INDUSTRIAL

72DL PLUS™ Ultrasonic Thickness Gauge

High Speed. High Frequency. High Precision.

EVIDENT

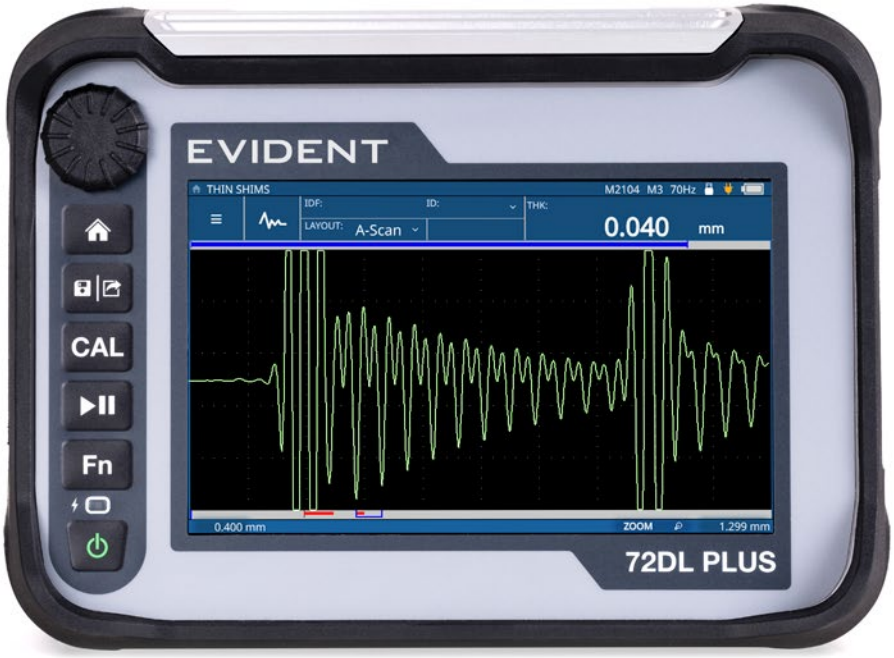
Lab-Quality Thickness Measurements for the Production Floor

The 72DL PLUS™ ultrasonic thickness gauge delivers precision thickness measurements at high speed in a portable, easy-to-use device. With fast scanning, advanced algorithms, and our lowest-ever minimum thickness capability, you can confidently measu e the thickness of very thin layers in the most challenging applications.

72DL PLUS thickness gauges are available in Standard Frequency and High-Frequency models. The High-Frequency model can measure ultra-thin materials, including multilayer paint, plastics, metals, and coatings.

The Multilayer Measurement Software available in both the models can simultaneously display the thickness of up to six independent layers. All 72DL PLUS models have the features to perform fast, accurate thickness measurements:

- Digital filters enable an xcellent signal-to-noise ratio to accurately measure noisy materials (e.g., fibe glass)
- High-resolution touch screen is easy to use and see from various viewing angles
- PC Interface Application integrates your workfl w, inspection management, alerts, and data analysis



Key Benefits

- **Rugged:** designed for IP65
- **Large, clear screen:** 177.8 mm (7 in.) high-resolution touch screen WVGA display
- **Versatile layouts:** A-Scan, B-Scan, A/B-Scan, Trend, and Zoom measurement layouts provide an accurate picture of thickness changes
- **Guided Inspection:** Interactive part map with thickness measurement locations (TMLs) show a quick view of the inspection status and quality
- **Customizable:** Standard Frequency model and High-Frequency model with Multilayer Measurement Software
- **Long battery life:** up to 8 continuous hours
- **E icient data management:** internal data logging and PC Interface Application speed up data collection and review
- **Connected:** supports wireless LAN
- **Cloud enabled:** wireless connection to the Evident Connect (EC) and compatible EC apps Evident Connect
- **Easy application setup:** create custom applications to reduce device setup time for routine inspections

