OPTICAL ANALYZER - INVERSE MACROSCOPE

QEYE 200 / QEYE 800

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WELD SEAM ANALYSIS – PRECISE, FAST AND STANDARD-COMPLIANT.

The Qeye 200 and Qeye 800 optical analysis systems by QATM set new benchmarks in visual quality control. As inverse macroscopes, they enable high-resolution image capture and precise measurement of weld seams, solder joints and components – directly on the macro-section.

The Qeye 200 specialises in the analysis of demanding laser welds – ideal for the automotive industry, electronics, and research and development in joining technology. The Qeye 800 excels in series production and materials testing, for example in steel construction and plant engineering, where weld shape, penetration depth and potential defects need to be assessed reliably.

Both systems deliver reproducible results in accordance with international standards such as DIN EN ISO 5817, supported by Intelligent Area Illumination and the powerful Qpix Control2 software – for laboratories that make no compromises on quality or throughput.

Click to view video

Product Video

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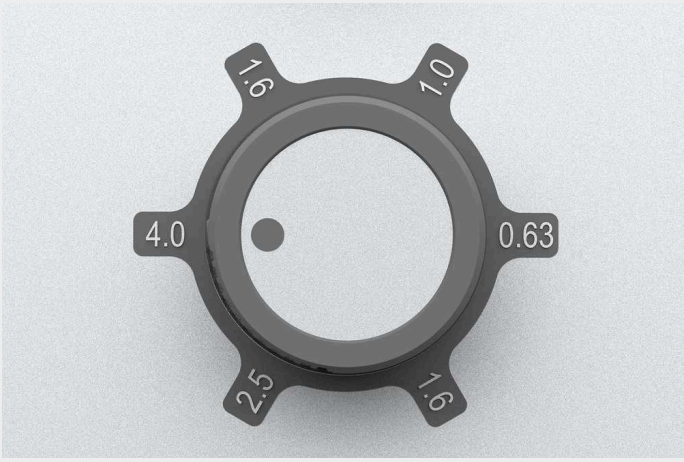
Qeye 200

Compact precision for detailed macrosection analysis

- Quality inspection of laser welds in the automotive industry
- Inspection of delicate welded joints in electronics and precision engineering
- Analysis of narrow deep welds in series production
- Process monitoring and optimisation in manufacturing
- Research and development in the field of laser welding processes



ZOOM SCROLL WHEEL

A handwheel allows for convenient and precise adjustment of the magnification range. Five pre-set steps ensure quick adapta-tion to different observation requirements

ANALYSIS EXAMPLES

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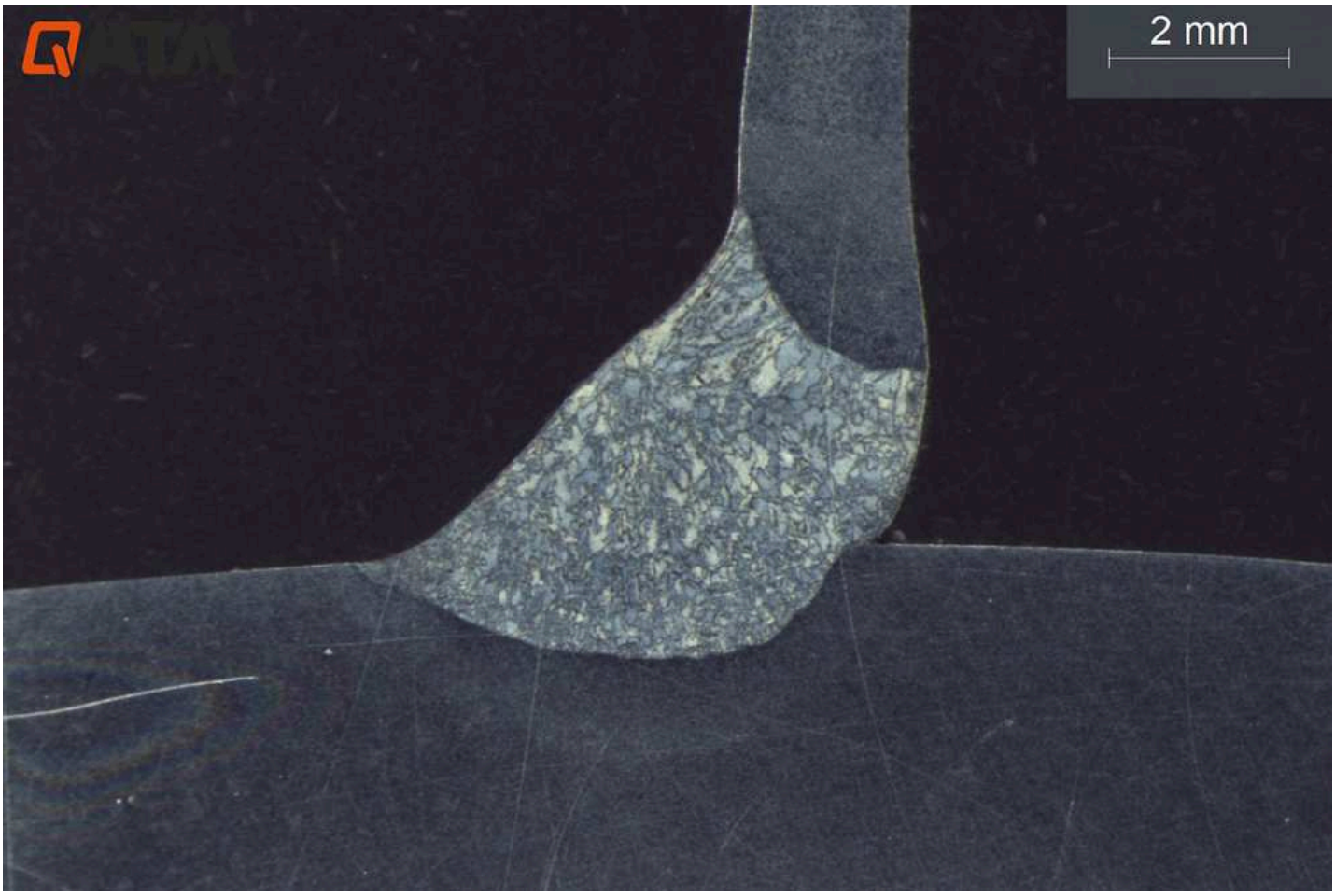

