



MM15

Multi-Parameter Patient Monitor



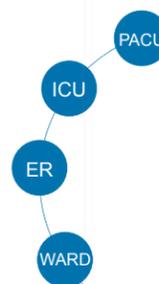
MM15

Multi-Parameter Patient Monitor



Features:

- M10 Transport Monitor/XM Module
Standard: 3/5-lead ECG, NIBP, SpO2, 2-TEMP
Optional: Nellcor OxiMax™ SpO2 (iM20 only), 12-lead ECG, 2-IBP
- V-SpO2 Module (Nellcor OxiMax™ SpO2)
- V-NIBP Module (Omron® NIBP)
- V-IBP Module (Maximum 8-IBP)
- V-C.O. Module (Thermal Dilution Cardiac Output)
- V-ICG Module (Impedance Cardiography)
- V-CO2 Module (Respironics Mainstream/Sidestream, G2 Sidestream)
- V-RM Module (Respiration Mechanics)
- V-AG Module (Masimo Mainstream/Sidestream)
- V-BIS Module (Bispectral Index)



Anesthesia Monitoring

The latest respiratory gas and brain activity monitoring technology backs you up with the most reliable performance during surgeries.



Respiratory Monitoring

The industry-leading CO2 & RM monitoring technology provides the most flexible and accurate solutions for both the intubated and non-intubated patients.



Cardiac Monitoring

Mediblu's unique iSEAP™/SEMIP ECG algorithm, together with the application of ICG technology, brings flexible choices and reliable measurements on even the extreme cardiac cases.



Intensive/Emergency Cares

The modular design and the expanded parameter configurations extend possibilities in ICU/ER monitoring on a case-to-case basis.



Technical Specifications

Physical Specification

Size: 333 mm (L) x 211 mm (W) x 289 mm (H)
Weight: <6.2 kg

Display

12.1" Full Touch-screen Color TFT

Resolution: 1280x1024 dpi

Environment Requirement

Ambient Temperature: -20°C - 55°C(-4 -131°F)

Humidity: 15%-95% non-condensing

Power Supply

External Power Supply: 100-240V AC, 50/60HZ

Internal Battery Power Supply: Rechargeable Li-ion 4200 mAh 14.8 V DC 2100 mAh (optional)

RESP

Method: Trans-thoracic impedance

Operation mode: Auto/ Manual

RR Measurement range: Adult: 0~120 rPM

Neonate/Pediatric: 0~150 rPM

Resolution: 1rPM

Apnea alarm threshold: 10s, 15s, 20s (default), 25s, 30s, 35s, 40s

Alarm: 3 levels of audible and visual alarm, alarm events recallable

Band width: 0.2-2.5Hz (-3dB)

Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

ECG

Lead type: 5-lead and 3-lead selectable, 12-lead optional

3 leadwire cable: RA; LA; LL or R; L; F

5 leadwire cable: RA; LA; RL; LL; V or R; L; N; F; C

12-lead: (including 3/5-lead) optional

10 leadwire cable: RA; LA; RL; LL; V1-V6 or R; L; N; F; C1-C6

3-lead: I; II; III;

I; II; III; aVR; aVL; aVF; V

I; II; III; aVR; aVL; aVF; V1-V6

Gain selection: x0.125;x0.25; x0.5; x1; x2; x4; auto

Sweep speed: 6.25mm/s, 12.5mm/s, 25mm/s, 50mm/s

ECG HR Range: Adult: 15-300bpm

Pediatric / Neonate: 15-350bpm

Resolution & accuracy: ±1bpm or ±1%, whichever is greater

Filter Diagnostic mode: 0.05-100Hz or 0.05-150Hz (optional 12-lead)

Filter Monitoring mode: 0.5-40 Hz

Surgical mode: 1-20Hz

Protection: Withstand 5000VAC/50Hz voltage in isolation against Defibrillation and electrosurgical interference

ST-Segment Detection:

Measurement range: -2.0 mV~2.0mV

Alarm range: -2.0 mV~2.0mV

ST-Segment Arrhythmia analysis and categorization: Yes

Alarm: 3 levels of audible and visual alarm, alarm events recallable

12 lead ECG analysis 208 Reference Diagnostic Results

Pace maker detection: Yes, and 5 types abnormal status detectable Arrhythmia verification compliant with AHA and MIT-BIH databases

IEC 60601-2-25 / EN 60601-2-25 / AAMI EC 11 / EC 13

IEC 60601-2-27 / EN 60601-2-27

NIBP

Method: Automatic Oscillometric
Operation modes: Manual/Automatic/Continuous
Auto measurement time interval: Adjustable 1/2/3/4/5/10/15/30/60/90/120/240/480 Minutes

Measurement unit: mmHg/kPa selectable

Measurement types: Systolic, Diastolic, Mean

Pressure range for Adults: Systolic: 40 - 270 mmHg

Diastolic: 10 - 215 mmHg

Mean: 20 - 235 mmHg

Pressure range for Pediatrics: Systolic: 40 - 200 mmHg

Diastolic: 10 - 150 mmHg

Mean: 20 - 165 mmHg

Pressure range for Neonates: Systolic: 40 - 135 mmHg

Diastolic: 10 - 100 mmHg

Mean: 20 - 110 mmHg

Leak test and pressure auto calibration: Yes

Over-pressure protection: Dual Safety protection

Resolution: 1mmHg

Accuracy: Max mean error ±5mmHg

Max standard deviation: ±8 mmHg

Alarm: Systolic, Diastolic, Mean

PR from NIBP: Measurement 40~240 bpm

Resolution: 1 bpm

Accuracy: 3bpm or 3% whichever is greater

Leak test and pressure auto calibration: Yes

IEC 60601-2-30 / EN 60601-2-30 /

EN 1060-1 / EN 1060-3 / EN 1060-4 SP10:2002

NIBP (By Omron M3600)

