

BeneHeart D3

Defibrillator/Monitor

More than a fast defibrillator



4-in-1 design and powerful function for full spectrum applications

With a 4-in-1 integrated design (manual defibrillation, AED, pacing, and monitoring modes), BeneHeart D3 puts any unexpected circumstances under your control.

Manual Defibrillation

Asynchronised defibrillation mode for cardioversion of ventricular fibrillation. Synchronised defibrillation mode for cardioversion of atrial fibrillation.

AED

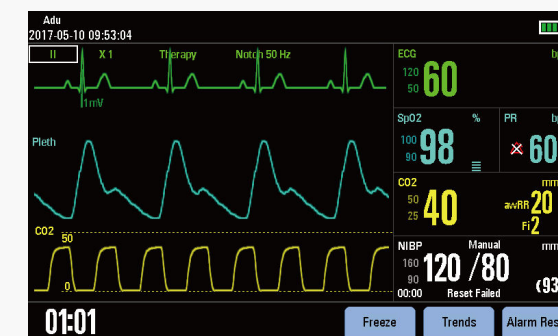
In AED mode, BeneHeart D3 automatically analyses the rhythm and determines whether a shock is necessary. Voice and text prompts guide the user through the process. Voice recording(180 minutes) is also available for after-case analysis and review.

Monitoring

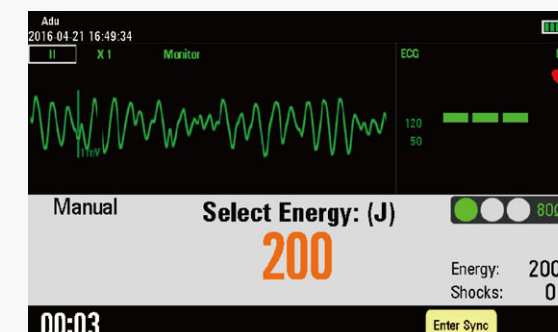
Diagnostic quality, 3/5 lead ECG monitoring with respiration, NIBP, SpO₂ and EtCO₂.

Non-invasive pacing

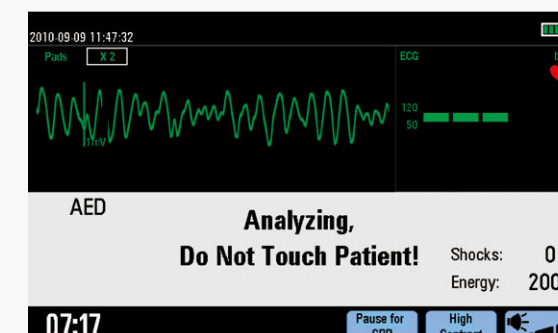
BeneHeart D3 offers external pacing in demand mode and fixed mode with adjustable rates and output. The 4:1 key enables clinicians to quickly select 1/4 of the defined pacer rate for observation of the patient's underlying rhythm.



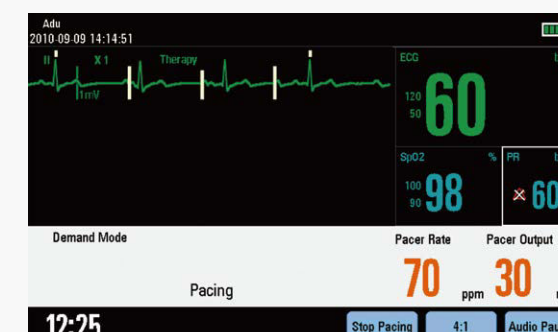
Monitoring



Manual Defibrillation



AED



Non-invasive pacing

Fast defibrillation

The fastest defibrillator

Mindray strives for constant innovation to improve the clinical aspects of product performance. The new generation of technology platform enables Mindray to improve the performance of the BeneHeart D3 defibrillator to meet changing clinician needs.

BeneHeart D3 gives you a greater chance of success for those patients suffering cardiac arrest. It only takes 7.5 seconds to complete the whole defibrillation operation. Studies show that when a patient suffers cardiac arrest, success rates for defibrillation drop for every second between CPR and defibrillation shock. Every second counts for cardiac arrest patients.*

*Edelson DP, Abella BS, Kramer-Johansen J, et al. Effects of compression depth and pre-shock pauses predict defibrillation failure during cardiac arrest. Resuscitation. 2006 Nov;71(2):137-45.



Power on in 2 seconds

Ultra fast power on due to our unique low-power dissipation sleep technology delivers more confidence for clinicians to handle any emergency situation.



Charge to shock in 3 seconds

Our improved battery performance and energy control system delivers charge to 200J and shock in only 3 seconds, allowing clinicians to focus on patients rather than the device.



ECG recovery in only 2.5 seconds

Our new DC Coupling Technology delivers rapid ECG recovery, meaning clinicians can evaluate the effectiveness of defibrillation and diagnose the patients condition immediately.



Manual defibrillation with clear 1-2-3 steps

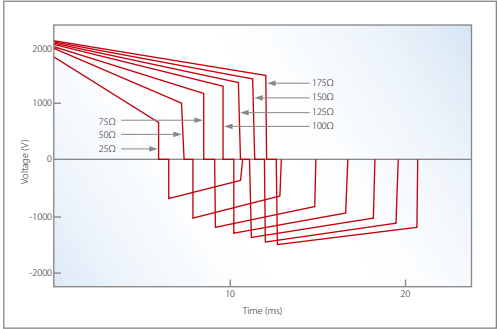
1. Select Energy
2. Charge
3. Shock

External Paddles with function buttons

Buttons for energy selection, charging and shock delivery improve usability for clinicians.

