Digital Microscope U50s

Latest 4K60 Technology!

4K
60 FPS

4K Optical Precision Built for Zero-Defect Compliance

INSPECTIS

Quality of Inspection

4K Video at 60fps

MORE NATURAL IMAGES

The U50s captures vivid 4K video at 60 frames per second with low latency.

The high refresh rate maintains image coherence and stability, reduces motion blur, and delivers smooth, dynamic images, especially of fast-moving stents under inspection.

4K 60 FPS

Breakthrough Technology

Exceptional image clarity and ergonomic benefits. Optimised for quality control, analysis, measurements and documentation of stents.

” Exceptional Image Clarity and Ergonomic Benefits”

Superior Optics

RESOLUTION POWER

First-class F1.6–F14 optics. Advanced, high-resolution motorised zoom lens with a 7-blade aperture and fast auto-focus.

The U50s's high-resolution lens design works in harmony with the large-aperture 5700K, 90+ CRI extra soft ring light to maintain image clarity, resolving power, true colours and depth of field, whether zooming in for high magnification or zooming out for a wide field of view.

Superior Optical Performance

Engineered for high-throughput medtech environments. Achieve 1µm or finer defect resolution across complex stent geometries at full production speed.

" High-Resolution Micro-Optics with Extended Depth of Field"

Optical Data

FOR ACCURACY & PRECISION

The system's standard optics produces ~ 6.7x - 314x magnification (with +5 lens on 28" monitor) maintaining high resolution power. If further magnification is needed, a wide range of diopter Macro Lenses can be added to magnify up to 1740x equal to 0.35x0.2mm field of view.

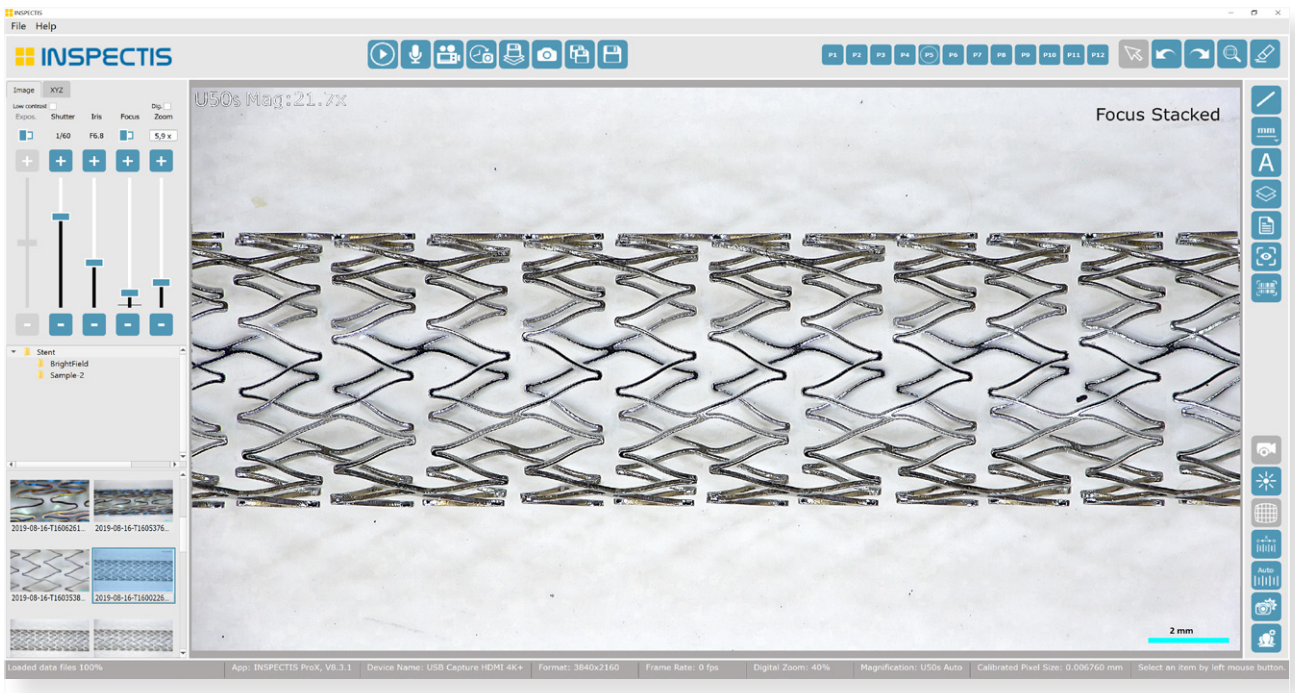
Lens	Zoom Factor	Magnification On-screen	H-FoV [mm]	WD range [mm]	Calibrated Pixel size [µm]	Resolution Power [lp/mm]
Standard	x1 zoom	2,9 x	211	> 225-185	55	5
Standard	x2 zoom	5,6 x	108	> 225-185	28,2	12
Standard	x5 zoom	13,3 x	45,8	> 225-185	11,9	25
Standard	x10 zoom	26,6 x	22,9	> 225-185	6	50
Standard	x20 zoom	50,7 x	12,0	> 225-185	3,13	90
Standard	x30 zoom	70,8 x	8,6	225-185	2,24	114
Standard	x40 zoom	96,5 x	6,3	225-185	1,64	114
Standard	x50 zoom	148 x	4,1	225-185	1,07	114
+1	1x	3,7 x	166	> 181- 135	43,28	8
+1	50x	184 x	3,3	181- 135	0,86	120
+2	1x	4,3 x	140	> 154-120	36,5	12
+2	50x	220 x	2,8	154-120	0,72	140
+3	2x	9,7 x	62,4	> 120-95	16,25	13
+3	50x	252 x	2,4	120-95	0,63	160
+5	1x	6,7 x	91,4	> 95-85	23.8	10
+5	50x	314 x	1,9	95-85	0,50	200
+10	2x	18,1 x	33,5	> 58-48	8,73	22
+10	50x	471 x	1,3	58-48	0,34	250
+28	15x	250 x	2,43	> 18-16.5	0,63	250
+28	50x	1008 x	0,60	18-16.5	0,16	450
+56	15x	429 x	1,42	> 18-17.5	0,37	450
+56	50x	1740 x	0,35	18-17.5	0,09	550

