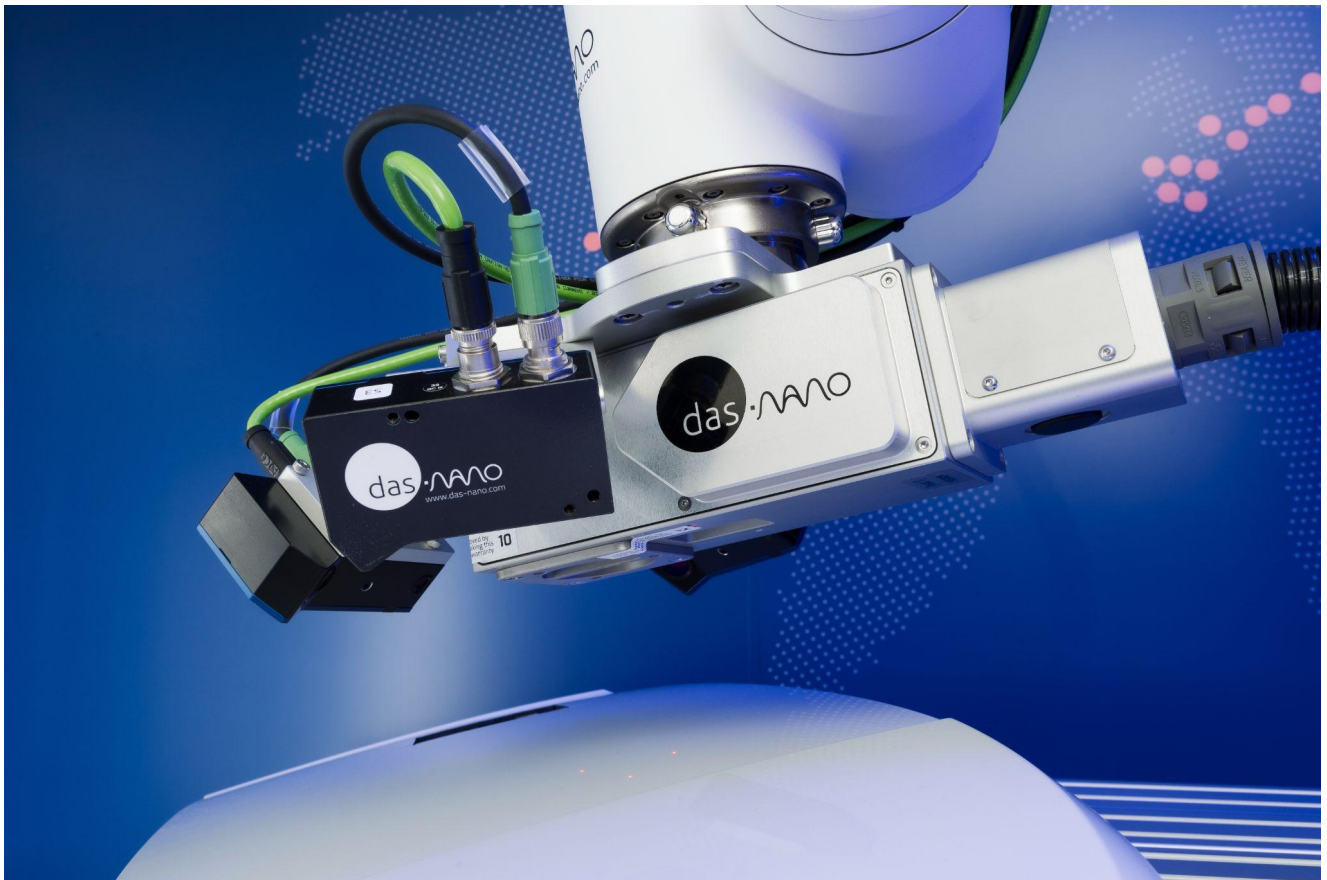




Thickness Measurement Solution with das-Nano's Terahertz

Datasheet





The **Thickness Measurement Solution** is a contactless patented system that, using **terahertz waves** and proprietary algorithms developed by **das-Nano**, provides the **thickness of every layer** in multilayer coatings in a non-destructive way.

Improve and fully control your painting process

-  Real-time data on the thickness of each coating layer
-  Early detection of quality errors
-  Control and supervision of the painting process
-  Full knowledge for a more robust process

Direct benefits for your business

-  Material and energy savings thanks to thickness optimization
-  Reduction of reworks
-  Reduction of CO₂ emissions and water consumption
-  No need for cost extensive calibrations

Measurable coating configurations			
Substrates	Metallic (ferrous and nonferrous), plastic and composite (glass and carbon fibers)		
Base coats	Solid, metallic, pearlescent, two-phase, trilayer and paints with magnetic particles, among others		
Clear coats	Matt, gloss and tinted		
Surfaces	Flat and curved surfaces (concave and convex; > 100 mm in bending radius). Surface temperature from 10°C to 150°C.		
Wetness conditions	Dry, wet and cured coatings		
Performance of the system			
Thickness accuracy	1 µm	Minimum thickness	5 µm
Number of layers	Up to 7 layers	Sampled area per point	4-mm spot size
Measurement time	Typically 5-6 s per point including positioning, robot movement and THz acquisition		
Measurement head distance	Optimum working distance to the inspected surface: 100 mm Other distances are possible		
Positioning accuracy	Normal incidence of the terahertz wave to the inspected surface with error < 0.2°		
Hardware and connectivity			
Dimensions (L × W × H)	Supply unit: 482.6 x 177.8 x (4U) x 450 mm. Robot head: 380 x 320 x 90 mm.		
Weight	Supply unit: 9 kg. Robot head: 5 kg.		
Optical fibers and cabling package	1 x umbilical cable: 28 mm in ø and 60 mm in bending radius. 3 x data wire: 6.5 mm in ø and 52/97.5 mm (<i>robot/7th axis</i>) in bending radius. 3 x power wire: 5.8/6.9 mm in ø and 43/103.5 mm in bending radius.		
Comms	Ethernet connection to communicate the system with PLCs and/or robots in the factory using TCP/IP sockets. Remote control available for software and firmware updates.		
Operational requirements			
Damage prevention	Contactless and non-destructive technology		
Industrial safety	Harmless technology, no security issues needed for terahertz technology		
Operating RT and RH	Room temperature (RT) range: 15°C (59°F) – 35°C (95°F) Relative humidity (RH) range < 75%		
Atmosphere	Non-condensing operating atmosphere		
Factory conditions key features	Patented vibration detection system for higher accuracy. No need for recalibration stops. IP54 rating for harsh industrial environments..		
Power requisites	110 / 240 VAC, 4 A-line power, 50-60 Hz. Single phase, two-wire plug		
Compliance	Product Safety: CE marking, NRTL (SGS listed to UL standards), RCM, IECEE CB scheme. Environmental: RoHS, REACH.		
Quality & Security Standards	ISO 9001, ISO 27001, Tisax registered		



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