbow in the inner layers of the stone. Transparent stones have always been particularly treasured. They combine the element stone, which has a high density, with the fluid light. The chosen double refractive feldspar is set within a moveable, protected mounting which is embedded in a black granite stone.

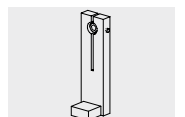
**Suitable**

- for educational institutes, seminar centres
- zoological and botanical gardens, parks pedestrian areas

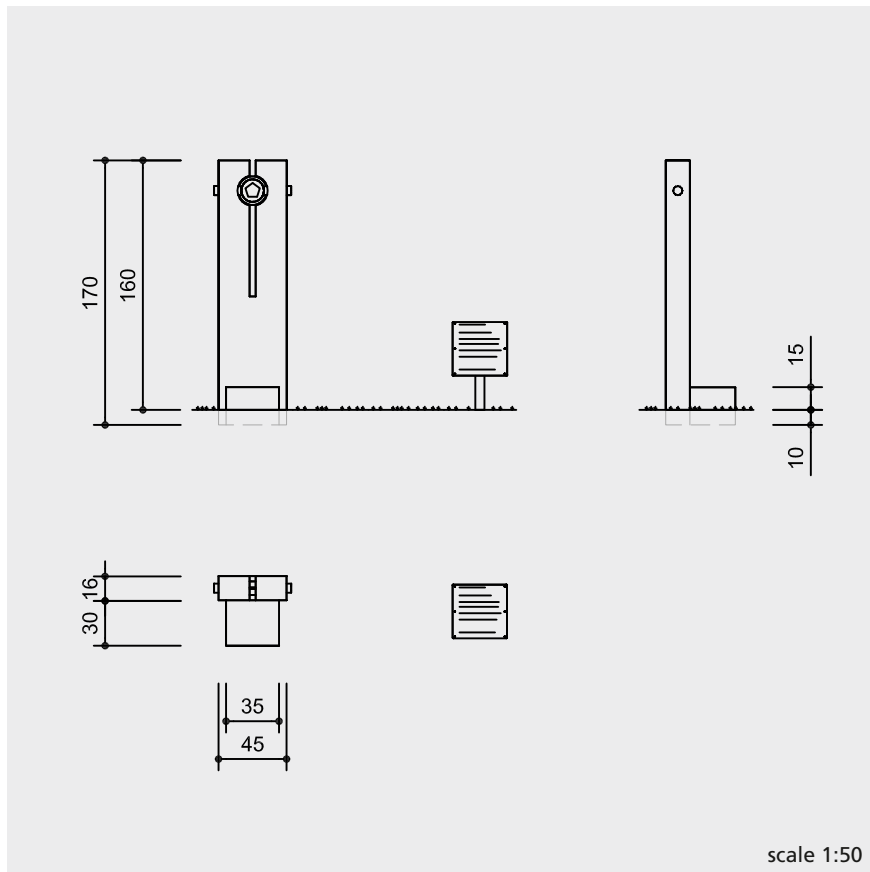


**Light Stone**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	slightly vulnerable
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



**10.33000**



**Technical information**

black granite block, polished outer surfaces

light stone of prismatic feldspar, enclosed between two safety glass screens in a stainless steel fixture, water-proof

feldspar can be pivoted to create various prismatic colour phenomena

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

height	1.60 m
width	0.45 x 0.16 m
prism enclosure	Ø 0.20 m
weight	425 kg
with packaging material	460 kg

**Components**

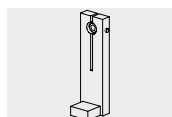
- 1 Light Stone with anchor iron
- 1 step
- 1 Explanation Board with support

**Installation information**

Recommended space  
circle diameter 3.00 m

Foundations  
1 item 80 x 80 x 60 cm  
excavation depth 70 cm  
Explanation Board  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



10.33000

**Function and Play value**

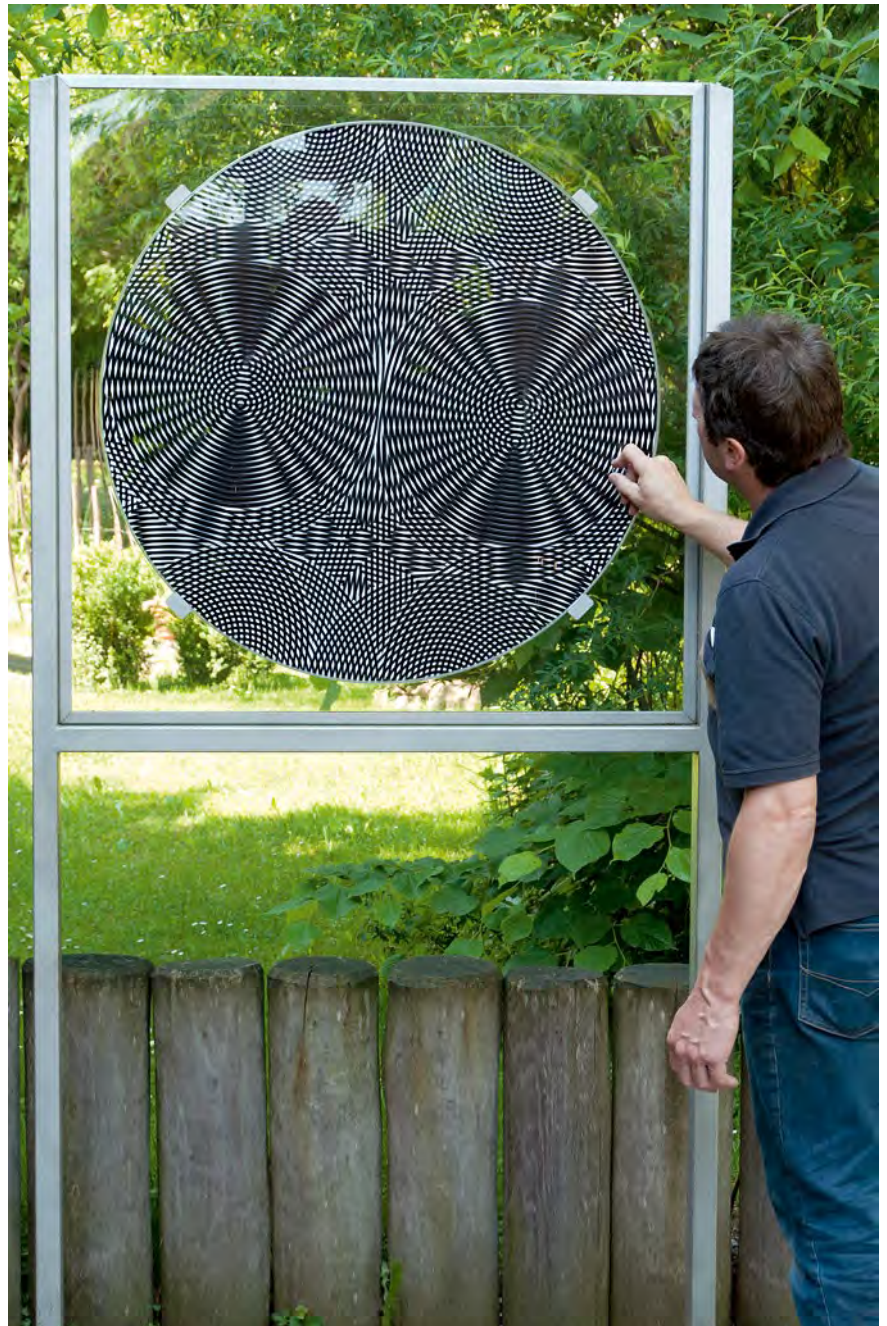
The Moiré Disc is an exciting and surprising perception game. First the front, transparent disc is turned, so that the pattern of each disc lies exactly on top of the other. If it is turned a little further, the lines appear to swell, where the front and back discs still run almost parallel, the angle becomes larger, the lines decrease in size. Thus, the eyes can visualise the connection between the darker areas – new patterns and lines appear. If it is turned further, movements and new movement directions are created: a tremor flows through the disc like a tremolo in music, e.g. in church music, or in organ tones, or the „Dies irae“. The distance between the tones is used to create chords. This can also be seen with waves in the water, where the superposition of waves either cancels out the wave swells or, conversely, transforms them into giant waves. Superpositions of waves can be calculated in optics, acoustics and fluid dynamics using the same formula. Therefore, this is about a universal phenomenon which contributes to perceptual understanding.

**Suitable**

- for kindergartens, waiting areas, music schools, public buildings, reception areas, training and recreational areas of companies, seminar centres, hospitals, doctor's surgeries, therapy gardens, zoological and botanical gardens



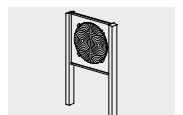
10.14100 for wall attachment



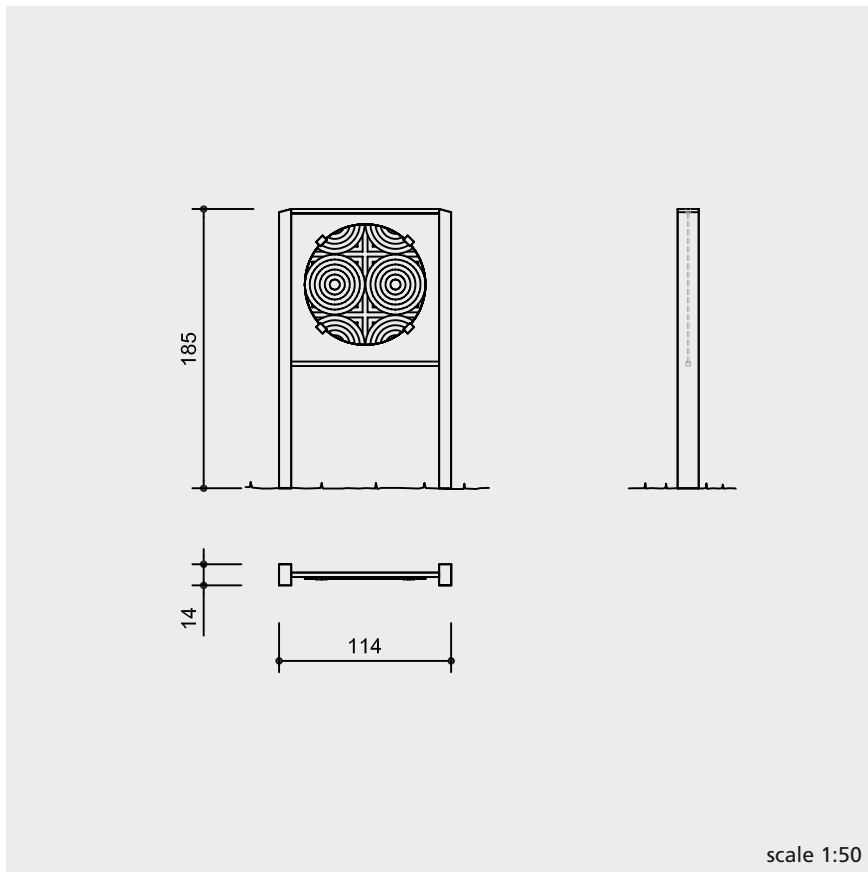
10.14005 support made of stainless steel

**Moiré Disc**  
**graubner** Play Stations for  
 Developing the Senses

Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation Board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.14000



### Technical information

equipment made of oak

impact- and weather-resistant acrylic glass held in four corrosion-proof bearings

large-diameter board with thick, transparent and completely non-smear UV-proof outer disc

condensation in disc interior precluded

### Dimensions

(small deviations possible)

height	1.85 m
width	1.14 m
depth	0.14 m
board	1.00 x 1.00 m
Disc diameter	0.86 m
weight:	95 kg
with packaging material	105 kg

### Components

- 1 Moiré Disc
- 1 wooden frame with installation plate

### Installation information

Recommended space  
3.00 x 2.00 m

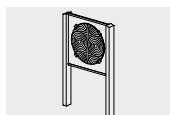
Foundations  
2 items 40 x 40 x 40 cm  
excavation depth 60 cm

#### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

**Equipment also available for wall attachment, Order No. 10.14100 or with frame made of stainless steel, Order No. 10.14005.**



10.14000

## living with sound

### playing with sound

#### experiencing sound

#### Experience of sound

The formative influence of water on the basic movements of life is of the same importance as air is for the formation of sound. Only air has the capacity to condense into rhythms, to dissolve and to vibrate and, because of this it becomes, like no other medium, the bearer for the world of sound.

The way a mass vibrates, i.e. its individual resonance when struck, delivers immediate information to people about the inner qualities of that mass. Thus, a stonemason can precisely discover if and where a stone's inner structure is cracked.

The load bearing capacity of old wooden constructions can be tested by knocking on the wood and analysing the clearness or dullness of the sound. This also works with steel girders. Material properties such as elasticity, humidity, homogeneity and solidity, even the amount of weight resting on it, become audible in the sound.

The sound instruments of the play stations are so-called idiophones, instruments which directly emit sound by their own vibrations. They demonstrate materials with their typical sound characteristics.

Wood formed into boards and tubes, such as the Dendrophone, Tubular Dendrophone and Sound Arch.

Stone as a solid block, such as the Tuning Stone, or like a spar as in the Stone Xylophone, or fixed at one end, as in the Stone Harp.

Metal as a rod, such as used in the Triangle or as a disc, such as the Gong or the Sound Discs, or as a tube like the Tubular Chimes.

Echo Game, Echo Way and Conference are components of our acoustic play area which make three-dimensional experiences in the open air a possibility.

The principle of the Wind Harp stems back to pre-biblical times.

Language enables direct contact between people. The air vibrating in the larynx produces resonance. When speaking, your own body experiences a delicate massage, and this has an invigorating effect on the whole organism. In the Singing Stone this individual resonance is amplified so that you can find your own completely personal note, a pitch, at which this individual resonance is especially amplified thus causing the body to become its own resonator.

The effect of sound waves is demonstrated at our sound pattern station.





**Function and Play value**

If you place your head in the stone's hollow and hum different notes, it is possible to find the note at which resonance occurs, and this causes a pleasant gently vibrating sensation throughout your body. You are transported into your own private world.

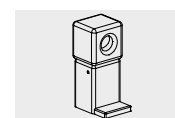
**Suitable**

- for leisure areas, parks, zoological and botanical gardens, institutions for people with special needs, music, language or drama schools, youth centres, seminar centres, presentation rooms, theatres, broadcasting corporations, training and conference rooms, convention institutions



**Small Singing Stone**  
*graubner* Play Stations for  
 Developing the Senses

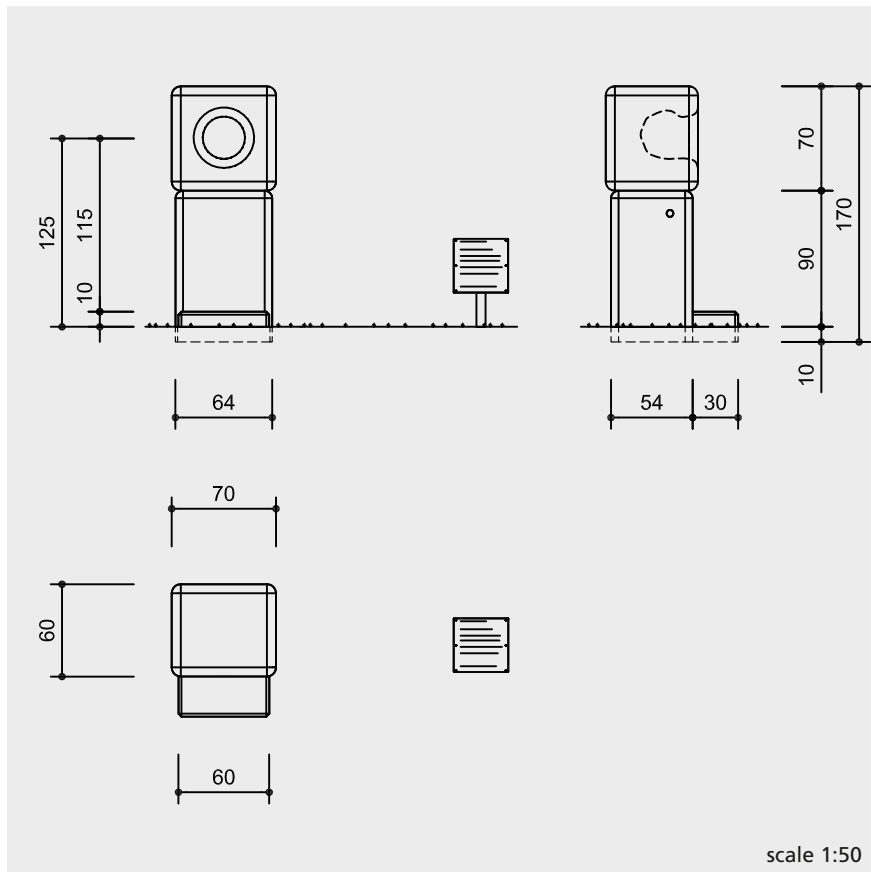
Acoustic effect	soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.41100



10.41300



**Technical information**

hewn cubic monolithic basalt lava singing stone and pedestal with textured surface and strongly rounded edges

specially formed cavity (singing hollow) with undercut for optimum resonance effect, with water outlet

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

height 1.70 m  
 height stone 0.70 m  
 height step 0.20 m  
 width stone 0.60 m  
 weight

**Order No.**

**10.41100** 1440 kg  
**10.41300** 570 kg

**Components**

**Order No. 10.41100**

- 1 Small Singing Stone with 2 anchor irons
- 1 pedestal
- 1 step
- 1 Explanation Board with support

**Order No. 10.41300**

- as before but without pedestal and step

**Installation information**

Recommended space  
 4.00 x 3.00 m

Foundations  
 1 item 100 x 80 x 60 cm  
 excavation depth 70 cm  
 recess 5 x 5 x 20 cm  
 Explanation Board  
 1 item 40 x 40 x 40 cm  
 excavation depth 60 cm

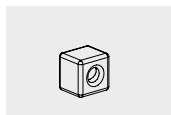
**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



