

Infinity[®] Gamma and Gamma XL Patient Monitors

Designed to support low- to mid-acuity patients, Infinity[®] Gamma and Gamma XL patient monitors provide a full set of the most commonly used parameters – including ECG, arrhythmia analysis, respiration, SpO₂, pulse rate, temperature, and noninvasive and invasive blood pressure. Patented Pick and Go[®] technology enables these monitors to provide continuous surveillance, while eliminating the need to purchase separate transport monitors.

Gamma and Gamma XL monitors have a compact, user-friendly design. Seamless wired or wireless networking capabilities let you share and receive patient information for better-informed decisions.

Features

- Provide monitoring versatility for any sub-acute care setting
- Display 3 or 4 channels and offer a choice of sizes
- Provide continuous monitoring and data collection

Monitoring Capabilities

Neonatal, pediatric and adult applications

ECG

Available leads	
3-lead set	Leads: I, II, III
5-lead set	Leads: I, II, III, aVR, aVL, aVF, V
6-lead set	Leads: I, II, III, aVR, aVL, aVF, V, V+
Measuring range	15 to 300 bpm
Accuracy	±5 bpm or ±2% (whichever is greater)
Frequency range (±3 db)	0.5 Hz to 28 Hz (50 Hz) 0.5 Hz to 40 Hz (60 Hz)
Filter frequency	50 to 60 Hz



TECHNICAL DATA

QRS Detection Range

Alarms	User-selectable upper and lower limits
Pacer detection	Leads: I, II, or III Amplitude: ± 5 to ± 700 mV Separation between pulses: > 30 msec Width (d_p): 0.1 to 2.0 msec
Accessories	3-, 5- or 6-lead electrode set

Dual Lead ST Analysis

Available leads	Choice of any two leads
Default leads	II, V (if used with MultiMed® 5 or 6 lead)
ECG complex length	900 msec
Units of measure	mm and mV, with a default of mm
Minimum number of beats	One required in updated interval
Resolution	± 0.1 mm/ ± 0.01 mV
Accuracy	$< \pm 1$ mm/ ± 0.1 mV (RTI – with respect to input)
Trends	Graphical and tabular, as provided by monitor function
Upper and lower ST alarms	-15.0 mm to +15.0 mm in 0.1 mm increments -1.50 mV to +1.50 mV in 0.01 mV increments

Isoelectric measurement point

Measuring range	Start of ECG complex to fiducial point -15 to +15 mm or -1.5 to +1.5 mV
Default	QRS onset – 28 msec

ST measurement point

Adjustment range	Fiducial point to end of ECG complex
Default	QRS offset + 80 msec

Respiration

Sensing lead	II
Measuring method	Impedance pneumography
Auxiliary current	$< 10 \mu A$ for any active electrode
Detection threshold	0.2 Ω to 4.0 Ω in manual mode (user adjustment) 0.2 Ω to 1.5 Ω in auto mode (automatic adjustment)
Measuring range	0 to 155 breaths/min
Accuracy	± 1 breath/min or $\pm 2\%$ (whichever is greater)
Alarms	User-selectable upper and lower respiration rate

Pulse Oximetry (SpO₂)

Displayed parameters	Saturation (fraction of oxyhemoglobin to functional hemoglobin) and pulse (rate and curve)
Measuring method	Absorption-spectrophotometry Pulse 30 to 250 bpm
Accuracy	SpO ₂ : 0 to 69% not specified SpO ₂ : 70 to 100% $\pm 2\%$ (except Masimo® LNOP-Ear which is $\pm 3.5\%$ and Nellcor® DS100A which is $\pm 3\%$) Saturation accuracy range increases by ± 1 digit for neonates Pulse: ± 3 bpm or $\pm 3\%$ (whichever is greater)
Alarms	User-selectable upper and lower limits for SpO ₂ and pulse rate
Accessories	Dräger Medical-approved Masimo or Nellcor sensors

Temperature

Displayed parameters	Absolute temperature
Measuring range	0 to 50° C
Accuracy	Probe: $\pm 0.1^{\circ}$ C System: $\pm 0.2^{\circ}$ C
Alarms	User-selectable upper and lower limits
Accessories	Dräger Medical-approved core and skin probes

Noninvasive Blood Pressure (NBP)

Displayed parameters	Systolic, mean and diastolic pressures
Measuring method	Oscillometric utilizing step deflation

