

LEXT™ OLS5100 Customized Solutions

Streamline Large, Heavy Sample Inspection and Enhance Accuracy



Customized Microscopes

Large and stable microscope frame to enable measurement of large and bulky samples with the laser precision of the LEXT series.

See pages 4 to 9



Customized Workstations

Accessories that enhance the stability of the microscope to bring out the best of the LEXT OLS5100 system.

See pages 10–15



Customized Sample Holders

Tailormade fixtures enable rapid and straightforward sample navigation, a crucial requirement for routine visual inspection of samples such as wafers, PCBs, or irregular samples.

See pages 16 to 19



Customized Software

Software that automates routine visual inspection processes is a powerful method to increase efficiency and ensure reproducible measurements.

See pages 20 to 21

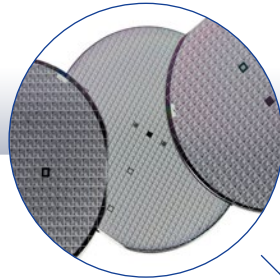
3D Measuring Laser Microscope Family

LEXT™ OLS5100 Systems

Choose the right configuration of the OLS5100 microscope based on your application requirements. The LEXT series consists of an array of microscopes that empower users to carry out varied applications. Standard LEXT systems can be used for the observation of small and delicate samples, while customized (CUS) LEXT systems—with their large and stable frames—are suited for the measurement of large and bulky samples.



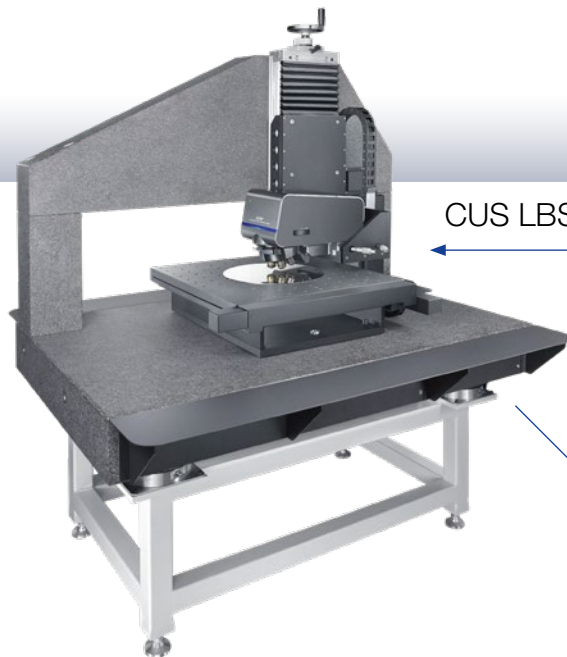
SAF



EAF



CUS TM



CUS LBS



3D Measuring Laser Microscope Family

Designed for Your Inspection Needs



SAF

Perfect choice for laboratory applications

Key Applications

- Failure analysis
- R&D
- QA

Stability

+++

Stage

100 × 100 mm

Sample height

100 mm

Stroke

100 mm

Footprint (L/B/H)

358 × 276 × 506 mm

Weight

31 kg (68 lb)

Transmitted light

No

Article code

N5677000



EAF

Larger clearance to observe taller samples and to handle more sophisticated sample mounts

Key Applications

- R&D
- QA
- Advanced process control

Stability

++

Stage

100 × 100 mm

Sample height

210 mm

Stroke

100 mm

Footprint (L/B/H)

480 × 349 × 608 mm

Weight

43 kg (94.8 lb)

Transmitted light

No

Article code

N5676600



CUS TM

Preferred solution for 8–12-inch wafers and PCBs

Key Applications

- Critical dimensions for power electronics
- Bond pad roughness

Stability

++

Stage

< 300 × 300 mm

Sample height

100 mm

Stroke

100 mm

Footprint (L/B/H)

680 × 410 × 780 mm

Weight

~80 kg (176.4 lb)

Transmitted light

On request

Article code

E0432451



CUS LBS

Enhanced environmental control and nearly no size limitation

Key Applications

- Surface metrology down to the nm level
- QA of large samples

Stability

+++

Stage

< 400 × 400 mm

Sample height

150 mm

Stroke

150 mm

Footprint (L/B/H)

1180 × 1310 × 1690 mm

Weight

~1000 kg (2204.6 lb)

Transmitted light

No

Article code

E0438555

Customized Microscopes

Large, Stable Stands for Large Sample Inspection



Customized LEXT™ OLS5100 Microscopes and Stands

Superior Stability for Large Sample Inspection

Discover our range of high-stability, customized microscopes and stands to benefit from all of the advanced features of the LEXT OLS5100, while achieving optimal measurement precision for inspection of large samples.

