



# SMART

Compact ENT treatment unit

**otopront®**

# SMART

## **Reinterpretation of an icon**

The idea for the SMART arose from the groundbreaking form of the first ENT treatment unit, the **Otopront “Säule”** (pillar).

This design, which combines all functional elements in one place, has been reinterpreted with regard to today's requirements and technical developments. The result is a highly flexible, slim-designed and elegant treatment unit, which can be fully-equipped.

## **Full functionality despite small dimensions**

Thanks to a space-saving arrangement of all its components, the SMART can be fully equipped: vibration-free high performance surgical suction unit for 24-hour use, hot water for rinsing, compressed air unit, up to 3 automatically switching LED light sources, integration of RF or endoscopy systems and microscopes.

## **In accordance with today's demands for flexibility**

With its stable, appropriately sized castors the SMART can be rolled smoothly to different locations. Optional equipment is also provided with castors, such as a microscope with a stand or the accompanying instrument tables and cabinets. The complete unit is therefore flexible for mobile use in outpatient surgery, at the bedside or in several treatment rooms.

## **Sophisticated ergonomics and design**

All elements can be easily operated both sitting and standing, because of the forward-angled surface and its circular arrangement around the body. The perfect 'assistant' for standing operation.

# Functional

Mobile treatment unit, expandable  
to a fully equipped workstation with  
microscope and instrument cabinet

# Mobile

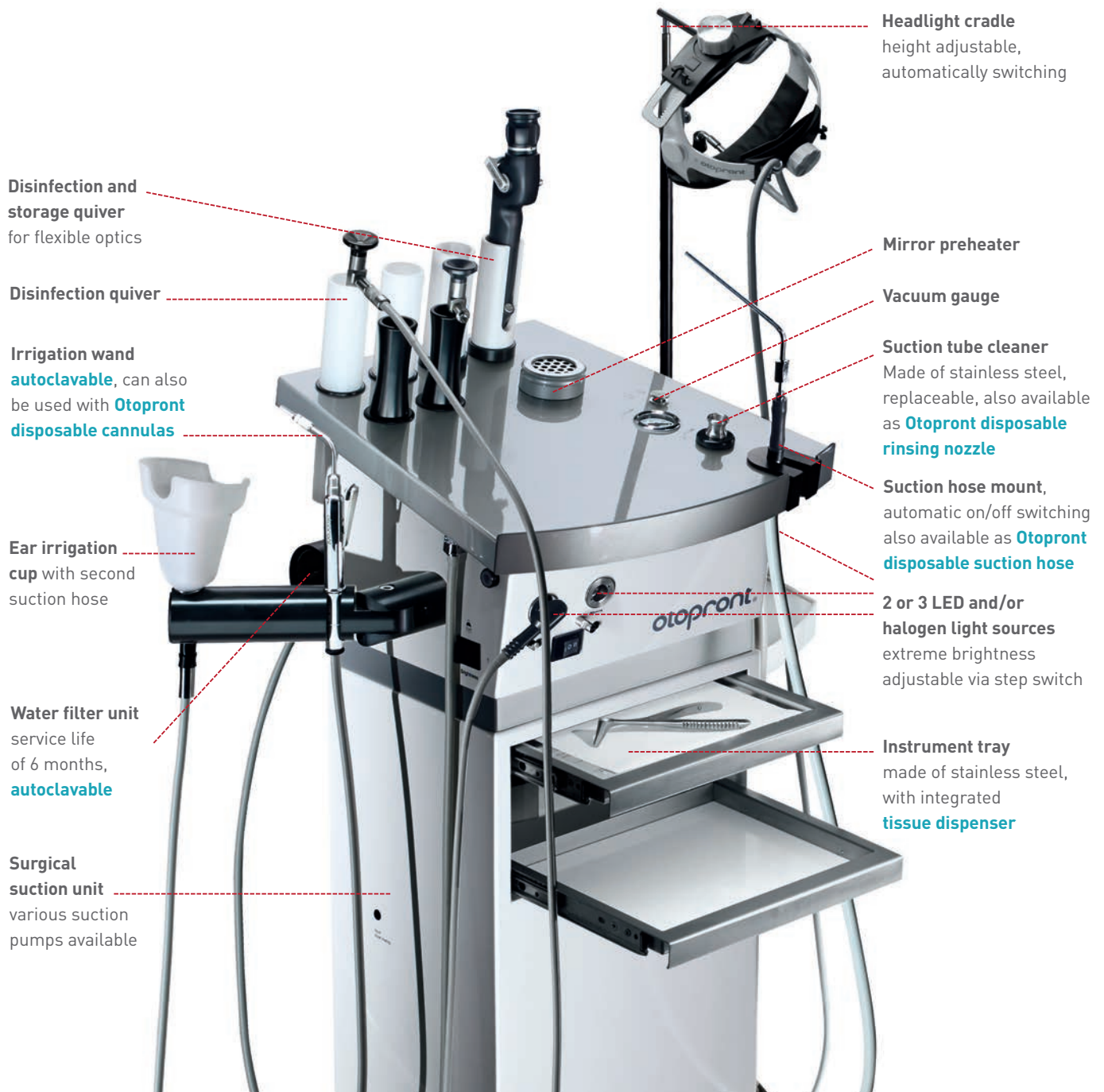
For mobile use in outpatient  
surgery, at the bedside or in  
multiple rooms