360J high energy

BeneHeart D3 defibrillator/monitor features 360J biphasic technology, which increases the chance to save difficult-to-defibrillate patients. Studies have shown that cardiac arrest is common among ventricular fibrillation (VF) patients and that defibrillation of recurring episodes of VF is increasingly difficult. A randomised controlled clinical trial shows the rate of VF termination increases with charge energy, when charge energy is 200J and above.*

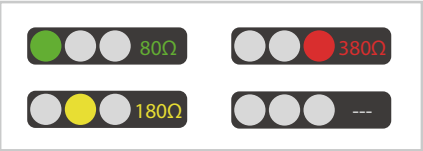


When impedance is adjusted, voltage and energy delivery cycle are adjusted automatically to correspond with impedance

*Stiell I, Walker R, Nesbitt L, et al. Biphasic Trial: A randomized comparison of fixed lower versus escalating higher energy levels for defibrillation in out-of-hospital cardiac arrest. Circulation. 2007;115:1511-1517.

Intuitive contact impedance indicator

Colour coded indicator with real contact impedance value provides a more intuitive guide to clinicians.



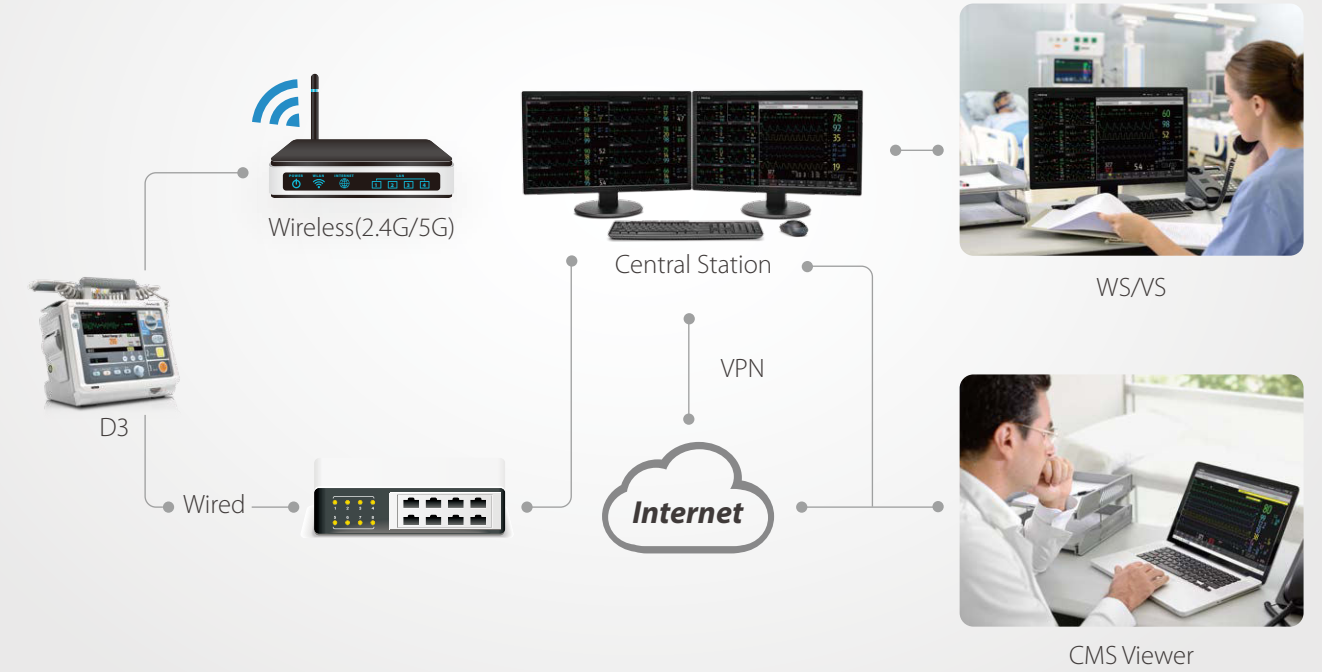
Adult/Paediatric mode

When changing from adult to paediatric mode, the default shock energy, monitoring range and parameter alarm limits change automatically to deliver the best treatment effect for both types of patients.



Effective IT solution

Our simple yet effective IT solution manages all the information from BeneHeart D3 defibrillator/monitors to avoid manual recording and so improve efficiency and reduce the workload of clinical staff. All information can be databased. A simple yet robust network connection following standard information infrastructure in most hospitals: Transmit data through 5G/2.4G WiFi, international standard IHE HL7 protocol and DHCP to obtain IP address automatically.



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, 5600mAh, 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	25 to 300 Ω (external defibrillation)
Range	
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 Meets AAMI DF-80
Sensitivity and specificity	
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, $\pm 1.5\%$
Pacing output	0 mA to 200 mA, $\pm 5\%$ 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
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, 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

SpO₂ 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 \pm 5 mmHg Pediatric: 140 \pm 5 mmHg Neonate: 90 \pm 5 mmHg