OLS5100 CUS TM Laser Scanning Microscope

Nanometer-Scale Measurement Precision for Large Samples

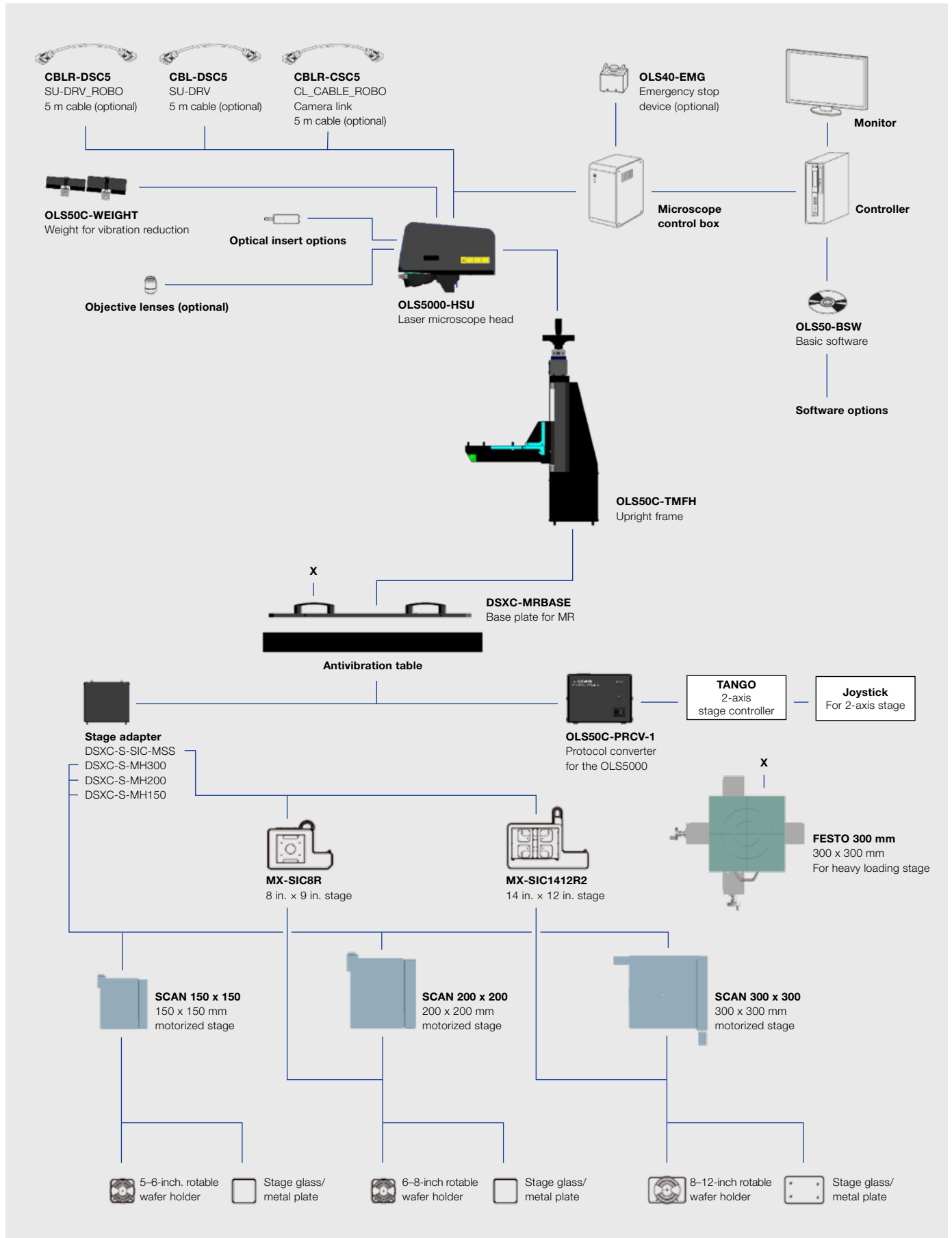
For nm scale inspection of large samples—including PCBs, silicon wafers, and heavy automotive parts—the LEXT OLS5100 CUS TM has multiple innovative design features:



