



Lyft[®]

Pulsed Eddy Current Reinvented



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without removing insulation, all have severe limitations and existing pulsed eddy current (PEC) solutions rely on outdated technology.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

Eddyfi introduces *Lyft*® — a reinvented, high-performance PEC solution. The patent-pending system features a portable, state-of-the-art instrument; real-time C-scan imaging; fast data acquisition (up to 15 readings per second) with grid and dynamic scanning modes; and great flexibility thanks to extension cables, probe shoes, and an extension pole. The *Lyft* probes can scan through thick metal and insulation, as well as aluminum, stainless steel, and galvanized steel weather jackets.

Lyft is offered in two models: the powerful *Lyft* capable of dynamic and grid mapping, and a lighter model offering conventional grid mapping only.

Powerful Embedded Software

The user-friendly multi-touch software includes several innovative features, including real-time C-scan imaging (grid mapping and dynamic modes), 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, while limiting the need for advanced knowledge of PEC.

The Best of PEC Made Portable

The *Lyft* instrument 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.

eddyfi.com/lyft



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 WT and Liftoff

The **Lyft** solution includes several sizes of plug-and-play probes for the right balance between wall thickness and liftoff. The standard probe family is versatile enough to support metal thicknesses up to 100 mm (4 in), insulation up to 300 mm (12 in), and stainless steel/aluminum/galvanized steel weather jackets.



The sleek probes also have the capability to inspect the hard-to-reach areas of varying geometries. Standard probes have a universal clip-on encoder, status LEDs, and a keypad making operation easy.

The splash-zone and underwater probes enable tackling offshore applications with their rugged design — watertight down to a

depth of 15 m (49.2 ft) and 100 m (328 ft).

The tank floor probe was developed for 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, assessing the remaining wall thickness of this critical region exposed to corrosion.

Accessories include a pole (up to 4.6 m/15 ft), long extension cables for rope access, and clip-on stabilizers and ergonomic handles. They also include probe shoes enabling operation on surfaces up to 120 °C (248 °F) and attenuating the vibration from galvanized steel weather jackets.

Visit www.eddyfi.com/pulsed-eddy-current-pec-probes/ for details.

Lyft Pro

This desktop software enables advanced Lyft data analysis and features the same graphical user interface than the Lyft software, making it easy to learn and benefiting from larger data layouts. This translates into Lyft instruments out in the field acquiring data while analysts work hard to extract value from acquired data. Lyft Pro makes it easier to plan inspections for several Lyft instruments. The software also has features to generate richer reports and tools to bridge calibration parameters between scan zones. Get in touch with Eddyfi to get Lyft Pro. Available for free to subscribing Lyft software and service plan users.

Get Eddyfi Certified Anywhere

Our offices in Québec, Houston, Lyon, and Abu Dhabi are geared to offer PEC training (at our offices or at your site) that will give you the necessary knowledge and skills to efficiently use PEC when inspecting assets.



Specifications

Instruments

Models	<ul style="list-style-type: none"> LYFT-PEC-GD: Supports grid and dynamic scans LYFT-PEC-G: Supports grid scans only 	
Dimensions (W×H×D)	355×288×127 mm (14.0×11.3×5.0 in)	
Weight	With batteries	6.6 kg (14.5 lb)
	Without batteries	5.7 kg (12.5 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

Display	<ul style="list-style-type: none"> 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
Video output	HDMI
Storage	SSD, 100 GB
Cooling	Sealed and fanless
Encoders	2 axes, quadrature (GD model only)
Connectivity	Gigabit Ethernet, Wi-Fi, Bluetooth®, USB 2.0 (×3)
Probe recognition and setup	Automatic

Performances

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

SmartPULSE	<ul style="list-style-type: none"> Automatic configuration of PEC pulser-receiver parameters Full thickness sensitivity (OD and ID defect detection) Reliable measurements w/ liftoff variations, weather jackets overlaps, straps, corrosion scabs 1-point calibration (on nominal or known thickness), auto-normalization, repeatability optimization
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Standard Probes*

Features	<ul style="list-style-type: none"> Remote control keypad Lyft 27-pin Fischer connector Heavy-duty, high-temp. (max. 120 °C (248 °F)) 5 m (16.4 ft) cable
Nominal WT	Up to 100 mm (4 in)
Liftoffs	<ul style="list-style-type: none"> 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 vol.	15 % of footprint volume
Min. measurable remaining WT	15 % from nominal

Weather jackets	<ul style="list-style-type: none"> Stainless steel up to 1.5 mm (0.06 in) Aluminum up to 1 mm (0.04 in) Galvanized steel up to 0.5 mm (0.02 in)
Pipe diam.	Down to 25 mm (1 in)
Test temps	<ul style="list-style-type: none"> Carbon steel structures: –150 °C to 500 °C (–238 °F to 932 °F) Max. weather jacket temp direct contact operation: 70 °C (158 °F) Max. weather jacket temp w/ probe shoe: 120 °C (248 °F)
Accessories	<ul style="list-style-type: none"> Universal clip-on encoder Probe shoes: operation on surfaces up to 120 °C (248 °F) attenuation of vibration from galvanized steel weather jackets Clip-on handle for medium and large probes Clip-on stabilizers Telescopic extension pole w/ embedded remote control keypad, up to 4.6 m (15 ft) long Extension cables: 15 m (50 ft) and 30 m (100 ft) Scan grid mat

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*

Models	<ul style="list-style-type: none"> Splash zone Underwater Tank floor <p>Refer to the PEC probe catalog for details.</p>
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*Refer to the *Understanding PEC Probe Selection and Footprint* posters on eddyfi.com/lyft.

The information in this document is accurate as of its publication. Actual products may differ from those presented herein.

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