The DFX-8 Series
Flaw Detector & Thickness Gauge

One on hand equals two on the job!

Flaw Detector:
▶ Sizing Toolkits: DAC, AWS, TCG, DGS.
▶ Exceptional visibility in sunlight (Blanview) transmissive color QVGA display (320x240 pixels).
▶ P.R.F. - 8 Hz to 2 kHz, adjustable.
▶ Screen Refresh Rate: 60 Hz.
▶ Detection: Z-Cross, Flank & Peak.

Thickness Gauge:
▶ Measurement: Variety of modes to address a number of applications.
▶ Large data storage with multiple formats: Alpha numeric grid and sequential w/auto identifier.
▶ Li-Ion pack up to 18 hrs, emergency backup 6 AA cells up to 12 hrs.
▶ Windows PC interface software included.
▶ 2 year warranty.
## DFX-8 SERIES SPECIFICATIONS

### Distribution

- **Distributed by:**

### General

- **Size:** 8.5W x 6.5H x 2.5D in (216 x 165 x 70mm).
- **Weight:** 4.5 lbs (2.04 kgs), with batteries.
- **Case:** Extruded aluminum body with nickel plated aluminum end caps (gasket sealed).
- **Display:** Blanview sunlight readable QVGA TFT color display (320 x 240 pixels). Viewable area 4.54 x 3.40 in (115.2 x 86.4 mm), or 5.7 in (144.78 mm) diagonal. 16 color palette, multiple color options and variable brightness.
- **Screen Refresh Rate:** 60Hz.
- **Display Views:** Flaw Detector: Full wave, +/- Rectified, or RF. Thickness Gauge: Digits, +/- Rectified, RF, or B-Scan.
- **Timing:** Precision TCXO timing with single shot 100 MHz 8 bit ultra low power digitizer.
- **Measurement Gates:** Two independent gates (Flaw), and three gates (thickness). Start & width adjustable over full range. Amplitude 5-95%, 1% steps. Positive or negative triggering for each gate with audible and visual alarms.
- **Operating Temperature:** 14 to 104°F (-10C to 60C).
- **Environmental:** Meets IP65 requirements.

### Pulser

- **Pulser Type:** DFX-8 Two adjustable square wave pulacers. DFX-8+ Two tone burst pulasers.
- **P.R.F.:** 8 to 2000Hz in selectable steps (8, 16, 32, 66, 125, 250, 333, 1000, 2000 Hz).
- **Pulser Voltage:** DFX-8 100 - 200 volt peak amplitude, rise/fall time < 10ns into 50ohm. DFX-8+ 100 - 400v.
- **Pulse Width:** 40 to 400 ns. Selectable step options 40, 80 & 400 ns (labeled spike, thin & wide).

### Receivers

- **Gain:** 0 to 110DB with 0.2dB resolution. Manual and AGC control.
- **Damping:** 50, 75, 100, 300, 600, & 1500 ohms.
- **Frequency Bands:** DFX-8 & DFX-8+ Broadband 1.8 - 19 MHz (-3dB). Four narrow bands at 1MHz, 2MHz, 5MHz, 10MHz. DFX-8+ Additional narrow bands at .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.

### Power Source

- **Lithium Ion Pack:** 10.8v, 2 amp hrs, typical operation 18hrs.
- **Battery Backup:** Emergency battery backup. Six 1.5V alkaline, 1.2V AA Nicad cells, 1.2V AA Ni-MH, or other equivalent power source. Battery life (continuous use): Alkaline (12 hrs), Nicad (5hrs), and Ni-MH (12hrs), with default settings.
- **USB:** Direct USB 1.1 PC connectivity.
- **Power Connector:** 12v @ 2amps, adapter 100-240VAC, .7 Amps, 50-60 Hz.
- **5 Pin Lemo (Includes):** RS232 Output: RS232 PC serial interface. DFX-8+ For use with B-Scan encoders (crawlers).
- **Alarm Outputs:** Two independent alarm outputs triggered by the gates.
- **Analog Out:** DFX-8+ Proportional outputs (amplitude or distance), 0-10 volts.
- **Transducer Connectors:** Two LEMO 00 connectors.

