

Dräger Globe-Trotter® GT5400

The Globe-Trotter GT5400 is the result of Dräger's ongoing commitment to the development of a safer and more stable neonatal transport system. This system meets global standards and moves seamlessly from vehicle to vehicle – by helicopter, airplane or ambulance.



TECHNICAL DATA

Physical specifications

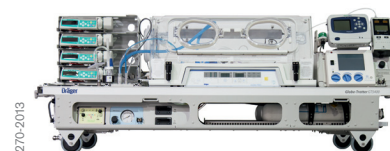
Nominal length	≤ 163.9 cm (64.5 in)
Nominal width	≤ 57.8 cm (22.75 in)
Nominal height (low hood, DIN mount with Bucher pins)	≤ 53.4 cm (21 in)
Nominal height (high hood, DIN mount with Bucher pins)	≤ 58.5 cm (23 in)
Weight range	80 – 116 kg (176 – 254 lbs)
Accessory deck weight limit (ground transport)	≤ 27.2 kg (60 lb)
Accessory deck weight limit (air transport)	≤ 13.6 kg (30 lb)
Chart/cell phone holder weight limit	≤ 0.9 kg (2 lb)
LSC monitor mounting bar weight limit	≤ 3.2 kg (7 lb)
Accessory pole weight limit	≤ 3.2 kg (7 lb)
Infant weight	10 kg (22 lb) maximum

Environmental specifications

Operating temperature range (ambient, normal function)	10 °C (50 °F) to 30 °C (86 °F) The incubator set point must be at least 3.0 °C (5.4 °F) higher than the ambient temperature.
Operating temperature range (ambient, limited function)	10 °C (50 °F) to 30 °C (86 °F) At more extreme ambient temperatures, the incubator temperature may not be maintained.
Storage temperature	-20 °C (-4 °F) to +60 °C (140 °F) ambient
Relative humidity (RH) operating range	5 % to 95 % RH, non-condensing operating range: sea level to 3 km (1,000 ft), non-pressurised ambient

Electrical specifications – GT5400 system

External power requirement	110 V/120 V AC, 50/60 Hz, 12 A maximum or 230 V AC, 50/60 Hz, 8 A maximum (Power consumption varies with system configuration)
Auxiliary power socket (110 /120 V AC units)	6 NEMA 5-15 R- HG hospital-grade sockets; nominal 3.5 A limit, varies with system configuration
Auxiliary power socket (230 V AC units)	6 IEC 60320-1 C13 socket; nominal 2.5 A limit, varies with system configuration
Earth leakage current (AC)	≤ 5 mA (normal condition); ≤ 10 mA (Single fault condition)
Touch current	≤ 100 µA (normal condition); ≤ 500 µA (Single fault condition)



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Electrical specifications – incubator subsystem

External power requirement	110 V/120 V AC, 50/60/400 Hz, 6 A maximum sine or square wave; or 230 V AC, 50/60/400 Hz, 4 A maximum sine or square wave; or 11 V DC to 13 V DC, 200 W maximum; or 26 V DC to 30 V DC, 200 W maximum (Note: the remainder of the GT5400 system is not specified for operation on 400 Hz mains power.)
Internal battery type	Lead acid, vented, rechargeable
Internal battery voltage	12 V DC nominal
Internal battery quantity	1 (Optional 2nd battery)
Internal battery capacity	Approximately 90 minutes per battery at full heater power
Internal battery charge time (single battery from full discharge)	Approximately 20 hours per battery (with AC power on and incubator controller in standby) (Note: charge time increases significantly if incubator controller is on and if digital pressure gauges, examination light and humidifier.*)
Internal battery life expectancy	Approximately 200 complete charge/discharge cycles

Incubator performance specifications

Mattress air velocity (average airflow rate circulated within the mattress area defined by 5 points up to a height of 4 in above the mattress)	< 20 cm/s (39 ft/min)
Carbon dioxide (CO ₂) level within the hood	< 0.5 % when a 4 % mixture of CO ₂ in air is delivered at 750 ml (25 oz) per minute at a point 10 cm (4 in) above the centre of a mattress.
Noise level within the hood (without alarms)	< 60 dB with ambient levels to ≤ 50 dB
Correlation of the displayed incubator temperature to the actual incubator temperature at temperature equilibrium	≤ 1 °C

Incubator temperature specifications

Operating parameters	Maintains a differential of up to 25 °C (45 °F) between the ambient temperature and set point for 90 minutes per battery. Example: With a set point of 36 °C (96.8 °F) and ambient temperatures of 11 °C (51.8 °F), the operating time (full heater, all heaters, lights on) is 90 minutes for one battery, or 3 hours for 2 batteries.
Temperature set point range	21.5 °C (70.7 °F) ± 1.5 °C to 38.0 °C (100.4 °F) in 0.1 °C increments
Temperature display range	17.0 °C (62.6 °F) to 45.0 °C (113 °F) in 0.1 °C increments
Temperature warm-up range	Approximately 30 minutes nominal (depending on hood size)

