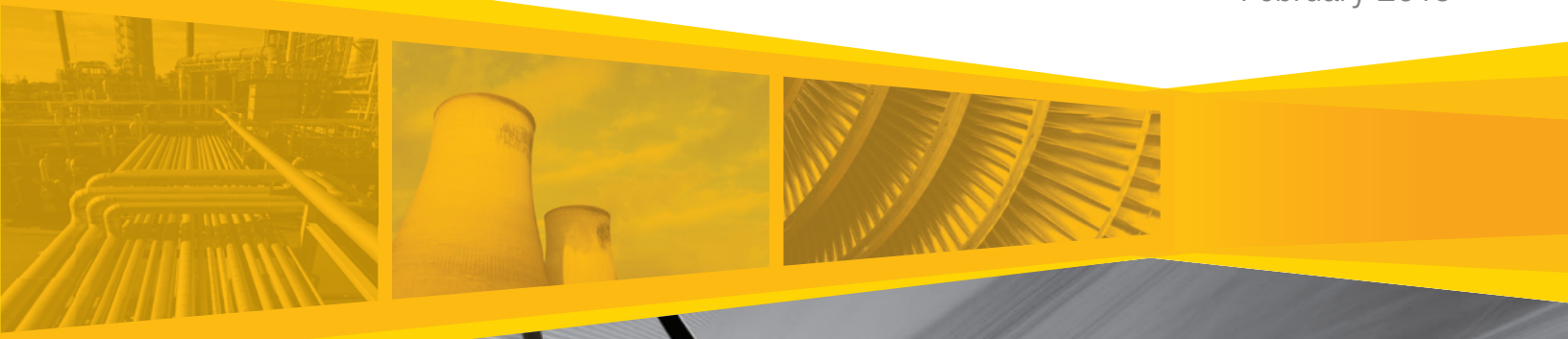




Tubing Inspection Probe Catalog

February 2016



What We Do

Eddyfi is the newest and most dynamic company in the field of non-destructive testing (NDT) equipment.

Located in the advanced NDT cluster of Québec, Quebec, Canada, Eddyfi focuses on providing complete, high-end solutions for the inspection of critical components in several major industries including oil and gas, nuclear, and power generation. It was created following the reorganization of Zetec Canada, and today employs experts with backgrounds at Zetec, R/D Tech, and Tecrad. The company develops the industry's best performing and most reliable test instruments, scanners, surface and tube probes, and acquisition and analysis software.

Eddyfi's mission is to push the limits of electromagnetic testing to new heights. This is achieved in part by designing a new generation of standard and specialized probes.

Eddyfi's Promises:

1. Unparalleled Quality and Durability

Eddyfi tubing probes are designed and manufactured using high-performance standards, including top-of-the-line polys, providing top quality signals throughout their extended lifespan.

2. Rapid Deliveries and Stocks

All probes are manufactured in our Québec facility. Many of our probes are stocked in our Quebec and European offices for quick delivery. Standard probe orders of five or less typically ship within three days.

3. Custom Probes

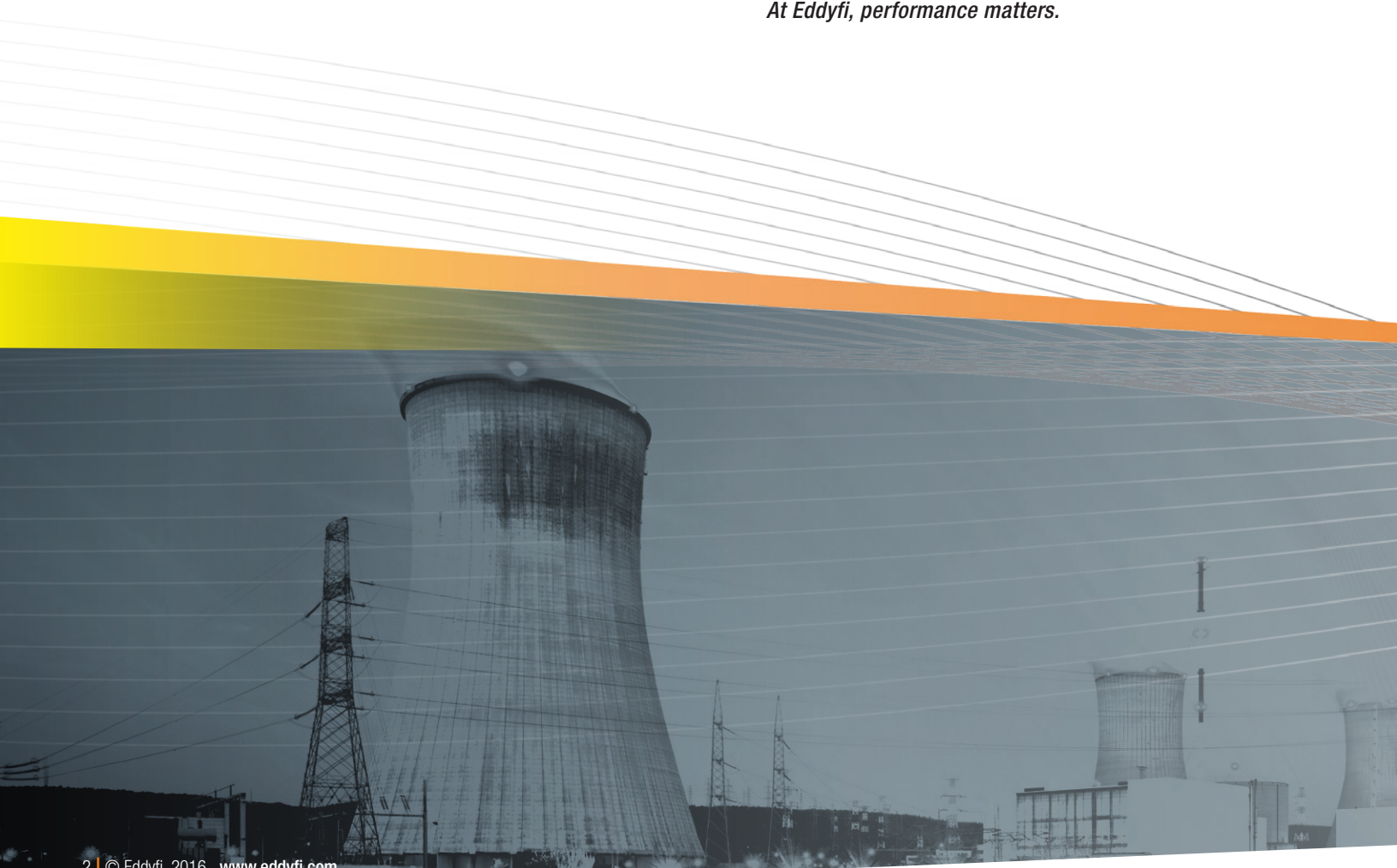
Eddyfi has the expertise, engineering, and manufacturing flexibility to supply custom-made solutions for the most challenging tube inspection applications.

4. Specialized Probe Technology

Eddyfi's experts use modeling software, advanced materials and proprietary techniques such as array multiplexing. Tubing probes such as the DefHi® tubing array push back the limits of tubing inspection.

For more information, write to probes@eddyfi.com.

At Eddyfi, performance matters.



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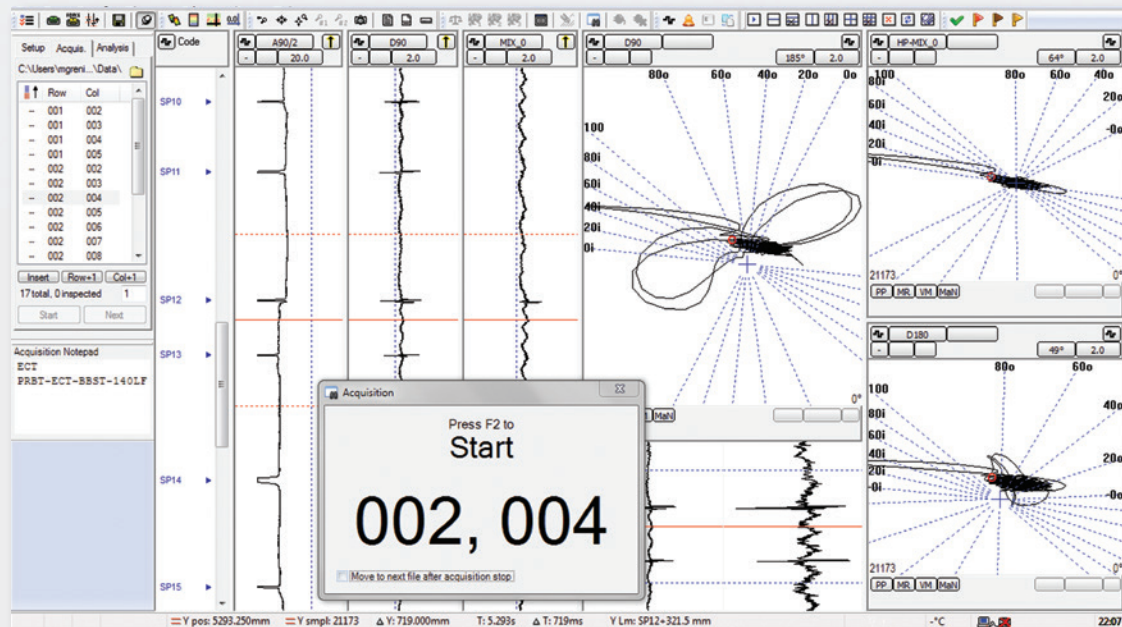


Eddy Current Technology

Eddy current testing (ECT) is the best method for inspection of non-ferrous tubing. It can detect and size defects affecting tubing such as steam erosion, baffle cuts, pitting, and cracking. Eddy currents are especially good to detect defects under support plates.

