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TEC-8300

Advanced defibrillator with seamless monitoring

Emergencies are crucial times, especially in cases of cardiac distress. Immediate intervention may be needed at such acute moments. For this, accurate, reliable monitoring with life support is a must.

Highly advanced Cardiolife TEC-8300 series defibrillators are portable biphasic defibrillators designed with cutting-edge technology. They offer seamless monitoring of vital parameters with critical life-support functions for intensive care before and after reaching clinical care.

NIHON KOHDEN

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Efficiency-enhancing features

The Cardiolife TEC-8300 series is designed for emergency situations. It is equipped with features and technologies which enable fast charging and shock delivery, easy operation, and efficient monitoring of cardiac patients.

- High-resolution 8.4" TFT colour LCD display for showing ECG, pulse, energy charge, 12-lead ECG, CO_2/SpO_2/NIBP/IBP/Temp
- Up to 6 traces can be shown simultaneously
- Provides intuitive and user-friendly AED function and external pacing
- Paddles that include external and internal paddles and disposable pads can be easily changed with one connector
- 12-lead ECG data can be shared with mobile devices via Bluetooth
- Data transmission to remote facilities by email
- Nihon Kohden's **polaris.one data management system** allows to view data at the hospital on a PC with ECG viewer software
- Self-test indicator that facilitates daily and monthly tests
- AC/battery operation
- Built-in thermal array recorder records variety of defibrillation information
- SD card for storage

Intensive monitoring

The Cardiolife TEC-8300 series also offers comprehensive monitoring in hospital for cardiac arrest care.

- **MULTI connector** ensures monitoring of parameters such as ECG, SpO_2, CO_2, IBP, NIBP, and temperature
- **Original ec1 arrhythmia analysis** algorithm improves the accuracy pf arrhythmia analysis and reduces false alarms
- Adjustable alarm settings
- Complete modular flexibility with MULTI connector and **Smart Cable™ Syste**m that immediately detects type of parameter and starts measuring accordingly when connected to MULTI socket

Smart technologies

The Cardiolife TEC-8300 series comes with certain special technologies that offer vital advantages to cardiac patients, ensuring their safety and well-being.

- **Unique ActiBiphasic technology** by Nihon Kohden uses a particular T-circuit which actively controls the second phase of the shock impulse, keeping a constant impulse curve. Defibrillation with low-energy-consuming biphasic impulse curve ensures less damage to the cardiac muscle while guaranteeing high defibrillation efficiency.
- **capONE** is the world's first mainstream CO_2 sensor that can measure $EtCO_2$ in non-intubated patients. It can also accurately measure CO_2 for intubated patients by altering the airway adapter. It requires no complicated settings or warm-up time, therefore delivering quick results.
- **iNIBP and BluPro SpO_2 technology** ensure enhanced patient comfort and clinical accuracy.
- **synECi18** – Nihon Kohden developed synECi18, a breakthrough technology, to provide 18-lead ECG information from a standard 12-lead ECG via synthesis of the additional leads V3R to V5R and V7 to V9 to help identify invisible ischaemia. Especially when presentation is not typical or initial 12-lead ECG is negative, diagnostic inaccuracy may cause harmful delays. Timely ischaemia detection may prevent myocardial damage or may shorten the time to PCI (percutaneous coronary intervention) indication. With the same workload and costs as associated with the standard ECG procedure, patient safety is optimised and this may reduce time to reperfusion. Especially in emergencies, synECi18 is regarded as a useful triage tool to enhance outcomes through early recognition and stratification.

Specifications

TEC-8300 (TEC-8321/TEC-8322/TEC-8332/TEC-8342/TEC-8352)

Display

Display size	8.4 inches
Display type	ST-NLT colour TFT
Effective display area	170.4 (W) x 127.8 (H) mm
No. of traces	6 waveforms
Sweep length	136.2 mm
Sweep speed	25 mm/s, 50 mm/s
Sensitivity	10 mm/1 mV ±10% (sensitivity x1)
Amplitude limit	122.7 mm

Defibrillator

Output energy (across 50 Ω)	2, 3, 5, 7, 10, 15, 20, 30, 50, 70, 100, 150, 200, and 270 J
Energy accuracy	2 J: ±0.5 J, 3 J: ±1 J, 5 to 15 J: ±2 J, 20 to 270 J: ±10%
Output waveform	Biphasic, truncated exponential constant power

Charging time

Manual mode	*Both AC 100 V to 240 V and fully charged battery:* 270 J, maximum 5 s 200 J, maximum 4 s 150 J, maximum 3 s
AED mode	*Both AC 100 V to 240 V and fully charged battery:* 270 J, maximum 8 to 15 s
Charging display	Displays the charged energy value on the screen
Synchronized discharge	Available
From the peak of R wave to the peak of discharge	Within 60 ms

