EVIDENT

Flaw Detector

EPOCH 6LT

EPOCH® 6LT Portable Flaw Detector

Elevate Your Inspections

- Maximum Uptime
- Safety
- Portability

No Compromises

Don't compromise on the inspection capabilities of your flaw detector. Now, inspectors who work in rope access applications or prioritize portability can take advantage of the functionality they need, in a small, portable instrument. The EPOCH® 6LT flaw detector combines the functionality of a powerful ultrasonic instrument with an ergonomic form factor matched specifically to rope access and high portability applications.

Reliable Flaw Detection in the Palm of Your Hand

Comfortable
Weighs just 1.95 pounds (890 g) with a grip-oriented weight distribution

Easy to Use
Rotary knob and simple button design makes navigation easy, even when wearing gloves

Clear, Bright Screen
View A-scans clearly in any light

Tough and Reliable
Engineered to IP65/67 and drop tested

Rotary knob control
Easy parameter adjustment

Comfortable hand grip
Hold the instrument with one hand

Connectors with center pin ID
Faster set up for thickness gauge dual transducers

Display rotation
Portrait and landscape views

Simple button design
Efficient navigation

¼-20 threaded insert connector
Connect to Evident and third party accessories

More Functionality on the Go

The workflow of the EPOCH® 6LT flaw detector is simple and straightforward so you can spend more time on your inspection and less time adjusting the instrument. The primary screen is a large, optimized A-scan display that contains links to commonly used features and functions. Combined with an improved scanning workflow, users can complete their inspections with minimal button presses and adjustments. When you do need to navigate the menu, prominent icons make it simple to find the feature you're looking for.

Despite its small size, the EPOCH 6LT flaw detector offers the features and functions necessary to meet the requirements of nearly any conventional ultrasonic inspection application and includes additional functionality for expanded connectivity.

Intuitive Navigation: A two-screen, icon-based interface makes navigation quick and easy

Optimized for One-Handed Operation: The hardware and software maximize efficient one-handed operation, freeing up a user's other hand to maneuver the probe

Advanced Flaw Detection Capabilities: Contains all the core functionality of the EPOCH 650 flaw detector and meets the requirements of ISO 22232-1

Fast Corrosion Defect Scanning: Optional corrosion software combines the ease of use of a thickness gauge with the flexibility of a flaw detector and includes center-pin transducer ID for faster set up

Stay Connected: Optional wireless LAN (Wi-Fi) connectivity for on-the-go data backups, setup downloads, efficient fleet management, and powerful cloud applications through the Evident Scientific Cloud

Harness the Power of Portability

The EPOCH® 6LT flaw detector offers features to help keep rope access technicians safe during challenging inspections. The rope access accessory kit enables users to secure the instrument to their leg with a strap or attach it to a harness for true hands-free operation. This includes the ability to rotate the instrument's inspection display to portrait mode, enabling proper visibility of the A-scan and readings when connected to your leg. With the unit secured, the user can make parameter adjustments with one hand, leaving the other hand free to manipulate the transducer or maintain balance and personal safety.

The user interface is optimized for one-hand use, so inspectors can control the inspection parameters without interrupting flaw scanning. For additional flexibility, the EPOCH 6LT flaw detector is compatible with a wide variety of Evident and third-party accessories via the ¼-20 threaded insert.

Rope Access Inspection Applications

Offshore Platform

The EPOCH 6LT flaw detector is the ideal tool for inspecting offshore oil platforms that are susceptible to corrosion.

- Optional corrosion software module for fast, efficient scanning
- Easy to use while hanging from an offshore platform

In-Service Wind Turbines

Technicians regularly inspect in-service wind turbine towers and blades and need a versatile flaw detector to do their job.

- Powerful acoustic and sizing features for inspecting the tower's welded joints
- Pulsing power and high signal-to-noise ratio required for inspecting composite blades

Bridges and Structural Steel

Bridges and structural steel are inspected to help ensure safety.

- Has all the necessary features for AWS code-compliant inspections, including an AWS D1.1/1.5 Weld Rating Calculator
- Includes DAC/TCG and DGS/AVG for flexible weld and base material inspections

Throw It in Your Bag and Go

NDT inspectors working in high portability industries require a lightweight, capable equipment. The EPOCH® 6LT flaw detector has a small form factor and weighs only 1.95 pounds (890 g) yet has all of the core functionality of the popular EPOCH 650 flaw detector. The EPOCH 6LT flaw detector is comfortable to use with one hand and is small enough to fit into a bag with other equipment.

High Portability Inspection Applications

In-Service Pipeline

Pipeline inspectors often travel long distances, making portable equipment essential.