Intuitive User Interface with an Easy-to-View, Large Screen

- Wide viewing angle for outstanding visibility in most ambient conditions
- 177.8 mm (7 in.), full color touch screen provides access to the setup and measurement layouts
- Guided configu ation makes it easy to change the settings based on your needs

Designed for Industrial Environments

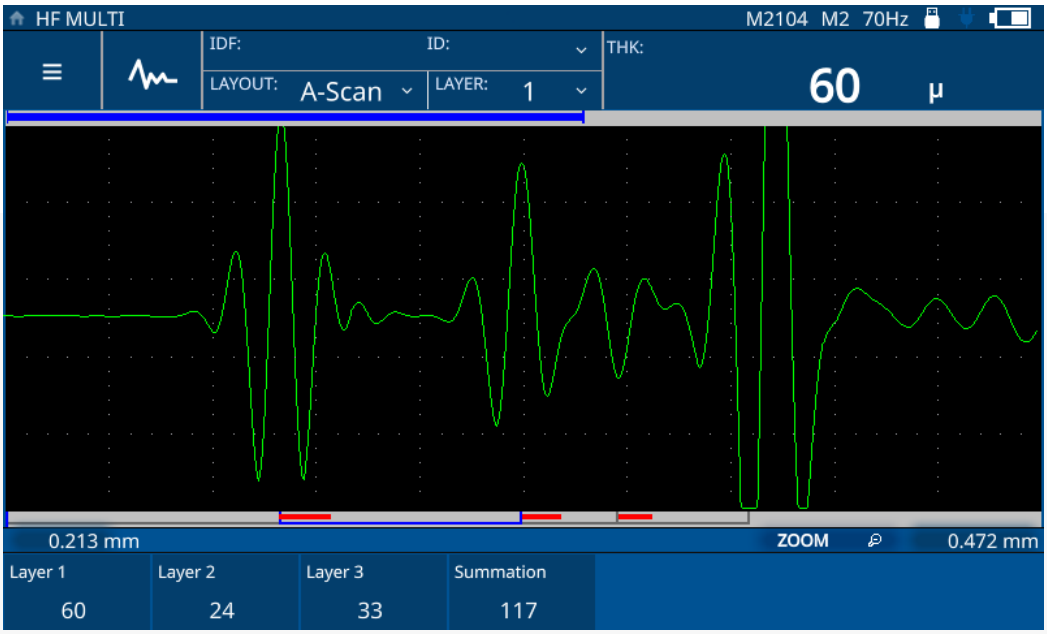
- Designed for IP65 to protect against dust and moisture
- Drop tested (MIL-STD-810G) to protect against falls and reduce the need for costly repairs
- Takes reliable measurements in a wide operating temperature range of –10 °C to 50 °C (14 °F to 122 °F)
- Portable for the production floo , weighing 2.1 kg (4.6 lb)
- Easy to control from the touch screen, key controls, and adjustment knob
- Can be used indoors and outdoors, on a work surface, or using a four-point chest harness or shoulder strap

Probes for Versatile Applications

- Compatible with our single element ultrasonic transducers with frequencies up to 125 MHz
- 0.2–30 MHz range for the Standard Frequency model can measure single layer and multilayer materials at high speed for fast results
- 20–125 MHz range for the High-Frequency model can measure ultra-thin and multilayer materials

Measure Multilayer Paint, Plastics, and Other Materials

The Multilayer Measurement Software offers multilayer thickness measu ements of up to six layers. Measurement settings for each layer—including material, velocity, target thickness ranges, and alarm thresholds—are easily accessible through the configu ation workfl w and touch-screen controls.



