

# Dräger Primus® Infinity® Empowered Anaesthesia Workstation

Primus® Infinity® Empowered combines ICU-quality ventilation and optimal anaesthesia therapy in a state-of-the-art design. It offers care for patients of all ages and acuity levels. In combination with Infinity® Acute Care System patient monitoring it enables continually access to a wide set of patient data to facilitate fast and informed decision making in the operating room.

#### Quick and intuitive operation

Clearly structured user interface supports a fast familiarisation process, making it easier for your staff to operate the device.

#### Precise ventilation from neonates to adults

Electrically driven piston ventilator provides ICU level ventilation in the operation room to improve therapy quality for neonates, children, and critical care patients.

#### Designed for low/minimal-flow anaesthesia

The Econometer can help to optimise low-flow settings and to identify gas deficiencies quickly and easily. The integrated heated breathing system delivers optimal conditioned breathing gas for patient comfort whilst enabling low/minimal-flow anaesthesia.

#### Advanced anaesthesia workstation

Compact anaesthesia machine design together with comprehensive patient monitoring and workflow-oriented IT solutions provides state-of-the-art therapy that can be configured to your specific OR environment.



#### Innovative RFID technology

Innovative Infinity® ID accessories were developed to simplify handling and optimizing workflow. Functions such as hose mismatch and automated water lock exchange control are now facilitated.

## Benefits

---

### Advanced anaesthesia workstation

As an advanced anaesthesia machine Primus Infinity Empowered offers premium quality ventilation therapy and anaesthesia delivery. Due to its compact breathing system and integrated advanced gas monitoring it is optimally designed to perform minimal- and low-flow anaesthesia. In combination with Infinity Acute Care System patient monitor all relevant patient data are available at the point of care what contributes to increased workflow efficiency and better patient outcome.

---

### Quick and intuitive operation

The Primus Infinity Empowered has a clearly structured user interface which supports a quick familiarisation process. This makes it easier for your staff to operate the device. The fully automated self-test saves you time for other meaningful activities. In emergency cases you can skip the self-test and get the device “ready in seconds” with full anaesthesia functionality.

---

### Designed for minimal- and low-flow anaesthesia

The leak-tight and compact breathing system of Primus Infinity Empowered ensures a fast gas-exchange time even under extreme settings down to 200 ml fresh-gas flow. Thanks to heated components, the patient gas is optimally climatized and water build-up is significantly reduced. The optional Econometer guides the user to set the optimal fresh-gas flow, and it is a great help especially during minimal- and low-flow anaesthesia applications.

---

### Precise ventilation from neonates to adults

Delivering accurate tidal volume in neonatal ventilation is mandatory. The high-precision piston ventilator technology from the Primus Infinity Empowered can accurately deliver a tidal volume of down to 5 ml and allows the frequency setting of up to 100 breaths per minute. The CPAP pressure support ventilation mode facilitates spontaneous breathing during surgery. The Autoflow ventilation mode enables to deliver the set tidal volume with possible lowest pressure. Both modes enhance the application of protective ventilation settings during surgery which can improve patient outcome.

---

### Innovative RFID technology

With Infinity ID accessories, Dräger has pioneered the use of RFID technology for clinical use in intensive care units and operating rooms to transform data into useful additional functionality for your daily clinical routine. Infinity ID accessories from Dräger do more than just fulfill their primary function by offering additional functionality. In combination with Primus Infinity Empowered the Infinity ID accessories can help you to simplify routine tasks, streamline workflow, and increase safety levels by checking incorrect circuit and soda lime canister connections and monitoring recommended replacement intervals for consumables.

## System Components



D-883-2010

### Dräger Vapor® 2000 and D-Vapor®

Dräger vaporisers have been the benchmark for quality for over 50 years. Quality trusted by doctors and nurses around the world: to date, over 400,000 Vapor units have been sold to hospitals around the world.



D-19739-2009

### Infinity® Acute Care System

Transform your clinical workflow with Infinity® Acute Care System. Its multiparameter monitor integrates with its networked medical-grade workstation, giving you real-time vital signs, access to clinical hospital systems and data management applications for a comprehensive range of patient information and powerful analysis tools at the point-of-care.



MT-105-2007

### Infinity® Omega Solution

This two-screen solution provides access to images, lab results and other clinical data, while displaying real-time vital signs data at the point of care on a 20" touchscreen. Bedside/transport monitor continuously monitors patient during transport and at the bedside.



D-19709-2015

### Dräger SmartPilot® View

SmartPilot® View provides innovative state-of-the-art modelling technology and a comprehensive visualisation concept of complex drug effects to display current and predicted anaesthesia levels. This intuitive display provides support at all phases of anaesthesia.

