



PROBE OPTIONS

Technical Specifications

The Elcometer 456 Probes are intelligent. This means:

- All Ferrous (F) Models will accept any Ferrous Probe
- All Non Ferrous (N) Models will accept any Non Ferrous Probe
- All Dual Ferrous & Non Ferrous (FNF) Models will accept
 - Any Ferrous (F)
 - Any Non Ferrous (N) and
 - Any Dual Ferrous/Non Ferrous (FNF) Probes

The Elcometer 456 Probes allow totally versatile application of the Elcometer 456 Coating Thickness Gauges to different coating thickness measurement tasks. Various probe ranges, resolution, size and access capabilities can be freely interchanged as required on both ferrous (F) and non-ferrous (N) metal substrates.

The **Plug-in Integral Probe – PINIP** has been designed to provide a separate probe model with an integral solution and provides the following advantages for the separate gauge :

- Single handed operation
- Stable readings for flat surfaces
- Gives the user a separate and an integral solution in one gauge

PINIP Probe →



Designed to be screwed into the base of the Elcometer 456 separate gauges, the PINIP, once connected, becomes part of the gauge case for greater stability and more accurate readings.

NEW PROBE OPTIONS

Elcometer have recently launched some new probes to complement our existing comprehensive range.

A new non-ferrous probe has been added with a measuring range of 0-5mm

NEW RANGE OF FERROUS AND NON-FERROUS *MINIATURE* PROBES

These probes are ideal for those who want to measure coating thickness in hard to reach places or on small surface areas which are not easily accessible using the normal Standard, Right Angle and Telescopic Probes available from Elcometer. To find out more about the Miniature Probe range, click on the link below.



Choosing the Correct Probe Type

Ferrous Probes use the Electromagnetic Induction Principle to measure non-magnetic coatings on a magnetic metal base. This includes paint, electroplating, galvanising, hard chrome, sprayed metal, powder coating, plastic, epoxy, rubber, ceramic, etc. on substrates such as steel, cast iron and ferritic and duplex stainless steel.

The Eddy Current Principle is used for all **Non Ferrous Probes** and can measure non-conductive coatings on non-ferrous metals including paint, anodising, vitreous enamel, plastic, epoxy, varnish power coating, glass fibre, rubber etc. on aluminum, copper, brass, austenitic (non-magnetic) stainless steel and other similar materials.

General Information

Max Operating Temperature	Ferrous	425°C
	Non Ferrous & FNF	200°C
Storage Temperature	-10 - 60°C	
Minimum Substrate Thickness	Ferrous*	0.3 mm
	Non Ferrous	0.1 mm

* with 2 point calibration 1 mm for ±1% accuracy at point of calibration



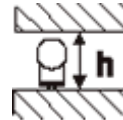
Probe Information – Technical Information (See Pg 3 for Miniature Probes)



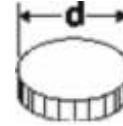
Minimum
Convex Surface
Diameter*



Minimum
Concave Surface
Radius



Headroom



Minimum
Sample
Diameter*



Calibration
Foil
Value*

Separate Ferrous

F1 (or F12 set as F1)	4mm	25mm	85mm	4mm	250µm
F2 (or F12 set as F2)	4mm	25mm	89mm	8mm	1mm
F1 Right Angle (or F12 set as F1)	4mm	25mm	28mm	4mm	250µm
F2 Right Angle (or F12 set as F2)	4mm	25mm	32mm	8mm	1mm
F1 Telescopic	4mm	25mm	32mm	4mm	250µm
F2 Telescopic	4mm	25mm	36mm	8mm	1mm
F3 Standard	15mm	40mm	102mm	14mm	2.5mm

Separate Non-Ferrous

N1	35mm	25mm	85mm	6mm	250µm
N1 Right Angle	35mm	25mm	28mm	6mm	250µm
N1A Anodiser's Probe	35mm	25mm	85mm	6mm	250µm
NEW N2 Standard	100mm	150mm	85mm	14mm	

Dual Ferrous and Non-Ferrous

FNF1 (as N)	38mm	25mm	88mm	8mm	250µm
FNF1 (as F)	4mm	25mm	88mm	4mm	250µm
FNF1 Right Angle (as N)	38mm	25mm	34mm	8mm	250µm
FNF1 Right Angle (as F)	4mm	25mm	34mm	4mm	250µm

