

# BeneHeart D30

## Defibrillator / Monitor



### Physical specifications

Dimensions	285 mm (W) x 170 mm (D) x 265 mm (H), without external blades
Weight	4.2 kg (main unit with battery)

### Environmental and physical requirements

Water resistance	IPX5
Resistance to solids	IP5X
Temperature	Operating temperature: -20 to 55 °C Storage: -40 to +75 °C
Humidity	Operation/storage: 5 to 95% (without condensation)
Altitude	Operation/storage: from -382 m at +4575 m
Discharge	It meets the requirements for medical devices. from 6.3.4.2, EN1789 (10.1.3, IEC60601-1-12)
Vibration	It meets the requirements for medical devices. from 6.3.4.2, EN1789 (10.1.3, IEC60601-1-12)
Blows	It meets the requirements of standard 6.3.4.2, EN1789
Free fall	1 fall on each surface (6 surfaces in total), at a height of 0.75 m
EMC	Complies with IEC60601-1-2 standard
Security	Complies with EN/IEC 60601-1 standard

### Screen

Guy	Color LCD capacitive touchscreen, protected by tempered glass
Dimensions	8 in.
Resolution	1024 x 768 pixels
Wave visualization	Max. 5 channels
Observation time wave	Max. 36 s (ECG)
Sweep speed	ECG/SPO2: 6.25, 12.5, 25, 50 mm/s RESP/CO2: 3, 6.25, 12.5, 25, 50 mm/s
Trace freezing	Yes
Screenshot	Yes
High contrast mode	Yes
Automatic brightness	Yes
Gesture control	Yes

### Feeding

#### AC Power Supply

Line voltage	100 to 240 V
Current	From 1.8 to 0.8 A
Frequency	50/60 Hz (±3 Hz)

#### DC power supply (with DC/AC inverter)

Input voltage	12 V
Output voltage	230 V
Output power	150 W

#### Battery

Guy	4500 mAh, lithium-ion battery block rechargeable
Number	1
Charging time	Less than 3 hours to 90% and less than 4 hours to 100% with the device turned off
Capacity indicator	5-segment LED indicator for quickly assessing battery capacity
Capacity (new battery fully loaded)	Monitoring mode: 6.5 hours, configured with 3/5 lead ECG, defibrillation
loaded)	Manual, screen brightness adjusted to the lowest level, no printing

Defibrillation mode: 220 times, shock of 360 J at 1-minute intervals without recording  
Stimulation mode: 4.5 hours, impedance of 50 ohm load, stimulation frequency: 80 ppm, stimulation output: 60 mA

### Recorder or printer

Method	High-resolution heat transfer dot matrix
Waves	Max. 3 channels
Speed	6.25mm/s; 12.5mm/s; 25mm/s; 50mm/s
Paper width	50 mm
Information	Real-time waveforms, real-time ST segment, QT interval Real-time, real-time event, physiological alarm, freeze waves, trend review in tabular format, trend review as graphs, physiological event review, full disclosure review, rescue log, event summary, automatic testing and configuration
Automatic registration	The printer can be configured to record marked events, loading, unloading, alarms, and self-testing.

### Data storage

4 GB internal storage	
Events	Up to 1000 events per patient
Storage	Up to 120 hours of consecutive ECG waveform
waves	
Trends in format tabular	200 hours, resolution: 1 m
Voice recording	At least 8 hours for each patient
Data Export	The data can be exported to a PC via a USB flash drive

### Defibrillator

Vibe	Truncated exponential biphasic wave, with impedance compensation
Energy accuracy	±2 J or 10% of the adjustment value, whichever is greater, at 50 ohms
Ignition time	Less than 2 seconds with a new, fully charged battery
Charging time	Less than 3 seconds at 200 J with a new, fully charged battery Less than 7 seconds at 360 J with a new, fully charged battery
Recovery time of ECG	Less than 2.5 seconds
Administration of discharge	Using electrode patches multifunction defibrillation paddles
Patient impedance range	From 25 to 300 $\bar{y}$ (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 synchronization pulse
AED mode	
Output energy	User configurable

