

# LIFEPAK® 10

defibrillator/monitor/pacemaker



Rugged, transport unit

User-friendly controls and display

Optional built-in noninvasive pacing

AC or DC auxiliary power supply

Serial 12-lead adapter available

Optional "hands-free" defibrillation adapter

CODE SUMMARY™ critical event record



The Medtronic Physio-Control LIFEPAK 10 defibrillator/monitor/pacemaker was designed to withstand the harsh environment faced by emergency medical providers throughout the world. This rugged, portable unit, which follows the tradition of the company's LIFEPAK 5 defibrillator/monitor, is built tough to withstand demanding field requirements.

Features include simple 1-2-3 operation and user-friendly display, and CODE SUMMARY critical event record, which recaps critical events from the moment of "power on." This unit also features optional built-in noninvasive pacing, AC or DC auxiliary power supply, and a defibrillation adapter for "hands-free" defibrillation. A serial 12-lead adapter is also available.

For ease in transferring a patient from prehospital to hospital care, electrodes and cables are compatible with the family of LIFEPAK 9 defibrillator/monitors. This unit was designed for easier maintenance with on-screen diagnostics for test and calibration. It also includes an integral chassis which allows 360° serviceability.

The LIFEPAK 10 defibrillator/monitor/pacemaker joins the Medtronic Physio-Control family of pre-hospital products.

**ECG MONITOR**

**ECG lead selection:** Paddles I, II, III

**Input:** Isolated ECG via QUIK-LOOK® defibrillator paddles, FAST-PATCH® electrodes, or 3-lead patient cable.

**ECG cable length:** 3.96m (13 ft) total length; 3.05m cable (10 ft); with .91m leads (3 ft)

**Electrical isolation and shielding:** Input protected against high voltage defibrillator pulses and radio frequency interference per FDA Standard MDS-201-0004. RF interference depends on distance from RF source, radio output power, radiating frequency, vehicle environment, etc.

**Common mode rejection:** Minimum 100dB with respect to chassis ground at 60Hz, 65dB minimum with respect to isolated ground.

**Cardioscope display**

**Size:** 72.5mm (2.85 in) x 43.5mm (1.7 in), non-fade

**Sweep speed:** 25mm/sec

**Frequency Response:**

- 1 to 30Hz, -3dB (monitor freq. resp.—domestic)
- 0.5 to 25Hz, -1.4dB (monitor freq. resp.—agency)
- 0.05 to 30Hz, -3dB (expanded freq. resp. while recorder in DIAG mode)
- 2 to 20Hz, -3dB (paddles freq. resp.)

**Strip chart recorder**

**Paper size:** 50mm x 30m (100 ft)

**Paper speed:** 25mm/sec

**Frequency Response:**

- 1 to 30Hz, -3dB (monitor freq. resp.—domestic)
- 0.5 to (-1.4dB) to 40 (-3dB) Hz, (monitor freq. resp.—agency)
- 0.05 to 100Hz, -3dB (diagnostic freq. resp.)
- 2 to 20Hz, -3dB (paddles freq. resp.)
- 1 to 30Hz (CODE SUMMARY—domestic)
- 0.5 to 40Hz (CODE SUMMARY—agency)

**Annotation:** Includes time, date, lead, gain, heart rate, defibrillator and/or pacing parameters.

**CODE SUMMARY critical event record:** Digitally stored record of critical ECG and device parameters.

**Status display:**

- Heart rate: 3 digit readout displays rates from 20 to 295 bpm
- Available energy
- Pacing rate (optional)
- Pacing current (optional)
- DIAC (if recorder is operating in diagnostic frequency)

**ECG output:**

- Unmodulated: 1V/mV at x 1.0 gain
- Modulated: 1400Hz ± 2% center frequency, 1Vrms, ± 10%
- Frequency response: matches strip chart recorder

**QUIK-PACE® NONINVASIVE PACEMAKER**

**Output rate:** 40 to 170 bpm

**Output waveform:** Monophasic, truncated, exponential current pulse (20msec; 15 to 25% droop)

**Output current:** 0 to 200mA

**Refractory period:** 200 to 340msec (function of rate)

**DEFIBRILLATOR**

**Waveform:** 5msec monophasic pulse (Edmark) per AAMI spec

**Energy select:** 0, 5, 10, 20, 50, 100, 200, 300, 360J

**Paddle controls:** Charge (with indicator light); Record (activates strip chart recorder); Energy select (rotating dial; 0 to 360J); Discharge (dual energy discharge buttons, one on each paddle).

**Charge time:** Charge to 360 joules in less than 12 seconds above 0°C.

**Paddle area:** 82cm<sup>2</sup>

**Synchronizer:** Delivers energy discharge within 20msec of sync marker on cardioscope (triggers to patient generated QRS complex).