# Space saving

Slim shape, integration  
of all essential functions



# Equipment details



A **compressed air unit**, including spray bottles with shatter protection and an easy snap connection, offers maximum safety and comfort. Can also be used with **Otopront disposable cannulas** for fine to high dosage of medication.



**Swivel console**  
for storing further instruments or diagnostic devices, e.g. the compact PES PILOT HDpro video endoscopy system. To be mounted on the **left** or **right** side, **variable in height**.

# Instrument desk SMART S and instrument cabinet SMART L

With the mobile instrument desk SMART S or the instrument cabinet SMART L the SMART can be extended to a complete ENT workstation



## Plexiglass cover

A plexiglass cover, available with hermetically closing lid, protects the instruments from dust and other environmental contaminants. Easy cleaning thanks to smooth surfaces.

## Instrument storage

Removable, **antibacterial** coated instrument trays with moveable stainless steel divider slats, **autoclavable**.

## Writing panel

Optional made of stainless steel as a work surface.

## Instrument storage space

Optionally open or closed, optionally as a storage drawer. The large storage areas allow easy access to instruments and accessories.

## Instrument disposal

Alternatively with 2 discard trays and stainless steel splash protection flaps, space for **wet wipes box**.

## Waste bin

With foot control and locking catch, easily removable for cleaning purposes and dimensioned for **standard disposal bags**.

Available in two versions:

Instrument desk SMART S and instrument cabinet SMART L

## Otopront Softclose system

The Softclose system enables an automatic, but damped closing of the cover. After the smooth opening of the cover, instruments can be taken out, to proceed directly with the treatment. Meanwhile the cover descends and closes automatically. Of course the cover can also be fully opened and locked in place. Optionally with hermetically closing framed lid.



# Suction

## Three suction pumps to choose from

The suction system is automatically activated when the suction hose is pulled out. The sealed base pump ensures extremely quiet and vibration-free operation at a flow rate of 58l/min. As an extremely powerful model, a two-head diaphragm pump with a pumping speed of 72l/min is available. Both units achieve a final vacuum of >91%. The quietest and lowest vibration model for use in continuous operation is the twin-piston surgical pump, operating at a flow-rate of 55l/min and a maximum vacuum of 93%.



**Twin-piston surgical pump**  
55l endurance runner from the operating theatre

## Suction jar

After each suction process, the suction jar is automatically emptied via a timed discharge pump. Emptying by hand is also possible at any time thanks to a simple plug-in system, so you are always on the safe side. A self-contained pressure cleaning unit with its own pump for effective flushing of the suction jar is available as an option. Thanks to this separate flushing pump there is no infectious connection to the mains drainage network or the ear irrigation system. As an alternative to the plug-in suction jar, single-suction-bag systems (various manufacturers) can be used, without major retrofitting. The exhaust air filter protects against germs and aerosols and is easy to change.

## Suction hoses

**Otopront disposable suction hoses** fit seamlessly into the suction hose mounts of all Otopront treatment units and are therefore fully compatible. As with the Otopront standard suction hose, the suction is automatically switched on/off when the Otopront disposable suction hose is removed.



