DPM5 is a robust patient monitor, small enough to move around, yet flexible enough to adapt to your particular needs. With a variety of purchasable options including arrhythmia and ST analysis, ETCO\(_2\) measurement and multi-gas analysis, DPM5 is configurable to your liking. Pay for only the advanced features that you need and nothing more. Quick-action keys on the front panel make this device especially easy to learn, which means a shorter learning curve for new or changing staff. Rich in function, conveniently adaptable and pleasingly affordable, DPM5 may be just the monitor for your department.

### Summary of Features and Benefits

- 12.1" TFT display, configurable up to 8 waveforms, enables maximum data analysis of your most critical parameters
- Standard features include 3/5-lead ECG, non-invasive blood pressure, \(\text{SpO}_2\), pulse rate, respiration, dual-channel invasive blood pressure, dual-channel temperature, lithium ion battery, and integrated recorder
- Optional features include Masimo SET\textsuperscript{®} or DPM \(\text{SpO}_2\), arrhythmia and ST analysis, DPM \(\text{CO}_2\), and Multi-gas analysis module
- 96-hours of graphic and list trends, NIBP list including 800 measurements, and alarm event recall for 70 alarm episodes for comprehensive historical review of all parameters
- 40-seconds of full disclosure waveform recall for detailed review of physiological events
- Multi-gas analysis module utilizes a sidestream method to measure the concentration of 5 anesthetic agents, ETCO\(_2\), \(\text{N}_2\text{O}\) and \(\text{O}_2\). It also provides automatic agent identification.
- Compact flash back-up, included on every device, protects your patient’s data should a sudden loss of power occur
- Built-in, 3-trace recorder for printing real-time and historical data
Review your patient’s most recent blood pressure measurements using the NIBP recall function, accessible using the Menu quick-action key. At the touch of a button, obtain a dedicated printout of your patient’s NIBP measurements.

With the multi-gas analysis module, perform 5-agent measurement, along with ETCO₂, N₂O and O₂, easily and reliably.

Select Large Numerics Mode for optimal visualization of your most important data. This display mode features bright, sizable numerics visible from across the bed or across the room.

Choose from a series of mounting schemes to create your ideal monitoring environment.
Display
Type: 12.1" color TFT
Resolution: 800 x 600 pixels
Waveforms: 8 selectable

ECG (3 and 5-Lead)
Leads: I, II, III, aVR, aVL, aVF, V
Gain Selection: x0.125, x0.25, x0.5, x1, x2, auto
Sweep Speed: 12.5mm/sec, 25mm/sec, 50mm/sec
Gain Selection: x0.125, x0.25, x0.5, x1, x2, auto
Sweep Speed: 12.5mm/sec, 25mm/sec, 50mm/sec
Gain Selection: x0.125, x0.25, x0.5, x1, x2, auto
Sweep Speed: 12.5mm/sec, 25mm/sec, 50mm/sec

Defibrillator Overload
Protection: Withstand 4000 VAC/50Hz voltage in isolation against electrosurgical interference and defibrillation
Recovery Time: <5sec
CMRR:
Diagnosis Mode: ≥90dB
Monitor Mode: ≥105dB
Surgical Mode: ≥105dB (Notch filter set to off)

Heart Rate Meter
Measurement Range: Adult: 15-300bpm
Pediatric/Neonate: 15–350bpm
Accuracy: ±1bpm or ±1%, whichever is greater
Resolution: 1bpm

Pacer Rejection:
When tested in accordance with ANSI/AAMI EC13-1992 Section 4.1.4, the 3/5 Lead ECG derived heart rate meter shall reject all pacer pulses ±2.0mV to ±700mV and duration 0.1ms to 2ms with no tail

Tall T-Wave Rejection:
When tested in accordance with the ANSI/AAMI EC13-2002 Section 4.1.2.1 c, the heart rate meter will reject all T-waves with amplitudes less than 1.2mV, 100ms QRS, a T-wave duration of 180ms and a Q-T interval of 350ms