In a basic bobbin probe, two coils are excited with an alternating electrical current. The coils produce a magnetic field that induces eddy currents along the circumference of the tube. If a defect disturbs the eddy current flow, the impedance of the coil changes and is measured by the acquisition unit. Using two frequencies, it is possible to eliminate the support plate disturbance and only keep the relevant flaw information. Using three or four frequencies permits defect discrimination against foreign objects (loose bolt), iron or copper deposits.

This inspection technique is suitable for austenitic stainless steel such as SS304/SS316, brass (70/30), Inconel™, titanium, copper-finned, and other materials.





Bobbin Probe — Standard

HIGHLIGHTS

- Easy to use
- Designed for non-ferromagnetic tubing
- Uncompromising durability
- Advanced lightweight polymer body
- Wear-resistant guides
- Highly kink-resistant cable
- 4-pin Amphenol connector

These probes set a new standard in durability. With their advanced lightweight polymer body and stainless steel wear-resistant guides, they are easier to use and longer lasting than most. They are specifically designed to inspect the non-ferromagnetic tubing in condensers, feedwater heaters, and heat exchangers.

PRBT-ECT-BBST-wwwXX-Yzz

CODE	DIAMETER
070	7.0mm
072	7.2mm
074	7.4mm
...	...
250	25.0mm
255	25.5mm
...	...
500	50.0mm

CODE	FREQUENCY IN kHz		
	Min.	Max.	Central
UF	1	10	5
LF	10	100	50
MF	50	500	250
HF	100	1 000	500

POLY	
CODE	MATERIAL
N	Nylon

POLY	
CODE	LENGTH
15	15 m (50 ft)
20	20 m (65 ft)
30	30 m (98 ft)

SELECTION GUIDE

ECT PROBE DIAMETERS AND FREQUENCIES

Diameters

TUBE OUTSIDE DIAMETER	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
9.53 mm	0.375 in	—	—	—	—	—	—	—	—	—	—	070	072	074	076	078
12.70 mm	0.500 in	—	—	—	072	078	084	088	090	096	098	102	104	106	106	108
15.87 mm	0.625 in	084	090	096	104	110	114	118	122	126	128	132	134	136	136	138
19.05 mm	0.750 in	114	122	126	134	140	144	148	152	156	158	162	164	166	166	168
22.22 mm	0.875 in	144	152	156	164	168	174	178	180	186	188	192	194	196	196	198
25.40 mm	1.000 in	174	182	186	194	198	204	208	210	216	218	222	224	224	226	228
31.75 mm	1.250 in	234	238	246	255	260	265	270	275	280	280	285	285	290	290	290
38.10 mm	1.500 in	295	300	310	315	320	325	330	335	340	340	345	345	350	350	350
50.80 mm	2.000 in	415	420	430	435	440	445	450	455	460	460	465	465	470	470	470

Frequencies

MATERIAL	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
Aluminum	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Aluminum bronze	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF
Copper-nickel (70/30)	UF	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF
Copper-nickel (90/10)	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF
Copper-nickel (95/5)	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
Inconel 600	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
Stainless steel 304/316	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF
Titanium 99 %	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF
Zirconium	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF



Bobbin Probe — Standard Detachable

HIGHLIGHTS

- Easy to use
- Designed for non-ferromagnetic tubing
- Uncompromising durability
- Advanced, lightweight polymer body
- Wear-resistant guides
- Detachable LEMO connector with fully protected pins

These probes set a new standard in durability and economy. With their advanced lightweight polymer body and stainless steel wear-resistant guides, they are easier to use and longer lasting than most. The detachable cable makes the probes cheaper to maintain if you already have compatible cables (see page 33). These probes are specifically designed to inspect the non-ferromagnetic tubing found in condensers, feedwater heaters, and heat exchangers.

PRBT-ECT-BBST-wwwXX-D

CODE	DIAMETER	FREQUENCY IN kHz		
		Min.	Max.	Central
110	11.0 mm	1	10	5
112	11.2 mm			
114	11.4 mm			
...	...			
250	25.0 mm			
255	25.5 mm			
...	...			
500	50.0 mm			

SELECTION GUIDE

ECT PROBE DIAMETERS AND FREQUENCIES

Diameters

TUBE OUTSIDE DIAMETER	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
15.87 mm	0.625 in	—	—	—	—	110	114	118	122	126	128	132	134	136	136	138
19.05 mm	0.750 in	114	122	126	134	140	144	148	152	156	158	162	164	166	166	168
22.22 mm	0.875 in	144	152	156	164	168	174	178	180	186	188	192	194	196	196	198
25.40 mm	1.000 in	174	182	186	194	198	204	208	210	216	218	222	224	224	226	228
31.75 mm	1.250 in	234	240	246	255	260	265	270	275	280	280	285	285	290	290	290
38.10 mm	1.500 in	295	305	310	315	320	325	330	335	340	340	345	345	350	350	350
50.80 mm	2.000 in	415	425	430	435	440	445	450	455	460	460	465	465	470	470	470

Frequencies

MATERIAL	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
Aluminum	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Aluminum bronze	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
Brass (admiralty)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (70/30)	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF
Brass (85/15)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF
Brass (95/5)	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF
Copper	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	UF	LF	LF	LF
Copper-nickel (70/30)	UF	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF
Copper-nickel (90/10)	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF
Copper-nickel (95/5)	UF	UF	UF	UF	UF	UF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF
Inconel 600	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF
Stainless steel 304/316	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF
Titanium 99 %	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF
Zirconium	LF	LF	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	HF



Bobbin Probe — Magnetic Saturation

HIGHLIGHTS

- Designed for tube inspection of ferritic stainless, duplex, and nickel-based alloys
- Uncompromising durability
- Replaceable, hardened-steel wear guide
- Highly kink-resistant cable
- 4-pin Amphenol connector
- Optimal saturation level

These probes are designed to inspect ferritic stainless, duplex, and nickel-based alloy tubes used in condensers and feedwater heaters. Strong rare-earth magnets provide full tube wall magnetic saturation, enabling test frequencies common for non-magnetic materials with similar wall thicknesses and conductivity. Can detect and size ID pitting, OD wear, pitting, and MIC attacks.