14.9 x 11.2 mm
Field of view

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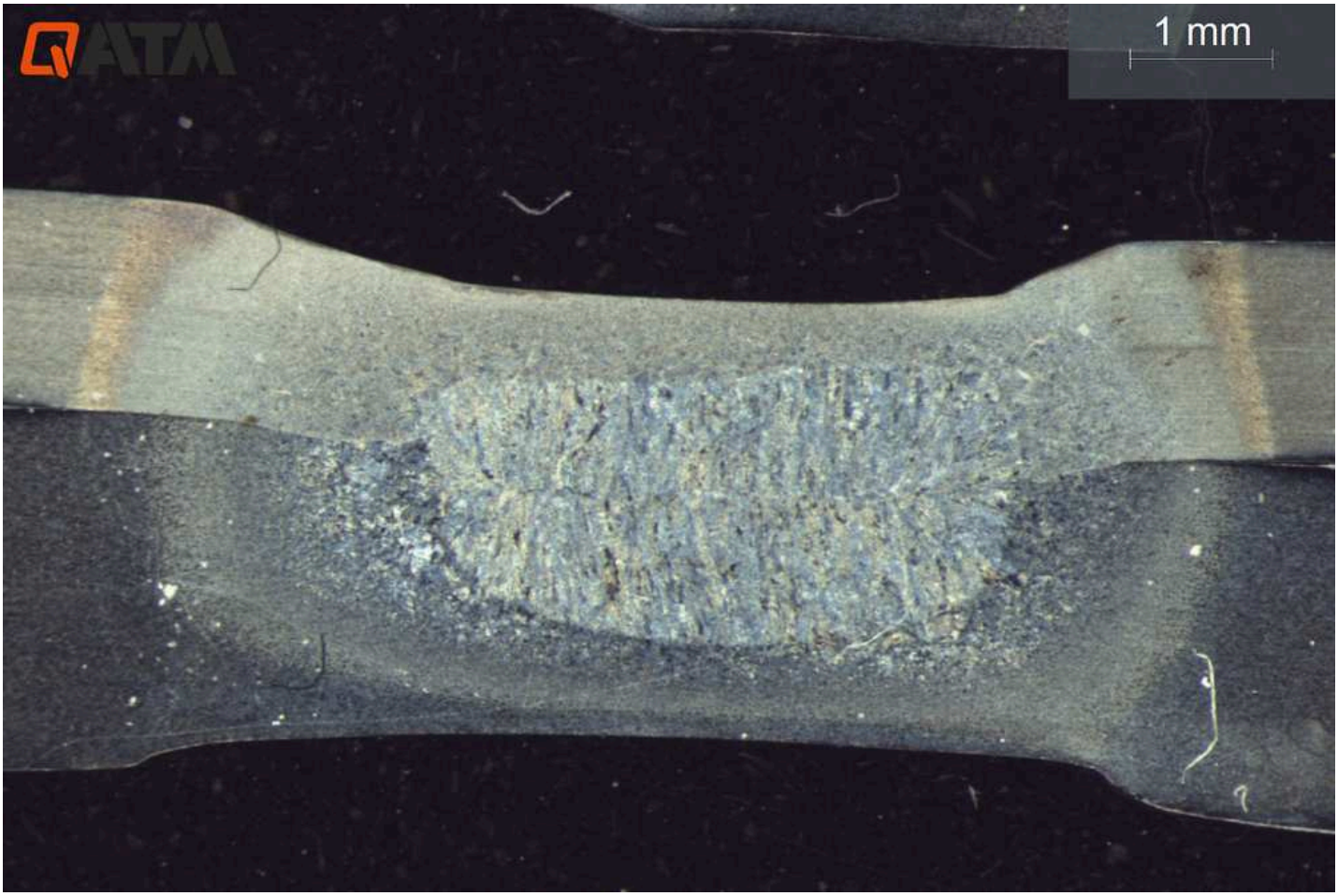

9.3 x 7 mm
Field of view

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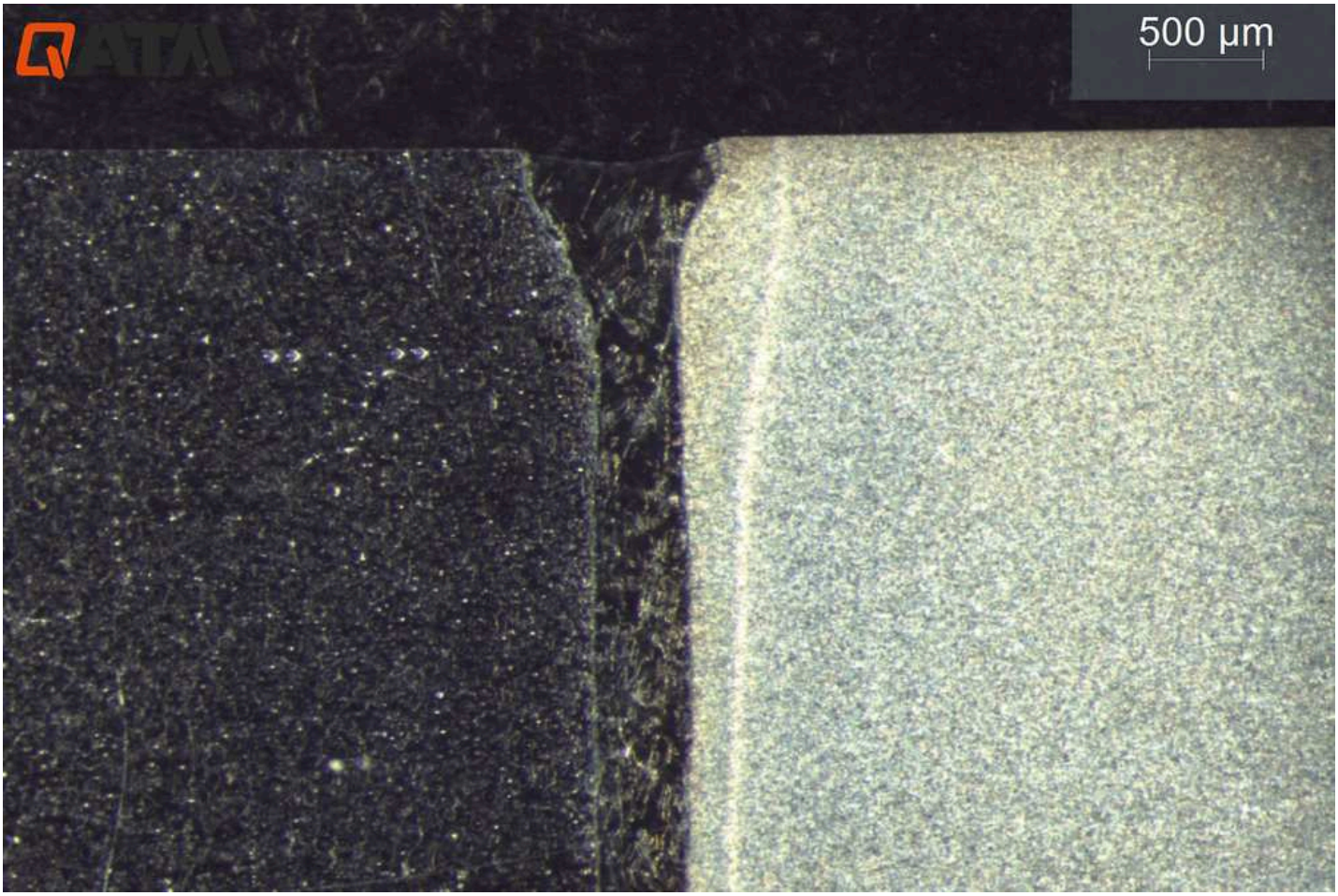