**Standard suction hose**  
autoclavable



**Otopront disposable suction hose**  
in 1.6 m oder 2.0 m length

## Suction hose rinsing system

With the aid of the suction hose rinsing system, even the smallest suction cannulas can be flushed along with the suction hose itself. By controlled flushing of the suction hose with disinfecting solution (for example, Aspi-Jet from Otopront), clogging of the suction hose is effectively prevented. Particularly advantageous is the option to flush the suction cannula during the treatment. For this purpose, specially autoclavable suction tube cleaners as well as **Otopront disposable suction tube cleaners** are available.



# Ear irrigation

## 38°C-warm water rinsing system

The system delivers precisely temperature-controlled water for the performance of ear irrigation. The water can be accurately dispensed with the all-metal wand. The heating of the water in a stainless steel boiler guarantees the economical management of energy and water.

An external heating cuff effectively eliminates lime furring of the heating elements. Hygienic safety is ensured by the fully autoclavable water filter unit, including the irrigation wand. A long-term study conducted at a leading German university clinic demonstrates the efficacy of the facility to ensure an enduring, impeccable water quality. The water filter unit, which needs only be changed every six months, is several times more cost-effective than terminal water filter units.

# Compressed air

## Compressed air unit

A compressor, which operates oil-free, supplies the stainless steel air tank with repeatedly filtered air. Thanks to the air reservoir, compressed air is immediately available without powering up the unit. An adjustable pressure limit in the Politzer gauge ensures additional safety. Like all Otopront handpieces, the fine-dose spray and the Politzer attachment are made of metal and are autoclavable. Various Politzer attachments and drug bottles complete the range. On request, the device is available for connection to a central air supply unit.



## Spray

### Spray bottles

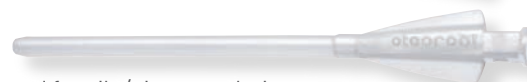
Three light-protected spray bottles with different spray cannulas for oily or aqueous solutions are embedded in the device surface and provide optimum protection for light-sensitive drugs. All spray bottles have a protective sleeve and on request drug product labeling rings. Each spray head can be used with both stainless steel and Otopront disposable cannulas (see adaptor below). Simple click connections offer maximum safety and comfort.

### Otopront disposable cannulas for spray units and ear irrigation

Two cannula types available:



for aqueous solutions



and for oily / viscous solutions



Disposable cannula for ear irrigation

### Disposable spray cannulas

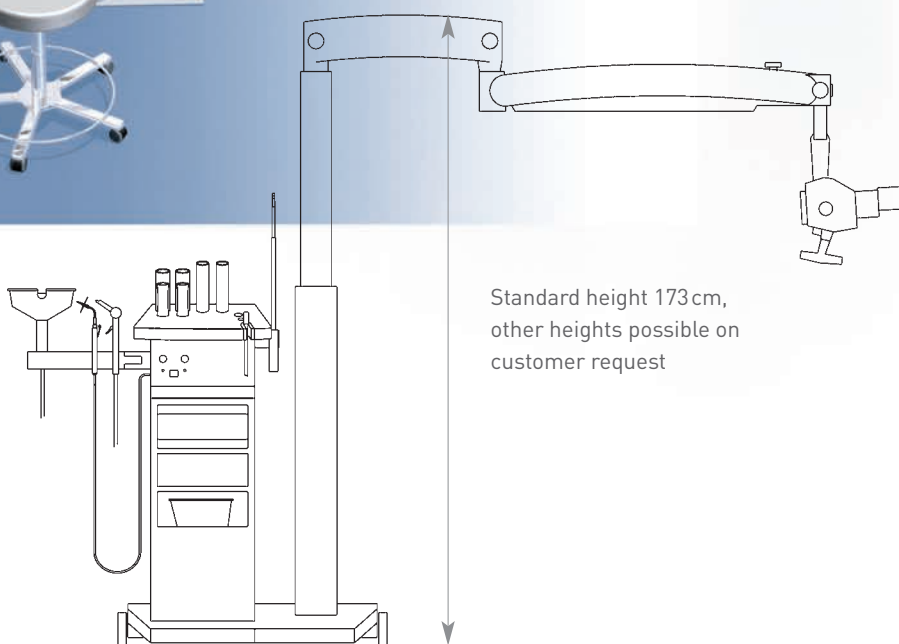
can be retrofitted with an adaptor for all Otopront spray heads

## Microscopy optimally positioned

The optimal upgrade to SMART is with **Carl Zeiss** or **Kaps** microscopes. Both microscopes can derive their light from a separate Otopront LED light source integrated in the device, with the advantage of varying brightness and colour temperature. Thanks to the daylight temperature (CRI > 95%) and high brightness (> 1800 lumens, dimmable) of the Otopront LED, an optimal true-colour and contrast-rich image is produced.