**Cord length:** 2.3m (7.5 ft)

**ENVIRONMENTAL**

**Temperature:**

- Standby: 5 to 55°C (41 to 131°F)
- Operating: -10 to 55°C (14 to 131°F) after minimum two hour storage at standby temperature
- Storage (exclusive of batteries): -30 to 65°C (-22 to 149°F)

**Humidity:**

- 0 to 95% (noncondensing)
- 0 to 34°C (32 to 93.2°F)
- 0 to 80% (noncondensing)
- 35 to 55°C (95 to 131°F)

**Atmospheric pressure:** 797 to 439mmHg (-570 to +15,000 ft)

**Shock (Drop):** With carrying case (soft case), passes drops of 43 inches from the handle (30 inches from case). This exceeds test levels per ECRI Report, Contract No. 223-77-5035, prepared for FDA (April 1979).

**Vibration Helicopter Aircraft:** MIL-STD-810D, Method 514.3 (category 6). Test levels per U.S. Army Aeromedical Research Laboratory Report No. 91-14, Section 2.6.3. (March 1991), (UH-1 helicopter, floor under co-pilot's seat).

**Vibration Fixed-Wing, Turboprop Transport:** (take off and climb) Test level of .0016g<sup>2</sup>/Hz, the maximum level per figure 32(31) of ECRI Report, Contract No. 223-77-5035. Prepared for FDA (April 1979).

**Sealed case:** MIL-STD-108E and IEC 601-2-4

**GENERAL**

**Battery:** 3 NiCad batteries, 12V, 1.0 amp hours each. A new Battery Pak registering at least 100% capacity on the Battery Support System will provide at a minimum:

- 45 minutes of monitoring or
- 30 minutes of pacing or
- 25 discharges at 360 joules per Battery Pak

**Physical characteristics**

**Height:** 10.4cm (4 in)

**Width:** 40.6cm (16 in)

**Depth:** 37cm (14.6 in)

**Weight:** 9kg (20 lbs)

**All specifications at 25°C unless otherwise stated.**



**Medtronic Physio-Control**  
 11811 Willows Road NE  
 P. O. Box 97006  
 Redmond, WA 98073-9706 USA  
 Tel: 425.867.4000  
 Tel: 425.867.4121  
 Internet: www.physiocontrol.com  
 Internet: www.medtronic.com

**Europe**  
 Basingstoke, Great Britain  
 Tel: 44.1256.782.727  
 Fax: 44.1256.782.728

**Canada**  
 Richmond Hill, Ontario  
 Tel: 905.709.4330  
 Fax: 905.709.3336

**United Kingdom, Ireland**  
 Basingstoke, Great Britain  
 Tel: 44.1256.782.727  
 Fax: 44.1256.782.728

**France**  
 Lyon - St Priest, France  
 Tel: 33.4.72.79.26.26  
 Fax: 33.4.72.79.26.36

**Germany, Switzerland**  
 Fernwald, Germany  
 Tel: 49.6404.91.41.0  
 Fax: 49.6404.91.41.20

**Austria**  
 Vienna, Austria  
 Tel: 43.1.240.44.160  
 Fax: 43.1.240.44.600

**Italy**  
 Sesto Fiorentino, Italy  
 Tel: 39.055.302.701  
 Fax: 39.055.302.4029

**Netherlands**  
 Hoofddorp, The Netherlands  
 Tel: 31.20.6.533.640  
 Fax: 31.20.6.535.822

**Spain**  
 Madrid, Spain  
 Tel: 34.91.375.6050  
 Fax: 34.91.375.6055

**Scandinavia**  
 Järfälla, Sweden  
 Tel: 46.8.580.945.00  
 Fax: 46.8.580.945.05

**Asia Pacific**  
 Christchurch, New Zealand  
 Tel: 64.3.3794.429  
 Fax: 64.3.3792.374

**Latin America**  
 Miami, Florida  
 Tel: 786.242.6661  
 Fax: 786.242.4505

**Middle East**  
 Dubai, UAE  
 Tel: 971.4.282.6532  
 Fax: 971.4.282.7970

**Hungary**  
 Budapest, Hungary  
 Tel: 36.1.214.2228  
 Fax: 36.1.214.2230

**Poland**  
 Warsaw, Poland  
 Tel: 48.22.613.38.13  
 Fax: 48.22.613.38.11

**Czech Republic**  
 Prague, Czech Republic  
 Tel: 420.2.2017.2277  
 Fax: 420.2.2056.1617

**People's Republic of China**  
 Beijing, China  
 Tel: 86.10.6708.1162  
 Fax: 86.10.6708.1163