

# patient DEFIBRILLATOR

## D-1000



- 4-in-1 design: Monitoring, Manual Defibrillation, AED and Pacer.
- Compact design, easy to carry and easy to operate.
- 8.4" TFT display with 4 waveforms assures easy ECG and vital signs (optional) viewing.
- Stands up to rugged use IP34 rating and impact test of 0.75m suited for emergency care environments and out of hospital use.
- Defibrillation, synchronized cardioversion and AED with Biphasic Technology.
- Quick charging in less than 5 seconds (200J).
- Escalating dose from 1J to 360J to Maximize defibrillation success.

## TECHNICAL SPECIFICATIONS

<b>PHYSICAL</b>		<b>RECORDER</b>	
DIMENSIONS	Without external paddles: 295mm (w) x 218mm (d) x 279mm (h)	METHOD	High-resolution thermal dot array
WEIGHT MAIN UNIT	6.6 kg (including ECG/defibrillator/pacing/SpO2/2 IBP/2 Temp/ Resp) Battery package (each): 0.75 Kg External paddle sets: 0.83 Kg	WAVEFORMS	Max. 3 channels
		SPEED	25mm/s, 50mm/s
		PAPER WIDTH	50mm
		REPORTS	The following can be recorded: Event Summary, Tabular Trends, Frozen Waveforms, Review, Operational Check and Configuration.
<b>ENVIRONMENTAL AND PHYSICAL REQUIREMENTS</b>		AUTO RECORDING:	Recorder can be configured to record marked events, charge, shock and alarms.
WATER RESISTANCE	IPX4 (without external power) IPX1 (with external power)		
SOLIDS RESISTANCE	IP3X	<b>DEFIBRILLATOR</b>	
TEMPERATURE	Operating: 0 to 450°C Storage: -20 to 600°C	WAVEFORMS	Biphasic truncated exponential waveform (BTE), with impedance compensation.
HUMIDITY	Operating/Storage: 10 to 95%, non-condensation.	ENERGY ACCURACY	±2J or 15% of setting, whichever is greater, into 50 Ohm.
ALTITUDE	Operating/Storage: 381m to +4575m	CHARGE TIME	Less than 5 seconds to 200 Joules with new, fully charged battery. Less than 8 seconds to 360 Joules with a new, fully charged battery.
SHOCK AND VIBRATION	Meets the requirements of 21.102, ISO9919 (Shock and vibration for transport).	SHOCK DELIVERY	Via multifunction defib electrode pads, or paddles.
BUMP	Meets the requirements of 6.3.4.2, EN1789 (Medical devices for use in road ambulances)	PATIENT IMPEDANCE RANGE	20 to 200 Ohm (External defibrillation).
FREE FALL	Meets the requirements of 6.4.2, EN1789 (Height of fall: 0.75m)	<b>MANUAL MODE</b>	
EMC	Meets ENIEC 60601-1	OUTPUT ENERGY	1,2,3,4,5,6,7,8,9,10,15,20,30,50, 70,100,150,170,200,300,360 J.
SAFETY	Meets ENIEC 60601-1	<b>SYNCHRONOUS</b>	
		CARDIOVERSION:	Energy transfer begins within 60ms of the QRS peak. Energy transfer begins within 25ms of the External Sync Pulse.
<b>DISPLAY</b>		<b>NON-INVASIVE PACING (ACCESSORIES NOT INCLUDED)</b>	
TYPE	TFT Color LCD	WAVEFORMS	Monophasic square wave pulse.
DIMENSIONS	8.4 inch	PULSE WIDTH	20ms, ±5%
RESOLUTION	800x600 pixels	REFRACTORY PERIOD	200 to 300ms, ±3% (function of rate).
DISPLAY WAVEFORMS	Max. 4 channels	PACING MODE	Demand or fixed
WAVE VIEWING TIME	Max. 16s (ECG)	PACING RATE	40ppm to 170ppm, ±1.5%.
		PACING OUTPUT	0 mA to 200 mA, ±5% or 5 mA, whichever is greater.
<b>POWER</b>		1:4 PACING	Pacing pulse frequency reduced by factor of 4 when activated.
<b>AC POWER</b>		*Accessories sold separately	
LINE VOLTAGE	100 to 240 VAC (±10%)	<b>ECG MONITORING</b>	
CURRENT	1.8 to 0.8A	LEAD TYPE	3 leads ECG, 5 leads ECG, PADS/PADDLES.
FREQUENCY	50/60 Hz (±3 Hz)	LEAD SELECTION	I,II,III,aVR, aVL, aVF, V, Pads/Paddles.
<b>DC POWER</b>	(through DC-AC Inverter)	HEART RATE DISPLAY	Adult: 15 to 300 bpm Pediatric: 15 to 350 bpm Neonate: 15 to 350 bpm
INPUT VOLTAGE	12VDC	RESOLUTION	1 bpm
POWER CONSUMPTION	190W	ARRHYTHMIA	Yes
<b>BATTERY</b>		ALARMS	Yes
TYPE	6.6 Ah, 14.8V, rechargeable lithium ion battery pack.	ECG SIZE	2.5mm/mV(x0.25), 5mm/mV(x0.5), 10mm/mV(x1), 20mm/mV(x2), 40mm/mV(x4)
NUMBER	Max. 2	SWEEP SPEED	12.5mm/s, 25mm/s, 50mm/s
CHARGE TIME	Less than 2 hours to 80% and less than 3 hours to 100% with device off.		
CAPACITY INDICATOR	5-segment led indicator for fast battery capacity evaluation		
<b>CAPACITY</b>	(two new, fully charged battery)		
MONITORING MODE:	10 Hours, Monitoring with ECG, SpO2, CO2, temperature and two invasive pressures continuously and all cables/sensors connected, NIBP measured every 15 minutes, without recording.		
DEFIB MODE:	200 times, 360J discharge at intervals of 1 minute without recording.		
PACING MODE	6 hours, 50 Ohm load impedance, Pacing rate: 80bpm, Pacing Output: 60 mA.		

