EDDYFI LYFT

Pulsed Eddy Current Reinvented

Eddyfi Technologies

PEC REINVENTED: CUI PROGRAMS REDEFINED

Corrosion under insulation (CUI), corrosion blistering and scabs, flow-accelerated corrosion (FAC), corrosion under fireproofing (CUF), and corrosion under coatings are possibly the greatest unresolved asset integrity problems in the industry. Current methods used to measure wall thickness over liftoff, without removing insulation, all have severe limitations and existing pulsed eddy current (PEC) solutions rely on outdated technology. It's time for evolution.

THE EVOLUTION OF PEC

Lyft® is a high-performance solution reinventing PEC. The patent-pending Eddyfi® solution features:

- State-of-the-art portable instrument
- Standard pulsed eddy current array (PECA) technology
- Real-time C-scan imaging
- Fast data acquisition
- Grid and dynamic scanning modes

Lyft can scan through thick metal and insulation, as well as aluminum, stainless steel, and galvanized steel weather jackets.

POWERFUL EMBEDDED SOFTWARE

The user-friendly multi-touch software includes several innovative features, including real-time C-scan imaging, complete wall thickness measurements (ID and OD corrosion), as well as complete inspection management and reporting capabilities.

Undersizing is a well-known phenomenon for PEC where defects smaller than a probe's averaging area appear shallower than they really are. The Lyft compensated wall thickness (CWT) tool mitigates this phenomenon by more precisely quantifying the minimum wall thickness of a specific region in a C-scan.

RELIABLE AND REPEATABLE RESULTS

The Lyft software is packed with automation and advanced algorithms that remove operator-specific dependence, thanks to the power of SmartPULSE™ technology. It automatically optimizes pulser and receiver parameters (gain, duration, time gates, filters, etc.). SmartPULSE also optimizes wall thickness measurements, which ensures optimal performance and repeatability.

THE BEST OF PEC MADE PORTABLE

Lyft is sealed and designed for IP65. Its magnesium alloy casing is tough, water and dust resistant, and cools without any external air exchange. The adjustable stand, the top handle, and four corner anchor points make it practical for on-site inspections. The embedded Windows® PC offers standard connect-anywhere capabilities and advanced productivity tools that optimize field testing. The premium-quality 26.4 cm (10.4 in) LED display is optically bonded, non-reflective, comes with 3 mm (1/8 in) strengthened glass, and is designed for gloved hands, under any lighting conditions. The system also comes with two, hot-swappable batteries for extended autonomy.

WWW.EDDYFI.COM/LYFT

Heavy-duty bumpers, hooked for harnessing

Quick Copy: Transfer all inspection files to USB at the touch of a button

Powerful connectivity

Protective doors

10.4", non-reflective, backlit, high-resolution multi-touch display

Battery life (typical): 6–8 hours

A NEW KIND OF PEC

Eddyfi has garnered R&D, a world-class portable instrument, software, sensors, and accessories, as well as dedicated application engineers and support teams to transform PEC into a technique capable of achieving its full potential. Who else but Eddyfi to reinvent an eddy current technique and redefine CUI programs?

OPTIMIZED PERFORMANCE FOR WALL THICKNESS AND LIFTOFF

The Lyft solution includes several sizes of plug-and-play probes for the right balance between wall thickness and liftoff.

The 6-element PECA probe is capable of a single-pass coverage of 457 mm (18 in) in grid or high-resolution, dynamic mode. It supports metal thicknesses 6–25 mm (0.25–1.00 in), insulation 25–102 mm (1–4 in), and stainless steel/aluminum. Displaying C-scans has never been this fast, improving overall inspection productivity as much as 10 times.

The single-element PEC probe family supports metal thicknesses up to 100 mm (4 in), insulation as thick as 300 mm (12 in), and stainless steel/aluminum/galvanized steel weather jackets.

The splash-zone and underwater probes enable tackling offshore applications with their rugged design—watertight down to 15 m (49.2 ft) and 100 m (328 ft).