- The EPOCH 6LT flaw detector is lightweight with an ergonomic design
- Includes dynamic flaw sizing software, such as DAC/TCG and DGS/AVG for inspecting welds, as well as optional corrosion software

In-Service Rail

Rail inspectors are constantly on the move and need a flaw detector that's up to the challenge.

- An intuitive user interface enables fast, efficient flaw detection
- Rugged and lightweight to endure the challenges of rail inspection

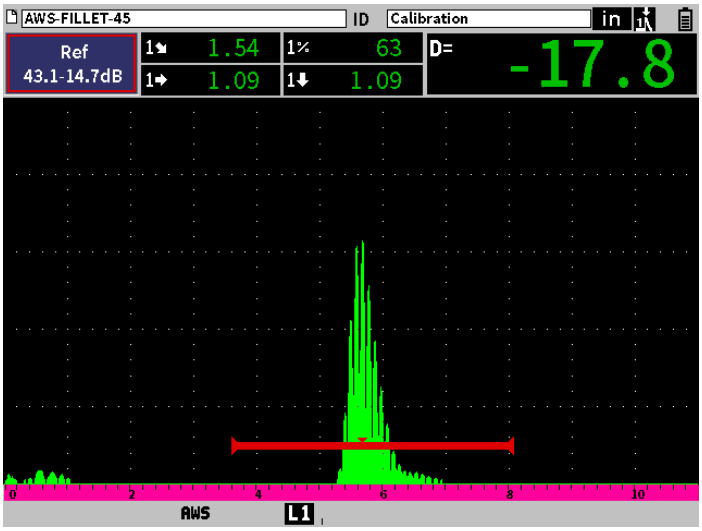
Aircraft Maintenance

Aircraft maintenance inspectors often need to carry multiple pieces of equipment and need an ultra-portable flaw detector.

- The EPOCH 6LT flaw detector is compact and easily fits in a bag with other equipment
- Has the pulser power and high signal-to-noise ratio required for inspecting composite aircraft skins

Powerful Features Optimized for One-Handed Operation

Based on the same digital architecture as the EPOCH® 650 flaw detector, the EPOCH 6LT flaw detector provides flexible, powerful pulsing and receiving features to accommodate the needs of most flaw detection inspections.



Pulser/Receiver

The instrument comes standard with powerful flaw detection capabilities, such as:

- PerfectSquare™ tunable square wave pulser
- Digital high dynamic range receiver
- Eight (8) 100% digital filter sets
- Auto- or manually-adjustable pulse repetition frequency (PRF) from 10 Hz to 2000 Hz
- Pulser voltage from 100 V to 400 V
- Amplitude resolution to +/- 0.25%
- Five customizable digital measurements

Standard Software Features

- **Dynamic DAC/TCG:** compares echo signals to a DAC curve or reference echo
- **DGS/AVG:** compares echo signals to a DGS/AVG diagram
- **AWS D1.1 and D1.5:** Provides a dynamic indication rating for AWS inspection applications

Added Versatility: Optional Software Features

- **Corrosion Module:** Includes automatic probe recognition, automatic gain control (AGC), thickness gauge measurement algorithm, true V-path correction, and an automatic zero function ("Do Zero")
- **Back Wall Echo Attenuator:** Attenuates the back wall of an inspected part using the screen region defined by Gate 2

Efficient Data Management

- Compatible with GageView® Pro PC interface program
- Export files via wireless LAN (Wi-Fi) or transfer to a removable USB memory stick
- Supports bitmap (BMP), comma-separated value (CSV), and PDF file formats

Connected and Cloud Enabled

The EPOCH 6LT flaw detector features cloud connectivity. Connect your flaw detector to the Evident Scientific Cloud via an optional wireless LAN USB dongle, enabling powerful cloud-based tools, including:

- Wireless firmware upgrade
- File backup and archiving
- Remote file access and management

Cloud file management includes all EPOCH 6LT file types, as well as exported report formats and image files. This remote data sharing capability makes it easier than ever to report and communicate your inspection results.