5.9 x 4.5 mm
Field of view

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QEYE 200 | 4K ULTRA HD

INVERSE COAXIAL MACROSCOPE

- 12 megapixel camera system
- Zoom levels: 0.63x – 1x – 1.6x – 2x – 4x
- Field of view ranging from 23.7 x 17.8 mm to 3.7 x 2.8 mm
- Integrated automatic brightness control
- Manual fine-tuning

Qeye 800

Precise macro-section analysis for quality and safety

- Quality control of welds in series production
- Material testing in testing laboratories
- Analysis of weld penetration, weld shape and potential defects
- Applications in the automotive industry, steel construction and plant engineering
- Research and development in the field of joining technology

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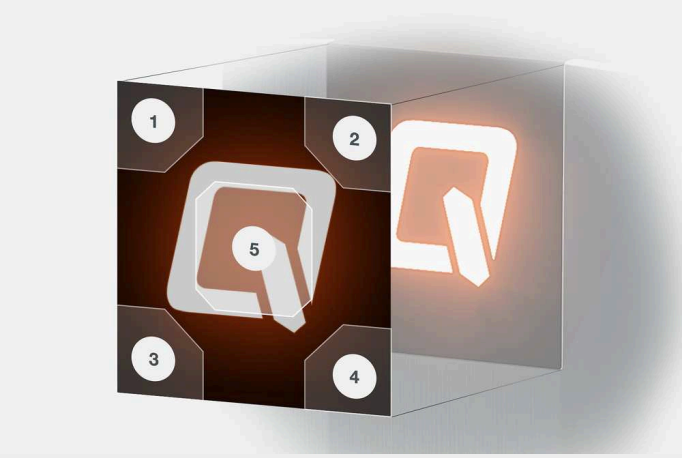

PROGRAMMABLE TOUCH PANEL

The touch panel can be programmed with the following five functions as required: zoom in, zoom out, turn all lights off, turn all lights on, and start analysis.

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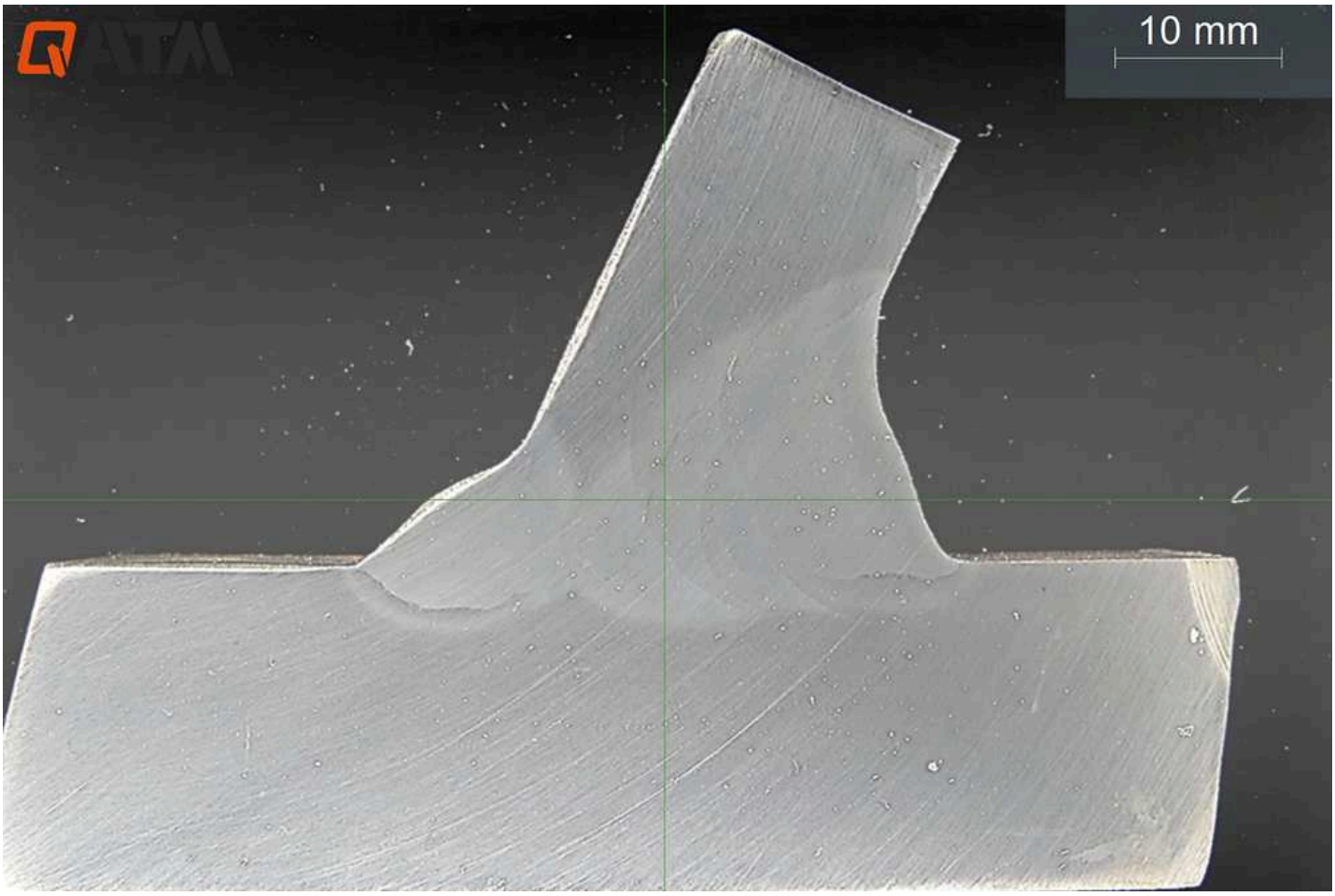