**10.41100**



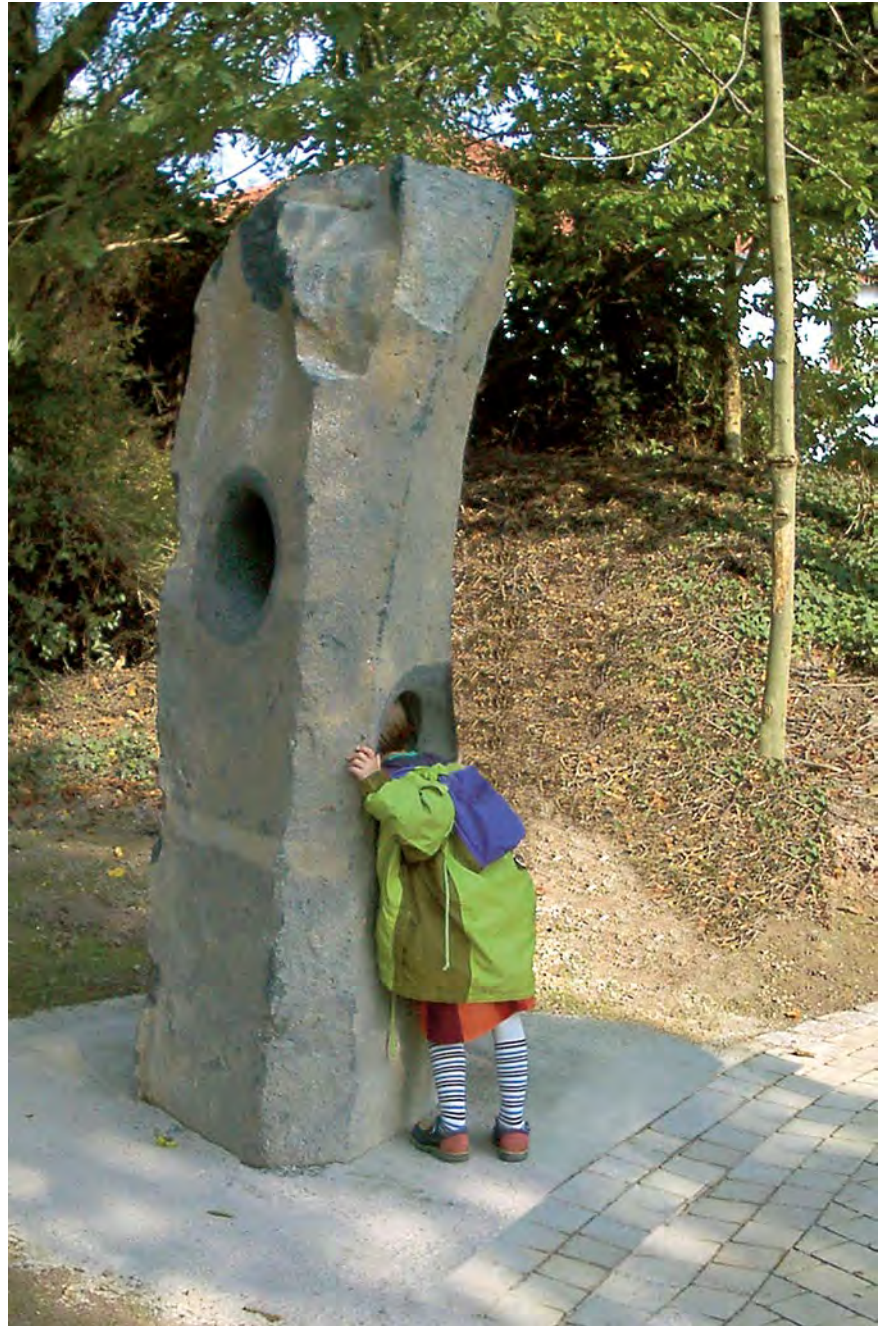
**10.41300**

**Function and Play value**

If you put your head into the hollow of this giant stone, which weighs tonnes, and hum different notes, you can retreat into a separate, complete world. You can discover "your" note where resonance occurs, and this causes a gentle sensation throughout your whole body. The organic and striking six to eight sided column shape is like a natural monument, something which is nowadays difficult to find.

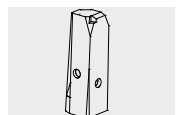
**Suitable**

- for leisure areas, parks, zoological and botanical gardens, institutions for people with special needs, therapy gardens

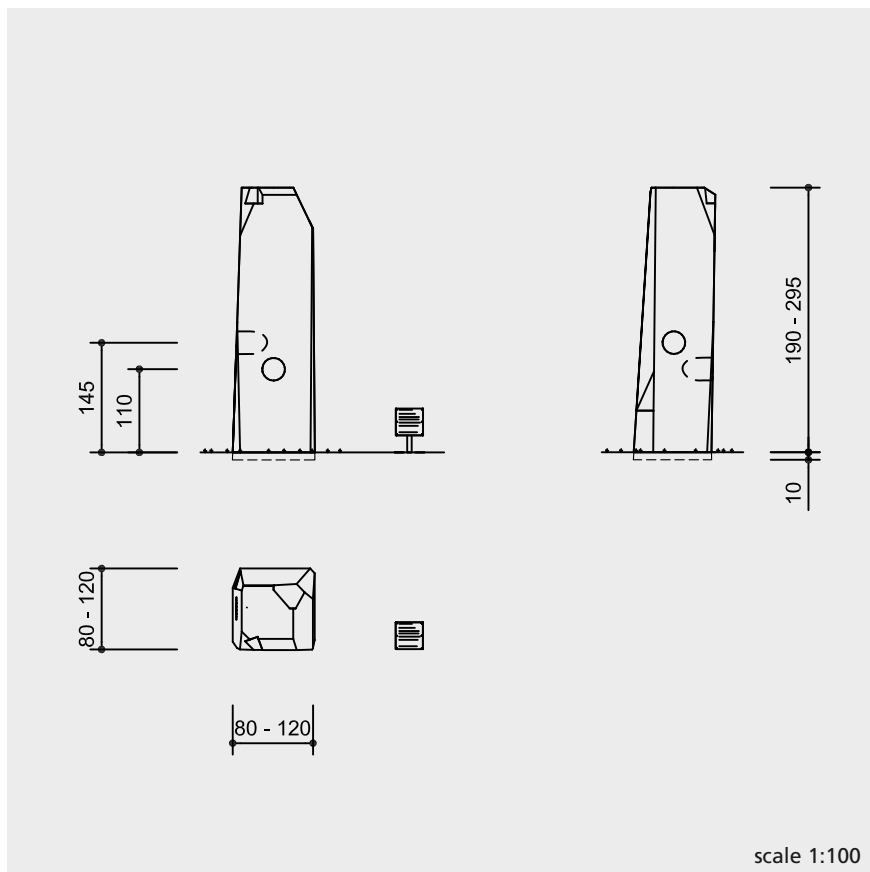


**Large Singing Stone**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	included
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.42020/10.42030/10.42040



scale 1:100

**Technical information**

Naturally formed basalt column. Each stone has its own individual shape. The side edges haven't been created by a stone mason but have existed in this shape for hundreds of years in stone formations. Traces of water and sediments can be seen clearly.

Specially formed cavities (singing hollows) with undercut for optimum resonance effect, with water outlet.

Stable due to a precisely worked base.

Support for Explanation Board made of stainless steel.

**Dimensions**

(small deviations possible)

base 0.80/0.80 m -  
1.20/1.20 m

height

**Order No.**

**10.42020** 2.00 - 2.49 m

**10.42030** 2.50 - 2.90 m

**10.42040** 2.91 - 3.05 m

singing hollows

height 1.10 m/1.45 m

weight depends on size  
2 - 5 t

**Components**

- 1 Large Singing Stone with 2 singing hollows and 1 anchor iron
- 1 Explanation Board with support

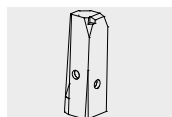
**Installation information**

Recommended space  
4.00 x 3.00 m

- Foundations
  - 1 item 130 x 130 x 70 cm
  - recess 5 x 5 x 50 cm
  - blinding layer
  - 1 item 130 x 130 x 5 cm
  - total excavation depth 80 cm
- Explanation Board
  - 1 item 40 x 40 x 40 cm
  - excavation depth 60 cm

**Attention!**  
Exact measurements may vary, for all installation dimensions refer to current installation instructions.

Technical changes reserved.



10.42020/10.42030/10.42040



**Function and Play value**

It is a well-known fact that, together with the eyes, the ears perceive a great amount of sensory impressions. However, not many of us know how many interesting sounds can be produced by tapping a stone. The ear helps us to "see" the invisible characteristics of the stone such as hardness, mass and elasticity. Experience of sound is experience of contact. The vibration of the stone is not only conveyed by the eardrum, but also via the human skin and - in the case of the Tuning Stone - intensively by the hands. The Tuning Stone is similar to a large tuning fork. The stone has two vertical cuts running down two-thirds of its length, and the split elements can be vibrated. This is achieved by lightly tapping the stone with the flat of the hand or by rubbing the stone carefully but firmly with water. This requires a number of attempts and some practice. The participant must achieve an empathy with the stone in order to find the correct frequency, and this enables a living relationship to be made with the otherwise dead, cold material.

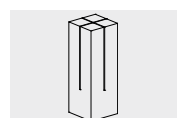
**Suitable**

- for public places, parks, pedestrian areas, botanical gardens, town halls, concert halls, material research institutions, educational institutes, department stores, youth centres, suitable institutions for people with special needs, seminar centres, music schools, training and recreational areas of companies

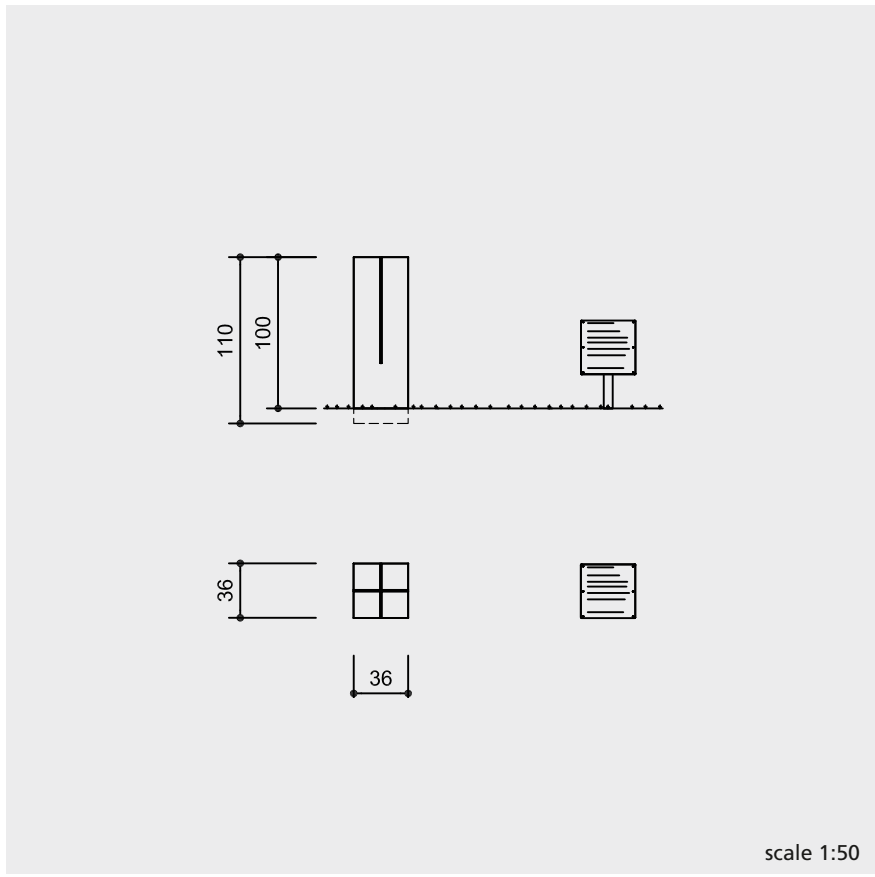


**Tuning Stone**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	not vulnerable
Supervision	recommended
Explanation board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.44000



**Technical information**

black granite block, polished outer surfaces

A long series of tests was necessary to find a highly dense stone that would produce such a sound phenomenon. The stone blocks are individually chosen, sawn, smoothed and polished.

support for Explanation Board made of stainless steel.

**Dimensions**

(small deviations possible)

total height	1.00 m
width	0.36 m
depth	0.36 m
weight	400 kg
with packaging material	430 kg

**Components**

- 1 Tuning Stone with 1 anchor iron
- 1 Explanation Board with support

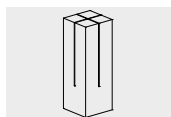
**Installation information**

Recommended space  
circle diameter 3.00 m

Foundations  
1 item 80 x 80 x 60 cm  
excavation depth 70 cm  
recess 5 x 5 x 20 cm  
Explanation Board  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.

**Tip**  
Place close to water so that the hands, or rather the stone, can be wetted.  
We recommend our Water Dish with stand post.  
**Order No. 10.44001**



**10.44000**

**Function and Play value**

With this stone you can create wonderful notes which resemble the heavenly sounds of a harp. The precisely measured, deep cuts enable the stone to produce a full range of tones. The shorter the cut, the higher the tone. Different notes up to an octave apart can be created.

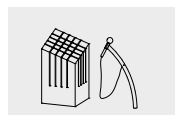
**Suitable**

- for public places, parks, pedestrian areas, botanical gardens, town halls, concert halls, material research institutions, educational institutes, department stores, youth centres, institutions for people with special needs, seminar centres, music schools, training and recreational areas of companies

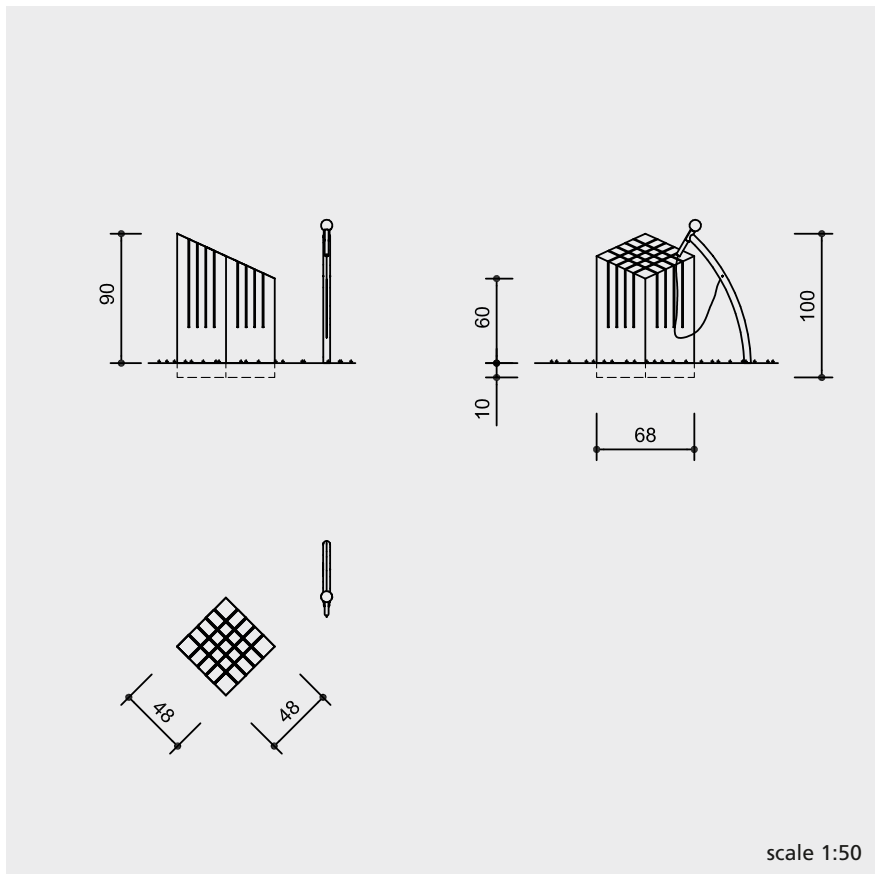


**Stone Harp**  
*graubner* Play Stations for  
Developing the Senses

Acoustic effect	soft
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.45000



**Technical information**

highly-dense black granite with polished outer surfaces

the top surface is angled in order to create different sounds, cuts are regularly spaced

stand post for beater made of stainless steel

beater of black synthetic material, suspension made of stainless steel cable

**Dimensions**

(small deviations possible)

total height	1.00 m
width	0.48 m
depth	0.48 m
weight	600 kg

**Components**

- 1 Stone Harp with 1 anchor iron
- 1 beater with stand post and attachment

**Installation information**

Recommended space  
3.00 x 3.00 m

**Foundations**

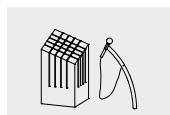
**Stone Harp**  
1 item 80 x 80 x 50 cm  
excavation depth 60 cm  
recess 5 x 5 x 20 cm

**Stand post for beater**  
1 item 40 x 40 x 40 cm  
excavation depth 50 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.45000



**Function and Play value**

Stones are not mute. Being able to generate a sound from the oversized stones of the giant xylophone is a moving experience. Tapping the solid, heavy granite, marble or volcanic stone with a rubber hammer produces a wealth of sounds and harmonies which has an exciting effect on people. Stonemasons recognise stones and their internal characteristics by their sound. Density, hardness and homogeneity of stones are shown during tapping by differing pitch and tonal quality. The Stone Xylophones are created from specially chosen blocks of black granite.



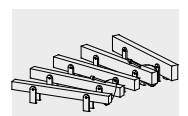
This ensures high-quality sound and break-resistance.