The tank floor probe targets the in-service inspection of storage tank floor annular rings. Its super-thin 4.8 mm (0.2 in) titanium blade enables the probe can slide up to 400 mm (16 in) under tank floor edges.

The patent-pending PEC-GS probe is dedicated to insulated structures protected by galvanized steel weather jackets. The probe offers better signal penetration, detection capabilities and sizing accuracy, and signal-to-noise ratio (SNR) compared to single-element PEC probes.

Details at www.eddyfi.com/pulsed-eddy-current-pec-probes/.
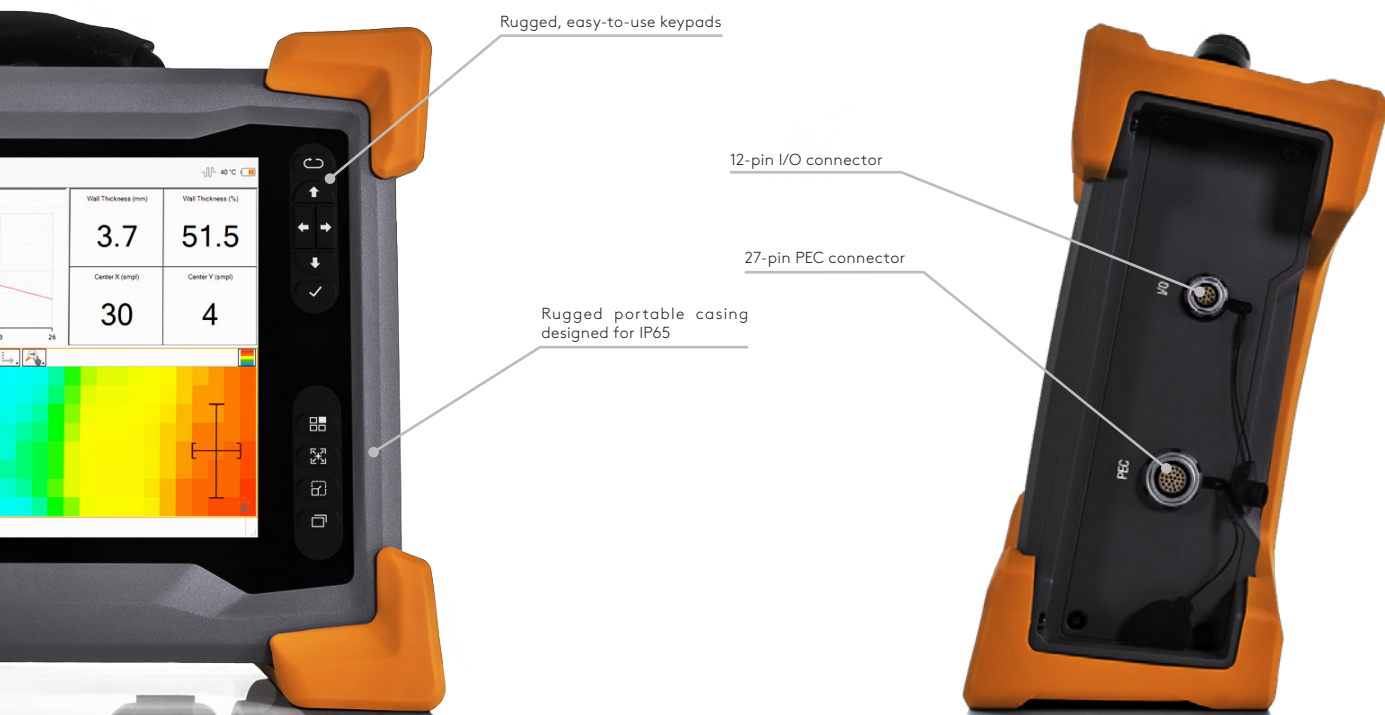
ANALYSIS AND REPORTING SOFTWARE

The Lyft Pro desktop software enables advanced Lyft data analysis through the same graphical user interface as the Lyft software, making it easy to learn and benefiting from larger data layouts. Lyft Pro makes it easier to plan inspections for several Lyft instruments—they can be out in the field acquiring data while analysts are hard at work extracting value from acquired data. The software also has features to generate richer reports and tools to bridge calibration parameters between scan zones.

