

Infinity® Gamma X XL Patient Monitor

The Infinity® Gamma X XL monitor is configured with a feature set that meets the needs of today's mid-acuity care environments, such as the Emergency Department, Operating Room, Post Anesthesia Care Unit, freestanding surgical center and community hospital Intensive Care Unit. Patented Pick and Go® technology enables the Gamma X XL to move with the patient – providing continuous surveillance, while eliminating the need to purchase separate transport monitors.

The Gamma X XL monitor provides seamless wired or wireless networking capabilities, which enables you to share and receive patient information for better informed decisions. To maximize your investment, the Gamma X XL monitor offers complete compatibility with the full range of Infinity products and expands via software upgrades.



TECHNICAL DATA

Features

- Provides monitoring versatility for mid-acuity care settings
- Doubles as a transport monitor
- Provides continuous monitoring and data collection

Monitoring Capabilities

Neonatal, pediatric and adult applications

ECG

Displays up to 12 leads (with Trust™)

Available leads labels

I, II, III, aVR, aVF, aVL, V, V+, (V, aVR, aVF, aVL only with 5- and 6-lead sets; V+ only with 6-lead set)
 TruST 12-lead reduced lead-set (6-wire):
 I, II, III, aVL, aVR, aVF, dV1, V2, dV3, dV4, V5 and dV6 (indicated for adults and pediatrics)¹

Measuring range

15 to 300 bpm

Accuracy

±2 bpm or ±1% (whichever is greater)

Frequency ranges

Filter off: 0.05 to 40 Hz display;
 0.05 to 125 Hz printer
 Monitoring filter: 0.5 to 40 Hz
 ESU filter: 0.5 to 16 Hz

¹ Optimum performance of TruST leads is based on a minimum 0.3mV amplitude and QRS duration <180 milliseconds on patients with a body surface area (BSA) of 1.5 - 2.5 m².

QRS Detection Range

Amplitude	0.5 to 5 mV
Duration	Adult and pediatric: 70 to 120 msec Neonatal: 40 to 120 msec
Alarms	User-selectable upper and lower limits
Pacer detection (adult/pediatric)	Leads: I, II or III Amplitude: ± 2 to ± 700 mV Width (d_p): 0.2 to 2.0 msec
Accessories	3-, 5- or 6-lead electrode set

ST (not intended for neonatal)

Available leads	Choice of any 3 available ECG leads
ST complex length	892 msec (-300 to +600 msec from fiducial point)
Sample rate	225 samples/sec
Frequency response	0.05 – 40 Hz

Isoelectric measurement point

Measuring range	Start of ECG complex to fiducial point
Default	QRS onset – 28 msec

ST measurement point

Adjustment range	Fiducial point to end of ECG complex
Point default	QRS offset +80 msec
Minimum number of normal beats	1 beat/updated interval
Update interval	15 sec
Averaging	Any valid beat in 15 sec
Resolution	± 0.1 mm
Trends	Graphical and tabular, as provided by monitor function
INOP Alarm	Yes
Upper and lower ST alarms	± 15 mm, ± 0.1 mm increments
Alarm delay	None, 15, 30, 45, 60 seconds

Respiration

Sensing leads	I, II (user-selectable)
Measuring method	Impedance pneumography
Auxiliary current	$\leq 10 \mu A$ for any active electrode
Detection threshold	0.2 Ω to 4.0 Ω in manual mode (user adjustment): 0.3 Ω to 1.5 Ω in auto mode (automatic adjustment)
Measuring range	0 to 155 breaths per min
Accuracy	± 1 breath/min or 2% of rate (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
Measuring range	SpO ₂ : 1 to 100% Pulse: 30 to 250 bpm

Accuracy	SpO ₂ : 0 to 69% not specified SpO ₂ : 70 to 100%: ±2% (except Masimo® LNOP-Ear which is ±3.5%, and Nellcor® DS100A which is ±3%) Saturation accuracy range increases by ±1 digit for neonates Pulse: ±3 bpm or ±3% (whichever is greater)
Alarms	User-selectable upper and lower limits for SpO ₂ and pulse rate Life-threatening desaturation alarm in neonatal mode only
Accessories	Dräger Medical-approved Masimo and Nellcor sensors

Second Pulse Oximetry (SpO₂)

Displayed parameters	Saturation, Pulse, Delta (Δ)
Measuring method	Absorption-spectrophotometry
Measuring range	SpO ₂ : 1 to 100% Pulse: 30 to 250 bpm
Accuracy	Refer to MicroO ₂ +® Telemetry Pulse Oximetry datasheet
Alarms	ΔSpO ₂ % upper alarm limit only Default: adult/pediatric 20%, neonatal 10% ΔSpO ₂ range: 1 to 100%, 1% resolution