Calibration and Verification

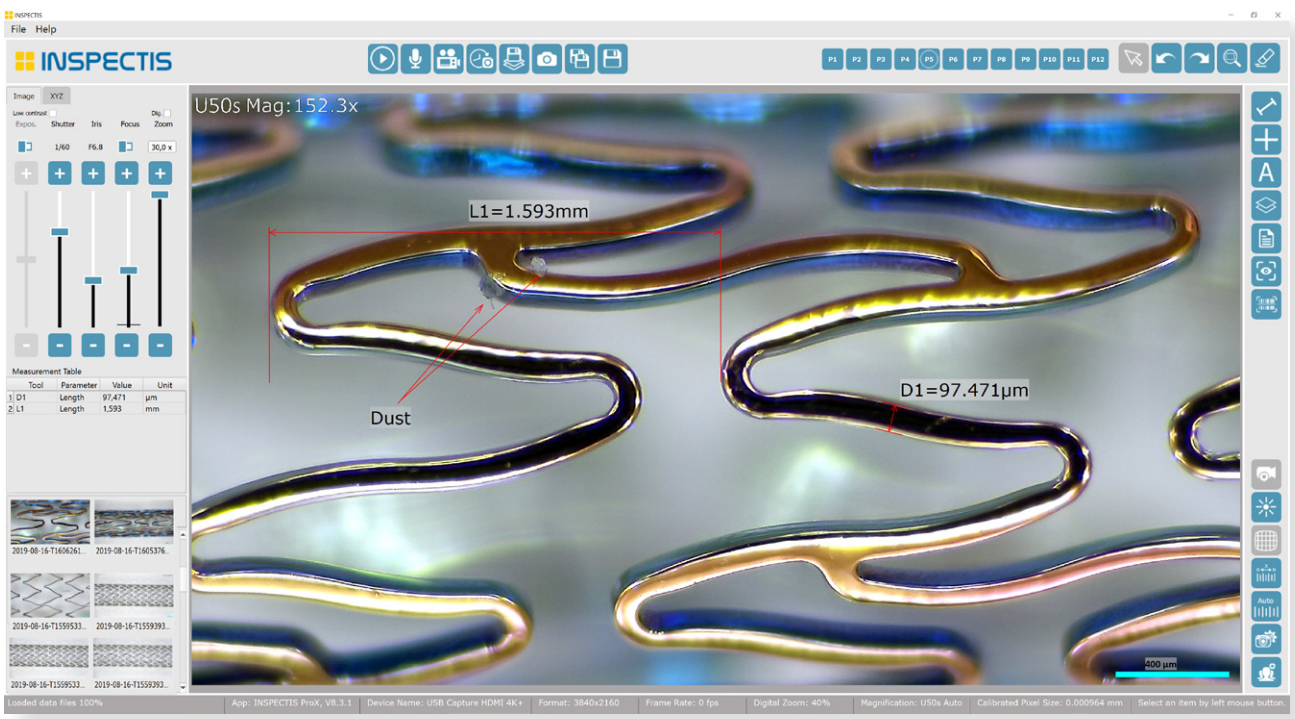
Calibration of zoom factors with tracking ensures accurate metrology results in INSPECTIS© software.
A calibration verification routine with report generation guarantees measurement accuracy over time.

