

## I-Flex™ ECA Probes

*The Swiss Army Knife of Surface Eddy Current Array Inspection*



We believe that *I-Flex* probes are the all-around best flexible, plug-and-play ECA probes in the NDT industry — flexibility without any compromise on performance.

*I-Flex* probes are specifically designed to adapt to complex geometries which makes them perfect for one-pass examinations of pipes, nozzles, turbine blades, wheels, and any other smooth, curved surface. *I-Flex* also use real pancake coils, not PCB equivalents, which give them good sensitivity to subsurface defects and excellent signal quality.

### Best Versatility

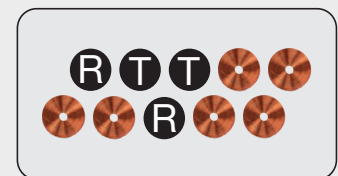
*I-Flex* probes are equipped with three built-in, adaptorless topologies. Topologies are the combination of how the coils are organized inside a probe and how they are activated.

### Benefits and Features

- Flexible PCB offers high flexibility to adapt to tight radius and curved surfaces
- Multiple built-in topologies address various types of flaws, including subsurface flaws
- Real pancake coils for better penetration compared to other flexible ECA probes on the market
- Rugged, perfect for challenging applications and trials
- Streamlined design — array aligned with cable exit
- Three sizes — S, M, L
- Compatible with our standard, click-on encoder

*I-Flex* probes are equipped with the following topologies:

- **Impedance.** Offers a high level of sensitivity. It is capable of detecting discontinuities of any orientation (absolute and differential modes).
- **Single driver.** Uses one coil as the transmitter. This topology offers high channel density because of the higher number of coils in the probe.
- **Short, double driver.** Uses two coils excited simultaneously, acting as a single transmitter. This topology makes it possible to detect typically small axial and transverse defects. It is most often used in high-resolution probes.



Short, double driver topology

# Specifications

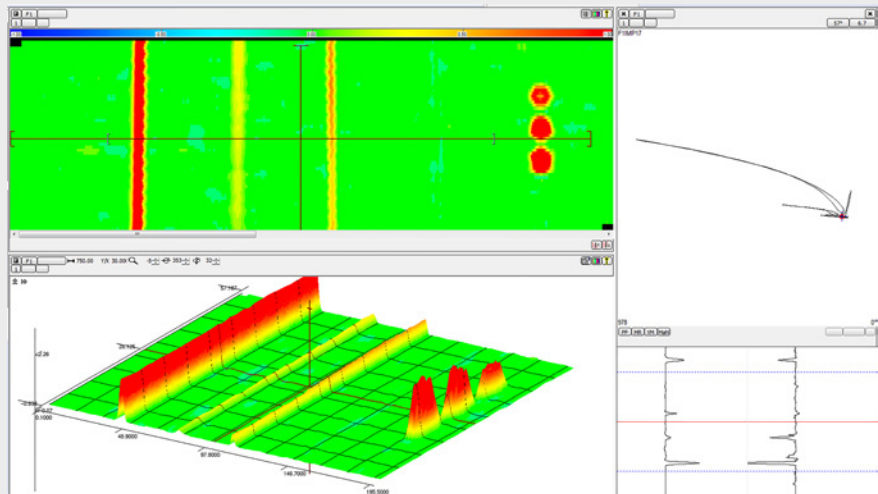
All *I-Flex* probes can use the impedance, single-driver, and short, double-driver topologies. Standard *I-Flex* probes are designed for surfaces with a bend radius of 20 mm (0.787 in) or more. We can also develop customized versions of *I-Flex* probes. Inquire for details.

Select from these five standard models, depending on your inspection requirements:

	Maximum Coverage		Balanced Coverage & Resolution		Super-High Resolution
Model	ECA-IFG-079-250-048-N03S	ECA-IFG-079-050-048-N03S	ECA-IFG-056-250-048-N03S	ECA-IFG-056-050-048-N03S	ECA-IFG-034-500-048-N03S
Casing	Large	Large	Medium	Medium	Small
Coverage	79 mm (3.11 in)	79 mm (3.11 in)	56 mm (2.21 in)	56 mm (2.21 in)	34 mm (1.34 in)
Central frequency	250 kHz	50 kHz	250 kHz	50 kHz	500 kHz
Frequency range	50–525 kHz	10–150 kHz	50–525 kHz	10–150 kHz	100–800 kHz
Coils (diameter × number)	5 mm × 48	5 mm × 48	3.5 mm × 48	3.5 mm × 48	2 mm × 48
Penetration (stainless steel/aluminum)	Up to 3 mm (0.118 in)	Up to 4 mm (0.157 in)	Up to 2 mm (0.079 in)	Up to 3 mm (0.118 in)	Surface-breaking defects only
Minimum detectable crack length	1.5 mm (0.059 in)	Far-side defects	1 mm (0.039 in)	Far-side defects	0.5 mm (0.020 in)

## Optional Encoder

High-precision, high-resolution (25.46 counts/mm) encoder for Eddyfi's entire standard surface probe series, equipped with an 18-pin connector compatible with the *Ectane*® 2 and *Reddy*™ and a 3 m (9.8 ft) cable. The click-on design of the encoder makes it extremely simple to install without any tools. Model: ENC-STD-2-18P-N03S and ENC-STD-2-12P-N03S, respectively.



Magnifi® *I-Flex* calibration data

