



# das-Nano Irys datasheet





Coating Thickness  
Inspection Solution









**das-Nano Irys** 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 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 and energy 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

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

## Hardware and connectivity

<b>Dimensions (L × W × H)</b>	<ul style="list-style-type: none"> <li>– Robot head: 380 x 320 x 90 mm</li> <li>– Supply unit with housing: 610 x 581 x 332 mm</li> </ul>
<b>Approx. weight</b>	<ul style="list-style-type: none"> <li>– Robot head: 5 kg</li> <li>– Supply unit: 46 kg</li> <li>– Connection wires: depending on the required length</li> </ul>
<b>Connection wires</b>	<ul style="list-style-type: none"> <li>– 1 x umbilical cable: approx diameter 28 mm and bending radius 60 mm</li> <li>– 3 x data wire: approx diameter 6.2 mm and bending radius 66 mm</li> <li>– 3 x power wire: approx diameter 6.7 mm and bending radius 100 mm</li> <li>– Wiring in sections to facilitate maintenance actions</li> <li>– Length: typically 20 m, longer or shorter cables upon request</li> </ul>
<b>Comms</b>	<ul style="list-style-type: none"> <li>– Ethernet connection to communicate the system with PLCs in the factory using TCP/IP sockets</li> <li>– Remote control available for SW and FW updates</li> </ul>

## Performance of the system

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

## Operational requirements

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



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