### Calibration

- **Automatic Calibration:** Longitudinal (straight), or Shear (angle).
- **Probe Types:** Single Contact, Dual, Delay, and Angle .
- **Units:** English (in), Metric (mm), or Time (µs).
- **Velocity:** 0.0100 to .6300 in/µs (256–16,000 m/s).
- **Test Range:** 0 to 0.076in (1.93mm) minimum, to 1200in (30,480mm) maximum at steel velocity. Continuously variable.
- **Zero Offset (Probe Zero):** 0–999.999 µs.

### Memory

- **Log Formats:** Grid (Alpha Numeric), or Sequential (Auto Identifier).
- **Capacity:** 4 Gb internal & up to 64 Gb External SD slot.
- **Screen Capture:** bitmap graphic capture for quick documentation.
- **Custom Setups:** 64 user configurations.

### Video

- **Remote Commander:** Java PC software allows remote display and control for training/presentation purposes, and custom system integration.

### Flaw Detector Features

- **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/DFS:** 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.
- **Measurement Mode:** Pulse-Echo Temp Comp Mode (PETP) - (Pit & Flaw Detection) Auto temperature compensation -measures from 0.025 in to 100 ft. (0.63 mm to 3048 cm).

### Flaw Detector Features (Cont’d)

- **Display Freeze:** Holds current waveform on screen.
- **Peak Memory:** Captures peak signal amplitude.
- **Auto Interface Gate - DFX-8:** Automatic adjustment of interface gate for immersion testing (water path).

### Thickness Gauge Features

- **Measurement Modes:**
  - **Pulse-Echo Mode (P-E):** (Pit & Flaw Detection) measures from 0.025 in to 100 ft. (0.63mm to 3048 cm).
  - **Pulse-Echo Coating Mode (PECT):** (Material Coating, Pit & Flaw Detection): Material: 0.025 in to 100 ft. (0.63mm to 3048 cm). 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 in to 100 ft. (0.63 mm to 3048 cm).
  - **Echo-Echo Mode (E-E):** (Thru Paint & Coatings) measures from 0.050 to 4.0 inches (1.27 to 102 millimeters). Will vary based on coating.
  - **Echo-Echo Verify (E-EV):** (Thru Paint & Coatings) measures from 0.050 to 1.0 inches (1.27 to 25.4 millimeters). Will vary based on coating.

### Coating Only Mode (CT)

- **Coating Thickness Measurements:** from 0.005 to 0.100 inches (0.0127 to 2.54 millimeters). Range will vary +/- depending on the coating.
- **Two point calibration option for material & coating, or selection of basic material types.**
- **Auto probe zero, recognition and temperature compensation.**
- **High speed scan up to 50 readings per second.**
- **Audible alarm with hi/lo limits.**
- **Built-in differential mode for QC inspections.**
- **64 custom setup configurations.**

### Transducers

- **Transducers**
  - **Polarization:**
    - **Transducer Connectors:** Two LEMO 00 connectors.
    - **Transducer Types:**
      - Longitudinal (straight), or Delay line:
      - **Transducer Features:**
        - **Audio Alarm:** with hi/lo limits.
        - **Auto probe zero, recognition and temperature compensation.**
        - **High speed scan up to 50 readings per second.**
        - **Audible alarm with hi/lo limits.**
    - **Transducer Types:**
      - Longitudinal (straight), or Delay line:
      - **Transducer Features:**
        - **Audio Alarm:** with hi/lo limits.
        - **Auto probe zero, recognition and temperature compensation.**
        - **High speed scan up to 50 readings per second.**
        - **Audible alarm with hi/lo limits.**
      - **Transducer Types:**
        - **Transducer Features:**
          - **Audio Alarm:** with hi/lo limits.
          - **Auto probe zero, recognition and temperature compensation.**
          - **High speed scan up to 50 readings per second.**
          - **Audible alarm with hi/lo limits.**

### Certification

- **Thickness Gauge:** Factory calibration traceable to NIST & MIL-STD-45662A.
- **Flaw Detector:** EN12668-1 compliant.
- **Warranty:**
  - **2 year limited**