- Stages with a high load capacity of 30 kg (66 lb)
- Manual Z adjustment for easy measurement of samples with different heights
- Motorized stages of 150 × 150 mm, 200 × 200 mm, or 300 × 300 mm for large and heavy samples
- The preferred solution for inspection of 8–12-inch wafers and PCBs

Ready for Nanometer-Scale Observation of Large Samples— OLS5000-TM

System Diagram



Customized TM 200 mm Stage Configurations

	Article code	Material name	Type
Required Items Available as kit E0432466 CUS-OLS5100-TM-200mm-KIT	N9049918	OLS50C-TMBASE CUS LEXT base	Frame
	N9049917	OLS50C-TMFH CUS LEXT stand	Frame
	N9049919	OLS50C-WEIGHT CUS LEXT weight	Frame
	N9049662	OLS50C-PRCV-1	Protocol converter
	N9049318	DSXC-S-MH200 adapter	200 mm stage
	E0438244	M-MS-MX61-4-2 motorized stage	200 mm stage
	E0438472	M-CU-DT-2 control unit desktop	Control unit
	E0433870	M-CBL200AP-2	Motor cable
	E0438481	M-HID-JS-2	Joystick
	N6378100	OLS5100-HSU	Scanning unit
	N2662700	U-D6REMC	Revolver
	N5686700	MPLFLN10x LEXT	Objective
	N5677800	OLS50-GRAB	
	E9701471	HW-WORKSTATION-HP-Z2G4-OLS5000	PC
	N6378400	OLS51-BSW: Basic software	SW
	N5678400	OLS50-S-MSP: Motorized stage package	SW
	35425	UYCP	Power cord
	E9701653	HW-TFT-24-HP-Z24N-G3	Monitor
Recommended accessories for microscope stability	E0438566	AC-AVT-I4 antiv. table, large	Active antivibration unit
	E0433874	AC-ST-i4	Stable stand
Wafer Holders	E0437210	CUS-POR-VAC-INS	Porous vacuum chuck insert
	E0433651 + E0433896	CUS-VAC-Wafer-Holder + M-AD-WHPR-246x246-asap. Plate	Stage insert + Adapter plate for 200 stage
Workstation with environmental control box	E0437206	CUS-TM-NP BOX	Environmental control box
	E0437208	CUS-LEXT-TM-T-NP Box	Stable stand with drill pattern for environmental control box; active antivibration unit E0438566 needs to be ordered separately
	E0437209	CUS-LEXT-MT	Monitor table

