Lifecard CF®
Digital Holter Recorder

CARDIAC DIAGNOSTIC SOLUTIONS

SPACELABS
Healthcare

Lifecard CF - for the clearest digital ECG

Del Mar Reynolds' rich history of innovation began nearly a half century ago with the development of Holter monitoring and analysis. Now the Diagnostic Cardiology part of Spacelabs Healthcare, we are proud to continue this tradition of connecting innovation with care.
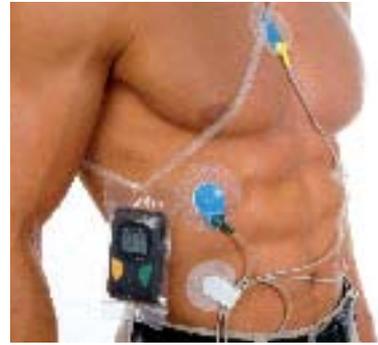
Lifecard CF takes digital Holter recording to a higher level. 12-bit resolution and Ultrasharp™ technology deliver outstanding ECG quality for accurate analysis from the most challenging recording environments.
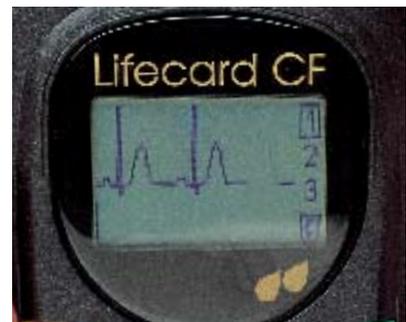
On-board ECG Display
Lifecard CF has a built in ECG display that allows you to monitor the ECG during hook-up. It even tells you when it has detected each atrial and ventricular pacing spike so you can optimize lead placement.

Pacemaker Spike Detection
Lifecard CF has an extremely sensitive pacemaker detection circuit with excellent noise rejection that operates continuously, with performance better than 10,000 Hz sampled pacemaker detection methods. The ultra low power design allows it to run from one AAA battery to acquire 7 days of continuous ECG.

Only 3 electrodes for 3 channels of ECG

ECG is displayed during every hook-up

The high resolution digital recorder

Lifecard CF uses 12-bit technology, which enables even the most subtle atrial arrhythmias and pacing to be clearly seen. P-waves are rounded, not squared off, and details like notched P-waves are precisely reproduced. 12-bit ECG can make the difference between confident diagnosis and an inconclusive Holter test. Some of the arrhythmias that show up clearly in 12-bit ECG could be missed altogether without it.

Just the length of a credit card and only 118g

7-day continuous ECG capability

Diagnose arrhythmias before they become an everyday occurrence.
Lifecard CF can record up to 7 days of continuous ECG which can be quickly scanned using Lifescreen software to find the most appropriate day for Holter analysis. That 24-hour period can then be analyzed using any of our current Holter scanners. 7-day recording enables positive early diagnosis of patients before their arrhythmias become an everyday occurrence.

Comfortable patients - better recordings

Lifecard CF's patented 3-channel 3-electrode hook-up improves patient comfort, which is very important for 7-day recordings. The splashproof design and disposable carrying pouch (see picture opposite) make it practical and convenient to wear the device under the clothing with short cables. This minimizes electrode disturbance and improves ECG quality, and it gives the patient the freedom to change clothes and perform their daily routine.

Never lose a recording again
Lifecard CF is designed to prevent tampering by the patient. Even if the battery or CF card is accidentally removed, when replaced the recording continues as normal, leaving a gap in the ECG and not a flat line. A back-up rechargeable battery maintains the clock and user settings for over three months when the recorder is not being used.

Voice recording stores patient name and ID

Inserting a CF card into the Holter analyser's card reader for immediate analysis

Latest technology in a rugged, splashproof enclosure

Lifecard CF benefits from all the latest improvements in CompactFlash memory technology. Removable cards allow future memory upgrades for today's devices. Using multiple cards allows quick transition to the next patient, and ECGs recorded on cards can easily be sent to a remote location for analysis.

Rugged
Lifecard CF is tested to withstand a 3 foot drop onto concrete and still function perfectly.

Splashproof for added practicality

Splashproof
A new Lifecard CF is rated to IPX4 when the seals are new, so you can be confident that it will be splashproof for years to come.

Voice recording: No PC necessary at hook-up
If no PC is available during hook-up, a voice recording of the patient's name and ID can be stored on the card, so hook-ups can be done anywhere. With multiple cards, there is no need to access a PC before re-using the recorder – just insert a fresh card and make a voice recording.

Data Management & Networking
Lifecard CF recordings integrate with the Spacelabs Healthcare Cardiology Information Management System. CardioNavigator® (C-NAV)

provides one central platform and core database for all ECG data and links to the Hospital Information Management System (HIS).

Upload patient details directly from the HIS via C-NAV into the Lifecard CF to save time and reduce transcription errors. Completed recordings can then be downloaded to any terminal on the C-NAV network for analysis on any networked system. All Holter data, including raw ECG and reports, are stored in the same central location as these other C-NAV integrated procedures:

• Resting ECG
• Stress Testing
• ECG Event Recording
• Ambulatory BP

Additional Features

Pacemaker Spike Detection	Time and Date Recording
Single AAA alkaline cell required	Patient event button
Splash proof	Large Digit LCD Clock Display
Patient ID storage (voice recording)	On board ECG hook up monitor
Lightweight and comfortable to wear	Belt Clip standard on long length patient cables
7-Day Capability with Lifescreen screening system for increased diagnostic yield	

Technical Specification

Dimensions

96 x 57 x 18 mm (3.8 x 2.2 x 0.7 inches)

Weight 118 g (4.2 oz) weight includes battery, patient cable and compact flash card

Power Supply

One AAA alkaline or rechargeable battery (NiMH)

Memory

90 MB removable CF card

Procedure Options

3 or 6 electrode	3 channel 48 hr
4 electrode	2 channel 48 hr
2 electrode	1 channel 7-day
OR	
3 or 4 electrode	2 channel 7-day

Data Compression

None in 48 hour recording.	
In 7 day mode:	10 m V max. error compressing MIT-BIH databases. Exceeds EC38 requirements.

Further Information

Dynamic Range	10 mV
Amplitude Resolution	2.5 microvolt (0.0025 mV)
Sampling Rate	1024 samples per second
Frequency Response	0.05 Hz to 40 Hz
Pacemaker Pulse Detection	Channels 1 and 2
Pacemaker Pulse Sensitivity	7 mV
Calibration	Automatic
Signal to Noise Ratio	70 dB
Common Mode Rejection	>80dB at 50/60 Hz
Input Impedance	>5 Mohm
Temperature Operating:	0º to +45º C
Storage	-20º to +65ºC

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