

ECTANE 2

The leading multi-technology instrument for surface and tubing applications is designed to be the most versatile, reliable, and powerful EC platform on the market.



REDDY FOR SURFACES

This turnkey ECA system is designed to perform critical surface inspections. Its fast and easy deployment, better PoD, length and depth sizing capabilities, data recording capacity, and consistent results help replace PT and MT.



REDDY FOR TUBING

Designed specifically for AC and tubing inspections, the system is compatible with all air-conditioner and ECT probes on the market without the need for adapters and the integrated software enables on-the-fly reporting.



LYFT

Reinventing PEC, the solution is designed for CUI and other critical applications. Often superior to radiography/stripping because it does not require access to both sides or surface preparation, and has no health hazards, making it much more cost efficient.



APPLICATIONS	<div>Surfaces</div> <ul style="list-style-type: none"><li>• Corrosion detection</li><li>• Crack detection</li><li>• Welds</li><li>• Turbines</li><li>• Castings</li><li>• Etc.</li></ul> <div>Tubing</div> <ul style="list-style-type: none"><li>• Ferrous and non-ferrous</li></ul>	<div>Surfaces</div> <ul style="list-style-type: none"><li>• Corrosion detection</li><li>• Crack detection</li><li>• Welds</li><li>• Turbines</li><li>• Castings</li><li>• Etc.</li></ul>	<div>Tubing</div> <ul style="list-style-type: none"><li>• Non-ferrous</li><li>• Air conditioners</li><li>• Chillers</li></ul>	<div>Corrosion detection</div> <ul style="list-style-type: none"><li>• Corrosion under insulation (CUI)</li><li>• Corrosion blisters and scabs</li><li>• Flow-accelerated corrosion (FAC)</li><li>• Corrosion under fireproofing (CUF)</li><li>• Splash zone and underwater</li><li>• Surface corrosion</li><li>• Corrosion under coatings</li><li>• Waterworks</li></ul>
TYPICAL BATTERY AUTONOMY	8 hours	6–8 hours	6–8 hours	6–8 hours
SUPPORTED INSPECTION TECHNOLOGIES	ECT, ECA, TECA, RFT, NFT, NFA, MFL, IRIS	ECA, TECA	ECT	Pulsed eddy current (PEC) Pulsed eddy current array (PECA)
DATA ACQUISITION	Up to 50 000 samples/s	Up to 50 000 samples/s	Up to 50 000 samples/s	Up to 75 mm/s (3 in/s)
SMARTMUX ECA CHANNELS	64, 128, 256	32, 64, 128		
ECT PROBE INPUTS	8	4	4	
ECT FREQUENCY RANGE	5 Hz–10 MHz	5 Hz–10 MHz	5 Hz–10 MHz	
IRIS TURBINE SPEED	Up to 100 RPS			
NOMINAL WALL THICKNESS				Up to 100 mm (4 in)
LIFTOFF TOLERANCE				Up to 300 mm (12 in)
SETUP TECHNOLOGY				SmartPULSE
UNDERSIZING COMPENSATION				Compensated wall thickness (CWT) tool
SUPPORTED WEATHER JACKETS				Stainless steel up to 1.5 mm (0.06 in) Aluminum up to 1 mm (0.04 in) Galvanized steel up to 1 mm (0.04 in)
SUPPORTED PART GEOMETRY				From 25 mm (1 in) OD to flat
AUTOMATIC REPORTING		√	√	√
UNIQUE FEATURES	<ul style="list-style-type: none"><li>• Multi-technology instrument</li><li>• Field-proven—hundreds of units in service</li></ul>	<ul style="list-style-type: none"><li>• Dedicated surface ECA inspection solution</li><li>• Portable and rugged</li></ul>	<ul style="list-style-type: none"><li>• Instant, automated reporting</li><li>• Shortest complete inspection time in the industry</li></ul>	<ul style="list-style-type: none"><li>• Accessible CUI integrity management solution</li><li>• Most powerful and easy-to-use screening system on the market</li></ul>



# THE EDDYFI LINE PROBES

## THE BEST EM TESTING PRODUCTS—BAR NONE

The Eddyfi product line focuses mainly on high-performance advanced electromagnetic solutions for the inspection of critical components and assets. Eddyfi products are the industry's best performing and most reliable test instruments, acquisition and analysis software, as well as standard and—more importantly—specialized surface array and tubing probes.

Eddyfi-line products constantly propel the limits of electromagnetic testing to new heights in an attempt to respond to your ever-changing inspection challenges.