PRBT-ECT-BBFS-wwwXX-Nzz

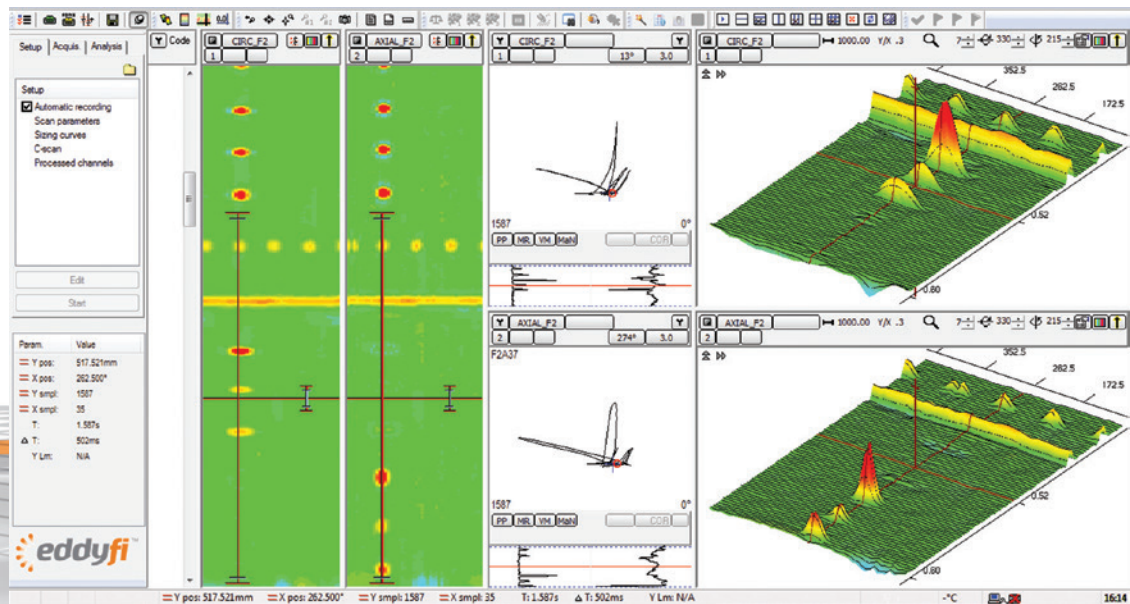
TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PROBE PART NUMBER
mm	in	BWG	mm	in	CODE	mm	in	CODE	RANGE	CODE	LENGTH	
19.05	0.750	12	2.77	0.109	124	12.40	0.488	LF MF	10–100 kHz 50–500 kHz	15 20	15 m (50 ft) 20 m (65 ft)	PRBT-ECT-BBFS-124XX-Nzz
		14	2.11	0.083	138	13.80	0.543					PRBT-ECT-BBFS-138XX-Nzz
		16	1.65	0.065	148	14.80	0.583					PRBT-ECT-BBFS-148XX-Nzz
		18	1.24	0.049	156	15.60	0.614					PRBT-ECT-BBFS-156XX-Nzz
		20	0.89	0.035	162	16.20	0.638					PRBT-ECT-BBFS-162XX-Nzz
22.22	0.875	14	2.11	0.083	170	17.00	0.669					PRBT-ECT-BBFS-170XX-Nzz
		16	1.65	0.065	180	18.00	0.709					PRBT-ECT-BBFS-180XX-Nzz
		18	1.24	0.049	188	18.80	0.740					PRBT-ECT-BBFS-188XX-Nzz
		20	0.89	0.035	194	19.40	0.764					PRBT-ECT-BBFS-194XX-Nzz
25.40	1.000	14	2.11	0.083	200	20.00	0.787					PRBT-ECT-BBFS-200XX-Nzz
		16	1.65	0.065	210	21.00	0.827					PRBT-ECT-BBFS-210XX-Nzz
		18	1.24	0.049	218	21.80	0.858					PRBT-ECT-BBFS-218XX-Nzz
		20	0.89	0.035	224	22.40	0.882					PRBT-ECT-BBFS-224XX-Nzz
		22	0.71	0.028	230	23.00	0.906					PRBT-ECT-BBFS-230XX-Nzz
		24	0.56	0.022	230	23.00	0.906					PRBT-ECT-BBFS-230XX-Nzz

Eddy Current Array Tubing Technology

Eddy current array (ECA) technology is the most advanced technique available to inspect non-ferrous tubing. The array configuration allows high-resolution inspections without compromising on the pull speed. ECA probes can be used to detect and size various types of defects such as corrosion, pitting, and cracking (circumferential and axial). Defects located near or under tube support plates or tubesheets can easily be detected with ECA probes.

Typical ECA probes use multiple individual coils positioned in a specific pattern around the circumference of the probe. These coils are excited and read in a multiplexed sequence that allows full tube inspection without mutual influence between adjacent coils and still allowing a uniform sensitivity to localized defect whatever their position in the tube.

Eddyfi's software, Magnifi®, offers best-in-class C-scan representation. Advanced data processing and landmark detection are available to improve defect detection, localization and characterisation. Sizing curves are available in C-scan to provide faster analysis and reporting.





DefHi[®] Probe

HIGHLIGHTS

- High-definition, multiplexed, ECA probe
- Designed for non-ferromagnetic tubing
- One-pass combination bobbin and array probe
- Sizing of circumferential and axial cracks¹
- Optimum resolution and uniform sensitivity with oval coil technology²
- Highly kink-resistant cable, replaceable centering devices
- Wider frequency range (HW to HF)
- Analysis with strip charts for bobbin and C-scans for array imaging

These probes are designed to inspect the non-ferromagnetic tubing found in condensers, feedwater heaters, and heat exchangers. They are especially good at detecting circumferential cracks at tube support plates and tubesheets (a major limitation of bobbin probes). They can also detect and size usual defects such as wear, corrosion, pitting, micro-pitting, and stress-corrosion cracking.

¹ Advanced option only

² Patented — Eddyfi NDT Inc.

DEFHI-TuV-wwwXX-Nzz

OPTION	MULTIPLEXER	BODY	CONFIGURATION			DIAMETER	FREQ. (kHz)	POLY LENGTH
	ECTANE 2/PROBE	RIGID/FLEX	BOBBIN	CIRCUM.	AXIAL			
1	E	R	B	C	—	Three-digit code represents probe diameter: e.g., 146 = 14.6 mm Contact us to verify availability of required diameters	HW: 4–60 kHz LF: 20–200 kHz MF*: 50–500 kHz HF**: 100–1200 kHz	05: 5 m (16 ft) 15: 15 m (50 ft)
2	E	R	B	C	A			

* Maximum MF is reduced to 400 kHz with 15 m cable.

** Maximum HF is reduced to 1 MHz with 15 m cable.

SELECTION GUIDE

DefHi PROBE DIAMETERS AND FREQUENCIES

Diameters

TUBE OUTSIDE DIAMETER	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
12.70 mm	0.500 in	—	—	—	—	—	—	—	—	096	096	102	102	106	106	106
15.87 mm	0.625 in	—	—	096	102	106	114	118	118	126	126	132	132	136	136	136
19.05 mm	0.750 in	114	118	126	136	140	148	148	148	156	156	162	162	166	166	170
22.22 mm	0.875 in	148	148	156	166	170	178	178	186	186	192	192	196	196	196	200
25.40 mm	1.000 in	178	186	186	196	200	208	208	216	220	220	226	226	226	230	230

Frequencies

MATERIAL	TUBE WALL THICKNESS (BWG, mm, in)															
	BWG	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	mm	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	1.07	0.89	0.81	0.71	0.65	0.56
	in	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	0.042	0.035	0.032	0.028	0.025	0.022
Brass (admiralty)	—	—	—	—	—	—	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF
Brass (70/30)	—	—	—	—	—	—	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF
Brass (85/15)	—	—	—	—	—	—	—	HW	HW	HW	HW	HW	LF	LF	LF	LF
Brass (95/5)	—	—	—	—	—	—	—	—	—	HW	HW	HW	HW	HW	LF	LF
Copper	—	—	—	—	—	—	—	—	—	—	—	HW	HW	HW	HW	HW
Copper-nickel (70/30)	HW	HW	HW	HW	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF
Copper-nickel (90/10)	—	HW	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF	MF	MF	MF	MF
Copper-nickel (95/5)	—	—	—	HW	HW	HW	HW	HW	LF	LF	LF	LF	LF	LF	MF	MF
Inconel 600	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF
Stainless steel 304/316	HW	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	HF	HF	HF	HF	HF
Titanium 99%	HW	HW	HW	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	HF	HF	HF
Zirconium	HW	HW	HW	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	HF	HF

Total Number of Array Channels (Frequency, Configuration)

PROBE DIAM.	FREQ.	HW		LF		MF	
	CONFIG.	BC	BCA	BC	BCA	BC	BCA
	096–106	—	—	12	36	18	54
	114–140	12	36	18	54	18	54
	148–178	12	36	24	72	24	72
	186–196	18	54	24	72	24	72
	200–230	18	54	30	90	30	90

