Technical
Specifications

EDDYFI LYFT

Corrosion Assessment Redefined

Eddyfi Technologies

CORROSION ASSESSMENT 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. Other methods used to measure wall thickness under liftoff, without removing insulation, all have severe limitations and existing pulsed eddy current (PEC) solutions rely on outdated technology. Let's redefine corrosion inspection.

The Evolution of PEC

Lyft® is a high-performance solution reinventing PEC.

The patented 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 encoded dynamic scanning modes

Lyft can scan through thick 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.

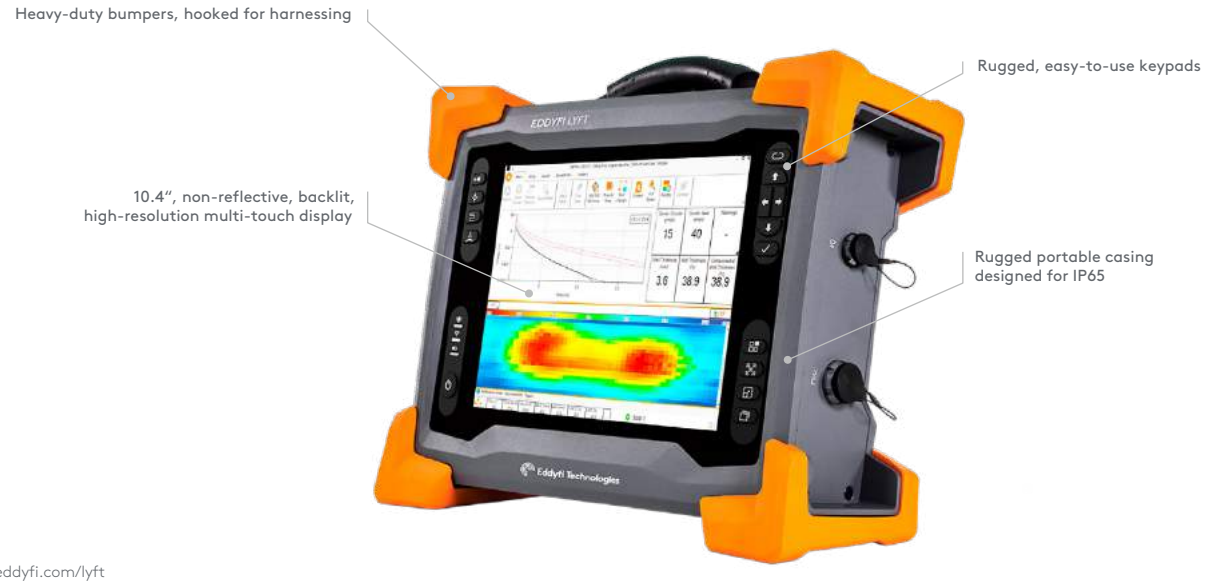
Undersizing is a well-known phenomenon for PEC where defects smaller than a probe's averaging area appear shallower than they really are. The Lyft compensated wall thickness (CWT) tool mitigates this phenomenon by more precisely quantifying the minimum wall thickness of a specific region in a C-scan.

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.



A NEW KIND OF PEC

Eddyfi's dedicated application engineers and R&D team combined a world-class portable instrument with advanced software, sensors and accessories to transform PEC into a technique that reaches its full potential. Who else but Eddyfi would reinvent an eddy current technique, integrate high-productivity array to the solution and completely 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 patented high-resolution PECA probe is part of a complete solution dedicated to providing the best estimate of remaining wall thickness under surface-forming scabs and blisters. Using an array of dual sensors capable of spatial triangulation, the probe enables the detection of small defects, in a single-pass coverage of 75 mm (3 in) in grid or encoded, dynamic-scanning modes. It supports metal thickness ranging from 3–19 mm (0.12-0.75 in) and liftoff from 0–50 mm (0–2 in).

The 6-element PECA probe is designed to improve overall inspection productivity as much as 10 times. The probe is capable of a single-pass coverage of 457 mm (18 in) in grid or encoded, dynamic-scanning modes. It supports metal thickness ranging from 6–25 mm (0.25–1 in), insulation from 0–102 mm (0–4 in), and aluminum/stainless steel weather jackets. Displaying C-scans has never been this fast.