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Butt Weld Sharck   Fillet Weld Sharck   Pencil Sharck   High-Res. Sharck

I-Flex   Padded   Semi-Flex   Gear

## TECA



APPLICATIONS	Welds and plates	Welds	Welds and plates	Pipes and plates
MATERIALS	Ferrous	Ferrous	Ferrous	Ferrous
SURFACE-BREAKING CRACKS	✓	✓	✓	✓
LENGTH & DEPTH SIZING	✓	✓	✓	✓
DETECTABLE DEFECTS (L×D)	3.0×0.5 mm (0.12×0.02 in)	3.0×0.5 mm (0.12×0.02 in)	3.0×0.5 mm (0.12×0.02 in)	2.00×0.25 mm (0.08×0.01 in)
MAX. MEASURABLE CRACK DEPTH	7 mm (0.28 in)	7 mm (0.28 in)	7 mm (0.28 in)	3 mm (0.12 in)
SIZING ACCURACY	±2 mm (0.08 in) ±10–20 %	±2 mm (0.08 in) ±10–20 %	±2 mm (0.08 in) ±10–20 %	±10 %
SCAN SPEED	Up to 200 mm/s (8 in/s)	Up to 200 mm/s (8 in/s)	Up to 200 mm/s (8 in/s)	Up to 600 mm/s (24 in/s)
LIFTOFF TOLERANCE	Up to 3 mm (0.12 in)	Up to 3 mm (0.12 in)	Up to 3 mm (0.12 in)	Up to 2 mm (0.08 in)
COVERAGE	53 mm (2.1 in)	30 mm (1.2 in)	7 mm (0.3 in)	71 mm (2.8 in)

## ECA



APPLICATIONS	Smooth, curved surfaces	Welds	Smooth, curved surfaces	Gears
MATERIALS	Ferrous, non-ferrous	Ferrous, non-ferrous	Ferrous, non-ferrous	Ferrous, non-ferrous
FAR-SURFACE CORROSION	✓		✓	
SUBSURFACE DEFECTS	✓		✓	
SURFACE-BREAKING DEFECTS	✓	✓	✓	✓
LENGTH SIZING	✓	✓	✓	✓
MIN. DETECTABLE CRACK LENGTH	0.5–1.5 mm (0.02–0.06 in)	0.5–1.0 mm (0.02–0.04 in)	0.5 mm (0.02 in)	5 mm (0.20 in)
FREQUENCY RANGES	0.6–800 kHz	50–800 kHz	0.6–800 kHz	0.25–1 MHz
PENETRATION (STAINLESS STEEL/ALUMINUM)	Up to 6 mm (0.24 in)		Up to 6 mm (0.24 in)	
COVERAGE	34–128 mm (1.34–5.04 in)	34–58 mm (1.34–2.28 in)	34–128 mm (1.34–5.04 in)	50–112 mm (2.0–4.4 in)

Array

Single-element   GS Cladding

Underwater

Tank Floor

ECT, RFT,  
NFT, MFL

AC

DefHi

NFA

IRIS

## PEC



APPLICATIONS	CUI, CUF, FAC	CUI, CUF, FAC	CUI, CUF, FAC	Corrosion under marine growth	Tank annular rings
SUPPORTED WALL THICKNESS	6–25 mm (0.25–1.00 in)	Up to 102 mm (4 in)	Up to 38 mm (1.5 in)	Up to 102 mm (4 in)	Up to 25 mm (1 in)
SUPPORTED CLADDING	Aluminum, stainless steel	Aluminum, stainless steel, galvanized steel	Galvanized steel		
SUPPORTED LIFTOFF	25–102 mm (1–4 in)	0–305 mm (0–12 in)	13–153 mm (0.5–6 in)	0–300 mm (0–12 in)	0–13 mm (0–0.5 in)
FOOTPRINT AT MIN. LIFTOFF	46 mm (1.8 in)	35–100 mm (1.4–3.9 in)	62 mm (2.4 in)	62–100 mm (2.4–3.9 in)	35 mm (1.4 in)
WATERTIGHTNESS				100 m (330 ft)	
BLADE LENGTH					400 mm (15.75 in)
MAX. DIRECT CONTACT SURFACE TEMPERATURE	70 °C (158 °F)	70 °C (158 °F)	70 °C (158 °F)	70 °C (158 °F)	70 °C (158 °F)
MAX. DIRECT CONTACT SURFACE TEMP. W/PROBE SHOE		120 °C (248 °F)			

## TUBES



APPLICATIONS	Heat exchangers, fin-fan air coolers	Air conditioners	Heat exchangers	Fin-fan air coolers	All tubing apps
MATERIALS	Ferrous, non-ferrous	Non-ferrous	Non-ferrous	Ferrous	Ferrous, non-ferrous
DETECTABLE DEFECTS	Pitting, wall loss, cracks, volumetric	Pitting, wall loss, axial, circumferential	Axial, circumferential	Axial, circumferential	Volumetric
INSPECTION SPEED	0.3–1 m/s (1–3.3 ft/s)	1 m/s (3.3 ft/s)	1 m/s (3.3 ft/s)	0.3 m/s (1 ft/s)	0.1 m/s (4 in/s)
SEALED	✓	✓	✓	✓	✓
REPLACEABLE PARTS	✓		✓	✓	✓
SIZING CAPABILITIES	✓	✓	✓	✓	✓
COMPATIBLE WITH COMPETITION	✓				✓
HIGH DURABILITY	✓	✓	✓	✓	✓
C-SCAN IMAGING			✓	✓	✓