CO₂

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

Mindray Building, Keji 12th Road South,
High-tech Industrial Park, Nanshan, Shenzhen 518057, P.R. China
Tel: +86 755 8188 8998 Fax: +86 755 26582680
E-mail: intl-market@mindray.com www.mindray.com

mindray | Healthcare with reach are registered trademarks or trademarks owned by Shenzhen Mindray Bio-medical Electronics Co., LTD
© 2018 Shenzhen Mindray Bio-medical Electronics Co., Ltd. All rights reserved. Specifications subject to changes without prior notice.
P/N: ENG-BeneHeart D3 Datasheet-210285x4P-20180515

mindray

BeneHeart D3/BeneHeart D2

Defibrillator/Monitor

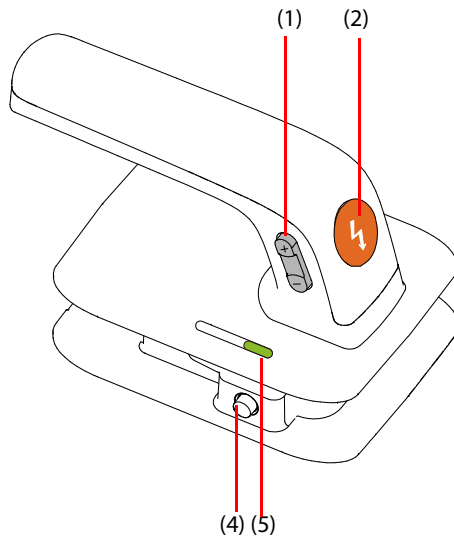
Operator's Manual



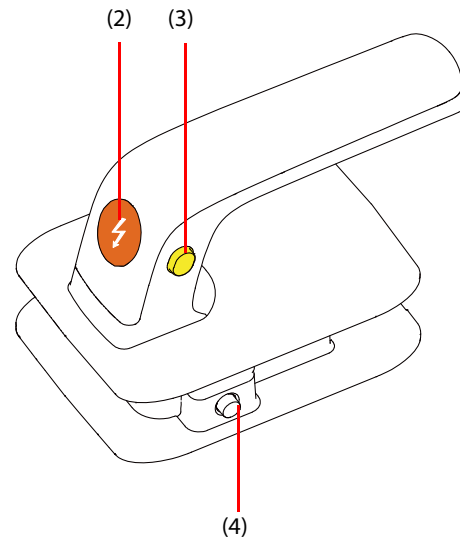
© Copyright 2017-2023 Shenzhen Mindray Bio-Medical Electronics Co., Ltd. All rights reserved.

- Release time: January 2023
- Revision: 15.0

2.5 External Paddles



Sternum paddle

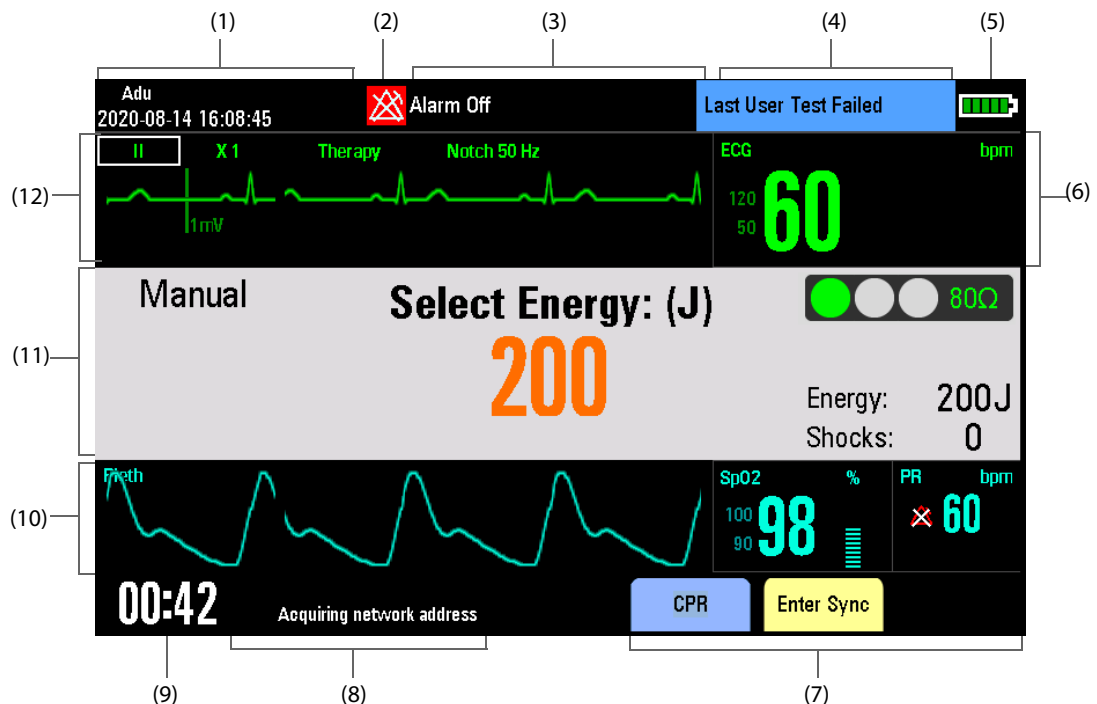


Apex paddle

- (1) Energy Select button
- (2) Shock button
- (3) Charge button
- (4) Latch button
Press this button to get for pediatric paddles. For details, refer to *7.4.2 Using Pediatric External Paddles*.
- (5) Patient contact indicator: indicates the contact status between the patient and external paddles. For details, refer to *7.7 Patient Contact Indicator*.

2.6 Display Views

The following figure shows the screen in the Manual Defib mode.