" Reliable Measurements, Guaranteed Over Time "

Image Quality



Stent, x5.9 Zoom with +5 lens, Focus Stacked.



Coated Stent, x30 Zoom with +5 lens

Advanced Controls

FOR EASE OF USE

Direct access to basic camera and lens attributes like zoom, aperture size, and colour balance via on board buttons. Full control of all camera and lens attributes by external consoles or by INSPECTIS© software.

On-board Controls

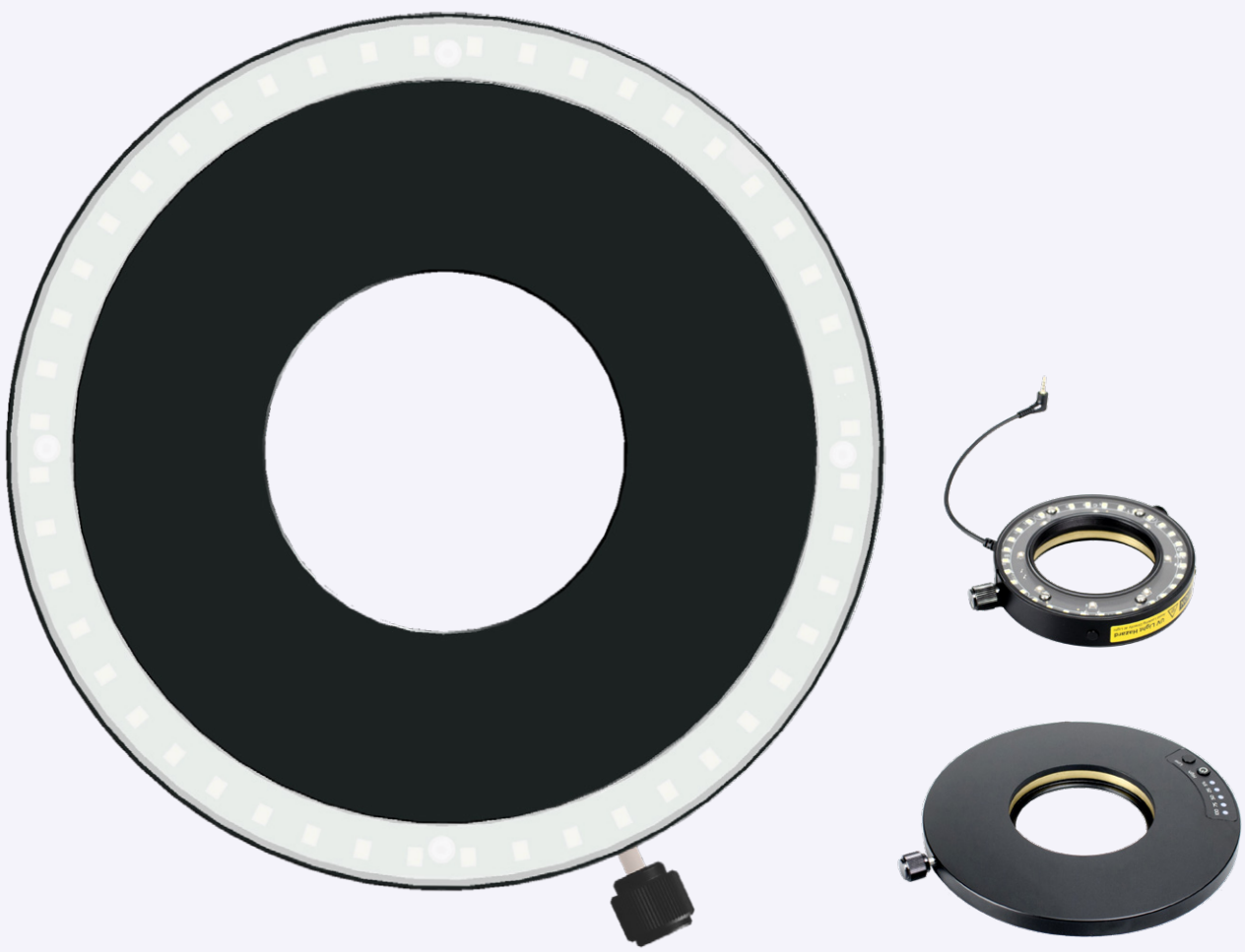
Memory Setup and Quick Recall for Workflow Efficiency

Up to 16 camera and lens configurations can be programmed via software, or 7 stored in the memory of the knob-driven control console, enabling operators to recall them quickly.

