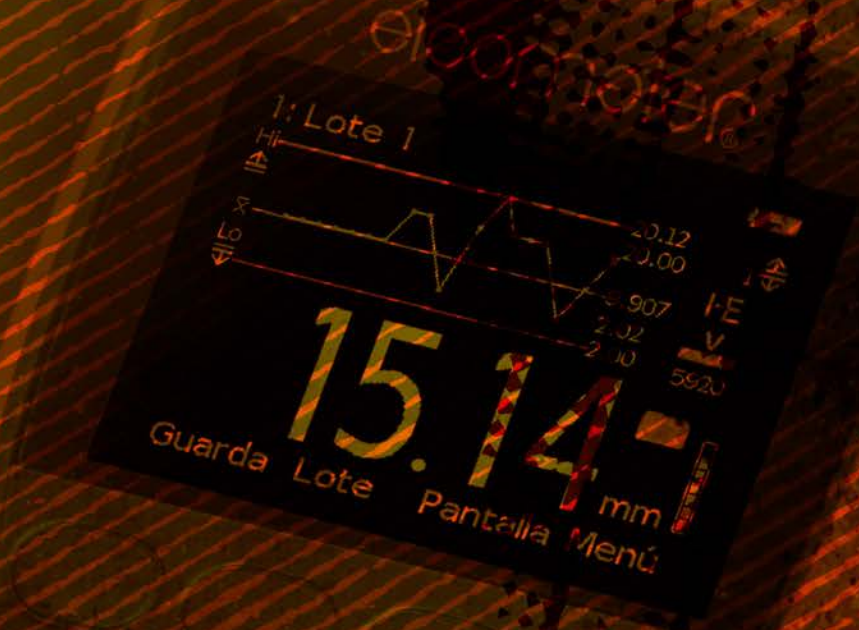
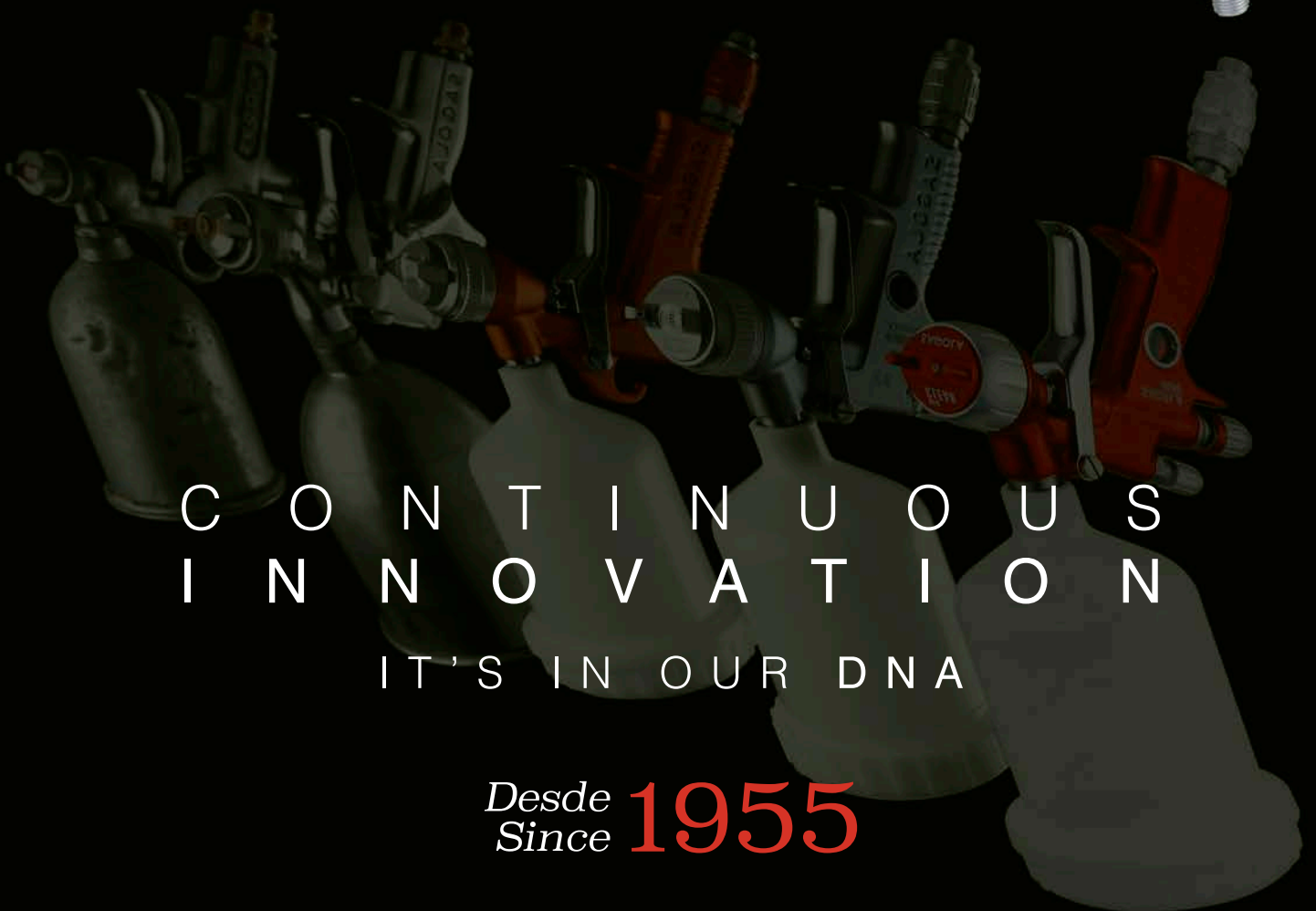


**SAGOLA**   
an Elcometer company



**INSPECTION EQUIPMENT  
TO PAINTING PROCESSES  
2024/25**



C O N T I N U O U S  
I N N O V A T I O N  
I T ' S I N O U R D N A

Desde **1955**  
Since

# SAGOLA®

an Elcometer company



Sagola S.A.U. (Vitoria-Gasteiz, Spain)



Elcometer Ltd. (Manchester, United Kingdom)



Product catalogues

SAGOLA can trace its origins to the year 1955 and is fruit of the pioneering spirit of its founder, Alejandro Sánchez Larrauri.

It began as a small subcontracting workshop for industry. After some years in the subcontracting sector, Larrauri felt the need to manufacture his own product and progressively withdraw from subcontracted activity.

The chosen product was the spray gun. This new era for SAGOLA was crowned by the manufacture and sale of the mythical ALM 401 spray gun. From that very moment SAGOLA began to make and distribute a large number of spray gun models and other complements used in the coatings sector such as air filters, pressure pots, and an endless list of equipment for the most varied applications.

Due once again to the entrepreneurial spirit of the SAGOLA team, the need was felt to open the company to the international market. For that reason the Company began operating in related markets such as Latin America, where it soon became the indisputable leader, later expanding to Arab countries, Asia and finally Europe. Today, SAGOLA is present in more than 80 countries worldwide.

SAGOLA has maintained the highest quality standards in the manufacture of its products from its very beginnings, which has contributed to become a very important competitor in sectors such as bodyshop and industry.

In 2020, SAGOLA has become part of a much larger company. The ELCOMETER Group. Headquartered in the UK, Elcometer is also a family business and has been owned by the Sellars family for seven generations. Beginning in the 19th century as a chemical company, Elcometer, headquartered in Manchester, UK, has grown into one of the world's leaders in the design, manufacture and supply of equipment for the coating and non-destructive testing industries (END).

Elcometer exports more than 90% of the products it manufactures through its offices in France, Germany, Japan, the Netherlands, Singapore, the United Arab Emirates and the USA and its global distribution network that covers more than 170 countries throughout the world.

Like Sagola, the philosophy of the Elcometer company is to integrate quality into all aspects of the products they design and manufacture, while being very aware of the environment that surrounds us. Elcometer's commitment is reflected in its ISO 9001 and 14001 Quality and Environmental accreditations.

## 1

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## 2

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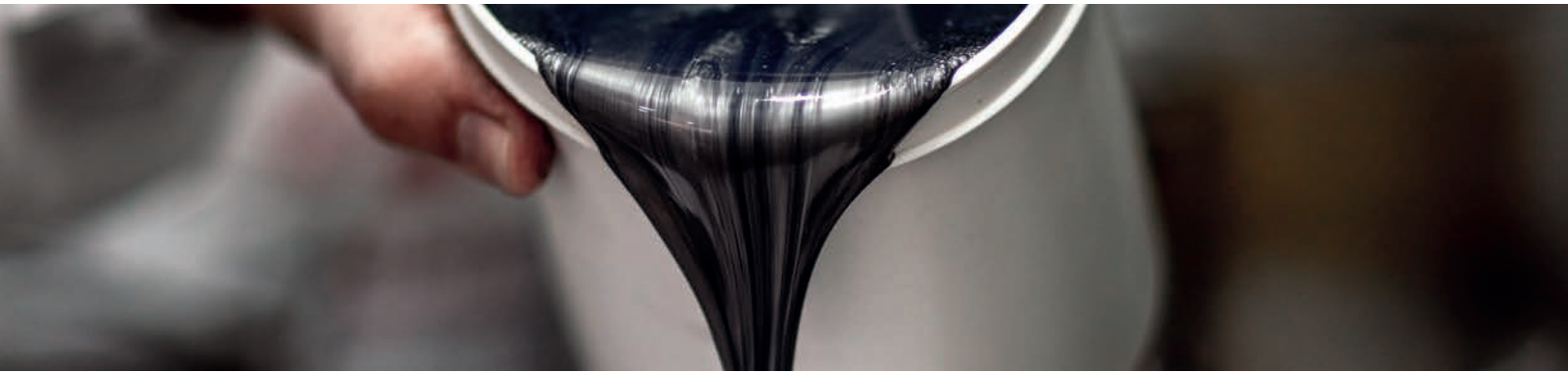
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# Viscosity

Flow cups and dip cups





Viscosity is perceived as 'thickness' or resistance to pouring, but there is more to viscosity than this. All fluids have an internal friction between molecules, which determines how well fluid flows. Due to this internal friction, energy is required to move the liquid and viscosity is the measure of the resistance to flow

## Viscosity measurement

Elcometer manufactures and supplies a wide range of viscosity meters, from flow cups to dip cups and rotational viscometers.

**Viscosity Flow Cups:** The process of flow through an orifice can often be used as a relative measure and for viscosity classification.

This kinematic viscosity thus measured is usually expressed in seconds of flow time, which can be converted to centistokes with a disk viscosity calculator.

**Dip cups:** Using the same principle as flow cups, dip cups – Frikmar, Zahn, Shell etc. – can be used to make rapid viscosity measurements on site or in the workshop.

**Flow measurement:** It is done with easy-to-use instruments that measure the fluidity and flow of coatings, especially thick or pasty materials..

## Definitions:

**Viscosity:** A measure of the resistance of a liquid to flow.

**Kinematic Viscosity:** The absolute viscosity of a fluid divided by the density of the fluid. Also known as the coefficient of kinematic viscosity.

**Centipoise:** A unit of measurement of which water is the standard at 1cP.

**Newtonian fluids:** Are fluids that continue to flow at a given temperature, such as water and some oils - regardless of the forces acting on it. No matter how fast it is stirred or mixed, Newtonian fluids will always behave in the same manner.

Newtonian fluids are normally measured with flow cups and viscosity dip cups, see page 9.

**Non-Newtonian fluids:** Are fluids which change viscosity when a force is applied, e.g. paints and ketchup, etc.

Fast and easy to use, **ElcoCalc™** instantly converts viscosity cup flow time in seconds into Centistokes (cSt).

Save time converting viscosity cup flow time into Centistokes (cSt) by using Elcometer's free ElcoCalc™ Mobile App, available from the Android or Apple App stores.

ElcoCalc™ works out the viscosity in Centistokes for you – simply choose your cup type, enter the flow time, and ElcoCalc™ does the rest.

