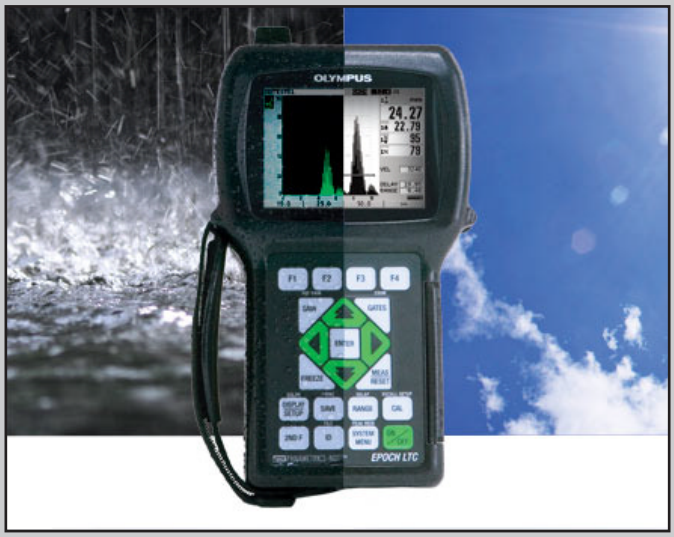
# EPOCH LTC
# RUGGED, HAND HELD
# FLAW DETECTOR




## GENERAL DESCRIPTION

The Panametrics EPOCH LTC digital ultrasonic flaw detector offers state-of-the-art technology in a compact and lightweight package. Based on the class-leading EPOCH XT, the EPOCH is full featured, complies with the EN 12668-1 standard, and has various specialized options to meet your inspection needs.

Ultrasonic flaw detection is widely used in locating and sizing hidden cracks, voids, disbonds, and similar discontinuities in welds, forgings, billets, axles, shafts, tanks and pressure vessels, turbines, and structural components.

The EPOCH features a bright, multicolor transflective, full-VGA (640 pixels x 480 pixels) display offering high-resolution A-scans and superior visibility in all lighting conditions, including direct sunlight. The EPOCH is also IP67 rated, ensuring that the instrument can perform in the harsh environments common in the inspection field.

**Features**

- Rated IP67 to ensure field ruggedness
- Complies with the EN 12668-1 standard
- Only 960 g (2.1 lb.)
- Full-color VGA display with transflective technology
- USB On-The-Go port for computer communication and direct printing
- Onboard and miniSD Card storage capabilities for the data logger
- Standard dynamic DAC/TVG
- Digital high dynamic range receiver with digital filters
- High-performance square wave pulser with tuning option

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# EPOCH LTC
# RUGGED, HAND HELD FLAW DETECTOR
## TECHNICAL SPECIFICATIONS

**GENERAL**
**EN 12668-1 compliant**
**Weight:** 960 g (2.12 lb) with Li-ion battery
**Dimensions:** 128.9mmW x 223.3mmH x 55.1mmD
**Keypad:** English, international symbols, Japanese, or Chinese
**Display languages:** English, Spanish, French, German, Italian, Japanese, Chinese, Russian, Norwegian, Swedish
**Transducer connection:** LEMO 00
**Battery:** Rechargeable Lithium-ion. Standard AA battery tray
**Battery operating time:**
Lithium-ion rechargeable battery: 8 hours
AA Li-FeS2: 6 hours
AA NiMH cells: 4 hours
AA alkaline cells: 3 hours
**Power compatibility:** 100/120 VAC, 200/ 240 VAC, 50-60 Hz

**ENVIRONMENTAL RATINGS**
**IP67 environmental Ingress protection rating**
**Explosive atmosphere approved as per:**
MIL-STD-810F, Procedure 1 and NFPA 70E, Section 500, Class 1, Div. 2, Group D
**Shock tested as per:** IEC 60068-2-27, 60 g, 6 ms H.S., 3 axes, 18 total
**Vibration tested:** Sine vibration as per 60068-2-6, 50 Hz to 150 Hz at 0.03 in. DA or 2 g, 20 sweep cycles
**Drop tested as per:** MIL-STD-810F 4.5.5 Procedure IV–Transit drop

**DISPLAY**
**Color transflective LCD:** Refresh rate of 60 Hz, user-selectable color schemes and brightness, two split-screen modes and one full-screen mode
**Display dimensions (W x H):**
640 pixels x 480 pixels, 75 mm x 56 mm diagonal
**Amplitude grid modes:** 100% or 110% amplitude display
**Time base grid modes:** Standard 0 to 10 division, Soundpath mode divides Range into five equal sections with grid lines, Leg mode displays Legs as grid lines
**PULSER**
**Square wave pulser:** Fixed width square wave pulser optimized for general flaw detection applications
**Pulse width:** Fixed width in base instrument. Adjustable from 30 ns to 10,000 ns (0.1 MHz) with EPLTC-SWP option
**Pulse repetition frequency (PRF):** Automatically software controlled over the range of 10 Hz to 500 Hz. Manual PRF control option available (PN: EPLTC-PRF)
**Measurement rate:** 10 Hz to 500 Hz. Always equal to PRF rate
Energy settings: 100 V to 400 V in 100-V increments
**Damping:** 50 Ù, 100 Ù, 200 Ù, 400 Ù

