The DCA-50 offers unmatched performance in its class. The newest DLI Watchman® portable data collector delivers a large 6.3” color screen and capability to collect three axes of vibration data simultaneously at a price comparable to less fully-featured single-channel collectors. It has a long battery life and a rugged enclosure sealed to IP67 ready for use in dirty industrial environments.

**DCA-50 features:**
- Spectrum, waveform, overall (RMS), envelope demodulation, tachometer speed, 1X amplitude and phase (with tachometer)
- Time synchronous averaging (with tachometer)
- On-screen analysis capabilities with harmonic, sideband, and reference cursors, and historical baseline overlay
- Waterfall, Bode, Orbit and Cepstrum plots
- FFTs up to 25,600 line for accurate troubleshooting
- Load machinery information and digital imagery from your ALERT™ database
- Interfaces with all ALERT host software

The DCA-50 utilizes a combination keypad-touchpad which offers easy mouse control as well as input of user commands, process readings, and field observations. An embedded computer on board the DCA50 runs an Intel-based 800 MHz CPU with 256 MB of RAM. Out of 2 gigabytes of non-volatile flash memory, over 1,500 megabytes are available for data storage.

**DCA-50 System**
The DCA-50 software system runs on Microsoft® Windows® XP Embedded™ operating system. Its data collection software is very easy to use in either route-based or barcode collection modes. The integral analysis software is the same as used in DLI's host ALERT™ software systems. Statistical average baseline data is loaded into the collector allowing data overlays and easy comparisons with historical data.

**Standard Accessories**
- Triaxial accelerometer with integral, armor cable
- Ball driver for mounting Triaxial accelerometer
- Leather/nylon protective cover with shoulder strap
- USB host interface cable assembly
- 110-230 VAC mains battery charger
- Transit case
- User manual
Optional Accessories

- DLI Multiplane Balance™ machine balancing software
- ALERT RTA™ advanced signal analysis software
- Accessory pouch
- Ethernet network adapter
- Barcode scanner
- Infrared tachometer
- Remote battery charging fixture for 110-230 VAC mains
- 12VDC car charging cable
- BNC input cable (4-channels)
- Mobile printer

Specifications

Digital Signal Processing
- Texas Instruments TMS320C51 Digital Signal Processor (DSP), running @ 40 MHz
- Four-channel 16 Bit A/D conversion
- Simultaneous sampling of all four inputs up to 41 KHz
- Anti-aliasing via an analog RC filter plus a 64th order digital FIR filter
- Dynamic range greater than 85 dB
- Signal to noise ratio greater than 76 dB
- Overall RMS amplitude detection

Spectral Analysis
- Four channel, simultaneous FFT analysis of the analog input channels up to 16 kHz span
- FFT Resolution of: 50, 100, 200, 400, 800, 1600, 3200, 6400, 12800, 25600 lines
- Spectral Windows: Hanning, Hamming, Flat top, none
- Averaging Types: Linear, Exponential, Peak-hold
- Overlap processing: selectable overlaps of 0%, 25%, 50%, and 75%

Time Domain Analysis
- Sample rates from 1 Hz to 41 kHz Inputs
- Long time capture
- Selectable ICP accelerometer sources
- Cable fault detection

- Input signal clipping detection (25 Volts maximum input signal amplitude)

Time Domain Analysis (cont.)
- TTL-level tachometer input
- Analog Signal Processing
- Selectable DC coupling or 0.2 Hz or 10 Hz high pass analog filtering
- Selectable single stage analog integration
- No more than -76 dB inter-channel cross talk

Triggering
- Internal: Selectable from any analog input channel. Level, slope, rising or falling edge
- Pre or Post-triggering: 0 to 100% of capture

Physical
- Size: 11” x 8” x 1.5”
- Weight: 6.2 lbs (2.8 kg) with 2-batteries
- Fully machined from aircraft grade aluminum
- Sealed IP-67 water and dust proof
- Anodized finish

Processor System Memory
- Intel-based x86 processor - 800 MHz
- 256 MB RAM
- 1 GB Compact Flash Hard Drive (programs and data)
- Microsoft® Windows® XP Embedded OS

Video & Display
- 6.3” 640 x 480 TFT VGA color display
- Rich color saturation and good contrast even in outdoors
- High visibility display glass

Host Interface / Printing
- Interface to USB 1.1 port on host PC
- Optional Ethernet network adapter
- Direct connect mobile printer
- Compatible with host software:
  - ExpertALERT v3.0 and later
  - AdvancedALERT v3.0 and later
  - StandardALERT v3.0 and later
  - ViewALERT v3.0 and later

Protective Cover
- Durable, shock-absorbing, insulating, molded foam case
- Shoulder and hand straps
- Leather and nylon
- Accessory pouch

Power Consumption & Battery Life
- 5 hours continuous data acquisition (no idle time between tests), typical 8 hour use with power management using 4 batteries
- Batteries are “hot-swappable” for uninterrupted use
- Uses two or four 4000 mAH Lithium batteries (two batteries are supplied as standard package)
- Universal AC power adapter 110-230 volts, 50-60 Hz

Interfaces
- Glidepoint™ touchpad / keypad digitizer
- Power switch
- Connectors (IP-67):
  - Power supply
  - CH-4/Tachometer (BNC)
  - Host interface / Ethernet / Device I/O
  - Triaxial Accelerometer (4-channel BNC with optional adapter)

Environmental Specifications
- Temperature:
  - Operating 0°C to 50°C
  - Storage -40°C to 70°C
- Six foot drop (in case)
- Vibration: 15 Gms (random vibration 6 axis)
- Humidity: 0-100% condensing

* ALERT host software is required

Specifications are subject to change without notice