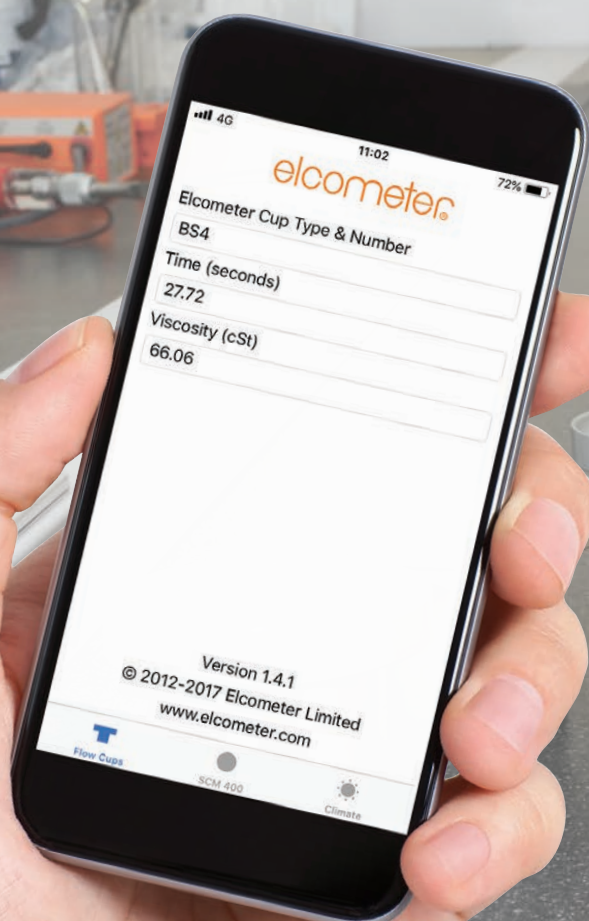
ElcoCalc™ is free software that is available on Android and the App Store. Compatible with Android™ mobile devices running Android™ 2.1 or later and also iPod, iPhone and iPad running iOS 4.0 or later.



Elcometer 2350, 2351, 2352, 2353, 2354 Viscosity flow cups



Elcometer 2434, 2435, 2436, 2437 Viscosity Dip Cups - Frikmar



**Elcometer 2435 & 2434**

**Viscosity Dip Cups - Frikmar**



Thanks to its handle, this cup is very easy to use to perform checks on site or during the manufacturing process. It is ideal for measuring the consistency of paints, varnishes and other similar products.

Simply dip the cup into the product to be measured, lift it out and measure how long it takes for the contents to empty through the orifice.

The measured kinematic viscosity is generally expressed in seconds (s) flow time, which can be converted to Centistokes (cSt) if the Standard stipulates a conversion method.

Several ranges are available, according to the Standards being used; from 7 to 1,100 cSt.

**STANDARDS:**

DIN: DIN 53211 (cup 4 only)  
 FORD/ASTM: **ASTM D 1200, D 5125**

**Technical Specification**

**FORD/ASTM Viscosity Dip Cups**

Part Number	Description	Orifice Diameter	Range <sup>1</sup> (cSt)	Certificate
<b>K0002435M001</b>	Elcometer 2435/1 FORD/ASTM Dip Cup 4	4.12 mm.	70 - 370	◇
<b>K0002435M001C</b>	Elcometer 2435/1 with calibration certificate	4.12 mm.	70 - 370	● <sup>3</sup>

**DIN Viscosity Dip Cups**

Part Number	Description	Orifice Diameter	Range <sup>1</sup> (cSt)	Certificate
<b>K0002434M002</b>	Elcometer 2434/2 DIN Dip Cup 4	4 mm.	96 - 683	◇
<b>K0002434M002C</b>	Elcometer 2434/2 with calibration certificate	4 mm.	96 - 683	● <sup>3</sup>

**Sagola Ford 4**

**Polyamide viscosity dip cup**



Dip cup, made of polyamide (solvent resistant) with metal outlet hole (brass).

Economical Ford 4 cup for quick checking of paint viscosity in industrial painting processes, before introducing the paint into the gun or painting equipment. Also suitable for checking and correcting said viscosity when application process times are extended in painting large surfaces.

**STANDARDS:**

FORD: **ASTM D 1200-24, ASTM D 1200-94**

**Technical Specification**

**FORD Viscosity Cups**

Part Number	Description	Orifice Diameter	Operating Temperature
<b>56418001</b>	Sagola FORD Viscosity Cup 4	4.11 mm.	20°C - 30°C

<sup>1</sup> For information Only

<sup>2</sup> Dimensional Certificate

<sup>3</sup> Efflux time Certificate

● Calibration Certificate supplied as standard

◇ Batch Calibration Certificate supplied as standard



**Elcometer 2351**

**Viscosity Flow Cups**



Viscosity Flow Cups are very easy to use instruments made of anodized aluminium with a stainless steel orifice, for measuring the consistency of paints, varnishes and similar products. The measured kinematic viscosity is generally expressed in seconds(s) flow time. If the Standards stipulate conversion methods the flow time can be converted into Centistokes (cSt) using the Elcometer ElcoCalc™ Mobile App.

Calibration certificates which offer traceability and assurance that each viscosity cup has been individually tested and comply to Standards are also available.

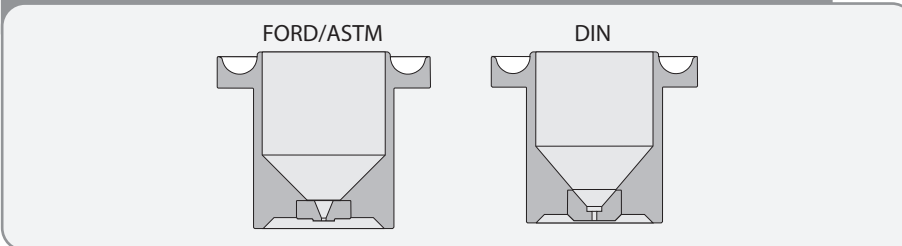
The cups can be supplied separately or with an adjustable stand which includes a precision level and an overflow glass draw plate.

**STANDARDS:**

FORD/ASTM: ASTM D 1200, D 5125

**Elcometer 2350**

**Viscosity Flow Cups - Cup Designs**



**STANDARDS:**

DIN: DIN 53211 (cup 4)

**Technical Specification**

**FORD/ASTM Viscosity Flow Cups**

Part Number	Description	Orifice Diameter	Range <sup>1</sup> (cSt)	Certificate
K0002351M004	Elcometer 2351/4 FORD/ASTM Viscosity Cup 4	4.12 mm.	70 - 370	◇
K0002351M004C	Elcometer 2351/4 with calibration certificate	4.12 mm.	70 - 370	● <sup>3</sup>

**Technical Specification**

**DIN Viscosity Flow Cups**

Part Number	Description	Orifice Diameter	Range <sup>1</sup> (cSt)	Certificate
K0002350M002	Elcometer 2350/2 DIN Viscosity Cup 4	4 mm.	96 - 683	◇
K0002350M002C	Elcometer 2350/2 with calibration certificate	4 mm.	96 - 683	● <sup>3</sup>

<sup>1</sup> For information Only

<sup>2</sup> Dimensional Certificate

<sup>3</sup> Efflux time Certificate

● Calibration Certificate supplied as standard

◇ Batch Calibration Certificate supplied as standard

Accessories

Viscosity Flow Cup Accessories

Accessories



**KT002400N001** Viscosity Cup Precision Stand with Bubble Level and Glass Draw Plate  
To ensure the viscosity cup is positioned correctly to carry out the test.

**KT002400P001** Bubble Level for Viscosity Cup  
To ensure the viscosity cup is parallel to the surface.

**KT002400P999** Viscosity Glass Draw Plate  
To retain test sample until operator is ready to commence test and provides surface for bubble level.



**K0007300M201** Elcometer 7300 High Precision Stopwatch



# Climatic Conditions

at the point of application



# Climatic Conditions



Monitoring climatic conditions, such as temperature, relative humidity, dewpoint and moisture, is often vital to the successful application of a coating and are critical to the resulting quality and performance of the coated product.

### Climatic Conditions

Elcometer offer a complete range of dewpoint and relative humidity meters, thermometers, dataloggers, moisture meters and anemometers to monitor climatic conditions.

In the protective coatings industry, moisture can form on the surface when the surface temperature is low enough to cause condensation from the atmosphere. The Dewpoint temperature ( $T_d$ ) is the point at which this occurs.

Monitoring the surface temperature ( $T_s$ ) relative to the air temperature ( $T_a$ ) and its relative humidity (%RH) allows the dewpoint temperature to be calculated and compared to the surface temperature. This difference in temperature ( $T\Delta$ ) is the key parameter dictating when it is safe to apply the coating.



Te - ideal for use as a simple thermometer



Waterproof and resistant to IP66



Remote monitoring of climate parameters



Water-resistant and dustproof with fully sealed sensors (rating equivalent to IP66)

**Elcometer 319**

**Dew Point Meter**

The rugged **Elcometer 319** Dewpoint Meter is designed to measure and record all relevant climatic parameters required to determine whether the conditions are suitable for painting.



Integrated magnets allow the gauge to be attached to the substrate during remote logging

A hand-held Dewpoint meter with both manual and automatic data logging in one gauge<sup>1</sup>

Stores 25,000 records in up to 999 batches<sup>1</sup>

Robust temperature sensors

Visual and audible indication of user defined limits for any or all parameters

Easy to use, intuitive menu structure

Gauges can be recertified at Elcometer Authorised Service Centres

Dustproof and waterproof with fully sealed sensors (equivalent to IP66)

**2** YEAR WARRANTY

<sup>1</sup> MModel T only.

\* El Elcometer 319 is supplied with 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase via [www.elcometer.com](http://www.elcometer.com).

**Elcometer 319**

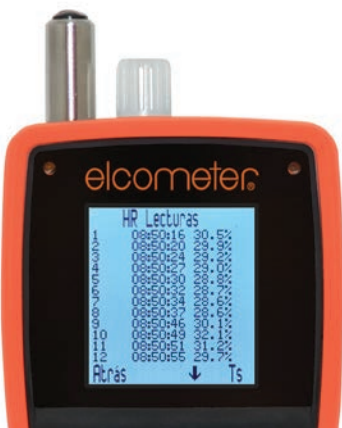
**STANDARDS:**  
 BS 7079-B4, IMO MSC.215(82),  
 IMO MSC.244(83), ISO 8502-4,  
 US Navy NSI 009-32,  
 US Navy PPI 63101-000



Mediciones grandes y fáciles de leer las en grados °C o °F



Ver hasta 5 estadísticas en pantalla seleccionables por el usuario



Revise las lecturas individuales

**Dew Point Meter**

**Measure and record climatic parameters:**

- HR** Relative humidity
- Ta** Air temperature
- Ts** Surface temperature
- Tr** Dewpoint temperature
- DT** TΔ (the difference between surface temperature and dewpoint)
- Tbs** Dry Bulb temperature Twb Wet Bulb temperature
- Te** External temperature correction (K-type)
- HE** Specific Humidity

**Versatile**

- The Elcometer 319 can be used as either a hand-held dewpoint meter or as a remote data logging monitor<sup>2</sup>
- Rapid response time
- Each gauge can be powered by either 2 x AA batteries (for up to 400 hours<sup>1</sup> use) or directly via the USB cable
- Adjustable limits can be set for each measurement parameter which trigger visual and audible alarms whenever a limit is exceeded
- Intelligent memory calculates total available logging time when using batches
- Gauges can be recertified at Elcometer Authorised Service Centres

**Accurate**

- Meets ISO 8502-4
- Each instrument is supplied with a Calibration Certificate
- Readings are switchable between Celsius and Fahrenheit
- All readings are time & date stamped

<sup>1</sup> BBased on 1 reading every 10 minutes in Logging Mode.

<sup>2</sup> Model T only.