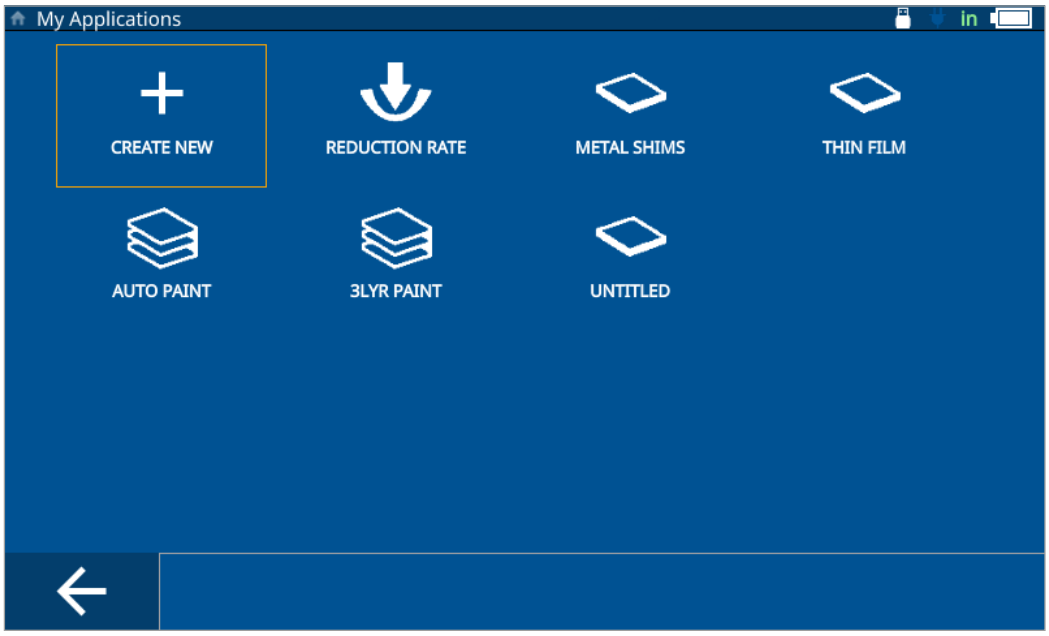
Streamlined Data Collection and Processing

All 72DL PLUS™ models have built-in datalogging with up to 2 GB of data storage, along with convenient onboard file management features.

- On-screen alphanumeric keypad for file naming and editing eport headers to organize your work
- The File Manager menu enables you to review and edit application files, eview and delete inspection data files, and see the inspection completion percentage; once a file is identified, it can be convenie ly recalled
- Connect a foot switch for hands-free activation of the save/send data function

Easy Application Setup with My Applications

For routine applications on simple or complex parts, store and recall settings in the My Applications menu to simplify the device setup process. This reduces manual selection and setting adjustments before each inspection, enabling efficiency and confidence in the mea ement quality.



The My Applications menu makes it easy to create custom applications right from the gauge using predefined configu ations, such as single layer, multilayer, and reduction rate. The menu guides you through each process step, from choosing the configu ation for an inspection to setting up the transducer, material, alarms and alarm conditions, measurement mode, and the part map. Once an application is created, accessing it is as simple as turning the gauge on—the instrument presents the My Applications menu as the startup screen, so an application can be quickly recalled.

For added fl xibility, the PC Interface Application can also be used to create applications and send the files to diff ent gauges on the production floor or ac oss facilities.

PC Interface Application

The PC Interface application offers modern data c eation, management, sharing, and analysis tools.

- Data trend dashboards and analysis tools speed up data review
- Build customized interactive part maps with clear inspection point guidance
- Create applications with the part map, material, transducer, and alarm setups
- Review and approve inspection data file and reports
- Easily transfer inspection data files and application files to and om the gauge and across multiple sites
- Generate inspection reports for individual components or entire production lines using customized templates
- Supports a variety of data transfer methods, including USB, RS-232, and wireless LAN

Connected and Cloud Capable

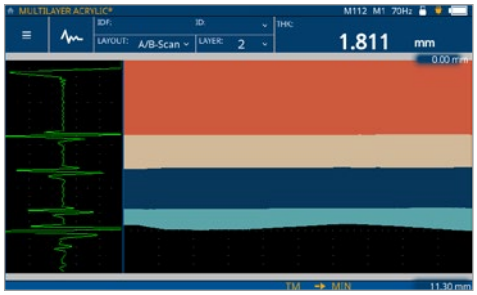
With wireless LAN and USB connectivity, the 72DL PLUS™ thickness gauge integrates into the Evident Connect (EC). Connect to the EC to:

- Create user accounts and manage user roles
- Register devices
- Retrieve calibration certificate
- Monitor device health information
- Update firmwa e

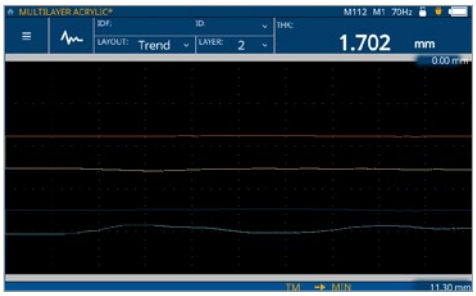
Track and Visualize Thickness Changes with Versatile Measurement Layouts

A-Scan

B-Scan



A/B-Scan



Trend

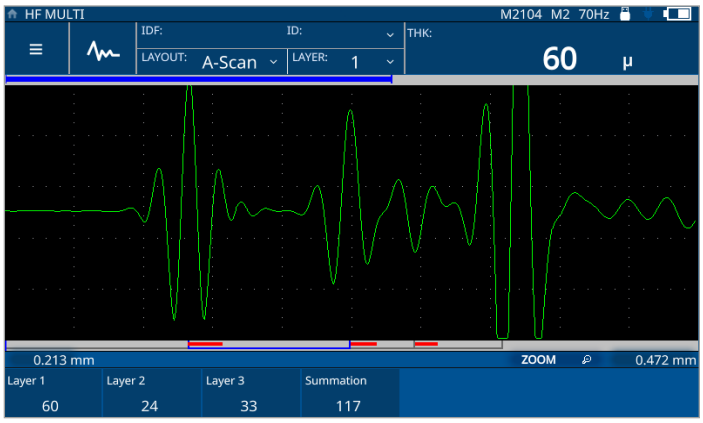
Zoom

All 72DL PLUS models include five measu ement layouts, so thickness changes on a test material can be accurately tracked and visualized.

Thickness Measurements Applications

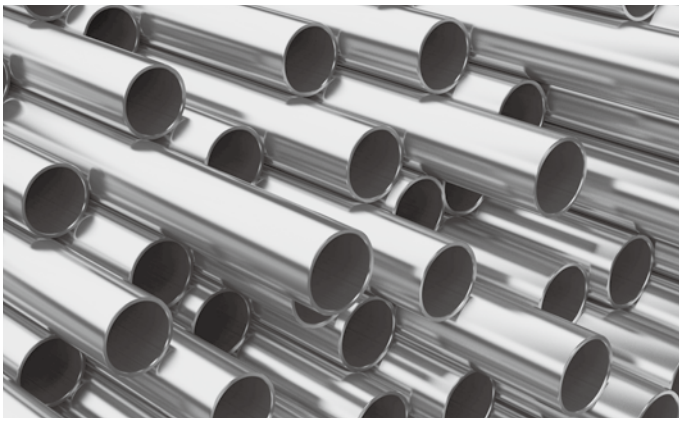
The 72DL PLUS™ thickness gauge offers eliable, high-quality measurement and performance to meet a wide range of applications across industries, including:

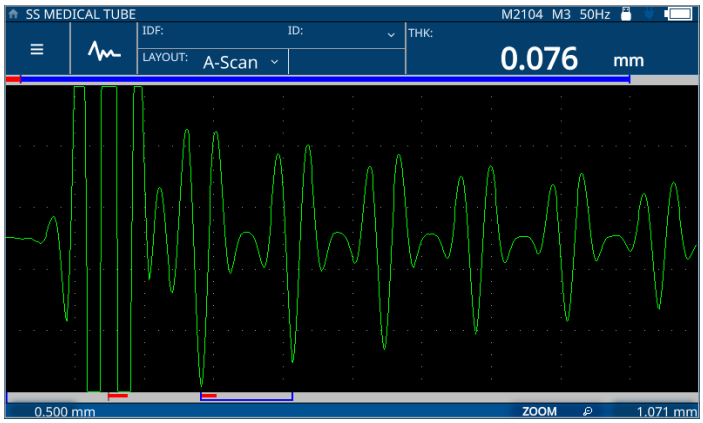
Automotive Paint Layer Thickness



Confidently measu e up to six layers with individual measurements displayed on the inspection screen