- (1) Patient Information area
This area shows patient name/bed number (configurable), patient category, paced status, and current date and time. indicates that the patient has an implanted pacemaker.
- (2) Alarm status symbols
This area shows the alarm status. For details, refer to 4.3.5 Alarm Status Symbols.
- (3) Physiological Alarm area
This area shows physiological alarm messages. When multiple alarms occur, they will be displayed circularly.
- (4) Technical Alarm area
This area shows technical alarm messages and prompt messages. When multiple messages occur, they will be displayed circularly.
- (5) Battery Status indicator
It indicates battery status. For details, refer to 22 Battery.
- (6) Parameter area
This area shows measurement parameters. Each measurement module has a parameter block and the parameter name is displayed at the upper left corner.
- (7) Soft Key area
The soft key labels are corresponding with the soft key buttons located below. The labels of the soft keys change according to the current display view and function.
- (8) Prompt area
This area shows the prompt information.
- (9) Runtime area
This area shows the operating time since the equipment is turned on.
- (10) Auxiliary Parameter area and/or waveform area
This area shows parameters that cannot be displayed in the parameter area. When this area cannot accommodate all parameters, the excess parameters will automatically occupy the area of last waveform.

A.3 CPR Compression Specifications

Compression depth	Measurement range: 0.0 to 8.0 cm Effective range: 1.5 to 8.0 cm Accuracy (for effective range): ± 0.5 cm or $\pm 10\%$, whichever is greater Resolution: 0.1 cm Refreshing rate: ≥ 0.5 Hz
Compression rate	Measurement range: 40 to 160 cpm (compressions per minute) Effective range: 40 to 160 cpm (compressions per minute) Accuracy: ± 2 cpm (compression per minute) Resolution: 1 cpm Refreshing rate: ≥ 0.5 Hz
Interruption time	Measurement range: 0 to 300 s Effective range: 0 to 300 s Resolution: 1 s Refreshing rate: ≥ 0.5 Hz

A.4 Pacer Specifications

Standards	Meet standards of IEC 60601-2-4
Pacer mode	Demand, fixed
Output waveform	Monophasic square wave pulse pulse width 20 ms or 40 ms Accuracy: $\pm 5\%$
Pacing rate	30ppm to 210ppm Accuracy: $\pm 1.5\%$ Resolution: 5 ppm
Pacing output	0mA to 200mA, Accuracy: $\pm 5\%$ or ± 5 mA, whichever is greater Resolution: 1mA, 2mA or 5mA
Refractory period	200 to 300 ms (depending on pacing rate)
4:1 pacing	Pacing pulse frequency reduced by factor of 4 when this function is activated.
Output protection	The equipment has no sign of damage after defibrillation-proof test.

A.5 Monitor Specifications

A.5.1 ECG Specifications (from ECG Lead Set)

Standards	Meet standards of IEC 60601-2-27
Patient connection	3-lead ECG cable, 5-lead ECG cable
ECG inputs	3-lead ECG set: I, II, III 5-lead ECG set: I, II, III, aVR, aVL, aVF, V
Gain	2.5 mm/mV ($\times 0.25$), 5 mm/mV ($\times 0.5$), 10 mm/mV ($\times 1$), 20 mm/mV ($\times 2$), 40mm/mV ($\times 4$), Auto. Error less than $\pm 5\%$
Sweep speed	6.25mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s. Error no more than $\pm 5\%$
Bandwidth (-3dB)	Diagnostic mode: 0.05 to 150 Hz Monitor mode: 0.5 to 40 Hz Therapy mode: 1 to 20 Hz

Common mode rejection	Diagnostic mode: >90 dB Monitor mode: >105 dB Therapy mode: >105 dB
Notch filter	50/60Hz, In Monitor and Therapy modes: notch filter turns on automatically In Diagnostic mode: notch filter is turned on manually
ECG signal range	±8mV (peak-to-peak value)
Calibration signal	1mV (peak-to-peak value) ±5%
Differential input impedance	≥5 MΩ
Electrode offset potential tolerance	±500mV
Defibrillation protection	Enduring 5000V (360 J) charge without data loss or corruption Baseline recovery time: <2.5 s (after defibrillation) Polarization recovery time: <10 s Defibrillation energy absorption: ≤10% (100Ω load)
ESU protection	Cut mode: 300 W Coagulate mode: 100 W Recovery time: ≤10 s In compliance with the requirements in clause 202.6.2.101 of IEC 60601-2-27
Pace Pulse	
Pace pulse markers	Pace pulses meeting the following conditions are labelled with a PACE marker: Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs
Pace pulse rejection	When tested in accordance with the IEC 60601-2-27: 201.12.1.101.13, the heart rate meter rejects all pulses meeting the following conditions. Amplitude: ±2 to ± 700 mV Width: 0.1 to 2 ms Rise time: 10 to 100 µs Input slew rate: 2.2 V/s ± 15% RTI
HR	
Measurement range	Neonate: 15 to 350 bpm Pediatric: 15 to 350 bpm Adult: 15 to 300 bpm
Accuracy	±1% or ±1bpm, which ever is greater
Resolution	1 bpm
Sensitivity	200 µV (lead II)
Heart rate averaging	In compliance with the requirements in Clause 201.7.9.2.9.101 b) 3) of IEC 60601-2-27, the following method is used: If the last 3 consecutive RR intervals are greater than 1200 ms, the 4 most recent RR intervals are averaged to compute the HR. Otherwise, heart rate is computed by subtracting the maximum and minimum ones from the most recent 12 RR intervals and then averaging them. The HR value displayed on the screen is updated every second.
Response time to heart rate change	Meets the requirements of IEC 60601-2-27: Clause 201.7.9.2.9.101 b) 5). From 80 to 120 bpm: less than 11 s From 80 to 40 bpm: less than 11 s

