Technical Specifications

LYFT

Corrosion assessment redefined

Lyft® can scan through thick insulation, as well as aluminum, stainless steel weather jackets. It also benefits from a range of PECA, single-element PEC, and application-specific probes to support various applications.

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.

BENEFITS

- State-of-the-art portable and connected instrument
- Inspect through thick insulation and fireproofing
- Save on insulation removal costs
- Real-time imaging for instant results
- Unrivalled productivity with PECA
- Easy setup with SmartPULSE™ calibration
- Highest confidence with Tau-scan™ and PermTool™ advanced analysis tools

APPLICATIONS

- Corrosion Under Insulation (CUI) and Fireproofing (CUF)
- Insulated pipes and vessels
- Through aluminum, stainless steel, and galvanized steel weather jackets
- Safe, in-service scab corrosion assessment, no need to remove the scale
- In-service inspection of storage tank annular plates
- Inspect ship decks without removing floor coverings

AUTOMATED SOFTWARE FOR RELIABLE AND REPEATABLE RESULTS

The Lyft software is equipped with automation and advanced algorithms designed to minimize the risk of operator-specific errors. With SmartPULSE™ technology, the software automatically and efficiently optimizes pulser and receiver parameters (such as gain, duration, time gates, filters, etc.) when preparing for an inspection. This optimization extends to wall thickness measurements, ensuring optimal performance and repeatability. Throughout the acquisition process, a suite of data quality verification checks continually monitors data, promptly notifying users to ensure usable and reliable data outputs.

UNIQUE TO LYFT—WALL THICKNESS MEASUREMENT TOOL FOR SMALLER FLAWS

Under sizing is a well-known phenomenon for PEC where defects smaller than the probe's averaging area appear shallower than they really are. The Lyft's Compensated Wall Thickness (CWT) tool mitigates the phenomenon by quantifying the minimum wall thickness of a specific region in a C-scan. The CWT tool's specialized algorithms isolated a defect's contribution to the A-scan signal to more precisely compute its minimum wall thickness.

CUI PROGRAMS REDEFINED

Corrosion Under Insulation (CUI) is possibly the greatest unresolved asset integrity problem in the industry. Current methods for measuring wall thickness over insulation (Liftoff) without removing it all have severe limitations. Lyft is a high-performance solution reinventing Pulsed Eddy Current (PEC).

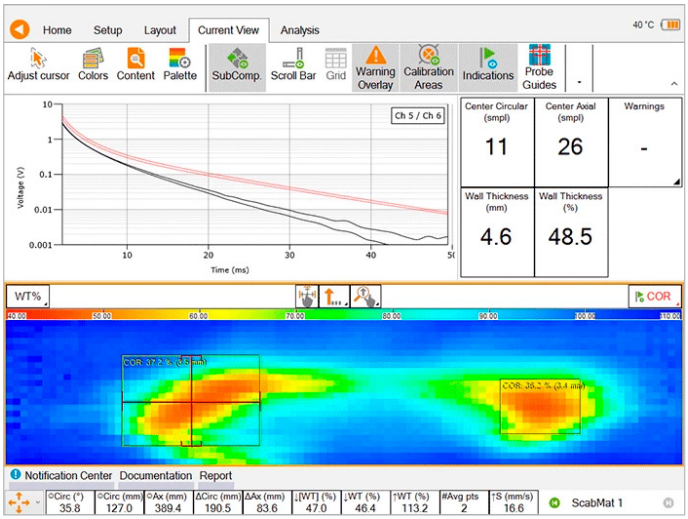

Figure 2: Lyft software CUI.

Figure 1: Annotated breakdown of Lyft showing its key features.

LYFT GO EMBEDDED SOFTWARE AND LYFT PRO FOR LAPTOP COMPUTERS

The Lyft software ecosystem is in constant evolution. Lyft GO is the dependable and intuitive data acquisition software on the Lyft unit. Lyft PRO uses the same user interface as Lyft GO with added features for analysis and is the prime tool for advanced data analysis. Now with the new PermTool™ and Tau-scan™, Lyft PRO is the first software of the industry to offer advanced analysis curves dedicated to deepen comprehension of the PEC signal and increase confidence in inspection results.