The single-element PEC probe family supports metal thickness up to 100 mm (4 in), insulation as thick as 300 mm (12 in), and stainless steel/aluminum/galvanized steel weather jackets. A range of specialized probes are available to tackle underwater inspections, the in-service inspection of storage tank floor annular rings, and insulated structures protected by galvanized steel weather jackets.

Analysis and Reporting Software

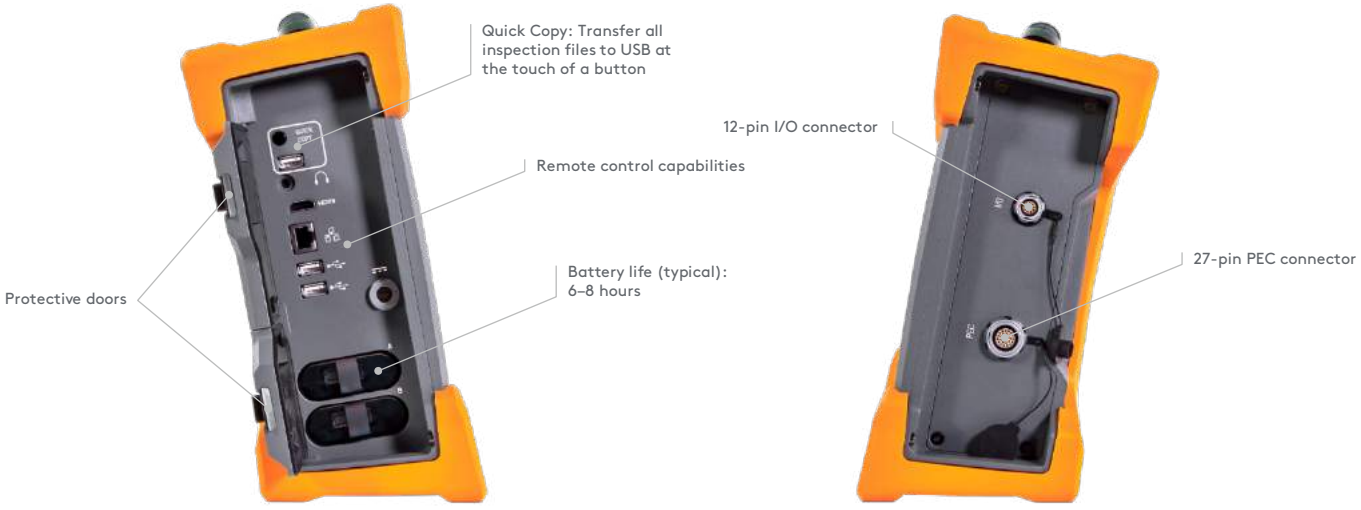
Lyft Pro desktop software enables advanced Lyft data analysis through the same graphical user interface as the Lyft software, making it easy to learn and benefit from larger data layouts. Lyft PRO makes it easier to plan inspections for several Lyft instruments. It also has a power mode allowing you to connect your computer to your Lyft instrument and to perform acquisition. Furthermore, the software has features to generate richer reports, tools to bridge calibration parameters between scan zones and take advantage of the Tau-scan™ for advanced analysis of PEC data.

SurfacePro 3D is an advanced visualization and reporting software designed to automatically create 3D components, overlay and stitch C-scans at data import.

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.

Details at: ***www.eddyfi.com/pulsed-eddy-current-pec-probes***



SPECIFICATIONS

INSTRUMENT

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 in^3)
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*		7
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
Encoder*		Quadrature
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)
SmartPULSE	Automatic PEC pulser-receiver parameters config. Full thickness sensitivity (OD and ID defects) Reliable measurements with liftoff variations, weather jacket 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	0–300 mm (0–12 in)
Smallest detectable defect volume	15% of footprint volume
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)	• Scab and corrosion blisters • Splash zone • Underwater • CUI under galvanized steel cladding • Tank floor • Custom probes

* Lyft-GDA

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

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