das-Nano Irys

Complete solution for car body coating thickness inspection & Big Data analytics platform

das-Nano Irys is a contactless patented system that using Terahertz waves and proprietary algorithms developed by das-Nano provides the thickness of every coating layer in a car body in a non-destructive way.

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Improve and fully control your painting process with das-Nano Irys

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

Direct benefits for your business

- 5% Material savings thanks to thickness optimization
- 3% Reduction of reworks
- Reduction of the environmental impact
- No need for cost extensive calibrations

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MEASURABLE COATING CONFIGURATIONS	
Substrates	Ferrous and non-ferrous metals, fiber composite materials (CFRP/GFRP) and polymers (thermoplastic, elastomers...)
Base coats	Solid, metallic, pearlescent, two-phase, trilayer and paints with magnetic particles, among others
Clear coats	Matt and gloss
Surfaces	Flat and curved surfaces (, concave and convex) Temperature from 10 to 150ºC
Wetness condition	Dry, wet and cured coatings

PERFORMANCE OF THE SYSTEM	
Thickness accuracy	1 µm
Minimum thickness	5 µm
Number of layers	Up to 5 layers
Sampled area per point	4-mm spot size
Measurement time per point	Between 0.5 and 5 seconds
Measurement head distance to the inspected surface	Optimum working distance to the inspected surface: between 80 and 120 mm. Further distances are possible if required
Positioning accuracy of the robot head	Normal incidence to the inspected surface Error < 0.2º

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HARDWARE AND CONNECTIVITY

Dimensions (L × W × H)	Robot head: 380 x 320 x 90 mm Supply unit: 610 x 581 x 332 mm
Approx. weight	Robot head: 5 kg Supply unit: 46 kg Connection wires: depending on the required length
Connection wires	1 x umbilical cable: diameter 28 mm, bending radius 60 mm 3 x data wire: diameter 6.2 mm, bending radius 66 mm 3 x power wire: diameter 6.7 mm, bending radius 100 mm Wiring in sections to facilitate maintenance actions Length: typically 20 m, longer or shorter cables upon request
Communications	Ethernet connection to communicate the system with PLCs in the factory using TCP/IP sockets Remote control available for SW and FW updates

OPERATIONAL REQUIREMENTS

Robotic system	Compatible with any conventional robot: any model and brand
Operating temperature	15°C (59°F) – 35°C (95°F)
Operating humidity	Relative humidity < 75%
Operating atmosphere	Non-condensing atmosphere
Factory environment key features	Patented vibration compensation system that allows more accurate measurements No need for recalibration stops IP54
Power requirements	110 / 240 VAC, 4 A-line power, 50-60 Hz Single phase, two-wire plug
Auxiliary systems	No auxiliary systems are required (i.e. water, compressed air, gas...)
Quality certifications	CE marking, REACH and RoHS compliant, ISO 9001, ISO 27001

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