**Elcometer 319**

**Dew Point Meter**

**Technical Specification**

Model	Model S	Model T	Certificate
Part Number	G319----S	G319----T	●
Reading Parameters - HR, Ta, Ts (Te <sup>6</sup> ), Tr, DT, Tbs, Tbh <sup>1</sup> , HE <sup>1</sup>	■	■	
Statistics - number of readings, standard deviation, mean, coefficient of variation, minimum, maximum	■	■	
Dustproof & waterproof with fully sealed sensors - equivalent to IP66	■	■	
Integral Magnets - secure the gauge during logging	■	■	
High/Low Limits - audible, visual, red/green LED alarms can be set against any or all parameters	■	■	
Multilingual Menus	■	■	
Backlight - user selectable	■	■	
K-Type Connector for external measurement	■	■	
Memory - with reading and statistic review	Last 10 records	25,000 records in 999 batches	
Manual Logging	■	■	
Interval Logging <sup>2</sup>		Adjustable between 1 second and 24 hours	
Data Output			
USB		■	
Bluetooth® to computer, Android™ & iOS4 devices <sup>4</sup>		■	
ElcoMaster® software & USB cable		■	
	Temperature Range	Accuracy	Resolution
Gauge <sup>5</sup>	-20 to +80°C (-4 to +176°F)	±0.5°C (±1°F)	0.1°C (0.1°F)
Air Temperature (Ta)	-20 to +80°C (-4 to +176°F)	±0.5°C (±1°F) <sup>7</sup>	0.1°C (0.1°F)
Surface Temperature (Ts)	-20 to +80°C (-4 to +176°F)	±0.5°C (±1°F)	0.1°C (0.1°F)
External K-Type Thermocouple (Te)	-40 to +200°C (-40 to +392°F)	±0.5°C (±1°F) <sup>6</sup>	0.1°C (0.1°F)
Relative Humidity (HR)	0 a 100%HR	±3%HR <sup>3</sup>	0.1%
Gauge & LCD Operating Range	-20°C to +80°C (-4°F to +176°F)		
Power Supply	2 x AA batteries or via USB Cable		
Battery Life	Manual Mode: Greater than 40 hours (Backlight Off) Interval Logging: up to 400 hours (1 reading every 10 minutes)		
Dimensions	180 x 75 x 35 mm (7 x 3 x 1.4")	Weight	300 g. (0.66 lb)
Packing List	Elcometer 319 Dewpoint Meter, 2 x AA batteries, wrist strap, carry case, calibration certificate, USB cable <sup>8</sup> , ElcoMaster <sup>®</sup> and operating instructions		

**Accessories**

T31920162	Magnetic Surface Temperature Probe; -40 to +80°C (-40 to +176°F)
T9996390-	Liquid Temperature Probe; -200 to +1100°C (-328 to +2012°F)
T99921325	USB Cable
T99916063	Wrist Strap
T99923480	Protective Carry Case/Pouch

<sup>1</sup> Calculated Value      <sup>2</sup> With Part Number T31920162      <sup>3</sup> at 1 m/s  
<sup>4</sup> Visit [www.elcometer.com/sdk](http://www.elcometer.com/sdk) to find out how to integrate Elcometer's MFi certified products to your App.  
<sup>5</sup> Do not expose the gauge to temperatures outside the gauge and LCD operating range  
<sup>6</sup> Accuracy ±2°C (4°F) with K Type probes supplied by Elcometer. Gauge tested with voltage input  
<sup>7</sup> Accuracy ±0.75°C below 10°C (±1.35°F below 50°F)    <sup>8</sup> Model T only.  
 ● Certificate supplied as standard.

**Elcometer 309**

**Higrómetro Digital**



**STANDARDS:**  
BS 7079-B4, ISO 8502-4

The **Delta T Elcometer 309 Hygrometer** has been specifically designed for use in very hot climates where the surface temperature of the substrate can exceed the paint manufacturer’s recommended limits for successful painting.

Pintura fuera de los límites recomendados puede tener un efecto perjudicial sobre el rendimiento y la vida útil del revestimiento.

The Elcometer 309 Delta T Hygrometer provides a simple and fast measurement of the two critical climate parameters within coatings:

- **Delta T (TΔ):** The difference between the surface temperature (Ts) and the dewpoint temperature (Td). When TΔ is less than 3°C (5°F) painting should not occur.
- **Relative Humidity (RH):** Expressed as a percentage, RH is the ratio of the amount of water vapour actually held by the air compared to the maximum amount of water vapour the air could hold at a given temperature. Typical maximum RH values specified by paint manufacturers are between 75% and 85%.

**Technical Specification**

Model	Elcometer 309 Delta T Hygrometer	Certificate
Part Number	G309----1	●
	<div style="display: flex; gap: 10px;"> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px 10px; background-color: #f0f0f0;">DT</div> <div style="border: 1px solid gray; border-radius: 10px; padding: 5px 10px; background-color: #f0f0f0;">HR</div> </div>	
Operating Range	-20oC to +80oC (-4 oF to +176oF)	
Surface Temperature (Ts)	-20oC to +80oC (-4 oF to +176oF)	
Relative Humidity (RH) & Accuracy <sup>1</sup>	0% to 100% RH (±3%) (Default upper limit 75%, user adjustable)	
Resolution	0.1°C (0.1°F) / 0.1%	
Power Supply	2 x AA batteries or via USB Cable	
Battery Life	Greater than 40 hours (Backlight off)	
Dimensions & Weight	180 x 75 x 35 mm. (7 x 3 x 1.4”) 300 g. (10.6 oz.)	
Packing List	Elcometer 309 Delta T Hygrometer, wrist strap, 2 x AA batteries, protective carry case/pouch with belt clip, RH probe calibration certificate and operating instructions.	

<sup>1</sup> at 1 m/s  
● Basic Calibration Certificate supplied as standard.



**Elcometer 410**

**Wind Speed Anemometer**



The **Elcometer 410** Anemometer is a portable, pocket sized instrument for taking accurate readings of wind speed.

The lightweight impeller with high precision jewel bearings provides very accurate airflow measurements even at low speeds. The anemometer's impeller can easily be replaced without the need to return the unit to Elcometer.

The wind speed can be displayed in various measurement units; indicating current speed, maximum speed or average speed.



**Technical Specification**

Part Number	Description	
G410-1	Elcometer 410 Anemometer	
Functions	Current wind speed (3 second average) Average speed since power on (AVG) Maximum 3 second gust since power on (MAX) Data Hold	
Measurement Units	Knots (kt), metres per second (m/s), kilometres per hour (km/h), miles per hour (mph), feet per minute (ft/min) and Beaufort Force (B)	
Operating Range	0.4m/s to 60m/s (0.8 to 135.0mph)	
Specification Range	0.4m/s to 40m/s (0.8 to 89.0mph)	
On-axis Accuracy <sup>1</sup>	±3% of reading or least significant digit, whichever is the greater	
Off-axis Response	-1% at 5°, -2% at 10°, -3% at 15°	
Calibration Drift	<1% after 100 hours operation at 7m/s	
Resolution	0.1 kt, m/s, km/h, mph. 1 ft/min below 1999 ft/min, 10 ft/min above 2000 ft/min. 1 Beaufort (0 to 12)	
Operating Temperature	-10°C to +55°C (14°F to 131°F)	
Storage Temperature	-30°C to +60°C (-22°F to 140°F)	
Power Supply	1 x CR2032 battery	
Battery Life	Approximately 300 hours	
Auto Switch Off	45 minutes after last key press	
Dimensions	Instrument Only:	122 x 42 x 20 mm. (4.8 x 1.6 x 0.8")
	Instrument and Protective Cover:	122 x 46 x 26 mm. (4.8 x 1.8 x 1")
Weight	Instrument Only:	65 g. (2.3 oz.)
	Instrument and Protective Cover:	102 g. (3.6 oz.)
Packing List	Elcometer 410 Anemometer, protective cover, lanyard, 1 x CR2032 battery and operating instructions.	

**Accessories**

**T41021406** Replacement Impeller

<sup>1</sup>Some loss of accuracy due to bearing wear may occur with sustained operation at or near maximum speed.

**Elcometer 113**

**Magnetic Thermometers**



The **Elcometer 113** Magnetic Thermometer continuously indicates the surface temperature of steel and other magnetic material.

The thermometers are based on a bimetallic strip and therefore do not require batteries but do require time to adjust to the temperature.

The Elcometer 113 is available in a number of scale ranges from 0°C to 120°C and as an economy version.

Ts

**Technical Specification**

Part Number	Description	Scale Range
G113----2	Elcometer 113 Magnetic Thermometer	0°C to 120°C
G113----2B	Elcometer 113 Economy Magnetic Thermometer	0°C to 120°C
Dimensions	57 x 20 mm. (2.25 x 0.8")	
Weight	56 g. (1.9 oz.)	
Packing List	Elcometer 113 Magnetic Thermometer and protective pouch	

**Elcometer 210**

**Paint Thermometer**



It is often important to ensure the temperature of the paint to be applied is at a temperature which will ensure correct application.

The Elcometer 210 Paint Thermometer is supplied with a clip which enables the thermometer to be hooked on to the edge of a paint pot, allowing accurate temperature measurement of the paint.

**Technical Specification**

Part Number	Description
G210----1	Elcometer 210 Paint Thermometer
Scale Range	-20°C to 60°C (-4°F to 140°F)
Dimensions	300mm (12") length with a 50mm (1.97") dial
Weight	67 g. (2.4 oz.)
Packing List	Elcometer 210 Paint Thermometer

**Elcometer 212**

**Digital Pocket Thermometer**



The **Elcometer 212** Digital Pocket Thermometer is ideal for day to day use.

Incorporating a fast response stainless steel liquid or surface probe, the Elcometer 212 provides temperature readings in under four seconds.

Housed in a water resistant case with integrated rubber seals and a moulded flush window, preventing dirt and leaks damaging the LCD display, the Elcometer 212 is ideal for use in the harshest of environments.

The probe when not in use, conveniently folds back into the side of the instrument, preventing damage.

- Liquid or surface probe options available
- User switchable between °C and °F
- Resolution can be set to 0.1°C (0.1°F) or 1°C (1°F)

T<sub>s</sub>

**Technical Specification**

Part Number	Description
G212----1A	Elcometer 212 Digital Pocket Thermometer with Liquid Probe
G212----2A	Elcometer 212 Digital Pocket Thermometer with Surface Probe
Measuring Range	-49.9°C to +299.9°C (-58°F to +572°F) user selectable
Operating Temperature	-20 a 50°C (-4 to 58°F)
Resolution	0.1°C (0.1°F) or 1°C (1°F) user selectable
Accuracy	±0.4°C (±0.7°F) up to 199.9°C (392°F), ±1°C (±1.8°F) above 199.9°C (392°F)
Probe	K-type Thermocouple
Display	14 mm. LCD
Battery Type	2 x CR2032 batteries
Battery Life	Approximately 1,500 hours
Auto Switch Off Time	10 minutes
Case Dimensions	19 x 47 x 153 mm. (0.7 x 1.9 x 0.7")
Weight	97 g. (3.4 oz.)
Packing List	Elcometer 212 Digital Pocket Thermometer with batteries fitted and operating instructions

**Elcometer 214L**

**Infrared Digital Thermometer (laser)**



The **Elcometer 214L** Infrared Digital Laser Thermometer is a simple and easy to use, non-contact thermometer which safely and accurately measures the surface temperature of non-reflective materials using infrared technology.

With a user switchable measuring range of  $-35^{\circ}\text{C}$  to  $365^{\circ}\text{C}$  or  $-31^{\circ}\text{F}$  to  $689^{\circ}\text{F}$ , a digital display of the temperature is produced in less than one second.