SMART with microscope  
and instrument cabinet BASIC



# LED light for endoscopy, video endoscopy and high performance LED stroboscopy

With its maximum brightness and especially its high CRI value (1800–2600 lm, 95%) with extended colour spectrum (thanks to 5-chip technology) the **Otopront LED light** provides the best conditions for direct endoscopy and especially for videoendoscopy.

For those who are accustomed to **halogen light** and prefer its suitability for assessing various situations. Thanks to the latest lamp technology, the same brightness as the Otopront LED-light is available to the user.



For workplace videoendoscopy the SMART is optimally expandable with our **PES Pilot HDpro** endoscopy system mounted on a swivel arm. Due to the swivel arm's radius of movement and the anterior mounted **touchscreen**, the PES Pilot HDpro is always easy to operate in the working area.

In addition, a **Otopront video nasopharyngoscope (chip-on-the-tip)** and the **Otopront Superbright LED** light source are available for stroboscopy with an additional brightness gain of more than 40%.



PES Pilot HDpro on swivel mount with touchscreen

# General hygiene as Otopront standard

**A few examples** from the Otopront hygiene range  
(see also supplementary 'Hygiene' leaflet):

## Otopront double quiver disinfection system

The double quiver disinfection system aids the correct immersion of optical devices. Precisely vertically guided by the inner quiver (submersion quiver), contact of the optical device with the outer quiver (rinsing quiver) is avoided. The inner quiver itself fully immerses in the disinfecting solution and is thereby also disinfected.

- Recontamination protection of the optics
- For fully viricidal disinfectants
- Quiver for flexible optics



**Submersion quiver**

for the safety of a perfect disinfecting process

## Otopront disposable cannulas for spray units and ear irrigation

Two cannula types available:



For aqueous solutions



and oily/viscous solutions



Disposable cannula  
for ear irrigation

Given tightened recent interpretation of requirements on hygienic preparation of medical instruments, the cleaning of suction hoses and narrow-lumen cannulas is in some instances critical and in others unworkable. Otopront solved that issue by the development of **disposable cannulas**.

- **Rapid replacement** of the cannulas with quick release
- Additional safety during treatment of **high risk patients**, epistaxis or dressing changes
- Support of compliance with **hygiene standards**
- **Two cannula types** available: for aqueous solutions or oily/viscous solutions

## Otopront disposable suction hoses

fit **without modification** to all Otopront suction hose suspensions. The hygiene solution for daily routine practice and clinic or as an occasional replacement for the conventional standard Otopront suction hose in case of obstruction or for infectious/critical patients.



## Adaptor for all pharmacy bottles

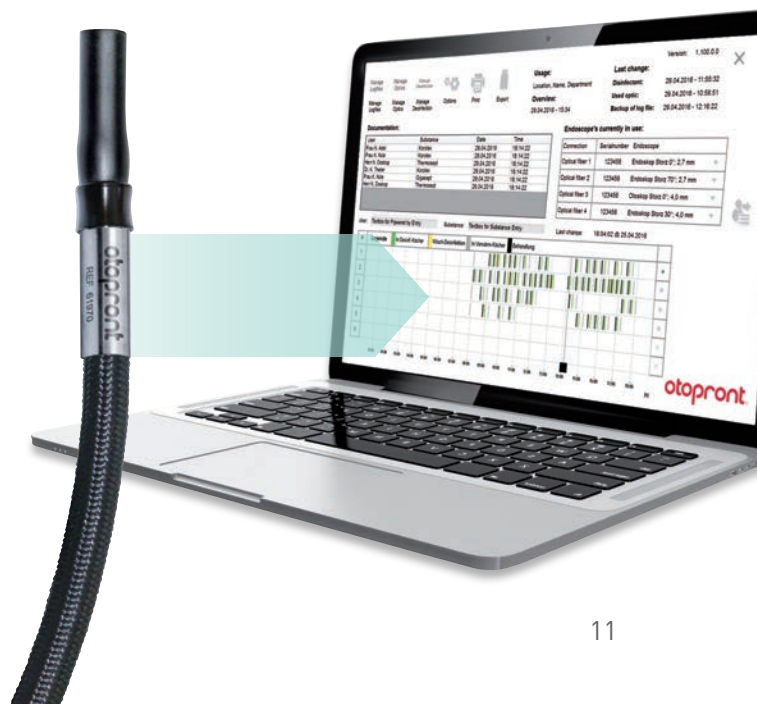
Due to new hygienic standards, it is now considered critical in some hospitals to decant medical solutions/preparations at the treatment site – e.g. into existing spray bottles. The requirements demand the filling of medicinal containers under aseptic conditions. Therefore, Otopront has developed a simple and safe system that allows **the use of all standard pharmacy bottles on the treatment unit**. By means of an adaptor it is possible to connect the pharmacy bottle directly to the spray system.