Time to alarm for tachycardia	Meets the requirements in Clause 201.7.9.2.9.101 b) 6) of IEC 60601-2-27. Waveform 4ah - range: <11 s 4a - range: <11 s 4ad - range: <11 s 4bh - range: <11 s 4b - range: <11 s 4bd - range: <11 s
Arrhythmia Analysis Classifications	Asystole, V-Fib/V-Tach, V-Tach, Vent. Brady, Extreme Tachy, Extreme Brady, PVCs/min, PVC, Couplet, VT>2, Bigeminy, Trigeminy, R ON T, Brady, Tachy, Missed Beat, PNP, PNC, Vent Rhythm, Multif. PVCs, Nonsus. Vtac, Pause, Irr. Rhythm, A-Fib
Tall T-wave rejection capability	When the test is performed based on Clause 201.12.1.101.17 of IEC 60601-2-27, the heart rate meter will reject all 100 ms QRS complexes with less than 1.2 mV of amplitude, and T waves with T-wave interval of 180 ms and those with Q-T interval of 350 ms.
Lead-off detection current	Measuring electrode: $\leq 0.1 \mu A$ Drive electrode: $\leq 1 \mu A$
Baseline recovery time	<2.5 s (after defibrillation)
Response to irregular rhythm	In compliance with the requirements in Clause 201.7.9.2.9.101 b) 4) of IEC 60601-2-27, the heart rate after 20 seconds of stabilization is displayed as follows: Ventricular bigeminy (3a): 80 ± 1 bpm Slow alternating ventricular bigeminy (3b): 60 ± 1 bpm Rapid alternating ventricular bigeminy (3c): 120 ± 1 bpm Bidirectional systoles (3d): 90 ± 2 bpm

A.5.2 ECG Specifications (from Defibrillation Electrodes)


Patient connection	paddles or multifunction electrode pads
ECG inputs	pads/paddles
Gain	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. Error less than $\pm 5\%$
Sweep speed	6.25 mm/s, 12.5 mm/s, 25 mm/s, 50 mm/s. Error no more than $\pm 5\%$
Bandwidth (-3dB)	Therapy mode: 1 to 20 Hz
Common mode rejection	Therapy mode: >105 dB
Notch filter	50/60 Hz In Therapy mode: notch filter turns on automatically
ECG signal range	± 8 mV (peak-to-peak value)
Calibration signal	1 mV (peak-to-peak value) $\pm 5\%$
Differential input impedance	$\geq 5 \text{ M}\Omega$
Electrode offset potential tolerance	± 1 V
Defibrillation protection	Enduring 5000V (360 J) charge without data loss or corruption Baseline recovery time: <2.5 s (after defibrillation) Polarization recovery time: <10 s Defibrillation energy absorption: $\leq 10\%$ (100 Ω load)
ESU protection	Cut mode: 300 W Coagulate mode: 100 W Recovery time: ≤ 10 s In compliance with the requirements in clause 202.6.2.101 of IEC 60601-2-27

Pace Pulse	
Pace pulse markers	<p>Pace pulses meeting the following conditions are labelled with a PACE marker:</p> <p>Amplitude: ± 2 to ± 700 mV</p> <p>Width: 0.1 to 2 ms</p> <p>Rise time: 10 to 100 μs</p>
Pace pulse rejection	<p>When tested in accordance with the IEC 60601-2-27: 201.12.1.101.13, the heart rate meter rejects all pulses meeting the following conditions.</p> <p>Amplitude: ± 2 to ± 700 mV</p> <p>Width: 0.1 to 2 ms</p> <p>Rise time: 10 to 100 μs</p>
HR	
Measurement range	<p>Pediatric: 15 to 350 bpm</p> <p>Adult: 15 to 300 bpm</p>
Accuracy	$\pm 1\%$ or ± 1 bpm, which ever is greater
Resolution	1 bpm
Sensitivity	200 μ V
Heart rate averaging	<p>In compliance with the requirements in Clause 201.7.9.2.9.101 b) 3) of IEC 60601-2-27, the following method is used:</p> <p>If the last 3 consecutive RR intervals are greater than 1200 ms, the 4 most recent RR intervals are averaged to compute the HR. Otherwise, heart rate is computed by subtracting the maximum and minimum ones from the most recent 12 RR intervals and then averaging them.</p> <p>The HR value displayed on the screen is updated every second.</p>
Response time to heart rate change	Meets the requirements of IEC 60601-2-27: Clause 201.7.9.2.9.101 b) 5).
	<p>From 80 to 120 bpm: less than 11 s</p> <p>From 80 to 40 bpm: less than 11 s</p>
Time to alarm for tachycardia	<p>Meets the requirements in Clause 201.7.9.2.9.101 b) 6) of IEC 60601-2-27.</p> <p>Waveform</p> <p>4ah - range: <11 s</p> <p>4a - range: <11 s</p> <p>4ad - range: <11 s</p> <p>4bh - range: <11 s</p> <p>4b - range: <11 s</p> <p>4bd - range: <11 s</p>
Arrhythmia Analysis Classifications	Asystole, V-Fib/V-Tach, PNP, PNC
Tall T-wave rejection capability	When the test is performed based on Clause 201.12.1.101.17 of IEC 60601-2-27, the heart rate meter will reject all 100 ms QRS complexes with less than 1.2 mV of amplitude, and T waves with T-wave interval of 180 ms and those with Q-T interval of 350 ms.
Lead-off detection current	≤ 0.1 μ A
Baseline recovery time	<2.5 s (after defibrillation, in therapy mode)
Response to irregular rhythm	<p>In compliance with the requirements in Clause 201.7.9.2.9.101 b) 4) of IEC 60601-2-27, the heart rate after 20 seconds of stabilization is displayed as follows:</p> <p>Ventricular bigeminy (3a): 80 ± 1 bpm</p> <p>Slow alternating ventricular bigeminy (3b): 60 ± 1 bpm</p> <p>Rapid alternating ventricular bigeminy (3c): 120 ± 1 bpm</p> <p>Bidirectional systoles (3d): 90 ± 2 bpm</p>

E Alarm Messages

This chapter lists only the most important physiological and technical alarm messages. Some messages appearing on your equipment may not be included.

