

# Dakota CMX10-DL Full Wave Capture Thickness Gauge



This is not just another A- Scan thickness gauge, this is an A- Scan gauge with full wave recording, B- Scan, TCG and 2nd layer, corrosion & precision thickness in one easy to use, affordable gauge.

The Dakota CMX10-DL Full Wave Capture Thickness Gauge is easy to navigate, simple to set up, all functions and features can be selected from the Menu icon. Create up to 50 custom setups for routine thickness inspections.

The Dakota CMX10-DL A-Scan Thickness Gauge boosts confidence in probability of detection (POD) through visual waveform analysis, signal optimization tools, and stability indicators that help inspectors verify and reduce false negatives on defects like pits or corrosion.

Useful variables such as transducer information, calibration methods, dates and calibration times can all be recorded, ensuring a high degree of consistency and repeatability.

A-Scan and B-Scan recording lets inspectors visualize the material profile, review scans and accurately locate corrosion, pits and other defects.

Enhanced Time Corrected Gain (TCG) and Backwall Echo Attenuation (BEA), plus flexible filtering and averaging, helps bring out critical signals in noisy or attenuative materials.

## Features

- Touchscreen and button keypad supports operation in the harshest environments.
- Heavy duty, rubberized, impact resistant, dust and waterproof case up to IP65.
- Up to 20,000 A-Scans on 128MB internal storage or approximately 5 million on a 32GB external memory card.
- Up to 15 hours battery life with LI-Ion Rechargeable Smart Battery or Mains Power Supply.
- Enhanced Time Corrected Gain (TCG) & Backwall Echo Attenuation (BEA), improving detection of porosity, inclusions, and cracks.
- Compatible with DakMaster™ for instant report generation and firmware updates.

## Dakota CMX10-DL Features Explained



### Time Corrected Gain (TCG) Improve possibility of detection

Time Corrected Gain (TCG) and filtering lets you lift later echoes without saturating the near surface. That is useful on rough or heavily corroded backwalls where the important echoes are weak and buried in noise.

Backwall Echo Attenuation (BEA) – enables on screen monitoring of backwall signal amplitude. A drop in backwall amplitude indicates an issue, useful in composite inspections and many other materials.



**Second Layer Inspection**  
**Less intrusive inspection better remaining life assessment**

The second layer/cladding measurement feature is about seeing the true condition of the base metal and liner separately.

The gauge interprets multiple echoes so it can distinguish the outer wall from the inner liner or cladding layer beneath. In practice, that means you can get one reading for total wall and another that represents the remaining thickness of the inner liner, or outer liner, even when it is behind a coating or outer shell.



**Crack Prove-Up Capability**  
**Fast confirmation of critical flaw**

High-resolution, accurate crack prove-up capability for fast confirmation of critical flaws, even in complex geometries.

The Dakota CMX10-DL Thickness Gauge increases the probability of detection of hard to detect pits and cracks using traditional angle transducer inspection methods, to supporting confident fitness-for-service decisions.



**Image Collect**  
**For guided inspection locations**

Upload a custom photo or CAD model of the part via DakMaster™ and then tap on that image to drive the next measurement location directly on the gauge itself.



**Internal Defect**  
**With point-to-point measurement**

B-Scan supports additional identification of defects in a composite layer beyond that of a traditional A- Scan gauge.

Cursors for point to point measurement provide accurate depth measurement.



**Overlay Comparison**  
**Identify differences in waveforms**

The Dakota CMX10-DL ultrasonic thickness gauge can help identify differences in waveform signal patterns to indicate changes in structure or areas of concern.

**From inspection to professional reports at the click of a button**

It's not all about inspection, it's what you do next that counts. Save up to 30% of your working week by producing professional inspection reports in seconds using DakMaster™ software.



