::: INSPECTIS

Inverted Microscope for Welding Analysis

4K ULTRA HD

WELDinspect

All-in-One Ultra HD Digital Inverted Microscope

High-resolution, ergonomic optical inspection system designed for weld bead analysis and measurement. 4K inverted imaging system with motorised zoom, auto-focus, built-in large aperture illumination, and dedicated software for weld bead measurements, analysis, documentation, and reporting.

Highlights:

- Ultra HD, 8.3 megapixel camera with motorised zoom and large aperture, reflection free diffuse illumination.
- High resolution optical system with fast auto-focus and aperture control for outstanding image quality.
- Robust aluminium housing with steel base-plate and stainless-steel top-plate for maximum stability.
- Large aperture, exchangeable tempered Gorilla® Glass optical window with anti-reflective coating.
- Powered by INSPECTIS© and Nikon NIS Elements D with sequential measurement and weld templates.

"Ultra Resolution, Fast and Reliable"

Superior Optical Performance

Dedicated inverted digital microscope with outstanding image quality. Large field of view range, ~ 84 to 3 mm (~3.3" to 0.12"), equivalent to ~2.5x - 70x optical magnification or ~200x on screen magnification.
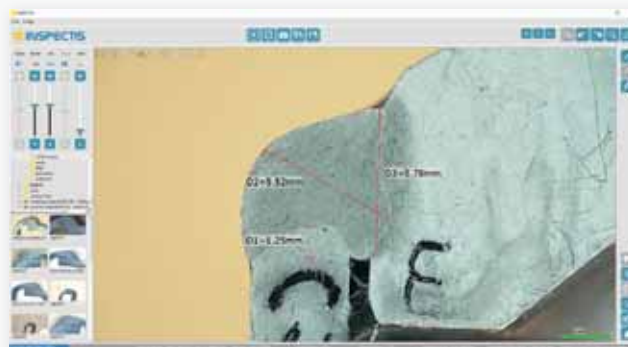
High resolution and high measurement accuracy. Available in UHD (4k) or FHD (2k) configurations with standard 200x or optional 360x on-screen magnification optics.

Large-aperture, Non-reflective Diffuse Illumination

High-resolution Zoom Optics with Auto-Focus

Digital Output

All Aluminium Housing

Durable Stainless Steel Top Plate

Low-friction Glass Window Protector

Exchangeable Tempered & AR-coated Glass Window

Developed for Ease-of-Use

Turn on the WELDinspect, start INSPECTIS© software and place the prepared sample on top of the device. The inverted, pre-calibrated optical system ensures that the sample is imaged brightly and sharply without any effort.

Make simple weld bead geometry measurements, save and export the results using INSPECTIS© Basics or perform advanced analysis and measurements by dedicated NIS-Elements software.
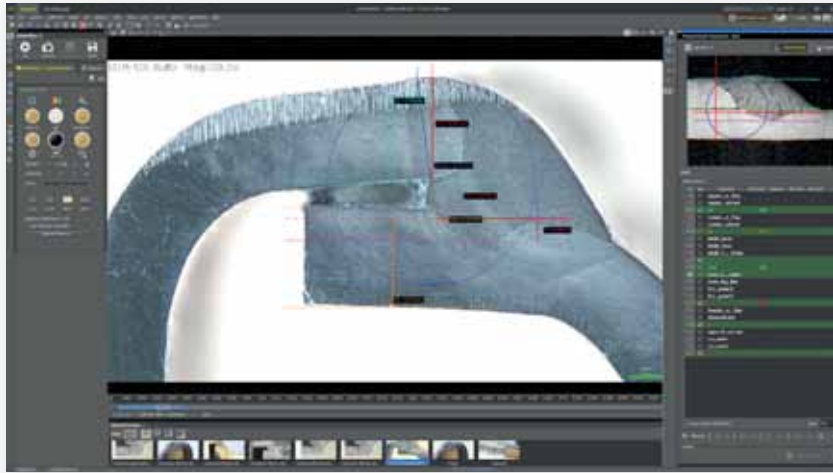
INSPECTIS© Basics software

Dedicated Software

Powerful and customizable Nikon Metrology NIS-Elements software with user-friendly sequential measurements, pre-defined weld templates and step-by-step instructions.