## PROBOT



INSPECTION TECHNOLOGY	ECT, ECA, RFT, NFT, NFA, MRPC, MFL, IRIS
INSPECTION SPEEDS	0–2.5 m/s (0–8 ft/s)
WEIGHT	23 kg (50 lb)
DESIGNED TO IP65	✓
SINGLE OPERATOR	✓
POLY DIAMETER RANGE	6.35–9.53 mm (0.25–0.38 in)
ENCODED DATA	2× for higher speed control
DATA SYNCHRONIZATION	All-in-one, linked to Ectane/Magnifi
AUTOMATION	Automated sequences controlled w/ probe gun



# A WIDE RANGE OF APPLICATIONS

M2M Gekko and Mantis are field qualified in the oil & gas, nuclear, power generation, aerospace, and railway industries, and they meet the minimum instrumentation and software requirements specified by ASME, AWS, API, ASTM, and ISO. Furthermore, Gekko is certified by PCN and CSWIP.

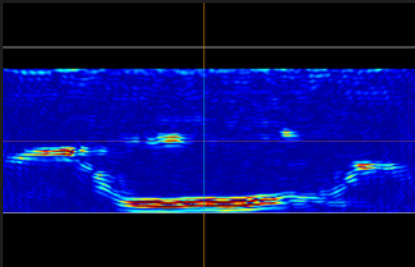
M2M Panther™ combines the speed and performance of phased-array ultrasound (PAUT) technology in compact form. The line is designed for integrators performing inline inspections and for laboratories pursuing R&D. Panther-line products offer a flexible and scalable solution for generic and custom non-destructive testing (NDT).



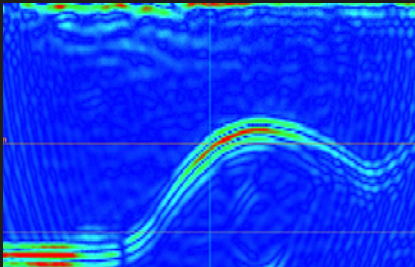
Gas tank inspection



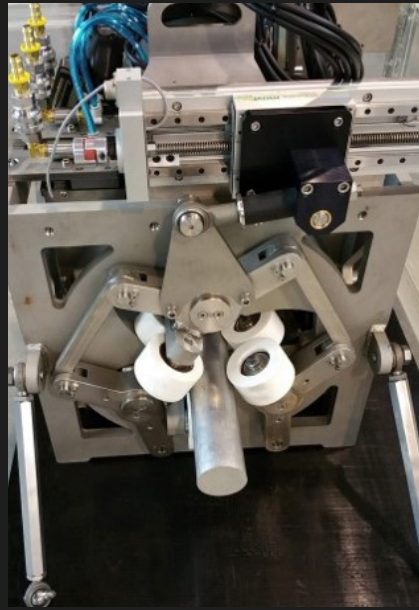
Pressure vessel inspection



Hydrogen damage (HIC, HTHA)