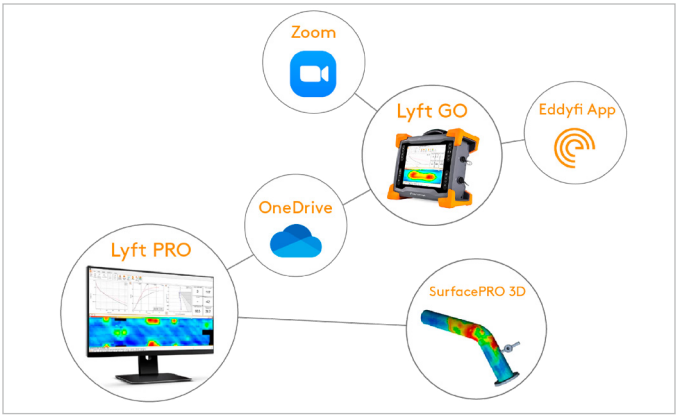

Figure 3: Lyft ecosystem.

A CONNECTED ENVIRONMENT

Lyft offers a comprehensive suite of hardware connectors and 3 software-connected tools, ensuring seamless operational efficiency and fostering effective team collaboration. While USB ports facilitates direct data transfer to other instruments or computers, Zoom Integration enhances team collaboration and enables streamlined product support by experts, OneDrive integration promotes secure and efficient data management and when utilized alongside Eddyfi Technologies' mobile application, users can effortlessly craft crystal-clear and context-rich reports.

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 PECA high-productivity probes is capable of a single-pass coverage of 457mm (18in) in grid or high-resolution encoded dynamic mode. It supports metal thickness 6–25 mm (0.25–1.0in), insulation 0–102mm (0–4in), and stainless steel and aluminum weather jackets. CUI assessment 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 100mm (4in), insulation as thick as 300mm (12in), and stainless steel/aluminium/galvanized steel weather jackets. They complement the array probes in limited-access, small-pipe, and thick-component inspections.

Figure 4: Lyft PECA pipeline CUI.

DESKTOP ANALYSIS SOFTWARE

SurfacePro 3D is the visualization and reporting software compatible with Lyft. It is designed to automatically create components and overlay stitched C-scan data. Import Lyft reports, create 3D components, and stitch color maps automatically. Easily import, export, create, and edit report templates. Compile and merge inspection data with associated images, inspection parameters, and defect tables for fast and compelling reporting.

THE BEST OF PEC IN A PORTABLE INSTRUMENT

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 26.4cm (10.4in) LED display is optically bonded, non-reflective, comes with 3mm (0.12in) 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.

GET EDDYFI CERTIFIED ANYWHERE

We are geared to offer ASME code compliant 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.

SPECIFICATIONS

INSTRUMENT

Dimensions (W × H × D)		355 × 288 × 127mm (14.0 × 11.3 × 5.0in)
Weight (with battery)		6.6kg (14.5lb)
Volume		13 L (791 in^3)
Power requirement		100–240 VAC, 50–60 Hz
Power supply		Direct VAC or onboard batteries
Batteries	**Type**	Li-ion, rechargeable, DOT compliant
	Typical	6–8 hours
Video output		HDMI
Number of channels*		7
Display		6.4cm (10.4in)
		Non-reflective (AR coating)
		Anti-fingerprint (oleophobic coating)
		3mm (1/8in), 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*	75 mm/s (3 in/s) (Typical), subject to variations based on component specifications and acquisition parameters.
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 5m (16.4ft) cable
Nominal wall thickness	Up to 100mm (4in)
Liftoffs	0–300mm (0–12in)
Smallest detectable defect volume	15% of footprint volume
Minimum measurable remaining wall thickness	15% from nominal
Weather jackets	Stainless steel up to 1.5mm (0.06in)
	Aluminum up to 1mm (0.04in)
	Galvanized steel up to 1.0mm (0.04in)
Pipe diameters	25mm (1in) 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)

ENVIRONMENT

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 PROBE

Available models (Visit website for details)	Scab and corrosion blisters
	Splash zone
	Underwater
	CUI under galvanized steel cladding
	Tank floor
	Custom probes
	Ship decks

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

Eddyfi Technologies
Beyond current