" Winner of the 2025 New Product Introduction (NPI) Award "

ILLUMINATION with PRECISION

Proper lighting determines whether defects are visible, measurable, and classifiable. The U50s is equipped with a large-aperture extra-soft ring light (48 LED lamps) that ensures brightness, uniformity, a high illumination angle, and an optimum colour temperature (CCT) with a high colour rendering index (CRI).



Dual Output Segment Ring Light with UV Capability

Optional ring light containing 32 white and 8 high-power 367nm UV LEDs, arranged along two rings. Features an integrated on/off control with electronic dimmer and dedicated switches for UV and 4-segment white light control.

” Configurable, Endlessly Versatile! ”

Cable Management

TIDY & TROUBLE FREE

The camera features a single compound cable design that ensures reliability, and supports safety, cleaning, and contamination control, while keeping the workspace clear for productive work.

Powered by the Camera

The exchangeable ring light is powered directly by the camera, eliminating the need for additional cable routing and an external power supply.

" Engineered Cable Management for Reliable Performance"

AUDIT-READY FRAMEWORK

Engineered to integrate seamlessly into validated medical manufacturing lines, the inspection system provides the data integrity, traceability, system repeatability, and metrology verification required to satisfy FDA and ISO auditing standards.

SCAB Svensk Certifiering

Certificate

ISSUED TO

Inspectis AB

Kista, Sweden

Svensk Certifiering Norden AB certifies that the quality management system for medical devices has been reviewed and complies with:

ISO 13485:2016

Details of scope and the range of the certificate are defined in the certification decision.

The management system covers:

Manufacture, sell and repair digital video microscopes and software for Capillaroscopy.

Michael Persaud, CEO

SVENSK CERTIFIERING NORDEN AB

Certificate number:	13485-0980
Date of origin:	30 Apr 2020
Issue date:	25 Mar 2026
Expiry date:	29 Apr 2029

Svensk Certifiering Norden AB, Företagsallén 10, SE-184 40 Åkersberga, Sweden +46 (8) 540 676 20 info@svenskcertifiering.se
Validity of the certificate contact: www.svenskcertifiering.se