80 x 60 mm
Field of view

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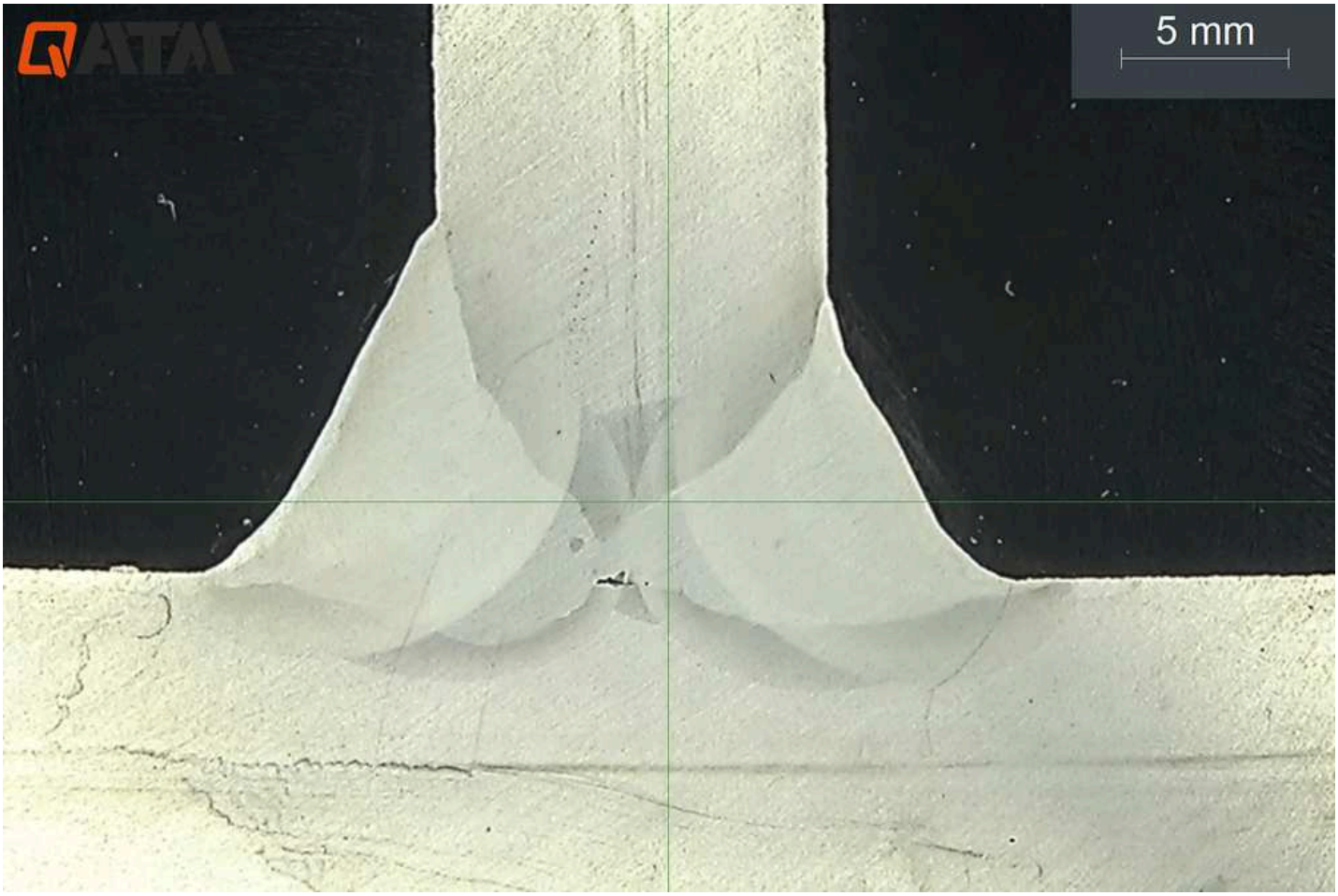

40 x 30 mm
Field of view

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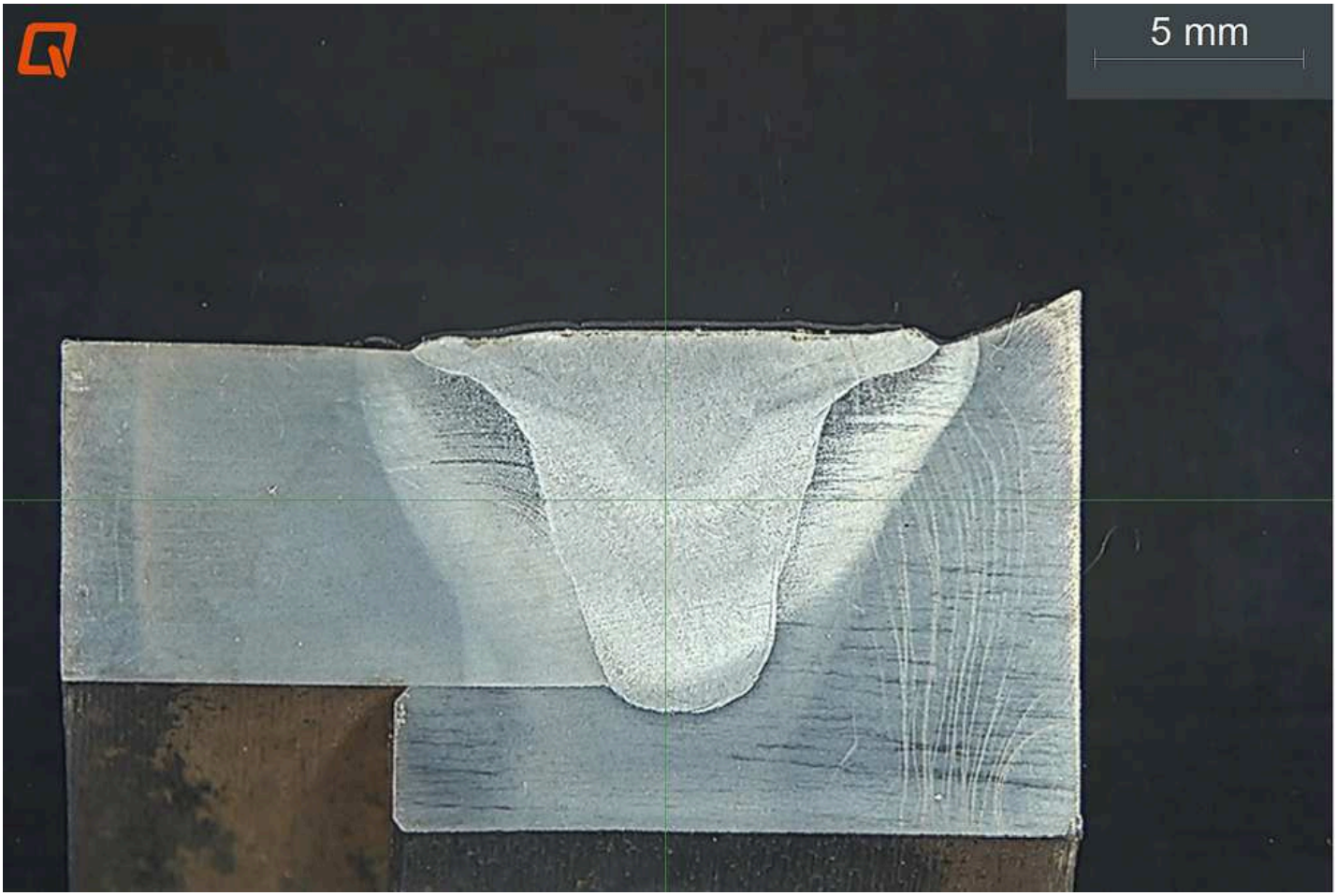

