

### OVERVIEW

The Delta 3300 Defibrillator / Transcutaneous Pacemaker Analyzer is a precision instrument for testing defibrillators and external (Transcutaneous) Pacemakers. It combines the complete testing functions of a Defibrillator Tester, Transcutaneous Pacemaker Analyzer and 12-Lead ECG / Arrhythmia Simulator into one compact, lightweight, and easy to-use instrument.

The Delta 3300 tests all Defibrillators including AEDs. It measures both monophasic and bi-phasic waveforms. It is compact, light weight and easy to use. The test results can be saved in the internal memory and uploaded to the PC and printed using ProCom Print software (CD included with the unit).



### MAIN FEATURES

- Large LCD Display with Backlight
- Compact & Lightweight (3lbs), and easy to use.
- Test results can be saved & upload to PC using Netech ProCom-Print software
- Li-Ion Rechargeable Battery and Hard Carrying case
- 2 Year Warranty

### PRODUCT HIGHLIGHTS

- Energy and Cardioversion Measurement
- Peak Voltage and Current Reading
- Waveform Storage and Playback
- Tests all Automated Defibrillators
- Multiple Arrhythmia simulations
- Pacer Loads from 50 to 1100 Ohms
- Pacer Amplitude, Rate, Pulse Width
- Demand Sensitivity, Refractory period, immunity and Pulse Energy
- 12 Lead ECG, Arrhythmia, Performance
- Li-Ion Rechargeable Battery

### ORDERING INFORMATION

#### Part No:

660 : Delta 3300 Defibrillator/  
Transcutaneous Pacemaker Analyzer

#### Standard Accessories (Included):

660-610-PADDLE-ADAP :  
Defibrillator Paddle Adapter

660-HHS-002: Li-Ion Battery  
Charger

660-610-6383: Transcutaneous/  
AED Interface Cable (Open ended)

660-HARD-CASE: Carrying Case  
RS232-USB-ADAPTER: USB Serial  
Adapter

USB: ProCom Print Software,  
User Manual, Brochure, Converter  
Program

660-PADDLE-ADAPTER-COVER: Plastic  
Cover for 660 Paddles

#### Optional Accessories

P/N-623: Delta 3300 Interface Cable for  
Zoll AED

P/N-651-HP: Delta 3300 Interface Cable for  
HP/Philips/Agilent

P/N-651-Physio: Delta 3300 Interface  
Cable for Physio/Lifepak/Metronic

P/N-651-Survival: Delta 3300 Interface  
Cable for Survivalink/Cardiac Science/  
FirstSave/Powerheart/Burdick Cardioive

P/N-651-Zoll: Delta 3300 Interface Cable  
for Zoll M

### GENERAL INFORMATION

Operating: +15°C to +35°C

Storage: 0°C to +50°C

#### Temperature Range:

50 ohms  $\pm 1\%$ ; non-inductive ( $< 1 \mu H$ )

Sampling Time : 20  $\mu s$

Measurement Time Window : 60 ms

Pulse Width : 60 ms

#### Display:

Type: LCD with LED Backlight

#### Data Input/Outputs :

RS-232C (1) for Computer control

Power: 7.4 Volt Li-Ion Battery

100-230 VAC input, 850 mA DC Charger

#### Housing:

High impact ABS Plastic case

#### Dimensions:

D x W x H:

10.25 x 6.25 x 2.5 Inch

26 X 16 x 6.4 Cm

Weight: 1.5 kg / 3.3 lbs.



**DEFIBRILLATOR ANALYZER****Energy Output Measurement:**

Maximum Energy: 800 J  
Display Resolution: Based on Auto Range  
Auto Range: 2 - 9.99 J, 10-99.9 J,  
100-800J  
Resolution: 0.01 J (2 - 9.99), 0.1 J (10-99.9),  
1 J (100-500)  
Accuracy:  $\pm 1\%$  of reading  $\pm 0.1$  J (2-9.9),  
 $\pm 1$  J (10-99),  $\pm 2\%$  (100-500)  $\pm 1$  J

**Load Resistance:**

50 ohms  $\pm 1\%$ ; non-inductive ( $< 1 \mu\text{H}$ )  
Sampling Time: 20  $\mu\text{s}$   
Measurement Time Window: 60 ms  
Absolute Max Peak Voltage: 5000 V  
Absolute Max Peak Current: 100 A  
Pulse Width: 60 ms

**High Level Output:**

High Range: 100:1 amplitude attenuation  
Low Range: 200:1 amplitude attenuation

**Waveform Storage / Playback:**

Discharge can be viewed via ECG outputs  
and paddles.