PROBE DIAM.	FREQ.	HF	
	CONFIG.	BC	BCA
	096–106	—	—
	132–136	18	54
	162–170	24	72
	196–200	30	90
	226–230	36	108



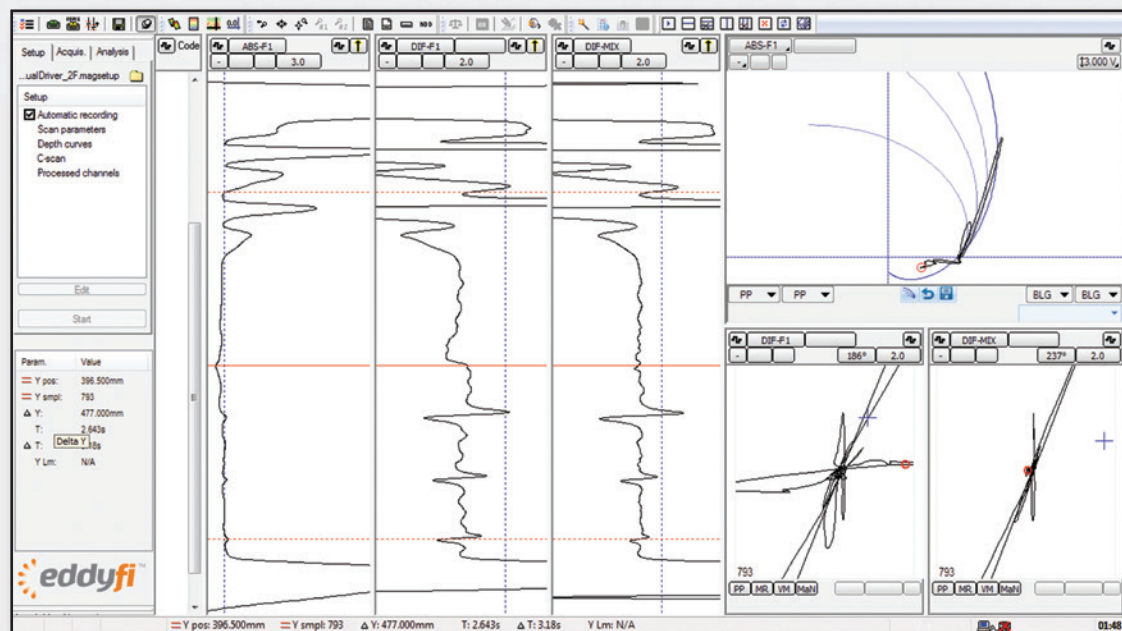
Remote-Field Technology

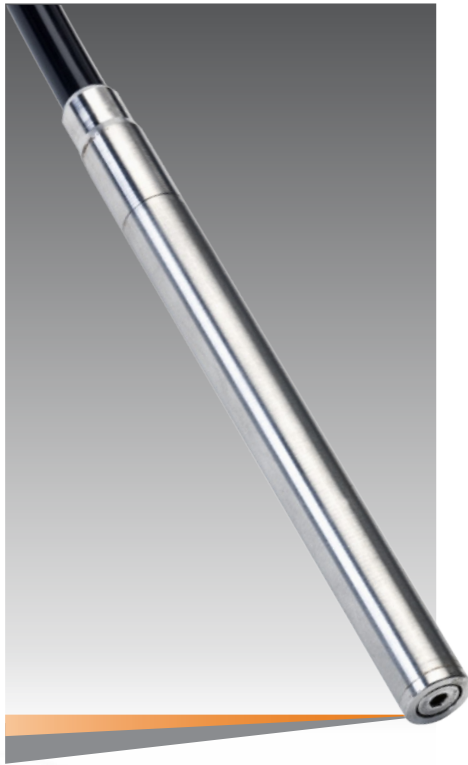
Remote-field testing (RFT) is the best method for inspection of ferrous tubing. RFT has an equal sensitivity to ID and OD indications and can detect and size defects affecting tubing such as steam erosion, baffle cuts, and pitting. Several probe designs are available for wall loss measurement, pit sizing, and flaw detection hidden by support plates.

RFT is a through-transmission technique where the receiver coil senses the flux lines that cross tube walls twice. Detector coils are separated from the exciter coil by a distance equivalent to two to three times the tube's outside diameter. RFT is suitable for carbon steel such as SA-179, SA-214, boiler tubes, ferritic stainless steel (SS439), nickel, and other ferromagnetic materials.

A special graphical representation of the RFT technique, called the voltage plane, can be used for accurate and reliable analysis of absolute signals. In voltage planes, defects can easily be sized for depth and volume. Furthermore, voltage planes allow for discrimination against permeability variations.

Eddyfi's software, *Magnifi*®, offers best-in-class voltage plane implementation. It allows extrapolation of long and taper defects, easily stores and retrieves nominal tube signal, and simultaneously compensates for material variations for absolute and differential signals.





Single Driver Probe — Standard

HIGHLIGHTS

- Preamplifier in the probe head (30 dB)
- Optimized for absolute signal analysis
- Uncompromising durability
- Highly kink-resistant, very flexible cable
- Low friction noise
- 19-pin Amphenol connector

These probes set a new standard in durability. Because they produce a similar response from their driver and receiver coils, they are also optimized for absolute signal analysis.

At 20 mm (0.787 in) and above, the probe's body is made of advanced, lightweight polymer. Below this diameter, the probes are sleeved with stainless steel.

The probes are particularly well suited to detecting most common defects (corrosion, erosion, wear, pitting) and to the ferromagnetic tubing in feedwater heaters, heat exchangers, and piping.

PRBT-RFT-SDST-wwwXX-Yzz

CODE		FREQUENCY IN Hz			POLY		POLY	
CODE	DIAMETER	Min.	Max.	Central	CODE	MATERIAL	CODE	LENGTH
085	8.5 mm				N	Nylon	20	20 m (65 ft)
090	9.0 mm						30	30 m (98 ft)
100	10.0 mm							
...	...							
200	20.0 mm							
220	22.0 mm							
...	...							
440	44.0 mm							

* Typical frequency range

SELECTION GUIDE

RFT — SDST PROBE DIAMETERS AND FREQUENCIES

Diameters

TUBE OUTSIDE DIAMETER	TUBE WALL THICKNESS (BWG, mm, in)																
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	
12.70 mm	0.500 in	—	—	—	—	—	—	—	—	—	—	—	—	—	—	085	090
15.87 mm	0.625 in	—	—	—	—	—	—	—	085	090	100	100	110	110	110	120	
19.05 mm	0.750 in	—	—	—	090	090	100	110	110	120	120	130	130	140	140	140	
22.22 mm	0.875 in	090	100	100	110	120	130	130	140	140	150	160	160	160	170	170	
25.40 mm	1.000 in	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200	
31.75 mm	1.250 in	180	180	180	200	200	200	220	220	220	240	240	240	240	240	260	
38.10 mm	1.500 in	220	240	240	260	260	260	280	280	300	300	300	300	300	300	300	
50.80 mm	2.000 in	340	360	360	380	380	380	400	400	400	420	420	420	420	420	440	

Frequencies

MATERIAL	TUBE WALL THICKNESS (BWG, mm, in)																
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	
Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	
Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF	
Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	
Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	
Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	
Stainless steel duplex (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	



Single Driver Probe — Boiler

HIGHLIGHTS

- Preamplifier in the probe head (30 dB)
- Spring-loaded centering devices
- Highly flexible design
- Uncompromising durability
- Highly kink-resistant cable
- Waterproof
- 19-pin Amphenol connector

These probes have spring-loaded centering devices. They are waterproof and extremely flexible to allow for easy, controlled travel along tight bends. The probes are offered in diameters corresponding to the most common boiler tubes, but custom probe diameters are also available on demand. These probes are particularly well suited to detecting most common defects (corrosion, erosion, wear, pitting) and use in ferromagnetic tubing of boilers and pipings.

PRBT-RFT-SDBL-wwwXX-Yzz

CODE	DIAMETER	CODE	FREQUENCY IN Hz			POLY		POLY	
			Min.	Max.	Central	CODE	MATERIAL	CODE	LENGTH
260	26.0 mm	LF*	10	400	50	N	Nylon	20	20 m (65 ft)
320	32.0 mm	MF	50	2000	300			30	30 m (98 ft)
360	36.0 mm	HF	500	20 000	2 500				
400	40.0 mm								
450	45.0 mm								
500	50.0 mm								
...	...								
700	70.0 mm								

* Typical frequency range

SELECTION GUIDE

RFT — SDBL PROBE DIAMETERS AND FREQUENCIES

Diameters

		TUBE WALL THICKNESS (BWG, mm, in)													
TUBE OUTSIDE DIAMETER	BWG	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	mm	7.62	7.21	6.58	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11
	in	0.300	0.284	0.259	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083
	38.10 mm	1.500 in	—	—	—	—	—	—	260	260	260	260	260	260	260
	50.80 mm	2.000 in	260	320	320	320	320	360	360	360	360	360	360	360	400
	63.50 mm	2.500 in	400	400	400	400	450	450	450	450	450	450	500	500	500
76.20 mm	3.000 in	500	500	500	550	550	550	550	550	550	550	600	600	600	600
88.90 mm	3.500 in	600	600	600	650	650	650	650	650	650	700	700	700	700	700

Frequencies

		TUBE WALL THICKNESS (BWG, mm, in)													
MATERIAL	BWG	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	mm	7.62	7.21	6.58	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11
	in	0.300	0.284	0.259	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083
	Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF
	Cast iron (gray)	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
	Ductile iron	LF	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF
Nickel 200	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF
Stainless steel 439, A268, TP439	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF
Stainless steel duplex (2205), 3RE60, A789	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF



Dual Driver Probe — Standard

HIGHLIGHTS

- Preamplifier in the probe head (30 dB)
- Optimized for differential signal analysis
- Uncompromising durability
- Highly kink-resistant, very flexible cable
- Optimized for differential signal analysis
- Low friction noise
- 19-pin Amphenol connector

These probes set a new standard in durability. They are optimized for differential signal analysis and to detect defects close to tube support plates.