In this chapter:

- The "I" column indicates how indications of technological alarms are cleared after the Alarm Pause button  or [Alarm Reset] soft key is pressed: "A" means all alarm indications are cleared; "B" indicates alarm light and alarm tones are cleared and the alarm messages change to prompt messages; and "C" indicates only alarm tone is disabled, but alarm light and alarm message remain presented.
- The "L" column indicates the alarm level: "H" refers to high, "M" refers to medium, and "L" refers to low. "*" means the alarm level is user-adjustable.
- XX represents a measurement or parameter label, such as ECG, NIBP, HR, PVCs, RR, SpO₂, PR, etc.

In the "Cause and solution" column, corresponding solutions are given instructing you to troubleshoot problems. If the problem persists, contact your service personnel.

E.1 Physiological Alarm Messages

Measurement	Alarm Message	L	Cause and solution
XX	XX Too High	M*	XX value has risen above the high alarm limit or fallen below the low alarm limit. Check the patient's condition and check if the patient category and alarm limit settings are correct.
	XX Too Low	M*	
ECG	Asystole	H	Arrhythmia has occurred to the patient. Check the patient's condition and the ECG connections.
	V-Fib/V-Tach	H	
	V-Tach	H	
	Vent. Brady	H	
	Extreme Tachy	H	
	Extreme Brady	H	
	Brady	M*	
	Tachy	M*	
	PVCs/min	M*	
	R ON T	M*	
	PVC	M*	
	VT>2	M*	
	Couplet	M*	
	Bigeminy	M*	
	Trigeminy	M*	
	Missed Beat	M*	
	Vent Rhythm	M*	
	Multif. PVCs	M*	
	Nonsus. Vtac	M*	
	Pause	M*	

Description	Applicable patient	Remark	PN
CapnoLine H O2Adult(008180)	Adult	Disposable	0010-10-42575
CapnoLine H O2Pediatric(008181)	Pediatric		0010-10-42576
NIV-Line Adult(008174)	Adult		0010-10-42577
NIV- LinePediatric(008175)	Pediatric		0010-10-42578

26.5 Therapy Accessories

Description	Model	Applicable patient	Remark	PN
External paddles	MR6601	Adult, pediatric	Reusable	0651-30-77001
Multifunction electrode pads	MR60	Adult	Disposable (5 sets/pack)	0651-30-77007
	MR61	Pediatric		0651-30-77008
	MR62	Adult		040-002608-00
	MR63	Pediatric		040-002609-00
Pads cable	MR6701	/	Reusable	0651-20-77031
Conductive gel	15-25	/	Consumable	0000-10-10775
Internal paddles	MR6501	Neonate	Reusable	0651-21-77043
	MR6502	Neonate	Reusable	0651-21-77044
	MR6503	Adult	Reusable	0651-21-77045
CPR sensor	MR6401	/	Reusable, with a battery	115-044836-00
CPR sensor cable	MR6801	/	Reusable	040-003096-00
CPR adhesive tape	MR6921	/	Disposable (3 sets/pack)	040-003123-00

26.6 Miscellaneous

Description	Model	PN
Rechargeable lithium ion battery	LI24I005A	115-049328-00
	LI24I001A	115-007858-00
Test load	MR6901	0651-20-77032
Test load	MR6905	040-000413-00
Analog output cable	/	009-008524-00
Cable of electrode pads with test load (50 ohm)	MR6702	040-000545-00
Synchronous defibrillation input cable	/	009-008523-00
Grounding cable	UL1015/14AWG	1000-21-00122
DC/AC adapter	/	0010-30-12471
Patient data management software kit	/	0651-30-77145
Carrying case and shield cover	/	115-018610-00
D3 back pouch	/	115-008708-00
Conducting gel mount kit	/	115-007857-00
Pothook kit	/	115-007587-00



Accessories and Consumables

CATALOGUE 2022.07

www.mindray.com

P/N:ENG-Accessories and Consumables Catalogue-210210X142P-20220728
©2022 Shenzhen Mindray Bio-Medical Electronics Co.,Ltd. All rights reserved.





Welcome to the Mindray Accessories Catalogue

This catalogue will provide you with the parts and accessories that connect to your Mindray Patient Monitor, Electrocardiograph, Defibrillator. Each Mindray product is the product of a special brand of patient focused, clinician-friendly design. For this reason, you can expect the same service, focus and quality with our parts and accessories.

Finding the Right Part

This catalog has been designed to make finding the right part easy. Chapters are organized by specific parameter categories. Simply locate the type of part you are looking for under the appropriate category.

Note:

This catalog is not an Operating Instructions Manual. This catalog will assist you in identifying the correct parts and accessories to connect to your Mindray product, please refer to the Operating Instructions Manual.

Warnings, Precautions and Notes can also be found in the Operating Instructions.