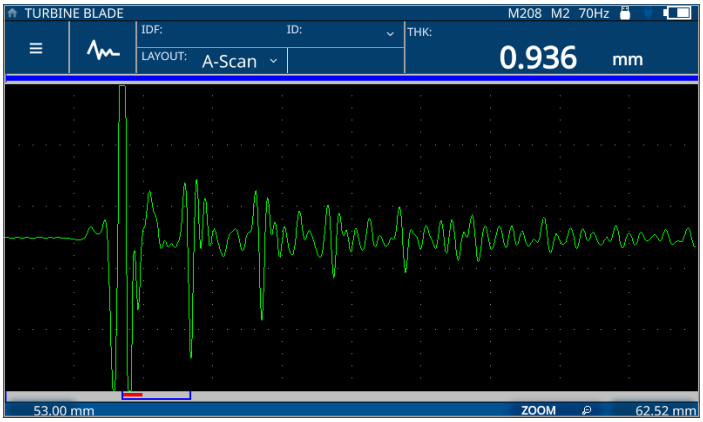
Medical Tubes





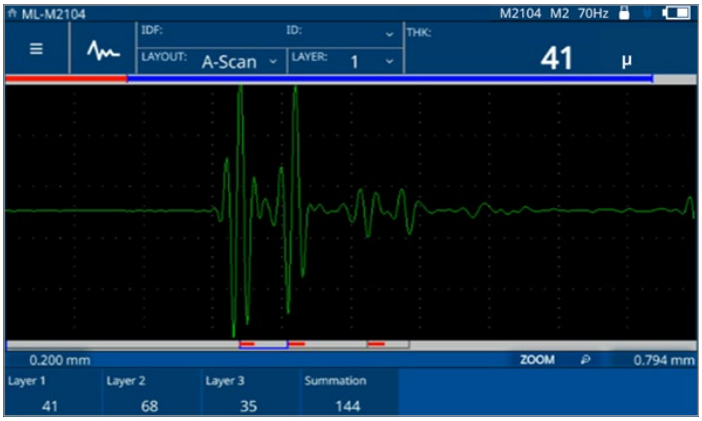
Precise thickness measurements of very thin material for improved quality control

Turbine Blade



Faster scanning and repeatable measurements for material with complex geometry

Paint on Composite



Measurement accuracy and repeatability for multilayer coatings on composites

Choose the Right Model for Your Needs

Choose between our Standard Frequency and High-Frequency models, depending on the application.

Standard Frequency model: offers eliable thickness measurements at high speed (2 kHz measurement speeds and a 60 Hz display update for A-Scan) using single element transducers with a frequency range of 0.2 to 30 MHz

High-Frequency model: includes all the features of the Standard Frequency model, as well as up to 125 MHz transducer frequency support for measurement of ultra-thin materials

Multilayer Measurement Software: simultaneously displays up to six multilayer measurements

Supported Feature or Mode	72DL PLUS Standard Frequency	72DL PLUS High Frequency
177.8 mm (7 in.) Touch Screen WVGA Display	X	X
60 Hz Display Update for A-Scan	X	X
Measurement Rate up to 2 kHz	X	X
Calibration, Gain, and Blank Controls on Frozen Waveforms	X	X
Connect to the Evident Connect (EC)	X	X
Multilayer Measurement Software	X	X
0.2 to 30 MHz Frequency Range	X	—
Up to 125 MHz Frequency Range for Ultra-Thin Materials	—	X