Analysis accuracy

Meets IEC 60601-2-4	2002 6.8.3 aa) 3) a)
ECG database	AHA, MIT & 3000 ECG database from Japan Hospitals
Shockable rhythm VF	≥ 90%
Shockable rhythm VT	≥ 75%
All other non-shockable rhythm	≥ 95%

Non-invasive pacing (only for TEC-8332/TEC-8352)

Pacing rate	30 to 180 pulse/min in 10 pulse/min steps
Output current	8 to 200 mA in 1 mA steps
Pacing modes	Fixed and demand
Maximum load resistance	Outputs 200 mA across 350 Ω

ECG

Leads	*3-electrode cable:* I, II, III *6-electrode cable:* I, II, III, aVR, aVL, aVF, 2 from V1 to V6 *10-electrode cable:* I, II, III, aVR, aVL, aVF, V1 to V
Waveform display	*Number of channels:* 2 (maximum, with 6 or 10 electrodes on home screen), 12 (maximum, with 10 electrodes on 12-lead window)
Heart rate counting range	*Defibrillation or monitoring mode:* 15 to 300 bpm *Pacing mode:* 15 to 220 bpm

SpO_2

Technology	Nihon Kohden SpO_2
Display range	0 to 100%SpO_2
Measuring accuracy	80%SpO_2 ≤ %SpO_2 ≤ 100%SpO_2: ±2%SpO_2 70%SpO_2 ≤ %SpO_2 < 80%SpO_2: ±3%SpO_2

CO_2

Method	Mainstream
CO2 measuring range	0 to 99 mmHg (0 to 133 hPa)
Accuracy	±3 mmHg (0 ≤ CO_2 ≤ 10 mmHg ±4 mmHg (10 < CO_2 ≤ 40 mmHg ±10% reading (40 < CO_2 ≤ 99 mmHg)
Respiration rate counting range	3 to 150 counts/min ±10%
Response time	Within 3 s

NIBP (TEC-8342/TEC-8352 only)

Display items	Systolic (SYS), diastolic (DIA), mean (MAP)
Measurement mode	Manual, STAT, Periodic

Invasive blood pressure (IBP)

No. of IBP pressure	2 maximum (except TEC8321, 1 number of IBP)
Measuring range	–50 to +300 mmHg

Temperature

Ports	1
Measuring range	0 to 45°C, 32 to 113°F
Measuring accuracy	±0.2°C (0°C ≤ Temperature < 25°C) ±0.1°C (25°C ≤ Temperature ≤ 45°C)

Alarm

Alarm level	*Crisis:* Patient is in critical condition and the patient's life may be at risk. *Warning:* Patient is in critical condition. *Advisory:* Setting or condition is not appropriate for accurate monitoring.
Alarm indicator	*Crisis:* Red blinking *Warning:* Yellow blinking *Advisory:* Cyan light
Alarm silence	Available when there is an alarm. Silences the alarm for 2 minutes.
Alarm suspend	Available when no alarm occurs. Suspends all alarms for 2 minutes.
Alarm volume priority	Crisis ≥ Warning ≥ Advisory
Volume range	45 to 85 dB (A)

Battery

Number of battery slots	2
Type	Lithium-ion battery
Nominal voltage	14.4 V
Rated capacity	6300 mAh (90.7 WH)
Capacity with fully charged new battery at 20°C ambient temperature	Minimum 200 discharges at 270 J Minimum 240 minutes continuous monitoring Minimum 180 minutes fixed mode pacing (180 pulse/min, 200 mA)

AC power requirements

Line voltage	100 to 240 V
Line frequency	50/60 Hz
Power input	*Intermittent load:* 250 VA or less *Continuous load:* 150 VA or less

Environment and safety

Operating temperature	0 to 45°C (32 to 113°F)
Operating humidity	30 to 95%
Operating atmospheric pressure	700 to 1060 hPa
Storage temperature	–20 to +70°C (–4 to +158°F)
Storage humidity	10 to 95% (relative humidity)
Storage atmospheric pressure	500 to 1060 hPa
Vibration	MIL-STD-810F 514.5
Protection Category	4 (Truck Restrained Cargo) MIL-STD-810F 514.5 Category: 9 (Helicopter)
Degree of protection	*Against harmful ingress of water:* IP24, IP21 *Against electrical shock:* Type Class I equipment Defibrillator proof type CF part applied

Dimensions and weight

Dimensions	334 (W) x 362 (H) x 262 (D) mm ±30 mm
Weight	*TEC-8321/TEC-8322/TEC-8332* 6.8 kg ±0.8 kg (including one battery pack) *TEC-8342/TEC-8352* 7.0 kg ±0.8 kg (including one battery pack)

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