

# Reddy<sup>®</sup>

Turnkey Eddy Current Array Made Portable



# THE BEST OF ECA. THE BEST OF A PORTABLE INSTRUMENT.

In our quest to make eddy current array (ECA) a truly universal and easy-to-use surface inspection method, we introduce the next step in the evolution of surface ECA: **Reddy**<sup>®</sup>, which is designed to meet the unique in-service needs of the oil & gas, power generation, and aerospace industries.

## Intuitive Real-Time C-Scan Imaging

High-quality C-scans convey a wealth of information. Analyzing eddy current signals is much more intuitive thanks to on-the-fly 2D imaging.

## Massive Multi-Touch Display

The premium-quality 26.4 cm (10.4 in) LED display is optically bonded, non-reflective, and comes with 3 mm (1/8 in) strengthened glass. It's designed for gloved hands, under any lighting conditions. The multi-touch capabilities enable easily zooming and rotating views.

## The Power of Eddy Current Array

The state-of-the-art electronics of **Reddy** offer up to 128 built-in SmartMUX™ channels, allowing for high-resolution, single-pass scans with wider coverage. Surface ECA with **Reddy** means a high probability of detection and significantly faster inspections.

## Designed for Field Use

Sealed and designed for IP65. The 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.

## Modern PC Capabilities

Equipped with a robust, 100 GB internal solid-state disk drive (SSD) for secure inspection data. The embedded, portable Windows® PC offers standard connect-anywhere capabilities and advanced productivity tools that optimize field testing.

eddyfi.co



Heavy-duty bumpers, hooked for harnessing

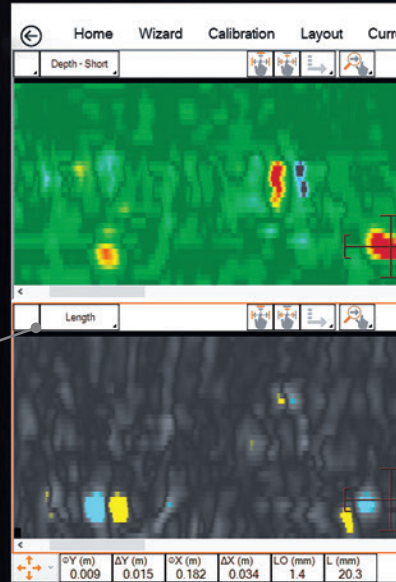
Quick Copy: Transfer all inspection files to USB at the touch of a button

Powerful connectivity

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

Protective doors

Battery life (typical): 6-8 hours



# THE FIRST REAL ECOSYSTEM FOR SURFACE EDDY CURRENT ARRAY

## Embedded Software

**Reddy** runs **Magnifi® GO**, Eddyfi's powerful — yet easy to use — acquisition and analysis software. It's especially tailored for surface inspection and relies on well-designed wizards to create setups. Furthermore, **Magnifi GO** makes collecting and reporting data incredibly intuitive. Fast, from setup to reporting.

## Desktop Data Analysis

**Magnifi GO** is compatible with its full-fledged big brother **Magnifi SR**. You can configure inspection setups for **Reddy** and perform in-depth inspection data analysis on your desktop or laptop computer with 3D C-scan capabilities.

When you combine **Reddy's** portability with Eddyfi's standard ECA, tangential ECA (TECA™), and/or custom probes, you unlock the power of the first true standard system for ECA surface inspection.

## The Right Probe for the Right Application

Our surface array probe catalog\* contains dozens of standard probes. They are designed for ferrous and non-ferrous materials, and for a variety of applications in the oil & gas, power generation, and aerospace industries.

Application	Ferrous	Non-Ferrous
Welds	✓	✓
Far-side corrosion		✓
Surface-breaking indications	✓	✓
Near-surface indications		✓

If our standard probes don't meet your requirements, you can still fully leverage the power of your **Reddy** — Eddyfi experts can design custom probes to suit your exact inspection needs.

\*[eddyfi.com/surface-probes](http://eddyfi.com/surface-probes)

om/reddy



Portable, rugged casing designed for IP65

12-pin I/O connector (encoders)

19-pin ECT connector

Rugged, easy-to-use keypads

32, 64 or 128-channel array connector

# Key Applications

## Detecting and Sizing Cracks in Carbon Steel Welds

The **Sharck™** is based on tangential ECA (TECA™) technology, which was specifically developed for cracking in carbon steel. Not only does it enable measuring surface-breaking crack position and length, but also sizing cracks as deep as 7 mm (0.28 in). Furthermore, the **Sharck** allows simultaneously scanning the weld cap, toe area, and heat-affected zone for longitudinal and transverse cracks without surface preparation or paint removal.



## Assessing Corrosion on Aluminum and Stainless Steel Tank Floors

Semi-flexible ECA probes can adapt to a tank floor's curvature and other geometric features, offering sufficient penetration to scan through thick aluminum/stainless steel (over 6.35 mm or 0.250 in thick). So doing, the solution is capable of detecting and characterizing corrosion-related defects such as pitting and thinning affecting as little as 10 % of a plate's thickness.



## Detecting and Assessing Stress Corrosion Cracking in Base Metal

**I-Flex™** probes are the most versatile ECA probes in the industry. Thanks to their multiple built-in topologies and flexible bodies, they can address a variety of applications. **I-Flex** probes are perfect for detecting stress-corrosion cracking (SCC) in both ferrous and non-ferrous materials. Whether SCC is affecting the integrity of pipelines, pressure vessels, or tanks (on base metal or internal cladding), encoded scans performed with **I-Flex** probes allow efficient sizing of clusters.



# Specifications

## General

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 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
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
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

## ECA/ECT

Channels	ECA: SmartMUX 32, 64, or 128 ECT: 4
Frequency range	5 Hz–10 MHz
Frequencies	ECA: 2 simultaneous ECT: 4 simultaneous
ECA connector	160-pin array
ECT connector	19-pin Fischer
I/O connector	12-pin Fischer
Generator output / Coil drive	Up to 20V <sub>pp</sub>
Injection modes	Multiplexed, simultaneous, continuous
Receiver gain	41 dB range, 23–64 dB
Data resolution	16 bits
Acquisition / Sampling rate	Up to 50 000 samples/s

## 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