**Suitable**

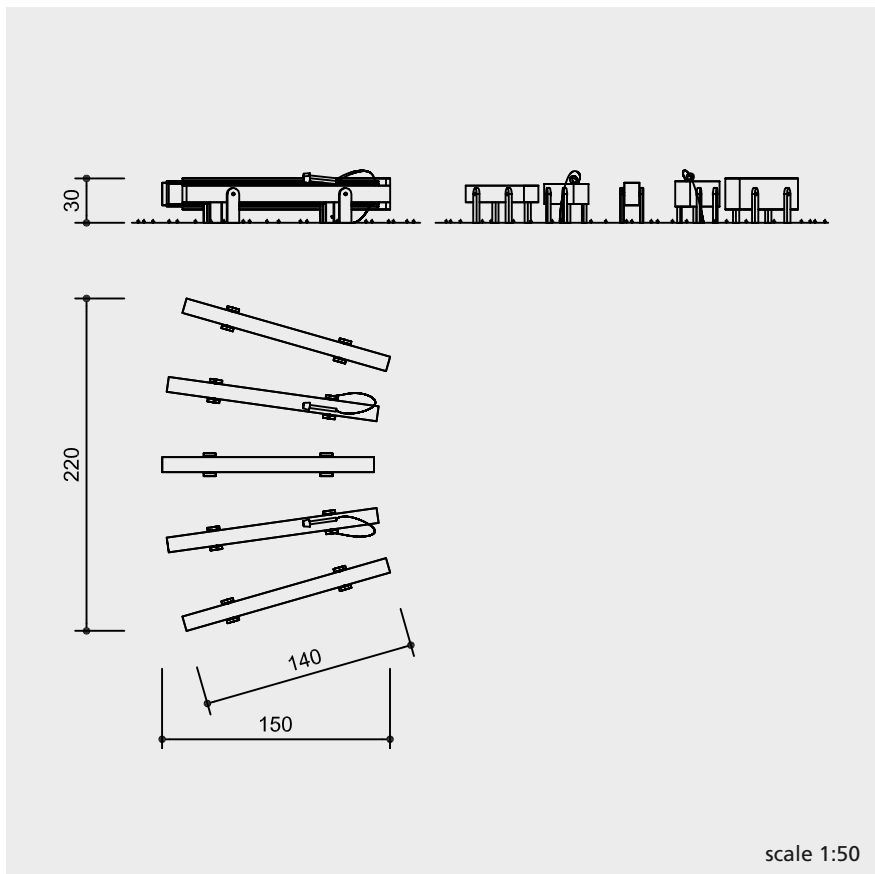
- for parks, outdoor areas of company buildings, schools, kindergartens, zoological and botanical gardens
- for indoor and outdoor areas of music schools, research institutions, institutions for people with special needs, children's museums, children's parks

Acoustic effect	medium
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	recommended
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible

**Stone Xylophone**  
*graubner* Play Stations for  
 Developing the Senses



10.46000



**Technical information**

The selected granite stones must be very sturdy and yet produce a good sound. The stones are polished on all sides and tuned to each other.

beater of black synthetic material, suspension made of stainless steel cable

**Dimensions**

(small deviations possible)

height	0.30 m
length	1.40 m
width	2.20 m
weight	450 kg

**Components**

5 stones with supporting constructions and 2 beaters

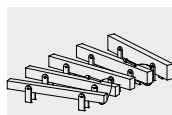
**Installation information**

Recommended space  
4.00 x 3.00 m

Foundations  
1 item 50 x 250 x 30 cm  
excavation depth 40 cm  
1 item 40 x 200 x 30 cm  
excavation depth 40 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.46000

**Function and Play value**

Tone is not just a noise, but a sound which the ear perceives as pure and of constant pitch. Each material has its own sound pattern. Metal bars create a particularly high-quality sound if bent into a triangle, and make especially pure vibrations audible. Familiar physical properties are transformed into amazingly simple aspects of life. An increase in the triangle size increases the quantity of upper vibrations clearly and noticeably. It is a learning experience for children and adults, and this knowledge reinforces their own experiences.

**Suitable**

- for indoors and outdoors
- for parks, patios, zoological and botanical gardens, schools, kindergartens, music schools, research institutions, institutions for people with special needs, children's museums, children's parks

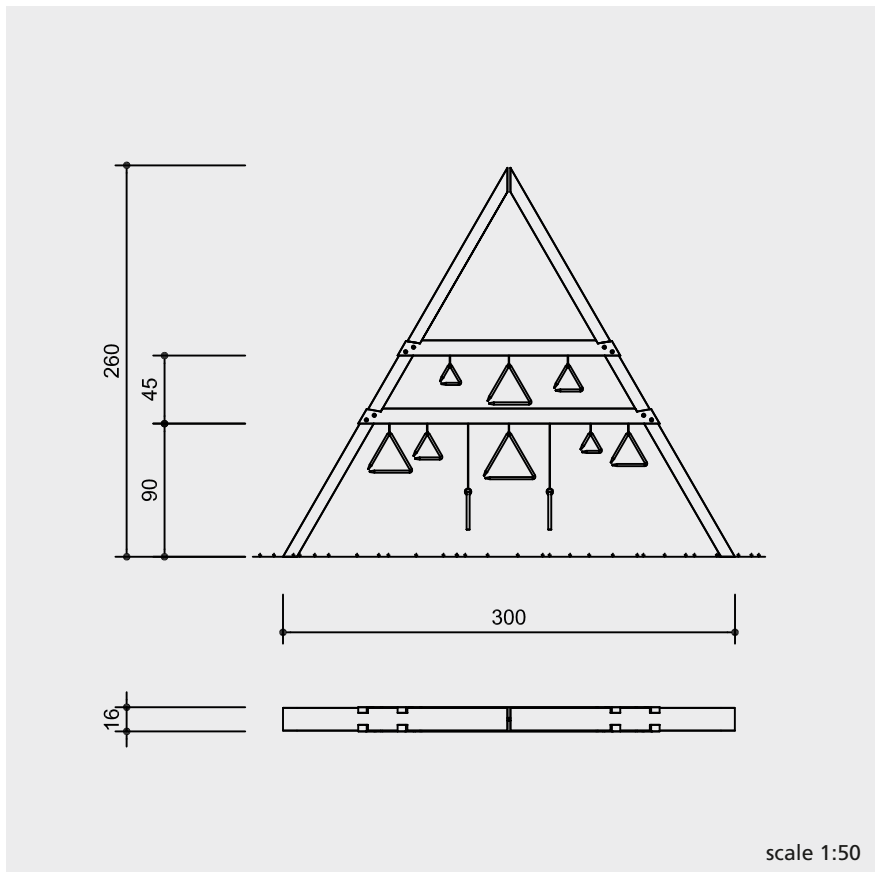


**Triangles**  
*graubner* Play Stations for  
Developing the Senses

Acoustic effect	medium
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.52000



**Technical information**

frame made of oak

wooden joints in traditional carpentry quality

special hardened stainless steel triangles

beater and cables made of stainless steel

**Dimensions**

(small deviations possible)

height	2.60 m
width	3.00 m
depth	0.16 m
weight	100 kg

**Components**

1 support frame with 8 triangles with 5 different tones and 2 beaters

**Installation information**

Recommended space  
5.00 x 2.50 m

Foundations  
2 items 60 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



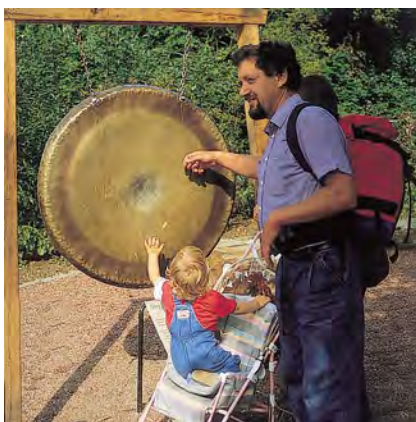
10.52000

**Function and Play value**

The skin can also perceive sound. Sound waves, especially those from gongs, are not only perceived by the ear but also by the skin. Every material has its own typical sound. In order to create this sound, the material needs to be made into a typical form. The gong, along with the triangle and bells, is a typical design for metal. It consists of a hand-finished metal plate which can be tuned by changing the tension, making particularly pure vibrations audible. The vibrations emitted by the gong are perceived as relaxing and invigorating on the skin, and pass right through all the different areas of the body. That is why the gong is also used for therapy.

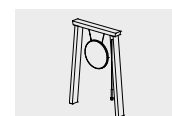
**Suitable**

- for parks, therapy gardens, institutions for people with special needs, kindergartens, nurseries, school youth hostels, seminar houses, training and recreational areas of companies



**Gong**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	strong
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible

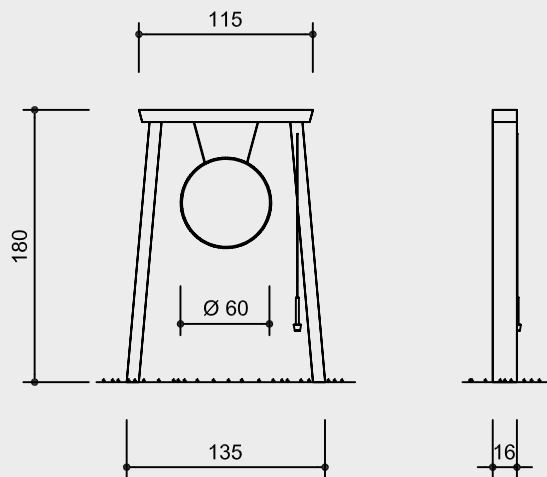


10.52160

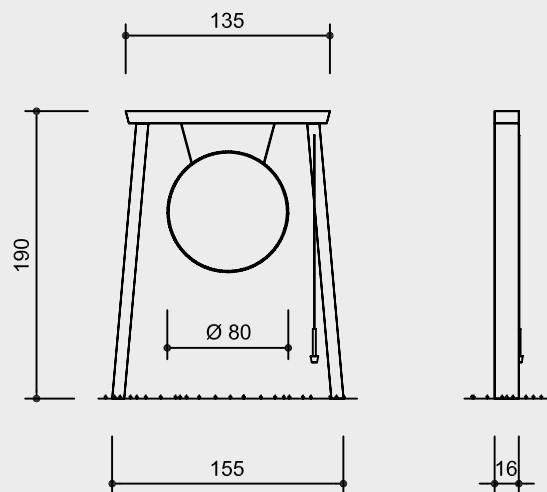


10.52180

**Order No. 10.52160 Gong**  
diameter 0.60 m



**Order No. 10.52180 Gong**  
diameter 0.80 m



scale 1:50

**Technical information**

frame made of oak

suspension made of plastic coated stainless steel cable

high quality manually operated gong of non-rusting bronze alloy with individual tone character

beater with rubber head, suspension made of stainless steel cable

**Dimensions**

(small deviations possible)

**Order No. 10.52160**

height	1.80 m
width	1.15/1.35 m
depth	0.16 m
gong	diameter 0.60 m
weight	75 kg

**Order No. 10.52180**

height	1.90 m
width	1.35/1.55 m
depth	0.16 m
gong	diameter 0.80 m
weight	100 kg

**Components**

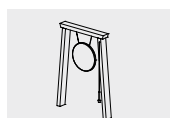
1 support frame with 1 gong and 1 beater

**Installation information**

Recommended space  
3.00 x 2.00 m

Foundations  
2 items 50 x 50 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



**10.52160**



**10.52180**

**Function and Play value**

The force and rhythm with which the Metal Gongs are struck, gives rise to different sounds and resonances. Each metal disc produces a particular range of sound. Together they make melodic games and sound experiments possible. There are calming sounds which find resonance in particular areas of the body, head, neck, chest or stomach, depending on pitch. The type of percussion, with a percussion hammer or by hand, produces sounds which generate melodic patterns and rhythms. Several people can play simultaneously and create music by listening to each other.

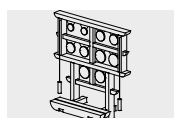
**Suitable**

- for parks, school yards, patios, kindergartens, music schools, sanatoriums

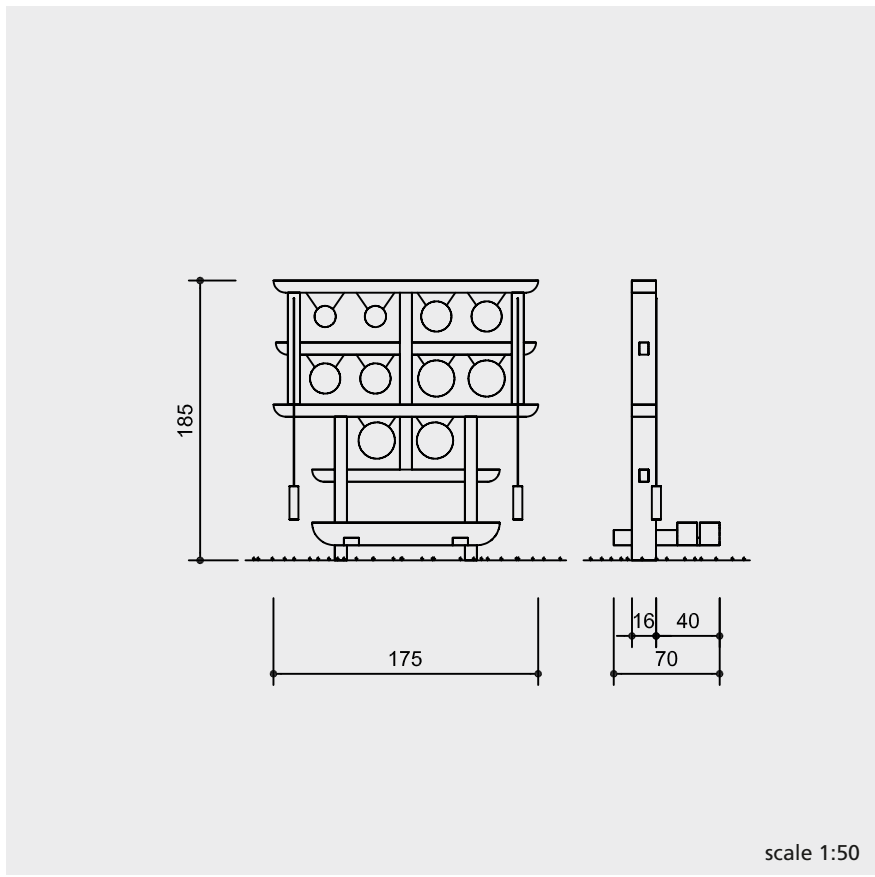


**Metal Gongs**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.52200



**Technical information**

frame made of oak

high-quality metal discs in brass,  
suspension made of stainless steel cable

beater made of white synthetic material,  
suspension made of stainless steel cable

**Dimensions**

(small deviations possible)

height	1.85 m
width	1.75 m
depth	0.70 m
weight	140 kg

scale 1:50

**Components**

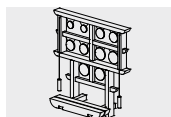
1 support frame with 10 metal discs  
and 2 beaters

**Installation information**

Recommended space  
3.00 x 2.00 m

Foundations  
1 item 150 x 60 x 55 cm  
excavation depth 75 cm

**Attention!**  
**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**  
Technical changes reserved.



10.52200





**Function and Play value**

The curved steel plate enables the forces pulling on the three steel strings to be seen and felt. Because the strings are not clamped into a ridged frame like piano strings, their note changes constantly. They produce quiet, relatively deep sounds when someone plucks or strikes them.

**Suitable**

- for city centres, parks, promenades

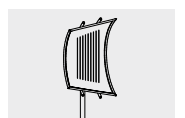


**Note**

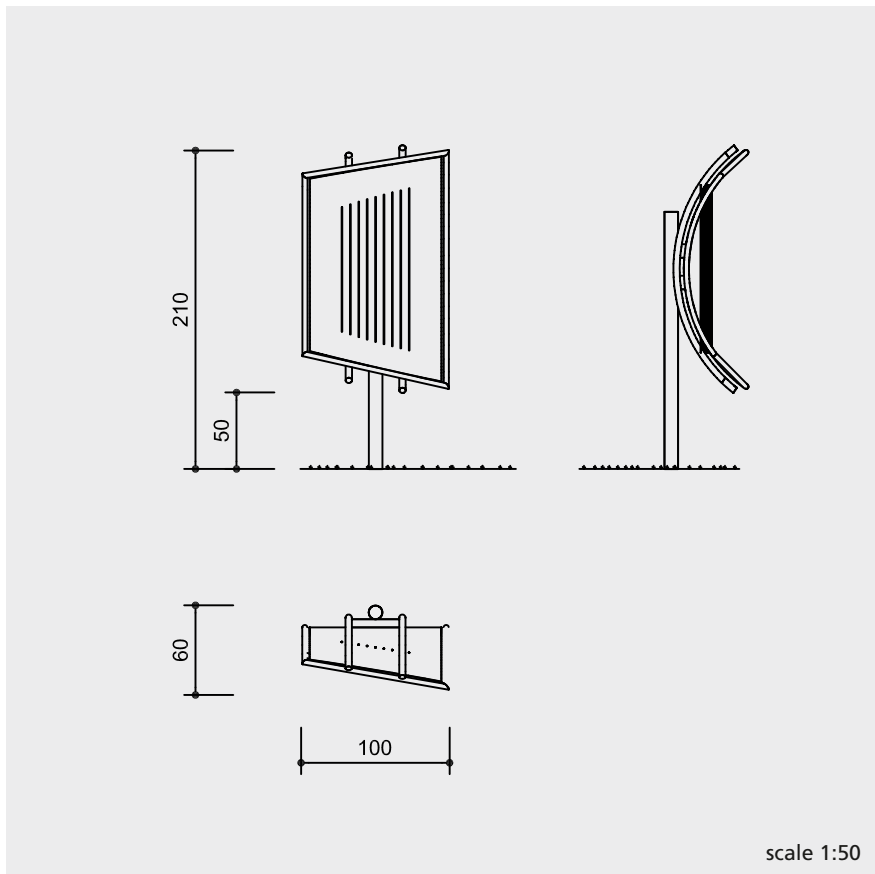
To achieve a good sound quality, this equipment must be tuned after installation and the pitch must be checked at regular intervals.

**Sound Chord**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	vulnerable in non-supervised areas
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.52300



**Technical information**

equipment made of stainless steel

strings made of stainless steel

**Dimensions**

(small deviations possible)

height	2.10 m
width	1.00 m
depth	0.60 m
weight	120 kg

**Components**

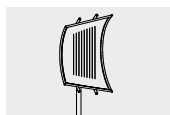
1 complete piece of equipment  
with 9 strings  
for fixation with screws, fastening  
material included

**Installation information**

Recommended space  
2.50 x 2.00 m

foundations  
1 item 60 x 60 x 50 cm  
excavation depth 70 cm

**Attention!**  
**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**  
Technical changes reserved.



10.52300

**Function and Play value**

If the respective shape and alloy is used for metal pipes to create the perfect sound, then they are called „Tubular Chimes“. They have been specially tuned for optimal sound with one major and one minor note around a common central note. Tubular Chimes are, like other orchestral instruments, tuned precisely. No other instrument can produce such a clear and lasting sound.

