



ACS Material Equipment Series

**MetriTec™ Coating Thickness Gauge**

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## I. Product Overview

ACS Materials' MetriTec™ MT Series Coating Thickness Gauges offer precise, non-destructive thickness measurement with automatic substrate recognition. Designed for versatile applications, these instruments are ideal for evaluating coating, plating, fireproof, and anti-corrosive layer thickness across a range of materials. The series includes dual-use models such as LS220H and LS221, suitable for both ferrous and non-ferrous substrates. For more specialized applications, LS225+F500 is optimized for ferrous materials, while LS225+N1500/N2000 is tailored for non-ferrous substrates—ensuring reliable and accurate measurements in diverse industrial environments.

## II. Product Features of the MetriTec™ Coating Thickness Gauge Series

**MetriTec™ Coating Thickness Gauge M220H** is an integrated high-precision coating thickness gauge, which combines the Hall effect and Eddy current thickness measurement principles. Based on the Hall effect, the instrument can measure non-ferromagnetic coatings on ferromagnetic metal substrates, while under the Eddy current principle effect, it can measure non-conductive coatings on non-magnetic metal substrates.

- There are only four types of ferromagnetic metal elements at room temperature: iron, cobalt, nickel, and gadolinium.
- Common non-ferromagnetic metals: copper, aluminum, zinc, chromium, etc.
- Hall effect: can be used for the measurement of non-ferromagnetic coatings on ferromagnetic metal substrates.
- Eddy current: can be used for the measurement of non-conductive coatings on non-magnetic metal substrates.



**MetriTec™ Coating Thickness Gauge M221 Coating Thickness Gauge** is a specialist instrument for measuring the thickness of coatings on metal surfaces. The instrument combines the Hall effect and Eddy current principles to measure the thickness of non-ferromagnetic coatings on ferromagnetic metal substrates and the thickness of non-

conductive coatings on non-magnetic metal substrates. The host and probe of M221 is separate, which makes it easy for the user to view the data under complex testing conditions. It can be used in the laboratory and engineering field.

- Hall Effect: can be used for the measurement of non-ferromagnetic coatings on ferromagnetic metal substrates.
- Eddy current: can be used for the measurement of non-conductive coatings on non-magnetic metal substrates.
- There are only four types of ferromagnetic metal elements at room temperature: iron, cobalt, nickel, and gadolinium.
- Common non-ferromagnetic metals: copper, aluminum, zinc, chromium, etc.



**MetriTec™ Coating Thickness Gauge M225+N1500** is a split type plating thickness tester, which consists of the host and the digital probe N1500. It adopts the eddy current induction principle and has ultra-high measurement accuracy and repeatability which is especially suitable for measuring ultra-thin coatings and various small-sized work pieces and special-shaped materials. Its plating thickness tester can be used in production inspection, construction acceptance as well as sales and exhibition sites. It can quickly and non-destructively measure the thickness of non-conductive coating on non-magnetic metal substrates. This plating thickness measurement device can be used in industries such as aviation, building materials, machinery, chemicals, engineering and instrumentation, etc.



### III. Product Specifications

Model/SKU#	MetriTec™ Coating Thickness Gauge M220H ELCG220H	MetriTec™ Coating Thickness Gauge M221 ELCG221	MetriTec™ Coating Thickness Gauge M225+F500 ELCG22501	MetriTec™ Coating Thickness Gauge M225+N1500 ELCG22502	MetriTec™ Coating Thickness Gauge M225+N2000 ELCG22503
Principles	Fe: Hall Effect NFe: Eddy current	Fe: Hall Effect NFe: Eddy current	Magnetic Induction	Eddy current	Eddy current
Measuring Range	0.0-5000µm	0.0-5000µm	0.0-500µm	0.0-1500µm	0.0-2000µm
Resolution	-	-	0.1µm: 0 µm – 99.9 µm 1 µm: 200 µm - 500 µm	0.1µm: 0 µm – 99.9 µm 1 µm: 100 µm - 999 µm 0.01mm: 1.00mm – 1.50mm	0.1µm: 0 µm – 99.9 µm 1 µm: 100 µm - 999 µm 0.01mm: 1.00mm – 2.00mm
Repeatability	-	-	≤ ± (0.8% H + 0.1 µm)	≤ ± (0.8% H + 0.1 µm)	≤ ± (1% H + 0.2 µm)
Accuracy	≤ ± (3% H + 2µm)	≤ ± (3% H + 2µm)	≤ ± (2% H + 0.3µm) after 5 points calibration	≤ ± (2% H + 0.3µm) after 5 points calibration	≤ ± (2% H + 0.3µm) after 5 points calibration
Measuring Interval	-	-	1.5 s	0.8 s	0.8 s
Measuring Area	Ø > 25mm	Ø > 25mm	ø = 7mm	ø = 7mm	Ø > 30mm
Minimum Curvature	-	-	Convex: 1.5mm Concave: 10mm	Convex: 1.5mm Concave: 10mm	-
Minimum Substrate Thickness	-	-	0.1mm	0.05mm	0.03mm
Probe Size	-	-	110*15mm	110*15mm	95.5*30mm
Best For	Conventional coating	Conventional coating	Ultra-thin electroplated coating	Ultra-thin anodized layer	Large-area panel coating, PCB coating

\*H is standard value.

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