Technical Specifications

	Standard Frequency	High Frequency
Overall Dimensions (W × H × D)	238.76 × 172.72 × 86.36 mm (9.4 × 6.8 × 3.4 in.)	
Weight	2.08 kg (4.6 lb)	
Power Supply	AC/DC adapter 24 V, or lithium-ion battery 73 Wh	
Battery Life	8 hrs	
Battery Storage Temperature	–20 °C to 40 °C (–4 °F to 104 °F)	
Operating Temperature	–10 °C to 50 °C (14 °F to 122 °F)	
Display	177.8 mm (7 in.) WVGA (800 × 480) PCAP touch, refresh rate 60 Hz	
Resolution	LOW: 0.1 mm (0.01 in.)	LOW: 25 µm (1 mil=0.001 in.)
	STD: 0.01 mm (0.001 in.)	STD: 2.5 µm (0.1 mil=.0.0001 in.)
	HI: 0.001 mm (0.0001 in.)	HI: 0.25 µm (0.01 mil=0.00001 in.)
Thickness Range (dependent on probe frequency, probe type, and material)	Steel 0.20 mm to 635 mm (0.008–25 in.)	Plastic 0.0127 mm to 25.4 mm (0.0005–1 in)
Multilayer Measurements	Up to 6 layers	
Measurement Rates	1–3 layers 2 kHz max	1–3 layers 1 kHz max
	4–6 layers 1 kHz max	4–6 layers 500 Hz max
Calibration	Single- or two-point automatic calibration; zero offset and/or velocity manual adjustment; single-point calibration from frozen waveform	
Display Layouts	A-Scan, B-Scan, A/B-Scan, Trend, Zoom, Template, and A-Scan/Template	
Capacity	2 GB; ~400,000 thickness readings, 20,000 waveforms	
Frequency Range	0.2–30 MHz (–3 dB)	20–125 MHz (–3 dB)
Gain	Automatic or Manual (max 100 dB)	Automatic or Manual (max 80 dB)
IP Rating	Designed and tested for IP65: protected against dust and water jets from all directions	
Explosive Atmosphere	MIL-STD-810F, Method 511.4, Procedure I	
Shock Tested	MIL-STD-810F, Method 516.5, Procedure I, 6 cycles each axis, 15 g, 11 ms half sine	
Vibration Tested	MIL-STD-810F, Method 514.5, Procedure I, Annex C, Figure 6, general exposure: 1 hour each axis	

Optional I/O Cables	Part Number
19-pin B scan cable, 4.5 m (15 ft.)	CBL-ENC-19P4-15
19-pin footswitch cable, 2 m (6 ft.)	CBL-FSW-19P3-2M
19-pin unterminated cable, 4.5 m (15 ft.)	CBL-IO-19PX-15
Micro HDMI to HDMI cable, 2 m (6 ft.)	CBL-HDMI-AD-6
19-pin to RS-232 cable, 2 m (6 ft.)	10-030997-00

Accessories Included

Standard Frequency

- AC charger adapter with power cord (varies by outlet configu ation)
- Getting Started Guide
- USB drive containing 72DL PLUS™ Precision Thickness Gauge User's Manual
- USB cable, Mini A to Mini B
- Transport case

High Frequency

- AC charger adapter with power cord (varies by outlet configu ation)
- Transducer cable (BNC to Microdot, 0.6 m (2 ft) double shielded)
- Getting Started Guide
- USB drive containing 72DL PLUS Precision Thickness Gauge User's Manual
- USB cable, Mini A to Mini B
- Transport case

Software

- Multilayer Measurement Software

Optional Accessories

- PC Interface Application
- Lithium-ion rechargeable battery
- Reference standards
- Ultrasound probes
- Probe cables

Global Support

Evident is a leader in NDT technology with a reputation for quality and accuracy. We are committed to providing the best technical support and after-sales service for our products, applications, training, and technologies through our global network of sales and customer service teams.

EVIDENT

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