01

Patient Monitor Accessories

ECG	2
SpO ₂	22
NIBP	36
TEMP	52
CO ₂	61
AG	74
IBP	78
ICP	83
RM	84
C.O.	86
ICG	89
BIS	90
PiCCO ₂	91
CCO/ScvO ₂	95
EEG	96
ANI	101
NMT	102
rSO ₂	105
Mounting	106
Rolling stands	116
Others	118

02

Defibrillator Accessories

122

03

Electrocardiograph Accessories

136



ECG Accessories



Integrated ECG Cable

- Integrated design, convenient for use and maintenance
- Meeting the requirements of EC53
- Outstanding shielding property and anti-interference performance, protecting ECG signal from being interfered
- Excellent defibrillation-proof performance, well protecting the equipment
- Flexible and durable cables
- Outstanding cable material, enduring repeated cleaning and disinfection
- Latex free

Integrated ECG Cables - IEC
For BeneVision, BeneView, ePM, iPM, uMEC, iMEC series monitors, BeneHeart defibrillator, uMED 20

Picture	Model	Part No.	No. Description	Purchasing Unit
	EA6252B	040-000963-00	ECG cable and wires (integrative): Adu/Ped, 12 Pin 5-Lead, Defib-Proof, IEC, Snap, 3.6 m	Each
	EA6232B	040-000967-00	ECG cable and wires (integrative): Adu/Ped, 12 Pin 3-Lead, Defib-Proof, IEC, Snap, 3.6 m	Each
	EA6252A	040-000962-00	ECG cable and wires (integrative): Adu/Ped, 12 Pin 5-Lead, Defib-Proof, IEC, Clip, 3.6 m	Each
	EA6232A	040-000966-00	ECG cable and wires (integrative): Adu/Ped, 12 Pin 3-Lead, Defib-Proof, IEC, Clip, 3.6 m	Each

Electrode

- Latex free
- DEHP free
- Good biocompatibility, avoiding allergic reactions to patient

Picture	Model	Part No.	No. Description	Purchasing Unit
	31499224	0010-10-12304	Adult ECG Electrode (Kendall, Medi Trace 210)	10 pcs/pouch
	H124SG	900E-10-04880	Neonatal ECG Electrode (Kendall, H124SG)	50pcs/pouch
		040-002711-00	Adult ECG electrode (INTCO)	5 pcs/pouch

Picture	Model	Part No.	No. Description	Purchasing Unit
		040-002833-00	Pediatric/Neonatal ECG electrode (INTCO)	30 pcs/pouch

Match with 3-lead Neonatal cables (040-000754-00)

Picture	Model	Part No.	No. Description	Purchasing Unit
	0406062	040-003254-00	Disposable neonatal 3-lead pre-wired electrode, radio translucent, AHA, 60 cm	50 pouch/box (3 pcs/pouch)



Defibrillator Accessories




Defibrillator Accessories


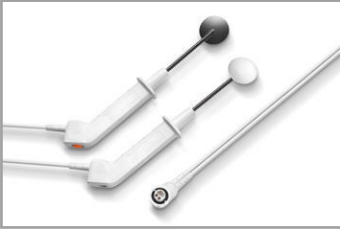
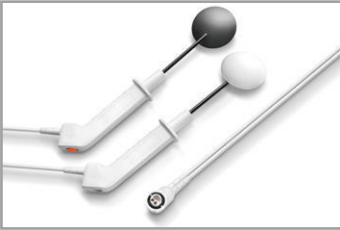


Reusable Internal paddles

- Apply for exposed heart defibrillation in OR during the heart surgery
- Integrate both cable and paddles in one cable
- Offer three paddle sizes to be chosen based on different patient types (1", 2" and 3")
- Auto-identify the paddle connection and reduce the energy level under 50J (default setting is 10J) for internal defibrillation use by uMED 20, BeneHeart D3 and D6
- Autoclavable

For BeneHeart D6/D3/uMED 20

Picture	Model	Part No.	No. Description	Purchasing Unit
		115-018366-00	Internal paddles, without shock button, 1 inch	Each
		115-018367-00	Internal paddles, without shock button, 2 inch	Each
		115-018368-00	Internal paddles, without shock button, 3 inch	Each

Picture	Model	Part No.	No. Description	Purchasing Unit
		125-000166-00	Internal paddles, with shock button, 1 inch	Each
		125-000167-00	Internal paddles, with shock button, 2 inch	Each
		125-000168-00	Internal paddles, with shock button, 3 inch	Each

External Paddles and Cables

- Applicable for both adults and pediatric patients, and easy to switch
- Safe for defibrillation energy delivery
- Patient contact indicator (PCI) makes it more convenient for medical staff to check the patient's contact status
- Space-saving spiral cable, flexible and durable
- Outstanding cable material, enduring repeated cleaning and disinfection
- Latex free


For BeneHeart D6/D3/uMED 20

Picture	Model	Part No.	No. Description	Purchasing Unit
		0651-30-77114	External paddles kit, Adu/Ped, PCI, with conductive gel (250 g)_D3 D6	Each
		125-000135-00	External paddles kit, Adu/Ped, PCI, with conductive gel (250 g)_uMED 20	Each

Pads Cable

- High voltage resistance and high safety
- Flexible and durable cables
- Outstanding cable material enduring repeated cleaning and disinfection



For BeneHeart D6/D3/uMED 20

Picture	Model	Part No.	No. Description	Purchasing Unit
	MR6702	040-000545-00	Cable of electrode pads with test load (50 ohm)	Each



Multifunctional Pads

- Two models for either adult or pediatric
- Multifunctional for defibrillation, pacing, and ECG monitoring
- Wide applicable temperature scope
- Highly adhesive
- Outstanding cable material enduring repeated cleaning and disinfection
- Disposable after use, and no pollution to the environment