SurfacePro 3D is an advanced visualization and reporting software designed to automatically create components and overlay stitched C-scan data.

GET EDDYFI CERTIFIED ANYWHERE

We are geared to offer PEC training: a blend of e-learning and hands-on training at our offices or yours that will give you the necessary knowledge and skills to efficiently use PEC when inspecting assets.

Rugged, easy-to-use keypads

12-pin I/O connector

27-pin PEC connector

Rugged portable casing designed for IP65

SPECIFICATIONS

INSTRUMENTS

Dimensions (W×H×D)		355×288×127 mm (14.0×11.3×5.0 in)
Weight	With batteries	6.6 kg (14.5 lb)
Volume		13 L (791 in³)
Power requirements		100–240 VAC, 50–60 Hz
Power supply		Direct VAC or onboard batteries
Batteries	Type	Li-ion, rechargeable, DOT compliant
	Typical life	6–8 hours
Video output		HDMI
Number of channels		6 (GD/GDA)

INSTRUMENTS (CONT.)

Display	26.4 cm (10.4 in) Non-reflective (AR coating) Anti-fingerprint (oleophobic coating) 3 mm (1/8 in), chemically strengthened glass cover Optically bonded LCD and touchscreen Passive backlight enhancement
Storage	SSD, 100 GB
Cooling	Sealed and fanless
Encoders	2 axes, quadrature (GDA model only)
Connectivity	Gigabit Ethernet, Wi-Fi, Dual Mode Bluetooth® 2.1, 2.1+EDR, 3.0, 3.0+HS, 4.0 (BLE), USB 2.0 (×3)
Probe recognition and setup	Automatic

PERFORMANCE

Dynamic data acquisition	Up to 15 points/s
Dynamic scan speed	Up to 75 mm/s (3 in/s)
Grid mapping scan speed	Instant, less than 1 second (typical)

PERFORMANCE (CONT.)

SmartPULSE	Automatic PEC pulser-receiver parameters config. Full thickness sensitivity (OD and ID defects) Reliable measurements with liftoff variations, weather jackets overlaps, straps, corrosion scabs 1-point calibration (on nominal or known thickness), auto-normalization, repeatability optimization

PROBES*

Features	Remote control keypad Lyft 27-pin Fischer connector Heavy-duty 5 m (16.4 ft) cable
Nominal wall thickness	Up to 100 mm (4 in)
Liftoffs	PECA-6CH-MED: 25–102 mm (1–4 in) PEC-152-G2: 0–300 mm (0–12 in) PEC-089-G2: 0–203 mm (0–8 in) PEC-025-G2: 0–76 mm (0–3 in)
Smallest detectable defect volume	15 % of footprint volume

PROBES (CONT.)

Minimum measurable remaining wall thickness	15 % from nominal
Weather jackets	Stainless steel up to 1.5 mm (0.06 in) Aluminum up to 1 mm (0.04 in) Galvanized steel up to 1.0 mm (0.04 in)
Pipe diameters	25 mm (1 in) up to flat surfaces
Test temperatures	Carbon steel: –150 –500 °C (–238 –932 °F) Max. weather jacket, direct contact: 70 °C (158 °F) Max. weather jacket, probe shoe: 120 °C (248 °F)

ENVIRONMENTAL

IP rating	Designed for IP65
Operating temperature	0–40 °C (32–104 °F)
Operating humidity	95 %, non-condensing
Compliance	ASME, EN 61010-1, CE, WEEE, FCC Part 15B, ICES-003, AS/NZS CISPR 22, RoHS

APPLICATION-SPECIFIC PROBES

Available models (Visit website for details)	Splash zone
	Underwater
	CUI under galvanized steel cladding
	Tank floor

*Refer to the *Understanding PEC Probe Selection and Footprint* on www.eddyfi.com/lyft.

www.eddyfi.com   info@eddyfi.com

Eddyfi Technologies
Beyond current