**Simple design:** The cap of the pharmacy bottle is replaced by the adaptor. In this way, it can be connected directly to the spray head of the treatment unit. An easy-to-clean, autoclavable stainless steel casing provides **protection from glass breakage** and a moulded part enables secure docking.

## Identity tag

Otopront also offers well-thought-out solutions for the increasing demand for documentation of use and processing in hospitals. On request, all Otopront suction hoses are provided with a serial number and/or identification tag. In this way it is possible to clearly identify and document when and in which patient the suction hose was used. The preparation can also be recorded, so that it is documented when and by whom the suction hose was autoclaved. All without additional time commitment!



# Instrument management

Despite its compact size all well-established Otopront standards are part of the SMART unit – such as pull-out stainless steel instrument trays with integrated **tissue dispenser**.

This provides a fresh instrument storage area for the subsequent patient within seconds.



## Instrument storage

Removable instrument trays with antibacterial coating and moveable stainless steel divider slats. All parts can be machine-cleaned. The instrument cover can optionally be hermetically sealed and equipped with the soft self-closing **Otopront Softclose system**.



# Maintenance

Besides coherent hygiene solutions, easy and efficient cleaning and maintenance are elementary components of each Otopront treatment unit.

## Validated water filter unit

The microbial pollution of water-bearing medical products is becoming increasingly critical. For many years Otopront has taken this threat very seriously and developed a solution for all water-bearing devices. The water filter unit has been specifically tailored to the user's requirements:

- With a pore size of <0.2 micrometers for containment of pseudomonas and legionella
- Easy to use, economical, high level of hygiene safety
- Autoclavable



Easy access to all suction jars and container for suction hose rinsing

## Hoses and handpieces

All hoses and handpieces as well as all application parts (spray bottles, cannula adaptors etc.) can be removed using their snap fasteners. Work surfaces can be easily cleaned and partly autoclaved as well.

## Filter and suction bag exchange

Easy access and quick exchange of suction jars and filters without any tools. Disposable suction jars such as ABBOT, BAXTER, SERRES etc. with volumes of 1 to 3 litres are compatible with the SMART unit. No modifications are required.

## Easy cleaning and maintenance

Removable hoses, external suction unit and suction hose rinsing allow easy and complete cleaning of the system. Quick couplers on all hoses ensure easy cleaning and assembly.



# Equipment

## SMART

### Basic configuration

- Suction unit with non-vibrating, smooth-running vacuum pump, 58 l/min, 91% vacuum
- Suction hose rinsing unit
- Mirror preheating unit
- Pull-out worksurface with integrated paper roll
- Small instrument drawer
- Double or triple light source, 150 W halogen and/or LED (CRI >95%) warm white
- Cradle for headlight height-adjustable

### Supplementary equipment

- Suction diaphragm pump: 72 l/min, 91% vacuum, oscillation-free suspension, oscillation-free, slow and silent-running
- Suction piston pump: 55 l/min, 91% vacuum, for 24 h continuous use, vibration-free suspension vibration-free, slow and silent-running
- Compressed air unit complete with fine-dosing wand, 3 spray bottles, shatter protection (optional for disposable spray cannulas)
- 38° C warm water rinsing irrigation with autoclavable water filter unit, optional self-contained 38°C water unit
- Automatic suction bottle emptying
- Rinsing bowl on swivel arm with second suction hose
- Completely external suction hose system
- Otopront SuperBright LED for flexible endoscopes
- Microscope holder with electrical supply and its own LED light source
- Swivel support for additional equipment
- Two rinsing containers
- Two quivers for flexible optics
- Two preheating quivers
- Top and base made of stainless steel
- Colour selection according to RAL colour range alternatively also 2-layer metallic paint