## OPTIONAL CONFIGURATIONS

<b>RESP</b>		<b>OVER-PRESSURE</b>	
MEASUREMENT TECHNIQUE	Thoracic impedance	PROTECTION BY HARDWARE	Adult: 330 mmHg Pediatric: 330 mmHg Neonate: 165 mmHg
LEAD	Optional: lead I and lead II; default lead II	DEFAULT START PRESSURE	Adult: 178±5 mmHg Pediatric: 133 ±10 mmHg Neonate: 67±5 mmHg
RESPIRATION EXCITATION			
WAVEFORM	<300µA, sinusoid, 62.8 kHz(±10%)		
RESPIRATION IMPEDANCE			
TEST RANGE	0.3 to 3 Ω		
BASELINE IMPEDANCE RANGE	200 to 2500 Ω (using an ECG cable with 1kΩ resistance)	<b>IBP (OPTIONAL)</b>	
DIFFERENTIAL INPUT IMPEDANCE	>2.5 MΩ	NUMBER OF CHANNELS	2
LINEAR SIGNAL RANGE	3 Ω p-p minimum	PRESSURE READINGS	Systolic, diastolic, mean pressures and PR
BANDWIDTH	0.2 to 2 Hz (-3 dB)	PRESSURE LABELS	ART, PA, CVP, RAP, LAP, ICP, P1 and P2
SWEEP SPEED	6.25 mm/s, 12.5 mm/s, 25mm/s	LINEAR INPUT RANGE	will be -50 to +300mmhg, after zeroing.
		MEASUREMENT RANGE	ART 0 to 300mmHg PA -6 to 120 mmHg CVP/RAP/LAP/ICP -10 to 40mmHg P1/P2 -50 to 300mmHg
<b>TEMP (OPTIONAL)</b>		RESOLUTION	1mmHg
NUMBER OF CHANNELS	2	PRECISION	±2% or ±1mmHg, whichever is greater
DISPLAYED PARAMETERS	T1, T2 and TD	EXCITATION	will be 5 Volts DC, ±2% Minimum load resistance will be 300Ω per transducer.
MEASUREMENT RANGE	0 to 50°C (32 to 122°F)	UPDATE PERIOD	1s
RESOLUTION	0.1°C	ZERO OFFSET RANGE	±200mmHg
PRECISION	±0.1°C (excluding the sensor) ±0.2°C (including the YSI 400 series sensor)	ZERO ACCURACY	±1mmHg
		NOISE	<0.5 mmHg RTI, DC to 12.5 Hz, 300Ω source impedance
UPDATE PERIOD	1s	DRIFT	<0.15 mmHg/°C; will not exceed ±1mmHg in 24hrs.
MINIMUM TIME FOR ACCURATE MEASUREMENT	Body surface: <100s Body cavity: <80s (YSI 400 series sensor)	FREQUENCY RESPONSE	DC-12.5Hz, 3db
		<b>CO2 (OPTIONAL)</b>	
<b>SPO2 (OPTIONAL)</b>		CO2 MEASUREMENT RANGE	0 to 99mmHg
MEASUREMENT RANGE	0 to 100%	PRECISION*	0 to 40mmHg: ±mmHg 41 to 76mmHg: ±5% 77 to 99mmHg: ±10%
RESOLUTION	1%	RESOLUTION	1mmHg
PRECISION	70 to 100%: ±2% (adult/pediatric, non-motion conditions) 70 to 100%: ±3% (neonate, non-motion conditions) 0% to 69%: Undefined.	DRIFT	meet the requirement of accuracy in 6hrs
		SAMPLE FLOW RATE	70,100 ml/min
REFRESHING RATE	1s	PRECISION OF DEFLATION RATE	±15% or 15ml/min, whichever is great
AVERAGING TIME	7s (When the sensitivity is set to High) 9s (When the sensitivity is set to Medium) 11s (When the sensitivity is set to Low)	START-UP TIME OF CO2 MODULE	<1min, the module enters the warming up status after the startup. One minute later, it enters the ready-to-measure status.
		AWRR MEASUREMENT RANGE	0 to 120 BrPM
<b>PR</b>		PRECISION	0 to 70BrPM: ±2BrPM >70 BrPM: ±5BrPM
MEASUREMENT RANGE	20 to 254 bpm	RESPONSE TIME	When measured with a neonatal watertrap and a 2.5 m-long neonatal sampling line: <3.5s @ 100ml/min <4s @ 70ml/min When measured with an adult watertrap and a 2.5 m-long adult sampling line: <5.5s @ 100ml/min <7s @ 70ml/min
RESOLUTION	1 bpm	DELAY TIME	When measured with a neonatal watertrap and a 2.5 m-long neonatal sampling line: <3s @ 100ml/min <3.5s @ 70ml/min When measured with an adult watertrap and a 2.5 m-long adult sampling line: <5s @ 100ml/min <6.5s @ 70ml/min
PRECISION	±3 bpm (non-motion conditions)	APNEA ALARM DELAY	AwRR: 10 to 40s
REFRESHING RATE	1s		
<b>NIBP (OPTIONAL)</b>			
MEASUREMENT TECHNIQUE	Auto oscillation		
DISPLAYED PARAMETERS	Systolic pressure, diastolic pressure, mean pressure and PR		
MODE OF OPERATIONS	Manual, auto and continuous		
MEASUREMENT INTERVAL			
IN AUTO MODE	1/2/3/4/5/10/15/30/60/90/120/180/240/480 minutes		
MEASUREMENT TIME			
IN CONTINUOUS MODE:	5min		
MEASUREMENT RANGE IN NORMAL MODE	mmHg Adult Pediatric Neonate Systolic pressure 40 to 270 40 to 270 40 to 135 Diastolic pressure 10 to 210 10 to 150 10 to 100 Mean pressure 20 to 230 20 to 165 20 to 110		
MEASUREMENT PRECISION	Maximum average error: ±5mmHg Maximum standard deviation: 8mmHg		
RESOLUTION	1mmHg		
STATIC PRESSURE			
MEASUREMENT RANGE	0 to 300mmHg		
STATIC ACCURACY	±3mmHg		
OVER-PRESSURE			
PROTECTION BY SOFTWARE	Adult: 297±3 mmHg Pediatric: 240 ±3 mmHg Neonate: 147±3 mmHg		