Integral Ferrous and Non - Ferrous

F1 (or F12 set as F1)	4mm	50mm	134mm	4mm	250µm
F2 (or F12 set as F2)	4mm	50mm	138mm	8mm	1mm
F3	15mm	60mm	153mm	14mm	2.5mm
N1	35mm	60mm	134mm	6mm	250µm
FNF1 (as N)	38mm	55mm	135mm	8mm	250µm
FNF1 (as F)	4mm	55mm	135mm	4mm	250µm

PINIP - Plug in Integral Probe

F1 (or F12 set as F1)	4mm	60mm	153mm	4mm	250µm
F2 (or F12 set as F2)	4mm	60mm	157mm	8mm	1mm
F3	15mm	45mm	168mm	14mm	2.5mm
N1	35mm	50mm	153mm	6mm	250µm
FNF1 (as N)	38mm	55mm	154mm	8mm	250µm
FNF1 (as F)	4mm	55mm	154mm	4mm	250µm

* Recommended maximum calibration foil values to achieve the specified accuracy under the measurement conditions shown for Minimum Convex Surface Diameter and Minimum Sample Diameter.



Technical Specifications - Elcometer 456 Miniature Probe Options

The **NEW** range of ferrous and non-ferrous **MINIATURE** probes from Elcometer are ideal for taking measurements in hard to reach places or on small surface areas, which are not easily accessible using the normal Standard, Right Angle and Telescopic probes, simply because they are too large.

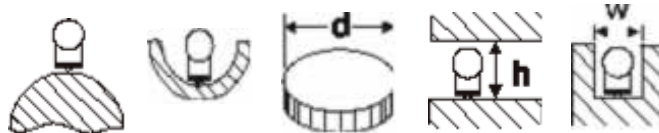


Ferrous and non-ferrous miniature probes are available with a measuring range of 0 - 500µm (0-20mils/thou) and two probe lengths options, 45mm or 150mm. The range consists of Straight, 45 Degree and 90 Degree angle probes making them ideal for accessing awkward areas such as:

- Inner diameters
- Thin diameter tubing
- Narrow edges
- Small curves Applications at the bottom of small, deep bores

General Information

Measuring Range	0 - 500µm
Accuracy	±1-3% or ±2.5µm <i>(The accuracy quoted has been defined using a 100 micron foil, with the miniature probe held in a Probe Placement Jig.)</i>
Resolution	Below 100µm: 0.1µm, 100 - 500µm: 1µm



Probe Type

Part Number	Minimum Convex Diameter	Minimum Concave Radius	Minimum Sample Diameter	Minimum Access Requirements Height	Minimum Access Requirements Width	Overall * Length (Headroom)
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FERROUS MINIATURE PROBES

Straight Miniature Probe, 45mm	T456FM3---A	1.5mm	6.5mm	3mm	n/a	6mm	150mm *
Straight Miniature Probe, 150mm	T456FM3---C	1.5mm	6.5mm	3mm	n/a	6mm	260mm *
45 Degree Miniature Probe, 45mm	T456FM3R45A	1.5mm	6.5mm	3mm	18mm	7mm	145mm
45 Degree Miniature Probe, 150mm	T456FM3R45C	1.5mm	6.5mm	3mm	18mm	7mm	250mm
90 Degree Miniature Probe, 45mm	T456FM3R90A	1.5mm	6.5mm	3mm	16mm	7mm	140mm
90 Degree Miniature Probe, 150mm	T456FM3R90C	1.5mm	6.5mm	3mm	16mm	7mm	245mm

NON-FERROUS MINIATURE PROBES

Straight Miniature Probe, 45mm	T456NM3---A	3mm	25mm	4mm	6mm		150mm *
Straight Miniature Probe, 150mm	T456NM3---C	3mm	25mm	4mm	6mm		260mm *
45 Degree Miniature Probe, 45mm	T456NM3R45A	3mm	25mm	4mm	18mm	7mm	145mm
45 Degree Miniature Probe, 150mm	T456NM3R45C	3mm	25mm	4mm	18mm	7mm	250mm
90 Degree Miniature Probe, 45mm	T456NM3R90A	3mm	25mm	4mm	16mm	7mm	140mm
90 Degree Miniature Probe, 150mm	T456NM3R90C	3mm	25mm	4mm	16mm	7mm	245mm

* The above capabilities have been determined using a calibration foil of 100 microns and the probe held in a probe placement jig.

