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# IES 3

The smoke evacuation system for clean air at your workplace

ELECTROSURGERY

# IES 3 smoke evacu

## Our solution for a safe working environment

Eliminate surgical smoke with all its potentially dangerous substances from operating rooms, outpatient facilities and medical practices.

Smoke evacuation with IES 3 reduces the smoke concentration in the operating room – and thus also your smoke exposure.[1,2] A face mask allows too many particles to pass through.[2,3]

Direct evacuation with an electrosurgical pencil just a few millimeters above the source is more efficient than conventional ventilation systems.[4] This always gives you a good view of the surgical field and the surgical site itself.[3]

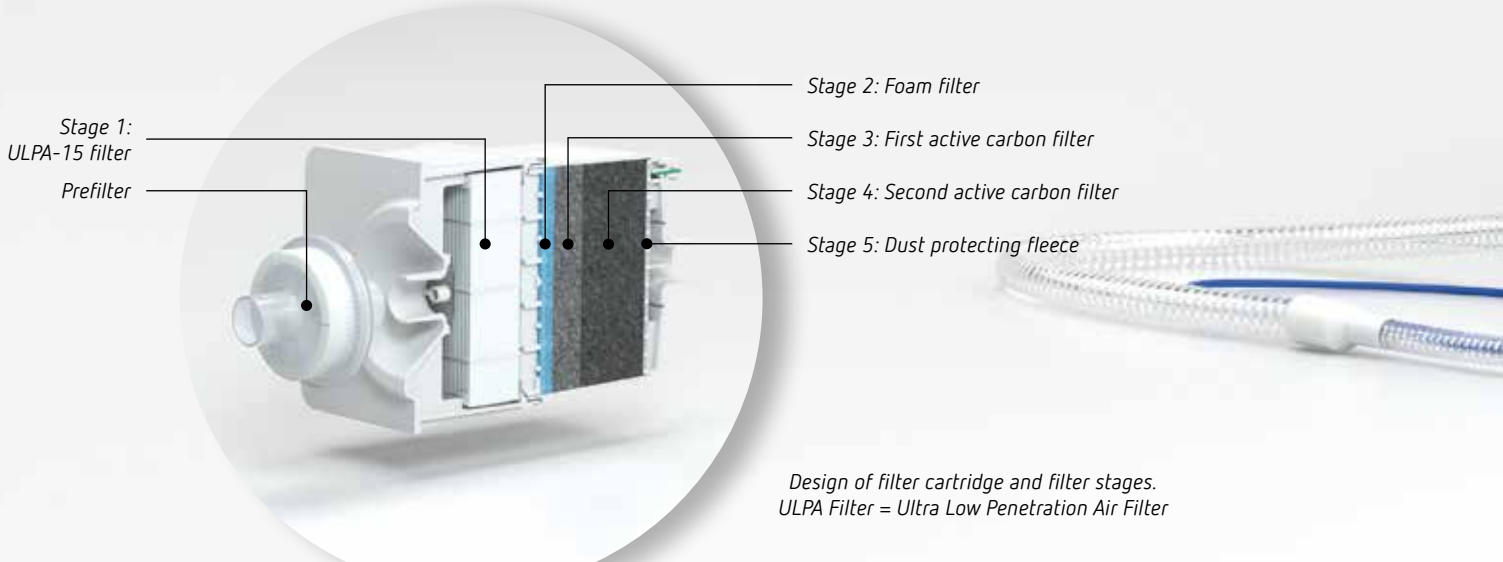
**HAZARD DETECTED. RISK AVERTED. INFORMATION AT: SMOKE.ERBE-MED.COM**

### Protection through ULPA-15 filter

One core component of the 5-stage main filter cartridge is the ULPA-15 filter which removes 99.995 % of all 0.1 µm particles.[5] It offers the best possible safety.[3,4] The active carbon barrier in the main filter reduces odors. The display indicates the remaining filter capacity at all times.[6] Changing the filter is simple and convenient.[7]
The optional prefilter protects the main filter cartridge against penetration of liquids and impurities via coarser tissue particles.