Corroded pipe inspection



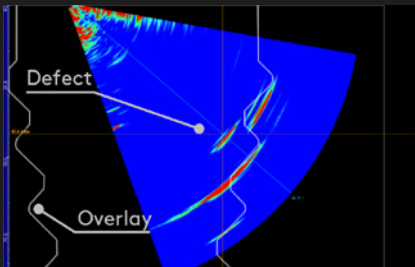
Automated bar inspection



Immersion tank and automated inspection



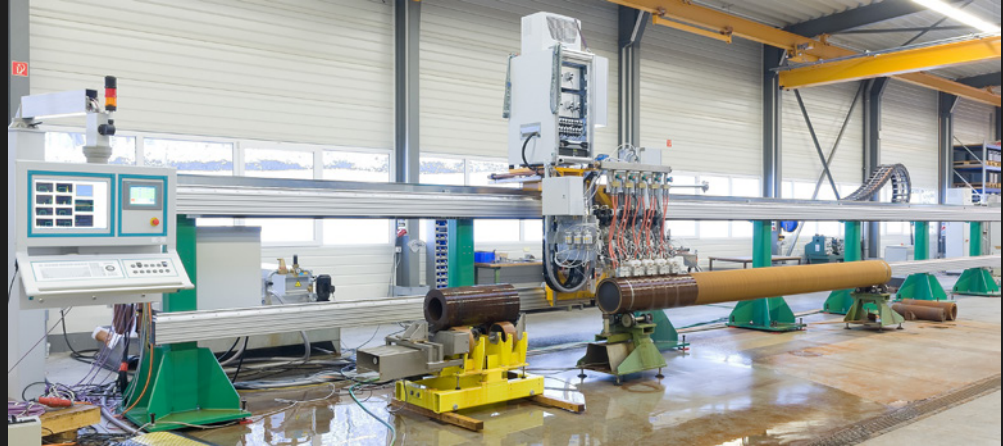
Composites inspection using SAUL



Turbine blade inspection



Girth weld pipe inspection



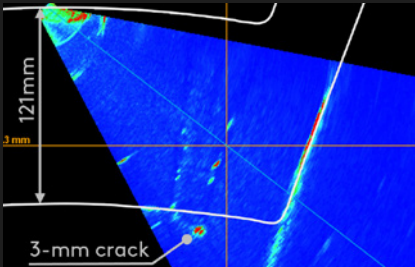
Inline tube inspection



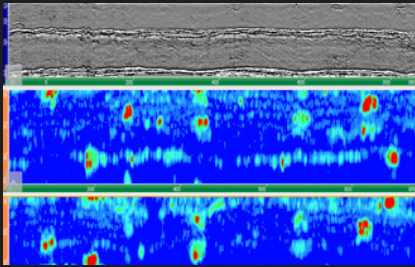
Aircraft inspection



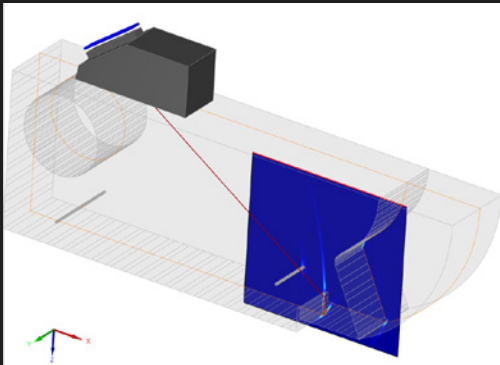
Rail inspection



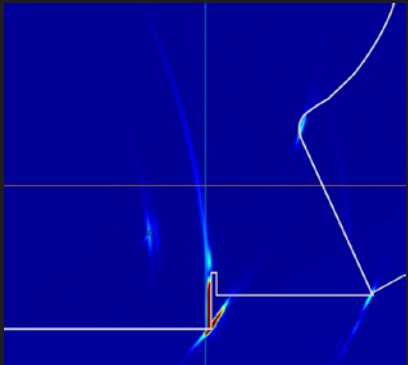
Nozzle inspection



Multi-group weld inspection



TFM multi-mode reconstruction (TT, TTT, TTTT) in a 1-million-pixel zone in a 3D CAD on **M2M ENLIGHT** analysis software



## M2M PRODUCT LINE



# THE M2M LINE

## STATE-OF-THE-ART PAUT EQUIPMENT FOR NDT




The M2M product line uses standard and state-of-the-art phased-array ultrasound technology (PAUT) to detect, characterize, and size most defects encountered by operators, integrators, or laboratories in the oil & gas, aerospace, power generation, steel, and automotive industries.

**M2M Gekko™** and **Mantis™** have recently become the reference in high-end portable PAUT flaw detectors with real-time total focusing method (TFM).

**M2M Panther™** is the new industrial instrumentation with real-time TFM designed for laboratories, inline industry and integrators.






The M2M product line meets several industrial requirements for inspection (production, inline inspection, and maintenance).

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GEKKO		MANTIS		PANTHER
<p>Gekko® is the first portable phased-array flaw detector capable of driving matrix arrays and to perform Total Focusing Methods (TFM) in real time.</p>		<p>Mantis™ is the light and economical version of Gekko® using the same technologies and software interface Capture with 16:64 channels</p>		<p>Designed for inline inspection integrators and laboratories engaged in R&amp;D, Panther™ combines TFM, the speed and performance of phased-array ultrasound technology in compact form. Panther™ offers flexible and scalable solutions for generic and custom NDT.</p>
				