32 x 24 mm
Field of view

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QEYE 800 | 4K ULTRA HD

INVERSE MACROSCOPE

- 8.5 megapixel camera system
- Zoom levels: 1x – 1.5x – 2x – 2.5x – 4x – 5x
- Field of view 80 x 60 mm – 16 x 12 mm
- Integrated automatic focus and brightness control
- Focus plane manually adjustable for measuring non-planar components

AREAS OF APPLICATION

INVERSE MACROSCOPY

Areas of application	Qeye 800	Qeye 200
Macro welds	✓✓✓	✓
Laser welds	✓	✓✓✓
Visual inspection for surface defects	✓✓	✓✓

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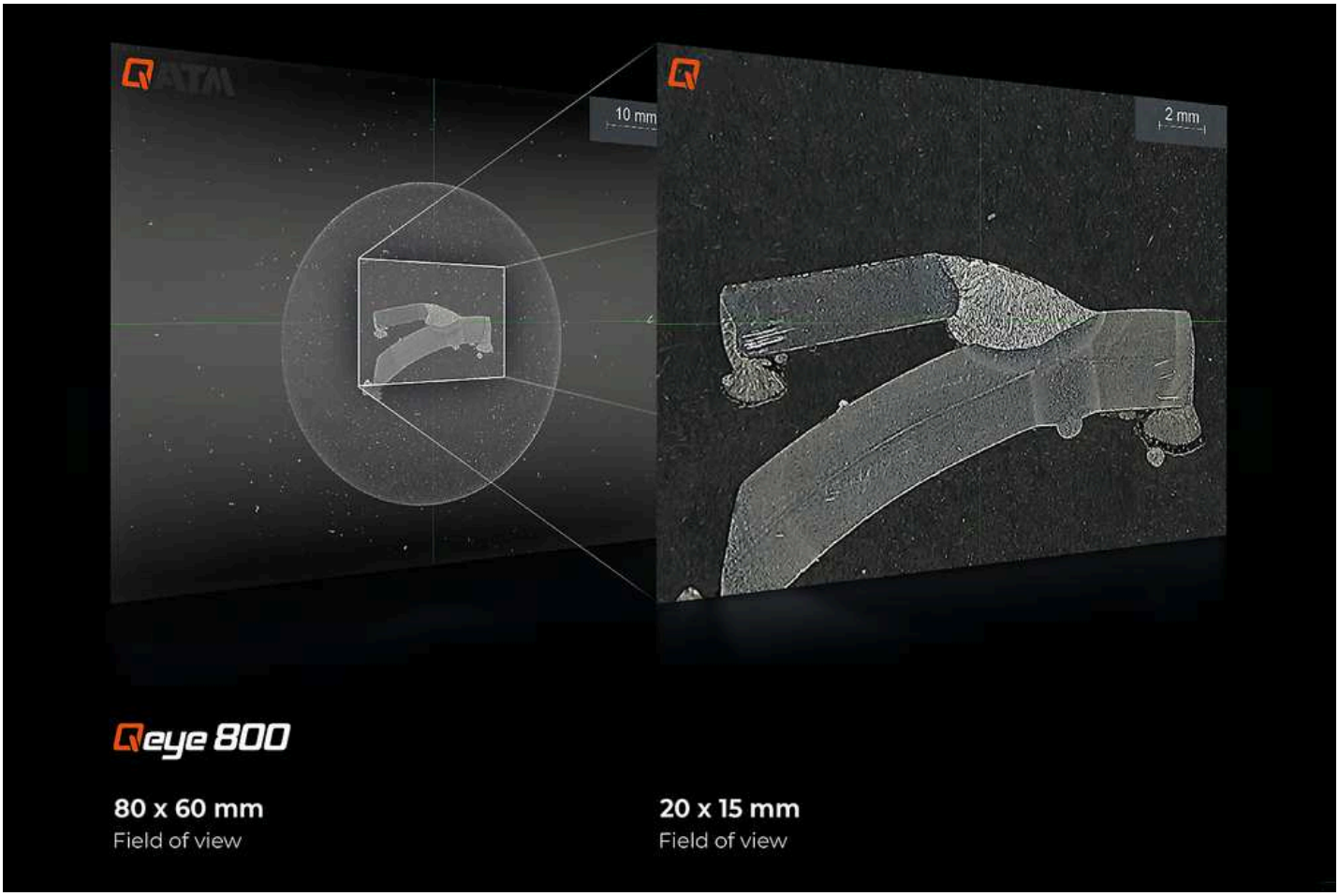
Visual inspection of components/PCB assessment	✔	✔✔✔