Customized TM 300 mm Stage Configurations

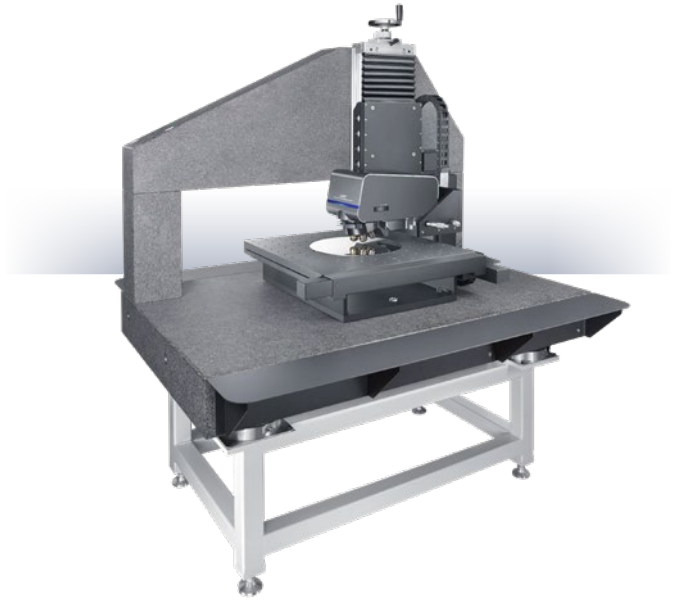
	Article code	Material name	Type	
Required Items Available as kit E0432467 CUS-OLS5100-TM-300mm-KIT	N9049918	OLS50C-TMBASE CUS LEXT base	Frame	
	N9049917	OLS50C-TMFH CUS LEXT stand	Frame	
	N9049919	OLS50C-WEIGHT CUS LEXT weight	Frame	
	N9049662	OLS50C-PRCV-1	Protocol converter	
	N9049317	DSXC-S-MH300 adapter	300 mm stage	
	E0433706	M-MS-CUS-300x300-4 motorized stage	300 mm stage	
	E0438472	M-CU-DT-2 control unit desktop	Control unit	
	E0433870	M-CBL200AP-2	Motor cable	
	E0438481	M-HID-JS-2	Joystick	
	N6378100	OLS5100-HSU	Scanning unit	
	N2662700	U-D6REMC	Revolver	
	N5686700	MPLFLN10x LEXT	Objective	
	N5677800	OLS50-GRAB		
	E9701471	HW-WORKSTATION-HP-Z2G4-OLS5000	PC	
	N6378400	OLS51-BSW: Basic software	SW	
	N5678400	OLS50-S-MSP: Motorized stage package	SW	
	35425	UYCP	Power cord	
	E9701653	HW-TFT-24-HP-Z24N-G3	Monitor	
	Recommended accessories for microscope stability	E0438566	AC-AVT-I4 antiv. table, large	Active antivibration unit
		E0433874	AC-ST-i4	Stable stand
Vacuum Wafer Holders for 4, 6 ,8, and 12 in. Wafers	E0433651	CUS-VAC-Wafer-Holder	Stage insert	
Workstation with environmental control box	E0437206	CUS-TM-NP BOX	Environmental control box	
	E0437208	CUS-LEXT-TM-T-NP Box	Stable stand with drill pattern for environmental control box; active antivibration unit E0438566 needs to be ordered separately	
	E0437209	CUS-LEXT-MT	Monitor table	

OLS5100 Large Bridge Stand

Maximizing Measurement Accuracy

The large bridge stand is designed to enable optimal precision and accuracy of measurements obtained with the LEXT™ OLS5100 system:

- Motorized stages of 300 × 300 mm or 400 × 400 mm for large and bulky samples up to 20 kg (44 lb)
- Weighs over 1000 kg (2204.6 lb) and uses the vibration-dampening properties of granite to boost stability
- A manual Z drive of 150 mm enables easy inspection of large and tall samples



Article code	Material name	Type
E0438555	CUS-OLS5000-Bridge-Stand-KIT 400 × 400 mm motorized table	Bridge stand
E0432367	OLS5000-HSU Integrator KIT	Scanning unit kit
N9049662	OLS50C-PRCV-1	Protocol converter
N4221200	CBLR-DSC5	Cable
N4220900	CBL-DSC5	Cable
N4221100	CBLR-CSC5	Cable