- Non-contact technology with laser spot indicator
- $^{\circ}\text{C}/^{\circ}\text{F}$  user switchable
- Fast, 1 second scanning of any surface
- Measure objects as small as 25 mm. (1")
- Distance-to-Target Ratio of 8:1
- Easy to read LCD display

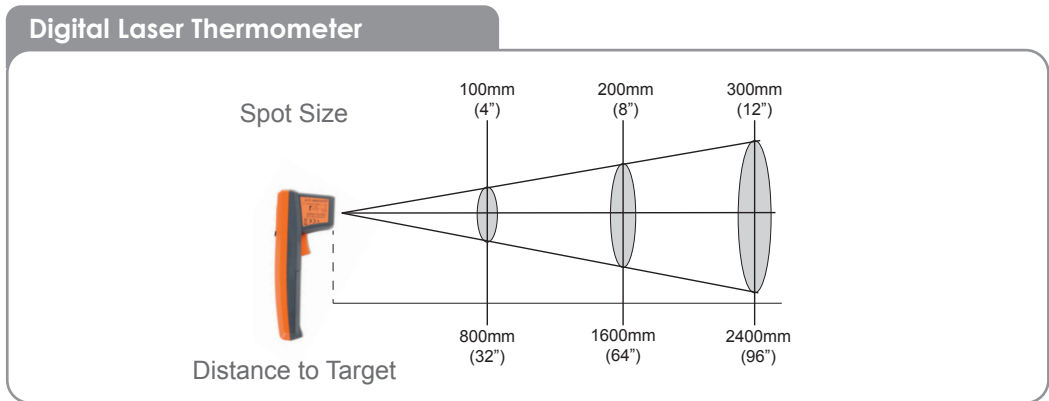
The Elcometer 214 IR Digital Laser Thermometer has a D/T ratio (Distance-to-Target) of 8:1 and measures the emitted energy from a target spot one-eighth the size of the working distance.

As can be seen in the diagram below, if the distance from the sensor optics to the target is 200mm (8") for example, the diameter of the measured area is 25mm (1").

$$T_s$$

**Technical Specification**

Part Number	Description		
<b>G214L----3</b>	Elcometer 214 Infrared Digital Laser Thermometer		
Measuring Range	$-35^{\circ}\text{C}$ to $365^{\circ}\text{C}$ ( $-31^{\circ}\text{F}$ to $689^{\circ}\text{F}$ )		
Ambient Temperature	0 to $50^{\circ}\text{C}$ (32 to $122^{\circ}\text{F}$ )		
Resolution	$0.2^{\circ}\text{C}$ ( $0.5^{\circ}\text{F}$ )	Accuracy	$\pm 1.5^{\circ}\text{C}$ ( $2.7^{\circ}\text{F}$ )
Distance-To-Target	8:1, 25 mm. (1") spot size		
Emissivity	Fixed at 0.95		
Response Time	1 second		
Battery Type	2 pilas AAA	Battery Life	14+ hours continuous use
Dimensions	166 x 34 x 64 mm. (6.5 x 1.3 x 2.5")	Weight	113 g. (3.98 oz.)
Packing List	Elcometer 214 Infrared Digital Laser Thermometer, 2 x AAA batteries (fitted), wrist strap and operating instructions		



# Paint Features





En la industria de los revestimientos, la medida más crítica es probablemente la del espesor de la película seca. Ofrece información vital en cuanto a la vida prevista del sustrato, la idoneidad del producto a los fines que se pretende y a su aspecto, además de asegurar el cumplimiento de una gran cantidad de Normas Internacionales.

Una "película seca" es el revestimiento de una superficie que se ha curado tras la evaporación del disolvente, de forma que el revestimiento resulta seco al tacto. El revestimiento suele ser pintura, barniz o en polvo. No obstante puede tratarse de cualquier sustancia aplicada a un sustrato. Un medidor de espesor de película seca (dft), denominado con frecuencia medidor de espesor de los revestimientos, puede utilizarse para medir el espesor de los revestimientos una vez secos.

Existen tres tipos de medidores de espesor de película seca: destructivos, mecánicos y digitales. En 1947, Elcometer lanzó al mercado uno de los primeros medidores de espesor de revestimiento no destructivos, el Elcometer 101. Más de siete décadas después, Elcometer ha desarrollado una gama completa de medidores de espesor de película seca destructivos, mecánicos y digitales que atienden todas sus necesidades de inspección de revestimientos.

Estándares de espesor de revestimientos.

Existen tres tipos de patrones de espesor de revestimiento disponibles en Elcometer:

**Láminas de calibración;** se suministran de forma individual o en grupos, estas láminas de precisión (o "galgas"), medidos con precisión de  $\pm 1\%$ , le ofrecen el método ideal para el ajuste de calibración del medidor de espesor de revestimiento en el sustrato, tomando en cuenta el material específico del sustrato, acabado y forma de la superficie para garantizar la mayor precisión posible. Las láminas están disponibles con o sin certificado de calibración trazable a estándares nacionales (UKAS y NIST).

**Patrones revestidos;** montados en una carpeta protectora, resistente al desgaste estos azulejos revestidos ferrosos o no ferrosos son ideales para medir con precisión el rendimiento del medidor de espesor de revestimientos. Los patrones revestidos tienen una precisión de  $\pm 2\%$  y se suministran con un certificado de calibración.

**Platos de prueba Cero;** en algunos casos, el obtener un sustrato no revestido puede ser difícil o poco práctico. Por este motivo, Elcometer proporciona una gama de Platos de prueba Cero. Estas placas de prueba, cuando se utilizan en conjunto con una serie de láminas, son ideales para medir con precisión el rendimiento de su medidor de espesor de revestimientos.

**Elcometer 311**

**Automotive Refinishing Gauge**

The **Elcometer 311** Automotive Paint Meter is one of the fastest on the market, used to instantly measure paint thickness and provide an indication of the overall condition of paintwork.

Automatic temperature compensation accurately measures in desert or alpine conditions alike

Fast reading rate of 60+ readings per minute significantly reduces inspection times

Dust & waterproof rugged design equivalent to IP64, ideal for measuring in wet or dry conditions

Automatic rotating display allows you to read the thickness value on horizontal & vertical surfaces

Large easy to read values in mils & microns

Ergonomic design gives you maximum comfort when measuring vehicles all day

Ambient light sensor automatically adjusts the screen brightness to your lighting condition

Switches automatically to measure coatings on steel & aluminium<sup>1</sup>

Scratch, solvent & water surfaces resistant colour display for protection against accidental damage



**Elcometer 311**

**Automotive Refinishing Gauge**



Large easy to read display

**Statistics**

The Elcometer 311 doesn't just take a thickness measurement

In addition to the coating thickness, the Elcometer 311 displays the key statistics such as the number of readings (n), average coating thickness (x), the lowest paint thickness (Lo) and the Elcometer Index Value (EIV)<sup>2</sup>.



Durable & impact resistant case clips straight on to your belt

**Powerful**

The higher the EIV the more severe the PPW

The EIV provides the inspector with a single number which illustrates the vehicle's overall paint condition and establishes any previous paintwork (PPW) that may have been undertaken.



360° auto rotating display for measuring at any angle

**Reliable**

Giving you peace of mind

Robust, durable & weather resistant, the Elcometer 311 is available with a 2 year<sup>3</sup> manufacturer's warranty



USB and Bluetooth<sup>®5</sup> data output to iPhone<sup>5</sup> or Android<sup>™</sup> devices

**Wireless Connectivity**

Connect to any PC, Android<sup>™</sup> or iOS mobile device

Instantly transmit your thickness values via USB or Bluetooth<sup>®</sup> to your PC or mobile device using ElcoMaster<sup>®4</sup> or your own software application.

**STANDARDS:**

ISO 2178, ISO 2808, ISO 2808-7C, ISO 2808-7D, ISO 2808-12A, ISO 2808-11B, ASTM E376, JIS K 5600-1-7, AS/NZS 1580.108.1

<sup>1</sup> Elcometer 311 FNF models

<sup>2</sup> EIV Patent number US 7,606,671 B2

<sup>3</sup> The Elcometer 311 is supplied with a 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase via [www.elcometer.com](http://www.elcometer.com).

<sup>4</sup> Available on the Elcometer 311 Model T only

<sup>5</sup> Compatible with iPod, iPhone and iPad.



**Elcometer 311**

**Automotive Refinishing Gauge**

**Technical Specification**

	Model B	Model B	Model T	Certificate
Part Number	A311CFBI	A311CFNFBI	A311CFNFTI	●
Built in Probe Type	Steel (F)	Steel & Aluminium (FNF)	Steel & Aluminium (FNF)	
Live Data output via Bluetooth® or USB			■	
Zero Calibration	■	■	■	
On Screen Statistics	Number of readings (n), Mean/Average (x), Lowest reading (Lo), Elcometer Index Value (EIV) <sup>1</sup>			
Fast Accurate Reading Rate	60+ readings per minute	Measurement Range	0-500 µm/0-20 mils	
Accuracy <sup>2</sup>	±5% or ±20 µm (1.0 mil)			
Resolution	10 µm (0.5 mil)			
Minimum Substrate Thickness <sup>3</sup>	Steel: 800 µm (30 mils)	Aluminium: 300 µm (12 mils) - FNF gauges only		
Operating Temperature	-10 to 50°C / 14 to 122°F	Relative Humidity (HR)	0 to 95%	
Power Supply	2 x AA Batteries or via USB Cable (rechargeable batteries can also be used)			
Battery Life <sup>4</sup>	Alkaline: approximately 16 hours		Lithium: approximately 24 hours	
Gauge Dimensions (Al x An x F)	14.1 x 7.30 x 3.70 cm / 5.55 x 2.87 x 1.46"			
Gauge Weight	156 g. (5.5 oz.) (including batteries)			
Packing List	Elcometer 311 gauge, 2 x AA batteries, steel & aluminium check pieces <sup>5</sup> , calibration check foil, wrist strap, impact resistant carry case, calibration test certificate, operating instructions, 2 year warranty extension card <sup>6</sup> .			

**Accessories**

T99916925	Calibration Check Piece; Steel (Ferrous)
T99916901	Calibration Check Piece; Aluminium (Non-Ferrous)
T99022570-7A	Calibration Check Foil; Nominal value 125µm (5 mils)
T99922341	Self Adhesive Screen Protectors (Pack of 10)
T99921325	USB Cable

**Elcometer Index Value - EIV**

The Elcometer Index Value (EIV) provides the inspector with a single number which illustrates the vehicle's overall paint condition and establishes whether any previous paint work (PPW) has been undertaken. This quantifiable number determines the extent of rework & the overall quality of the vehicle being appraised.

<sup>1</sup> EIV Patent number US 7,606,671 B2

<sup>2</sup> Whichever is the greater

<sup>3</sup> For specified accuracy

<sup>4</sup> Using default settings & lithium batteries, alkaline or rechargeable batteries may differ

<sup>5</sup> F models: steel check piece; FNF models: steel & aluminium check pieces

<sup>6</sup> The Elcometer 311 is supplied with a 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase via [www.elcometer.com](http://www.elcometer.com)

● Calibration test certificate supplied as standard

Elcometer 415

Paint & Powder Coating Thickness Gauge

The **Elcometer 415** Industrial Paint & Powder Thickness Gauge provides simple, fast and accurate coating thickness measurements on smooth & thin industrial paint and powder coated surfaces.

Auto rotating large colour display provides clear visibility whatever the angle of measurement

Scratch, solvent & powder resistant display

Large easy to read values in microns or mils

Rugged & resistant to powder coatings ingress equivalent to IP64

Easy to use, ergonomic design provides maximum comfort for continuous use

1 point & 2 point calibration ensures accuracy on smooth & thin coated substrates

Automatically switches between ferrous & non-ferrous substrates<sup>1</sup>

Incredibly fast (60+ readings per minute), reducing inspection times, increasing productivity



<sup>1</sup> Elcometer 415 FNF models

**Elcometer 415**

**Paint & Powder Coating Thickness Gauge**

**Statistics**



Large read with key statistics

The Elcometer 415 doesn't just take a thickness measurement

In addition to the coating thickness, the Elcometer 415 displays the key statistical values required to assess overall industrial finishing; number of readings (n), average coating thickness (x), the lowest (Lo) and the highest (Hi) paint thickness.