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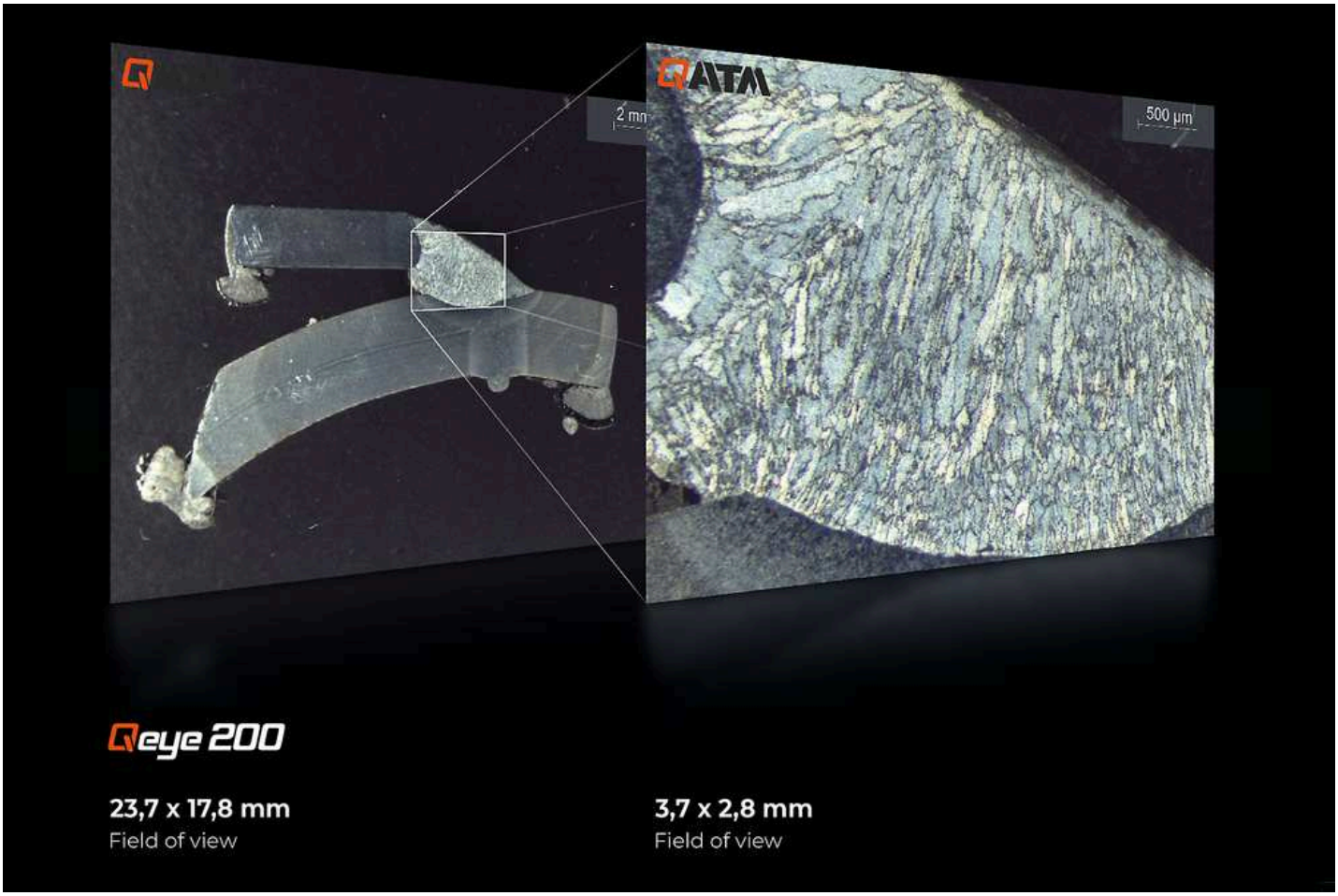

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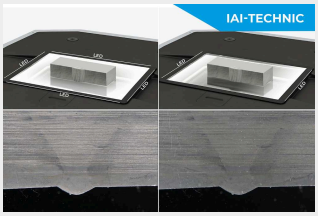
INNOVATIVE OPERATION

CONVINCING BENEFITS



OPTIMIZED SPECIMEN ILLUMINATION

IAI = Intelligent Area Illumination. The Qeye system features innovative LED analysis area illumination. Each of the 4 illumination profiles (right, left, front, rear) can be switched on or off smoothly and individually. This now enables faster and more precise testing, without the disturbance of light influences or grinding reflections.

TOUCH CONTROL PANEL

Qeye offers impressive ease of use via freely programmable capacitive buttons. Once centered, the Q lights up to indicate the current status, and used to trigger imaging. The buttons located in the corners can be configured to control LED illumination, zoom, field of view and brightness. The soft-touch control panel is responsive, even when used with gloves.

QPIX CONTROL2

Operated by tried and trusted Qpix Control2 software. Combination of hardness testing and optical analysis in a familiar user interface using just one PC. Efficient measurement and inspection of weld specimens in seconds, live image, 3D Smartview and a uniform reporting system for hardness testing and macro analysis.

FEATURES AND BENEFITS

Qeye saves time, providing detailed analysis and measurement with supreme accuracy. Robust modern industrial design. Easy replacement of the glass sample carrier. Absolutely dust-tight due to assembly in a clean room.

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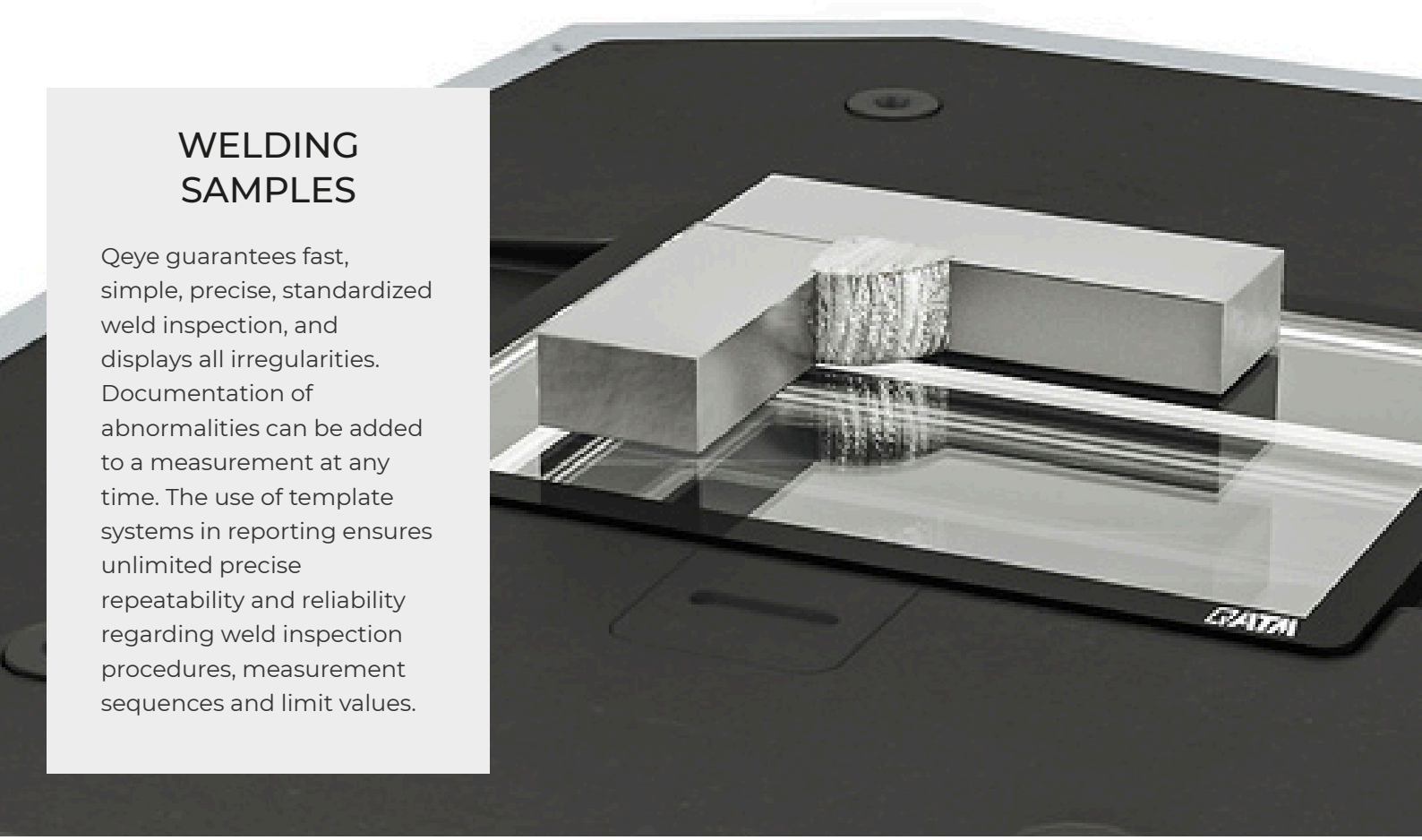