## Accessories



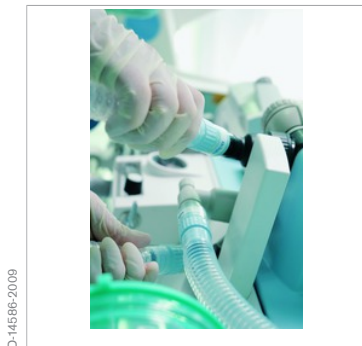
### Drägersorb® Soda Lime

High safety and CO<sub>2</sub> absorption capacity. Soda lime is essential for CO<sub>2</sub> absorption in inhalation anaesthesia machines with rebreathing systems. Yet conventional soda lime can produce Compound A and carbon monoxide.



### WaterLock 2

Perfect protection for precise gas measurement. Dräger WaterLock 2 safely stops water from getting into the multi-gas sensor. The membrane technology developed by Dräger for the WaterLock 2 stops any bacteria or germs from getting into the gas measurement system. The WaterLock 2 is also safe and simple to empty – with a further advantage in handling and hygiene.



### Infinity® ID-accessories

Each and every Infinity® ID-accessory has been designed to offer additional functionality, which can help you simplify routine tasks, streamline workflow and increase safety levels.

## Related Products



D-15456-2017

### Dräger Perseus® A500

Outstanding ventilator technology meets the latest approaches to ergonomics and system integration in one innovative anaesthesia machine, developed together with experts from all over the world to streamline your anaesthesia workflow.



D-6836-2014

### Dräger Fabius® Tiro

Get the most out of even the smallest spaces with a compact yet fully featured anaesthesia solution designed for use in a variety of specialised environments.



D-12287-2011

### Dräger Fabius® MRI

Increase the diagnostic capability of your MRI unit with the help of state-of-the-art ventilation in the Dräger Fabius® MRI anaesthesia system specially designed for use in MRI environments.

## Technical Data

### BASE UNIT

|   |                  |
|---|------------------|
| Weight (without vaporisers and gas cylinders)   | 147 kg           |
| Dimensions of trolley version (without patient monitoring and IT solutions mounted) (H x W x D) | 138 x 80 x 80 cm |

### Power and battery back-up

|                                   |   |
|-----------------------------------|---|
| Power consumption                 | 200 W/typical   |
| Operating voltage                 | 100 – 240 V~, 50 – 60 Hz  |
| Integrated emergency power supply | for at least 30 minutes, up to 90 minutes, depending on set ventilation parameters. |

### ANAESTHESIA GAS SUPPLY MODULE

|                            |  |
|----------------------------|--|
| Fresh gas flow             | 0 and 0.2 – 18 L/min   |
| O <sub>2</sub> flush       | > 35 L/min   |
| O <sub>2</sub> safety flow | 0 – 12 L/min   |
| External fresh-gas outlet  | Optional   |
| Vaporiser mount            | Up to two Dräger Auto Exclusion or Interlock®2 or Selectatec® Vaporizers, optional vaporiser standby holder Auto Exclusion or Interlock®2 or Selectatec® |

### VENTILATOR OPERATING SPECIFICATIONS

|                         |  |
|-------------------------|--|
| Ventilator E-Vent® plus | Electrically operated and electronically controlled  |
| Operating modes         | Man/Spont,<br>Volume Control (VC),<br>Pressure Control (PC),<br>Optional: Pressure Support (PS)<br>Optional: Volume Autoflow (AF)<br>Synchronized volume-controlled ventilation (SIMV), optionally with PS<br>Synchronized volume-guaranteed ventilation volume AF, optionally with PS<br>CPAP |

### Control input changes

|   |  |
|---|--|
| Pressure limitation P <sub>MAX</sub> (in VC)            | (PEEP+10) up to 70 hPa   |
| Pressure limitation P <sub>INSP</sub> (in PC)           | (PEEP+5) up to 70 hPa  |
| PEEP in VC  | 0 – 20 hPa (max. P <sub>MAX</sub> -10 hPa)   |
| PEEP in PC  | 0 – 20 hPa (max. P <sub>INSP</sub> -5 hPa)   |
| Tidal volume (in VC)                                    | 20 – 1,400 mL<br>5 – 1,400 mL (with Advanced Ventilation option)   |
| Tidal volume (in PC)                                    | 5 – 1,400 mL (with Advanced Ventilation option)  |
| Trigger   | 0.3 – 15 L/min   |
| Breathing frequency                                     | 3 – 100 per minute   |
| Minimum frequency for apnea ventilation in PS mode      | OFF, 3 – 20 per minute (with Advanced Ventilation option)  |
| Breathing time ratio (I:E)                              | max. 5:1   |
| Inspiratory time (T <sub>INSP</sub> )                   | 0.2 – 6.7 s  |
| Inspiratory pause (T <sub>IP</sub> :T <sub>INSP</sub> ) | 0 – 60 %   |
| Inspiratory flow  | max. 150 L/min   |
| Inspiratory ramp T <sub>SLOPE</sub>                     | 0.0 – 2 s (in PC, PS and volume AF)  |
| System leakage tightness                                | < 150 ml/min at 30 hPa (automatic leakage test)  |
| Integrated safety functions                             | Sensitive ORC function: minimum oxygen supply of 25 vol.% oxygen (O <sub>2</sub> ) or 200 ml/min in mixtures with nitrous oxide (N <sub>2</sub> O) |