Ideal for measuring dry film thickness on thin coated substrates

**Accurate**

Maintain accuracy with easy calibration

The Elcometer 415 is easy to use and has 1 point & 2 point calibration, ensuring accurate measurements on smooth & thin industrial paint & powder coated surfaces.



360° auto-rotating display for clear readings at any angle

**Reliable**

The meter is designed to last

Robust, durable & powder resistant, the Elcometer 415 is available with a 2 year<sup>1</sup> manufacturer's warranty; giving you peace of mind.

**Wireless connectivity**



Transfer live data via Bluetooth®2 to PC, Android™ or iOS mobile devices

Connect with any PC or Android™ or iOS mobile device

As each measurement is taken, the Elcometer 415 instantly transmits the thickness values via Bluetooth®2 or USB straight into an inspection application or into ElcoMaster®, Elcometer's Mobile App, for instant report generation.

**STANDARDS:**  
 AS2331.1.4, AS/NZS 1580.108.1, ASTM B 499, ASTM D 1186, ASTM D 1400, ASTM D 7091, ASTM E 376, BS 3900-C5-6A, BS 3900-C5-6B, BS 5411-11, BS 5411-3, BS 5599, DIN 50981, DIN 50984, ECCA T1, EN 13523-1, ISO 2178, ISO 2360, ISO 2808-12, ISO 2808-6A, ISO 2808-6B, ISO 2808-7C, ISO 2808-7D, JIS K 5600-1-7, NF T30-124

## Elcometer 415

## Paint &amp; Powder Coating Thickness Gauge

## Technical Specification

Model	Model B	Model B	Model T	Model T	Certificate
Part Number	A415CFBI	A415CFNFBFI	A415CFTI	A415CFNFTI	●
Built in Probe Type	Ferrous	Ferrous/ Non Ferrous	Ferrous	Ferrous/ Non Ferrous	
Live Data Output	USB	USB	Bluetooth® & USB	Bluetooth® & USB	
On Screen Statistics	Number of readings (n), Average/Mean (x), Lowest reading (Lo), Highest reading (Hi)				
Fast Accurate Reading Rate	60+ readings per minute		Measurement Range: 0 - 1.000µm (0 - 40mils)		
Accuracy <sup>3</sup>	±1-3% or ±2.5µm (±0.1mil)				
Resolution	0.1µm: 0 - 100µm; 1µm: 100 - 1000µm (0.01mil: 0 - 5mils; 0.1mil: 5 - 40mils)				
Minimum Substrate Thickness	Steel: 300 µm (12 mils)		Aluminium: 100 µm (4 mils) - FNF gauges only		
Operating Temperature	-10 to 50°C (14 to 122°F)		Relative Humidity (HR): 0 to 95%		
Power Supply	2 x AA Batteries or via USB Cable (rechargeable batteries can also be used)				
Battery Life <sup>4</sup>	Alkaline: Approximately 16 hours Lithium: Approximately 24 hours				
Gauge Dimensions (Al x An x F)	14.1 x 7.30 x 3.70 cm (5.55 x 2.87 x 1.46")				
Gauge Weight	156 g (5.5oz) (including batteries)				
Packing List	Elcometer 415 gauge, 2 x AA batteries, steel & aluminium check pieces <sup>5</sup> , foil set, wrist strap, impact resistant carry case, screen protector <sup>6</sup> , calibration test certificate, operating instructions, USB cable <sup>3</sup> , ElcoMaster® CD <sup>2</sup> & 2 year warranty extension card <sup>7</sup>				

## Accessories

T99916925	Calibration Check Piece; Steel (Ferrous)
T99916901	Calibration Check Piece; Aluminum (Non-Ferrous)
T99022255-1	Foil Set; 0 - 1.000 µm (0 - 40 mils)
T99022255-1C	Certified Foil Set; 0 - 1.000 µm (0 - 40 mils)
T99921325	USB Cable
T99922341	Self Adhesive Screen Protectors (Pack of 10)

<sup>3</sup> When subject to a 2-point calibration: ±1% when calibrated close to the required thickness, ±3% across the range

<sup>4</sup> Using default settings & lithium batteries, alkaline or rechargeable batteries may differ

<sup>5</sup> F models: steel check piece; FNF models: steel & aluminium check pieces

<sup>6</sup> Elcometer 415 Model T

<sup>7</sup> The Elcometer 415 is supplied with a 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase

● Calibration test certificate supplied as standard

**Elcometer 456**

**Coating Thickness Gauge - Separate**

The **Elcometer 456** Coating Thickness Gauge is available with a wide range of separate interchangeable probes; providing greater coating thickness measurement flexibility on metal substrates.

Measure coatings up to 1500  $\mu\text{m}$  (60 mils) on metal substrates

Easy to read, user definable display with automatic screen brightness

Dust and waterproof rugged design equivalent to IP64



Ergonomic design, ideal for continuous use

Temperature stable measurements



**Elcometer 456**



Large easy to read measurements in Metric and Imperial units



Halve the inspection time using the scan probe



View up to 8 user selectable statistics on screen



Rugged and reliable, ideal for harsh environments

**Coating Thickness Gauge - Separate**

**Fast**

Helping you become more efficient

70+ readings per minute and 140+ per minute with Scan Probe, multiple calibration memories and alphanumeric batch identification.

**Accurate**

Accurate measurements on smooth, rough, thin and curved surfaces

Measures on smooth, rough, thin and curved surfaces to  $\pm 1\%$  in accordance with National & International Standards.

**Easy**

Large buttons and colour screen

LCD screen with auto rotate; factory calibrated with high and low reading limit indicators in multiple languages.

**Reliable**

Designed to last

Heavy duty, impact resistant and supplied with fully traceable test certificates and our 2 year gauge warranty\*.

**Powerful**

Store up to 150,000 readings in 2,500 batches

Measures up to 1.500  $\mu\text{m}$  (60 mils) of coating on metal substrates with USB and Bluetooth® data output making it compatible with ElcoMaster® software.

**STANDARDS:**

AS 2331.1.4, AS 3894.3-B, AS/NZS 1580.108.1, ASTM B 499, ASTM D 1186-B, ASTM D 1400, ASTM D 7091, ASTM E 376, ASTM G 12, BS 3900-C5-6B, BS 3900-C5-6A, BS 5411-11, BS 5411-3, BS 5599, DIN 50981, DIN 50984, ECCA T1, EN 13523-1, IMO MSC.215(82), IMO MSC.244 (83), ISO 1461, ISO 19840, ISO 2063, ISO 2178, ISO 2360, ISO 2808-6A, ISO 2808-6B, ISO 2808-7C, ISO 2808-7D, ISO 2808-12, JIS K 5600-1-7, NF T30-124, SS 184159, SSPC PA 2, US Navy PPI 63101-000, US Navy NSI 009-32

\* The Elcometer 456 is supplied with a 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase via [www.elcometer.com](http://www.elcometer.com).

**Elcometer 456**

**Coating Thickness Gauge - Separate**

Product Features	Model B	Model S	Model T
Fast, accurate reading rate; <i>70+ readings per minute</i>	■	■	■
Repeatable & reproducible measurements	■	■	■
Easy to use menu structure; <i>in 30+ languages</i>	■	■	■
Tough, impact, waterproof & dust resistant; <i>equivalent to IP64</i>	■	■	■
Bright colour screen; <i>with permanent backlight</i>	■	■	■
Scratch & solvent resistant display; <i>2,4" (6cm) TFT</i>	■	■	■
Large positive feedback buttons	■	■	■
USB power supply; <i>via PC</i>	■	■	■
Test certificate	■	■	■
2 year gauge warranty <sup>1</sup>	■	■	■
Automatic rotating display; <i>0°, 90°, 180° &amp; 270°</i>	■	■	■
Ambient light sensor; <i>with adjustable auto brightness</i>	■	■	■
Emergency light	■	■	■
Tap awake from sleep	■	■	■
Gauge software updates <sup>2</sup> ; <i>via ElcoMaster® software</i>	■	■	■
Data output	■	■	■
USB; <i>to computer</i>	■	■	■
Conexión Bluetooth®; <i>to computer Android™ &amp; iOS<sup>3</sup> devices</i>		■	■
On screen statistics	■	■	■
<i>Number of readings <math>\eta</math>; Mean (average) <math>x</math>; Standard deviation <math>\sigma</math>;</i>			
<i>Highest reading <math>Hi</math>; Lowest reading <math>Lo</math>; Coefficient of variation <math>CV\%</math>;</i>	■	■	■
<i>Elcometer index value<sup>4</sup> <math>EIV</math></i>			
Nominal dry film thickness; <i>NDFT</i>		■	■
IMO PSPC; <i>%&gt;NDFT, %&gt;90&lt;NDFT, 90:10 pass/fail</i>		■	■
High & low limits; definable audible & visual alarms		■	■
Number of readings above high limit		■	■
Number of readings below low limit		■	■
Live reading trend graph; <i>in Batch Mode</i>		■	■
ElcoMaster® software & USB cable	□	■	■
Replaceable screen protectors	□	■	■
Protective case	■	■	■
Plastic transit case	□	□	■
Separate models; <i>with automatic probe recognition</i>	■	■	■
Probe type; <i>Ferrous (F), Non-Ferrous (N), Dual (FNF)<sup>5</sup></i>	F, N, FNF	F, N, FNF	F, N, FNF
Modelos con sonda separada; <i>se encienden automáticamente</i>	■	■	■
Multiple calibration methods	■	■	■
Factory; <i>resets to the factory calibration</i>	■	■	■
2-point; <i>for smooth and rough surfaces</i>	■	■	■
1-point; <i>zero calibration</i>	■	■	■
Zero offset <sup>6</sup> ; <i>for calibration according to ISO19840</i>	■	■	■
Predefined calibration & measurement methods		■	■
ISO, SSPC PA2, Swedish, Australian		■	■

<sup>1</sup> The Elcometer 456 is supplied with a 1 year warranty against manufacturing defects. The warranty can be extended free of charge to 2 years within 60 days of purchase via [www.elcometer.com](http://www.elcometer.com).

<sup>2</sup> Internet connection required    <sup>3</sup> Visit [www.elcometer.com/sdk](http://www.elcometer.com/sdk) to find out how to integrate Elcometer's MFi certified products to your App.

