Redefining Anaesthesia
Do we have the potential to do more?
System Components and Accessories

With the Dräger Zeus® Infinity® Empowered, you can choose from a wide range of options and accessories to create exactly the anaesthesia workstation you need. Here are just a few examples:

- **DIVA™ application modules for Isoflurane, Sevoflurane and Desflurane**: Designed for use in direct injection of volatile agent (DIVA) anaesthesia.

- **Anaesthetic Gas removal System (AGS)**, capacity: 30-50 l/min. Effective removal of anaesthesia gases from the working area.

- **Reusable breathing circuit set for neonates and pediatrics**: For tidal volumes up to 200 ml.

- **SpiroLife® flow sensor**: Reliable and accurate hot wire anemometry technology; can be sterilized.

- **Syringe pump module DPS**: Designed for use with the IVENUS integrated system for intravenous anaesthesia.

- **HEPA breathing system filter SafeStar® 55**: Effective conditioning of inspired air.

- **Drägersorb® CLIC**: Designed to allow rapid exchange of soda lime while effectively eliminating the possibility of skin contact.

- **Waterlock® 2**: Effective removal of condensation from the breathing circuit.

- **LiteStar® face mask**: Lightweight, transparent face mask with compatible connection for oxygen application.
target controlled anaesthesia

FULL-FEATURED, ICU-QUALITY VENTILATION
The Zeus Infinity Empowered (IE) gives you high quality ventilation in the operating room and is ideally suited for use in adults, children and neonates alike. The innovative, turbinedriven TurboVent ventilation concept gives you convincing advantages of spontaneous breathing and active PEEP with practically unlimited inspiratory flow, regardless of the ventilation mode.

EFFICIENT AND PRECISE:
TARGET CONTROLLED ANAESTHESIA (TCA)
Turbine driven ventilation lets you experience the world of anaesthesia via Direct Injection of Volatile Agents (DIVA), with fully automatic administration of oxygen, carrier gas and volatile agents. Combined with an array of decision support functions and capabilities, the Zeus IE ushers in the era of Target Controlled Anaesthesia (TCA), where anaesthetists simply set their targets for each phase of the anaesthesia process, letting the Zeus IE calculate reasonable and efficient route to success. TCA can be used regardless of the desired fresh gas flow rate or interval – all the way down to closed loop ventilation. This gives you cost-effective anaesthesia possible by keeping gas consumption to an absolute minimum.

ACTIVE RISK MANAGEMENT SUPPORT
An integrated drug database actively linked to the IVenus system automatically sets default values and dosages boundaries for a variety of pharmaceuticals and provides high-visibility color coding to help reducing reduce the risk of user error.
Dräger Zeus® Infinity® Empowered

- Touchscreen
- IV-pumps
- Breathing system with APL-valve
- O₂ flow meter (for local anaesthesia)
- DIVA dosing modules (for Isoflurane, Sevoflurane, Desflurane)
- Trolley with central brake
The cutting-edge technology of the Zeus IE incorporates seamless integration of patient monitoring and intravenous therapy, both easily accessed and controlled by touch screen. A wide range of vital parameters can be easily monitored via the integrated connector panel. From balanced anaesthesia all the way to state-of-the-art Total Intravenous Anaesthesia (TIVA), i.v. anaesthesia is now as easy to administer as conventional volatile anaesthesia. An integrated drug database actively linked to the IVenus system automatically sets default values and dosages boundaries for a variety of pharmaceuticals and provides high-visibility color coding to reduce the risk of user error. Therapeutic decisions are comprehensively monitored and supported by an intelligent alarm management system.

Dräger's user interface design philosophy is focused on maximum intuitiveness and simplicity. The high level of standardization makes it easy for personnel to familiarize themselves with the Zeus IE, keeping training cost and effort to an absolute minimum. Equipped with the largest standard monitor screen on the market today*, the Zeus IE displays parameters with maximum legibility, while a structured, personalized monitor setup lets the user change between display options to suit their needs. The touch screen gives you instant access to all relevant parameters, trend data and diagnostic information, as well as an innovative intelligent alarm management system. But it doesn’t stop here. A second, dedicated monitor displays information accessed through the Infinity Acute Care System. This means uninterrupted, simultaneous visualization of real-time parameters as well as findings or other data accessed from your hospital network – or even beyond.