At 20.0 mm (0.787 in) and above, the probe's body is made of advanced, lightweight polymer. Below this diameter, the probes are sleeved with stainless steel.

These probes are particularly well suited to detecting most common defects (corrosion, erosion, wear, pitting) and in the ferromagnetic tubing of feedwater heaters, heat exchangers, and piping.

PRBT-RFT-DDST-wwwXX-Yzz

CODE	DIAMETER
100	10.0mm
110	11.0mm
...	...
200	20.0mm
220	22.0mm
...	...
440	44.0mm

CODE	FREQUENCY IN Hz		
	Min.	Max.	Central
LF	10	400	50
MF*	50	2000	300
HF	500	20 000	2 500

* Standard frequency range

POLY	
CODE	MATERIAL
N	Nylon

POLY	
CODE	LENGTH
20	20 m (65 ft)
30	30 m (98 ft)

* Standard frequency range

SELECTION GUIDE

RFT — DDST PROBE DIAMETERS AND FREQUENCIES

Diameters

TUBE OUTSIDE DIAMETER	TUBE WALL THICKNESS (BWG, mm, in)																
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	
15.87 mm	0.625 in	—	—	—	—	—	—	—	—	—	100	100	110	110	110	120	
19.05 mm	0.750 in	—	—	—	—	—	100	110	110	120	120	130	130	140	140	140	
22.22 mm	0.875 in	—	100	100	110	120	130	130	140	140	150	160	160	160	170	170	
25.40 mm	1.000 in	120	120	130	140	150	150	160	170	170	180	180	190	190	190	200	
31.75 mm	1.250 in	180	180	180	200	200	200	220	220	220	240	240	240	240	240	260	
38.10 mm	1.500 in	220	240	240	260	260	260	280	280	280	280	300	300	300	300	300	
50.80 mm	2.000 in	340	360	360	380	380	380	400	400	400	420	420	420	420	420	440	

Frequencies

MATERIAL	TUBE WALL THICKNESS (BWG, mm, in)																
	BWG	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
	mm	6.05	5.59	5.16	4.57	4.19	3.76	3.40	3.05	2.77	2.41	2.11	1.83	1.65	1.47	1.24	
	in	0.238	0.220	0.206	0.180	0.165	0.148	0.135	0.120	0.109	0.095	0.083	0.072	0.065	0.058	0.049	
Carbon steel A178, A179, A192, A214	LF	LF	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	
Cast iron (gray)	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	HF	HF	
Ductile iron	LF	LF	LF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	
Nickel 200	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	MF	HF	HF	
Stainless steel 439, A268, TP439	MF	MF	MF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	
Stainless steel duplex (2205), 3RE60, A789	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	HF	

Near-Field Technology



NFT Bobbin Probe — Absolute/Differential

HIGHLIGHTS

- Optimized for internal defect detection
- Designed to inspect aluminum-finned carbon steel tubes in fin-fan coolers
- Uncompromising durability
- Stainless steel body
- Highly kink-resistant, very flexible cable
- Replaceable centering devices
- 19-pin Amphenol connector

These probes are designed to inspect aluminum-finned carbon steel tubes in fin-fan coolers. The coil configuration allows reliably detecting internal defects such as corrosion, erosion, pitting, and axial cracking. The probes are sleeved with stainless steel.

PRBT-NFT-BBAD-wwwXX-Nzz

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PROBE PART NUMBER
mm	in	BWG	mm	in	CODE	mm	in	CODE	RANGE	CODE	LENGTH	
19.05	0.750	10	3.40	0.134	110	11	0.433	MF	50–2 000 Hz	20 30	20 m (65 ft) 30 m (98 ft)	PRBT-NFT-BBAD-110MF-Nzz
		11	3.05	0.120	120	12	0.472					PRBT-NFT-BBAD-120MF-Nzz
		12	2.77	0.109	130	13	0.512					PRBT-NFT-BBAD-130MF-Nzz
		13	2.41	0.095								PRBT-NFT-BBAD-140MF-Nzz
		14	2.11	0.083	140	14	0.551					PRBT-NFT-BBAD-140MF-Nzz
		15	1.83	0.072								PRBT-NFT-BBAD-150MF-Nzz
		16	1.65	0.065								
		17	1.47	0.058								
		18	1.24	0.049	150	15	0.591				PRBT-NFT-BBAD-150MF-Nzz	

PRBT-NFT-BBAD-wwwXX-Nzz

TUBE OD		TUBE WT			DIAMETER			FREQUENCY		POLY		PROBE PART NUMBER	
mm	in	BWG	mm	in	CODE	mm	in	CODE	RANGE	CODE	LENGTH		
25.40	1.000	9	3.76	0.148	160	16	0.630	MF	50–2 000 Hz	20 30	20 m (65 ft) 30 m (98 ft)	PRBT-NFT-BBAD-160MF-Nzz	
		10	3.40	0.134	170	17	0.669					PRBT-NFT-BBAD-170MF-Nzz	
		11	3.05	0.120	180	18	0.709					PRBT-NFT-BBAD-180MF-Nzz	
		12	2.77	0.109								PRBT-NFT-BBAD-190MF-Nzz	
		13	2.41	0.095	190	19	0.748					PRBT-NFT-BBAD-200MF-Nzz	
		14	2.11	0.083								PRBT-NFT-BBAD-210MF-Nzz	
		15	1.83	0.072	200	20	0.787					PRBT-NFT-BBAD-220MF-Nzz	
		16	1.65	0.065								PRBT-NFT-BBAD-230MF-Nzz	
		17	1.47	0.058	210	21	0.827					PRBT-NFT-BBAD-240MF-Nzz	
		18	1.24	0.049								PRBT-NFT-BBAD-250MF-Nzz	
31.75	1.250	8	4.19	0.165	210	21	0.827					PRBT-NFT-BBAD-260MF-Nzz	
		9	3.76	0.148	220	22	0.866					PRBT-NFT-BBAD-270MF-Nzz	
		10	3.40	0.134								PRBT-NFT-BBAD-280MF-Nzz	
		11	3.05	0.120	230	23	0.906					PRBT-NFT-BBAD-290MF-Nzz	
		12	2.77	0.109								PRBT-NFT-BBAD-300MF-Nzz	
		13	2.41	0.095	240	24	0.945					PRBT-NFT-BBAD-310MF-Nzz	
		14	2.11	0.083								PRBT-NFT-BBAD-320MF-Nzz	
		15	1.83	0.072	250	25	0.984					PRBT-NFT-BBAD-330MF-Nzz	
		16	1.65	0.065								PRBT-NFT-BBAD-340MF-Nzz	
		17	1.47	0.058	260	26	1.024					PRBT-NFT-BBAD-350MF-Nzz	
18	1.24	0.049	PRBT-NFT-BBAD-360MF-Nzz										
38.10	1.500	8	4.19	0.165	270	27	1.063					PRBT-NFT-BBAD-370MF-Nzz	
		9	3.76	0.148	280	28	1.102					PRBT-NFT-BBAD-380MF-Nzz	
		10	3.40	0.134								PRBT-NFT-BBAD-390MF-Nzz	
		11	3.05	0.120	290	29	1.142					PRBT-NFT-BBAD-400MF-Nzz	
		12	2.77	0.109								PRBT-NFT-BBAD-410MF-Nzz	
		13	2.41	0.095	300	30	1.181					PRBT-NFT-BBAD-420MF-Nzz	
		14	2.11	0.083								PRBT-NFT-BBAD-430MF-Nzz	
		15	1.83	0.072	310	31	1.220					PRBT-NFT-BBAD-440MF-Nzz	
50.80	2.000	6	5.16	0.203	380	38	1.496					PRBT-NFT-BBAD-450MF-Nzz	
		7	4.57	0.180								PRBT-NFT-BBAD-460MF-Nzz	
		8	4.19	0.165	400	40	1.575					PRBT-NFT-BBAD-470MF-Nzz	
		9	3.76	0.148								PRBT-NFT-BBAD-480MF-Nzz	
		10	3.40	0.134	420	42	1.654					PRBT-NFT-BBAD-490MF-Nzz	
		11	3.05	0.120								PRBT-NFT-BBAD-500MF-Nzz	
		12	2.77	0.109								PRBT-NFT-BBAD-510MF-Nzz	
		13	2.41	0.095								PRBT-NFT-BBAD-520MF-Nzz	
		14	2.11	0.083								PRBT-NFT-BBAD-530MF-Nzz	

Near-Field Array Technology



NFA Probe — Absolute/Array

HIGHLIGHTS

- High-resolution array scans (C-scans) of fin-fan air cooler tubes at NFT speeds
- Designed to inspect aluminum-finned carbon steel tubes of fin-fan coolers and ferromagnetic heat exchangers
- Defect detection and sizing in a single pass
- Axial and circumferential crack detection
- Rugged and easy to use — No magnets
- Hardened-steel, replaceable wear guides
- Wide variety of probe diameters

These probes are designed to inspect aluminum-finned carbon steel tubes of fin-fan coolers and ferromagnetic heat exchangers. The coil configuration allows reliably detecting and sizing internal defects such as ID pitting, internal cracking at the tubesheets, internal erosion, and wall loss.