Gas delivery specifications

Central gas supply connections	NIST, DISS (male), DISS (female)
Central gas supply pressure	379 to 517 kPa (55 to 75 psi)
Gas cylinder connections (Air, O ₂)	DIN, PISS, UNI
Gas cylinder pressure	20,684 kPa (3000 psi)
Gas cylinder length	43.2 to 86.3 cm (17 to 34 in)
Gas cylinder diameter	8.9 to 11.9 cm (3.5 to 4.72)
Auxiliary flow control valve range	0 L/min to 15 L/min

*optional

Standards compliance

All configurations and mounting systems of the GT5400 comply with the following standards¹⁾:

- **IEC 60601-1:2005 / EN 60601-1:2006 / AC 2010**
Medical Electrical Equipment
Part 1: General Requirements for Basic Safety and Essential Performance
- **IEC 60601-1-2:2007 / EN 60601-1-2:2007**
Medical Electrical Equipment
Part 1-2: General Requirements for Basic Safety and Essential Performance
Collateral Standard: Electromagnetic Compatibility Requirements and Tests
- **IEC 60601-1-6:2010 / EN 60601-1-6:2010**
Medical Electrical Equipment
Part 1-6: General Requirements for Basic Safety and Essential Performance
Collateral Standard: Usability

The incubator portion of the GT5400 complies with the above standards and two additional standards:

- **IEC 60601-2-20:2009 / EN 60601-2-20:2009**
Medical Electrical Equipment
Part 2-20: Particular Requirements for the Basic Safety and Essential Performance of Infant Transport Incubators
- **IEC 60601-1-8:2006 / EN 60601-1-8:2007**
Medical Electrical Equipment
Part 1-8: General Requirements for Basic Safety and Essential Performance
Collateral Standard: General Requirements, Tests and Guidance for Alarm Systems in Medical Electrical Equipment and Medical Electrical Systems

The GT5400 air vehicle configuration with Bucher pin mounting system complies with the applicable sections of the following standards²⁾:

- **EN 13718-1:2008** Medical Vehicles and their Equipment – Air Ambulances
Part 1: Requirements for Medical Devices used in Air Ambulances
- **EN 13718-2:2008** Medical Vehicles and their Equipment – Air Ambulances
Part 2: Operational and Technical Requirements of Air Ambulances
- **EN 13976-1:2003** Rescue Systems – Transportation of Incubators
Part 1: Interface Conditions
- **EN 13976-2:2003** Rescue Systems – Transportation of Incubators
Part 2: System Requirements
- **RTCA DO 160 Section 7** (Operational Shocks and Crash Safety) Environmental Conditions and Test Procedures for Airborne Equipment
- Federal Aviation Regulations (FAR) and Canadian Air Regulations (CAR)
Sections FAR 23/CAR 523 and FAR 29/CAR 529

The GT5400 ground vehicle configuration with DIN mounting system complies with the applicable sections of the following standards³⁾:

- **EN 1789:2007** Medical Vehicles and their Equipment – Road Ambulances
- **EN 13976-1:2003** Rescue Systems
Transportation of Incubators
Part 1: Interface Conditions
- **EN 13976-2:2003** Rescue Systems
Transportation of Incubators
Part 2: System Requirements Instructions for Use
GT5400 Neonatal Transport System

1) The GT5400 basic system includes the following components:

- Incubator
- Selection of low or high hood
- Battery: 1
- Vital signs monitor: Yes or No
- Ventilator with O₂ monitor
- Selection of infusion pumps: 2-4 stacked with mounting rack
- 4 stacked with mounting rack
- Selection of CO₂ monitor: Yes or No
- Examination light, disposable breathing circuit: with humidification or without humidification
- Auxiliary power sockets
- Gas blender
- Auxiliary O₂ flow control
- Suction system including disposable canister
- Humidifier system
- Digital pressure gauges for gas cylinders
- Accessory deck with mounting rails
- Chart/cell phone holder

2) In addition to the components of the basic system, the GT5400 air vehicle configuration includes the following components:

- Selection of second battery : No
- Cylinder holders/regulators: 2/2, 3/2,
- DIN connectivity: Yes with Bucher pins

3) In addition to the components of the basic system, the GT5400 ground vehicle configuration includes the following components:

- Selection of second battery : Yes
- Cylinder holders/regulators: 2/2, 3/2, 4/2, or 4/4
- DIN connectivity: Yes

CORPORATE HEADQUARTERS

Drägerwerk AG & Co. KGaA
Moislinger Allee 53-55
23558 Lübeck, Germany

www.draeger.com

Manufacturer:

Draeger Medical, Inc.
3135 Quarry Road
Telford, PA 18969, USA
The quality management system at
Draeger Medical, Inc. is certified
according to ISO 13485 and ISO 9001

USA

Draeger Medical, Inc.
3135 Quarry Road
Telford, PA 18969-1042, USA
Tel +1 215 721 5400
Toll-free +1 800 437 2437
Fax +1 215 723 5935
info.usa@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 +1 905 763 1890
Canada.support@draeger.com