12-Lead Digital Holter Recorder and Software

CARDIAC DIAGNOSTIC SOLUTIONS
12-Lead Holter Solution

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.

Spacelabs Healthcare offers a flexible and modular system, providing high resolution 12-Lead ECG from Holter. This is achieved by the combination of a modular recorder solution, and software options for our range of Holter systems.

This modular approach ensures that 24 hour 12-Lead ECG functionality can be added to any Lifecard CF recorder simply by using the Varios active yoke, patient cable, and installation of the 12-Lead Holter software.

Lifecard 12

**Varios** - The lightweight Varios yoke houses the ECG amplifiers and is worn on the patient’s sternum, giving a comfortable and unobtrusive hookup with the shortest possible lead-wires.

The yoke is controlled and powered by the Lifecard CF recorder which also provides a built-in hook-up monitor to ensure the highest quality signal is obtained. The Varios active yoke provides a number of benefits:

- Avoids tangles and lead strain on the electrodes
- An unobtrusive hookup for the patient
- Shorter lead wires reduce interference from external sources
- Upgradeable for future applications

High Quality Recordings

12-Lead Holter provides a number of benefits to clinicians in helping to diagnose complex arrhythmias and ST changes over multiple leads.

Lifecard CF provides the best possible Holter bandwidth ECG by the use of advanced technology:

- 10 electrode patient cable to give true 12-Lead ECG results as opposed to derived results.
- 4096 Hz sampled ECG per lead
- 0.6uV digitization for maximum ECG fidelity
- No data compression
12-Lead Holter Option

The 12-Lead Holter software can be added to a Pathfinder or Impresario Holter analysis system. The program provides the interface to view, measure and print the selected ECG from the Holter system, for detailed 12-Lead analysis.

• View the selected ECG in 12-Lead view with a 1 minute pan range
• ECG strip and beat labeling
• Select individual beats to zoom and measure
• Annotate ST segment deviations with reference, J and J+80 controls
• Printout 12-Lead ECG and beat complexes within the Holter report
• Measure PQRST intervals
• Adjustable V-Lead gain
• Multiple print formats
Technical Specifications

**Lifecard 12 Specification**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>256MB removable CF card</td>
</tr>
<tr>
<td>Procedure</td>
<td>24hr 12-Lead Holter recording</td>
</tr>
<tr>
<td>Data Compression</td>
<td>None</td>
</tr>
<tr>
<td>Sampling Rate</td>
<td>4096 samples per second</td>
</tr>
<tr>
<td>Bandwidth</td>
<td>0.05 - 40 Hz</td>
</tr>
<tr>
<td>Amplifier Noise Level</td>
<td>0.6uV</td>
</tr>
<tr>
<td>Pacemaker Pulse Detection</td>
<td>All Channels</td>
</tr>
<tr>
<td>Pacemaker Pulse Sensitivity</td>
<td>2mV</td>
</tr>
<tr>
<td>Full compliance</td>
<td>with ANSI/AAMI EC38 Holter Standard, with IEC/EN 60601-2-47 Holter Standard</td>
</tr>
</tbody>
</table>

**Technical Features**

- High quality, high strength shielded cable with ultra-low microphonic noise
- Active Neutral electrode for maximum signal quality
- Electrode failure detection
- Electrode failure tolerant - vital for ambulatory procedures
- Protected against defibrillation
- Protected against fluids and wet cleaning processes
- Rugged design with all standard Lifecard CF features

**Software Specifications**

- Arrhythmia and ST analysis of any 3 leads
- Display the selected ECG in 12 leads with a 1 minute pan range
- ECG can be viewed in 12 x 1 or 2 x 6 formats on screen
- Measurement Calipers for P-width, PR-interval, QRS width, QT-interval with automatic measurement table generation
- ST measurement, reference, J point, J+80 and beat labels
- Options to store the 12-Lead reports, ECG strips or recording

**Print Formats**

- Portrait 3 x 4 user selected 12-Lead beats with measurements and 3 lead 25mm/s rhythm strip overview
- Portrait 12 x 1 single complexes with ST measurements printed adjacent to the ECG in each channel