**RECEIVER**
**Gain:** 0 dB to 110 dB — Two user-defined gain step adjustments and presets
**Total instrument bandwidth:** 0.2 MHz to 26.5 MHz at –3 dB
**Digital filter settings:**
**Standard:** 0.2 MHz to 10.0 MHz
**Broadband:** 2.0 MHz to 21.5 MHz
**Low Pass:** 0.5 MHz to 4.0 MHz
**High Pass:** 8.0 MHz to 26.5 MHz
**Rectification:** Full wave, positive half wave, negative half wave, RF
**System linearity:** Horizontal: ±0.2% FSW
Vertical:0.25% FSH, amplifier accuracy ±1 dB
**Reject:** 0% to 80% full screen height with visual warning

**CALIBRATION**
**Automated distance calibration for velocity and zero offset**
**Test modes:** Pulse Echo, Dual, or Through Transmission
**Units:** Millimeters, inches, or microseconds
**Range:** Base instrument: 4 mm to 5000 mm
**Extended range option:** 4 mm to 10000 mm
**Velocity:** 635 m/s to 15240 m/s (0.0250 in./ìs to 0.6000 in./ìs)
**Zero offset:** 0 ìs to 750 ìs
**Display delay:** –59 mm to maximum range
**Refracted angle:** 10° to 85° in 0.1° resolution

**MEASUREMENTS**
**Types:** Thickness, Soundpath, Projection, Depth, Amplitude, Time-of-Flight for Gate 1.
**Gate 2 option (PN: EPLTC-GATE2):** Allows Echo-to-Echo measurements regardless of Gate 2 measurements and Gate 2 alarms.
**Four measurement display locations:** User selects up to four measurements from either gate to be displayed on the live screen.
**Dynamic DAC/TVG standard:** ASME, ASME III, JIS, and CUSTOM DAC with up to three warning curves. Allows dynamic adjustment of curves with gain, dynamic range 110 dB, slope 100 dB/ìs, and up to 50 points captured.
**Amplitude measurement:** 0% to 110% full screen height.
**X-value correction:** Removes the distance between the Beam index point and the front of transducer from the surface distance measurement.
**Gate 1:** Measures Echo height and Time-of-Flight.
**Gate start:** Variable over the entire displayed range.
**Gate width:** Variable from Gate start to the end of displayed range.
**Gate height:** Variable from 2% to 95% full screen height.
**Alarms:** Positive and negative thresholds, minimum depth.
**Zoom:** Displayed range is the Gate 1 width.

**INSTRUMENT INPUTS/OUTPUTS**
**USB:** USB On-The-Go port for PC communication, printing, and data storage.
**VGA ouput port:** To connect to computer monitors and projectors.
**miniSD:** miniSD Card slot for data storage.
**DATA STORAGE**
Capable of storing up to 50,000 IDs with waveforms, measurements, and configuration parameters in the onboard memory. The miniSD allows virtually unlimited data storage.

**STANDARD PACKAGE**
The EPOCH LTC package includes:
**EP-MCA:** AC adaptor
**EPLTC-TC:** Transport case
**EPLTC-MAN:** Instrument user's manual
**EPLTC-HS:** Hand strap
**EPLTC-BAT-L:** Lithium-ion rechargeable battery
**EPLTC-BAT-AA:** battery cell tray
**Warranty:** One-year limited warranty.

**OPTIONS**
**EPLTC-EW:** Extended warranty for one additional year
**SOFTWARE OPTIONS**
**DGS/AVG:** PN: EPLTC-DGS-AVG
**Manual PRF control:** PN: EPLTC-PRF
**Extended range:** PN: EPLTC-RANGE
**Gate 2 (Echo-to-Echo):** PN: EPLTC-GATE2
**Tunable square wave pulser:** PN: EPLTC-SWP
**Curved surface correction:** PN: EPLTC-CSC
**AWS D1.1/D1.5:** PN: EPLTC-AWS
**GageView Pro:** PN: GAGEVIEWPRO-KIT-USB-A-AB

**OPTIONAL ACCESSORIES**
**External smart battery charger:** PN: EPXT-EC
**Chest harness:** PN: EP4/CH
**Rubber protective case with pipestand:** PN: EPLTC-RPC
**Clear display protectors (10):** PN: EPLTC-DP

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