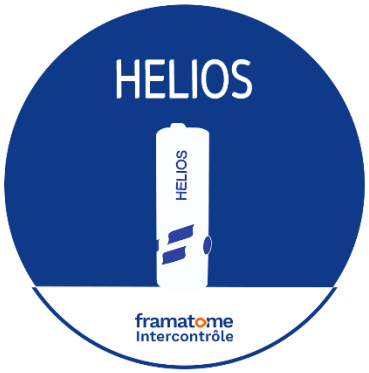
framatome
Intercontrôle

HELIOS

Visual Testing (VT) under a new light

HELIOS (HEmispherical LIght Oriented Sensor) is a breakthrough in the way industrial video inspections are performed and interpreted.



Challenge

Traditional video inspections have limitations when it comes to accurately characterize detected indications.

Solution

HELIOS significantly enhances video inspections by analyzing images under multiple lighting angles. HELIOS introduces a multi-element approach, improving surface analysis in a similar way to ultrasonic or eddy current inspections.

Based on surface reflectance (light and focus), HELIOS generates a set of images from different illumination directions, providing a detailed interpretation of defects.

This allows operators to determine whether an indication is in relief (porosity, indentation, etc.) or on the surface (crack, discoloration, etc.), without altering the geometry.

Customer benefits

- Quality and accuracy of the TV inspection through a multi-element approach
- Ergonomics and ease of use

Delivery and Options:

- Delivered in a transport case
- Windows software (HELIOS App)
- HELIOS device and connectors
- Available Options:
  - Computer with preinstalled HELIOS software
  - Custom sensor head adapter
  - Portable battery

Technical Features

- Dome diameter: 50 mm
- Field of view: 9 x 9 mm
- Pixel size: 10 µm
- Acquisition time: 5 s
- 2D processing time: < 10 s
- 3D reconstruction time: < 30 s

Physical Characteristics

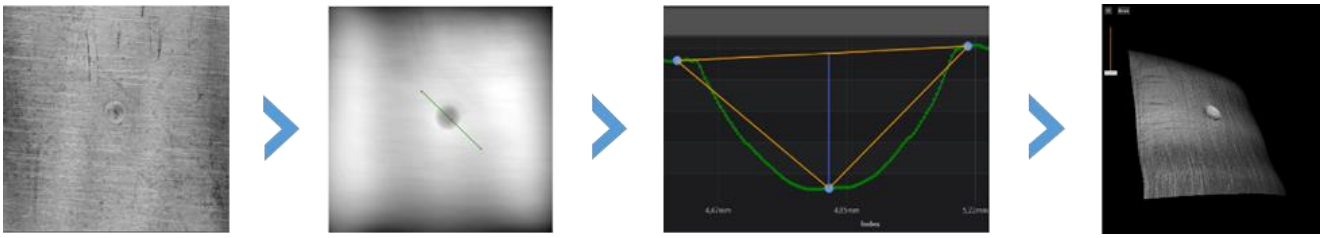
- Weight: 600 g
- Height: 210 mm
- Power supply: PoE (max. 40 m)
- Contact surface: 63 x 70 mm



©Framatome A0390-P-FR-G-EN-202602_HELIOS

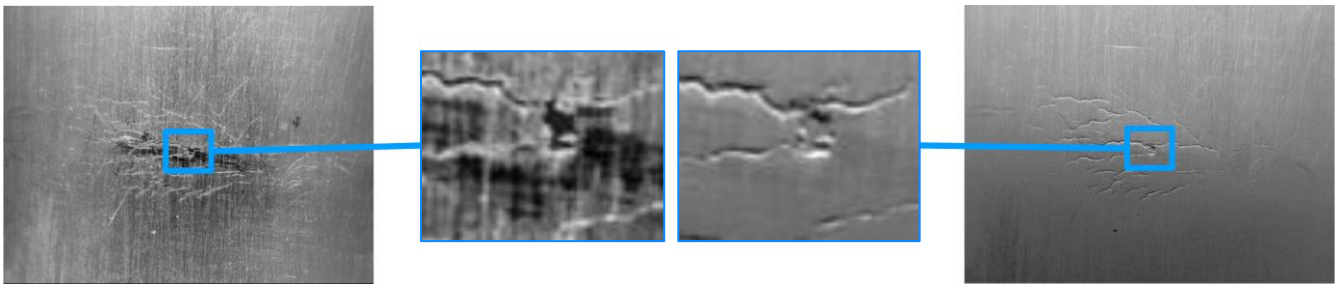
Analysis Tools

- The HELIOS software includes a wide range of tools to better characterize detected defects.
  Each acquisition produces a processed image, highlighting the features of the indication and its environment.
  It is also possible to generate a 3D map of the inspected area and perform height measurements.

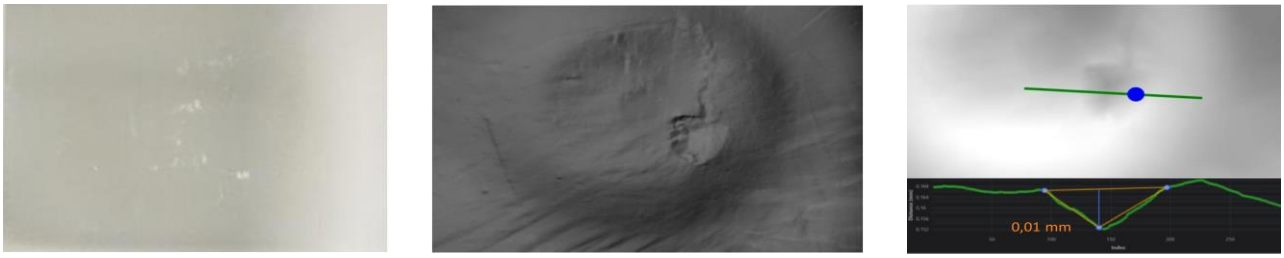


Applications Examples

- Crack detection on smooth surfaces



- Impact detection on a surface



Raw image | 3D modeling | 3D normal map

Discover more applications of this breakthrough in our dedicated HELIOS video:

Intercontrôle

Contact :sales.intercontrole.com
www.intercontrole.com

© [2026] Framatome. All rights reserved. This document is provided for informational purposes only and does not constitute a contractual offer or commitment. Product features, specifications, and availability are subject to change without notice. While every effort has been made to ensure the accuracy of this information, Framatome cannot be held liable for any errors or omissions. For the most current information, please contact Framatome.

framatome Intercontrôle

© Framatome /A0390-P-FR-G-EN-202602_HELIOS