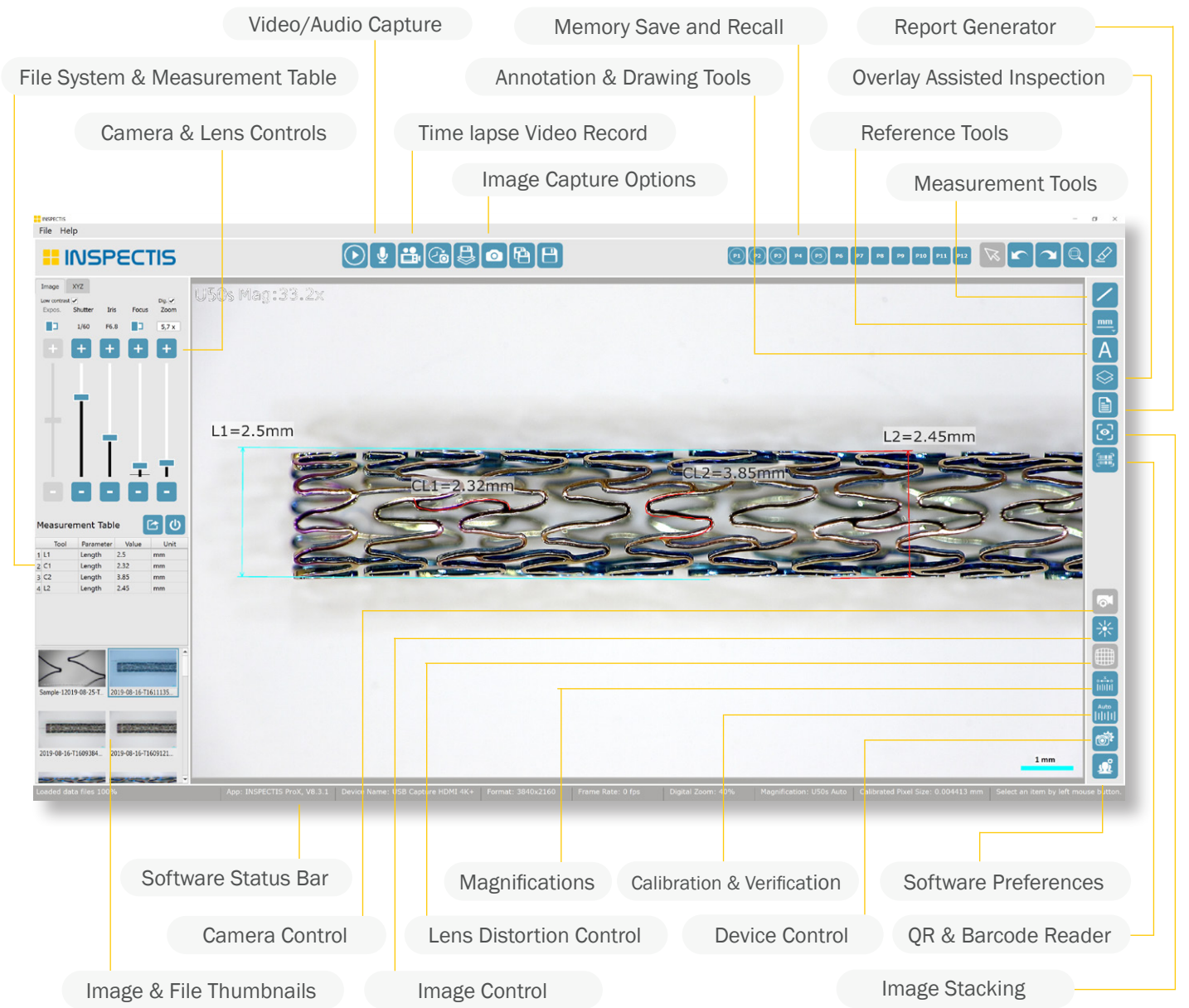
High Quality & Reliable

Industrial build quality inside and out. Designed and manufactured according to ISO 9001 standards.

Software

POWERED BY INSPECTIS© ProX

Powerful yet easy-to-use software with streamlined workflow and pre-calibrated optics for live video streaming, camera control, capture, analysis, measurement and reporting.



Intuitive & Efficient

Icon based graphical user interface and powerful video processing engine. Advanced tools for memory setups, zoom tracking, geometrical measurements, image overlays, comparisons, depth of focus extender, counting, DXF editor, digital graticule, drawings, annotations and reporting.