**Suitable**

- for public areas, parks, play centres, museums, music gardens



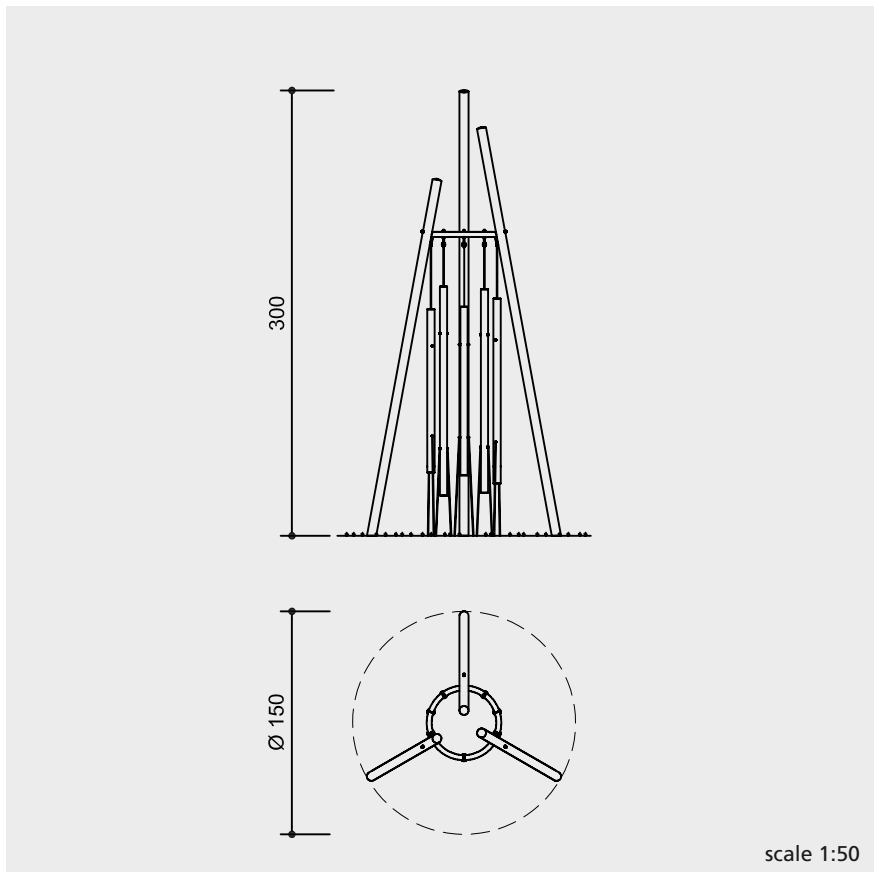
**Tubular Chimes**  
*graubner* Play Stations for  
 Developing the Senses



Acoustic effect	medium to strong
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.52400



**Technical information**

supporting tubes, ring, foot plates and base plate made of stainless steel

tuned brass sound tubes

tensioning cable made of stainless steel

beater made of plastic, suspension made of stainless steel cable

**Dimensions**

(small deviations possible)

height	3.00 m
diameter	1.50 m
sound tubes	diameter 48 x 4 mm
weight	90 kg

**Components**

- 3 supporting tubes on foot plates
- 1 ring with 5 sound tubes and tensioning cables on base plate, each to be screwed in, fastening material included
- 2 beaters

**Installation information**

Recommended space  
circle diameter 3.00 m

Foundations  
1 item triangular,  
length of the edge 175 cm,  
20 cm high, excavation depth 30 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



10.52400

**Function**

Eddy currents which can be observed in water, can also be found in a similar form in the air. These invisible phenomena are transformed into a soft heavenly sound by the Wind Harp, which is also called the Aeolian Harp. Air is not only the carrier for the sound, but the air vortexes themselves produce sounds. The Aeolian Harp is a stringed instrument resembling a trapezoidal zither which is referred to in many ancient songs and tales. The instrument is turned into the direction of the wind, so that it produces sounds. It is a particularly interesting aspect that when the wind is stronger, more overtones are produced.

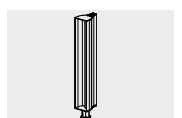
**Suitable**

- for particularly windy locations, lookout points, nature parks

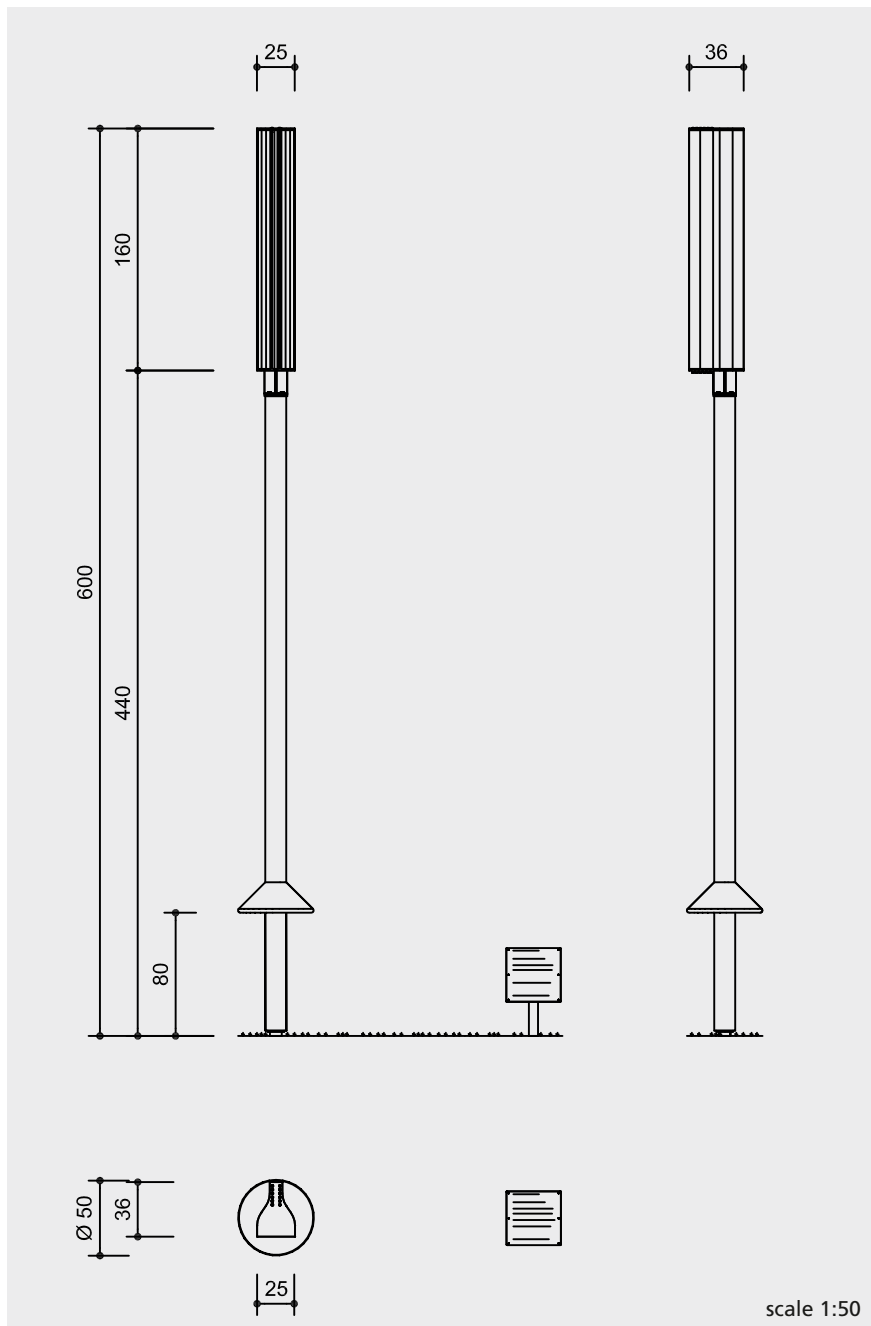


**Wind Harp**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	with strong winds not suitable for residential areas
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	included
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.52500



**Technical information**

rotating, stainless steel mast, with lubricating nipple and ball bearings for turning the wind harp into the wind direction

resonance body made of stainless steel supported on bearings with air baffles to improve the air flow and with a resonance effect for the vibrations produced

resonance body with 12 strings

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

total height	6.00 m
resonance body	1.60 x 0.25 x 0.36 m
weight	200 kg

**Components**

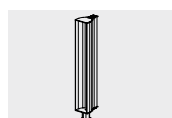
- 1 complete piece of equipment with steel mast and foundation anchor
- 1 Explanation Board with support

**Installation information**

Recommended space  
circle diameter 3.00 m

- Foundations
- 1 item 130 x 130 x 70 cm, reinforced
  - blinding layer 5 cm
  - excavation depth 115 cm
- Explanation Board
- 1 item 40 x 40 x 40 cm
  - excavation depth 60 cm

**Attention!**  
Exact measurements may vary, for all installation dimensions refer to current installation instructions.  
Technical changes reserved.



10.52500



**Function and Play value**

The Dendrophone is made up of harmoniously tuned sound boards which have been arranged like an oversized xylophone. If the lengths of the sound elements are changed, different tones are produced, and these are tuned and amplified with resonators. Hitting it, either with a percussion hammer or by hand, produces warm sounds, and these can be made into melodies and rhythms. Several people can play on the equipment at the same time and create music together.

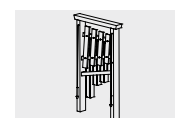
**Suitable**

- for indoors and outdoors
- for parks, health resort gardens, national parks, zoological and botanical gardens, schools, kindergartens, sanatoriums, institutions for people with special needs



**Dendrophone - single field**  
**Dendrophone - double field**  
*graubner* Play Stations for Developing the Senses

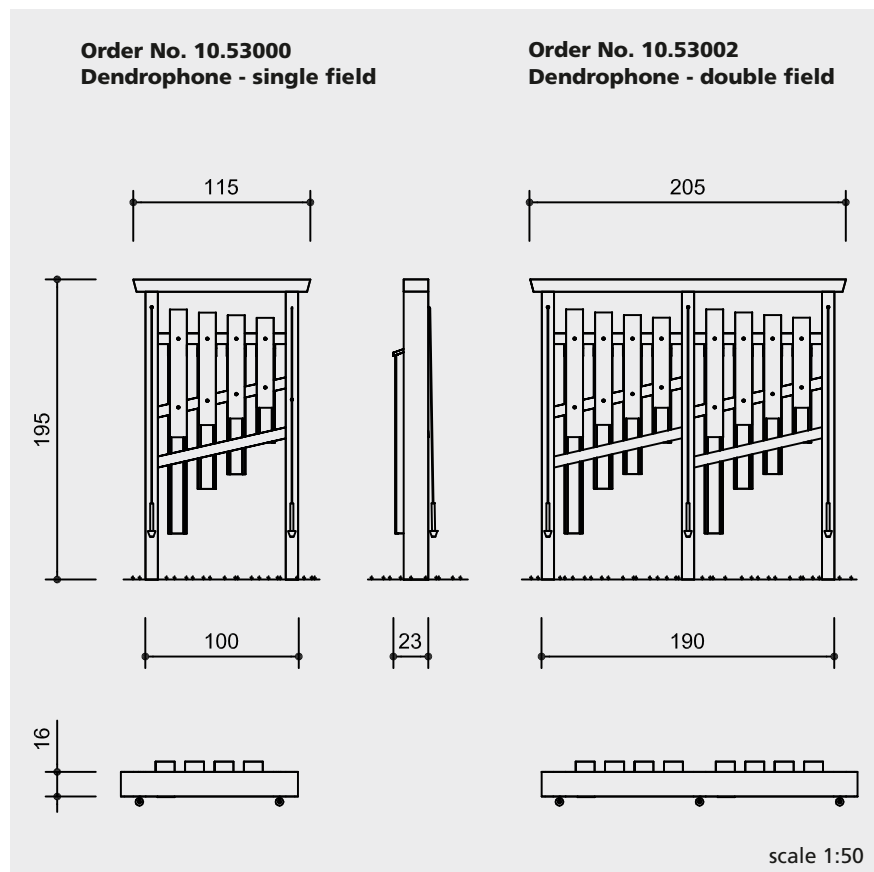
Acoustic effect	soft
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



**10.53000**



**10.53002**



### Technical information

frame made of oak

carefully chosen sound boards made of cherry wood

the vertical resonators are designed to create optimal sound with each sound board

only wood joints in accordance with traditional carpentry

beater with rubber head, suspension made of stainless steel cable

### Dimensions

(small deviations possible)

height	1.95 m
single field width	1.15/1.00 m
double field width	2.05/1.90 m
depth	0.23 m
weight	75/140 kg

### Components

#### Order No. 10.53000

1 single field with 4 sound boards and 2 beaters

#### Order No. 10.53002

1 double field with 8 sound boards and 3 beaters

### Installation information

Recommended space

**Single field** 2.50 x 2.10 m

**Double field** 2.50 x 3.00 m

Foundations

**Single field**

2 items 40 x 40 x 40 cm

excavation depth 60 cm

**Double field**

3 items 40 x 40 x 40 cm

excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.53000



10.53002



**Function and Play value**

The Tubular Dendrophone creates music to listen to and feel, with harmoniously tuned wooden pipes which are both sound and resonance elements. If you place your hand on a ringing sound pipe it sends the vibration of the wood through your body. The sound of the wood combines with the resonance of the enclosed air in the pipes.

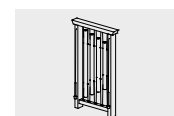
**Suitable**

- for parks, health resort gardens, national parks, zoological and botanical gardens, schools, kindergartens, sanatoriums, institutions for people with special needs



**Tubular Dendrophone - single field**  
**Tubular Dendrophone - double field**  
*graubner* Play Stations for  
 Developing the Senses

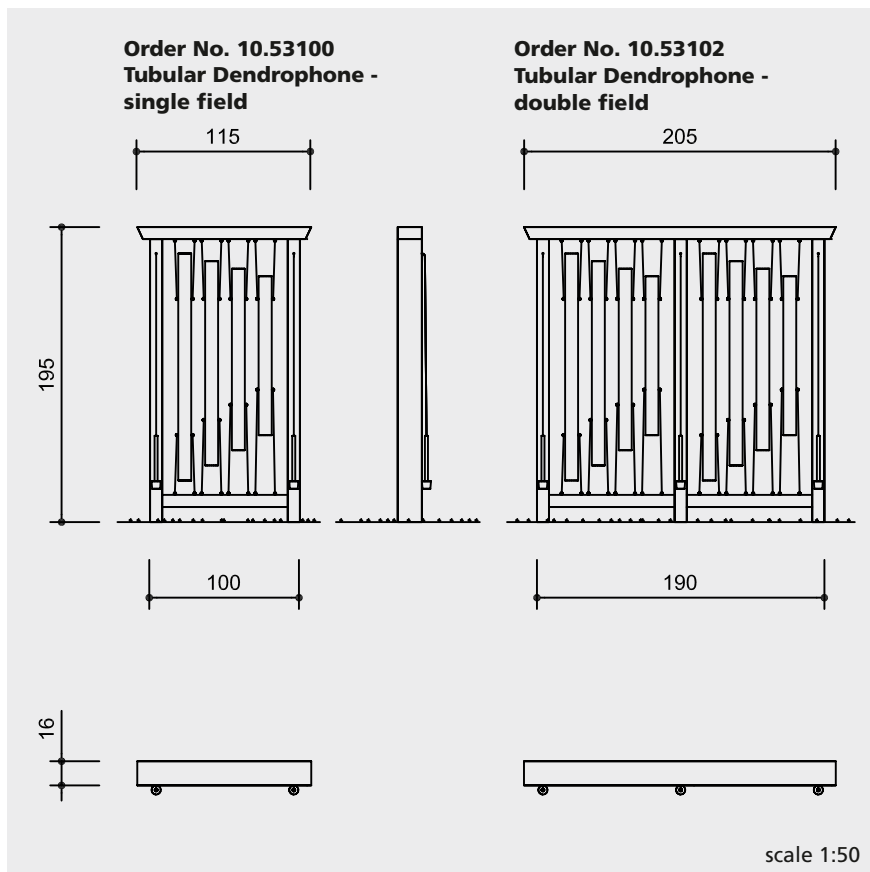
Acoustic effect	soft
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



**10.53100**



**10.53102**



**Technical information**

frame made of oak

binary sound tubes of milled and turned cherry wood bonded together

special suspension with low vibration absorption made of stainless steel and brass

beater with rubber head, suspension on a stainless steel cable

**Dimensions**

(small deviations possible)

height	1.95 m
single field width	1.15/1.00 m
double field width	2.05/1.90 m
depth	0.16 m
weight	
single field	85 kg
double field	160 kg

**Components**

**Order No. 10.53100**  
**Tubular Dendrophone- single field**  
 1 single field with 4 sound tubes  
 and 2 beaters

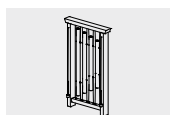
**Order No. 10.53102**  
**Tubular Dendrophone - double field**  
 1 double field with 8 sound tubes  
 and 3 beaters

**Installation information**

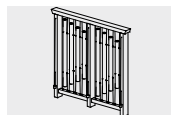
Recommended space  
**Single field** 2.50 x 2.10 m  
**Double field** 3.00 x 2.50 m

Foundations  
**Single field**  
 2 items 40 x 40 x 40 cm  
 excavation depth 60 cm  
**Double field**  
 3 items 40 x 40 x 40 cm  
 excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.



**10.53100**



**10.53102**

**Function and Play value**

The Sound Arch, which consists of five wooden sound tubes, can be played from both sides at the same time. This has the effect of particularly encouraging the participants to play together and listen to each other.