EPOCH® 6LT Specifications

General	
User Interface Languages	English, Spanish, French, German, Japanese, Chinese, Portuguese, Russian, Italian
Transducer connections	LEMO 00
Data storage	100,000 IDs onboard
Battery type and life	Single lithium-ion rechargeable standard; 6 h life
Power requirements	AC Mains: 100 VAC to 120 VAC, 200 VAC to 240 VAC, 50 Hz to 60 Hz
Display type	Full VGA (640 × 480 pixels) transflective color LCD, 60 Hz update rate
Display dimensions (W × H, Diag.)	117 mm × 89 mm, 146 mm (4.62 in. × 3.49 in., 5.76 in.)
Overall Dimensions (W × H × D)	209 mm × 128 mm × 36 mm, 58 mm at the hand grip (8.2 in. × 5 in. × 1.4 in., 2.3 in. at the hand grip)
Weight	890 g (1.95 lb.), including lithium-ion battery
Instrument Inputs/Outputs	
USB ports	(1) USB 1.1 Full Speed Host (Type A) (1) USB 2.0 Full Speed Client (Type Mini B)
Video output	1 digital video output
Environmental Ratings	
IP rating	Ingress Protection (IP) engineered to IP67 (dust tight and water submersion) and IP65 (dust tight and water jets) per IEC 60529-2004 (Degrees of Protection provided by enclosures—IP Code).
Explosive atmosphere	MIL-STD-810F, Method 511.4, Procedure 1.
Shock tested	MIL-STD-810F, Method 516.5, Procedure I, 6 cycles each axis, 15 g, 11 ms half sine.
Vibration tested	MIL-STD-810F, Method 514.5, Procedure I, Annex C, Figure 6, general exposure: 1 hour each axis.
Operating temperature	-10 °C to 50 °C (14 °F to 122 °F)
Battery storage temperature	0 °C to 50 °C (32 °F to 122 °F)
Pulser	
Pulser	Tunable square wave
PRF	10 Hz to 2000 Hz in 10 Hz increments
Energy settings	100 V, 200 V, 300 V, or 400 V
Pulse width	Adjustable from 25 nsec to 5,000 nsec (0.1 MHz) with PerfectSquare™ technology
Damping	50, 400 Ω
Receiver	
Gain	0 to 110 dB
Maximum input signal	20 Vp
Receiver input impedance	400 Ω ± 5%
Receiver bandwidth	DC to 26.5 MHz at -3 dB (standard version)
	0.2 to 26.5 MHz at -3 dB (ISO 22232-1:2020 compliant version)
Digital filter settings	8 digital filter sets (standard version)
	7 digital filter sets (ISO 22232-1:2020 compliant version)
Rectification	Full-Wave, Positive Half-Wave, Negative Half-Wave, RF
System linearity	Horizontal: ± 0.5% FSW
Resolution	0.25% FSH, amplifier accuracy ± 1dB
Reject	0 to 85% FSH in 1% increment positions
Amplitude measurement	1.25% to 110% full screen height
Measurement rate	Equivalent to PRF in all modes (single shot)
Calibration	
Automated calibration	Velocity, zero offset Straight beam (first back wall or echo-to-echo) Angle beam (sound path or depth)
Test modes	Pulse echo, dual, or through transmission
Units	Millimeters, inches, or microseconds
Range	4.31 mm to 6,700 mm at 5,900 m/s (0.2320 in./µs)
Velocity	635 m/s to 15240 m/s (0.0250 in./µs to 0.6000 in./µs)
Zero offset	0 to 750 µs
Display delay	-10 microseconds to 2203 microseconds
Refracted angle	0° to 85° in 0.1° increments, then jump to 90°
Gates	
Measurement gates	2 fully independent flaw gates
Gate start	Variable over entire displayed range
Gate width	Variable from 0.040 microseconds to end of displayed range
Gate height	Variable from 2 to 95% full screen height in 1% increments
Alarms	Positive and negative threshold/curve, minimum depth (gate 1 and gate 2)
Measurements	
Measurement display locations	5 locations available (manual or auto selection)
Gate (1, 2)	Thickness, sound path, projection, depth, amplitude, time-of-flight, min./max. depth, min./max. amplitude, sizing measurements based on mode
Echo-to-echo	Standard gate 2 – gate 1
DAC/TCG	Standard, up to 50 points, 110 dB dynamic TCG range
Special DAC modes	Custom DAC (up to 6 curves), 20–80% view
Curved surface correction	Standard OD or bar correction for angle beam measurements

Software Options

EP6LT-CORRSN (Q1400008):
Corrosion module

EP6LT-BEA (Q1400009):
Back wall echo attenuation gate

Optional Accessories

BATT-10025-0024 (Q7600001):
Lithium-ion rechargeable battery

EP-MCA-X:
EPOCH series charger / adaptor with power cord

HNDL-10018-0001 (Q7790068):
EPOCH 6LT wrist strap

EPLTC-C-USB-A-6 (U8840031):
USB cable, mini A to mini B

CASE-10042-0001 (Q7640003):
EPOCH 6LT transport case

600-DP (U8780297):
Display protectors (10 pack)

EP6LT-KIT-ROPE (Q7790069):
EPOCH 6LT rope access accessory kit

EP4/CH (U8140055):
EPOCH series chest harness

EP6LT-STAND (Q7790070):
EPOCH 6LT desktop stand

EPXT-EC-X:
EPOCH series external charging base with power cord

EP6LT-RPC:
EPOCH 6LT rubber protective case with stand, includes 1/4 in.-20 extension adaptor and bracket mount screw

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