

Multi-Layer Paint Coating Thickness Measurement

Terahertz Technology for Primer, Base Coat, Clear Coat / Top Coat DFT Measurement



Why Paint Coating Inspection Matters



Individual layer thickness variation



Uneven paint affecting appearance & performance



Process variation across complex body panels



Finished-part inspection without surface damage

Applications

For Automotive Paint Shop Quality Control



Doors



Fenders



Bonnets / Hoods



Roofs



Body Panels



Non-Contact



Fully Automated



High Precision



Real-time Results



How Terahertz Technology Works for Paint Coating Inspection

THz pulses reflect from each coating-layer interface. Time separation between reflections provides information about the optical thickness of individual paint layers.

1 SCAN

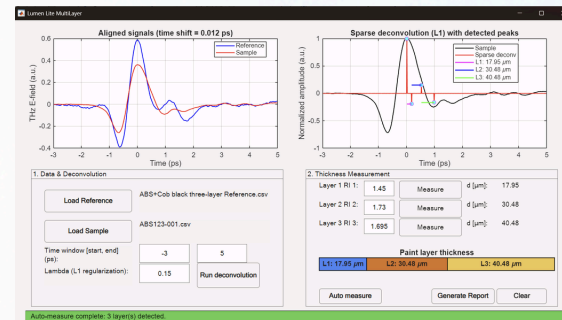
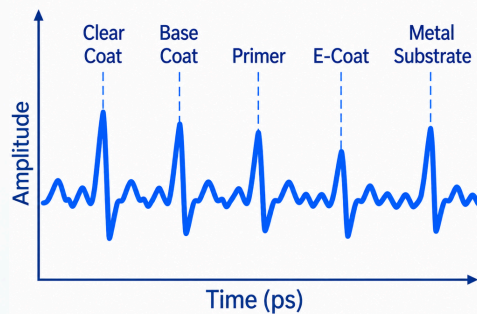
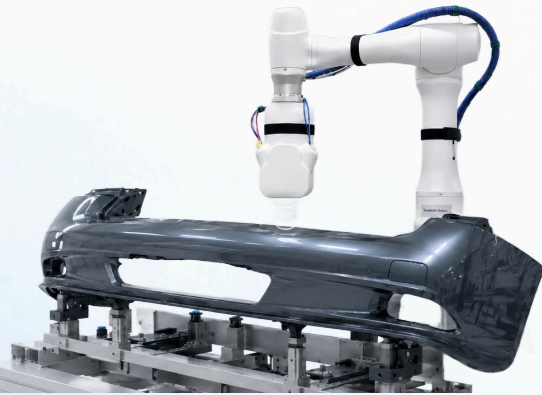
Single-sided, non-contact THz reflection measurement at defined inspection locations.

2 DETECT

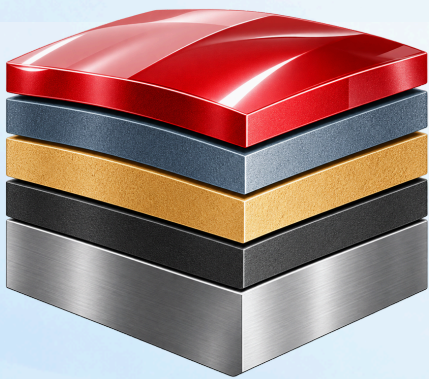
Identify reflections from clear coat, base coat, primer, E-coat and substrate interfaces.

3 ANALYSIS & REPORT

Calculate individual layer thickness and total DFT, compare with tolerance limits, and provide Pass / Fail results.



Typical Automotive Paint Stack



- Air
- Clear Coat
- Base Coat
- Primer
- E-Coat (Electrocoat)
- Metallic Substrate

Key Inspection Capabilities



Individual Layer Thickness

Measure each coating layer thickness.



DFT Measurement

Calculate total coating thickness (DFT).



Tolerance / Pass-Fail

Compare with specified limits and alarms.



Digital QC & Reporting

Store, trend analysis, and inspection reports.

Non-contact inspection for validated automotive paint systems, supporting individual layer thickness measurement, quality control and automated production inspection.

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