Kit Items

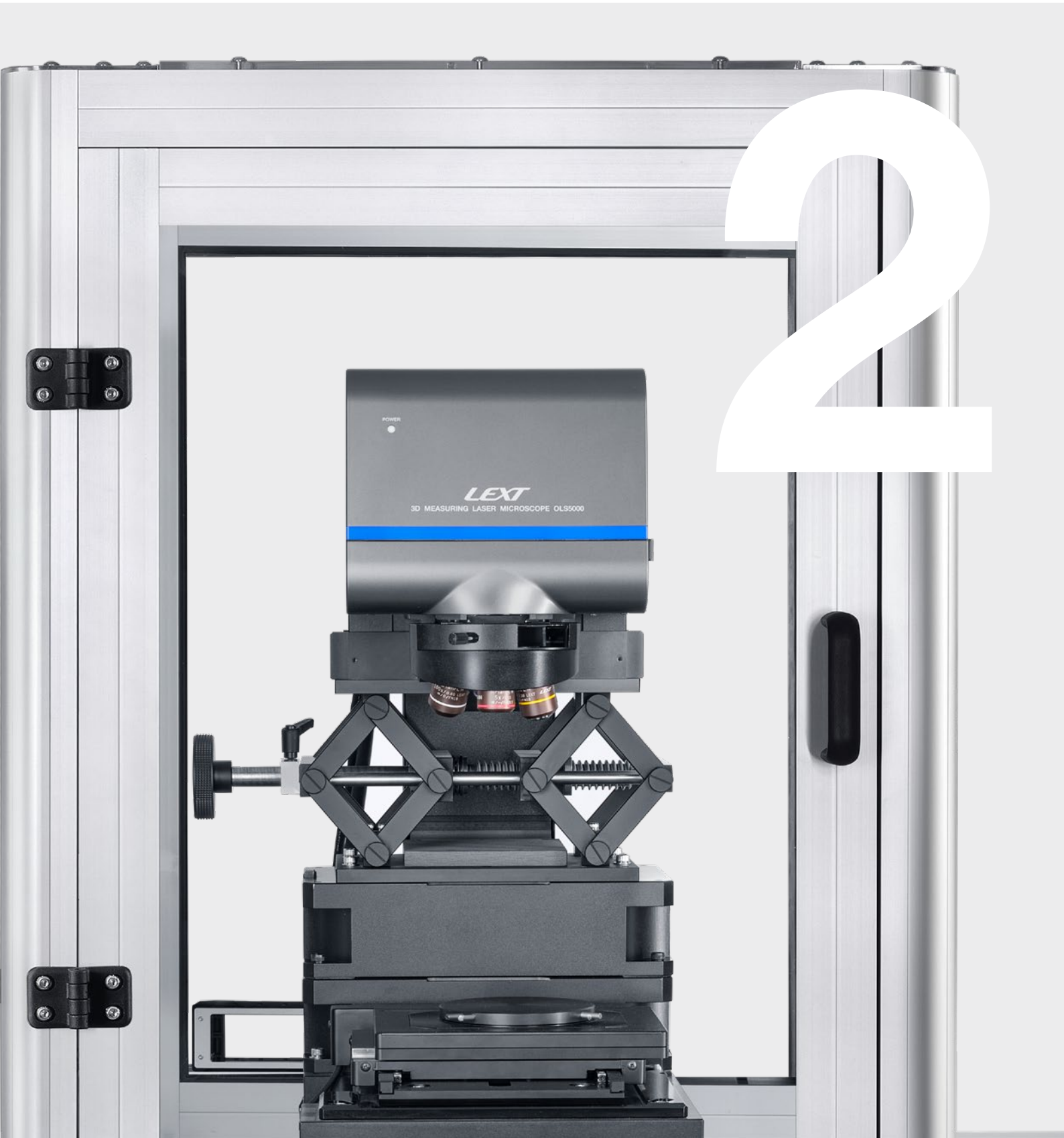
Article code	Kit name: CUS-OLS5000-Bridge-Stand-KIT
E0438555	<p>CUS-OLS5000-Bridge-Stand-KIT: 400 × 400 mm motorized table; Bridge stand consisting of 4 parts; 1 × lower frame 1200 × 1000 × 600; material: steel; 1 × base plate out of hard stone (1200 × 1000 × 150 mm), color: black; 1 × bridge out of hard stone (200 × 150 × 200 mm), color: black; Accuracy 0.010 mm incl. calibration certificate; Vibration isolation; Working height 850 mm</p> <p>Motorized x/y stage: Motorized x/y stage 400 × 400 mm; Maximum sample weight: 20 kg (44 lb)</p> <p>Manual Z-drive (z): Travel range 150 mm; Mounting of OLS5000 head</p> <p>Steering: TANGO 2 Desktop steering; 2-axis joystick; Auxiliary I/O TANGO DT / PCI-E; Motor cable 3 m</p> <p>System integration and test</p>

Article code	Material name	Type
E0432367	OLS5000-HSU Integrator KIT	Scanning unit kit
N6378100	OLS5100-HSU	Protocol converter
N2662700	U-D6REMC	Scanning unit kit
N5686700	MPLFLN10x LEXT	Objective
N5677800	OLS50-GRAB	SW
E9701471	HW-WORKSTATION-HP-Z2G4-OLS5000	PC
N6378400	OLS51-BSW: Basic software	SW

LEXT™ Workstations

All-In-One Solutions

2



LEXT Workstations



An All-In-One Solution for High-Resolution Inspection

For a complete solution for precise nanometer-scale inspection, discover our high-stability workstations for standard LEXT OLS5100 models as well as the LEXT CUS™.

Dedicated LEXT workstations provide:

- Stable microscope stands
- Active antivibration units
- Environmental control boxes
- Extended stands for PCs and monitors



Dedicated monitor table for the LEXT system



Compatible with standard tables

These workstation components can be combined into a single dedicated tool for precise visual inspection or purchased as standalone units to suit individual inspection requirements.