* at the time, when this brochure was released
POWER
The Dräger Zeus Infinity Empowered (IE) provides seamless integration of ventilation, therapy, monitoring and information management in a single, elegant solution. Taking process orientation to the next level, the Zeus IE puts practically every aspect of your workflow right at your fingertips – directly at the point of care.

CONTROL
The Zeus IE with its high level of integration and automation of routine processes gives you unparalleled control over the entire OR process so that you can stay focused on your main objective – caring for your patient.

QUALITY
Every aspect of the Zeus Infinity Empowered was designed and built in accord with the uncompromising quality standards Dräger has been known for over the last hundred years. The Dräger Zeus IE will help you to maximize the quality of your processes, and with that the quality of care.

EFFICIENCY
At Dräger, we know that the OR process is more than just an operation. Preparation, documentation, postoperative routines and maintenance are also essential components. The Zeus IE was designed to help you increase your perioperative productivity – one of the most important factors in creating the most cost-effective working environment possible.

PATIENT SAFETY
Integrated decision support, intelligent alarms, and enhanced monitoring and visualization systems are all a part of Dräger’s uncompromising ongoing commitment to optimize patient safety during every phase of the procedure.
THE POWER OF INFINITY
Our Infinity Acute Care System is a clinical process optimization approach that focuses on your workflow and is designed to help improve workplace ergonomics, overcome technical limitations, reduce complexity, improve information access and support safer and faster patient transports. The Zeus Infinity Empowered was designed to work hand in hand with IACS, sharing its user interface so that you can enjoy the advantages of the IACS patient monitoring system directly from the point of care. Taken together, the Dräger Zeus Infinity Empowered represents a substantial innovation in anaesthesia therapy and monitoring.

MAINTENANCE AND SERVICE
Routine maintenance checks can be performed at the touch of a button, and Remote Service, just one of the innovative features of the Infinity Network, works to help minimize in-field service time, further reducing costs and system downtime. This kind of advanced connectivity, combined with open architecture and modular design, will serve to protect your investment in the long term.
Introducing the Dräger Zeus® Infinity® Empowered

Outstanding results begin with a perfect process. Process orientation is a key factor in providing the kind of care your patients expect and our people want to deliver. This kind of integration will take your workflow to the next level. It’s a real revolution.

Anaesthesia is a complex undertaking. It begins with a profound understanding of physiology and pharmacology as well as detailed knowledge of the individual patient’s condition and findings. It moves on to focus on the requirements of the procedure at hand and then culminates in a detailed plan of action encompassing narcosis, ventilation, therapy and recovery. Finally, the entire process is supported by vigilant monitoring of vital functions and system parameters.

In today’s world of modern medicine, the challenges in the perioperative environment are constantly growing. Procedures are changing, becoming more sophisticated, more demanding. Now, specialists are often confronted with levels of acuity and comorbidity that were almost unknown in the past. And as health-care costs rise, process efficiency has become a central theme as hospitals now compete on the basis of quality, cost-effectiveness and outcome.

In order to meet these challenges, new ideas, fresh thinking and new solutions that make use of the entire spectrum of available technology are essential. For over a century, the name Dräger has stood for just that – performance, innovation and quality. And now, we have raised the bar again, combining lifetimes of experience and state-of-the-art technology into Dräger’s advanced, comprehensive support solution ever built for anaesthesia.
Gas delivery

Modes of operation:
- fresh-gas control, auto control with 
  exp. agent control ISO, SEV, DES

Fresh-gas flow:
- 0.25 – 18 l/min (fresh gas control);
- 0 – 18 l/min (auto control);
- closed system mode (Uptake)