## Technical Data

### Ventilator monitoring

|            |   |
|------------|---|
| Monitoring | <p>Displayed as value: Minute volume (MV) and tidal volume (<math>V_T</math>); breathing frequency, peak pressure, plateau pressure, mean airway pressure, PEEP; patient compliance <math>C_{PAT}</math>;</p> <p>Displayed as diagram: airway pressure, inspiratory and expiratory flow;</p> <p>Displayed as bar diagram: expiratory minute volume and tidal volume; display of graphic trends; numerical list of measurement values; auto-set for alarm limits</p> |
|------------|---|

### Gas monitoring

|                |   |
|----------------|---|
| Monitoring     | <p>Displayed as value: Inspiratory and expiratory concentration of <math>O_2</math>, <math>N_2O</math>, <math>CO_2</math>, and volatile anaesthetics (Halothane, Isoflurane, Sevoflurane, Desflurane); displayed as a diagram: concentration of <math>CO_2</math>, <math>O_2</math>, and volatile anaesthetic agents, virtual flow tubes for fresh-gas flow</p> |
| Control screen | 12.1" full-colour TFT display   |

### BREATHING SYSTEM

|                            |   |
|----------------------------|---|
| Heated breathing system    | Yes   |
| Filling Volume of Absorber | <p>1.5 L with reusable absorber canister</p> <p>1.2 L with CLIC Absorber 800+</p> <p>1.2 L with CLIC Absorber Drägersorb Free</p> |

### GAS SUPPLY CONNECTION

|                 |   |
|-----------------|---|
| Gas supply      | 3-gas variant ( $O_2$ , $N_2O$ , and Air) or 2-gas variant ( $O_2$ and Air) |
| Cylinder supply | ( $O_2$ , $N_2O$ ) or ( $O_2$ , Air)  |

### OTHER

|                           |  |
|---------------------------|--|
| Communication interface   | 2 x RS232  |
| Protocol                  | Medibus, Medibus.X   |
| Data available for export | All alarms, pressures, $O_2$ , $CO_2$ , volume and fresh-gas flow data, ventilation settings, flow and pressure curve, anaesthesia gases |
| Writing surface           | Pull-out tray  |
| Additional accessories    | Anaesthetic gas scavenging system (AGSS), endotracheal suction unit, writing plate   |

## Ordering Information

### Software 4.5n

|                                     |                             |
|-------------------------------------|-----------------------------|
| Basic software version 4.53         | 8608515 (8608511 for Japan) |
| Advanced Monitoring option package  | 8605290                     |
| Advanced Ventilation option package | 8605290                     |
| Volume Mode Autoflow option package | 8605290                     |
| Advanced Views option package       | 8605290                     |

## Notes

Not all products, features, or services are for sale in all countries.  
Mentioned Trademarks are only registered in certain countries and not necessarily in the country in which this material is released. Go to [www.draeger.com/trademarks](http://www.draeger.com/trademarks) to find the current status.

### CORPORATE HEADQUARTERS

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany  
[www.draeger.com](http://www.draeger.com)

### Manufacturer:

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53-55  
23542 Lübeck, Germany

### REGION DACH

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany  
Tel +49 451 882 0  
Fax +49 451 882 2080  
[info@draeger.com](mailto:info@draeger.com)

### REGION CENTRAL

**AND SOUTH AMERICA**  
Dräger Panama S. de R.L.  
59 East Street, Nuevo Paitilla  
House 30, San Francisco Town  
Panama City, Panama  
Tel +507 377 9100  
Fax +507 377 9130  
[servicioalcliente@draeger.com](mailto:servicioalcliente@draeger.com)

### REGION MIDDLE EAST, AFRICA

Drägerwerk AG & Co. KGaA  
Branch Office  
P.O. Box 505108  
Dubai, United Arab Emirates  
Tel +971 4 4294 600  
Fax +971 4 4294 699  
[contactuae@draeger.com](mailto:contactuae@draeger.com)

### REGION ASIA PACIFIC

Draeger Singapore Pte. Ltd.  
25 International Business Park  
#04-20/21 German Centre  
Singapore 609916  
Tel +65 6308 9400  
Fax +65 6308 9401  
[asia.pacific@draeger.com](mailto:asia.pacific@draeger.com)

### REGION EUROPE

Drägerwerk AG & Co. KGaA  
Moislinger Allee 53–55  
23558 Lübeck, Germany  
Tel +49 451 882 0  
Fax +49 451 882 2080  
[info@draeger.com](mailto:info@draeger.com)

### CANADA

Draeger Medical Canada Inc.  
2425 Skymark Avenue, Unit 1  
Mississauga, Ontario, L4W 4Y6  
Tel +1 905 212 6600  
Toll-free +1 866 343 2273  
Fax +1 905 212 6601  
[Canada.support@draeger.com](mailto:Canada.support@draeger.com)

Locate your Regional Sales  
Representative at:  
[www.draeger.com/contact](http://www.draeger.com/contact)

