

DAKOTA ULTRASONICS

The CMX DL+

A/B Scan Material & Coating Thickness Gauges



The Finest in Portable Inspection!

Highlights:

- ▶ Powered by a 100MHz DSP platform using FPGA technology.
- ▶ Display Options: Grayscale 1/8 VGA, or AMOLED color 1/4 VGA.
- ▶ Two Channels—Dual pulsers and receivers.
- ▶ Up to 140Hz pulse repetition rate.
- ▶ Screen refresh: B&W 25 Hz, Color 120 Hz.
- ▶ Adjustable gain: -30 dB to 70 dB range.
- ▶ Automatic gain control (AGC).
- ▶ Time corrected gain (TCG).
- ▶ Data storage (32 Megabit of non-volatile RAM).

CMX DL+ SPECIFICATIONS

Physical

Size:

Width (2.5in/63.5 mm)
Height (6.5 in/165 mm)
Depth (1.24 in/31.5 mm)

Weight: 13.5 ounces (with batteries).

Keyboard: Membrane switch pad with twelve tactile keys.

Operating Temperature:

14 to 140F (-10C to 60C)

Case: Extruded aluminum body with nickel-plated aluminum end caps (gasket sealed).

Data Output: Bi-directional RS232 serial port. Windows® PC interface software.

Display(Two Options): 1/8in VGA grayscale display (240 x 160 pixels). Viewable area 2.4 x 1.8in (62 x 45.7mm). EL backlit (on/off/auto). 25 Hz screen refresh rate.

1/4 VGA AMOLED color display (320 x 240 pixels). Viewable area 1.7 x 2.27 in (43.2 x 57.6 mm). 120 Hz screen refresh rate.

Ultrasonic Specifications

Measurement Modes:

Coating Off: Pulse-Echo (P-E)

Coating On: Pulse-Echo Coating (PECT)

Temp Comp: Pulse-Echo Temperature Compensation (PETP)

Thru-Paint: Echo-Echo (E-E)

Thru-Paint Verify: Echo-Echo Verify (E-EV)

Coating Only: Coating (CT)

Pulser: Dual square wave pulsers.

Receiver: Dual receivers - manual or AGC gain control with 110dB range (limited). Adjustable damping with color option.

Timing: Precision 25 MHz TCXO with single shot 100 MHz 8 bit ultra low power digitizer.

Power Source

Three 1.5V alkaline or 1.2V NiCad AA cells.

Alkaline: grayscale 35 hrs, color 12 hrs.
Nicad: grayscale 10 hrs, color 5 hrs.

Power saving DIM feature for color display.

Auto power off if idle 5 minutes.

Battery status icon.

Transducer

Transducer Types:

Dual / Single Element (1 to 15 MHz).

Flaw Prove Up (1 to 10MHz).

Locking quick disconnect
"00" LEMO connectors.

Standard 4 foot cable.

Custom transducers and cable lengths available for special applications.

Measuring

Pulse-Echo Mode (P-E) - (Pit & Flaw Detection) measures from 0.025 to 19.999 inches (0.63 to 508 millimeters).

Pulse-Echo Coating Mode (PECT) - (Material, Coating, Pit & Flaw Detection); Material: 0.025 to 19.999 inches (0.63 to 508 millimeters). Coating: 0.001 to 0.100 inches (0.01 to 2.54 millimeters).

Pulse-Echo Temp Comp Mode (PETP) - (Pit & Flaw Detection) Auto temperature compensation - measures from 0.025 to 19.999 inches (0.63 to 508 millimeters).

Echo-Echo Mode (E-E) - (Thru Paint & Coatings) measures from 0.100 to 4.0 inches (2.54 to 102 millimeters). Range will vary +/- depending on the coating.

Echo-Echo Verify Mode (E-EV) - (Thru Paint & Coatings) measures from 0.100 to 1.0 inches (2.54 to 102 millimeters). Range will vary +/- depending on the coating.

Coating Only Mode (CT) - (Coating Thickness) Measures from 0.0005 to 0.100 inches (0.0127 to 2.54 millimeters). Range will vary +/- depending on the coating.

Flaw Mode: Basic mode using angle beam transducers. Color offers D1.1 linearity.

Resolution: +/- 0.001 inches (0.01 mm).

Velocity Range:

0.0492 to 0.5510 inches/ μ s
1250 to 13995 meters/sec

Single and Two point calibration option for material & coating, or selection of basic material types.

Units: English & Metric

Display

Large Digits - Standard thickness view. Digit Height: 0.700 inches (17.78 millimeters). Color 0.565 in (14.35 mm).

A-Scan - Rectified +/- (flaw view), RF (full waveform view).

B-Scan - Time based cross section view. Display speed; grayscale (15 secs per screen), color (variable speed).

Scan Bar Thickness - 6 readings per second. Viewable in B-Scan and Large Digit views.

Repeatability Bar Graph - Bar graph indicates stability of reading.

Feature Status Bar - Indicates features currently active.

Memory (CMX DL)

Log Formats:

Grid (alpha numeric)

Sequential (auto identifier)

Cell contents:

Graphics On: grayscale 16,000 & color 8,000 readings, A/B Scan image, & gauge settings for every reading.

Graphics Off: 210,000 readings (coating, material, min & max).

OBSTRUCT to indicate inaccessible locations.

Connections

Output: RS232 serial interface. PC software & USB converter cable included.

Transducer Connectors: Two LEMO 00 connectors.

Certification

Thickness Gauge: Factory calibration traceable to NIST & MIL-STD-45662A.

Warranty

2 year limited



MADE IN THE USA

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