**Suitable**

- for parks, health resort gardens, national parks, zoological and botanical gardens, schools, kindergartens, sanatoriums, institutions for people with special needs

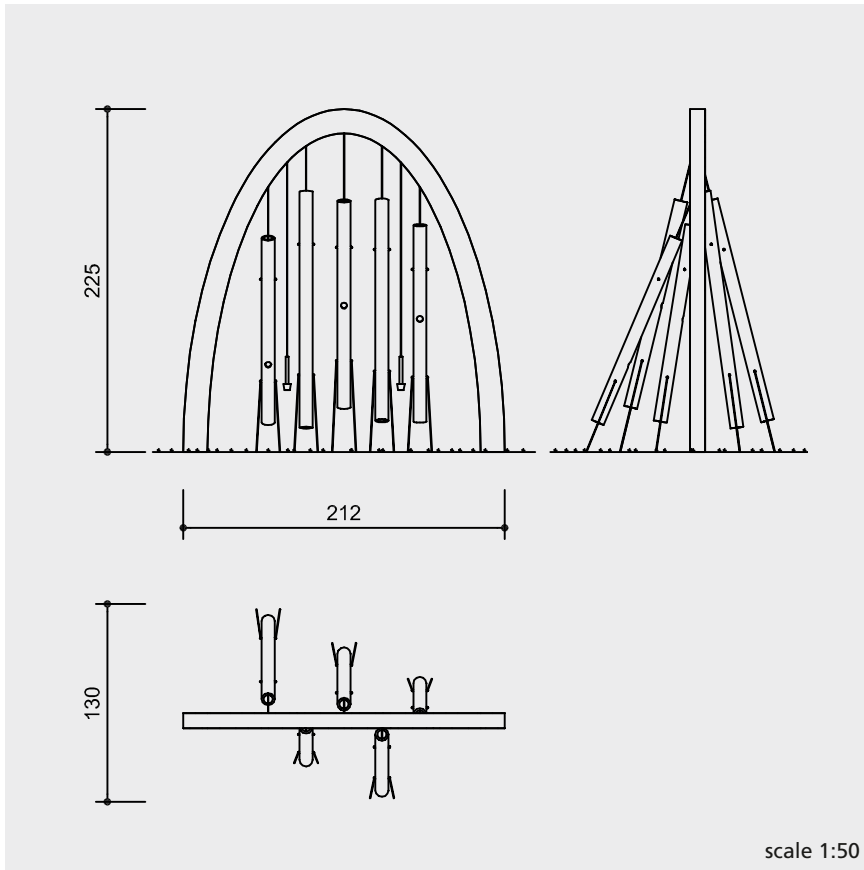


**Sound Arch**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	slightly vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.53200



### Technical information

wooden frame, constructed from oiled larch, glued into the shape of an arch

binary sound tubes of milled and turned cherry wood bonded together

special suspension with low vibration absorption made of stainless steel and brass

beater with rubber head, suspension made of stainless steel cable

### Dimensions

(small deviations possible)

height	2.30 m
width	2.12 m
depth	1.30 m
weight	110 kg

### Components

- 1 wooden bow with steel feet
- 5 sound tubes with tensioning cables and base plates for fixation with screws, fastening material included
- 2 beaters

### Installation information

Recommended space  
4.50 x 3.00 m

Foundations  
2 items 50 x 50 x 50 cm  
excavation depth 70 cm  
1 item 175 x 30 x 30 cm  
excavation depth 45 cm  
1 item 100 x 30 x 30 cm  
excavation depth 50 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.53200

**Function and Play value**

These stylised tree shapes with their different sound leaves, sound branches and drums are particularly suited to parks and atmospheric gardens. Exciting music can be experienced when played together. The sounds range from the melancholic sound of the Steeldrum to the cheerful one of the Sound Leaf. These robust objects can be played by hand or with the attached hammers.

**Sound Leaf**

The individual sound plates have a tone like the clang of a cymbal. The stylised leaves are attached to the tree in a way that they can move freely. They produce a very cheerful and lively sound.

**Sound Tree**

The sound bars are like powerful chimes and represent branches. They are also used to make xylophones.

**Steeldrum**

The melodic, sometimes also melancholic sound of the Steeldrum fascinates people. It symbolises the wooden drums that are made from hollowed tree trunks in many different cultures. The Steeldrum was first made from old oil barrels after the Second World War by people from the Caribbean. Skilful hammering creates individual areas in the base each having their own different tone.

**Suitable**

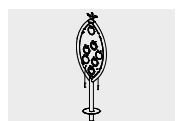
- for parks, atmospheric gardens



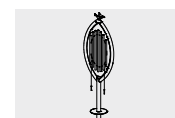
**Sound Leaf  
Sound Tree  
Steeldrum**

*graubner* Play Stations for  
Developing the Senses

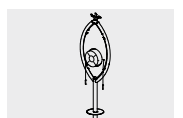
Acoustic effect	medium
Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



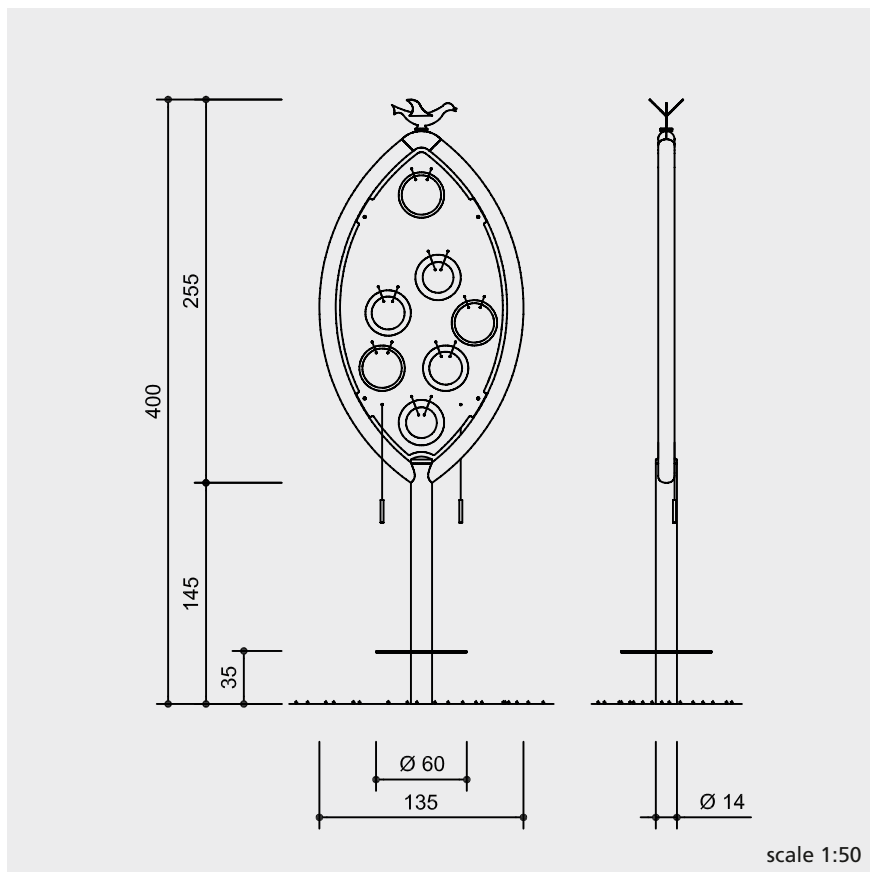
**10.54000**



**10.54100**



**10.54200**



**Technical information**

all stainless steel equipment  
in stylized tree shape

**Dimensions**

(small deviations possible)

total height	4.00 m
width	1.35 m
diameter	0.35 m
weight	180 kg

**Components**

1 complete piece of equipment  
with respective accessories

**Installation information**

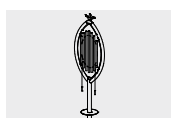
Recommended space  
circle diameter 3.00 m

Foundation  
1 item 130 x 130 x 70 cm  
reinforced  
blinding layer  
130 x 130 x 5 cm  
total excavation depth 115 cm

**Attention!**  
**Exact measurements may vary, for  
all installation dimensions refer to  
current installation instructions.**  
Technical changes reserved.



10.54000



10.54100



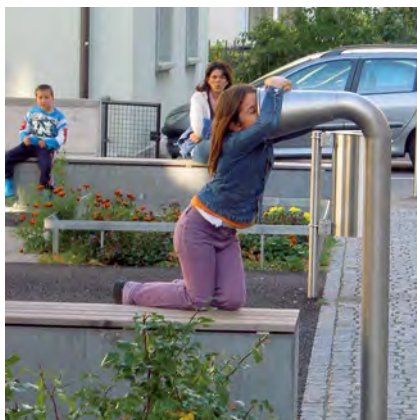
10.54200

**Function and Play value**

Sound behaves in similar ways to water which is why it can be directed through tubes as was done in old ship's telephones. Between two and four speaking/ listening stations can be installed and these are connected by underground pipes and a special sound distributor. It is possible to communicate over unusually long distances without the use of any electronic amplifiers. However, visual contact makes sense.

**Suitable**

- for parks, therapy gardens, schoolyards, playgrounds

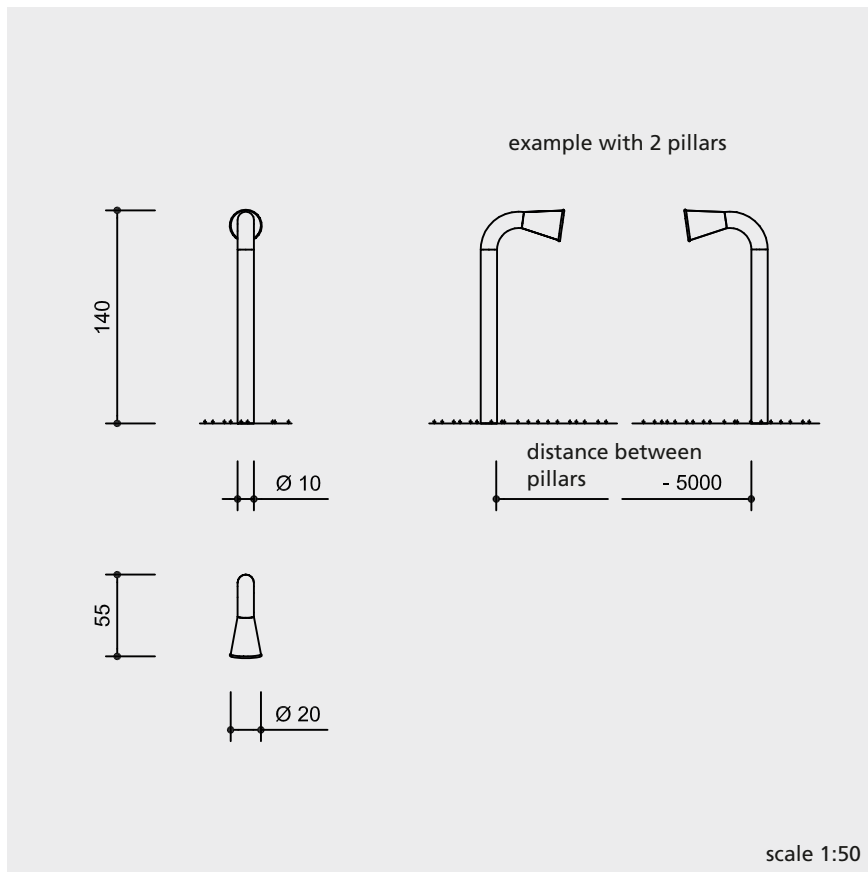


**Conference**  
*graubner* Play Stations for  
Developing the Senses

Acoustic effect	soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	not possible



10.55000



**Technical information**

pillar made of stainless steel

cone shaped opening with perforated sheet cover

**Dimensions**

(small deviations possible)

height	1.40 m
tube diameter	0.10 m
speech and listening tube depth	0.20 m
depth	0.55 m
weight	21 kg per pillar

**Components**

depending on the number ordered  
2 - 4 pillars with coupling

minimum number is 2 pillars

**On-site work**

supply and installation of the required underground pipes as well as the ducting for connecting materials according to our specifications

**Installation information**

Recommended space  
circle diameter 2.00 m per pillar

Foundations  
1 item 60 x 60 x 70 cm per pillar  
excavation depth 90 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.55000



**Function and Play value**

Speak into the acoustic cone and listen to the multiple echo. The further the sound travels, the more it changes, and dark sounds will disappear. The reverberation becomes rhythmical. The echo allows you to experience the limiting effect of space: differing times between echoes create various impressions of space. It is also possible to communicate with each other by speaking into the acoustic cones. Different sound nuances are created, depending on where you call into the cone.

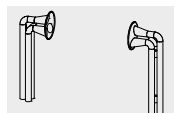
**Suitable**

- for parks, children's hospitals, therapy gardens, schoolyards
- for entrances to public buildings

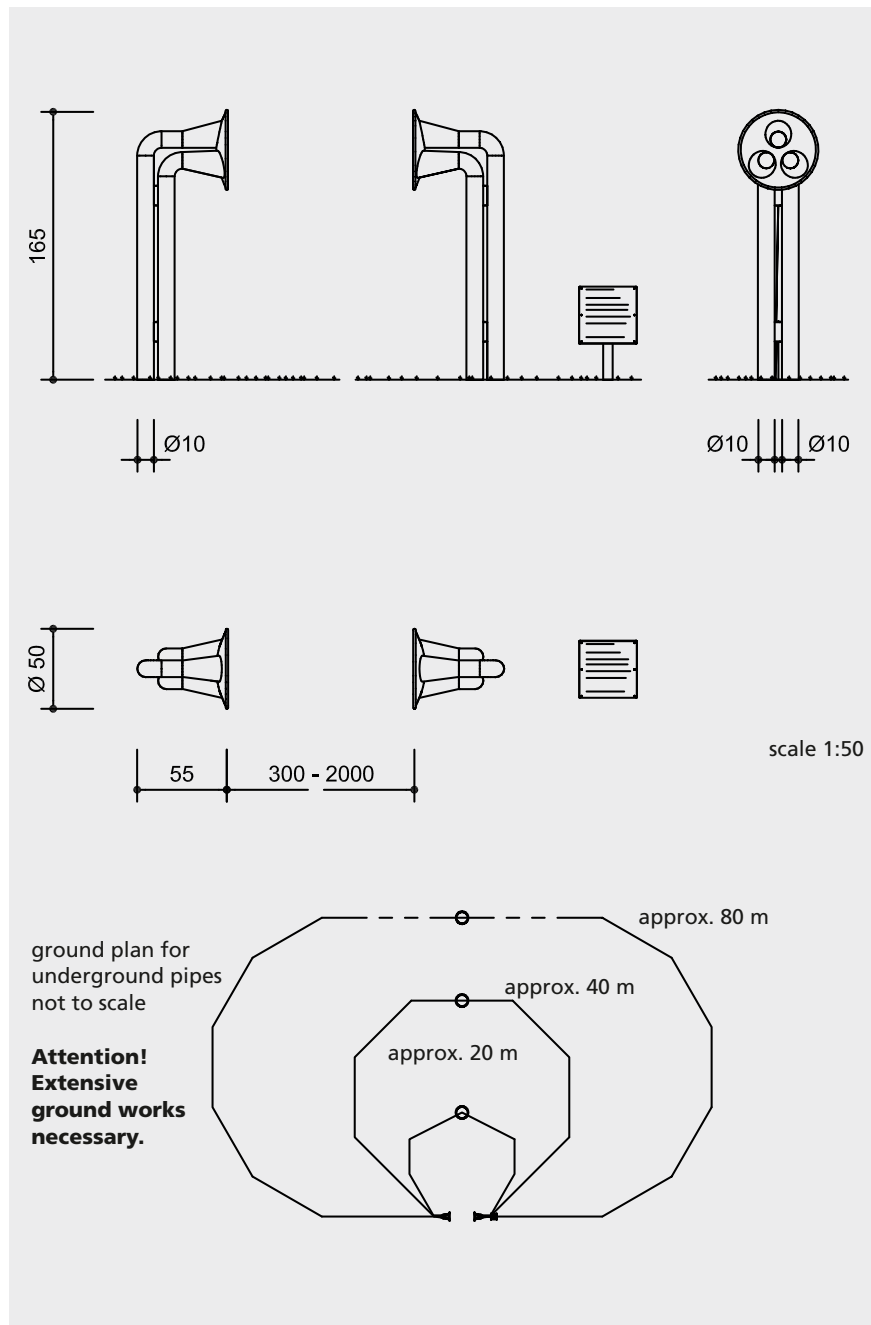


**Echo Game**  
*graubner* Play Stations for  
 Developing the Senses

Acoustic effect	soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	included
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	not possible



10.55100



### Technical information

echo pillars made of stainless steel

cone shaped openings with incorporated sound reflector and perforated sheet cover

support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	1.65 m
tube diameter	0.10 m
speech and listening tube	0.50 m
depth	0.55 m
weight	110 kg

scale 1:50

### Components

- 2 echo pillars with flange and couplings
- 1 Explanation Board with support

### On-site work

supply and installation of the required underground pipes according to our specifications

### Installation information

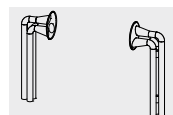
Recommended space  
circle diameter 2.00 m per pillar

- Foundations
- 2 items 80 x 80 x 70 cm excavation depth 90 cm
  - Explanation Board
  - 1 item 40 x 40 x 40 cm excavation depth 60 cm

### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.55100

**Function and Play value**

We recommend installing a play station at the start of educational water trails, fields of experience, and also in entrances to playgrounds, where they serve the purpose of preparing the arriving participant for the following sensory and perceptual experiences. The play station "Listening to Water" is suitable for this purpose. With this installation visitors are introduced to the natural sounds coming from a watercourse: dripping, murmuring, gurgling.

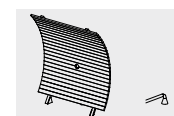
**Suitable**

- for footpaths near watercourses, parks, health resort gardens
- for entrances and reception areas



**Listening to Water**  
*graubner* Play Stations for  
 Developing the Senses

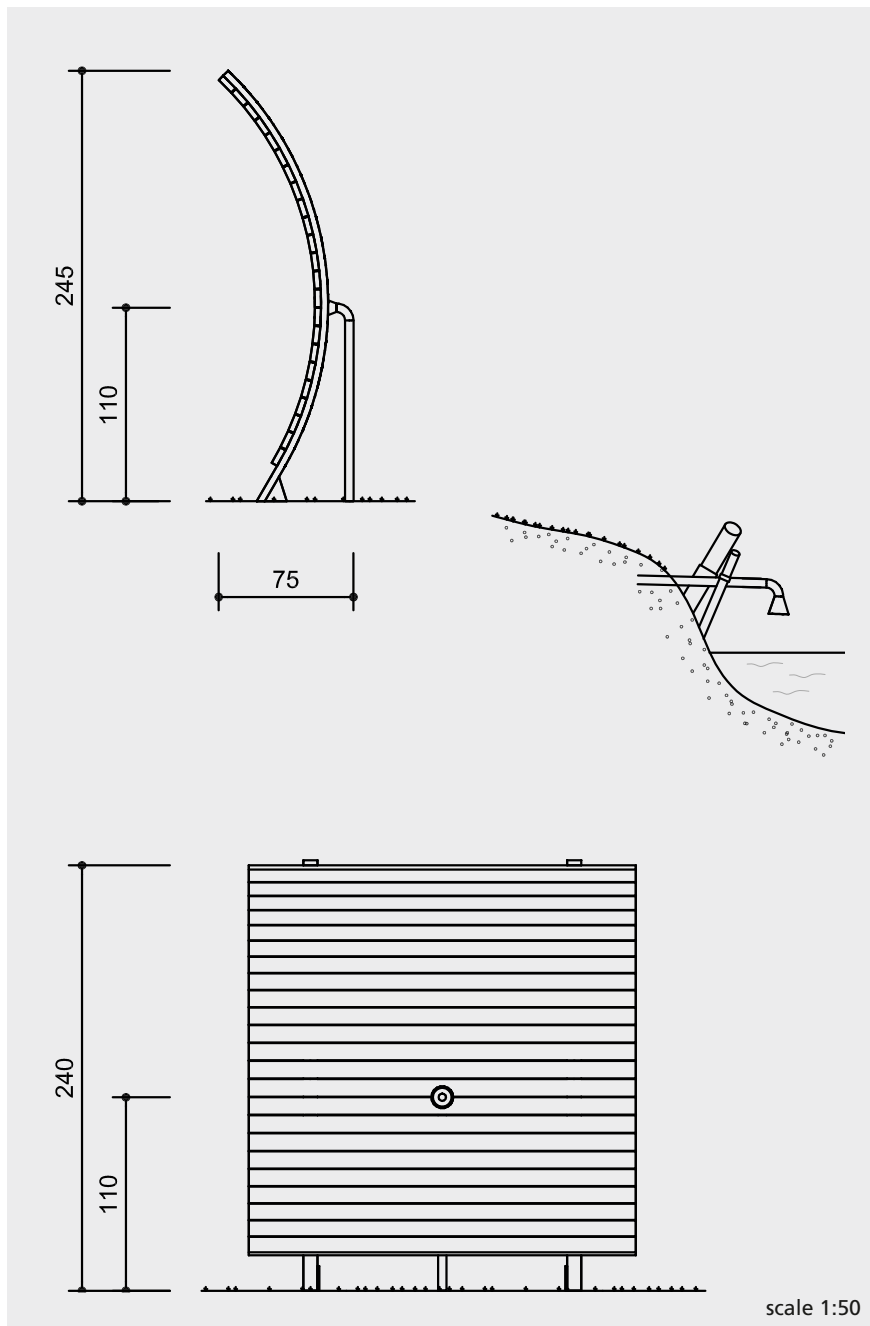
Acoustic effect	very soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation board	recommended
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	not possible



10.57100



10.57200



**Technical information**

planking made of mountain larch  
 all pipe and cone elements made of stainless steel

hot-dip galvanised frame



**Dimensions**

(small deviations possible)

height 2.45 m  
 listening height 1.10 m  
 width 2.20 m  
 depth 0.75 m  
 weight

**Order No. 10.57100** 260 kg

**Order No. 10.57200** 80 kg

For more detailed explanation of the quality characteristics see price list.