<sup>4</sup> Elcometer Index Values are used in the automotive industry to assess a coating's overall quality; USA Patent Number US7606671B

<sup>5</sup> Patent Number FNF EEUU: 5886522

<sup>6</sup> US patent number for Zero Offset US6243661

**Elcometer 456**

**Coating Thickness Gauge - Separate**

**Product Features**

■ Standard □ Optional

	Model B	Model S	Model T
Automatic calibration; <i>for rapid calibration</i>		■	■
Calibration memory type; <i>gauge (m) or gauge &amp; batch (ml)</i>	m	ml	ml
Number of batches; <i>with unique calibrations</i>		1	2,500
Calibration memories; <i>3 user-programmable memories</i>			■
Measurement outside calibration warning			■
Calibration lock; <i>with optional PIN code unloc</i>	■	■	■
Delete last reading	■	■	■
Gauge memory; <i>number of readings</i>	Last 5	1,500	150,000
Individual batch calibrations; <i>sent to PC via ElcoMaster® software</i>		■	■
Limits; <i>user definable audible &amp; visual pass/fail warnings</i>		■	■
Gauge (m) or gauge & batch specific (ml) limits		m	ml
Date and time stamp		■	■
Review, clear & delete batches		■	■
Batch types; <i>normal, counted average, IMO PSPC</i>		■	■
Navsea Mode			■
Batch review graph			■
Copy batches and calibration settings			■
Alpha-numeric batch names; <i>user definable on the gauge</i>			■
Scan & Auto Repeat Modes, <i>with Scan Probe connected</i>			■
Fixed Batch Size Mode; <i>with batch linking</i>			■

**Technical Specification**

Gauge only	Model B	Model S	Model T	Certificate
Elcometer 456 Ferrous Separate	A456CFBS	A456CFSS	A456CFTS	●
Elcometer 456 Dual FNF Separate	A456CFNFBS	A456CFNFSS	A456CFNFTS	●
<b>Gauge and probe</b>				
Elcometer 456 Ferrous gauge with probe	A456CFBS-F1S	A456CFSS-F1S	A456CFTS-F1S	●
Elcometer 456 Dual FNF gauge with probe	A456CFNFBS-FNF1S	A456CFNFSS-FNF1S	A456CFNFTS-FNF1S	●
<b>Probe only#</b>				
Ferrous standard Probe: Range: 0-1500µm/0-60mils			T456CF1S	●
Ferrous & Non-Ferrous standard Probe: Range: 0-1500µm/0-60mils			T456CFNF1S	●
Ferrous standard Probe: Range: 0-5mm/0-200mils			T456CF2S	●
Non Ferrous standard Probe: Range: 0-5mm/0-200mils			T456CN2S	●
Display Information	2.4" (6cm) QVGA colour TFT display, 320 x 240 pixels			
Battery Type	2 x AA batteries, rechargeable batteries can also be used			
Battery Life	approximately 24 hours of continuous use at 1 reading per second*			
Gauge Dimensions (h x w x d)	141 x 73 x 37mm (5.55 x 2.87 x 1.46")			
Gauge Weight (including batteries)	161 g (5.68 oz)			
Operating Temperature	-10 to 50°C (14 to 122°F)			
Packing List	Elcometer 456 gauge, wrist harness, transit case (T), protective case (B, S, T), 1 x screen protector (S, T), 2 x AA batteries, operating instructions, USB cable (S, T), ElcoMaster® software (S, T)			

\* Using default settings & lithium batteries, alkaline or rechargeable batteries may differ

● Certificate supplied as standard

^ Model B and S gauges are supplied in a cardboard box. Model T gauges in a plastic transit case with space for a separate probe. The transit case can be purchased as an optional accessory for Model B and S gauges using sales part number T45623465

#Separate probes are supplied with a set of 1 scale foils as standard (sales part number T99022255-1). A certified foil set is available to purchase as an optional accessory, sales part number T99022255-1C



**Elcometer 480**

**Glossmeter**

The **Elcometer 480** range are easy-to-use glossmeters that combine high accuracy, repeatability and reproducibility, making them the most advanced glossmeters on the market today

Multiple angles; 20°, 60°, 85° and differential mode with pass/fail

Standard, auto repeat and scan mode, and 40 user definable limit standards

3 - 10 readings per second, with 40,000 reading memory in up to 2,500 batches

Display readings, statistics, graphs & batch review

Auto calibration tile recognition via RFID<sup>1</sup>

Date and time stamped readings

Small, robust & ergonomic

USB & Bluetooth® data output, PC, iPhone or Android™ compatible



**2 YEAR WARRANTY**

**STANDARDS:**  
AS/NZS 1580.602.2, ASTM C584, ASTM D523, ASTM D1455, ASTM D2457, ASTM D4039, ASTM E430, ASTM E2387, BS 3900 D5, DIN 67530, ECCA T2, EN 12373-11, EN 13523-2, ISO 7668, ISO 2813, ISO 13803, JIS K 5600-4-7, JIS Z 8741, TAPPI T 653 (20°)

\* Elcometer 480 gauges are supplied with a one year warranty against manufacturing defects. The warranty can be extended to two years via [www.elcometer.com](http://www.elcometer.com).

<sup>1</sup> Radio Frequency Identification; European Patent Number: 2906904

**Elcometer 480**

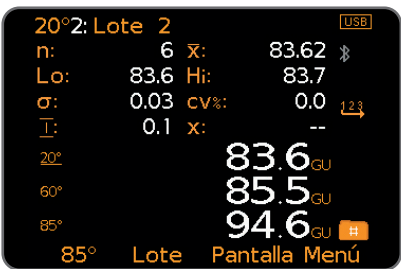
**Glossmeter**



A range of models available: single, double and triple



Store up to 40,000 readings in up to 2,500 batches



Multiple display options and measurement modes

Range	0-10GU	10-100GU	100-2.000GU
Repeatability	±0.1GU	±0.2GU	±0.2%
Reproducibility	±0.2GU	±0.5GU	±0.5%

**The Model Range**

Available as either a simple entry level 60° glossmeter or state of the art Single, Dual or Triple angle variants.

**Memory and Batching**

Store 40,000 date and timed stamped readings in up to 2,500 user definable alpha-numeric batches.

**Display Modes**

Fully customisable, scratch and solvent resistant colour LCD allows the user to display: Gloss, % Reflectance or Haze readings, Statistics, Readings and Differential with pass/fail, Trend Graph or Analogue Scan Bar.

**Accuracy & Repeatability**

Advanced electronics and state-of-the-art optical design ensures highly accurate, repeatable and reproducible measurements with agreement among industry-leading instruments.

**Wireless connectivity**

Measurements can be instantly transferred to PC, iPhone, Android™ or other mobile devices via USB or Bluetooth® for instant reporting using ElcoMaster® software.



**Elcometer 480**

**Glossmeter**

**Measurement Modes**

**Standard, Auto Repeat & Scan Modes**

No two inspections are the same. It is for this reason that the Elcometer 480 is equipped with three measurement modes:

- **Standard Mode:** Press the measure button to take an individual spot measurement.
- **Auto Repeat Mode:** When the glossmeter is slid over the surface a measurement of all three angles is automatically taken at a user definable rate between 10 - 180 readings per minute. When enabled all the individual readings are stored into memory.
- **Scan Mode:** As the glossmeter slides over the entire surface area the gauge measures all three angles at a continuous rate of 10 readings per second. When stopped, the gauge displays and stores the average, highest and lowest values - ideal for checking a sample's overall uniformity.



**Limit Standards and Differential Mode with Pass/Fail**

When visual appearance is critical Master Standards are created. These are generated and approved by the customer and then used by manufacturers as part of their quality control inspection regime. As these Master Standards have been visually approved they often do not have numerical gloss values assigned.

In order to avoid subjectivity between inspectors, the Elcometer 480 can automatically generate and store the nominal (target), highest & lowest acceptable gloss values (Limits) from the Master Standard.



Up to 40 Limits for each customer's Master Standards can be stored within, and recalled from, the gauge's 'Limit Standard' memory.

When Limit Standards are used in combination with the gauge's Differential Mode, the Elcometer 480 displays the measurement value together with the difference from the nominal (target) value.

Readings outside the Limit Standard are displayed in red, providing quick Pass/Fail analysis.

Due to the Elcometer 480's industry leading inter-instrument agreement, once a Master Standard Limit has been created, the gauge can transfer these values to other Elcometer 480 glossmeters, via the ElcoMaster® software's Library of Limit Standards, at any time.

Information from multiple glossmeters can be combined into a single inspection report within ElcoMaster®, ideal for multiple production and assembly lines.

Elcometer 480

Glossmeter

Product Features

■ Standard □ Optional

	Model B	Model T
Measurement geometries	60°	60°, 20/60° or 20/60/85°*
Measurement units	GU	GU, HU <sup>1</sup> & %
Fast, accurate reading rate	■	■
Repeatable & reproducible measurements	■	■
Easy to use menu structure; <i>in 30+ languages</i>	■	■
Tough, impact, waterproof & dust resistant	■	■
Scratch & solvent resistant colour display; 2.4" (6cm) TFT	■	■
Rotating display: <i>auto, 0°, 180°</i>	■	■
Ambient light sensor; <i>with adjustable auto brightness</i>	■	■
Data output		
USB live readings	■	■
USB batch download		■
Bluetooth®: <i>to PC, iOS or Android™ mobile devices</i>		■
USB & battery powered	■	■
Calibration Certificate	■	■
Manual gauge calibration	■	■
Auto gauge calibration; <i>via RFID tagging of integrated calibration tile<sup>2</sup></i>		■
On screen statistics- <i>user selectable</i>		
Number of readings, Mean (average), Standard deviation,	■	■
Highest reading, Lowest reading, Range		■
Coefficient of variation,		■
Nominal value, High Limit value, Low Limit value		■
Number above high limit, Number below low limit		■
Measurement modes		
Standard Mode	■	■
Auto Repeat Mode (auto repeat); <i>programmable 10-180 readings per minute</i>		■
Scan Mode (of exploration); <i>10 readings per second</i>		■
Differential Mode with Pass/ Fail mode;		■
Limit Standards; <i>up to 40 programmable standards</i>		■
Gauge & batch specific standard limits		■
Gauge memory 40,000 readings in up to 2,500 batches		■
Alpha-numeric batch names		■
Fixed batch size mode		■
Date and time stamp		■
Gauge auto diagnostics	■	■
Display modes;user selectable		
Readings; <i>gloss, % reflectance<sup>1</sup>, haze<sup>1</sup></i>	■	■
Selected statistics	■	■
Live trend graph; <i>last 20 readings</i>		■
Scan bar		■
Readings & differential ( <i>with pass/fail</i> )		■
Delete last reading	■	■
2 year extended warranty <sup>3</sup>	■	■

\* Dependant on model

<sup>1</sup> Haze on Dual and Triple models only




<sup>2</sup> Radio Frequency Identification; European Patent Number: 2906904

<sup>3</sup> Elcometer 480 gauges are supplied with a one year warranty against manufacturing defects. The Elcometer 480 is extendable within 60 days from date of purchase, free of charge, to 2 years via [www.elcometer.com](http://www.elcometer.com).

**Elcometer 480**

**Glossmeter**

**Technical Specification**

Part Number	Description	Certificate	
J480B-6	Elcometer 480 Model B 60° Glossmeter	●	
J480T-6	Elcometer 480 Model T 60° Glossmeter	●	
J480T-26	Elcometer 480 Model T 20/60° Glossmeter	●	
J480T-268	Elcometer 480 Model T 20/60/85° Glossmeter	●	
Display information	2.4" (6cm) QVGA colour TFT display, 320 x 240 pixels		
Power	USB (via PC) or 2 x AA batteries (~50,000 readings)		
	20°	60°	85°
Measurement Dimensions			
	20°: 10 x 10mm	60°: 8 x 16mm	85°: 4 x 55mm
Measurement Range	0 - 2,000GU	0 - 1,000GU	0 - 160GU
Repeatability	± 0.1GU (0 - 10GU); ±0.2GU (10 - 100GU); ±0.2%: 100 - 2,000GU		
Reproducibility	± 0.2GU (0 - 10GU); ±0.5GU (10 - 100GU); ±0.5% 100 - 2,000GU		
Resolution	Gloss:	0,1GU (0 - 100GU); 1GU (>100GU)	
	% Reflectance:	0.01% (0 - 10%); 0.1% (10 - 100%)	
	Haze:	0.1HU (0 - 100HU); 1HU (>100HU)	
Operating Temperature	-10°C to 50°C (14 to 122°F); Relative Humidity: 0 to 85% HR		
Dimensions (H x W x D)	68 x 155 x 50 mm. (2.68 x 6.10 x 1.97")		
Weight	534 g. (1 lb. 3 oz.) (including batteries)		
Packing List	Elcometer 480 Glossmeter, integrated calibration tile, calibration certificates for gauge & calibration tile, 2 x AA batteries, wrist strap, operating instructions, plastic carry case, ElcoMaster® software (Model T) and USB cable (Model T)		

**Accessories**

T48024798-LC	Low Gloss Calibration Tile	Nominal Value: 22GU at 60°	●
T48024798-MDC	Mid Gloss Calibration Tile	Nominal Value: 55GU at 60°	●
T48024798-HC	High Gloss Calibration Tile*	Nominal Value: 97GU at 60°	●
T48024798-MRC	Mirror Gloss Calibration Tile	Nominal Value: 1,900GU at 20°	●
T48024798-SH	Soft Material Specimen Holder, complete with 3 sample trays		
T48025004	Soft Material Sample Trays (x3)		
T99923535	Gloss Tile Cleaning Cloth		
T99925002	USB Cable		



Each calibration tile is supplied within its own base unit to ensure measurement accuracy and repeatability



The soft material specimen holder is supplied with 3 sample trays - ideal for testing soft, powder or viscous materials



● Certificate supplied as standard.