TARGETED APPLICATIONS	Rough field unit, high resolution & thick components inspection	Compact field unit, mostly adapted for component thickness up to 25mm		Laboratories, inline industry, integrators
HARDWARE				
UNIT	Touchscreen portable unit	Touchscreen portable unit		Tabletop unit with GPU computer
PAUT, TFM	PAUT 64:64 to 64:128PR TFM 64:64 to 128:128	PAUT 16:64PR TFM 16:16 to 64:64		PAUT 32:128PR to 128:128 Stackable up to 2048:2048
UT, TOFD	4P/R LEMO channels	1P/R and 1P channels		4 LEMOs per 128 channels system
ENCODERS	3-axis	From 2 up to 3*-axis		3-axis
WEIGHT	6,9kg with batteries	4,4kg with battery		6kg
BATTERY AUTONOMY	4h – hotswappable batteries	4h – hotswappable battery		DC or AC power supply
FREQUENCY RANGE	0,4 to 20MHz for PA 0,6 to 25MHz for conv UT	0,4 to 20MHz for PA		0,4 to 20Mhz
DATA TRANSFER	Up to 150MB/s	Up to 150MB/s		Up to 320MB/s
PAUT ACCESSORIES	Probe adapters & splitters	Probe adapters & splitters		Probe adapters & splitters
SOFTWARE				
ACQUISITION SOFTWARE	Capture™	Capture™		Acquire™
MULTI-GROUP CONFIGURATION	Up to 8 groups	Up to 8 groups		No limitation (inc. combination of PA & TFM)
AVAILABLE UT PROBES	PA Linear, Matrix, DLA, DMA UT pulse-echo, Dual, TOFD	PA Linear, Matrix*, DLA, DMA* UT pulse-echo, Dual, TOFD		PA Linear, DLA, Matrix, DMA, sectorial, daisy, sparse UT pulse-echo, Dual, TOFD
COMPONENT GEOMETRIES	Plates, pipes, fillet welds, nozzles	Plates, pipes, fillet welds*, nozzles*		Plate, cylinder, sphere, cone, butt welds, fillet welds, nozzle, Full 2D & 3D CAD compatibility
PHASED ARRAY TECHNIQUES	Sectorial, Linear, Compound, TFM, Adaptive TFM*, FMC recording	Sectorial, Linear, Compound, TFM, FMC recording*		Sectorial, Linear, compound, Pitch-catch, FMC, PWI & TFM, possibility to program arbitrary TFM mode Adaptive TFM* coming soon
ANALYSIS SOFTWARE	Capture™, Enlight & CIVA Analysis Free PC Viewer	Capture™, Enlight & CIVA Analysis Free PC Viewer		Enlight & CIVA Analysis
REMOTE CONTROL	Screen sharing & data transfer through ethernet & Wifi* Teamviewer remote control	Screen sharing & data transfer through ethernet & Wifi* Teamviewer remote control		Software development kit (SDK) Remote control documentation

\*Optional

# MFL SCANNERS

	Floormap3DiM-R	Floormap3Di-R	Floormap-R	Handscan	Pipescan
					
APPLICATION	Tank bottom and roof	Tank bottom and roof	Tank bottom and roof	Tank bottom, shell and roof	Pipes
INSPECTION TYPE	Full mapping, screening and stop-on-defect system	Full mapping system	Screening and stop-on-defect system with data recording and floor image exports	Mini-screening system	Adjustable pipe screen system (48–2400 mm)
TECHNOLOGY	MFL and STARS	MFL and STARS	MFL and STARS	MFL	MFL
OUTPUT	Tank bottom map or visual with images	Tank bottom map	Visual with images	Visual	Visual
MATERIAL THICKNESS RANGE	5–16 mm (0.2–0.6 in)	5–16 mm (0.2–0.6 in)	5–16 mm (0.2–0.6 in)	5–16 mm (0.2–0.6 in)	5–16 mm (0.2–0.6 in)
SCAN SPEED	Variable up to 1 m/s (39.4 in/s)	Variable up to 1 m/s (39.4 in/s)	Variable up to 1 m/s (39.4 in/s)	450 mm/s (17.7 in/s)	450 mm/s (17.7 in/s)
SCAN WIDTH	300 mm (11.8 in)	300 mm (11.8 in)	300 mm (11.8 in)	150 mm (5.9 in)	Up to 150 mm (5.9 in)
CHANNELS/SENSORS	64/256	64/256	64/256	6/16	Up to 6/16
TOP & BOTTOM DISCRIMINATION	✓	✓	✓		
METHOD OF PROPULSION	Motor	Motor	Motor	Push/Pull	Push/Pull
CMAP COMPATIBILITY	✓—Mapping only	✓—Mapping only			
TYPICAL BATTERY AUTONOMY	4 hours	4 hours	4 hours	8 hours	8 hours

# VACUUM BOXES

	V750 LED	V750	V400	V400LP	V600LP
					
WELD TYPE	Tank bottom and roof	Tank bottom and roof	Bottom to annular	Bottom to annular	Tank bottom and roof
VACUUM RATING	20 in Hg	20 in Hg	20 in Hg	10 in Hg	10 in Hg
WELD TEST LENGTH	750 mm (29.5 in)	750 mm (29.5 in)	400 mm (15.7 in)	400 mm (15.7 in)	560 mm (22.1 in)
INTERNAL LED LIGHTS	✓				
CALIBRATE GAUGE	✓	✓			

SILVERWING  
PRODUCT  
LINE



UT SYSTEMS

TANK INSPECTION: FROM ROOF TO BOTTOM

Silverwing is the leading product line of NDT equipment for above-ground storage tanks, vessels, and pipeline inspection within the oil, gas, and petrochemical industries.