Download series of DEA	Energy level: 100 to 360 J, configurable for adults; 10 to 100 J, configurable for pediatrics
Time elapsed since the analysis of rhythm until the load	Downloads: 1, 2, 3, configurable By default, it complies with the guidelines. 2020 AHA/2021 ERC Initial analysis: 10 s Non-initial analysis: 6 s
Monitor parameters in AED mode	ECG, SpO <sub>2</sub> , CO <sub>2</sub> , NIBP, filtered ECG, information CPR, CCF, CQI
Sensitivity and specificity	It complies with IEC 60601-2-4 and the AHA recommendation

### Non-invasive stimulation

Vibe	Monophasic square wave pulse
Pulse width	20 ms or 40 ms, $\pm 5\%$
Refractory period	From 200 to 300 ms, $\pm 3\%$ (frequency function)
Stimulation mode	Demand or fixed
Frequency of stimulation	From 30 lpm to 210 lpm, $\pm 1.5\%$
Stimulation output	0 mA to 200 mA, $\pm 5\%$ or 5 mA, whichever elderly
4:1 Stimulation	The stimulation pulse frequency is reduced by a factor of 4 when activated

### ECG

Type of referral	3-lead ECG, 5-lead ECG
Derivation selection	3 leads: I, II, III 5 leads: I, II, III, aVR, aVL, aVF, V
Visualization of heart rate	Adults: 15 to 300 ppm Pediatrics: 15 to 350 ppm Neonatal: 15 to 350 ppm
Resolution	1 ppm
Arrhythmia	Yes
Alarms	Yes
ST/QT monitoring	Yes
ECG size	1.25mm/mV (x0.125), 2.5mm/mV (x0.25), 5mm/mV (x0.5), 10mm/mV (x1), 20mm/mV (x2), 40 mm/mV (x4), Auto
Patient isolation (resistant to defibrillation)	CF Type: ECG, RESP, SpO <sub>2</sub> , NIBP, TSI, TEMP Type BF: CO <sub>2</sub>

### Breathing

Method	Transthoracic impedance
Range	Adults: 0 to 200 rpm Pediatric, neonate: 0 to 200 rpm
Resolution	1 rpm

### Pulse oximetry SpO<sub>2</sub>

#### Mindray SpO<sub>2</sub>

Range	From 0 to 100%
Resolution	1%
Heart rate range	From 20 to 300 ppm

#### Nellcor SpO<sub>2</sub>

Range	From 0 to 100%
Resolution	1%
Heart rate range	From 20 to 300 ppm

#### SpO<sub>2</sub> of Masimo

Range	From 1 to 100%
Resolution	1%
Heart rate range	From 25 to 240 ppm

### PANI

Mode of operation	Manual, Auto, STAT, Sequence
Static pressure range	From 0 to 300 mmHg
Displayed pressures	Systolic, Diastolic, Average
Inflation pressure of the sleeve (default)	Adults: 160 mmHg Pediatric: 140 mmHg Neonate: 90 mmHg
Heart rate range	From 30 to 300 ppm

### CO<sub>2</sub>

#### Sidestream CO<sub>2</sub>

Measurement range	From 0 to 150 mmHg
Resolution	1 mmHg
Measurement interval from awFR	From 0 to 150 rpm
awFR accuracy	<60 rpm: $\pm 1$ rpm From 60 to 150 rpm: $\pm 2$ rpm
Flow rate of sample	50 ml/min

### CPR Information

Parameters monitored	From the RCP* sensor : frequency, depth, recoil, compression fraction (CCF), interruption time
	Regarding patches: frequency, downtime Mindray's SPO <sub>2</sub> : frequency, CCF, interruption time, compression quality index (CQI)
CPR Metronome	Yes
CPR Countdown	Yes
CPR filter	Yes

### CPR Sensor\*

Weight	Approximately 180 g (without battery)
Thickness	From 17.5 to 19 mm
Depth of compression	Measuring range: 0 to 8 cm Accuracy: $\pm 5$ mm or 10%, whichever is greater
Speed of compression	Measurement range: 40 to 160 cpm Accuracy: $\pm 2$ cpm

### Grid

Data connection	Wired, Wi-Fi, 4G
Data transmission	
Patient data	Within the hospital: sends real-time data to CMS or HL7 service via Wi-Fi or wired network Emergencies: sends real-time data to CMS via 4G network
Device data	Sends device data (such as auto-test report, battery status, etc.) to the device management system via Wi-Fi or wired network

\* Some features marked with an asterisk may not be available. To obtain the For the most up-to-date information, please contact your local Mindray sales representative.

[www.mindray.com](http://www.mindray.com)

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