WELDING SAMPLES

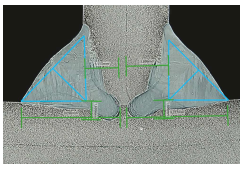
Qeye guarantees fast, simple, precise, standardized weld inspection, and displays all irregularities. Documentation of abnormalities can be added to a measurement at any time. The use of template systems in reporting ensures unlimited precise repeatability and reliability regarding weld inspection procedures, measurement sequences and limit values.

APPLICATIONS

BENEFITS OF PRACTICAL EXPERIENCE

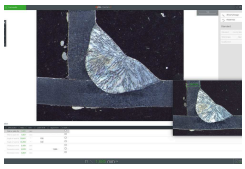
MEASURING TOOLS

Precise measurement tools ensure the fast and easy measurement of



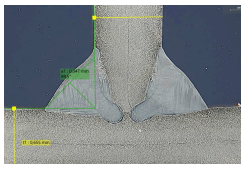
WELDING SEAMS

Fillet weld measurement with full range of intuitively operated measurement



TEMPLATE MODE INCLUDING REFERENCE IMAGE

Customised client templates can be saved along with



SNAPPING MEASUREMENT LINES

Different measurement lines can be linked together

STANDARD-COMPLIANT TEST EQUIPMENT

All necessary measuring tools are, of course, a basic component

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weld specimens. Lengths, angles, circle, polygons for area or perimeter calculations. Zoom and brightness can be calibrated individually.

tools

- Easy adjustment of measuring lines
- Seam quality evaluation
- Recordable notes

a reference image of the survey and accessed at any time. Predefined survey elements and the QATM standard catalogue are also pre-installed in the system

individual-ly and precisely aligned with one another. This allows complex measurement tasks to be carried out in a structured and efficient manner.

of the software for weld inspections according to DIN EN ISO 5817. For example: the A dimension, the depth of burn-in, evaluation limits and a standard-compliant inspection report.

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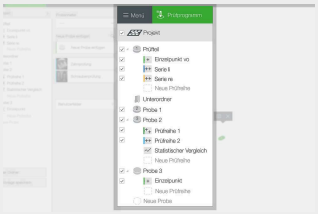
INDUSTRY 4.0

EQUIPPED FOR TODAY AND TOMORROW

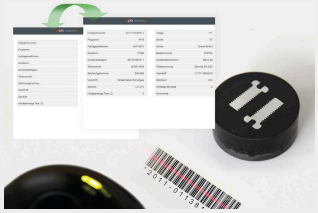


PROFESSIONAL DATA MANAGEMENT

Benefit from clearly-structured batch management, the effective template use of various test projects, well-organised measurement results and all job information in the background. Once created, templates receive all requisite information about test samples, including test methods, designations and user-field information.

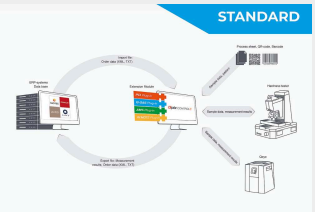
AUTOMATIC EXPORT FUNCTIONS

Many pro-level export functions are built into Qness solutions as standard. Raw data is exported into CSV/TXT and XML, report exports into MS Word, Excel, PowerPoint and PDF – as part-specific issues or as individual exports. All export configurations can also be stored individually for templates.



BARCODE/QR CODE/ DMC READER

Qpix software platforms support the use of barcode and QR code readers, simplifying workflows for inspectors and preventing operator error. Populating header data is simple (standard), and readers can be fully integrated to automatically select templates or retrieve data from higher-level systems (optional).



QCONNECT

Qconnect is the interface in QATM Qpix Control2 software, providing customers with a full portfolio of inter-device connectivity - from serial production, open XML interfaces (bi-directional) and pre-specified plug-in solutions, such as the QDAS Plug-In+, through to customer-specific connectivity solutions implemented completely by QATM. We have a professional solution for every applicational requirement.

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FULLY-INTEGRATED SYSTEM SOLUTION

The new Qeye can also be integrated into a test lab table. Adapted to individual requirements, height-adjustable and optionally available with a hardness tester for every laboratory.

APPLICATIONS

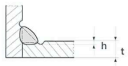
STANDARD ASSESSEMENT OF WELDS

Standard-compliant weld evaluation – structured and fully documented. The Qeye systems support the entire inspection process: from the custom configuration of your own inspection standards directly within the software, through the systematic identification of irregularities in accordance with DIN EN ISO 5817, to a complete, print-ready inspection report with evaluation groups. This ensures that every test meets the highest standards – in a traceable and audit-proof manner.