Ranging from MFL scanners for tank floors to advanced UT corrosion mapping systems, our solutions enable engineers to evaluate the condition of industrial assets, thus supporting effective and safe operations.

INSTRUMENTS






RMS APU

Swift






DIMENSIONS	515×437×228 mm (20.3×17.2×9.0 in)	355×288×127 mm (14.0×11.3×5.0 in)
WEIGHT	13 kg (28.6 lb)	6.6 kg (14.5 lb)
POWER	110 V/230 V	Battery
TYPICAL BATTERY AUTONOMY		6–8 hours
SUPPORTED PRODUCTS	RMS2, RMS2 ARC	Scorpion2, with built-in joystick
DISPLAY	43.9 cm (17.3 in) 1920×1080 pixels	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
COOLING	Fan	Sealed and fanless
CONNECTIVITY	Gigabit Ethernet, Wi-Fi, USB 2.0, 3.0	Gigabit Ethernet, Wi-Fi, Bluetooth®, USB 2.0

SCANNERS

	RMS2	RMS2 Arc	Scorpion2	R-Scan	Thetascan
					
APPLICATION	Tanks, pipes, vessels	Pipes longitudinal	Tank shell and vessels	Various	Various
DESCRIPTION	Automated corrosion mapping system	Automated corrosion mapping system	Remote access B-scan crawler	Handheld B-scan scanner	Handheld C-scan scanner
TECHNOLOGY	Immersion ultrasonic	Immersion ultrasonic	Dry-coupled ultrasonic	Dry-coupled ultrasonic	Dry-coupled ultrasonic
OUTPUT	C-scan corrosion map	C-scan corrosion map	B-scan corrosion profile	B-scan corrosion profile	C-scan corrosion map
PROBE STANDARD	5 MHz 50 mm (2.0 in) focus 5 MHz 75 mm (3.0 in) focus	5 MHz 50 mm (2.0 in) focus 5 MHz 75 mm (3.0 in) focus	5 MHz dry-coupled dual element	5 MHz dry-coupled dual element	5 MHz dry-coupled dual element
PROBE OPTIONS	10 MHz 40 mm (1.6 in) focus 2.5 MHz 75 mm (3.0 in) unfocused 5 MHz dual	10 MHz 40 mm (1.6 in) focus 2.5 MHz 75 mm (3.0 in) unfocused 5 MHz dual			
MATERIAL THICKNESS RANGE	5–150 mm (0.2–2.0 in)	5–150 mm (0.2–2.0 in)	5–100 mm (0.2–3.9 in)	5–100 mm (0.2–3.9 in)	5–100 mm (0.2–3.9 in)
POWER	110 V/230 V	110 V/230 V	Battery	Battery	Battery
TYPICAL BATTERY AUTONOMY			4 hours	8 hours	8 hours
SCAN SPEED	730 mm/s (28.7 in/s)	730 mm/s (28.7 in/s)	Up to 180 mm/s (7.1 in/s)		
SCAN WIDTH	300: 300 mm (11.8 in) 450: 450 mm (17.7 in) 600: 600 mm (23.6 in)	1 m (39.4 in)	Line scan	Line scan	
UMBILICAL CABLE LENGTH	Up to 30 m (98.4 ft)	Up to 30 m (98.4 ft)	50 m (164.0 ft)	2 m (6.6 ft)	2 m (6.6 ft)
MIN DIAMETER	300: 650 mm (25.6 in) 450: 152 mm (6.0 in) 600: 650 mm (25.6 in)	24–36: 600 mm (23.6 in) 36–48: 900 mm (35.4 in)	Circumferential: 2 m (6.5 ft)* Longitudinal: 3 m (10 ft)* *For straight-line driving	50 mm (2.0 in)	300 mm (11.8 in)
MAX DIAMETER	300: Flat plate 450: Flat plate 600: Flat plate	24–36: 900 mm (35.4 in) 36–48: 1200 mm (47.2 in)	Flat plate	Flat plate	Flat plate
REMOTE ACCESS	√	√	√		