**Sync Time Measurements:**

Timing Window:  
Starts: 40 ms at each R wave peak  
Test Waveforms:  
All Waveform simulations available  
Delay Time Accuracy:  $\pm 1$  ms

**Charge Time Measurement:**

30 to 60 in steps of 15 seconds.

**TRANSCUTANEOUS  
PACEMAKER ANALYZER****Test Load Range:**

50 -1100 Ohms in steps of 100 Ohms.  
Accuracy: 50 - 500 ohm  $\pm 1\%$   
500 - 1100 ohm  $\pm 1.5\%$

**Pulse Measurements:**

Amplitude: 4 to 400 mA (50 ohm load)  
Accuracy:  $\pm 1\%$  or  $\pm 1$  mA  
Max. amplitude: 400 mA (50 Ohm Load)  
Rate: 30 to 800 ppm  
Accuracy:  $\pm 1\%$  or 2 ppm  
Pulse Width: 0.5 to 50 ms  
Accuracy:  $\pm 1\%$  or  $\pm 0.3$  ms

**Demand Sensitivity Test:**

Waveforms: QRS, Square(SQR),  
Triangle(TRI), and Haversine (SSQ)

**Waveform Width:**

40, 50, 60, 70, 80, 90, 100, 200, 300, 400  
ms

**Pacer Rate:**

30 to 120 ppm

**ECG Output:**

Amplitude: User Selectable 0.1 - 5 mV

**Pacer Input (Load dependent):**

Amplitude (50 ohm): 0 - 10 mV  
Resolution (50 ohm): 25  $\mu\text{V}$   
Amplitude: (500 ohm): 0 - 100 mV  
Resolution: (500 ohm): 1 mV  
Accuracy:  $\pm 2\%$

**Immunity Test:**

Interference Signal: 50/60 Hz  
ECG signal Amplitude: 0.5 to 5.0 mV

**Refractory Period Measurement:**

20 to 500 ms (both Pacing and Sensing)  
Accuracy:  $\pm 5$  ms

**PATIENT SIMULATOR****ECG General:**

Lead Configuration: 12-lead simulation  
RL, RA, LA, LL, V1-6  
Output Impedance: RL to All leads 1000  
Ohms, V Leads: 1000 ohms to RL  
High Level Output: 0.5 V/mV of low level  
(lead II)  
Rates: 30, 40, 50, 60, 70, 80, 90, 100, 110,  
120, 130, 140, 150, 160, 170, 180, 190, 200,  
220, 240, 260, 280, 300 & 310 BPM  
Accuracy:  $\pm 1\%$   
Amplitude: User Selectable 0.1 - 5 mV  
(Lead II)  
Accuracy:  $\pm 2\%$  @ Lead II (SQR)

**Arrhythmia Selections:**

Ventricular Fibrillation Coarse (VFBC)  
Ventricular Fibrillation Fine (VFBF)  
Ventricular Tachycardia (VTAC)  
Atrial Fibrillation (AFIB)

**Performance Waveforms:**

Sine, Square, Triangle:  
Rate: 0.2, 0.3, 0.4, 0.5, 1, 2, 3, 4, 5, 6, 7,  
8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50,  
55, 60 Hz.  
Amplitude: 0.1, 0.25, 0.50, 1, 1.5, 2.0,  
2.5, 3.0, 3.5, 4.0, 4.5, 5.0 mV.  
Amplitude accuracy:  $\pm 2\%$   
(Square Wave -Lead II 1.0 mV)

**Pacer Pulse:**

Pulse Width: 10mS  
Amplitude: 1.0 mV (Lead II)  
Accuracy:  $\pm 2\%$