Temperature

Displayed parameters	Absolute and delta temperatures
Measuring range	Absolute: -5° C to 50° C Delta: 0° C to 55° C
Accuracy	Absolute: ±0.1° C Delta: ±0.2° C
Alarms	User-selectable upper and lower limits for absolute and delta values
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); Interval and Continuous (5 minutes)

Interval times 1, 2, 2.5, 3, 5, 10, 15, 20, 25, 30, 45, 60, 120 and 240 minutes

Measuring range (default)

Adult (270 mmHg)	Heart rate: 30 to 240 bpm Systolic: 30 to 250 mmHg Mean: 20 to 230 mmHg Diastolic: 10 to 210 mmHg
Pediatric (180 mmHg)	Heart rate: 30 to 240 bpm Systolic: 30 to 170 mmHg Mean: 20 to 150 mmHg Diastolic: 10 to 130 mmHg
Neonatal (140 mmHg)	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	Adult (270): 160 mmHg \pm 10 mmHg Pediatric (180): 120 mmHg \pm 10 mmHg Neonatal (140): 110 mmHg \pm 10 mmHg
Inflation pressure after a valid measurement	Adult (270): Systolic +25mmHg \pm 10 mmHg Pediatric (180): Systolic +25 mmHg \pm 10 mmHg Neonatal (140): Systolic +30 mmHg \pm 10 mmHg
Maximum inflation pressure	Adult (270): 265 mmHg \pm 5 mmHg Pediatric (180): 180 mmHg \pm 10 mmHg Neonatal (140): 142 mmHg \pm 10 mmHg
Minimum inflation pressure	Adult (270): 110 mmHg \pm 10 mmHg Pediatric (180): 90 mmHg \pm 10 mmHg Neonatal (140): 70 mmHg \pm 10 mmHg
Connector	Quick-release connector with single airway

Invasive Blood Pressure

Displays up to 4 pressures	2 IBP with Y-cable 4 IBP with HemoMed™ pod (optional)
Measuring method	Resistive strain gauge transducer
Display resolution	1 mmHg
Measuring range	-50 to 400 mmHg
Frequency ranges	DC to 8 Hz, DC to 16 Hz, and DC to 32 Hz (user-selectable)
Zero balance	\pm 200 mmHg
Transducer specifications	Dräger Medical-approved transducers with a resistance of 200 Ω to 3000 Ω and an equivalent pressure sensitivity of 5 μ V/V/mmHg \pm 10%
Accuracy	\pm 1 mmHg or \pm 3%, exclusive of transducer (whichever is greater)
IBP alarms	User-selectable upper and lower limits for systolic, mean and diastolic pressures
Accessories	Dräger Medical-approved pressure transducers

Display Specifications

Type	Thin Film Transistor-Liquid Crystal Display Active Matrix (TFT-LCD)
Size	264 mm (10.4 in.) diagonal
Channels	5 channels standard, 6 channels optional
Viewing area	211 x 158 mm (8.3 x 6.2 in.)
Resolution	640 x 480 pixels

User Interface

Rotary knob	Easy-to-use menu structure and fixed keys
Three alarm levels	Life-threatening, Serious and Advisory

Connections

MultiMed® pod, Masimo SET® SmartPod®, HemoMed pod (for up to 4 IBP only), NBP-input, etCO₂ module, Infinity Docking Station, analog output, QRS sync output, RS 232, remote keypad, and Scio® Four modules

Analog Output

Signals	ECG, arterial blood pressure
Delay	≤ 25 msec

Physical Specifications

Cooling	Convection
Size (H x W x D)	253 x 365 x 190 mm (10.0 x 14.4 x 7.5 in.)
Weight	5.8 kg (12.7 lbs.)
(with battery)	6.4 kg (14.0 lbs.)

Information Management Capabilities

Data storage	24 hours of trended parameter information
Data resolution	30-second sampling
Trend tables	1-, 5-, 15-, 30- or 60-minute display formats
Trend graphs	1-, 2-, 4-, 8-, 12- or 24-hour display formats

Electrical Specifications

Power requirements	100 to 240V AC, 2A @ 100V AC, 1A @ 240V AC (max, fully loaded)
Frequency	50/60 Hz (nominal)
Input voltage	11 to 15V DC
Power consumption	<70 watts (fully loaded)
Patient leakage current	<10 μ A
Protection class	Internally powered (per IEC 60601-1)

Battery Specifications

Internal battery	Battery type: lithium-ion Battery capacity: 180 minutes Charging time: 6.5 hours at 25° C
External auxiliary battery	Battery type: sealed lead-acid Battery capacity: 50 minutes Charging time: 3.5 hours at 25° C
Size (external auxiliary battery) (H X W X D)	62 x 182 x 24 mm (2.4 x 7.2 x .9 in.)
Weight	0.635 kg (1.4 lbs.)

Battery life is specified for new batteries with monitor running under the following conditions: ECG, SpO₂, four invasive blood pressures, two temperature probes, NBP measurement every 15 minutes connected, display at 50% brightness.