INSPECTIS© ProX

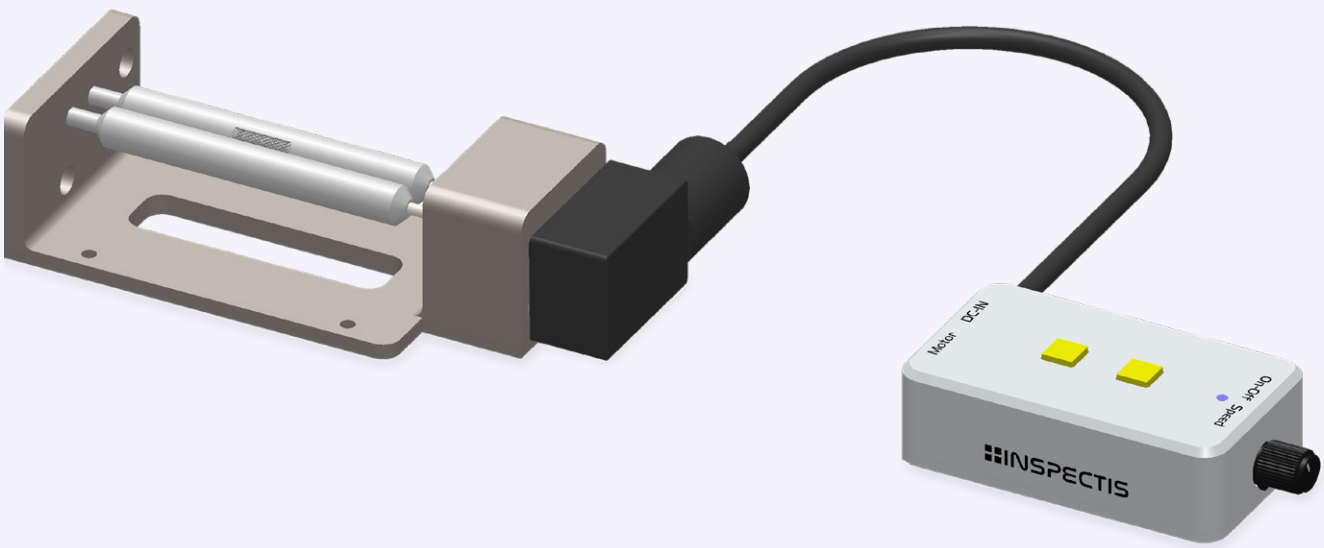
Feature	ProX
Live image view, freeze and capture	•
Record video and audio	•
Digital zoom of still images and live video	•
Flip image vertically/horizontally, b/w conversion and enhanced contrast	•
Save multiple frames to one picture	•
Add comments linked to images	•
Print images or send files by email	•
File folder system management	•
Multilanguage interface	•
Direct camera and lens parameters controls	•
16 Memory presets and recall for camera and lens configurations	•
Link Digital Graticules to presets	•
Define and calibrate custom magnifications	•
Automatic and manual calibration and tracking of the entire zoom range	•
Automatic and manual verification of calibration with report	•
Import and calibrate external images	•
Automatic lens distortion correction in live image	•
Object counting	•
Distance measurement	•
Area, length, perimeter circle, angle, curve length and polygon measurements	•
Select, move, adjust, erase, undo/redo measurements and annotations	•
Overlay grids, rectangle and crosshair on live image	•
Annotation and objects counts on Image	•
Drawing tools like rectangle, ellipse, curve, line and arrow	•
Password for supervisor lock software preferences and camera settings	•
Calibration tracking error compensation	•
Generate reports and certificates with images and measurements	•
Automatic Barcode, QR and Datamatrix scanner and Excel report	•
Auto snap to measurement lines, ends, corners and centres	•
Export performed measurements (TXT and EXCEL)	•
Overlay 2-dimensional scales or PNG pictures on live image (digital graticule)	•
Compare live to still or still to still images	•
Automatic and manual focus stacking (depth of field extender)	•
Time lapse video capture and recording	•
Time interval Overlay Assisted Inspection (OAI)	•
Automatic alignment of overlaid image to live image	•
Automatic rescaling of overlaid image through lens zoom	•
DXF editor with optical edge detection. Create, import, edit, export or overlay	•

” Cut the Time Spent on Inspection and Measurement ”

Motorised Mandrel

PRECISION and CONTROL

The inspection system can be equipped with a motorised mandrel featuring a remote control and interchangeable cylindrical rods, available in white or black colour, to support and rotate stents in both directions.



Full Length, One Pass

Controlled rotation plus 81 mm of pricise lateral travel from the integrated slider plate on the stand, enables fast, seamless inspection of the stent's entire length.

" Rotation and Translation at Your Fingertips! "

Configuration

DEDICATED SYSTEM PACKAGE

4K60 Digital Microscope System Package for Stent Inspection, supplied with an optional Manual Knob-Drive or Motorised Mandrel featuring direction and speed control.

Included items:

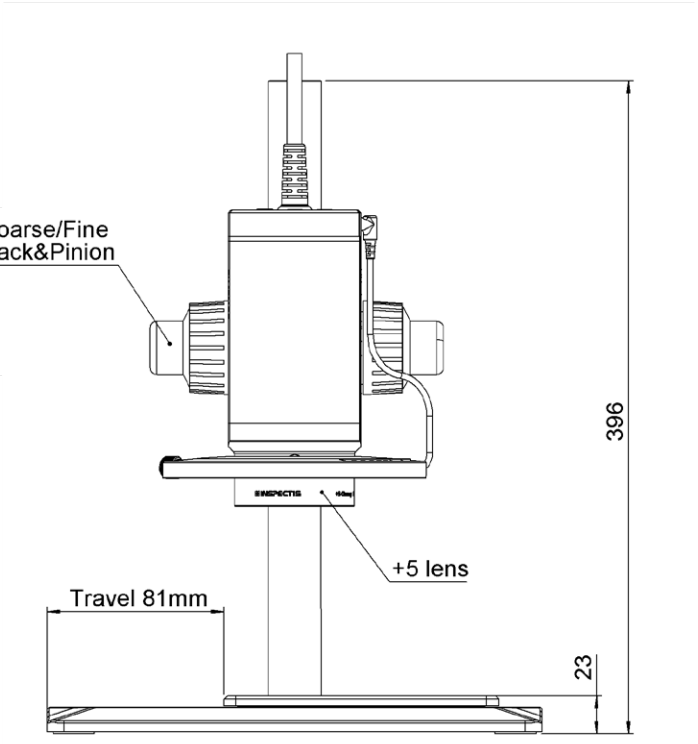
- U50s, Ultra HD 2160p 60fps modular digital microscope, 50x Zoom
- Stable stand 90 degrees view angle with coarse/fine z-adjustment and precision X-stroke slider stage
- +5 Dioptre macro Lens
- White large aperture ring light with high-haze diffuser and electronic dimmer
- INSPECTIS© ProX software with 4K USB3.2 Gen 2x2 capture
- 28” 4K 60fps Monitor