**Components**

**Order No. 10.57100**

**Listening to Water**

1 reflecting wall with listening cone  
 1 sound receiving cone

**Order No. 10.57200**

**Listening to Water as Pillar**

1 listening pillar  
 1 sound receiving cone

**On-site work**

supply and installation of the required pipe work according to our specifications

**Installation information**

Recommended space depending on the installation situation

Foundations

**Order No. 10.57100**

1 item 200 x 100 x 30 cm  
 excavation depth 50 cm

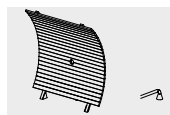
**Order No. 10.57200**

1 item 60 x 60 x 70 cm  
 excavation depth 90 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



**10.57100**



**10.57200**

**Function and Play value**

Every culture has its melodies which stay alive by frequent repetition. The melodic fence gives you this opportunity to play these melodies as a chorus or as a canon or even backwards if you want to. The fence has been tuned with little familiar melodies such as "Frère Jacques". Other melodies within an octave tone range are possible. The melodic fence consists of handrail, frame and sound tubes. Running a hammer or a stick over the metal rods of the melodic fence creates the tune of a song.



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Design W. Graubner

In non-public areas the suspension can be done with cables instead of a screw. The length of the fence can be varied depending on the melody or the required space.

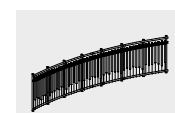
With changes of more than 10 % please request a price that will differ from the list price.

**Suitable**

- for public places
- to support sensory perception for senior citizens and people with special needs
- early musical education

Acoustic effect	soft
Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible

**Melodic Fence**  
**„Hänschen Klein“**  
**„Frère Jacques“**  
*graubner* Play Stations for  
 Developing the Senses

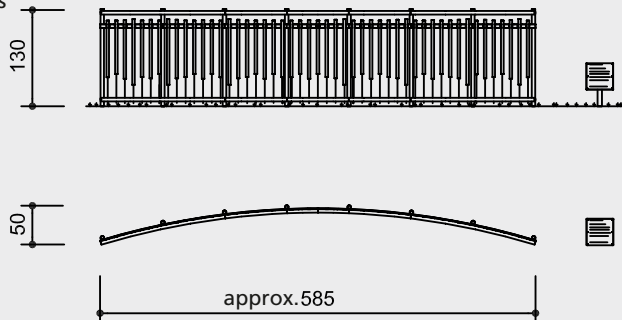


10.58000

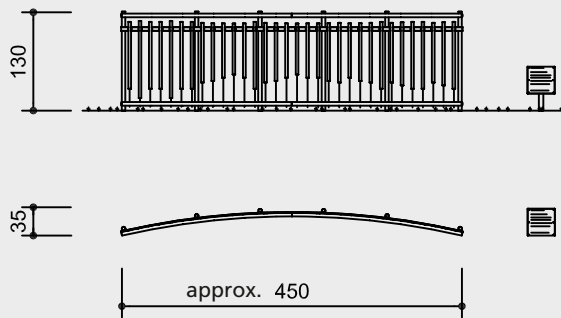


10.58100

**"Hänschen Klein"**  
**Order No. 10.58000**  
 with 49 notes



**"Frère Jacques"**  
**Order No. 10.58100**  
 with 32 notes



scale 1:100

**Technical information**

melodic fence made of stainless steel  
 with metal sound tubes

support for Explanation Board made of  
 stainless steel

**Dimensions**

(small deviations possible)

**Order No. 10.58000 „Hänschen Klein“**

height 1.30 m  
 length 5.85 m  
 weight 170 kg

**Order No. 10.58000 „Frère Jacques“**

height 1.30 m  
 length 4.50 m  
 weight 145 kg

**Components**

- 1 complete piece of equipment  
 with base plates for fixation with  
 screws, fastening material included
- 1 Explanation Board with support

**Installation information**

Recommended space  
 4.80 or 6.00 x 2.00 m

**Foundations**

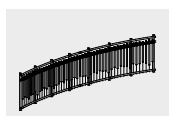
**Order No. 10.58000**  
 2 items 280 x 40 x 50 cm  
 excavation depth 60 cm

**Order No. 10.58100**  
 2 items 220 x 40 x 50 cm  
 excavation depth 60 cm  
 Explanation Board  
 1 item 40 x 40 x 40 cm  
 excavation depth 60 cm

**Attention!**

**Exact measurements may vary, for  
 all installation dimensions refer to  
 current installation instructions.**

Technical changes reserved.



10.58000



10.58100

## living with smell

### playing with smell

#### experiencing smell

#### Sense of smell

The sense of smell is the most primal of all the senses.

The organ with which people achieve the most human accomplishment in the most literal sense is the thinking brain, which emerged from the smelling brain during the course of human development and is the source of all thought.

The reception organ of the sense of smell is located at the roof of the nasal cavity and is known as the olfactory mucous membrane. Smell nerves connect it to the relevant area of the brain. The performance thereof exceeds that of any known chemical method. Aromatic substances are detected over large distances, whereby one ten millionth of a gram is sufficient.

Nowadays we can say with a reasonable amount of certainty that there are seven primary smells (similar to the primary colours of colour vision) from which all smells are created by mixing.

When you hold your breath you smell just as little as if you take full breaths. It is better to smell by "sniffing", i.e. taking short breaths. The breathed-in constituents are separated from the majority of things as fragrance molecules, and do not just stimulate the olfactory nerves but enter the bloodstream directly via the breathing process, where they have a noticeable effect on the overall sensitivity of the person in a similar way to hormones.

Smelling is a comparative process and is directly linked to retentiveness. Inactivity dulls the sense of smell and retentiveness at the same time. Smell connects us to everything. Some smells are experienced as expanding and others as confining – like breathing itself.

The fragrance organ can be filled with the seven basic materials to practice smelling. However, mixed fragrances can also be provided, such as forest soil, sea air etc – which can be used to play a fun memory game and generate thought-provoking impulses to memories that are all but forgotten.

*Es ist der Organismus als  
Ganzes der die Organe zu-  
sammen hält. Solange ich den  
"roten faden" statt in mir selbst  
woanders suche lebe ich nur brüch-  
stückhaft mit mir selbst...*





**Function and Play value**

Little protected flasks are placed in stainless steel stations and these can be filled with a multitude of fragrances. They should be renewed every three months, or, alternatively, the fragrances can be swapped at this time. This is especially recommended for residences for senior citizens: it can give rise to guessing games and conversations.

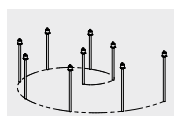
**Suitable**

- for training areas, seminar centres, kindergartens, sanatoriums, hospitals, residences for senior citizens

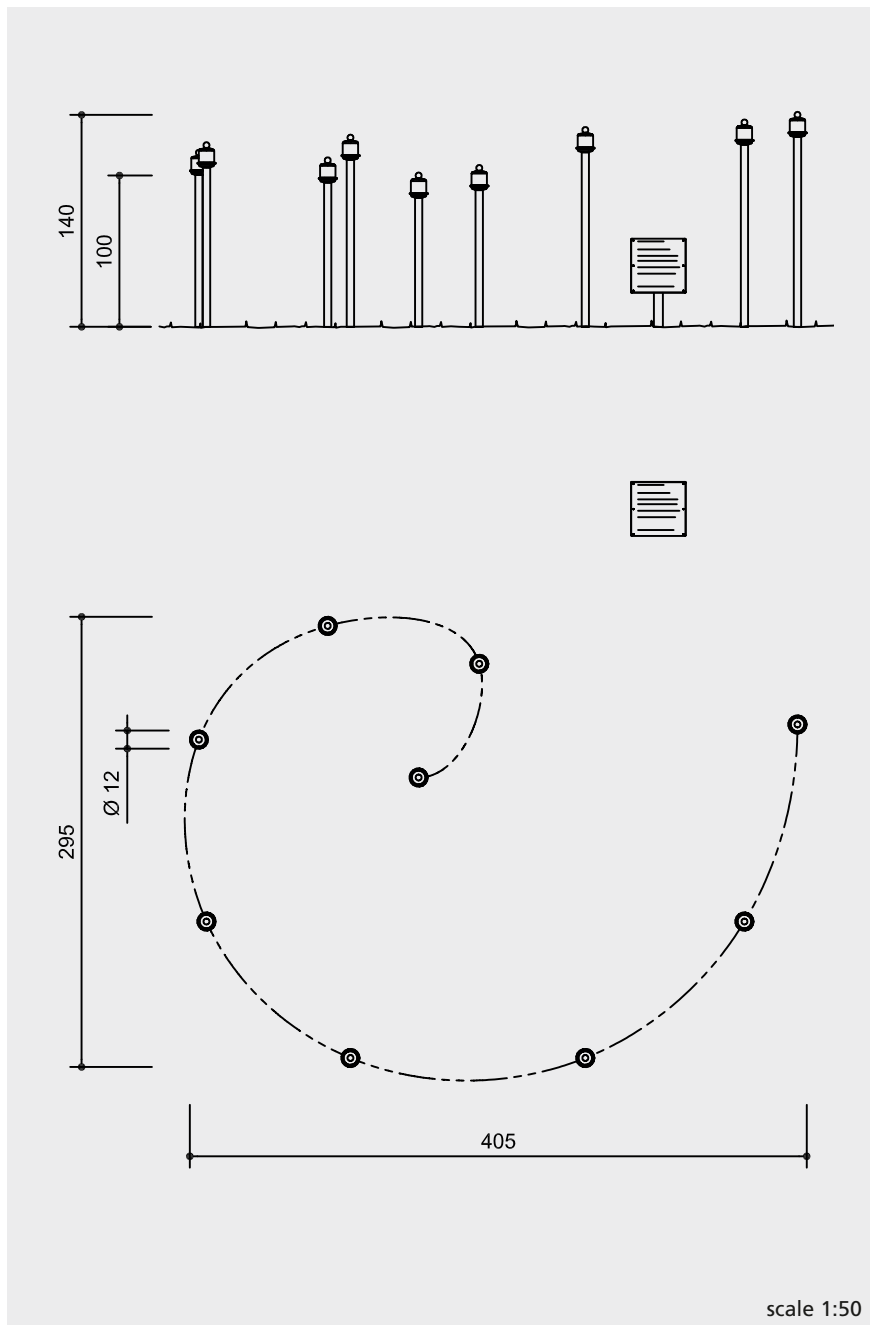


**Scented Organ**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	not necessary
Installation in concrete	possible



10.61000



**Technical information**

all stainless steel equipment with side openings for smelling

unscrewable secured lid

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

height	1.00 -1.40 m
diameter	Ø 0.12 m max.
weight	180 kg

**Components**

- 9 pillars with aromatic oils  
sufficient for a two year supply
- 1 Explanation Board with support

**Installation information**

Recommended space  
5.00 x 4.00 m

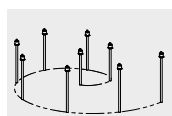
Foundations  
9 items 50 x 50 x 40 cm  
excavation depth 60 cm  
Explanation Board  
1 item 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.

The depicted arrangement of the pillars is just a proposal. It is possible to order a different number of pillars. Minimum order number: 3



**10.61000**

## living with space

### playing with space

#### experiencing space

##### Experience of space

Our experience of space is very closely connected to the space in which we move. When moving around in space, invisible forces appear: if you stand upright then this movement is pushing against gravity. Any physical activity produces radial forces of two opposing forms.

Centripetal forces pull inwards and centrifugal forces are directed outwards. For example an ice skater experiences both forces intensely when pirouetting.

The movements of the human being are related to the earth in the same way as the rotations of the earth are related to the solar system. Simple physical activities like walking and standing give us the opportunity of experiencing our incorporation into the cosmic structures.

If this cosmic horizon is not taken into account during building activity, then this results in a feeling of constriction and claustrophobia; the vital functions of life become paralysed. We believe that only by taking into account this cosmic horizon can architecture truly fulfil its function as we understand it.

Playing with gravity by straightening up can be experienced by using the Balancing Board or the Balancing Disc.

Spinning in the Pirouette allows an insight into your own individual room for movement and how it can be experienced as a space full of invisible forces.

The Partner Swing and Pyramid Partner Swing allow you to experience the principle of the pendulum and your own being as a "physical body".

The Balancing Rope gives you the opportunity to get a feeling for your sense of balance.

Gravity and mass become tangible on the Stone Pendulum with its unusually slow swing, and a feeling for inertia can be gained by turning the tons of weight of the Turning Stone.

*Es ist der Organismus als  
Ganzes der die Organe zu-  
sammenhält. Solange ich den  
"roten Faden" statt in mir selbst  
woanders suche lebe ich nur brüch-  
stückhaft mit mir selbst...*



**Function and Play value**

During development of the embryo, the ear helps to regulate and balance the bodily functions between the mother and the unborn child. After birth the ear carries on its regulating function as a balancing organ. Due to lack of exercise and movement, this ability can become retarded in many people. This can be experienced by standing on the Balancing Board and closing the eyes. You have to "hold on" with your eyes. Maintaining balance on the Balancing Boards therefore is a game which promotes the activity of the individual organ at the same time as it revitalises the whole body. It promotes balance for the individual as well as in relationship with others and the environment. The connection between the functions of hearing and balancing becomes clear if participants try to balance in an extremely sound-proofed chamber. It can only be done with difficulty. The Balancing Boards can also be used for gymnastic purposes where the Balancing Discs provide the experience of balance and loss of balance.

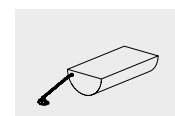
**Suitable**

- for playgrounds
- for schools, training areas, seminar centres, kindergartens

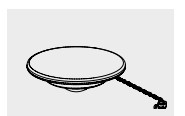


**Small Balancing Blocks  
Small Balancing Discs**  
*graubner* Play Stations for  
Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	standard compliant
Installation in concrete	possible

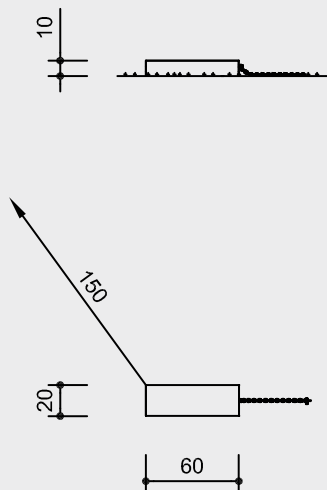


10.71000

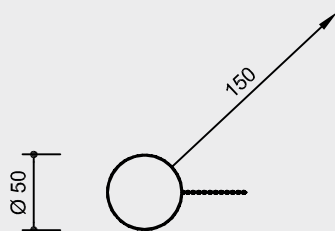


10.71100/10.71200

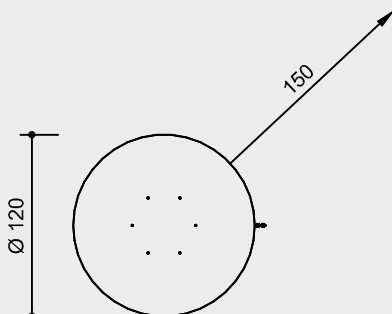
**Order No. 10.71000**  
**Small Balancing Board**



**Order No. 10.71100**  
**Small Balancing Disc**  
 for 1 person



**Order No. 10.71200**  
**Small Balancing Disc**  
 for 2 - 3 persons



scale 1:50

**Technical information**

balancing block made of solid ash wood with anti-slip tread

balancing disc made of waterproof bonded plywood with anti-slip tread and solid waterproof bonded ash wood

secured against theft by ground fastening with rotating joint made of stainless steel, ground anchor and galvanised, close-link chain

**Dimensions**

(small deviations possible)

**Small Balancing Board**  
**Order No. 10.71000**

length	0.60 m
width	0.20 m
height	0.10 m
weight	10 kg

**Small Balancing Disc**  
**Order No. 10.71100**

diameter	0.50 m
height	0.14 m
weight	15 kg

**Small Balancing Disc**  
**Order No. 10.71200**

diameter	1.20 m
height	0.18 m
weight	25 kg

**Components**

**Order No. 10.71000**  
**Small Balancing Board**  
 including chain and fastening material

**Order No. 10.71100**  
**Small Balancing Disc** for 1 person  
 including chain and fastening material

**Order No. 10.71200**  
**Small Balancing Disc** for 2 - 3 persons  
 including chain and fastening material

**Installation information**

Surfacing requirements corresponding to a fall height of  $\leq 0.60$  m (please refer to price list for more detailed information)

Recommended space with safety distance

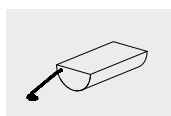
**Order No. 10.71000**  
**Small Balancing Board**  
 with chain  $\varnothing$  5.60 m/w/o chain  $\varnothing$  3.60 m

**Order No. 10.71100**  
**Small Balancing Disc**  
 with chain  $\varnothing$  5.30 m/w/o chain  $\varnothing$  3.50 m

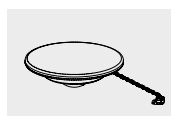
**Order No. 10.71200**  
 with chain  $\varnothing$  6.20 m/w/o chain  $\varnothing$  4.20 m

Foundations  
 1 item 30 x 30 x 20 cm  
 excavation depth 50 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.