PRBT-NFA-BBAA-wwwXX-Nzz

TUBE OD		TUBE WT			DIAMETER			FREQ.		POLY		PROBE PART NUMBER
mm	in	BWG	mm	in	CODE	mm	in	CODE	RANGE	CODE	LENGTH	
19.05	0.750	12	2.77	0.109	124	12.4	0.488	MF	1–40 kHz	20 30	20 m (65 ft) 30 m (98 ft)	PRBT-NFA-BBAA-124MF-Nzz
		13	2.41	0.095	130	13.0	0.512					PRBT-NFA-BBAA-130MF-Nzz
		14	2.11	0.083	138	13.8	0.543					PRBT-NFA-BBAA-138MF-Nzz
		15	1.83	0.072	142	14.2	0.559					PRBT-NFA-BBAA-142MF-Nzz
25.40	1.000	10	3.40	0.134	170	17.0	0.669					PRBT-NFA-BBAA-170MF-Nzz
		11	3.05	0.120	180	18.0	0.709					PRBT-NFA-BBAA-180MF-Nzz
		12	2.77	0.109	184	18.4	0.724					PRBT-NFA-BBAA-184MF-Nzz
		13	2.41	0.095	188	18.8	0.740					PRBT-NFA-BBAA-188MF-Nzz
		14	2.11	0.083	194	19.4	0.764					PRBT-NFA-BBAA-194MF-Nzz
		15	1.83	0.072	200	20.0	0.787					PRBT-NFA-BBAA-200MF-Nzz
31.75	1.250	10	3.40	0.134	230	23.0	0.906					PRBT-NFA-BBAA-230MF-Nzz
		11	3.05	0.120	236	23.6	0.929					PRBT-NFA-BBAA-236MF-Nzz
		12	2.77	0.109	244	24.4	0.961					PRBT-NFA-BBAA-244MF-Nzz
		13	2.41	0.095	250	25.0	0.984					PRBT-NFA-BBAA-250MF-Nzz
38.10	1.500	10	3.40	0.134	290	29.0	1.142					PRBT-NFA-BBAA-290MF-Nzz
		11	3.05	0.120	296	29.6	1.165					PRBT-NFA-BBAA-296MF-Nzz
		12	2.77	0.109	302	30.2	1.189					PRBT-NFA-BBAA-302MF-Nzz
		13	2.41	0.095	308	30.8	1.212					PRBT-NFA-BBAA-308MF-Nzz

Magnetic Flux Leakage Technology



MFL Probe — Absolute/Differential/Trail

HIGHLIGHTS

- Designed to inspect aluminum-finned carbon steel tubes in fin-fan coolers
- Optimized for internal and external defect detection
- Capable of detecting circumferential cracks
- No ABS drift adapter box necessary
- Replaceable, hardened-steel wear guides
- Uncompromising durability
- Optimal saturation level
- Highly kink-resistant cable
- 19-pin Amphenol connector

PRBT-MFL-ADT-XXX-Nzz

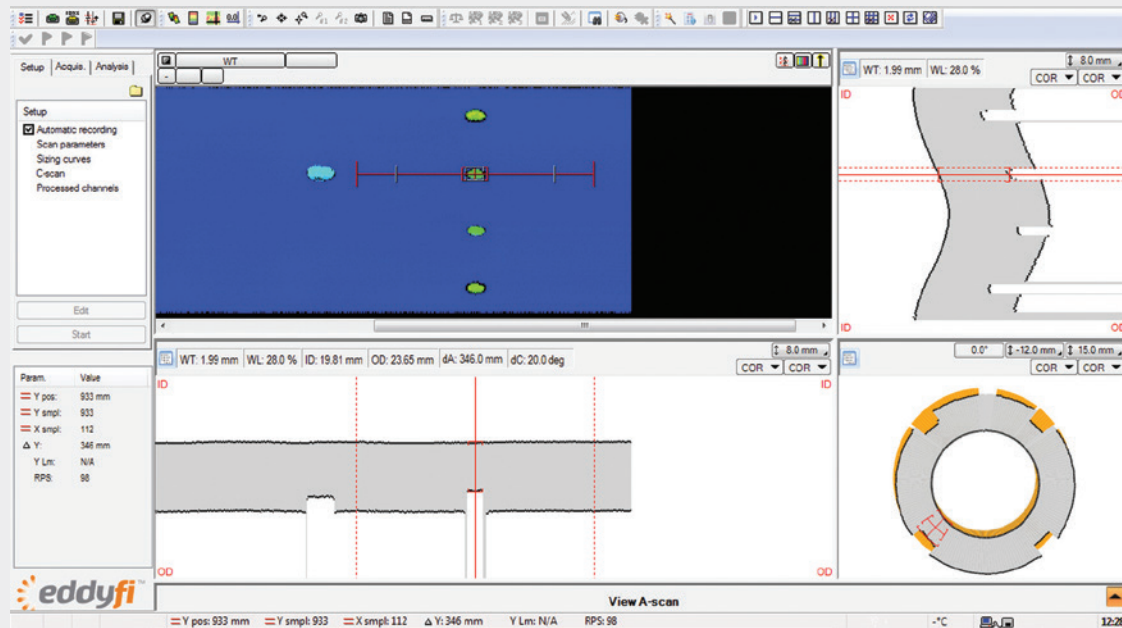
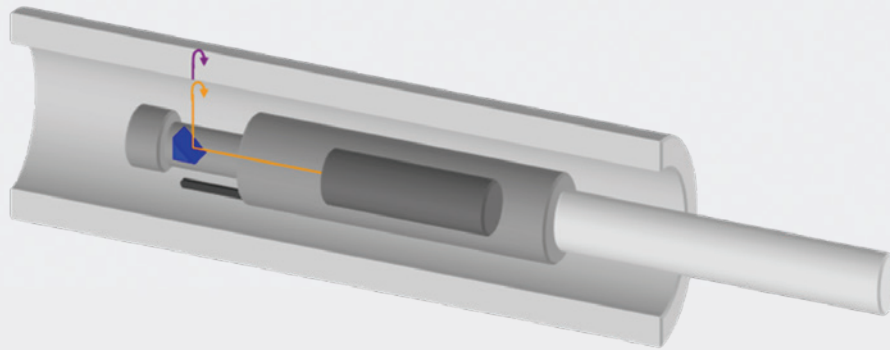
TUBE OD		TUBE WT			DIAMETER			POLY		PROBE PART NUMBER	NOTES		
mm	in	BWG	mm	in	CODE	mm	in	CODE	LENGTH				
19.05	0.750	12	2.77	0.109	124	12.4	0.488	20 30	20 m (65 ft) 30 m (98 ft)	PRBT-MFL-ADT-124-Nzz	These probes offer less sensitivity to external defects, because the core sections of the probes are significantly smaller than the tube section. Sensitivity to internal defects remains very high.		
		13	2.41	0.095						PRBT-MFL-ADT-138-Nzz			
		14	2.11	0.083	138	13.8	0.543			PRBT-MFL-ADT-148-Nzz			
		15	1.83	0.072						PRBT-MFL-ADT-162-Nzz			
		16	1.65	0.065						PRBT-MFL-ADT-170-Nzz			
25.40	1.000	9	3.76	0.148	162	16.2	0.638			PRBT-MFL-ADT-180-Nzz			
		10	3.40	0.134	170	17.0	0.669			PRBT-MFL-ADT-188-Nzz			
		11	3.05	0.120	180	18.0	0.709			PRBT-MFL-ADT-194-Nzz			
		12	2.77	0.109	188	18.8	0.740			PRBT-MFL-ADT-200-Nzz			
		13	2.41	0.095						PRBT-MFL-ADT-230-Nzz			
		14	2.11	0.083	194	19.4	0.764			PRBT-MFL-ADT-244-Nzz			
		15	1.83	0.072						PRBT-MFL-ADT-256-Nzz			
		16	1.65	0.065						PRBT-MFL-ADT-290-Nzz			
		17	1.47	0.058	200	20.0	0.787			PRBT-MFL-ADT-302-Nzz			
31.75	1.250	10	3.40	0.134	230	23.0	0.906			PRBT-MFL-ADT-315-Nzz			
		11	3.05	0.120						PRBT-MFL-ADT-302-Nzz			
		12	2.77	0.109	244	24.4	0.961			PRBT-MFL-ADT-315-Nzz			
		13	2.41	0.095						PRBT-MFL-ADT-315-Nzz			
		14	2.11	0.083						PRBT-MFL-ADT-315-Nzz			
		15	1.83	0.072	256	25.6	1.008			PRBT-MFL-ADT-315-Nzz			
38.10	1.500	10	3.40	0.134	290	29.0	1.142			PRBT-MFL-ADT-315-Nzz			
		11	3.05	0.120						PRBT-MFL-ADT-315-Nzz			
		12	2.77	0.109	302	30.2	1.189			PRBT-MFL-ADT-315-Nzz			
		13	2.41	0.095						PRBT-MFL-ADT-315-Nzz			
		14	2.11	0.083						PRBT-MFL-ADT-315-Nzz			
		15	1.83	0.072	315	31.5	1.24			PRBT-MFL-ADT-315-Nzz			