NIS-elements combines powerful image acquisition, analysis, visualization and data sharing tools.
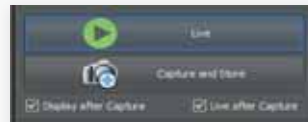

Nikon NIS-Elements D software with sequential measurements

Easy View and Capture

Pre-calibrated optics with automatic zoom tracking ensures quick and accurate image view and capture. Built-in camera controls with quick access zoom buttons makes image adjustment and acquisition simple and intuitive.
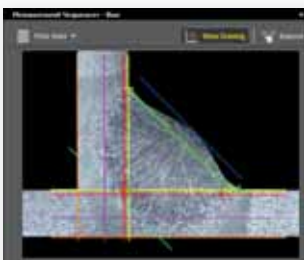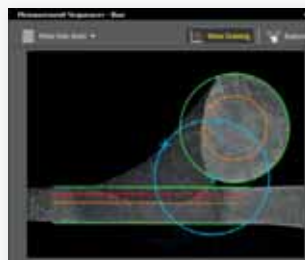

Quick access Pre-calibrated zoom buttons

Live image view and capture pad

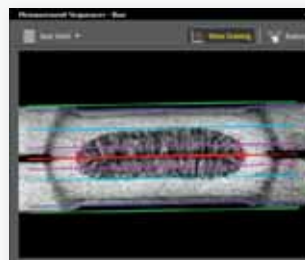# Fast and Accurate Measurements

Use a pre-defined weld template or define your specific measurement sequence according to individual standards and acceptance criteria.
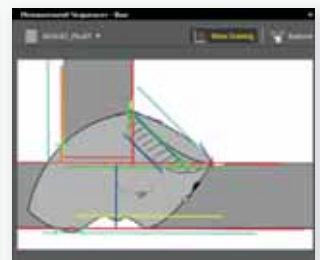