Measurement Ranges

Adult/Pediatric: Pulse Rate: 40 - 200bpm

Systolic Pressure: 60 - 250mmHg

Diastolic Pressure: 40 - 200mmHg

Mean Arterial Pressure: 45 - 235mmHg

Pulse Rate: 40 - 240bpm

Pressure: 40 - 120mmHg

Diastolic Pressure: 20 - 90mmHg

Mean Arterial Pressure: 30 - 100mmHg

Measurement Accuracy: Pulse Rate: ±2bpm or 2% of reading

whichever is greater

Blood Pressure: Complies with ANSI/

AAMI SP10:2002

Modes of Measurement: Manual, Long-term automatic, Short-term automatic, Smart Inflation, Smart measurement, High speed

Pressure Transducers: Two independent solid-state

Deflation Methods: Dynamic Linear Deflation rate specific to pulse rate

Technical Specifications (cont.)

SpO2

Measurement & Alarm Range: 0 - 100%
Resolution: 1%;
Accuracy: $\pm 2\%$ (70-100%, Adult/Pediatric);
 $\pm 3\%$ (70-100%, Neonate)
PR Measurement and Alarm Range: 30 - 300bpm
Resolution: 1bpm
Accuracy: 3bpm Refresh 1s

ISO 9919

SpO2 (By Nellcor OxiMax™)

Measurement & Alarm Range: 0 - 100%
Resolution: 1%;
Accuracy: $\pm 2-3\%$ (70-100%, Adult/Pediatric);
 $\pm 3-3.5\%$ (70-100%, Neonate)
PR Measurement and Alarm Range: 20 - 300bpm
Resolution: 1bpm
Accuracy: 3bpm (depends on probe)

Temperature (2 Channels, 1 probe by default)

Measurement range: 0~50°C (32-122°F)
Resolution: 0.1°C
Accuracy: $\pm 0.1^\circ\text{C}$ (without probe)
Channel: Dual-channel. Provide T1; T2; ΔT
IEC 12470-4

IBP (Multi-channel extendable)

Measured Pressure: ART, PA, CVP, RAP, LAP, ICP, P1, P2
Measurement range: -50 - 300 mmHg;
Resolution: 1 mmHg
Accuracy: $\pm 2\%$ or $\pm 1\text{mmHg}$, whichever is greater
(without probe)
Sensitivity: $5\mu\text{V}/\text{mmHg}$;
Impedance range: 300-3000 Ω
IEC 60601-2-34

CO2 (Mainstream / Sidestream)

By Philips Respronic CAPNOSTAT 5 & LoFlo Technology
Range: 0~ 150mmHg
Accuracy: $\pm 2\%$ 0 ~ 40mmHg,
 $\pm 5\%$ 41~70mmHg
 $\pm 8\%$ 71~100mmHg
 $\pm 10\%$ 101~150 mmHg
AwRR Accuracy: $\pm 1\text{rpm}$

Convenient design for intubated and non-intubated applications
Possible to work at low sample flow rate: 50ml / minute
Detailed specification refer to the user manual of Respronic
ISO 21647

Mediblu

Mediblu offers quality products.
We provide integrated solutions
for all your medical needs.

Cardiac Output

Method: Thermodilution Technology
Measuring range: CO: 0.1 ~ 20L/min
TB: 23°C ~ 43°C
TI: - 1°C ~ 27°C
Alarm range 23°C ~ 43°C

Anesthetic GAS/O2

Technology Infra-red absorption characteristic
Paramagnetic Oxygen: Optional
Gas: CO2, O2, N2O, Des, Iso, Enf, Hal, Sev
Warm-up time: (IRMA AX+) Iso accuracy mode: 45s
Full accuracy mode: 60s
(ISA OR+ / AX+) <20s
Sample flow rate (for ISA OR+ / AX+) 50 \pm 10 ml/min
Measuring range: CO2: 0 ~ 15%
N2O: 0 ~ 100%
Hal/Iso/Enf: 0 ~ 8% Sev: 0~10%
Des: 0 ~ 22%
O2: 0 ~ 100%(ISA OR+/AX+)
Respiratory Rate: 0-150bpm \pm 1bpm
MAC Value displayed

ISO 21647

Thermal Recorder

Built-in, direct thermal pixel array recorder
2 channels printing and 1,2 channels selectable
Up to 3 channels printing and 1,2,3 channels selectable (to be released)
Print speed: 25mm/s, 50mm/s (to be released)
Paper width: 50 mm

I/O Interface

8-USB Ports
SD Card Socket
RS-232 Serial Port
RJ-45 Ethernet Port. IEEE 802.3 DVI output
VGA output
Analog and Nurse Call output Defibrillation Synchronization Output
WLAN Access Point 802.11g 54Mbps (optional)

Wi-Fi

IEEE 802.11b/g/n
Frequency Band 2.4 GHz ISM band
Modulation OFDM with BPSK, QPSK, 16-QAM, and 64-QAM
802.11b with CCK and DSSS
Typical Transmit Power ($\pm 2\text{dBm}$) 17 dBm for 802.11b DSSS
17 dBm for 802.11b CCK
15 dBm for 802.11g/n OFDM