Modes of operation

Manual (single measurement) or interval

Interval times	Off, 2, 2.5, 3-15 (increments of 1), 30, 45, 60, 120, 180, 240 minutes
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Measuring range (default)

Adult	Heart rate: 30 to 240 bpm Systolic: 30 to 250 mmHg Mean: 20 to 230 mmHg Diastolic: 10 to 210 mmHg
Pediatric	Heart rate: 30 to 240 bpm Systolic: 30 to 170 mmHg Mean: 20 to 150 mmHg Diastolic: 10 to 130 mmHg
Neonatal	Heart rate: 30 to 240 bpm Systolic: 30 to 130 mmHg Mean: 20 to 110 mmHg Diastolic: 10 to 100 mmHg

Cuff pressure

Default inflation pressure or after technical alarm

Adult: 160 mmHg ± 10 mmHg
Pediatric: 120 mmHg ± 10 mmHg
Neonatal: 110 mmHg ± 10 mmHg

Inflation pressure after a valid measurement

Adult: Systolic +25 mmHg ± 10 mmHg
Pediatric: Systolic +25 mmHg ± 10 mmHg
Neonatal: Systolic +30 mmHg ± 10 mmHg

Maximum inflation pressure

Adult: 265 mmHg ± 5 mmHg
Pediatric: 180 mmHg ± 10 mmHg
Neonatal: 142 mmHg ± 10 mmHg

Minimum inflation pressure

Adult: 110 mmHg ± 10 mmHg
Pediatric: 90 mmHg ± 10 mmHg
Neonatal: 70 mmHg ± 10 mmHg

Connector

Quick-release connector with single airway

Invasive Blood Pressure

Displays up to 2 pressures (with IBP options)

Measuring method	Resistive strain gauge transducer
Display resolution	1 mmHg
Measuring range	-50 to 399 mmHg
Frequency range	DC to 16 Hz
Zero balance range	±190 mmHg
Transducer specifications	Dräger Medical-approved transducers with a resistance of 300Ω to 2000Ω and an equivalent pressure sensitivity of 5μV/V/mmHg ±10%
Accuracy	±2 mmHg or ±3% whichever is greater, after successful zero and calibration (exclusive of transducer)
IBP alarms	User-selectable upper and lower limits for systolic, diastolic and mean pressures
Accessories	Dräger Medical-approved pressure transducers

Display Specifications

Type	Thin Film Transistor-Liquid Crystal Display Active Matrix (TFT-LCD)
Size	
Gamma	16.5 cm (6.5 in.) diagonal
Gamma XL	21 cm (8.4 in.) diagonal
Channels	
Gamma	3 standard, 4 with 4 channel option
Gamma XL	4 standard
Viewing area	
Gamma	132.5 mm x 99.4 mm
Gamma XL	170.9 mm x 129.6 mm
Resolution	640 x 480 pixels

User Interface

Rotary knob – for selection and confirmation of changes	
Easy-to-use menu structure and fixed keys	
Three alarm levels	Life-threatening, Serious and Advisory

Physical Specifications

Cooling	Convection (no fan)
Dimensions (H x W x D)	
Gamma	215 x 301 x 131 mm (8.5 x 11.9 x 5.2 in.)
Gamma XL	215 x 301 x 131 mm (8.5 x 11.9 x 5.2 in.)
Weight	
Gamma	3.11 kg (6.85 lbs.) without battery
Gamma XL	3.32 kg (7.32 lbs.) without battery

Information Management Capabilities

Data storage	24 hours
Data resolution	60 seconds
Trend tables	1, 5, 15, 30 or 60 minute display formats
Trend graphs	1, 2, 4, 8 or 12 hour display format
Trend type	Tabular and graphical tables and event recall (10 events)

Electrical Specifications

Input voltage	11 to 14V DC, 2.5A
Power consumption	<52 watts (fully loaded)
Patient leakage current	<10 μ A
Protection class	Internally powered (per IEC 60601-1)

Power Adapter

Power requirements	100 to 120V AC, 0.8A 200 to 240V AC, 0.4A
Frequency	50 to 60 Hz
Chassis leakage current	<300 μ A @ 110V AC and 60 Hz <500 μ A @ 220V AC and 50 Hz

Battery Specifications

Internal battery	Battery type: lead-acid Battery capacity: 75 minutes Charging time: 5.5 hours at 25° C
Optional internal battery	Battery type: lithium-ion Battery capacity: Minimum 180 minutes Charging time: 8 hours at 25° C

Battery life is specified under the following conditions:
NBP measurement every 15 minutes connected, no etCO₂
and running at 25° C

Battery life may diminish after extended use.