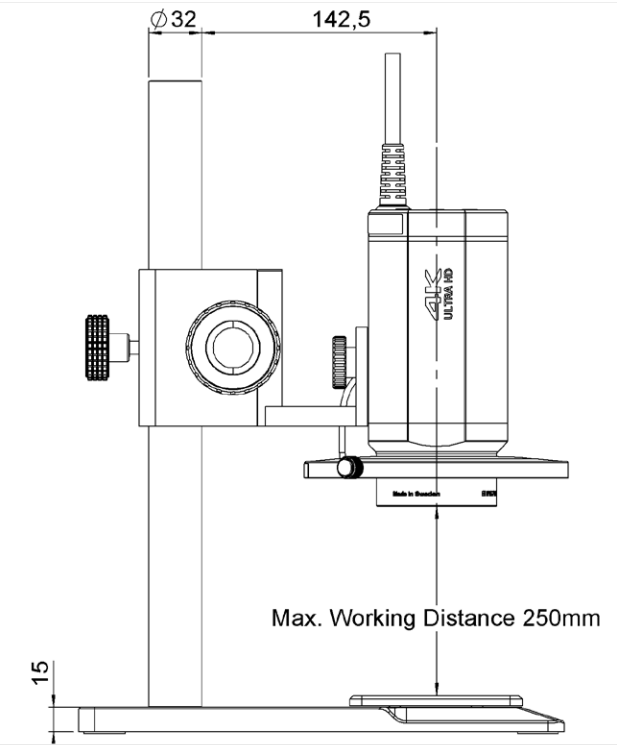
Configurable

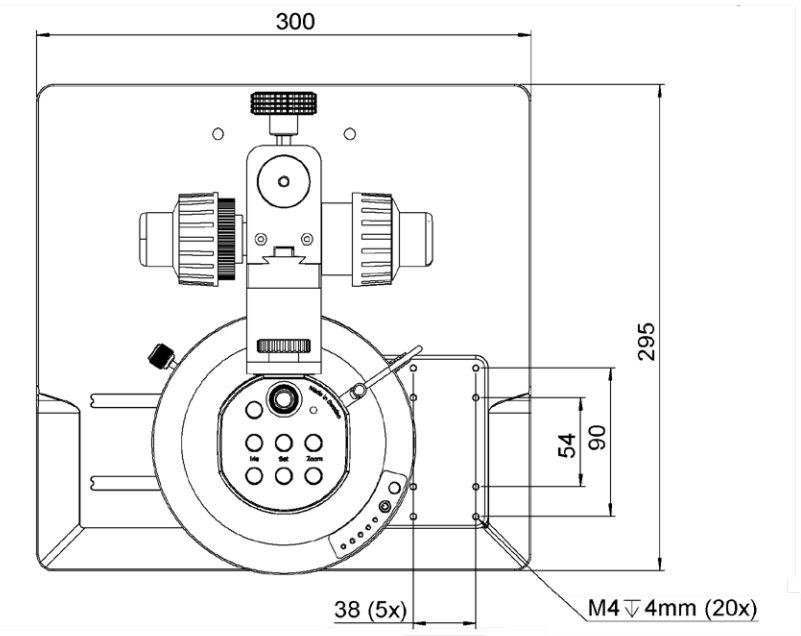
Thanks to its modular design and wide range of optional accessories, the system can be adapted to both production and R&D environments.