Fillet Weld template
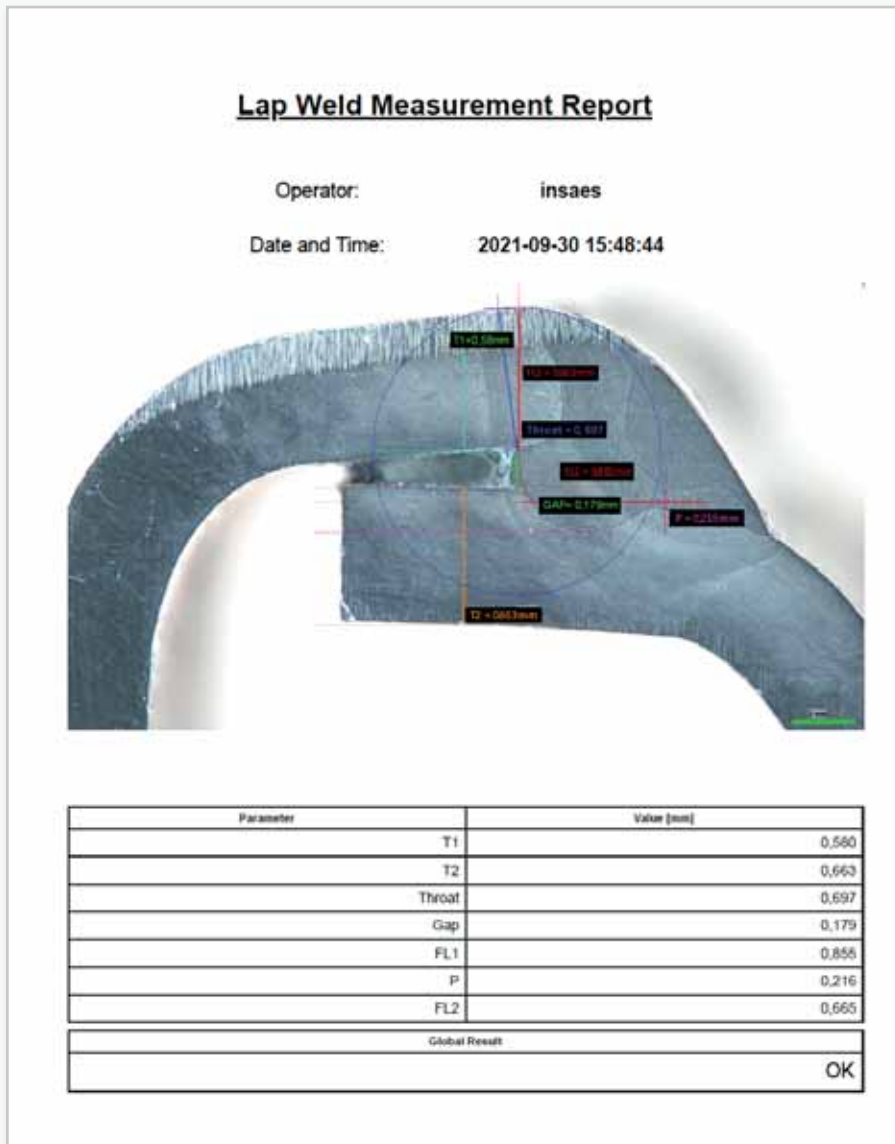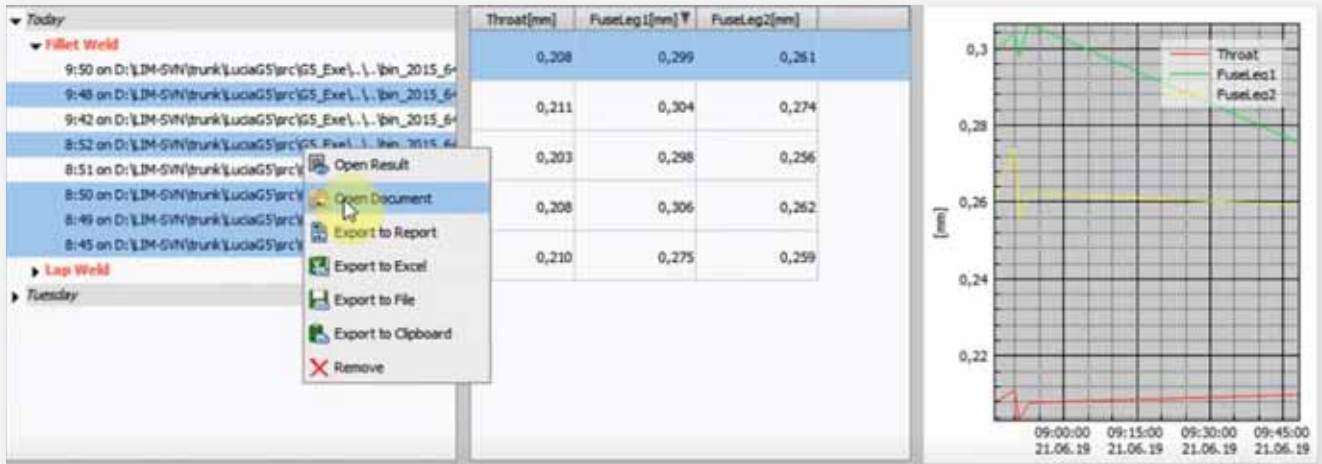
Plate Pole Weld template

Spot Weld template

ISO5187 Fillet Weld template

"Highly Configurable and Customizable"

Data Export and Report

Export finished measurements as a group to a Report, Microsoft Excel, Clipboard or a File format. The report further allows to exoprt all of its pages to a PDF on. The measurement definition itself including the report can be edited according to the specific customers needs.

Lap Weld Measurement Report

Operator: insaes

Date and Time: 2021-09-30 15:48:44

Parameter	Value [mm]
T1	0,580
T2	0,663
Throat	0,697
Gap	0,179
FL1	0,855
P	0,216
FL2	0,665
Global Result	
	OK

Sample lap weld measurement report with standard template

"Speeds up your projects and ensure their full traceability "

System Configurations and Accessories

HD-250, WELDinspect 8.3MP 4K Digital Inverted Microscope System*

Included items:

- DIM-U, Inspectis Digital Inverted Microscope 8.3MP Ultra HD with 7.5-196x On-screen magnification, 26x Zoom, Auto-focus and large aperture LED RingLight
- Inspectis 4K UHD USB3.0 Capture Pro Device
- INSPECTIS© Basics Image Capture software
- Inspectis USB communication Cable
- Inspectis Hardened glass windows (5 pcs kit)
- Inspectis Dust Cover for the instrument
- HDMI Cable and Power Supply
- Annual Service and Support for INSPECTIS© software (one year)

Monitor, keyboard, and NIS Elements D software are illustrative and shall be ordered separately

HD-240, WELDinspect 2.1MP FHD Digital Inverted Microscope System*

Included items:

- DIM-F, Inspectis Digital Inverted Microscope 2.1MP Full HD with 7.2-205x On-screen magnification, 26x Zoom, Auto-focus and large aperture LED RingLight
- Inspectis Full HD HDMI USB3.0 Capture Device
- INSPECTIS© Basics Image Capture software
- Inspectis USB communication Cable
- Inspectis Hardened glass windows (5 pcs kit)
- Inspectis Dust Cover for the instrument
- HDMI Cable and Power Supply
- Annual Service and Support for INSPECTIS© software (one year)

Monitor, keyboard, and NIS Elements D software are illustrative and shall be ordered separately

- Upgrade INSPECTIS© Basics to ProX software including USB dongle (* -BX)
- Upgrade with 35x zoom optics, 360x magnification (* -X)
- Upgrade with Crossed Polariser filter set (* -P)

Optional Accessories

HD-139, Nikon NIS Elements D software with sequential measurement and weld templates
(Nikon Metrology item numbers may be used)

HD-133, INSPECTIS© ProX Image Capture, Metrology, Utility and reporting software

HD-130, 4K UHD PCIe Capture Device

HD-241, Hardened glass windows (5 pcs kit)

HD-245, Low-friction screen protector for glass window (5 pcs kit)

HD-242, Metallic window plate with circular aperture

HD-243, Calibration Micrometer Scale, 50mm, Div 1.0mm

HD-244, Calibration Micrometer Scale, 50mm, Div 1.0mm with accredited certificate (UKAS)

HD-248, Flight Case with foam inlay for digital inverted microscopes

System Specifications

System:

Parameter	Value
Video Output	Ultra HD 2160p/30 fps DIM-U & -UX models / Full HD 1080p/60 fps DIM-F & -FX models
Imager	8.5 Mpixels. 3840(H)x2160(V) 16:9 format. Progressive scan CMOS image sensor DIM-U & -UX 2.3 Mpixels. 1920(H)x1080(V) 16:9 format. Progressive scan CMOS image sensor DIM-F & -FX
Pixel Size (resolution)	1.62 µm x 1.62 µm DIM-U & -UX models / 2.5 µm x 2.5 µm DIM-F & -FX
I/O Ports	HDMI video output, 5P MiniDin Power input, 8P MiniDin PC communication
Camera and Lens controls	Zoom, Iris, Manual/Auto Brightness, Manual/Auto Focus, Contrast, Clarity, White Balance
Illumination	Built-in large-aperture white LED RingLight with diffuser. (Crossed polariser filter set is ordered separately)
Storage / Operating Environment	-20° – +60°C, 20 - 95% RH, non-condensing / -5 ° – +40°C, 20 - 95% RH, non-condensing
Size / Weight	200 (W) x 170 (D)x 235 (H) mm / ~ 5.2 kg.

Optical Data:

Model	Video Output	Zoom Range	Magnification On-screen	Magnification Optical	Field of View H [mm]	Field of View V [mm]	Calibrated Pixel Size [µm]
DIM-U	4K	x1 (min)	7,5 x	2,6 x	81.8	46.0	21,3
DIM-U	4K	x26 (max)	196 x	68 x	3.08	1.73	0,8
DIM-UX	4K	x1 (min)	10,9 x	3,8 x	55,7	31,3	14.5
DIM-UX	4K	x35 (max)	368 x	127 x	1,65	0,93	0.43
DIM-F	Full HD	x1 (min)	7,2 x	2,5 x	84.0	47,3	43,7
DIM-F	Full HD	x26 (max)	205 x	71 x	2,96	1,66	1,54
DIM-FX	Full HD	x1 (min)	11,2 x	3,9 x	54,3	30,5	28,3
DIM-FX	Full HD	x35 (max)	367 x	126.9 x	1,66	0,93	0.86

Ordering information

Item no.	Product name
HD-250	WELDinspect, 8.0MP Ultra HD Digital Inverted Microscope system
HD-240	WELDinspect, 2.1MP Full HD Digital Inverted Microscope system
HD-139	Nikon NIS Elements D software with sequential measurement and weld templates (Nikon Metrology item numbers may be used when ordered via Nikon Metrology sales network)
* -BX	Upgrade INSPECTIS© Basics to ProX software including USB dongle
* -P	Upgrade with Crossed Polariser filter set
* -X	Upgrade with 35x zoom optics, 360x magnification

Nikon Metrology STRATEGIC PARTNER

INSPECTIS
Quality of Inspection