For BeneHeart D6/D3/D1/uMED 20

Picture	Model	Part No.	No. Description	Purchasing Unit
	MR60	0651-30-77007	Defibrillator disposable pads (Adu/Ped, without auto-identification, radiolucent), cable length 1.2 m, preconnectable (0.45 m cable out-of-pouch)	5pcs/box
	MR61	0651-30-77008	Defibrillator disposable pads (Ped, without auto-identification), cable length 1.2 m, preconnectable (0.45 m cable out-of-pouch)	5pcs/box


For BeneHeart D1

Picture	Model	Part No.	No. Description	Purchasing Unit
	MR62	115-035426-00	AED disposable pads (Adu/Ped, with auto-identification), cable length 1.2 m, preconnectable (0.45 m cable out-of-pouch)	5pcs/box
	MR63	115-035427-00	AED disposable pads (Ped, with auto-identification), cable length 1.2 m, preconnectable (0.45 m cable out-of-pouch)	5pcs/box

Test Load

- Used to test the performance of the main unit and multifunctional cable
- High reliability and safety

For BeneHeart D6/D3/uMED 20




Picture	Model	Part No.	No. Description	Purchasing Unit
	MR6905	040-000413-00	Test load (for use with the cable of electrode pads)	Each




CPR Sensor
For BeneHeart D6/D3/D1

Picture	Model	Part No.	No. Description	Purchasing Unit
		115-044836-00	CPR sensor kit (with battery, not for D1) , Including: CPR sensor with battery CPR sensor cable Disposable CPR sensor adhesive tape, 3 pcs	Each
		115-044871-00	CPR sensor kit (without battery) Including: CPR sensor without battery CPR sensor cable Disposable CPR sensor adhesive tape, 3 pcs	Each
		040-003123-00	Disposable CPR sensor adhesive tape	3 pcs/pack

Carrying Case

- Carrying a defibrillator for pre-hospital or field emergency treatment
- Two models for either adult or pediatric
- High safety coefficient in load bearing
- High applicability in extreme environments
- Outstanding material enduring repeated cleaning and disinfection


Picture	Model	Part No.	No. Description	Purchasing Unit
		115-018610-00	Carry case_D3	Each
		125-000022-00	Carry case_D6	Each
		115-023421-00	Carry case_D1	Each

Picture	Model	Part No.	No. Description	Purchasing Unit
		048-004292-00	Rescue kit	Each
		125-000023-00	Upper pouch_D3	Each
		115-008543-00	Upper pouch_D6	Each
				
		115-008708-00	Back pouch_D3	Each


Conductive Gel

Picture	Model	Part No.	No. Description	Purchasing Unit
	15-25	0000-10-10775	Conductive gel, 250 g	Each


Battery Charger

Picture	Model	Part No.	No. Description	Purchasing Unit
		115-009187-00	External Li-ion battery charger +1 power cord (GB)	Each
		115-009188-00	External Li-ion battery charger +1 power cord (US)	Each
		115-009189-00	External Li-ion battery charger +1 power cord (India)	Each
		115-009190-00	External Li-ion battery charger +1 power cord (EU)	Each
		115-009191-00	External Li-ion battery charger +1 power cord (Brazil)	Each
		115-009192-00	External Li-ion battery charger +1 power cord (UK)	Each
		115-025630-00	External Li-ion battery charger +1 power cord (Australia)	Each
		115-033660-00	External Li-ion battery charger +1 power cord (Swiss)	Each
		009-001687-00	DC power input cable for external charger, cigarette-lighter plug	Each
		115-013411-00	Mounting plate of external charger	Each


Thermal Paper

Picture	Model	Part No.	No. Description	Purchasing Unit
		A30-000001---	Thermal paper (50mmx20m)	Each
		M002-10-69954	Thermal paper (80mmx20m)	Each




Mobile Trolley



Picture	Model	Part No.	No. Description	Purchasing Unit
		115-015823-00	Mobile trolley kit for D6 Including: Mounting for D6 Trolley for D3/D6	Each
		115-015825-00	Mobile trolley kit for D3 Including: Mounting for D3 Trolley for D3/D6	Each

Cabinet

Picture	Model	Part No.	No. Description	Purchasing Unit
		045-001140-00	AED cabinet (with mounting kit, lock and alarm)	Each

Mounting

Picture	Model	Part No.	No. Description	Purchasing Unit
		115-007587-00	Bedrail hook_D3	Each
		115-051797-00	Bedrail hook_D6	Each
		115-013412-00	Table mounting kit_D3	Each
		115-066638-00	Vehicle mounting kit_D3	Each
		115-005061-00	Vehicle mounting kit_D6	Each

Picture	Model	Part No.	No. Description	Purchasing Unit
		115-030528-00	D6 vehicle dock station CE, DC power input connector, with cigarette DC power cable	Each
		115-030529-00	D6 vehicle dock station CE, AC power input connector, without AC power cable	Each

Others

For BeneHeart D6/D3/D1/uMED 20

Part No.	No. Description	Purchasing Unit
0651-30-77145	Data output software package (software CD, installation guide)	Each
009-008523-00	Defib Sync cable_D3 D6	Each
0651-20-77046	Defib Sync cable_uMED 20	Each
009-008524-00	Analog output cable_D3 D6	Each
0651-20-77122	Analog output cable_uMED 20	Each
0010-30-12471	DC/AC adapter_D3 D6	Each
115-067930-00	Wi-Fi to 4G router kit_D3 D6	Each