10.71000



10.71100/10.71200

**Function and Play value**

The Large Balancing Disc encourages groups of people to play a balancing game together. Each individual can experience how small circling, spiral movements can achieve the aim of balancing. The Balancing Disc is available in two sizes. On the larger one, up to 25 people can try to attain combined balance. The participants can achieve equilibrium by cooperation, mutual observation, and more and more responsive movements. After the wild rush at the beginning, the group begins to try out more sensitive movements which transform the activity into a peaceful game.



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**Suitable**

- for school yards, swimming pools, seminar centres, school youth hostels, parks
- as a therapy aid

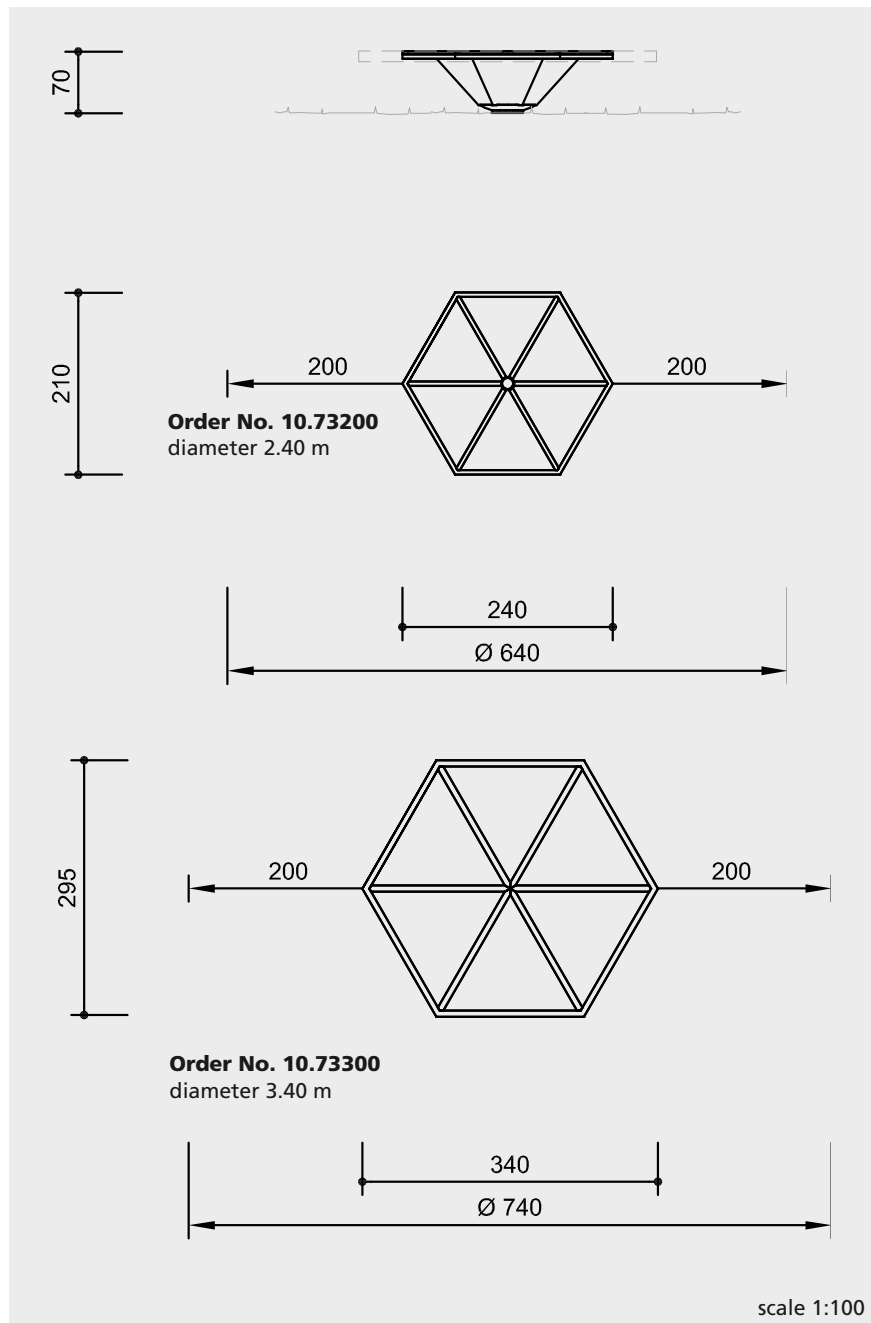
**Large Balancing Disc**  
*graubner* Play Stations for Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	not possible

Design W. Graubner according to H. Kükelhaus



10.73200/10.73300



### Technical information

stainless steel construction mounted on revolving and pendulum bearing

walking surface made of multiple laminated weather resistant non-slip phenolic plywood with rounded edge profile

pendulum bearing with limitation of movement and self-lubricating bearings

covering and edge profile as well as bearings made of stainless steel

mechanism completely enclosed to prevent danger of entrapment

### Dimensions

(small deviations possible)

#### Order No. 10.73200

height 0.70 m  
diameter 2.40 m  
weight 400 kg

#### Order No. 10.73300

height 0.70 m  
diameter 3.40 m  
weight 600 kg

### Components

1 complete piece of equipment with foundation anchor

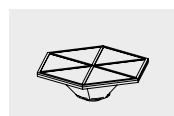
### Installation information

Surfacing requirements corresponding to a fall height of  $\leq 1.00$  m (please refer to price list for more detailed information)

Foundations  
1 item 130 x 130 x 70 cm reinforced blinding layer  
1 item 130 x 130 x 5 cm  
total excavation depth 95 cm

**Attention!**  
Exact measurements may vary, for all installation dimensions refer to current installation instructions.

Technical changes reserved!



10.73200/10.73300



**Function and Play value**

The turning motion allows you to experience the space you move in as a space full of invisible forces acting on your body. Our bodies are subject to the laws of gravity, and with their help, we can stand upright on the vertical axis. This provides us with an insight into the significance of an upright posture. If you slouch, you are only able to rotate very slowly around your own axis. Also the ability to avoid vertigo can be learnt on this rotating disc. Either you fix your gaze on a certain point in the surrounding landscape and quickly catch a glimpse of it at every turn or you direct your entire attention to the surrounding environment and become as one with it thereby keeping your orientation directed outwards.

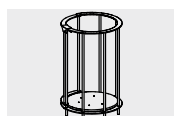
**Suitable**

- for parks, health resort gardens, physical education and gymnastic areas, swimming pools, zoological and botanical gardens

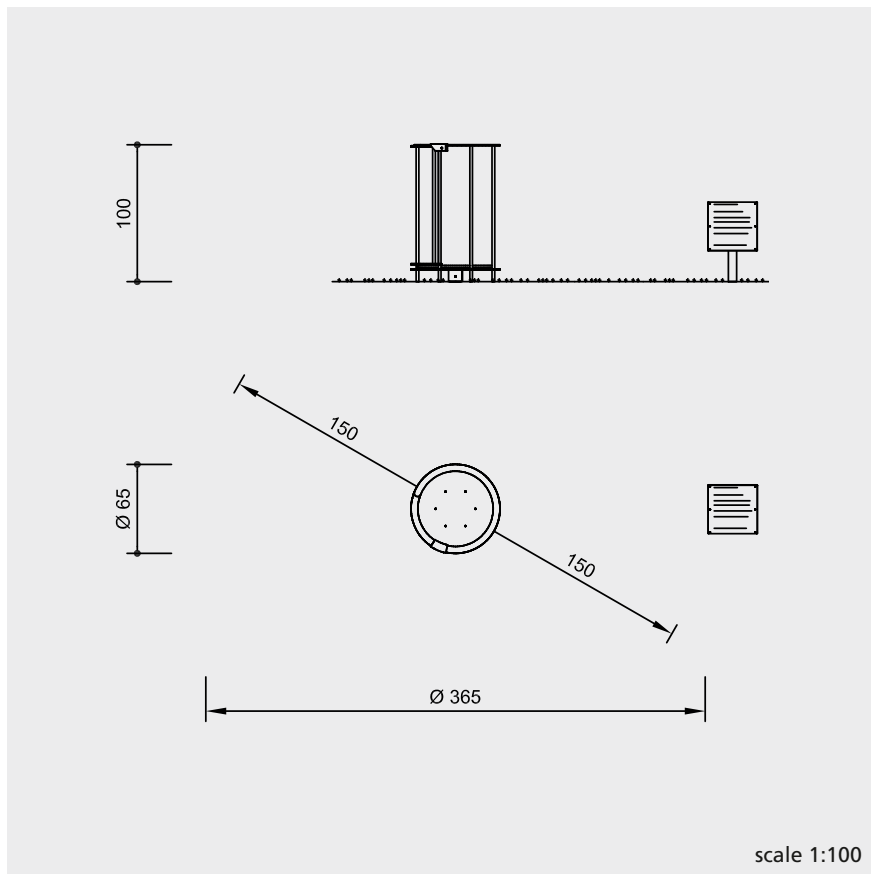


**Pirouette**  
*graubner* Play Stations for  
Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	included
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	not possible



10.91000



### Technical Information

ground plate made of steel

non-slip foot plate

rotating plate on maintenance free, free-moving and dirt-protected double ball bearing

fall protection through railing and door made of stainless steel

entry door with safe locking mechanism

support for Explanation Board made of stainless steel

### Dimensions

(small deviations possible)

height	1.00 m or 0.80 m
diameter	0.65 m
turning disc	Ø 0.55 m
weight	90 kg

### Components

- 1 complete piece of equipment
- 1 Explanation Board with support

### Installation information

Surfacing requirements corresponding to a fall height of  $\leq 0.60$  m (please refer to price list for more detailed information)

#### Foundations

- 1 item 80 x 80 x 40 cm excavation depth 60 cm
- Explanation Board
- 1 item 40 x 40 x 40 cm excavation depth 60 cm

#### Attention!

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



10.91000

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**Function and Play value**

Our sense of space and time is characterised by our own body mass and its speed of movement. Setting into motion the significantly larger mass of the Turning Stone requires either much more time or strength than is required to move ourselves.

Two possibilities exist of bringing the large mass of the Turning Stone into motion: first, it can be achieved by means of extreme effort over a short period of time. The second possibility however is amazing: merely by exercising a slight force it is possible to set the massive stone block into a rotating movement which becomes faster and faster, provided that the stone continues to be pushed long enough. This can even be achieved merely by using your little finger.

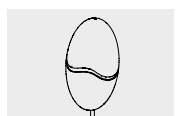
**Suitable**

- for inner city locations, pedestrian areas



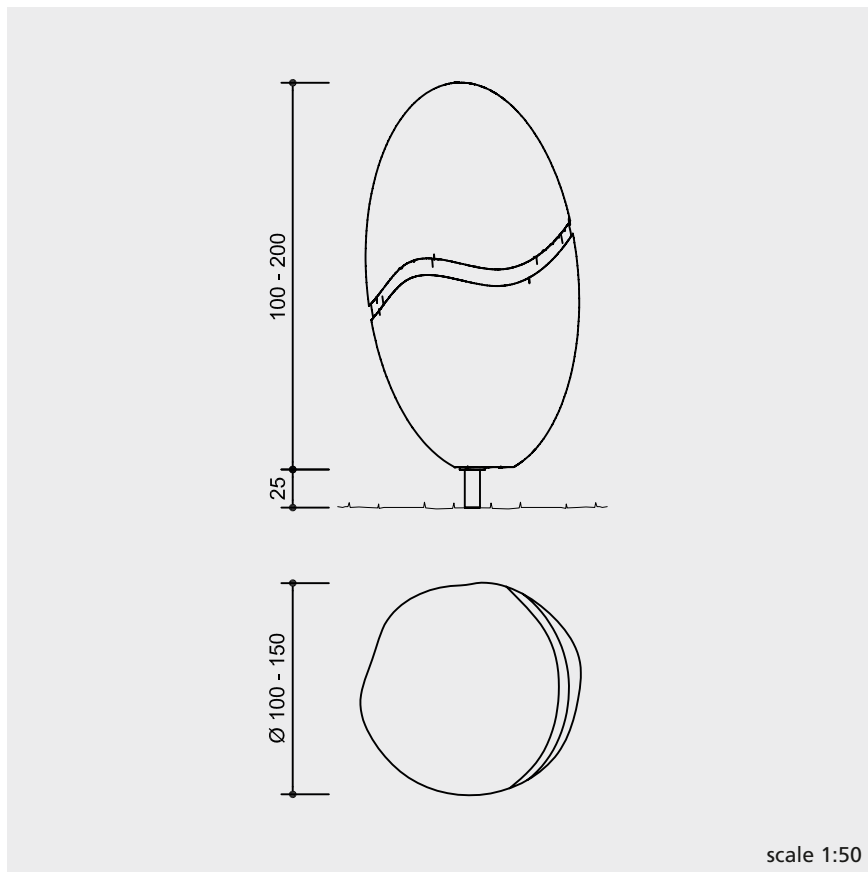
**Turning Stone**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	indoors and outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	possible



10.91520 - 10.91540

Design W. Graubner according to H. Kükkelhaus



**Technical information**

oval to ball shaped boulder with recessed diagonal groove

special bearings with lubricating nipple, set into the stone so that the stone will not tilt if the bearing breaks

foot with ground plate, corrosion-resistant

**Dimensions**

(small deviations possible)

stone height	1.00 - 2.00 m
diameter	1.00 - 1.50 m
weight	depends on size

**Order No.**

**10.91520** approx. 2 - 3 t

**10.91530** approx. 3 - 4 t

**10.91540** approx. 4 - 5 t

**Components**

1 Turning Stone with foot and foundation anchor

**Installation information**

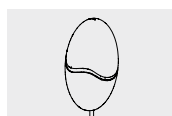
Recommended space  
circle diameter 4.00 m  
(please refer to price list for more detailed information)

Foundations  
1 item 130 x 130 x 70 cm reinforced  
blinding layer  
1 item 130 x 130 x 5 cm  
total excavation depth 95 cm

**Attention!**

**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**

Technical changes reserved.



**10.91520 - 10.91540**

**Function and Play value**

Here both young and old can just have fun by cooperating together in this interactive game. The human body is subject to the physical laws of mass. Various invisibly acting forces reach a harmonious equilibrium in the swinging movement. You are transported into a state of physical well-being. The fact that two swings are connected together intensifies the swinging experience by the act of harmony and the extra length of the swing chains. The rhythmic energy of one swing is transferred to the other resting swing. This is then reversed for the other swing. The long-lasting swinging momentum is transferred from one swing to the other in alternating rhythm. The partner being swung is able to experience in an unusual way how their movement is then transferred to the other partner.

**Suitable**

- for parks, seminar centres, educational institutions

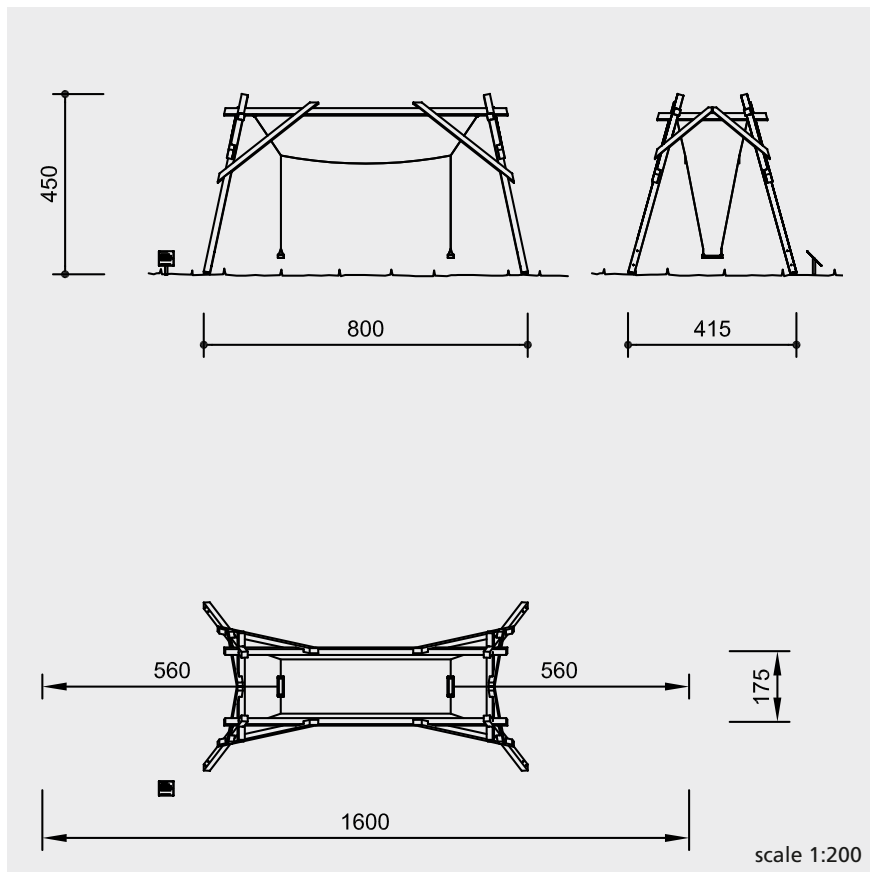


**Partner Swing**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	recommended
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	not possible



10.92000



**Technical information**

equipment constructed from square timbers made of mountain larch, selected according to eight quality criteria, with steel feet

joints and suspension hot-dip galvanised

weather-resistant connecting ropes

rubber seats on short-link, hot-dip galvanisation chains

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

height	4.50 m
length	7.90 m
width	4.00 m
weight	900 kg

**Components**

- 1 complete swing frame with swing suspension
- 1 Explanation Board with support

**Installation information**

Surfacing requirements corresponding to a fall height of  $\leq 3.00$  m (please refer to price list for more detailed information)

- Foundations
- 4 items 60 x 60 x 60 cm excavation depth 80 cm
  - Explanation Board
  - 1 item 40 x 40 x 40 cm excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.



