



Lyft™

Pulsed Eddy Current Reinvented



PEC REINVENTED: CUI PROGRAMS REDEFINED

Corrosion under insulation (CUI) is possibly the greatest unresolved asset integrity problem in the industry. Current methods for measuring wall thickness with liftoff, without removing insulation, all have severe limitations and existing pulsed eddy current (PEC) solutions rely on outdated technology. It's time for evolution. It's time for *Lyft*[™].

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-mapping and dynamic scanning modes, and flexibility with long cables (35 m/115 ft). It can also scan through thick metal (up to 64 mm/2.5 in) and insulation (up to 203 mm/8 in liftoff), as well as aluminum, stainless steel, and galvanized steel weather jackets.

Reliable and Repeatable Results

The *Lyft* software is packed with automation and advanced algorithms that remove operator-specific dependence, thanks to the power of the SmartPULSE[™] technology. It automatically optimizes pulser and receiver parameters (gain, duration, time gates, filters, etc.). SmartPULSE also optimizes wall thickness (WT) measurements, which ensures optimum performance and repeatability, while limiting the need for advanced knowledge of pulsed eddy current.

Powerful Embedded Software

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

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 and portable 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 battery operation.



eddyfi.com



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 plug-and-play probes of different sizes for the right balance between WT and liftoff. The probe family allows enough flexibility to support metal thicknesses up to 64 mm (2.5 in), 203 mm (8 in) insulation, stainless steel/aluminum/galvanized steel weather jackets, and the capability to inspect the hard-to-reach areas of varying geometries. Standard probes have an embedded encoder and a keypad that makes operation easy. The splash-zone family of probes enables tackling offshore applications with its rugged design watertight down to a depth of 10 m (32.8 ft). Accessories include poles (up to 4.6 m/15 ft), long extension cables (35 m/115 ft) for rope access, and probe shoes enabling operation on surfaces up to 120 °C (248 °F) and attenuating the vibration from galvanized steel weather jackets.

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.

PEC Probes

Built-in Controls: Easily perform inspections without having to manipulate the **Lyft** instrument.

Encoder: The high-precision 20.53 counts/mm encoder enables exactly positioning defects for targeted mitigation.

LEDs: The green and red LEDs notify the user of various conditions, for example: when the scan is being performed too quickly, the readiness of **Lyft**, whether you are outside the scan zone, the SmartPULSE PEC autoset status, and so forth.



com/lyft



Specifications

Instrument

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|-----------------------------|-------------------|--|
| 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 |
| Connectivity | | Gigabit Ethernet, Wi-Fi, Bluetooth®, USB 2.0 (×3) |
| Probe recognition and setup | | Automatic |

Probes*

| | |
|----------------------|--|
| Standard (×3) | <ul style="list-style-type: none"> • Liftoffs: 0–203 mm (0–8 in), 0–152 mm (0–6 in), 0–25 mm (0–1 in) • Built-in encoder • Remote control keypad • Lyft 27-pin Fischer connector • Heavy-duty 5 m (16.4 ft) cable |
| Splash zone (×1) | <ul style="list-style-type: none"> • Liftoffs: 0–152 mm (0–6 in)* • Watertightness depth: 10 m (32.8 ft) • Lyft 27-pin Fischer connector • Heavy-duty 20 m (65.6 ft) cable <p>* Contact Eddyfi for information about other models.</p> |
| Testing temperatures | <ul style="list-style-type: none"> • Carbon steel structure temperature range: –150 °C to 500 °C (–238 °F to 932 °F) • Maximum weather jacket temperature for direct contact operation: 70 °C (158 °F) • Maximum weather jacket temperature with probe shoe: 120 °C (248 °F) |
| Accessories | <ul style="list-style-type: none"> • Extension cable, 35 m (115 ft) long • Telescopic extension pole with embedded remote control keypad, up to 4.6 m (15 ft) long • Probe shoes enabling operation on surfaces up to 120 °C (248 °F) and attenuating the vibration from galvanized steel weather jackets (compatible with telescopic extension pole) |

Performance

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|---|--|
| Nominal wall thickness | Up to 63.5 mm (2.5 in) |
| Insulation (liftoff) | 0–203 mm (0–8 in) |
| 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) |
| Smallest detectable defect volume | 15% of footprint volume (footprint × wall thickness) |
| Minimum measurable remaining wall thickness | 15% from nominal |
| Pipe diameter | Down to 25 mm (1 in) |
| 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) |
| SmartPULSE | <ul style="list-style-type: none"> • Automatic configuration of PEC pulser-receiver parameters • Full thickness sensitivity (OD and ID flaw detection) • Reliable measurements even with liftoff variations, weather jackets overlaps, straps, and corrosion scabs • Repeatability optimization • One-point calibration (on nominal wall or known thickness value) and auto-normalization |

Environmental

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|-----------------------|---|
| 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 |

*Refer to the *Understanding PEC Probe Selection & Footprint* poster on eddyfi.com/lyft.

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