Scaling Signal: 1mV ±5%

Pace Pulse
Pulse Indicator:
Pace pulses meeting the following conditions are marked by the PACE indicator
Amplitude: ±4 to ±700mV (3/5-lead)
Width: 0.1 to 2ms
Rise time: 10 to 100μs

Pulse Rejection:
When tested in accordance with the ANSI/AAMI EC13-2002: Sections 4.1.4.1 and 4.1.4.3, the heart rate meter rejects all pulses meeting the following conditions
Amplitude: ±2 to ±700mV
Width: 0.1 to 2ms
Rise time: 10 to 100μs
Minimum input slew rate: 20V/s RTI

ST Analysis
Adult/Pediatric Only
Measurement Range: -2.0mV to 2.0mV
Accuracy: -0.8mV to 0.8mV: ±0.02mV or ±10%, whichever is greater
ST Adjust Scale: 60ms after J point; 80ms after J point (default: 60ms after J point)
ISO Adjust Scale: 4 to 200ms before R-Wave (default: 80ms)
Step: 4ms
J Point Adjust Scale: 4 to 200ms after R-Wave (default: 48ms)

Arrhythmia Analysis
Adult/Pediatric Only
Asystole, ventricular fibrillation, ventricular tachycardia, pacer non-paced, pacer non-capture, ventricular rhythm, couplet, VT>2, bigeminy, trigeminy, R on T PVC, multiform PVC, irregular rhythm, missed beats, bradycardia, tachycardia

Respiration
Range: Adult: 0-120bpm
Pediatric/Neonate: 0-150bpm
Resolution: 1bpm
Accuracy: 7-150bpm: ±2bpm or ±2%, whichever is greater
0-6bpm: undefined
Lead: I or II (default: lead II)
Sweep Speed: 6.25mm/sec, 12.5mm/sec, 25mm/sec

Non-Invasive Blood Pressure
Measurement Method: Oscillometric
Measurement Modes: Manual, auto, continuous
Connector Type: Rectus
Units of Measure: mmHg, kPa (user-selectable)
Resolution: 1mmHg
Systolic Range: Adult: 40-270mmHg
Pediatric: 40-200mmHg
Neonate: 40-135mmHg
Diastolic Range: Adult: 10-210mmHg
Pediatric: 10-150mmHg
Neonate: 10-100mmHg
Mean Range: Adult: 20-230mmHg
Pediatric: 10-150mmHg
Neonate: 10-100mmHg
Accuracy:
Mean error: <±5mmHg
Standard deviation: <8mmHg
Cuff Deflation Technique: Step bleed
Cuff Inflation:
Volume of 500cc to 300mmHg in <20sec
Over Pressure Protection: Double safety protection (hardware and software)
Pulse Rate Range: 40-240bpm
Pulse Rate Accuracy: ±3bpm or ±3%, whichever is greater
**Invasive Blood Pressure**

- **Measurement Range:** -50 to 300 mmHg
- **Resolution:** 1 mmHg
- **Accuracy:** 1 mmHg or ±2%, whichever is greater
- **Zero Offset Range:** ±200 mmHg
- **Excitation:** 5 VDC, ±2%
- **Frequency Response:** DC to 12.5 Hz ±1 Hz, -3 dB
- **Waveform Scales:**
  - ART: 0 to 300 mmHg
  - PA: -6 to 120 mmHg
  - CVP: -10 to 40 mmHg
  - RAP: -10 to 40 mmHg
  - LAP: -10 to 40 mmHg
  - ICP: -10 to 40 mmHg
  - IBP1/IBP2: -50 to 300 mmHg

- **Pulse Rate from Invasive Blood Pressure**
  - **Measurement Range:** 25-350 bpm
  - **Resolution:** 1 bpm
  - **Accuracy:** ±1 bpm or ±1%, whichever is greater

**Pulse Oximetry**

**With Masimo SET® SpO2**

- **Measurement Range:** 1-100%
- **Resolution:** 1%
- **Accuracy:** ±2% (70-100%, Adult/Pediatric, no motion)
  ±3% (70-100%, Neonate, no motion)
  ±3% (70-100%, Adult/Pediatric/Neonate, motion)
  0-69% unspecified