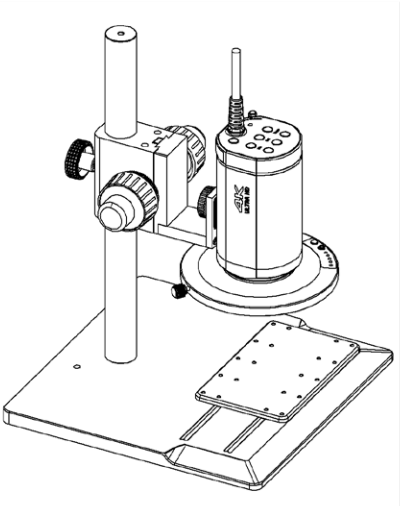
” The Last Microscope You’ll Ever Need! ”

Mechanical Dimensions









Dimensions in mm

Specifications

Digital Camera System:

Parameter	Value
Video Output	4K 2160p, 60 frames per second, 8.3Mp
Optical System	25:1 motorised zoom with auto-focus and iris control F1.6 - F14
Digital Zoom	2x digital zoom with 3D noise reduction
Macro Lens	+5, f=200mm, M67x0.76mm
I/O Ports	HDMI2.0 video output, 5P MiniDin power input, 8P MiniDin for communication
On-board Controls	Zoom, Auto-brightness level, Manual/Auto Focus, White Balance
Camera and Lens Controls	Zoom, Iris, Manual/Auto Brightness, Manual/Auto Focus, Shutter Speed, White Balance, Colour Gain, Sharpness, Clarity, Contrast, Flip V/H, Black&White, NIR Mode, Low-Contrast Mode, Memory Save/Recall (16 pcs).
Illumination	White RingLight, Large Aperture with Diffuser and Electronic Dimmer, 5700K, 90+ CRI
Stand	Stable stand, 90^0 view Angle with Coarse/Fine Focusing and Precision X-stroke Slider
X-slider Travel	81 mm
Mandrel	Manual with Knob-drive or Motorised with Speed and Direction Control. 85 mm rods length.
Software	INSPECTIS© ProX with USB3.2 Gen2x2, Win11/10
Storage / Operating Environment	-20° – +60°C, 20 - 95% RH, non-condensing / -5 ° – +40°C, 20 - 95% RH, non-condensing
Size, Weight	300 (W) x 295 (D) x 396 (H) mm. 9 kg.

Ordering Numbers for Systems Package and Optional Products:

Item name	Order No.
Inspectis 4K60 Optical Inspection System Lite for Stent	HD-116-KIT-S-Lite
Inspectis 4K60 Optical Inspection System ProX for Stent	HD-116-KIT-S-ProX
Upgrade with ESD-protected Housing	* -E
Upgrade with LP	* -L
Upgrade with Hermetic Sealed Housing	* -S
Inspectis Dual White & UV RingLight with Dimmer and Segment Control	HD-124-WUV
Mandrel with Knob-Drive	HD-301
Mandrel, Motorised with remove Control Console	HD-302
Inspectis Polarisation filter set for Segment Control Ring Light, 67mm	HD-024-P-U
Inspectis Remote Camera Control with Advanced Adjustments	HD-020
Inspectis Remote Camera Control with Knob Drive, Programmable with 7 memories	HD-200-MEM
Inspectis COM-splitter with Switch-box for Double-control of Digital Microscope	HD-020-Y
Inspectis Remote Camera Control PC software including Communication Cable	HD-201
Inspectis Macro lens +10 diopter, 67mm	HD-123
Inspectis High Magnification lens +28 diopter, 67mm	HD-142
Inspectis High Magnification lens +56 diopter, 67mm	HD-143
USB Foot switch for INSPECTIS© Software, 3-pedals	HD-052

Performance

The Inspectis visual inspection systems feature cutting edge UHD digital imaging technology equipped with high resolution motorised zoom lens, pre-calibrated optics and swift precise auto-focus. We design, manufacture, and deliver carefully specified optical systems with outstanding performance, made from durable, high-quality materials to ensure they are fit for purpose and have a long life in real working environments.

Quality

Our quality management system is certified to **ISO 13485:2016** and **ISO 9001:2015**, and designed to ensure that all products are fit for their intended purpose, meet the required specifications for quality and safety and comply with regulatory requirements and marketing authorisation.

Support

We are committed to being your strategic partner for digital optical inspection systems and be recognized as the technology leader that provides the highest standards of pre and after sales support. From the moment you engage with us and order an Inspectis product, you can be confident of receiving the best possible assistance including product training, software upgrades and help in the unlikely event of something going wrong.

Reseller

INSPECTIS

Quality of Inspection

Inspectis Optical Systems
Stockholm, Sweden

www.inspect-is.com
info@inspect-is.com

V.1. 2026 Specifications are subject to change without prior notice!