IRIS UT

Internal rotary inspection systems (IRIS) rely on a transducer to generate an ultrasonic pulse oriented parallel to the axis of the tube (flooded with water beforehand). Ultrasound waves are reflected by a mirror and propagate towards the tube's outer wall. They are partially transmitted inside the inner-diameter (ID) wall and reflected by the outer-diameter (OD) wall. Knowing the ultrasonic velocity of the tube's material, we can assess the wall thickness using the time-of-flight difference between the two surfaces. Water circulation rotates the mirror, ensuring that the entire tube is inspected.

IRIS is particularly versatile, as it is suitable for ferrous and non-ferrous materials and allows detecting corrosion, pitting, and thinning on a wide range of tube diameters and wall thicknesses.



IRIS Kit

PART NUMBER	DESCRIPTION
IRIS-KIT-FUL	Complete IRIS kit including (pump and filter unit sold separately): <ul style="list-style-type: none">• 2 turbines• 4 centering devices• 3 transducers• 4 cables (20 m)• 1 flood tube adapter• 1 repair kit

Transducers
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IRIS accessories
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**Centering devices
and cables**
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Transducers and Turbines

Transducers



PART NUMBER	DESCRIPTION
PRBT-IRIS-TD-10M-254	10 MHz transducer, 25.4 mm focal length
PRBT-IRIS-TD-10M-318	10 MHz transducer, 31.8 mm focal length
PRBT-IRIS-TD-10M-381	10 MHz transducer, 38.1 mm focal length
PRBT-IRIS-TD-10M-445	10 MHz transducer, 44.5 mm focal length
PRBT-IRIS-TD-10M-508	10 MHz transducer, 50.8 mm focal length
PRBT-IRIS-TD-15M-254	15 MHz transducer, 25.4 mm focal length
PRBT-IRIS-TD-15M-318	15 MHz transducer, 31.8 mm focal length
PRBT-IRIS-TD-15M-381	15 MHz transducer, 38.1 mm focal length
PRBT-IRIS-TD-15M-445	15 MHz transducer, 44.5 mm focal length
PRBT-IRIS-TD-15M-508	15 MHz transducer, 50.8 mm focal length
PRBT-IRIS-TD-20M-254	20 MHz transducer, 25.4 mm focal length
PRBT-IRIS-TD-20M-318	20 MHz transducer, 31.8 mm focal length
PRBT-IRIS-TD-20M-381	20 MHz transducer, 38.1 mm focal length

Turbines



HIGHLIGHTS

- Unequalled rotation speed
- No trapped air bubbles
- Easy maintenance

Eddyfi's IRIS turbines are engineered to leverage the **Ectane® 2**'s impressive acquisition rate and deliver optimal results for a wide range of rotation speeds, up to 120 revolutions per seconds. The unique mechanical design significantly reduces the formation of bubbles and allows smooth operation for successful ultrasonic examinations. Turbines are available in two sizes: 12 mm (0.472 in) and 17 mm (0.669 in).

PART NUMBER	DESCRIPTION
PRBT-IRIS-TB-120	Diameter 12 mm (0.472 in)
PRBT-IRIS-TB-170	Diameter 17 mm (0.669 in)

Centering Devices and Cables

Tulip Centering Devices



HIGHLIGHTS

- Easily adjustable
- No spring sensation
- Good wear resistance
- Easy maintenance

The polymer centering tulip design ensures ease of sliding and maximum durability in a compact size. Each centering tulip is screwed in the main rod, which prevents back-and-forth spring sensation (snap-back). This design is available in extra-small size covering tube IDs ranging from 11.4 mm to 18 mm (0.45 in to 0.71 in).

Spring-Loaded Arm Centering Devices



HIGHLIGHTS

- Linked arms for better centering
- Self-contained
- Fast and simple assembly
- Easy maintenance

These centering devices have two sets of spring-loaded arms linked in both directions to ensure perfect centering with three contact points. The centering device is made to be self-contained and removable from the shaft without loss of components or pressure in the arms. This design is available in four sizes — extra-small, small, medium, large — covering tube IDs ranging from 11.4 mm to 76.2 mm (0.45 in to 3.0 in). The large centering device comes with a flexible shaft for bent tube inspection.

PART NUMBER	DESCRIPTION
PRBT-IRIS-CDXS	Extra-small centering device (11.4–18.0 mm)
PRBT-IRIS-CDSM-SLA	Small centering device with spring-loaded arms (18.0–25.4 mm)
PRBT-IRIS-CDMD	Medium centering device with spring-loaded arms (23.0–42.0 mm)
PRBT-IRIS-CDLG	Large centering device with spring-loaded arms (38.1–76.2 mm)

Cables

PART NUMBER	DESCRIPTION
PRBT-IRIS-CBL-N15	Nylon cable, diameter 7.9 mm (0.313 in), 15 m long
PRBT-IRIS-CBL-N20	Nylon cable, diameter 7.9 mm (0.313 in), 20 m long

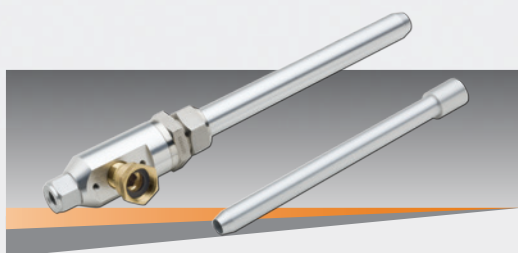
PART NUMBER	DESCRIPTION
PRBT-IRIS-CBL-N30	Nylon cable, diameter 7.9 mm (0.313 in), 30 m long
PRBT-IRIS-CBL-BNC	BNC cable, 3 m long

IRIS Accessories



Pumps and Filter Units

PART NUMBER	DESCRIPTION
PRBT-IRIS-WPFT-120	Submersible water pump and filter unit (120V)
PRBT-IRIS-WPFT-220	Submersible water pump and filter unit (220V)



Flood Tube Adaptor

PART NUMBER	DESCRIPTION
PRBT-IRIS-FLOOD	Flood tube adaptor (2 sizes)



Encoder

Eddyfi's encoder allows accurately reporting defect positions along tubes by monitoring the movement of the probe. The reliable and simple-to-use encoder mechanism offers superior precision compared to traditional landmarks.