## Product Features

Model	CMX10-DL
Screen Displayed Range	592mm (steel)
Measurement Range	PE: 0.007" to 58.3" (0.18mm to 1480mm) (probe dependant), EE: 0.007" to 23.3" (0.18mm to 592mm) (probe dependant), EEV: 0.007" to 11.7" (0.18mm to 296mm) (probe dependant), 2nd Layer Thickness (PE2): 0.007" to 58.3" (0.18mm to 1480mm) (probe dependant), 2nd Layer Thickness ThruPaint™ (EE2): 0.007" to 23.3" (0.18mm to 592mm) (probe dependant)
Velocity Calibration Range	0.0079 to 0.7874 in/μs / (200 to 20000 m/sec)
Transmitter Pulse	Square
Transmitter Pulse Voltage (peak-to-peak)	50 - 200V (User Adjustable in 1Volt steps)
Pulse Rise Time	<10 ns
Pulse Duration	25 to 250nS (Dependent on probe frequency)
Gain Control	0-74dB in 0.1dB steps features: Time Controlled Gain, Auto80
Transducer Frequency Range	1 - 20MHz
Measurement Accuracy	0.001" (±0.01mm) or ±1% of Reading (whichever is largest) *@ 5MHz 1/4" on Steel.
Measurement Resolution	±0.0001" (±0.001mm)
Min & Max Measurement	(Steel @ 5920m/s) Minimum: 0.007" (0.18mm) Maximum: 23.3" (592mm) (Delay: 0.1" - 35" (-3mm - 888mm))
Calibration Options	Zero (using the integral zero disc) , 1 - point, 2 - point , Custom Velocity, Preset Material
Gates	Flank, Zero-Cross, Peak
Number Gates	1-3 Depending on Mode Selected
Filter Settings	Low Pass (10Mhz, 20Mhz, 30Mhz), High Pass (0.5Mhz, 2.5Mhz, 5Mhz) & Broadband
Time Corrected Gain (TCG)	Ramp, Curve (up to 16 points)
Pulse Repetition Frequencies (PRFs)	2KHz
Back Wall Echo Suppression	■
V-path / dual path error correction	Automatically corrects for V-path (Dakota NDT transducers only)
DakMaster Software™	■
DakMaster™ Mobile App	■
Transducer Probe Type	Dual Contact, Single Contact, Single Delay, Angular (Prove Up)
Auto Detect & Transducer Set Up	Feature compatible with ODU style Transducers
Display	800 x 480 pixels, Colour, Touchscreen, Graphical, TFT Display
Display Refresh Rate	60Hz
Waveform Refresh Rate	20Hz (50ms)
Display & Recall Facilities	Numerical Reading, A- Scan, B- Scan and Video Recordings can be stored and retrieved in Data logs
A-Scan	Rectified +/-, RF, Full Wave
B-Scan	Timed Includes Recording and Analysis with 2 Curser Measurement
Differential Mode	■
Display Freeze	Freeze Screen and Overlay Signal on Screen
Expanded Gate	Expand signal displayed under gate
Transducer Stability Indicator	Speed 20Hz (50ms)
Display Colour Inversion	A- Scan Sunlight Assist
Brightness Adjust	Manual and automatic screen brightness level adjustment
Display Configurations	A-Scan, Statistics, Live Reading, Grid, Image Collect
Image Collect Library	Part Display Images (Multiple Formats)
Screen Share & Control	Remote Viewing Feature with Control
Data Output	USB and Bluetooth® LE Data Output
Log Formats	Sequential, Grid, Recording, Amplitude/Depth Colour Options
Screen Capture	On Gauge and Screen view function in DakMaster™
Note Ability	OBSTRUCT to indicate inaccessible, with notes
Full Traceability Feature	Set Up Library, Transducer Library, Calibration Library
Data Log File Format Options	Projects, Folders, Individual Files

## Technical Specifications

Part Number	Description
CMX10-DL	Dakota CMX10-DL Full Wave Capture Thickness Gauge
Operation of Gauge Controls	Keypad Only, Touchscreen Only or Keypad & Touchscreen Combined Control
Gauge Dimensions	180 x 105 x 50mm
Gauge Weight	872g
Operating Temperature	-10 to 50°C
Probe Sockets Type(s)	1/2 x Lemo-00 1x ODU Smart Port
Power Supply	LI-Ion - Rechargeable Smart Battery or Mains Power Supply
Battery Life	9 to 15 hrs (Dependant on usage)
Ingress Protection (IP)	Dust tight and protected against low power water jets in any direction; equivalent to IP65
Certification	Calibration Certificate
Warranty	1 year limited
Manufacture	Made in the United Kingdom

## Packing List

Dakota CMX10-DL Gauge
Ultrasonic Couplant; 1 x 120ml
Power Supply (UK, EU, US) Adapters
Rechargeable Battery
Hand Strap x1
Extension straps x2
Screen Protector x 1
USB Cable
Calibration Certificate
User Guide
DakMaster™ Software Download Card
Transit Case

## Accessories



Screen Protector, Pack of 5  
Part Number: **T92033669**



Hand Strap (incl extension pieces)  
Part Number: **T92033670**



Transit Case  
Part Number: **T92033673**



USB Cable  
Part Number: **T92033668**



Rechargeable Battery Pack  
Li-Ion 10.8V, 3.35Ah, 36.2Wh  
Part Number: **T92033672**



Power Supply with UK, EU & US  
Adapters  
Part Number: **T92033671**