10.92000

**Function and Play value**

The whole body is used here. Physical well-being is soon experienced. At the beginning it is not easy to understand what happens when two people move the partner swing. Enjoyment comes with the discovery that when one person swings, the other, without having to do anything, also swings. However it can also happen that in spite of great effort someone does not start to swing. And that only makes the enjoyment even greater when, with a delay dependent on the connected system of coupled swinging, the swing momentum returns powerfully. It becomes gradually clear to the participants that their own efforts return to benefit themselves later; they begin to feel physically comfortable with their own bodies and build up a relationship with their partner.

**Suitable**

- for parks, seminar centres, educational institutions

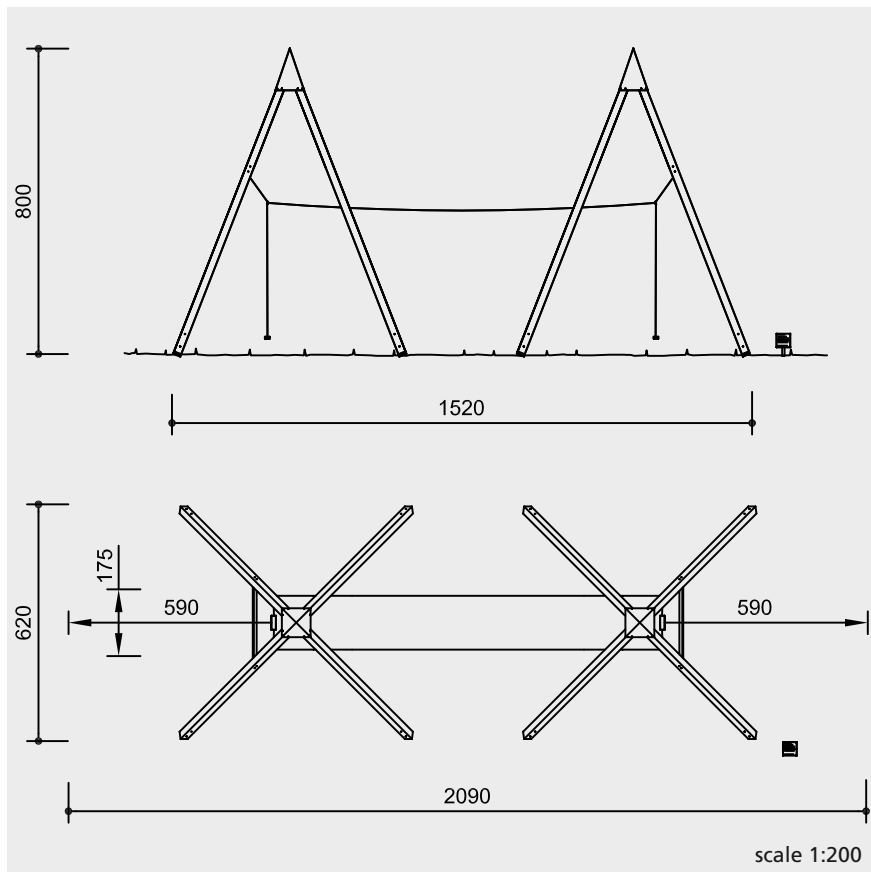


**Pyramid Partner Swing**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	recommended
Explanation Board	included
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	not possible



10.93000



**Technical information**

beams of laminated mountain larch, glued according to DIN 1052, with steel feet

joints and suspension hot-dip galvanised

weather-resistant connecting ropes

top of stainless steel

rubber seats on short-link, hot-dip galvanisation chains

support for Explanation Board made of stainless steel

**Dimensions**

(small deviations possible)

for one pyramid	
height	8.00 m
length	6.00 m
width	6.00 m
weight	2.000 kg

**Components**

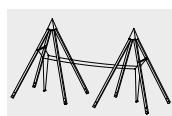
- 1 complete swing frame with swing suspension
- 1 Explanation Board with support

**Installation information**

Surfacing requirements corresponding to a fall height of  $\leq 3.00$  m (please refer to price list for more detailed information)

- Foundations  
 8 items 80 x 80 x 60 cm  
 excavation depth 80 cm  
 Explanation Board  
 1 item 40 x 40 x 40 cm  
 excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.



10.93000



**Play value**

Balancing on a rope corresponds to a original feeling towards life. The risk of doing it is an exciting game against the force of gravity and the sense of balance. Everybody knows the feeling of following one's thread of their own life while constantly balancing, and of being in danger of tipping to one side or the other. Here on the balancing rope, inner balance can be experienced and practised.



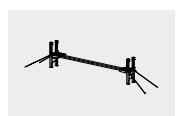
© Richter Spielgeräte GmbH 09/20

**Recommended for**

- School children
- Young people
- Swimming pools without supervision, such as outdoor pools, adventure pools or similar
- Supervised play areas, such as kindergartens, schools, after-school programmes or similar

**Balancing Rope**  
*graubner* Play Stations for  
 Developing the Senses

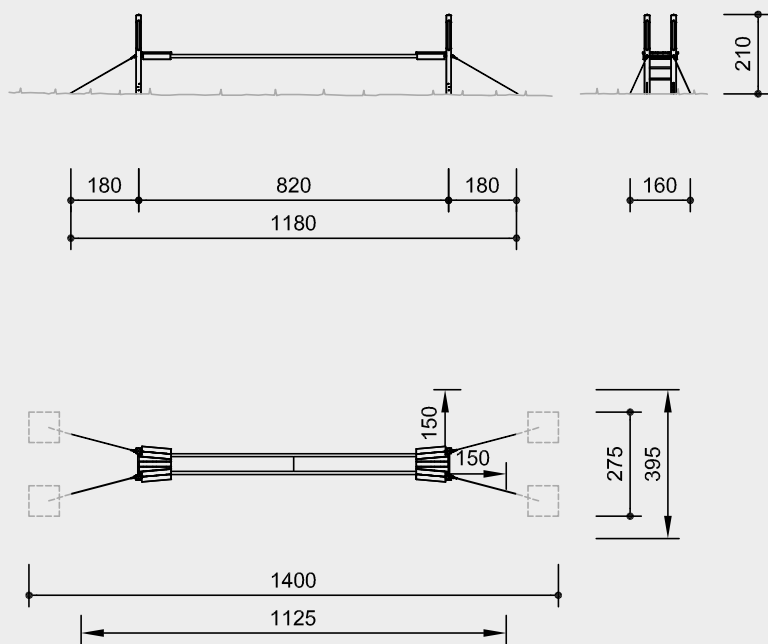
Vandalism	not vulnerable
Supervision	not necessary
Explanation Board	not necessary
Installation	outdoors
Safety check (DIN EN 1176)	has been completed
Installation in concrete	not possible



10.95005

Design W. Graubner / H. Kükkelhaus

**Order No. 10.95005**  
**Balancing Rope**



Scale 1:200

Safety check according to EN 1176

**Components**

2 Ladder supports with tensioning ropes, pedestals, ropes and foundation anchors

Explanation board on request

**Installation information**

Surfacing requirements corresponding to a fall height of  $\leq 1.50$  m (please refer to price list for more detailed information)

**Foundations**  
 2 items 120 x 120 x 60 cm  
 Excavation depth 80 cm  
 4 items 80 x 80 x 60 cm  
 Excavation depth 100 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.

**Technical information**

Equipment made of oak

**Core-free**

Sawn-timbers core-free, thus decreasing occurrences of cracking and undesired changes in shape



**Hardwood rungs**

Climbing rungs made of hardwood (ash)  $\varnothing$  4.2 cm, milled and mortised, secured against twisting, easy to grip and not cold for children to touch



**Richter Hercules type rope**

Richter Hercules type rope, a combination of galvanised six-strand steel cables and polyester yarn, diameter  $> 20$  mm, laid and glued with very good abrasion resistance, strong sheathing even in the case of damage by puncturing



**Aluminium rope pressing**

Aluminium rope pressing, cylindrically pressed, with rounded ends



**Sintered bush**

For all reciprocating movements we use sintered plain bearings which are self-lubricating in use and can easily be exchanged if necessary



**Ground anchor**

All parts used for anchoring to the ground are made of hot-dip galvanised steel or stainless steel



**For more detailed explanation of the quality characteristics see price list.**

PP ropes with connection rope,  $\varnothing$  80 mm, with steel core

**Dimensions**

(small deviations possible)

Height	2.10 m
Length	11.80 m
Width	1.60 m
Weight	300 kg



10.95005

**Function and Play value**

The stone block allows you to experience the effect of mass and gravity, time, rhythm and weightlessness on your own body. Sit on the stone block and swing lightly with your eyes shut. Your own movements appear to be unusually slowed down. A hint of weightlessness can be perceived. Or try to make the stone begin to swing merely with a thread placed around the cable.

**Suitable**

- only for supervised areas

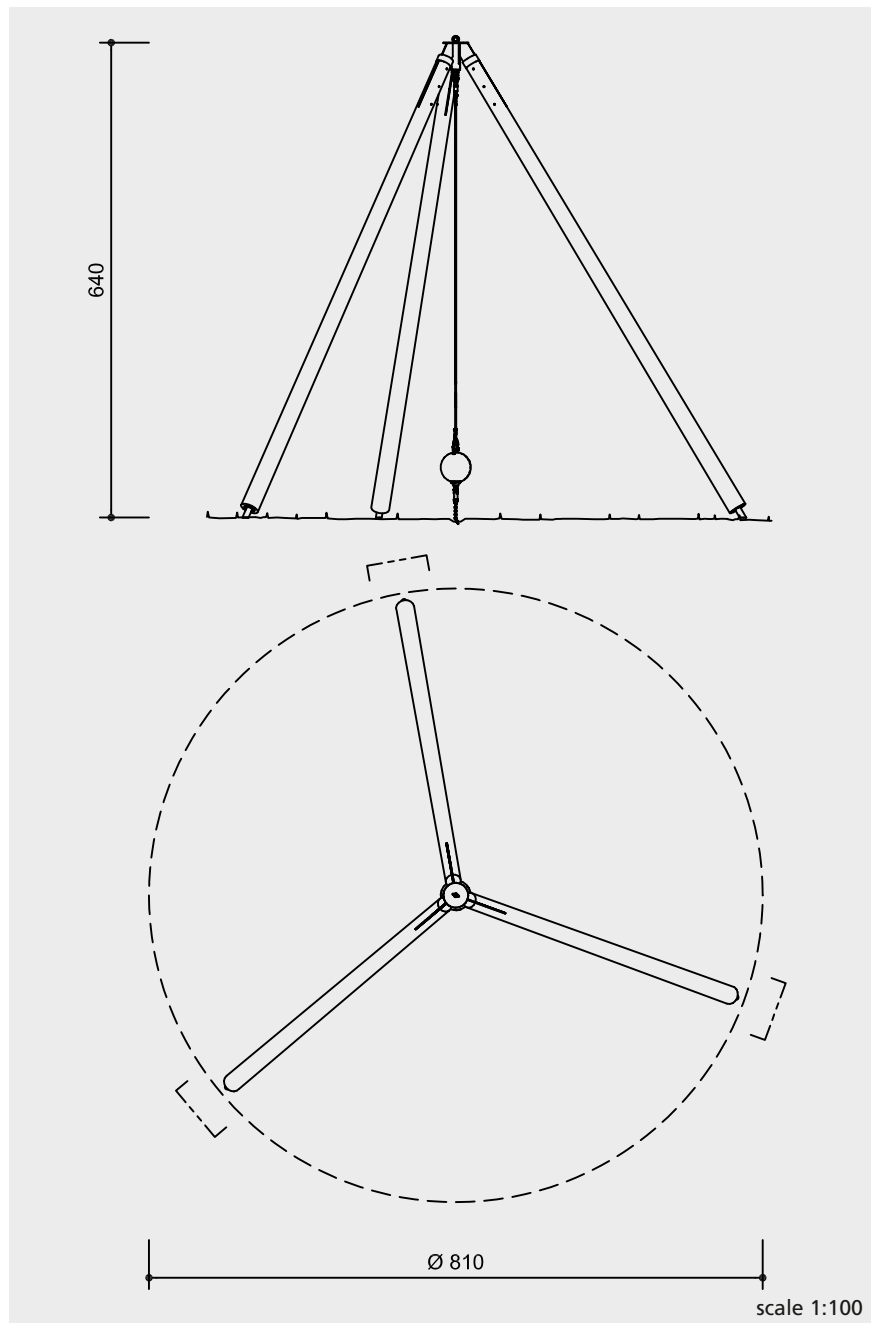


**Stone Pendulum**  
*graubner* Play Stations for  
 Developing the Senses

Vandalism	not vulnerable
Supervision	absolutely necessary
Explanation Board	recommended
Installation	outdoors
Safety check (EN 1176)	has been completed
Installation in concrete	not possible



10.96000



**Technical information**

supports made of mountain larch with galvanised steel feet

rotating bearing with ball bearings, high-tensile stainless steel cable

central limited swing range with chain and stainless steel swivel, alternatively short chain with padlock that can be removed by a supervisor

double secured suspension at pendulum joint and the suspension of the stone

**Dimensions**

(small deviations possible)

**frame**

height 6.40 m  
 diameter 8.10 m  
 weight 900 kg

**stone**

diameter 0.40 -0.80 m  
 weight 150 - 350 kg

**Components**

- 1 complete piece of equipment with stone and cable
- 1 chain with limited swing range
- 1 short chain with padlock

**Installation information**

Surfacing requirements corresponding to a fall height of ≤ 1.00 m (please refer to price list for more detailed information)

Foundations  
 4 items 80 x 80 x 80 cm reinforced  
 blinding layer  
 80 x 80 x 5 cm  
 total excavation depth 105 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
 Technical changes reserved.  
**Equipment also available made of oak timber.**



10.96000

**Please ask us about other Explanation Boards in our range which are not illustrated here.**

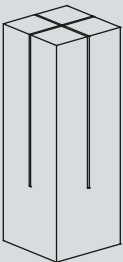
**A useful supplement to the play stations**

The Explanation Boards show information on the significance of the equipment which extends beyond the merely play-related enjoyment of the equipment. They contribute to a deeper understanding of the phenomenon.

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⊕

## The Tuning Stone

### Make a stone sing



The pillar consists of a polished block of granite, scored with deep grooves.

These grooves make it possible to make the stone sing by simply rubbing it with your hand. This causes the block to vibrate like a large tuning fork made of stone.

If there is a water source available, it can be used to wet the stone by rubbing it evenly over the surface with your hands. The best effect is achieved with hands that are free of oil.

Rubbing on the stone causes a vibration that creates a sound. A similar phenomenon is known from glasses, which can be made to create a sound by wetting the rim with water and rubbing it with the finger.

The sound of the stone is full and deep and the mass of the stone causes the special effect to continue for a while.

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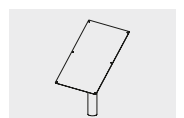
Design: W. Graubner – Play Stations for Developing the Senses according to Hugo Kükelhaus

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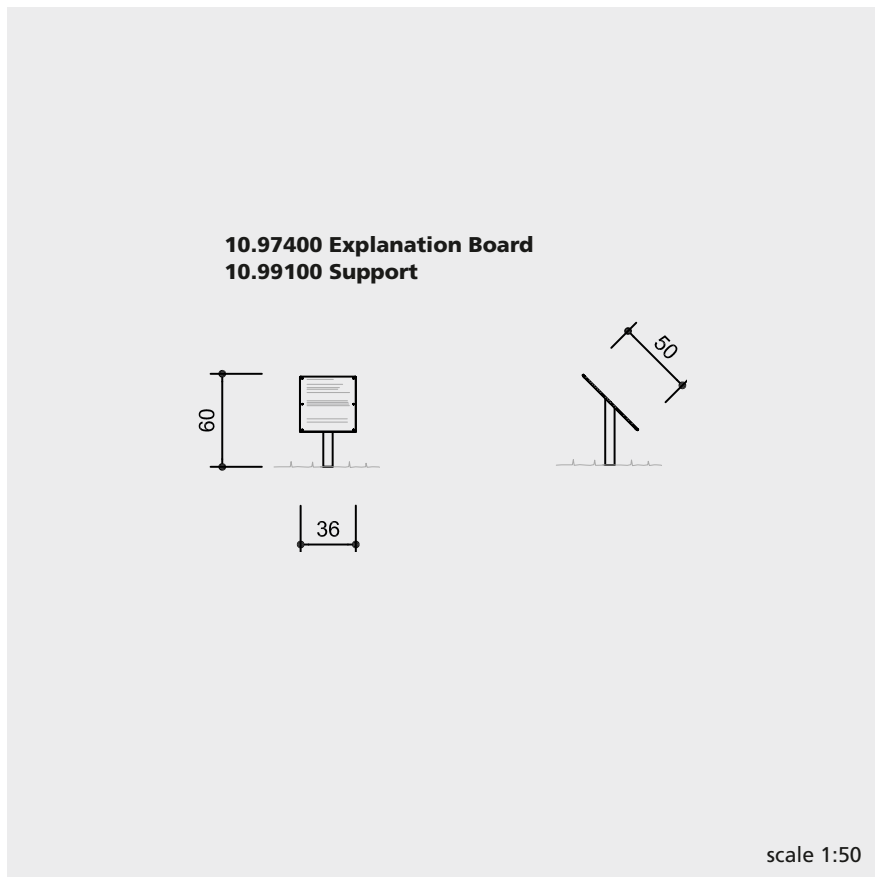
**Explanation Board  
Support for Explanation Board  
graubner Play Stations for  
Developing the Senses**



**10.97400**



**10.99100**



**Technical information**

Explanation Board  
made of stainless steel  
  
screen printed text  
  
support made of stainless steel

**Dimensions**  
(small deviations possible)

**Explanation Board**

height	0.50 m
width	0.36 m
total height with support	0.60 m
weight	15 kg

scale 1:50

**Components**

**Order No. 10.97400**  
1 Explanation Board with text

**Order No. 10.99100**  
1 support

**Installation information**

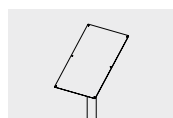
Recommended space  
1.00 x 0.75 m

Foundations  
1 piece 40 x 40 x 40 cm  
excavation depth 60 cm

**Attention!**  
**Exact measurements may vary, for all installation dimensions refer to current installation instructions.**  
Technical changes reserved.



**10.97400**



**10.99100**



①



②



③



④



⑤



⑥



⑦

**Do you want to know more about us?**

- ① The main catalogue includes our complete product range.

A selection of our products is described in the following theme catalogues:

- ② Acoustic and Play
- ③ For the Very Young
- ④ Water and Play
- ⑤ Child and Play
- ⑥ Movement by Climbing
- ⑦ Growing Older

Please ask for our information materials.

We look forward to hearing from you.  
Phone +49-80 52/1 79 80