**With Mindray™ SpO2**

- **Measurement Range:** 0-100%
- **Resolution:** 1%
- **Accuracy:** ±2% (70-100%, Adult/Pediatric, no motion)
  ±3% (70-100%, Neonate, no motion)
  ±3% (70-100%, Adult/Pediatric/Neonate, motion)
  0-69% unspecified

**Temperature**

- **Scale:** Selectable °C or °F
- **Channels:** 2
- **Measurement Range:** 0°C to 50°C (32°F to 122°F)
- **Resolution:** 0.1°C
- **Accuracy:** ±0.1°C (excluding sensor)
  ±0.2°C (including YSI 400 series sensor)
- **Measurement Time:**
  - Body surface: <100 sec (using YSI 400 series sensor)
  - Body cavity: <80 sec (using YSI 400 series sensor)

**CO₂ with Mindray Sidestream**

- **Measurement Range:** 0-99 mmHg
- **Resolution:** 1 mmHg
- **Accuracy:** 0-38 mmHg: ±2 mmHg
  39-99 mmHg: ±5% + 0.08% × (reading - 38 mmHg)
- **CO₂ Waveform Recognition:**
  - 0-38 mmHg: ±2 mmHg
  - 39-99 mmHg: ±5% of reading + 0.08% for every 1 mmHg
- **Start-up Time:** <1 min from start-up, module enters warming-up status. 1 min later, module enters ready-to-measure status (full accuracy mode).
- **Sampling Rate:** 70 ml/min or 100 ml/min (default: 100 ml/min)
- **Auto-Zeroing Interval:**
  - At start-up, and every 12 hours thereafter

**CO₂ with Oridion® Microstream®**

- **Measurement Range:** 0-99 mmHg
- **Resolution:** Numeric: 1 mmHg
  Waveform: 0.1 mmHg
- **Accuracy:** 0-38 mmHg: ±2 mmHg
  39-99 mmHg: ±5% + 0.08% × (reading - 38 mmHg)
- **CO₂ Waveform Recognition:** 0-38 mmHg: ±2 mmHg
  39-99 mmHg: ±5% of reading + 0.08% for every 1 mmHg
- **Start-up Time:** 30 sec typical. Reaches 5% steady-state accuracy within 3 min
- **Sampling Rate:** 50 ml/min - 7.5 ml/min + 15 ml/min
- **Auto-Zeroing Interval:** At start-up, and every 12 hours thereafter

**Respiration**

**With Masimo SET® SpO2**

- **Measurement Range:** 25-240 bpm
- **Resolution:** 1 bpm
- **Accuracy:** ±3 bpm (no motion)
  ±5 bpm (motion)

**With Mindray™ SpO2**

- **Measurement Range:** 20-254 bpm
- **Resolution:** 1 bpm
- **Accuracy:** ±3 bpm (no motion)
  ±5 bpm (motion)
Anesthesia Gases

**Sampling Rate:**
- Adult/pediatric: 120, 150, 200ml/min (user-selectable) (default: 120ml/min)
- Neonatal: 70, 90, 120ml/min (user-selectable) (default: 70ml/min)

**Sampling Delay Time:** <4sec
**Refresh Rate:** 1sec
**Warm-up Time:**
- 45sec to warm-up status
- 10min to ready-to-measure status

**Normal Operating Conditions After Warm-up:**
- Ambient Temperature: 10°C to 55°C (50°F to 131°F)
- Ambient Pressure: 700–1200hPa
- Ambient Humidity: 10–95% RH, non-condensing

**Measurement Range:**
- CO₂: 0-30%
- N₂O: 0-100%
- Des: 0-30%
- Sev: 0-30%
- Enf/Iso/Hal: 0-30%
- O₂: 0-100%
- AwRR: 2-100bpm