### Good response, quiet operation

The innovative bi-turbo technology ensures a clean and safe working environment within a very short time through effective and fast evacuation. Due to the enhanced noise insulation, the IES 3 is noticeably quieter and more pleasant than comparable devices.[7,8]




*Design of filter cartridge and filter stages.*
*ULPA Filter = Ultra Low Penetration Air Filter*

# uation system

## Extended range of applications

The different operating modes of the IES 3 allow versatile use:

- ☑ **Open surgical mode (OPEN Mode)**
- ☑ **Laparoscopic mode (LAP Mode) with special accessories such as the LAP tubing set with trumpet valve (3 m and 5 m)**
- ☑ **Presettings and configurations allow immediate use for different clinical requirements**

## Flexible activation

You have the following options for activating the IES 3 individually – regardless of working with one or two instruments simultaneously:

- ☑ **Automatically via the VIO®activation**
- ☑ **Via the automatic activation device for all electrosurgical units**
- ☑ **Via the foot switch for laser and ultrasonic applications**

**91 %**
**OF RESPONDENTS REGARD THE IES 3 AS QUIET AND PLEASANT.[7]**

# Our complete package

## Smoke evacuation made by Erbe

Benefit from our almost 100 years of experience in electrosurgery, our worldwide presence and international support. The IES 3 is our contribution to a safe working environment.[1,3]

**90 %**
**OF ALL RESPONDENTS REGARD THE IES 3 USER INTERFACE AS INTUITIVELY EASY.[7]**

**HORIZONTAL**

**VERTICAL**

**INTEGRATED IN THE VIO® 3 WORKSTATION**

### Easy and intuitive to use

- ☑ **Compatible with all models of the VIO® range**
- ☑ **Fast and user-friendly operation:[7]**
  - → Proven user interface, similar to the VIO® 3 touchscreen
  - → Display shows all parameters at a glance (settings, filter runtime, notes for the user)

### High flexibility, compact design

- ☑ **Smoke evacuation for every surgical discipline**
- ☑ **In the operating room as well as in outpatient facilities and medical practices**
- ☑ **For electrosurgery, laser, ultrasound**
- ☑ **Can be integrated into the VIO® workstation**
- ☑ **Can be used as stand-alone device**
- ☑ **Can be positioned horizontally or vertically**

# A system with variable configurations – all from one source

**Water trap and prefilter** protect the high-efficiency filter.

The **connection to the central evacuation system** removes particles and odors from the operating field.

The **automatic activation device** enables starting the IES 3 with all electrosurgical devices.

Good view of the target area in LAP mode with the **LAP tubing set.**

The **T-piece** offers optimal simultaneous evacuation even with 2 instruments.

The **one-pedal footswitch** activates the IES 3 in combination with laser and ultrasonic devices.

The **single-use smoke evacuation pencils** extract surgical smoke directly at its source.


| Instruments | |
|---|---|
| **20321-028** | Electrosurgical pencil for IES, telescoping with spatula electrode |
| **20321-040** | Smoke evacuation pencil, single-use, short with spatula electrode, connecting cable 3 m |
| **20321-041** | Smoke evacuation pencil, single-use, short with coated spatula electrode, connecting cable 3 m |
| **20321-042** | Smoke evacuation pencil, single-use, short with spatula electrode, connecting cable 5 m |
| **20321-043** | Smoke evacuation pencil, single-use, short with coated spatula electrode, connecting cable 5 m |
| **20321-007** | Clip-on handle for Slim-Line electrosurgical pencils, tip short 12 mm<br>with evacuation tubing 3 m and connection ø 22 mm, without electrosurgical pencil |
| **20321-020** | Clip-on handle for Slim-Line electrosurgical pencils, tip long 100 mm<br>with evacuation tubing 3 m and connection ø 22 mm, without electrosurgical pencil |
| **20321-044** | Clip-On handle for smoke evacuation<br>To be used in combination with Erbe Slim-Line electrosurgical pencils (20190-065, 20190-066, 20190-067, 20190-074, 20190-075) |
| **20321-045** | Extension tip for Clip-On handle<br>To be used in combination with 20321-044 |