# D-1000 MONITOR DEFIBRILLATOR



**EXTERNAL PADDLES: CABLE AND PADDLES IN ONE PIECE, EASY TO STERILIZE.  
PADDLE BASE WITH TIGHT LOCKS, ALSO AVOIDING WRONG PLACEMENT**  
ADULT OR PEDIATRIC PADDLE SIZES, SIMPLE TO SWITCH  
INTEGRATED RECORDER WITH 3-CH WAVEFORM PRINTING



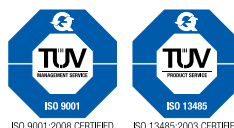
**3/5-LEAD ECG WITH ARR  
SP02 (OPTIONAL)**



- USB PORT (DATA TRANSFER TO PC BY FLASH DISK)
- RJ45 PORT (FOR UPGRADING)
- MULTIFUNCTIONAL PORT FOR ECG OUTPUT AND DEFIB SYNCHRONIZATION INPUT
- VGA PORT FOR EXTENDED DISPLAY
- POWER CORD LOCK TO INSURE POWER INPUT IN EMERGENCY SITUATION
- 1 LI-ION BATTERY INCLUDED (2ND OPTIONAL)
- BATTERY LED TO INDICATE POWER CAPACITY PERCENTAGES

**Standard Configurations:** Pacing, TFT screen, Manual Defibrillation, AED, 3/5-lead ECG with ARR, Resp, Recorder, 1 Li-ion battery, External paddles.  
**Optional Configurations:** SpO2, 2-Temp, NIBP, 2ch IBP, Microstream / Sidestream EtCO2, 2nd Li-ion battery, Multi-function pads kit (disposable), Carry Case, Pacing Accessories.

Contact us for additional information.  
Note: Specifications subject to change without notice.



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