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# INSTRUMENTS

	AMIGO2	U31	PACE
			
APPLICATIONS	Topside weld inspection through coatings, drill threads, bridges, infrastructure, spheres, tanks	Subsea weld inspection, splash zone, jackets and subsea structures, pipelines, damage assessment	Rope access, cranes, towers, offshore/onshore structures, single-person operation, through coatings
DIMENSIONS	355×288×127 mm (14.0×11.3×5.0 in)	260×142ø mm (10.2×5.6ø in)	295×198×75 mm (11.6×7.8×3.0 in)
WEIGHT	6.6 kg (14.5 lb)	7.6 kg (16.8 lb) in air 4.3 kg (9.6 lb) in water	2.5 kg (5.5 lb)
TYPICAL BATTERY AUTONOMY	Over 6–8 hours	Over 10 hours w/ standard probe Over 5 hours w/ array probe	Over eight hours
RECHARGE TIME	5 h (from depleted)		3.5 h (from depleted) Desktop and in-vehicle charger
SUPPORTED INSPECTION TECHNOLOGIES	ACFM, array probe technology	ACFM, array probe technology	ACFM
OPERATING TEMPERATURE RANGE	0–40 °C (32–104 °F)	–20–40 °C (–4–104 °F)	–20–50 °C (–4–122 °F)
PROBE CABLE LENGTH	Up to 50 m (164 ft)	5 m (16.4 ft)	15 m (49 ft)
UMBILICAL CABLE		150 m (492 ft)	
ARRAY SUPPORT	Yes	U31D: No U31R ROV: Yes	None
ENVIRONMENTAL PROTECTION	IP65 rated	IP54 rated	IP65 rated
ACFM SOFTWARE	Onboard and desktop Assist software	Desktop Assistu	Onboard Pace software
ACCOMPANYING HARDWARE	Optional Toughbook	Toughbook	None necessary
MAX. OPERATING DEPTH		300 m (984 ft) U31D/ROV deployment: 3 km (1.9 mi)	
ROV COMPATIBILITY		U31D upgrade for ROV available	

## THE BEST ACFM SOLUTIONS FOR ALL ENVIRONMENTS

The TSC product line uses alternating current field measurement (ACFM®) technology to detect and size surface-breaking cracks, dramatically improving the reliability of underwater inspections, reducing operator dependence, and providing auditable inspection records.

ACFM has become widely recognized and accepted as one of the most reliable methods of detecting surface-breaking cracks in steel structures and metallic components.

## TSC PRODUCT LINE

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# ACFM® PROBES

WeldMini-PencilMicro-PencilLong/Angled Nose

## STANDARD



COMPATIBLE INSTRUMENTS	Amigo2	Amigo2	Amigo2	Amigo2
SURFACE-BREAKING DEFECTS	✓	✓	✓	✓
THROUGH COATING	✓	✓	✓	✓
WELD INSPECTION	✓	✓	✓	✓
APPLICATIONS	Rough welds, heavy pitting, corrosion	Restricted areas, rat holes, plate edges	High sensitivity for shallow defects (<1 mm)	Extended/Angled nose for difficult to access areas
FREQUENCY/HF OPTION	Fixed at 5 kHz 50 kHz HF option	Fixed at 5 kHz	Fixed at 5 kHz 50 kHz HF option	Fixed at 5 kHz 50 kHz HF option
NOSE CONFIGURATION		Straight, right angle, transverse	Straight, right angle, transverse	Extended or angled

## UNDER WATER

WeldGround WeldTight AccessMini-PencilMicro-Pencil



COMPATIBLE INSTRUMENTS	Amigo2, U31D	Amigo2, U31D	Amigo2, U31D	Amigo2, U31D	Amigo2, U31D
OPERABLE DEPTH	Amigo2: 50 m (164 ft) U31D: 300 m (984 ft)	Amigo2: 50 m (164 ft) U31D: 300 m (984 ft)	Amigo2: 50 m (164 ft) U31D: 300 m (984 ft)	Amigo2: 50 m (164 ft) U31D: 300 m (984 ft)	Amigo2: 50 m (164 ft) U31D: 300 m (984 ft)
SURFACE-BREAKING DEFECTS	✓	✓	✓	✓	✓
THROUGH COATING	✓	✓	✓	✓	✓
WELD INSPECTION	✓	✓	✓	✓	✓
APPLICATIONS	Welds, plates, tubulars	Weld repair grind inspection, long nose	Tubular welded connections, tight geometry	Restricted areas, rat holes, plate edges	High sensitivity for shallow defects (<1 mm)
FREQUENCY	Fixed at 5 kHz	Fixed at 5 kHz	Fixed at 5 kHz	Fixed at 5 kHz	Fixed at 5 kHz
NOSE CONFIGURATION		Straight, right angle, transverse	Straight, right angle, transverse	Straight, right angle, transverse	Straight, right angle, transverse

## SENSU



COMPATIBLE INSTRUMENTS	Pace
SURFACE-BREAKING DEFECTS	✓
THROUGH COATING	✓
WELD INSPECTION	✓
APPLICATIONS	Single-operator rope access, cranes, bridges, topside welds
FREQUENCY/HF OPTION	Fixed at 5 kHz 50 kHz HF option
NOSE CONFIGURATION	Straight, right angle, transverse right angle