Battery life may diminish after extended use.

Environmental Requirements

Temperature range	Operating: 10° C to 40° C Storage: -20° C to 50° C
Relative humidity	Operating: 20% to 90%, non-condensing Storage: 10% to 95% (with packaging)
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 X XL monitor complies with Medical Devices Directive (MDD) 93/42 EEC and bears the CE mark.

Ordering Information

Infinity Gamma X XL 8419290, MU20538, 8606290
Patient Monitor

Note: Infinity Docking Station power supply, power cable, MultiMed, and all patient connection and intermediate cables must be ordered separately.

Standard with each monitor, basic arrhythmia includes:
asystole, ventricular fibrillation, ventricular tachycardia and artifact.

Arrhythmia II option augments basic arrhythmia monitoring to include:
ventricular run, accelerated idioventricular rhythm, supra-ventricular tachycardia, couplet, bigeminy, tachycardia, bradycardia, pause, artifact, and also supports PVC/min parameter output.

Note: Bradycardia is available as a low heart rate alarm for neonates.

Infinity Docking Stations (IDS)

Docking Station 5206110

Provides mechanical mounting as well as interfaces for the monitor's electrical, network, video, recorder, and RS 232 data export and serial communications.

Mounting Docking Station 4715319

For use in standalone configurations

Docking Station/Monitor Power Supply MS18284

Note: Powers monitor directly or via Infinity Docking Station

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-parameter pods to monitor
3-, 5- or 6-lead ECG, impedance respiration,
two temperatures (with Y-cable) and SpO₂.

MultiMed 6 5191221

Multi-parameter pods to monitor
3-, 5- or 6-lead ECG, impedance respiration,
two temperatures (with Y-cable) and SpO₂.

NeoMed 5590539

The NeoMed pod supports monitoring
of 3-lead ECG, impedance respiration,
two temperatures, SpO₂ and FiO₂.

SpO₂ Pod

Masimo SET SpO₂ SmartPod Kit MS16901

(see individual datasheet for details)

Software Options

Gamma X XL 6th waveform channel	5597914
Gamma X XL dual IBP (2-channel IBP)	MS15061
Gamma X XL Arrhythmia II	4322967
Gamma X XL 3-lead ST	5201988
Gamma X XL ARIES (includes 12-lead ST Analysis and non-diagnostic 12-lead reports)	5597328
Gamma X XL wireless networking	7498087
Physiological Calculations option	5201996
VF6 Plus (for SpO ₂ SmartPod) (included with new monitor orders)	MS17033

Wireless LAN PC card and access point installation are required for wireless monitoring and must be ordered through your local Dräger Medical sales representative.

TruST 12-lead reduced lead-set ECG algorithm provides 12-lead monitoring using a standard 6-wire lead-set and standard lead placement for limb leads, V2 and V5.

ARIES software option enhances TruST 12-lead monitoring with the addition of 12-lead ST Analysis.

Optional Modules and Hardware Accessories

Note: Refer to individual datasheets for details concerning connection cables, adapters, transducers and mounting accessories

Hemodynamic accessories

2 IBP Y-adapter, 10-pin	5731281
2 IBP Y-adapter, 7-pin	5592147
HemoMed Provides management of up to 4 invasive blood pressures; not supporting cardiac output	5588822

etCO₂ and anesthesia gas monitoring

etCO ₂ module	4319310
Scio Four modules: (order through)	6871810
Scio Four Oxi plus module	
Scio Four plus module	
Scio Four Oxi module	
Scio Four module	

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 ordering recorder for mounting with a Gamma X XL monitor, the following items are required:	
Monitor mount and R50 recorder	4720145
Interface plate (2 each)	3376493
Recorder cable 0.6 m	4712993

Other Accessories

Remote keypad	5203042
Auxiliary battery	5592097
Auxiliary battery charging station (charges up to four batteries simultaneously)	5597377

Europe, Middle East, Africa,
Latin America, Asia, Pacific:

Dräger Medical AG & Co. KG

Moislinger Allee 53-55

23542 Lübeck

GERMANY

Tel: +49-1805-3 72 34 37

+49-451-882-822

Fax: +49-451-882-37 79

E-mail: Business.Support@draeger.com

USA:

Draeger Medical, Inc.

3135 Quarry Road

Telford, PA 18969

USA

Tel: +1-215-721-5400

Toll-free: +1-800-437-2437

Fax: +1-215-723-5935

E-mail: info@draegermed.com

Canada:

Draeger Medical Canada, Inc.

120 East Beaver Creek Road Suite 104

Richmond Hill Ontario L4B 4V1

CANADA

Tel: +1-905-763-3702

Toll-free: +1-866-343-2273

Fax: +1-905-763-1890

E-mail: Canada.Support@draeger.com

www.draeger.com

Manufacturer:

Draeger Medical Systems, Inc.

Telford, PA 18969 USA

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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