*All instruments including accessories are listed in our catalog.*

# Technical data

| | |
|---|---|
| **Power connection** | |
| Rated supply voltage | 100 – 240 V AC (± 10 %) |
| Rated supply frequency | 50 / 60 Hz |
| Line current | max. 3 A |
| Power consumption | max. 300 watts |
| Stand-by | 12 watts at 230 V, 12 watts at 115 V |
| Potential equalization connection | Yes |
| Power fuse | T 4 A H / 250 V |
| **Type of operation** | |
| Continuous operation | |
| **Unit data** | |
| Filter specifications | ULPA-15 in accordance with EN 1822-3:2011 and EN 1822-5:2011, corresponds to the requirements of ISO 16571 smoke evacuation devices |
| Noise development | At 60 % evacuation power ≤ 49 dB(A) according to DIN EN ISO 3744<br>At max. evacuation power ≤ 59 dB(A) according to DIN EN ISO 3744 |
| Extraction performance | ≤ 730 l / min (maximum turbine power, th)<br>≤ 300 l / min (with main filter cartridge, automatic shut-off) |
| **Dimensions and weight** | |
| Width x height x depth | 205 x 280 x 404 mm |
| Weight | 9.7 kg including main filter cartridge |
| Display size | 5.7 inches |
| **Ambient conditions for operating the unit** | |
| Temperature | +10 °C to +40 °C |
| Relative humidity | 15 % – 85 %, non-condensing |
| Air pressure | 54 kPa – 106 kPa |
| Max. operating height | 5000 m over SL |
| **Acclimatization** | |
| If the unit has been stored or transported at temperatures below +10 °C or above +40 °C, the unit will take approximately 3 hours to acclimatize to room temperature. | |
| **Standards** | |
| Classification in accordance with MDD 93 / 42 EEC | I |
| Protection class in accordance with EN 60 601-1 | I |
| Type in accordance with EN 60 601-1 | CF |

# Smoke evacuation system and accessories

| Smoke evacuation system consisting of: | |
|---|---|
| **10323-000** | IES 3 smoke evacuation unit |
| **20323-000** | Main filter cartridge IES 3 |

| Accessories for protecting the main filter cartridge | |
|---|---|
| **20321-022** | Prefilter for smoke evacuation |
| **20323-004** | Self-sealing water trap; right angled, medium volume |

| Accessories for laparoscopic application and simultaneous application | |
|---|---|
| **20323-003** | LAP tubing set IES 3 with trumpet valve 3 m |
| **20323-006** | LAP tubing set IES 3 with trumpet valve 5 m |
| **20323-005** | T-piece<br>22 mm outer diameter, 22 mm inner diameter, 22 mm outer diameter |

| Accessories for open surgical application | |
|---|---|
| **20321-004** | Evacuation tube with optimized streaming |
| **20321-009** | Evacuation tubing, ø 22 mm |
| **20321-010** | Evacuation funnel connection, ø 22 mm |
| **20321-012** | Evacuation tubing, ø 22 mm, length 2.1 m (reusable) |

| Accessories for connection to central evacuation system | |
|---|---|
| **20323-001** | Evacuation element IES 3 for central evacuation |
| **20323-009** | Smoke evacuation tubing, ø 32 mm, length 1.8 m, type VT 10106 |

| Attachment sets | |
|---|---|
| **20180-132** | Attachment set IES 2 / IES 3 to VIO® CART 20180-000 |
| **20323-008** | Attachment set VIO® C to IES 3 |
| **20323-007** | Attachment set IES 3 to VIO® 3 |

| Accessories for activation options | |
|---|---|
| **20323-002** | Automatic activation device for IES 3<br>for VIO® C, electrosurgical external devices or stand-alone operation |
| **20322-101** | One-pedal footswitch IES 2 / IES 3 AP & IP X8 equipment |


***References***

*1 Schultz L: Can efficient smoke evacuation limit aerosolization of bacteria? AORN J. 2015 Jul; 102(1):7-14.*
*2 R S Parsa, N J Dirig, I N Eck, W K Payne III.: Surgical Smoke and the Orthopedic Implications. The Internet Journal of Orthopedic Surgery. 2015 Volume 24 Number 1*
*3 BRENDA C. ULMER, RN, MN, CNOR: The Hazards of Surgical Smoke; AORN J.2008, Vol 87, No. 4: 721-734.*
*4 Karsai S et al: Smoking guns: hazards generated by laser and electrocautery smoke. J Dtsch Dermatol Ges. 2012 Sep;10(9): 633-6.*
*5 Internal data: VB_Filter qualification ULPA15 IES 3; D158650*
*6 Internal data: filter service life IES 3; D138347*
*7 Internal data: results of summary evaluation II; D158302*
*8 Internal data: VB_sound measurements IES 3; D162979*

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