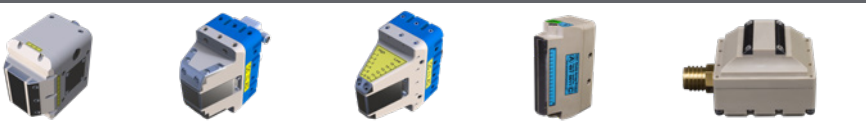
Weld ProbeCompliant ArrayFlat-Bottom Array



## ARRAY

COMPATIBLE INSTRUMENTS	Amigo2	Amigo2	Amigo2
APPLICATIONS	Defect sizing and location	Butt and lap welds	Flat/Gently curved plates, flush or low profile welds
SCAN WIDTH	30 mm (1.18 in)	45 mm (1.77 in)	45 mm (1.77 in)
POSITION ENCODER	✓	✓	✓
START/STOP BUTTONS	✓	✓	✓
STATUS LIGHTS	✓	✓	✓
NO. OF ROWS/CHANNELS	3/10	8/16	8/16
FIELDS/SENSORS	x/y	x	x/y

Scanned Array 542Scanned Array 543Scanned Array 493Pick & Place Array 497Low-Profile Mini 549



## SUBSEA ARRAY

COMPATIBLE INSTRUMENTS	U31R / Engineered solutions, e.g., Magcrawler, Nodescanner, etc.				
OPERABLE DEPTH	1 km (0.5 mi)	1 km (0.5 mi)	1 km (0.5 mi)	1 km (0.5 mi)	1 km (0.5 mi)
APPLICATIONS	Flat surfaces	Flat surfaces	Tight access	Low-dexterity deployment	Low-overhang areas
SCAN WIDTH	50 mm (1.97 in)	26 mm bottom 10 mm each side (1.02×0.40 in)	8 mm bottom 35 mm each side (0.31×1.38 in)	80 mm long 20 mm wide (3.15×0.79 in)	40 mm (1.57 in)
POSITION ENCODER	Optional	Optional			
NO. OF ROWS/CHANNELS	8/32	7/28	15/30	2/32	6/24
FIELDS/SENSORS	x/y	x/y	x	x	x/y

## THREAD ARRAY



COMPATIBLE INSTRUMENTS	Amigo2	Amigo2	Amigo2
FREQUENCY	5 kHz (420) 50 kHz (520)	5 kHz (377) 50 kHz (369)	5 kHz (378) 50 kHz (370)
APPLICATIONS	Drill pips, threaded connections, including under high load		
SCAN WIDTH	8 threads (3.5 threads/in)	12 threads (4 threads/in)	12 threads (5 threads/in)
POSITION ENCODER	✓	✓	✓
START/STOP BUTTONS	✓	✓	✓
NO. OF ROWS/CHANNELS	8/16	12/24	12/24
FIELDS/SENSORS	x	x	x



# TELETEST FOCUS<sup>+</sup>™

Guiding the Wave of Innovation



## FROM PIPE SCREENING TO PIPE INSPECTION

FOCUS<sup>+</sup> is the first commercial product offering all the benefits of the conventional guided wave screening technology with the added feature of focusing sound energy into specific regions of pipes to measure the distribution of corrosion around the circumference at a specific distance. This proves especially valuable where pipes are inaccessible, enabling inspectors to make more informed decisions about the need for further action.

### FOCUS<sup>+</sup> UNIT

The FOCUS<sup>+</sup> unit incorporates all the feedback from operators. The computer-controlled unit is battery operated and equipped with an integrated pump for collar inflation. The device also contains GPS location and is simple to connect. Permanently wired in octants, the unit has the capability of focusing without the need for reconfiguration.

### SOFTWARE

The FOCUS<sup>+</sup> software is designed with the operator in mind. The user-friendly tools guide operators through setup and automatically perform most functions without the need for user input. In addition, focusing on localized areas is just one click away.

## FEATURES AND BENEFITS

- Internal electric pump for inflation of collars
- GPS
- Wireless capabilities
- Octant inspection for C-scan imaging
- Secondary focusing technique unique to FOCUS<sup>+</sup>
- Longitudinal and torsional wave modes

### COLLARS

The collars combine the latest carbon-Kevlar® composite material and a latch design for a one-piece tool with a light and easy-to-use an integral bladder. Using the latest CAD software allowed to improve coupling between the guided wave transducers and the pipe surface, maximizing the signal amplitude. The collars incorporate Multi-Mode™ and 5-ring torsional modules generating torsional and longitudinal wave modes, offering operators the versatility to make more informed judgements.

Light Mini-Test collars and modules can inspect pipe sizes 48.3–114.3 mm (1.5–4.0 in). High-tech carbon fiber composite collars can, on the other hand, inspect pipe sizes 168.3–610.0 mm (6–24 in) in diameter and are designed to daisy chain to inspect pipe sizes up to 2 m (78 in) in diameter (two and three-collar configurations).