## Instrument cabinet SMART S, L

### Basic configuration

- Instrument tray with plexiglass cover
- 4 trays with variable division
- Pull-out arrangement panel, optional as writing panel (L)
- Instrument drawer, optional storage drawer (L)
- Instrument discard tray on stainless steel pull-out
- Waste container with rocker (S) or hinged (L)

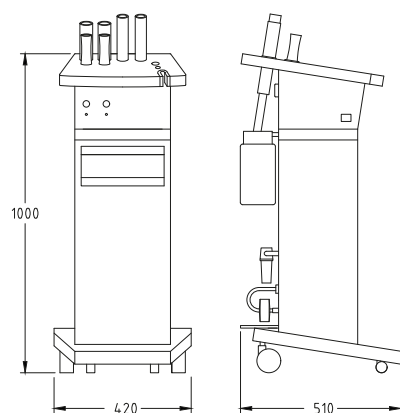
### Supplementary equipment

- Instrument tray with Otopront Softclose system and hermetic dust seal
- Mirror preheater for more than 50 examination mirrors
- Heated instrument surface for body temperature instruments
- Built-in tray for infectious waste, cannulas etc (L)
- Colour selection according to RAL colour range alternatively also 2-layer metallic paint

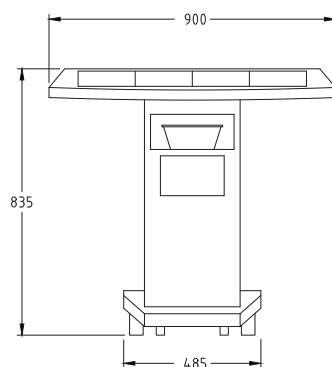


# Dimensions

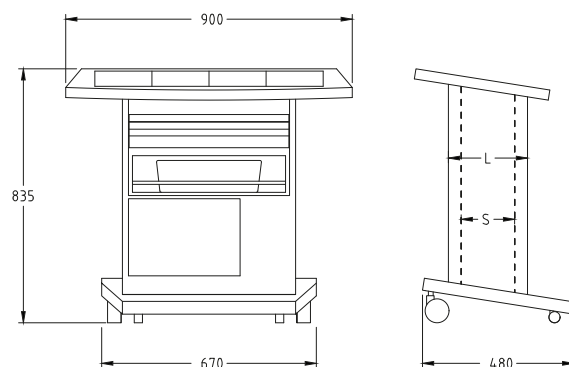
**SMART**



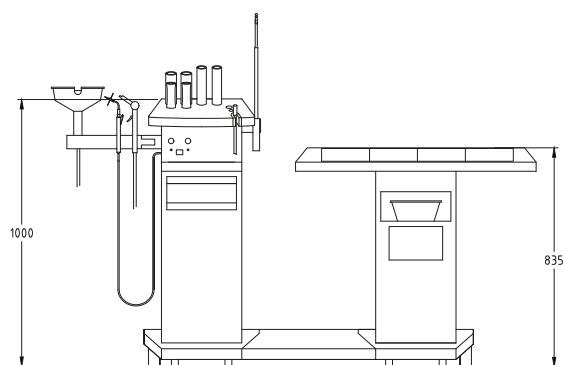
**Instrument cabinet  
SMART S**



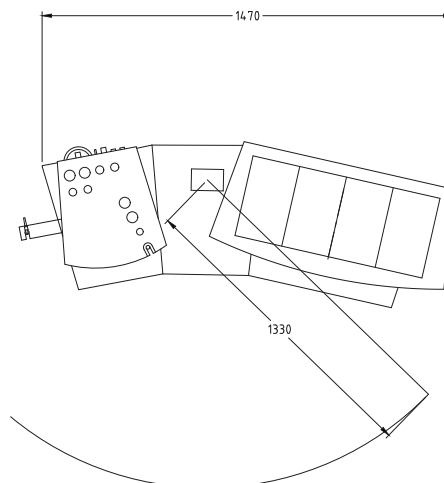
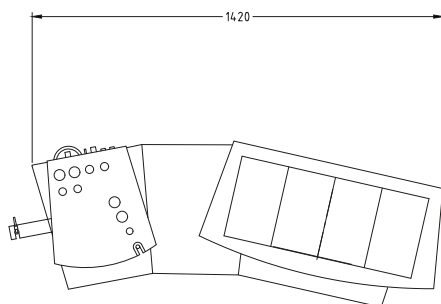
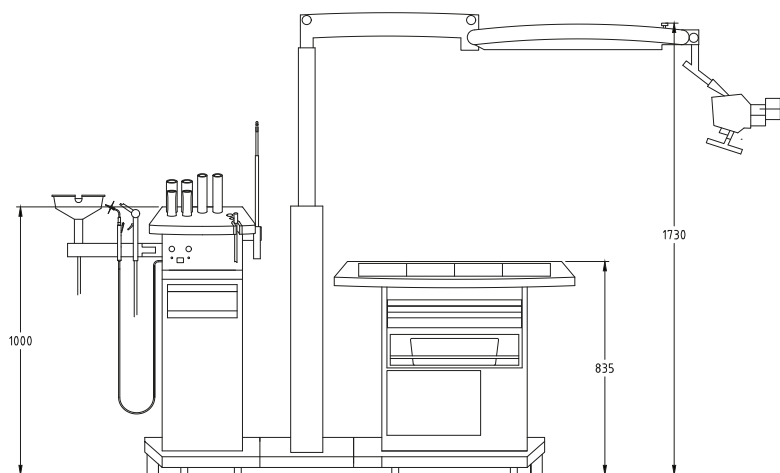
**Instrument cabinet  
SMART L**



