

uMED 20

Defibrillator / Monitor



Physical Specifications

Dimension	275 mm (w) x 205 mm (d) x 190 mm (h)
Weight	≤ 5.3 kg (basic config. with a battery and external paddles)

Environmental and Physical Requirements

Water resistance	IPX4 (without external power)
Solids resistance	IP4X
Temperature	Operating: 0 to 45 °C Storage: -30 to 70 °C
Humidity	Operating/storage: 15 to 95 % (non-condensing)
Altitude	Operating/storage: -381 m to +4575 m
Shock and vibration	Complies with requirements of 201.15.3.5.101.2, ISO80601-2-61
Bump	Meets the requirements of 6.3.4.2, EN1789 (Medical devices for use in road ambulances)
Free fall	Meets the requirements of 6.3.4.3, EN1789 (Height of fall: 0.75 m)
EMC	Meets IEC60601-1-2
Safety	Meets EN/IEC 60601-1

Display

Type	TFT Color LCD
Dimensions	7 inch
Resolution	800 × 480 pixels
Display waveforms	Max. 4 channels
Wave viewing time	Max. 16 s (ECG)

Power

AC Power	
Line voltage	100 to 240 V~ (±10%)
Current	1.8 to 0.8 A
Frequency	50/60 Hz (±3 Hz)
Battery	
Type	5600 mAh, rechargeable lithium ion battery pack
Number	1
Charge time	Less than 3 hours to 90% and less than 4 hours to 100% with equipment power off
Capacity (new, fully charged battery)	Monitoring mode: 6 hours, monitoring with 5-lead ECG, Resp, SpO2, NIBP measurements set at an interval of 15 minutes Defib mode: 300 times, 200 J discharge with three discharges per minute Pacing mode: 4.5 hours, 50 Ohm load impedance, pacing rate: 80 bpm, pacing output: 60 mA
Battery weight	0.46 kg

Recorder

Method	High-resolution thermal dot array
Waveforms	Max. 3 channels
Speed	6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Paper width	50 mm
Reports	Real time waveforms, Event Summary, Tabular Trends, Frozen Waveforms, Review, User test, and Configuration

Auto recording

Recorder can be configured to record marked events, charge, shock, alarm, auto test

Data Storage

Patient profiles	Max. 100 patients
Events	Standard: up to 500 events for one patient High capacity: up to 1000 events for one patient
Waveform storage	Standard: up to 10 hours of consecutive ECG waveform High capacity: up to 24 hours of consecutive ECG waveform
Tabular trends	Standard: 8 hours, resolution: 1 min High capacity: 72 hours, resolution: 1 min
Voice recording	Max. 180 min in total; max. 60 min for each patient
Data export	Data can be exported to PC through USB flash memory

Defibrillator

Waveform	Biphasic truncated exponential waveform, with impedance compensation
Energy accuracy	±2 J or 15 % of setting, whichever is greater, into 50 Ohm
Power on time	Less than 2 seconds with fast startup mode
Charge time	Less than 3 seconds to 200 J with a new, fully charged battery Less than 7 seconds to 360 J with a new, fully charged battery
ECG recovery time	Less than 2.5 seconds
Shock delivery	Via multifunction defib electrode pads, or paddles
Patient impedance	15 to 300 Ω (internal defibrillation)
Range	25 to 300 Ω (external defibrillation)
Manual Mode	
Output energy	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 50, 70, 100, 120, 150, 170, 200, 300, 360 J
Synchronous cardioversion	Energy transfer begins within 60 ms of the QRS peak Energy transfer begins within 25 ms of the external sync pulse
AED Mode	
Output energy	User configurable
AED shock series	Energy level: 100 to 360 J, configurable Shocks series: 1, 2, 3, configurable Default configuration meets AHA2020/ERC2021 Guidelines CPR mode with 1-channel ECG monitoring
Sensitivity and specificity	Meets IEC 60601-2-4, AAMI DF80 requirement and AHA recommendation

Noninvasive Pacing

Waveform	Monophasic square wave pulse
Pulse width	20 ms or 40 ms
Refractory period	200 to 300 ms (function of rate)
Pacing mode	Demand or fixed
Pacing rate	30 ppm to 210 ppm
Pacing output	0 mA to 200 mA or 5 mA, whichever is greater

4:1 pacing Pacing pulse frequency reduced by factor of 4 when activated 60 to 150 rpm: ± 2 rpm

ECG

Lead type 3 leads ECG, 5 leads ECG
Lead selection 3 leads ECG: I, II, III; 5 leads ECG: I, II, III, aVR, aVL, aVF, V
Heart rate display Adult: 15 to 300 bpm
 Pediatric: 15 to 350 bpm
 Neonate: 15 to 350 bpm
Resolution 1 bpm
Arrhythmia Yes
Alarms Yes
ECG size 2.5 mm/mV ($\times 0.25$), 5 mm/mV ($\times 0.5$), 10 mm/mV ($\times 1$), 20 mm/mV ($\times 2$), 40 mm/mV ($\times 4$), Auto
Sweep speed 6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s
Patient isolation (defibrillation proof) Type CF: ECG, RESP, SpO₂, NIBP
 Type BF: CO₂

Respiration

Method Trans-thoracic impedance
Range Adult: 0 to 200 rpm
 Pediatric, neonate: 0 to 200 rpm
Resolution 1 rpm

SpO₂ Pulse Oximetry

Range 0 to 100 %
Resolution 1 %
PR range 20 to 300 bpm

NIBP

Operating mode Manual, Auto, STAT
Static pressure range 0 to 300 mmHg
Displayed pressures Systolic, Diastolic, Mean
Cuff inflation pressure (default) Adult: 160 \pm 5 mmHg
 Pediatric: 140 \pm 5 mmHg
 Neonate: 90 \pm 5 mmHg

CO₂

Measurement range 0 to 150 mmHg
Resolution 1 mmHg
awRRR measurement range 0 to 150 rpm
awRRR accuracy 0<60 rpm: ± 1 rpm

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