\* Supplied with gauge

**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

The **Elcometer PTG** range comes with all the features and functionality needed to accurately measure the thickness of virtually any material.

**STANDARDS:**  
EN 14127, EN 15317

Selectable reading speed of 4, 8, 16Hz (4, 8, 16 readings per second)

2-point, 1-point, material, speed, defined thickness and factory calibration options enable accurate measurements of a wide range of materials

Intelligent connected transducer with automatic recognition ensures the correct probe is identified when changing the transducer

The Elcometer PTG8 is supplied with or without a 15MHz 1/4" Microdot right angle single element thickness transducer.

(Wide range of transducers available)



High and low limit indicators (Hi and Lo) provide information about problem areas

Store up to 3 calibration methods in memory

16Hz scanning mode, ideal for measuring a large area



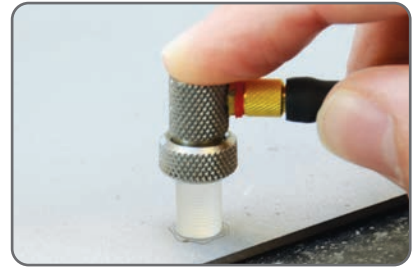
**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

**Accurate**

Measures thin materials with pinpoint accuracy

Flexible & easy to use, the Elcometer PTG gauges have a measurement range from 0.15mm (0.006”) to 25.40mm (1.000”) with up to ±1% accuracy, across three measurement modes; Interface Echo (IE), Echo Echo (EE) & Plastic mode (PLAS).



Accuracy of ±1% in all three measurement modes

**Customizable**

Choose and customize the display screen

The Elcometer PTG range has a variety of display modes to choose from allowing the user to select the most suitable mode to suit their needs: readings, selected statistics, bar graph, sequence graph or differential mode.



Customizable reading screen

**Powerful**

Store each measurement for further analysis

Up to 100,000 readings can be saved into the gauge memory as each measurement is taken, which can be downloaded later into an inspection application or into ElcoMaster® for further analysis and reporting.

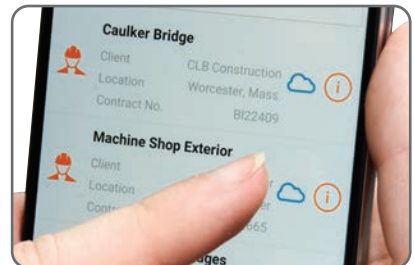


A maximum of 100,000 readings can be stored in the meter's memory

**Wireless Connectivity**

Seamlessly connect to any PC, Android™ or iOS mobile device

Connect the Elcometer PTG8 via Bluetooth® or USB to a PC, Android™ or iOS mobile device & download the data into an inspection application or into ElcoMaster® Software for instant report generation.



Connect the meter to a mobile device via Bluetooth® or USB

**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

**Measurement mode**



**Interface Echo (IE);** A highly accurate measurement mode, Interface Echo displays the total thickness from the top surface to the material density boundary. (typically the back wall). Suitable for measuring materials between 1.65mm and 25.4mm (0.065” to 1”) thick.

**Echo - Echo Mode (EE);** ideal for measuring thinner materials, the thickness of the material from the top surface of the material to the density limit of the material (typically the back wall). Suitable for measuring materials between 0.15mm and 10.15mm (0.006” to 0.4”) thick.

**Plastic Mode (PLAS);** a mode specifically used for measuring very thin plastics between 0.15mm and 5mm (0.006” to 0.197”) thick. A special graphite delay line is required for this mode.

**User Definable Upper and Lower Limits**



PTG meters feature user-definable upper and lower limits with audible and visual pass/fail warnings, allowing the user to compare readings to predefined values. The PTG8 allows up to 40 pre-programmed limits to be stored, which can be set for individual readings or for each batch.

If a measurement is taken that falls outside the set limits, the reading value and limit icon turn red, the red LED flashes, and the alarm sounds to immediately indicate problem areas.

**Calibration options**



PTG meters have a variety of calibration options including 1-point, 2-point and Velocity. Alternatively, the user can use one of 39 predefined materials stored in the meter: Aluminum, Steel, Stainless Steel, Cast Iron, Plexiglass, PVC, Polystyrene and Polyurethane.

The PTG8 allows users to store up to three calibrations in memory. Once stored, the user can select a calibration without recalibrating the meter. Using the meter’s alphanumeric function, calibration memories can be renamed to suit the calibration setup.




**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

Range of display modes

**Lecturas**




The reading value is displayed.

**Selected Statistics**




Up to 8 statistical values can be displayed, depending on what the user defines.

**Sequence Graph**




Linear trend graph of the last 20 measurements that is updated after each reading.

**Bar Graph**



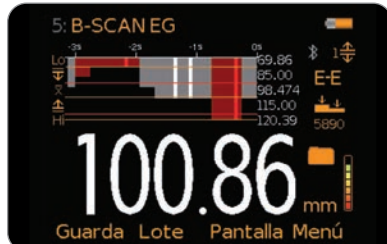
An analogue representation of the current measurement value together with the highest (Hi), lowest (Lo) and average ( $\bar{x}$ ) reading. The graph is updated automatically when each reading is taken.

**Readings and Differential**



The last reading is displayed along with the variation from the nominal value (if set).

**B-Scan**



A cross-section view of the material under test is displayed along with the readings taken, the saved readings, the maximum (Hi), minimum (Lo), and average ( $\bar{x}$ ) readings, and the upper/lower limit values (if set).

To view a range of transducers to suit your specific application, visit [www.elcometer.com](http://www.elcometer.com)



## Elcometer PTG

## Ultrasonic Precision Thickness Gauge

## Product Features

 Standard  Optional

	Model PTG6	Model PTG8
Part Number (gauge only)	PTG6	PTG8BDL
Easy to use menu structure in multiple languages	■	■
Tough, impact, waterproof and dust resistant equivalent to IP54	■	■
Bright colour screen with permanent backlight	■	■
Ambient light sensor, with adjustable brightness	■	■
Scratch and solvent resistant display; 2.4" (6cm) TFT	■	■
Large positive feedback buttons	■	■
USB power supply via PC	■	■
Gauge software updates <sup>2</sup> via ElcoMaster® Software	■	■
2 year gauge warranty <sup>2</sup>	■	■
Limits: 40 definable audible & visual pass/fail warnings		■
<b>Measurement Mode</b>		
Echo Echo (EE)	■	■
Interface Echo (IE)	■	■
Plastic Mode (PLAS)	■	■
<b>Measurement Rate</b>		
4, 8, 16Hz	4, 8, 16Hz <sup>3</sup>	4, 8, 16Hz <sup>3</sup>
<b>Thickness range<sup>4</sup></b>		
E-E 0.15 - 10.15mm (0.006-0.400")	■	■
I-E 1.65 - 25.40mm (0.065-1.000")	■	■
PLAS 0.15 - 5.00mm (0.006-0.197")	■	■
<b>Measurement Units</b>		
mm or inches	■	■
m/s, in/μs		
Repeatability / Stability Indicator	■	■
<b>Display Mode</b>		
Reading	■	■
Selected statistics		■
Scan thickness bar graph		■
Run Chart		■
Readings and Differential		■
B-Scan cross sectional display		■
<b>Selectable Reading Resolution</b>		
Low; 0.1mm, 0.01", 10m/s, or 0.001 in/μs	■	■
Hi; 0.01mm, 0.001", 1m/s, or 0.0001 in/μs	■	■

<sup>1</sup> Internet connection required

<sup>2</sup> The Elcometer PTG range is extendable within 60 days from date of purchase, free of charge to two years via [www.elcometer.com](http://www.elcometer.com)

<sup>3</sup> User selectable default setting in scan mode is 16Hz (PTG8 only)

<sup>4</sup> Dependent on the material being measured and the transducer being used

## Elcometer PTG

## Ultrasonic Precision Thickness Gauge

## Product Features

 Standard  Optional

	Model PTG6	Model PTG8
<b>Statistics</b>		
Number of readings, n; Mean average, $\bar{x}$ ; Standard deviation, $\sigma$ .		■
Lowest reading, Lo; Highest reading, Hi		■
Low / high limit value		■
Reading Range Value		■
Nominal Value		■
Number of readings below low limit		■
Number of readings above high limit		■
<b>Calibration Options</b>		
Zero (using the built-in zero disk)	■	■
1 - point	■	■
2 - point	■	■
Material selection; 39 preset materials	■	■
Factory; resets to the factory calibration	■	■
Velocity (speed of sound)	■	■
Known thickness value		
<b>Calibration Features</b>		
Calibration lock; with optional PIN Lock	■	■
Test calibration feature	■	■
Calibration memories: 3 programmable memories		■
Measurement outside calibration warning		■
<b>Data Logging</b>		
Number of readings		100.000
Number of batches		1.000
Sequential batching		■
Grid batching		■
Fixed batch size mode; with batch linking		■
Obstruct entry; add 'obst' into grid location		■
Delete last reading		■
Date & time stamp		■
Review, clear & delete batches		■
Alpha numeric batch names; user definable		■
Batch review graph		■
<b>Data Output</b>		
USB to PC	■	■
Bluetooth® to PC, Android™ & iOS devices		■
ElcoMaster® software®	■	■
<b>Transducer Probe Type</b>		
Single Element	■	■
<b>Auto transducer recognition</b>		
	■	■

**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

**Technical Specification**

Part Number (gauge only)	Features 15MHz 1/4" right angle encapsulated single element transducer	Description	Certificate
PTG6	PTG6-TXC	Elcometer PTG6 Ultrasonic Thickness Gauge	●
PTG8BDL	PTG8BDL-TXC	Elcometer PTG8BDL Ultrasonic Thickness Gauge	●

Model Number	PTG6 & PTG8	
Measurement Rate <sup>1</sup>		
Interface Echo (IE)	1.65 - 25.40mm (0.065 - 1.00")	
Echo Echo (EE)	0.15 - 10.15mm (0.006 - 0.400")	
Plastic Mode (PLAS)	0.15 - 5.00mm (0.006 - 0.197")	
Measurement accuracy <sup>2</sup>		
Interface Echo (IE)	±0.015mm (1.65-2.99mm) ±0.5% (3.00-25.4mm)	±0.0006" (0.065 0.117") ±0.5% (0.118-1.000")
Plastic Mode (PLAS)	±0.015mm (0.15-2.99mm) ±0.5% (3.00-5.00mm)	±0.0006" (0.006-0.117") ±0.5% (0.118-0.197")

Operating Temperature	-10 to 50°C (14 to 122°F)
Battery Type	2 AA batteries
Battery Life <sup>3</sup>	Alkaline: Approximately 15 hours Lithium: Approximately 28 hours
Gauge Weight	210 g. (7.4 oz.) - including batteries, without transducer
Size (w x h x d)	145 x 73 x 37 mm (5.7 x 2.87 x 1.46") - without transducer

Elcometer PTG6 Ultrasonic Thickness Gauge, 15MHz transducer (PTG6-TXC only), ultrasonic coupler, 3 screen protectors, wrist harness, 2 AA batteries, plastic carrying case, calibration certificate, 2-year warranty extension card, instructions for use.

**Packing List**

Elcometer PTG8 Ultrasonic Thickness Gauge, 15MHz transducer (PTG8BDL-TXC only), ultrasonic coupler, 3 screen protectors, wrist harness, 2 AA batteries, plastic carrying case, calibration certificate, USB cable, ElcoMaster® software, 2-year warranty extension card, instructions for use.