Environmental Requirements

Temperature range	Operating: 0° C to 45° C Storage: -20° C to 50° C
Relative humidity	Operating: >10% and <95%, non-condensing Storage: >10% and <95% non-condensing
Atmospheric pressure	Operating: 525 to 795 mmHg (70 to 106 kPa) Storage: 375 to 795 mmHg (50 to 106 kPa)

Standards

IEC 60601-1 and applicable particular and collateral standards, IEC 60601-1-2, Electromagnetic compatibility CISPR 11, Class B

The Infinity Gamma and Gamma XL monitors comply with Medical Devices Directive (MDD) 93/42 EEC and bear the CE mark.

Ordering Information

Infinity Gamma Patient Monitor 8419060, MU20536, 8606060

Infinity Gamma XL Patient Monitor 8419910, MU20517, 8604910

Note:

Infinity Gamma XL includes pod port

Infinity Gamma XL invasive pressure is optional
(see software options)

Infinity Docking Stations (IDS)

Docking Station 5206110

Provide mechanical mounting as well as connection for the monitor's power, network, video, recorder, RS 232 data export and serial communications.

The above docking station requires the docking station power supply

Docking Station Power Supply MS18508

Note: powers Infinity Docking Station

Mounting Docking Station 4715319

For use in standalone configuration

Battery

Replacement battery 5947697
(lead-acid, 75 minutes)

Lithium-ion (minimum 180 minutes optional) 5732354

Battery charger (lead-acid only) 4710211

Power Cables

Europe, CEE 7 4321712

North America, 5-15R 4321720

Switzerland, SEV 1 01 1 4321613

Great Britain, BS 1363 1851713

Australia, New Zealand, AS 3112 1851705

China, power cord 1859714

Danish power cord 1851721

MultiMed® Pods

MultiMed 5 3368391

Multi-parameters pods to monitor 3-, 5- or 6-lead ECG, impedance respiration, temperature and SpO₂

MultiMed 6 5191221

Multi-parameters pods to monitor 3-, 5- or 6-lead ECG, impedance respiration, temperature and SpO₂

NeoMed 5590539

The NeoMed pod supports monitoring of 3-lead ECG, impedance respiration, and one temperature and SpO₂
(FiO₂ not supported on Gamma and Gamma XL)

SpO₂ Pod

Masimo SET® SpO₂ SmartPod® Kit MS16900

(see individual datasheet for details)

Software Options

4th waveform channel (Gamma only)	7487171
Full arrhythmia	7487189
2nd invasive blood pressure (Gamma only)	5586578
Dual IBP; includes 2 IBP channels (Gamma XL only)	MS15484
OxyCRG	5957480
Dual-lead ST-segment analysis	5594978
Scio® multigas connectivity (Gamma XL only)	MS13205
VF6 Plus (for SpO ₂ pod)*	MS17038
Wireless network support**	7487197

* Included with new monitor orders

** Cisco wireless access points and PC LAN card
can be ordered from your local Dräger Medical representative.

Hardware Options

PC memory data card 2MB	4718248
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etCO₂ and Anesthesia Gas Monitoring

etCO ₂ pod	5740738
Scio Four modules: (order through)	6871810
Scio Four Oxi plus module	
Scio Four plus module	
Scio Four Oxi module	
Scio Four module	
Scio only supported on Gamma XL	

Recorder Options

R50 2-channel recorder	5952630
R50N 2-channel network recorder	5740068
Infinity Network laser printer (115 V)	6556513
Infinity Network laser printer (220 V)	6556539
When the R50 is ordered to be mounted with a Gamma or a Gamma XL, the required items include:	
Mount adapter, monitor and R50 bracket	4720145
R50 2-channel recorder	5952630
Interface plate (2 each)	3376493
Recorder cable 0.6m	4712993

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The quality management system at
Draeger Medical Systems, Inc. is
certified according to ISO 13485,
ISO 9001 and Annex II of Directive
93/42/EEC (Medical devices).

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