BeneHeart D3

Defibrillator / Monitor

Physical Specifications

Dimension	288 mm (w) x 203 mm (d) x 275 mm (h)
Weight	
Main unit	4.7 kg
Battery package (each)	0.54 kg
External paddle set	0.86 kg

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	Meets the requirements of 21.102, ISO9919 (Shock and vibration for transport)
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. 3 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)
DC Power (through DC-AC Inverter)	
Input voltage	12 VDC
Power consumption	190 W
Battery	
Type	15.1 V, 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 indicator	5-segment led indicator for fast battery capacity evaluation
Capacity (new, fully charged battery)	Monitoring mode: 6 hours, monitoring with a 5-lead ECG, Resp, SpO_2, CO_2 and NIBP measurements set at an interval of 15 minutes. Wi-Fi is disabled Defib mode: 200 times, 360 J discharge at intervals of 1 minute without recording Pacing mode: 4.5 hours, 50 Ohm load impedance, pacing rate: 80 bpm, pacing output: 60 mA

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	Up to 1000 events for one patient
Waveform storage	Up to 24 hours of consecutive ECG waveform
Tabular trends	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 a new, fully charged battery
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 Range	25 to 300 Ω (external defibrillation)
Manual Mode	
Output energy	1, 2, 3, 4, 5, 6, 7, 8, 9, 10 , 15, 20, 30, 50, 70, 100, 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 2015 AHA Guidelines CPR mode with 1-channel ECG monitoring
Sensitivity and specificity	Meets AAMI DF-80

Noninvasive Pacing

Waveform	Monophasic square wave pulse
Pulse width	20 ms or 40 ms, ±5 %
Refractory period	200 to 300 ms, ±3 % (function of rate)

Pacing mode	Demand or fixed
Pacing rate	30 ppm to 210 ppm, ±1.5 %
Pacing output	0 mA to 200 mA, ±5 % or 5 mA, whichever is greater
4:1 pacing	Pacing pulse frequency reduced by factor of 4 when activated

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
Arrhymia	Yes
Alarms	Yes
ECG size	2.5 mm/mV (×0.25), 5 mm/mV (×0.5), 10 mm/mV (×1), 20 mm/mV (×2), 40 mm/mV (×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, SpO_2 , NIBP Type BF: CO_2

Respiration

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

SpO_2 Pulse Oximetry

Mindray SpO_2	
Range	0 to 100 %
Resolution	1 %
PR range	20 to 300 bpm
Nellcor SpO_2	
Range	1 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±5 mmHg Pediatric: 140±5 mmHg Neonate: 90 ± 5 mmHg

CO_2

Measurement range	0 to 150 mmHg
Resolution	1 mmHg
awRR measurement range	0 to 150 rpm
awRR accuracy	0<60 rpm: ±1 rpm 60 to 150 rpm: ±2 rpm

CPR Compression

Weight	Approximately 180 g (without battery)
Thickness	17.5 to 19 mm
Compression depth	Measurement range: 0 to 8 cm Accuracy: ±5 mm or 10 %, whichever is greater
Compression rate	Measurement range: 40 to 160 cpm (compressions per minute) Accuracy: ±2 cpm (compression per minute)
Interruption time	0 to 300 s
CPR filter	Yes

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