O₂ control:
- 25 – 100 %; ORC

Carrier gases:
- N₂O and Air

O₂ flush:
- > 35 l/min

O₂ safety flow:
- 0 – 12 l/min

Auxiliary O₂ flow tube:
- 0 – 16 l/min (regional anaesthesia)

External fresh-gas outlet:
- optional

Anesthetic agent delivery DIVA

Mode of operation max. 2 DIVA Modules:
- fresh-gas control, auto control with
  exp. agent control ISO, SEV, DES

Content:
- 315 ml

Delivery range: Fresh-gas control
- ISO: 0 – 5 kPa; SEV: 0 – 8 kPa;
- DES: 0 – 18 kPa

Delivery range: Auto control
- ISO: 0 – 2.5 kPa; SEV: 0 – 5 kPa;
- DES: 0 – 12 kPa

Ventilator TurboVent

Electronically driven and controlled turbine open for spontaneous breathing

Modes of operation:
- manual vent.; spontaneous vent.;
- volume mode; volume mode with
  Autoflow; pressure mode;
- synchronized volume and pressure modes;
- CPAP-pressure support

Tidal volume:
- 20 – 1500 mL (volume mode)

Application range:
- Neonates, Children, Adults

Inspiration Pressure Pinsp:
- PEEP~70 hPa

Pressure support above PEEP (PSupp):
- 0 – 70 hPa

Breathing frequency:
- 3 – 80 1/min

Inspiratory time:
- 0.2 – 10 s ; (IE 4:1 – 1:4)

Pressure rise time:
- 0 – 2 s

Inspiratory flow:
- 0 – 180 l/min

Pressure limitation PMAX:
- 8 – 50 hPa

PEEP/CAPAP:
- 0 – 35 hPa; 0 – 10 hPa

Flow trigger:
- 0.3 – 15 l/min

System tightness:
- < 100 ml at 20 hPa

Volume of soda lime cannister:
- 1.5 l

Weight:
- 180 kg incl. 2 DIVA-Modules

Dimensions (H x W x D):
- 165 x 110 x 70 cm

Power supply:
- 100 – 240 V, 45 – 65 Hz

Ethernet interface (3):
- Infinity network connection

Serial interface:
- remote control of up to 4 IV-pumps, drug database;
- central alarm management, trend display, mechanical integration

Monitoring

Touchscreen 17" Colour; Display of up to 7 waveforms with mini trends;
- intelligent alarm management, central alarm display; comprehensive browser-based help system; monitoring of inspiratory and expiratory concentrations of O₂, N₂O, CO₂ as well as volatile agents; minute volume, tidal volume, breathing frequency; Peak, Plateau, Mean and PEEP breathing pressures; inspiratory and expiratory flow; compliance, resistance; following parameters may be displayed as waveforms: CO₂, O₂, volatile agents, breathing pressure, inspiratory and expiratory flow or volume; Virtual flow tubes; PV or PV Loop; gas and vol.

Patient monitoring

ECG (6 lead); adjustable Multilead ST-segment analysis incl. alarm;
- Non-invasive blood pressure (single, interval, continuous, venostasis); invasive blood pressure (max.10 channels); cardiac output incl. hemod. calculations, pulse oxymetry with plethysmogram; temperature measurement (2x); Neuro muscular transmission (NMT); Anaesthesia Effect monitoring (BISx)

Remote control of Infusion system IVENS

Remote control of up to 4 IV pumps, drug database;
- central alarm management, trend display, mechanical integration

General

Data exchange:
- USB

Ethernet interface (1):
- For access to hospital network, network printer or remote inspection

Interface for IV system:
- Ethernet interface (1)

Ethernet interface (2):
- For access to central network printer or remote inspection

Ethernet interface (3):
- Infinity network connection

Telephone:
- 100 – 240 V, 45 – 65 Hz
- min. 30, max. 90 minutes

Dimensions (H x W x D):
- 165 x 110 x 70 cm

Weight:
- 180 kg incl. 2 DIVA-Modules

Manufacturer:
- Draeger Medical GmbH
- 23542 Luebeck, Germany