Customer Standard

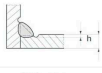
DIN EN ISO 5817 2023-07 DE

DIN EN ISO 5817 2023-07 EN

6520-1	Designation	Remarks	Illustration
5012	Intermittent undercut (short imperfection)	Smooth transition is required. This is not regarded as a systematic imperfection.	
503	Excessive convexity	Smooth transition is required between the cap of the weld and the plate surface and/or the adjacent welding bead(s)	
505	Incorrect weld toe		

	No	Type	Name	Description	Value	Min.
✓	1	Throat thickness	a1	Thickness of weld	5,121 mm	
✓	2	Length	t1	Wall or plate thickness	9,714 mm	
✓	3	Length	t2	Wall or plate thickness	9,615 mm	
✓	4	Length	cucH1	Continuous undercut height	0,250 mm	
✓	5	Length	ecH1	Excessive convexity height	0,998 mm	
✓	6	Length	ecW1	Excessive convexity width	11,291 mm	

DIN EN ISO 5817 2023-07 EN Level: C

	No	6520-1	Designation	Illustration	Thickness	D	C
✓	1.7	5011	Continuous undercut		t1>3mm	✓ucH ≤ 1,000	✓ucH ≤ 0,500
✓	1.10	503	Excessive convexity		t≤0,5mm	✓ecH ≤ 3,823	✓ecH ≤ 2,694

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CREATE CUSTOM STANDARDS

Design standards exactly as you want them – directly within our software. This allows you to implement standards efficiently and adapt them flexibly to your specific requirements.

IDENTIFICATION OF IRREGULARITIES

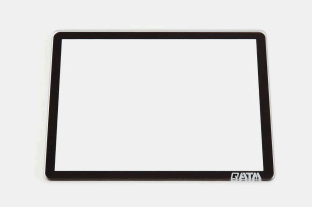
Once the survey has been completed, any irregularities can be assessed in accordance with DIN EN ISO 5817.

STANDARD TEST REPORT

To ensure comprehensive documentation, all results can be included in a complete test report, including the evaluation groups

ACCESSORIES & TOOLS

PRECISE, CLEAN AND UNCOMPROMISING



SAMPLE CARRIER

Small but extremely important tools for analytical purposes are sample holders. Available in sets of five, made from aluminium silicate glass (Gorilla Glass).

QEYE COVER

The Qeye shielding hood absorbs extraneous light and reflections are completely eliminated. Included as standard with every Qeye.

OBJECT MICROMETER

A 50 mm object micrometer with a resolution of 0.1 mm guarantees easy and accurate control of optical magnification. Optionally available with a UKAS certificate.

QATM CLEANING MATERIALS

High-quality microfiber cloths, cleaning cloths and special glass cleaners for a perfect shine. We recommend the use of specially-developed QATM cleaning material only.

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TECHNICAL DATA

Qeye 200

Field of view	23,7 x 17,8 mm - 3,7 x 2,8 mm (0,933 x 0,7“ - 0,146 x 0,11“)
Zoom levels	0,63x - 1x - 1,6x - 2,5x - 4x
Camera	4K Ultra HD - 12 Megapixel - USB 3.0
Illumination	IAI - LED unit (Intelligent Area Illumination)
Software	Qpix Control2
Machine operation	external PC system (Windows 11 64-bit)
Dimensions glass sample carrierr (L x W x H)	95 x 75 x 2 mm (3.7 x 3.0 x 0.08“)
Max. sample weight	5 kg (11 lbs)
Interface	1 x USB 3.0
Power connection	100 - 240 V ~1/N/PE, 50 - 60 Hz
Power Consumption	Idle: ~35 W Operation: ~60W Max. ~100 W
Dimensions	220 x 220 x 260/365* mm (8.7 x 8.7 x 10.2/14.3“) *inkl. Qeye cover

Qeye 800

Field of view	80 x 60 mm - 16 x 12 mm (3.1 x 2.4“ - 0,63 x 0,47“)
Zoom levels	1x - 1.5x - 2x - 2.5x - 4x - 5x
Camera	4K Ultra HD - 8.5 megapixel - USB 3.0
Illumination	IAI - LED unit (Intelligent Area Illumination)
Software	Qpix Control2
Machine operation	external PC system (Windows 11 64-bit)
Dimensions glass sample carrierr (L x W x H)	95 x 75 x 2 mm (3.7 x 3.0 x 0.08“)
Max. sample weight	5 kg (11 lbs)
Interface	1 x USB 3.0
Power connection	100 - 240 V ~1/N/PE, 50 - 60 Hz
Power Consumption	Idle: ~35 W Operation: ~60W Max. ~100 W
Dimensions	220 x 220 x 260/365* mm (8.7 x 8.7 x 10.2/14.3“) *inkl. Qeye cover
Space requirement	300 x 300 mm (11.8 x 11.8“)

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Space requirement	300 x 300 mm (11.8 x 11.8“)
Weight	16 kg (35.3 lbs)
Ambient temperature	18 - 28 °C (64 - 82 °F)
Humidity maximum	maximum 70 % - non-condensing

Weight	16 kg (35.3 lbs)
Ambient temperature	18 - 28 °C (64 - 82 °F)
Humidity maximum	maximum 70 % - non-condensing

www.qatm.com/qeye-200

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ORDER DATA

QB0130201	Qeye 200

PC SYSTEM FOR MACHINE CONTROL	
QA0057500	High-end PC system Full HD - Qpix Control2
QA0057600	2nd 24" Full HD UltraSharp monitor
QA0057501	High-end PC system Ultra HD (4K) - Qpix Control2
QA0057601	2nd 27" Ultra HD (4K) monitor

SOFTWARE MODULES	
QSO013600	Qpix - Barcode / QR code scanner software module
QA0089600	Barcode/QR-Code 1D/2D Scanner Kit - Bluetooth
QA0071700	El. Measurement caliper - Qpix Control2 compatible
QA0108200	NFC Login Package QpixControl2
QSO213600	RFID Tag MIFARE, key chain gray 10 pcs.

QPIX CONNECT - DATA CONNECTION	
QSO031600	Qpix Control2 - PCI plug-in
QSO013500	Qpix Control2 - AMS plug-in
QSO030400	Qpix Control2 - Q-DAS plug-in

ACCESSORIES	
QA0095500	Glass sample carrier set of 5 - Qeye 800
QSO194400	Dust protection cap - Qeye 800
QA0099600	Cleaning kit Qeye
QSO197900	Glass scale 50mm, verification - Qeye 800
A7500500	Qeye table 1760x770x800 with stone plate
A7500501	Qeye table 1760x1000x800 with stone plate
A7500502	Qeye table 1760x770x800
A7500503	Qeye table 1760x1000x800

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QA0048500	UPS - Uninterruptible Power Supply 900VA
QSO192600	Accessory box - Optical analyzer
QVV0030	Documentation

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