**SMART with Instrument cabinet SMART S**



**SMART with Instrument cabinet SMART L  
with microscope**



# Technical data

## Suction unit

- Basic pump: 58 l/min, 91% vacuum  
Alternatively:
  - Diaphragm pump: 72 l/min, 91% vacuum
  - Twin-piston pump: 55 l/min, 93% vacuum, designed for continuous operation
- all pumps are vibration-free and extremely quiet running
- Easily accessible water filter unit
- Vacuum gauge
- Double overflow protection
- Automatic activation, optionally by foot switch
- Plug-in suction jar
- Automatic suction jar emptying
- Use of disposable suction bags and suction hoses, no modifications required

## Suction hose cleaning

- Integrated rinsing of hose and cannulas with disinfectant solution

## LED/halogen light sources

- 2 or 3 halogen light sources 150W
- Alternatively with 2 or 3 LED light sources (CRI > 95%, > 1800 lumens, dimmable, warm white)
- Otopront Superbright LED (> 2600 lumens)

## Endoscope quivers

- 2 removable preheating quivers, thermostat controlled
- 2 rinsing quivers
- 2 quivers for flexible optics suspension
- Submersion quiver for all standard optics as contamination protection

## Spray unit

- 0–4 bar, adjustable, with gauge
- Fine dosing
- Spray handpiece, [autoclavable](#)
- 3 spray bottles with replaceable cannulas
- [Otopront disposable cannulas](#)

## Ear irrigation unit

- Handpiece, fine-dosing
- Scale-free boiler system

## Ear irrigation cup

- Disposal via separate suction hose
- On swivel arm

## Hygiene

- All application parts with patient contact are [autoclavable](#)
- Quick fasteners on all hoses
- [Otopront disposable suction hoses](#)
- [Otopront disposable cannulas](#)
- [Otopront disposable rinsing nozzles](#)
- [Otopront disposable suction bag](#)

## Smoke evacuation system, switchable

- For laser and electrosurgery, optional connection of a multistage [activated carbon filter system](#) for targeted extraction of aerosols from the ENT body cavities on the suction hose
- ULPA filter for protection against bacteria, viruses and aerosols

## Headlight cradle

- Height-adjustable and automatic switching
- Laterally mounted

## Medical rail system

- Stainless steel DRÄGER profile 25x10 mm or 35x10 mm
- Laterally mounted

## Construction

- Steel body, multi-layer lacquered
- Colour selection according to RAL colour range
- Top and base made of stainless steel or steel coated

## Driveability

- Antistatic rollers
- 2 castors on the front

## Weight

- 55–85 kg

## Power supply

- 110–230 V~, 50/60 Hz

## Power consumption

- 1000 W max.

## CE marking

- in accordance with directive 93/42/EWG

Basic configuration and optional supplementary equipment as per price list. See also page 14.

All designs and specifications subject to change without notice.

## Happersberger otopront GmbH

Medical Equipment Manufacturer  
D-65329 Hohenstein · P.O. Box · Germany  
Tel. +49 6120-9217-0 · Fax +49 6120-9217-60  
[www.otopront.com](http://www.otopront.com) · [info@otopront.com](mailto:info@otopront.com)

**otopront®**