**Resolution:**
- CO₂: 1mmHg, AwRR: 1bpm

**Accuracy:**
- CO₂:
  - 0-1%: ± 1%
  - 1-5%: ± 2%
  - 5-7%: ± 3%
  - 7-10%: ± 5%
  - >10%: unspecified
- N₂O:
  - 0-20%: ± 2%
  - 20-100%: ± 3%
- Des:
  - 0-1%: ± 15%
  - 1-5%: ± 2%
  - 5-10%: ± 4%
  - 10-15%: ± 6%
  - 15-18%: ± 1%
  - >18%: unspecified
- Sev:
  - 0-1%: ± 15%
  - 1-5%: ± 2%
  - 5-8%: ± 4%
  - >8%: unspecified
- Enf/Iso/Hal:
  - 0-1%: ± 15%
  - 1-5%: ± 2%
  - >5%: unspecified
- O₂:
  - 0-25%: ± 1%
  - 25-80%: ± 2%
  - 80-100%: ± 3%
- AwRR:
  - 2-60bpm: ± 1bpm
  - >60bpm: unspecified

Anesthesia Gases (continued)

**Measurement Rise Time:**
- Sampling flow 120ml/min, using the DRYLINE™ water trap and neonatal DRYLINE™ 2.5m sampling line:
  - CO₂: 250ms
  - N₂O: 250ms
  - O₂: 600ms
  - Hal/Iso/Sev/Des: 300ms
- Enf: 350ms
- Sampling flow 200ml/min, using the DRYLINE™ water trap and adult DRYLINE™ 2.5m sampling line:
  - CO₂: 250ms
  - N₂O: 250ms
  - O₂: 500ms
  - Hal/Iso/Sev/Des: 300ms
- Enf: 350ms

**Data Storage**

- Trend Data: 96hrs at selectable resolutions: 1min, 5min, 10min
- 1hr at selectable resolutions: 1sec, 5sec

**Alarm Events:**
- 70 alarm events and associated waveforms
  - (selectable waveform lengths: 8sec, 16sec or 32sec)

**NIBP Measurements:**
- 800 (systolic, diastolic, mean pressure and measurement time)

**Recorder**

- **Type:** Thermal array
- **Speed:** 25mm/sec, 50mm/sec
- **# Traces:** 3

**Battery**

- **Type:** Rechargeable lithium ion
- **Number of Batteries:** 2
- **Run Time:** 5hrs using a new, fully charged battery and monitoring ECG, SpO₂ and NIBP measurements every 15min at 25°C
- **Recharge Time:** 6.5hrs

**Interfacing**

- **Connectors:**
  - 1 AC power connector
  - 1 RJ45 network connector
  - 100 BASE-TX
  - 1 VGA connector
  - 15-PIN D-sub
  - 1 BNC connector
  - 1 equipotential grounding connector
DPM™ Series

Physical Dimensions

Monitor Size: 27cm(H) x 31.8cm(W) x 13.7cm(D)
10.6"(H) x 12.5"(W) x 5.4"(D)

Monitor Weight: Less than 4.7kg (10.4lbs) standard configuration
(ECG, Resp, SpO₂, 2-Temperature, NIBP with
1 lithium ion battery)

Environmental

Operating Temperature: 0°C to 40°C
5°C to 35°C (Sidestream CO₂ module)
5°C to 35°C (Microstream CO₂ module)
10°C to 35°C (AG module)

Storage Temperature: -20°C to 60°C

Operating Humidity: 15% to 95%, non-condensing

Storage Humidity: 10% to 95%, non-condensing

Operating Altitude: -500 to 4600m (-1640 to 15092 ft)
-305 to 3014m (-1000 to 9889 ft)
(Masimo SpO₂/CO₂ modules/AG modules)

Storage/Transportation Altitude: -500 to 13100m (-1640 to 42979ft)
-305 to 6096m (-1000 to 20000ft)
(Masimo SpO₂/CO₂ modules/AG modules)

Power Requirements

AC Voltage: 100–240VAC, 50/60Hz

Power: 110VA

Safety

Type of Protection: Class I with internal electric power supply

Degree of Protection: Sidestream/Microstream CO₂ modules: BF
ECG/Resp/Temp/SpO₂/NIBP/IBP module: CF

Protection Against Ingress of Fluids: Not protected