



Features

- Blanview sunlight readable QVGA TFT colour display
- Sizing Toolkits: DAC, AWS, TCG, DGS
- Pulse Repetition Frequency: 8 to 333 Hz, adjustable
- Screen Refresh Rate: 60Hz
- Detection: Z-Cross, Flank & Peak
- Automatic: probe zero, probe recognition, and temperature compensation
- Measurement: Variety of modes to address a number of applications
- Large data storage: 6Gb internal & up to 64Gb external SD slot
- Multiple formats: Alpha numeric grid and sequential with auto identifier
- Up to 12 hours of battery life
- Download to ElcoMaster® data management software

The bench-top FD800 flaw detector series combines state-of-the-art flaw detection with advanced material thickness capabilities.

Designed for use in the laboratory these gauges are the tool you need for all your flaw detecting needs.

The Elcometer FD800 Bench Top Flaw Detector is available in two models: FD800DL and FD800DL+.

The time corrected gain (TCG) feature automatically compensates for sound attenuation through a material, further increasing the performance of the gauge.

Within the grid batching of the FD800DL+ the user has the capability to enter 'OBSTRUCT' on to the grid for easy identification of inaccessible locations to measure.

The FD800DL+ has a 6Gb internal memory and an external SD slot which allows up to 64Gb with full data logging via RS232 data output to ElcoMaster® data management software.

Tool kits include:

- TRIG enabling location of flaws in both surface distance and depth from the transducer.
- TCG (time corrected gain) increases gain as time increases, in order to achieve an overall level of sensitivity for the same flaw/reflector at different distances.
- DAC for the creation of DAC curves which are used to inform the operator of the size of any given flaw at any depth.
- AWS function provides automatic defect sizing in accordance with AWS D1.1 structural welding code.
- DGS/AVG allows automatic defect sizing from a single reference defect.

FD800 Bench Top Flaw Detectors

Material Thickness Features

Model & Part Number	FD800DL & FD800DL+
Display Mode: Material thickness digits display B-Scan cross sectional display B-Scan with digits display Scan bar display Coating thickness display A-Scan display Flaw detection modes	<ul style="list-style-type: none"> • • • • • + Rectified, - Rectified, Full Waveform (RF) TRIG, DAC, AWS, TCG, Zero Crossing, Flank, Peak
Measurement Mode¹	PE, PETP (Temp Compensation), EE (ThruPaint™), EEV, CT (Coating) & PECT
Measurement Rate (Thickness Mode) Manual: Scan mode Scan bar display	4 readings per second 32 readings per second 6 readings per second
Measuring Range²	PE: 0.63 - 30480mm (0.025 - 1,200 inches) PETP: 0.63 - 30480mm (0.025 - 1,200 inches) EE: 1.27 - 102mm (0.050 - 4.000 inches) EEV: 1.27 - 25.4mm (0.050 - 1.000 inches) CT: 0.01 - 2.54mm (0.0005 - 0.100 inches) PECT: 0.63 - 30480mm (0.025 - 1,200 inches) PECT: 0.01 - 2.54mm (0.0005 - 0.100 inches)
Measurement Accuracy²	± 1% or ±0.1mm whichever is the greater
Measurement Resolution	0.01mm (0.001 inches)
Velocity Calibration Range	256 - 16,000m/s (0.0100 - 0.6300in/ms)
Additional Features: High speed scan mode Differential mode Limit alarm mode	<ul style="list-style-type: none"> • • •
B-Scan display speed	adjustable display speed
Calibration Setups	6 factory & 64 user-definable setups transferrable to and from a PC archive
Gates	3 fully adjustable gates: start, stop, width & threshold
Damping	adjustable; impedance matching for optimising transducer performance
Pulsar Type	FD800DL: two adjustable square wave pulsers. FD800DL+: two tone burst pulsers
Gain	manual, automatic gain control (AGC) with 110dB range with 0.2dB resolution
Timing	precision TCXO timing with single shot 100MHz 8bit ultra low power digitizer
Data Logging	<ul style="list-style-type: none"> • 6Gb internal & up to 64Gb external SD slot <ul style="list-style-type: none"> • Bitmap graphic capture • sequential and grid logging • Alpha numeric batch identification • OBSTRUCT indicates inaccessible locations
Calibration Options	single, two point, velocity & material type
Transducer Recognition	automatic
V-path / dual path error correction	automatic
Probe Zero	automatic

¹ PE: Pulse-Echo Mode, EE: Echo-Echo (ThruPaint™) Mode.

² Measuring range & accuracy depends on material, surface conditions and the transducer selected.

FD800 Bench Top Flaw Detectors

Flaw Detection Features

Flaw Detection Mode Features	FD800DL & FD800DL+
Automatic Calibration:	Longitudinal (straight), or Shear (angle)
Probe Types:	Single Contact, Dual, Delay & Angle
Material Velocity Table:	Contains longitudinal and shear velocities for a variety of material types
TRIG	Trigonometric display of beam path, depth, surface distance, and curved surface correction. Used with angle beam transducers
DAC	Up to 8 points may be entered and used to digitally draw a DAC curve. Reference -2, -6, -10, (-6/-12), (-6/-14), (-2/-6/-10) dB. Amplitude displayed in %DAC, dB, or %FSH
AWS	Automatic defect sizing in accordance with AWS D1.1 structural welding code.
AVG/DGS	Automatic defect sizing using probe data. Stores up to 64 custom setups
TCG	Time corrected gain. 50 dB dynamic range, 20 dB per microsecond, up to 8 points for curve definition
Detection Modes	Zero Crossing, Flank and Peak
Display Freeze	Hold current waveform on screen
Peak Memory	Captures peak signal amplitude.
PRF	8 to 2000Hz in selectable steps (8, 16, 32, 66, 125, 250, 333, 1000, 2000Hz)
Pulse Width	40 to 400 ns. Selectable step options 40, 80 & 400 ns (labeled spike, thin & wide)
Frequency Bands	FD800DL & FD800DL+: Broadband 1.8 - 19 MHz (-3dB). Four narrow bands at 1, 2, 5, 10MHz FD800DL+: Additional narrow bands at 0.5MHz, 15MHz
Horizontal Linearity	+/- 0.4% FSW
Vertical Linearity	+/- 1% FSH
Amplifier Linearity	+/- 1 dB
Amplitude Measurement	0 to 100% FSH, with 1% resolution
Delay	0 - 999in (25,375mm) at steel velocity
Display	Blanview sunlight readable QVGA TFT colour display. 115.2 x 86.4mm (4.54 x 3.40 inches) viewable screen
Display Refresh Rate	60 & 120Hz
Units (selectable)	mm or inches
Backlight	adjustable brightness
Repeatability / Stability Indicator	●
Battery Type	6 x AA alkaline
Battery Life (approximate)	12 hours
Low Battery Indicator	●
Battery Save Mode	auto
Operating Temperature	-10 to 60°C (14 to 140°F)
Size (w x h x d)	216.0 x 165.0 x 70.0mm (8.5 x 6.5 x 2.5 inches)
Weight (including batteries)	2.04kg (4.5lbs)
Case Design	Aluminium case design with gasket sealed end caps, waterproof membrane keypad
Transducer Connector Type	LEMO
RS232 Interface	Bi-directional
Packing List	Elcometer NDT FD800DL or FD800DL+ gauge, couplant, carry case, user manual, test certificate, 3 x AA batteries, ElcoMaster® software, transfer cable