<sup>1</sup> Dependent on the material being measured and the transducer being used

<sup>2</sup> On steel

<sup>3</sup> Approximate battery life when in continuous reading mode with a reading speed of 4Hz. May differ with rechargeable batteries.

● Certificate supplied as standard

**Elcometer PTG**

**Ultrasonic Precision Thickness Gauge**

When accuracy is the key, Elcometer's range of **precision transducers** allows the user to measure accurately.



Disc	Part Number	Probe Diameter	Probe Configuration	Damping*	ThruPaint™	Connector type		Suitable for measuring						Suitable for:	
						Encapsulated right angle	Microdot	Iron foundry	Plastics	Thin plastics	Fiberglass	Thin fiberglass	Steel	Glass	Aluminium
<b>15.0MHz Single Element Transducer</b>															
●	TXC15M0CM	1/4"	Right Angle	S			●		●		●	●	●	●	●
<b>20.0MHz Single Element Transducer</b>															
●	TXC20M0CM	1/4"	Right Angle	S			●		●		●	●	●	●	●

**Delay lines**

Each single element transducer is supplied with 9mm and 12mm acrylic delay lines suitable for measurements on steel, aluminium and titanium. When making measurements on thin plastics using Plastic Mode (PLAS), a graphite delay line is required. These can be purchased as optional accessories.

Part Number	Description
T92016528	Acrylic Delay Line; 1/4" Ø x 9mm.
T92016529	Acrylic Delay Line; 1/4" Ø x 12mm.
T92023853-4	Graphite Delay Line; 1/4" Ø x 3/8"



Each transducer can be easily identified by the disc on the top.

Visit [www.elcometer.com](http://www.elcometer.com) for the full range of Elcometer transducers



\* Damping: S - Standard undamped transducer

**Elcometer 112**



**STANDARDS:**

ASTM D 4414-A, AS/NZS 1580.107.3, BS 3900-C5-7B, ISO 2808-1A, ISO 2808-7B, JIS K 5600-1-7, NF T30-125, US Navy PPI 63101-000, US Navy NSI 009-32

**Hexagonal Wet Film Combs (Stainless Steel)**

These hexagonal precision formed stainless steel wet film combs are long lasting, reusable and supplied in a range of thicknesses measuring up to 3,000µm (120mils).

These six sided combs vary in size, giving either 24 or 36 measurement steps, depending upon the comb, thus providing increased accuracy.

**Technical Specification**

Part Number	Range	Values	Certificate
K0003236M201	20 - 370 µm	20; 30; 40; 50; 60; 70; 80; 90; 100; 110; 120; 130; 150; 170; 190; 210; 230; 250; 270; 290; 310; 330; 350; 370µm	●
K0003236M202	25 - 2.000 µm	25; 50; 75; 100; 125; 150; 175; 200; 225; 250; 275; 300; 350; 400; 450; 500; 550; 600; 650; 700; 750; 800; 850; 900; 950; 1.000; 1.100; 1.200; 1.300; 1.400; 1.500; 1.600; 1.700; 1.800; 1.900; 2.000µm	●
Dimensions	Elcometer 112	77 x 50 x 1 mm. (3236M201) / 90 x 77 x 1 mm. (3236M202)	
Packing List	Wet Film Comb, storage case and operating instructions		

● Certificate included

**Elcometer 112AL**



**STANDARDS:**

ASTM D 4414-A, AS/NZS 1580.107.3, BS 3900-C5-7B, ISO 2808-1A, ISO 2808-7B, JIS K 5600-1-7, NF T30-125, US Navy PPI 63101-000, US Navy NSI 009-32

**Punched Wet Film Combs (Aluminium)**

These punched aluminium combs offer the user a low cost method of measuring the wet film thickness.

The Elcometer 112AL, being punched from aluminium, is not as accurate as precision formed stainless steel wet film combs and has a shorter lifespan.

Supplied in a pack of 10 combs, each comb has Metric (25 - 3000µm) on one side and Imperial (1 - 118mils) on the other.

The Elcometer 112AL can be customised with your logo. Please contact Elcometer for further details.

**Technical Specification**

Part Number	Description	Weight
B112AL 12473-3	Elcometer 112AL Aluminium Wet Film Comb (Pack of 10)	90 g. (3.17 oz.)
Dimensions	75 x 65 x 1 mm.	
Packing List	Elcometer 112AL (Pack of 10) and operating instructions	

**Elcometer 137**

**LED Illuminated (x10) Magnifier**



From time to time a closer inspection of a surface is required to ascertain the exact conditions of the material's profile, cleanliness etc.

The Elcometer 137 LED illuminated magnifier is the ideal product for the job as many environments can be in low light or dark areas - ballast tanks, oil and gas tanks, etc.

- Lightweight, battery powered, portable magnifier
- Ideal for viewing surface comparators
- x10 magnification for close surface inspection
- Scaled lens for easy measurement of surface features

**Technical Specification**

Part Number	Description
H137----1	Elcometer 137 LED Illuminated Magnifier
Battery Type	2 x LR14 (C)
Dimensions	33 x 215 mm. (1.3 x 8.5")
Weight	236 g. (0.52 lb.)
Packing List	Elcometer 137 LED Illuminated Magnifier and operating instructions

**Elcometer 7210**

**Pocket (x30) Microscope**



The Elcometer 7210 is pocket size making it an extremely practical microscope for site inspections.

Having x30 magnification and an inbuilt light source, the Elcometer 7210 Pocket Microscope is the ideal choice for close up investigation of defects and surface cleanliness.

**Technical Specification**

Part Number	Description
KT007210M001	Elcometer 7210 Pocket Microscope
Battery Type	2 x AA batteries
Dimensions	140 x 50 x 22 mm. (5.5 x 2 x 0.9")
Weight	68 g. (0.14 lb.)
Packing List	Elcometer 7210 Pocket Microscope, 2 x AA batteries and operating instructions

**Elcometer 900**

**Illuminated (x50) Microscope**

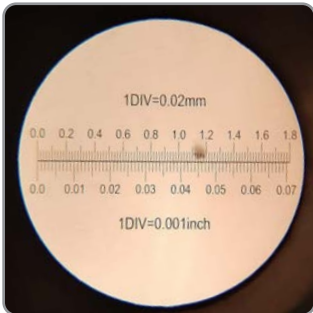


The Elcometer 900 is a very simple, graduated x50 microscope with internal illumination.

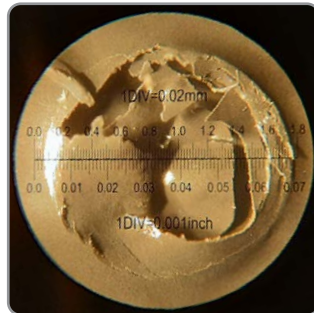
This allows the user to quickly determine the width by counting the number of graduated reticules on the scaled lens and then calculating the value.

**Technical Specification**

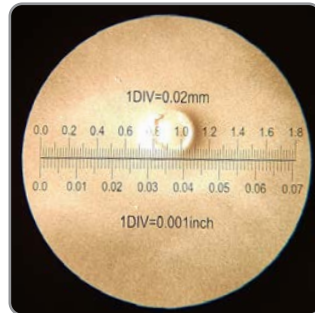
Part Number	Description
W90018568-D	Elcometer 900 Microscope
Battery Type	1 x LR03 (AAA)
Dimensions	120 x 43 x 115 mm. (4.7 x 1.7 x 4.5")
Weight	145 g. (0.31 lb.)
Packing List	Elcometer 900 Illuminated Microscope and operating instructions



Appearance of speck of impurity in compressed air of 80 microns



Appearance of air bubbles in primer coat



300 micron paint crater appearance



**Elcometer 148**

**pH Tester**



**STANDARDS:**  
ASTM E 70

In many industries, pH measurement is critical to the correct performance of processes. pH is the measure of acidity of a liquid.

The pH scale ranges from 0 to 14pH - where 0pH is acidic and 14pH is alkaline. pH is temperature dependent thus the temperature of the sample under test will affect the pH value recorded.

This simple, easy to use instrument measures both pH and temperature using a single sensor.

The Elcometer 148 sensor has automatic temperature compensation, ensuring like-for-like measurements can be taken for meaningful comparison of the results.

- Simultaneously displays pH and temperature
- Measurement hold / freeze function
- Record maximum and minimum readings over a series of tests
- °C / °F user switchable
- Waterproof to IP57 and floats on water
- Auto power off

The condition of the sensor is automatically monitored after each successive calibration and sensors can be easily replaced by the user as and when required.

**Technical Specification**

Part Number	Description	
H148----1	Elcometer 148 pH Tester	
	pH	Temperature
Range	0 a 14 pH	0 to 89°C (32 to 192°F)
Resolution	0.01 pH	0.1°C (0.1°F)
Accuracy	±0.03 pH	±0.5°C (±1°F)
Battery	4 x AAA batteries	
Calibration	3 point at 7pH, 4pH and 10.01pH	
Dimensions	195 x 40 x 36 mm. (7.7 x 1.6 x 1.42")	
Weight	150 g. (5.3 oz.)	
Packing List	Elcometer 148 pH Tester, pH / temperature sensor, 4 x AAA batteries, wrist strap, 4 pH calibration sachet, 7pH calibration sachet and operating instructions.	

**Accessories**

T14821766	pH/Temperature Sensor
T14821768-1	4pH Buffer Solution for Calibration: Capsules, Pack of 10
T14821768-2	7pH Buffer Solution for Calibration: Capsules, Pack of 10
T14821768-3	9pH Buffer Solution for Calibration: Capsules, Pack of 10
T14821767-1	4.01pH Buffer Solution for Calibration: 100ml (3.38 fl oz) Bottle
T14821767-2	7pH Buffer Solution for Calibration: 100ml (3.38 fl oz) Bottle
T14821767-3	10.01pH Buffer Solution for Calibration: 100ml (3.38 fl oz) Bottle

**Sagola**

**Inspection kit - Compressed air quality test**



Sagola's Air Quality Test allows a complete analysis of the compressed air line at the point of application.

It detects solid particles and oils in compressed air that can ruin your painting jobs. It calculates the temperature measurement of compressed air. And it calculates the dew point and relative humidity of the air.

Diagnoses the causes related to the most common defects in painting, such as water bubbles, craters, peeling, particle projection, haze, etc.

Practical case for safe transport.



**Technical Specification**

Part Number	Description	Weight
15020001	Sagola Air Quality Test Complete Kit	1.3 Kg. (2.9 lb.)
49000740	Membrane filters. Pore 0.45 µm (50 units)	
Dimensions	340 x 275 x 85 mm. (13.4 x 10.8 x 3.4")	
Packing List	Air quality test case and operating instructions	



**Elcometer**

**Automotive inspection kit**



The Elcometer Automotive Inspection Kit are produced specifically for the automotive aftermarket and insurance Assessors, 3rd party consultants, body shops and used car sales.

An illuminated magnifier is supplied to enable close inspection of bodywork.

Measurement parameters include:

- Surface temperature
- Surface inspection
- Coating thickness

**STANDARDS:**  
 AS/NZS 1580.108.1, ASTM B 499,  
 ASTM D 7091, ASTM E 376,  
 ISO 2360, ISO 2808-12,  
 ISO 2808-7C, ISO 2808-7D,  
 NF T30-124

**Content** ■ Standard □ Optional

Model	Description	Kit	Page
Elcometer 137	LED Illuminated Magnifier (x10)	■	47
Elcometer 311	Automotive Paint Meter	■	23
Elcometer 214L	Infrared Digital Laser Thermometer	■	20

Individual Instruments can be used in accordance with many other tests. Please see individual Product Information Pages for details.

**Technical Specification**

Part Number	Description
<b>YKIT-AUTOMOTIVE-2</b>	Elcometer Automotive Inspection Kit 2
Dimensions	310 x 260 x 80 mm. (12.2 x 10.2 x 3.1")
Weight	1.5 kg. (3.3 lb.)



**SPAIN**

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