PART NUMBER	DESCRIPTION
PRBT-ENCODER	Cable encoder for tubing probe, including fixtures for the flood tube adaptor and 4 m cable

Selection Guide — IRIS

		TUBE WALL THICKNESS (BWG, mm, in)								
		BWG	4	6	8	10	12	14	16	18
		mm	6.05	5.16	4.19	3.40	2.77	2.11	1.65	1.24
		in	0.238	0.206	0.165	0.135	0.109	0.083	0.065	0.049
TUBE OUTSIDE DIAMETER	15.87 mm	0.625in	—	—	—	—	—	—	CDXS TB-120 TD-20M-254	CDXS TB-120 TD-20M-254
	19.05 mm	0.750in	—	—	—	—	CDXS TB-120 TD-15M-254	CDXS TB-120 TD-15M-254	CDXS TB-120 TD-20M-254	CDXS TB-120 TD-20M-254
	22.22 mm	0.875in	—	—	CDXS TB-120 TD-10M-254	CDXS TB-120 TD-15M-254	CDXS TB-120 TD-15M-254	CDXS TB-120 TD-15M-254	CDXS TB-120 TD-20M-254	CDXS TB-120 TD-20M-254
	25.40 mm	1.000in	CDXS TB-120 TD-10M-254	CDXS TB-120 TD-10M-254	CDXS TB-120 TD-10M-254	CDXS TB-120 TD-15M-254	CDSM TB-170 TD-15M-318	CDSM TB-170 TD-15M-318	CDSM TB-170 TD-20M-318	CDSM TB-170 TD-20M-318
	31.75 mm	1.250in	CDSM TB-170 TD-10M-318	CDSM TB-170 TD-10M-318	CDSM TB-170 TD-10M-318	CDMD TB-170 TD-15M-318	CDMD TB-170 TD-15M-318	CDMD TB-170 TD-15M-318	CDMD TB-170 TD-15M-318	—
	38.10 mm	1.500in	CDMD TB-170 TD-10M-318	CDMD TB-170 TD-10M-318	CDMD TB-170 TD-10M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	CDMD TB-170 TD-15M-381	—
	50.80 mm	2.000in	CDMD TB-170 TD-10M-381	CDMD TB-170 TD-10M-381	CDLG TB-170 TD-10M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	CDLG TB-170 TD-15M-445	—
	63.50 mm	2.500in	CDLG TB-170 TD-10M-445	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	—	—
	76.20 mm	3.000in	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-10M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	CDLG TB-170 TD-15M-508	—	—

Example: CDSM: Centering device, small
 TB-170: Turbine, 17.0 mm
 TD-15M-254: Transducer, 15 MHz, 25.4 mm focal length

Cables and Adapters

Detachable Probe Cables



PART NUMBER	DESCRIPTION
PRBT-ECT-CBL-095-N15	Premium ECT nylon cable, diameter 9.5 mm (0.375 in), 15 m long
PRBT-ECT-CBL-095-N20	Premium ECT nylon cable, diameter 9.5 mm (0.375 in), 20 m long
PRBT-ECT-CBL-095-N30	Premium ECT nylon cable, diameter 9.5 mm (0.375 in), 30 m long



Adapters

PART NUMBER	DESCRIPTION
PRBT-ADAPT-41x4	41-pin male Amphenol to 4-pin female Amphenol ECT bobbin probe adapter
PRBT-ADAPT-41x4&4	41-pin male Amphenol to 2× female 4-pin Amphenol dual ECT bobbin probe adapter
PRBT-ADAPT-41xAC	41-pin male Amphenol to 2× female 4-pin Amphenol air-conditioning probe adapter
PRBT-ADAPT-41x36	41-pin male Amphenol to 36-pin female Amphenol probe adapter
PRBT-ADAPT-41x6	41-pin male Amphenol to 6-pin male Jaeger (switchable) ECT bobbin probe adapter
PRBT-ADAPT-19x3&6	19-pin male Amphenol to 3-pin and 6-pin female Amphenol RFT probe adapter
PRBT-ADAPT-19x5&6	19-pin male Amphenol to 5-pin ITT Cannon and 6-pin female Amphenol RFT probe adapter
PRBT-ADAPT-19x3&5&6	19-pin male Amphenol to 5-pin ITT Cannon, 3-pin and 6-pin female Amphenol with 15 dB preamplifier universal RFT probe adapter
PRBT-ADAPT-19x8	19-pin male Amphenol to 8-pin female Amphenol MFL probe adapter
PRBT-ADAPT-8x19	8-pin male Amphenol to 19-pin female Amphenol MFL probe adapter

Ectane[®] 2

Surface Array and Tube Inspection System

A Proven Success. Made Better.

With several hundred units in the field, the **Ectane[®]** has become the most popular multi-technology test instrument on the market. It's time for the next generation — **Ectane 2**.

Portability and autonomy

The **Ectane 2** test instrument is approximately 10 L (688 in³) in volume and weighs in at 6.8 kg (15 lb), making it about three times more compact than other legacy test instruments. The **Ectane 2** is therefore easy to carry beyond being rugged. The instrument is also battery powered — 8 hours of autonomy eliminates the need for an external power source.

Built-in technological versatility

Non-destructive testing of tubing and surfaces relies on a number of techniques, which often depend on the application and the materials involved. Use the **Ectane 2**'s built-in capabilities with almost any combination of the following testing technologies, according to your needs:

- Eddy current testing (ECT)
- Eddy current array (ECA)
- Remote-field testing (RFT)
- Near-field testing (NFT)
- Magnetic flux leakage (MFL)
- Internal rotating inspection system (IRIS) ultrasonic testing

Whatever the technology, the **Ectane 2** can drive it without external boxes or clumsy connections.

The **Ectane 2** can also drive partial saturation ECT probes and magnetic bias ECT probes with its onboard current source, and RPC probes with its motor drive.

Superior connectivity

BootP has always proven to be extremely cryptic and notoriously difficult to use. The **Ectane 2** is designed to be plugged into your network and simply work. There's no longer any need for BootP, which means you can be up and running in next to no time.

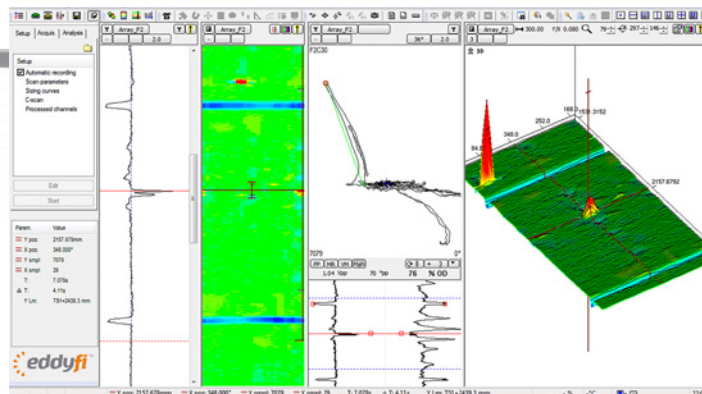


Magnifi®

Eddy Current Data Acquisition and Analysis Software

The Most Advanced Eddy Current Data Acquisition and Analysis Software.

In today's NDT world, **Magnifi** is simply the most comprehensive, stable, and reliable multi-technology software for surface and tube inspections.



Versatility

Magnifi is compatible with the most inspection technologies, the most instruments, and the most file formats. With such a tool at your fingertips, there is almost no need to switch back and forth between several software anymore.

Guided setup

The **Magnifi** setup wizard removes the need for high-level NDT knowledge for a thorough setup. The setup wizard pilots you through all the necessary steps to achieve the best setup in the least amount of time.

Seeing is believing

C-scan imaging allows personnel without extensive ECT data analysis experience to view data from the probe and be confident about the inspection results.

TubePro

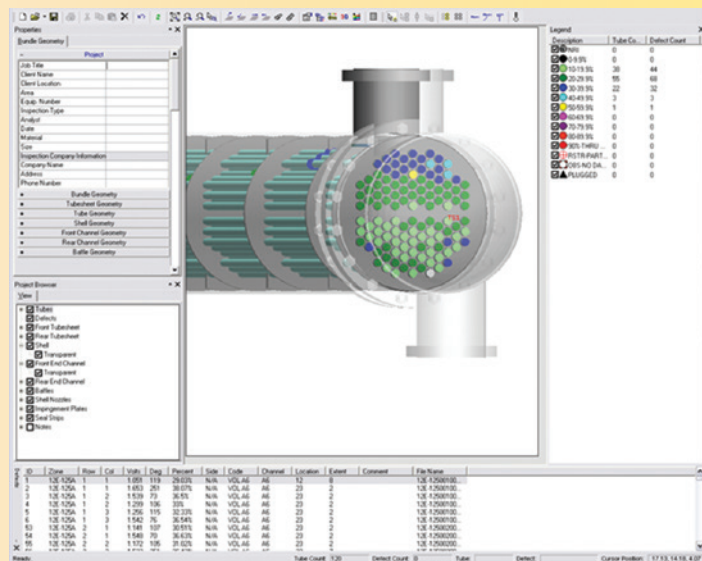
TubePro is the state-of-the-art fruit of ISS' over 30 years of experience in developing thermal, mechanical and inspection software applications for the petrochemical and power generation industries.

Ease of use

TubePro was developed with a focus on ease of use. It is easy to learn the tube mapping edition tools featured in the software. You can easily add, delete, and edit tubes, as well as conventional functions such as undo offer a familiar feel to **TubePro**.

Advanced reporting

Reports can be output as spreadsheets compatible with any popular spreadsheet software. Cells can be updated in real time and easily linked to calculate and specify data to TubePro.





www.eddyfi.com

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Printed in Canada. 2016-02-25