- Versatile 2-unit workstations can be easily arranged in various orientations
- A separate base unit prevents transmission of vibrations from PCs and controllers to the LEXT system
- The base unit can also be combined with existing tables for PCs and monitors

LEXT™ High-Stability Stands

Enhancing Visual Inspection Capabilities

To enable optimal accuracy for nm scale measurements, LEXT stands provide a range of unique features:

- Designed to accommodate an environmental control box—extending the measurement capabilities of the LEXT system to include cleanroom inspection
- Can be fitted with an integrated or desktop active antivibration unit that negates external vibrations and provides maximum microscope stability
- Models for the either the standard LEXT system or the CUS™ extend the range of samples that can be inspected to accommodate various workflows

Standard LEXT OLS5100 Models

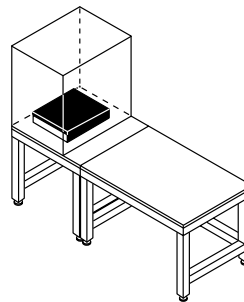
Compatible with standard LEXT models, including the EAF, SAF, and SPF, the stand for the standard LEXT OLS5100 model enables reliable inspection of samples, including silicon wafers, PCBs, and other electronics.

Active Antivibration Unit Integrated in the Stand

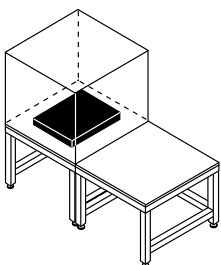


- Ideal solution for inspections that require high magnification
- Compact solution that saves space
- The compact setup makes it easier to use

Active Antivibration as an Add On



- Economic solution
- User has the option to buy stand separately if high magnification applications are not required



LEXT OLS5100 Customized TM Model

The stand for the LEXT OLS5100 CUS™ provides a sturdy and stable base for the microscope that enables inspection of large or heavy samples such as large electronics or automobile parts.

Article code	Material name	Type	Dimensions in mm
E0437207	CUS-LEXT-EAF-WS-i4-400x500	Stable stand for OLS5100 SAF, EAF, SMF with integrated active antivibration system	800 × 800 × 760
E0438521	CUS-LEXT-EAF-T-NP Box	Stable stand for OLS5100 SAF, EAF, SMF	800 × 800 × 760
E0437208	CUS-LEXT-TM-T-NP Box	Stable workstation for CUS™ with screws for EV box	1000 × 1050 × 760
E0437209	CUS-LEXT-MT	Monitor table common for standard and CUS™ microscope	1200 × 800 × 760

Active Antivibration Desktop Units

Enhanced Stability for Individual Inspection Needs

Active antivibration desktop units negate external vibration from a range of sources, providing optimal stability for high-resolution measurements.

- Antivibration units have an active bandwidth of 0.6–200 Hz
- Devices have an isolation performance minimum of 25 dB at 5 Hz or 40 dB at >10 Hz, providing excellent microscope stability
- Units are compact and are designed to either fit on a desktop with a LEXT microscope or integrate into our high-stability stands

Active Antivibration Desktop Unit for Standard LEXT systems

- Available as a separate unit or an integrated solution with the stand for standard LEXT system
- Load capacity of up to 120 kg (264.6 lb)

Active Antivibration Desktop Unit for Customized TM

- Has a load capacity of up to 150 kg (330.7 lb), enabling precise inspection of large and heavy samples such as automobile parts
- Available as a standalone unit or an integrated solution with the stand for the CUS TM



Small active antivibration unit for standard LEXT systems



Large active antivibration unit for OLS5100 CUS TM

Article code	Material name	Type	Dimensions in mm
E0438521	AC-AVT-14 antiv. table; small	AV table small for OLS5100 SAF,EAF,SMF	400 × 500 × 90
E0438566	AC-AVT-14 antiv. table, large	Active antivibration unit for OLS5100 CUS TM	550 × 700 × 92

Environmental Control Boxes

An Intelligent Solution for Cleanroom Inspection

When conducting nm scale measurements with the LEXT system, even minor movements such as nearby talking or walking can affect measurement accuracy.

Microscope shielding with LEXT environmental control boxes not only minimizes the effect of external vibrations, but provides an added layer of protection from dust and other debris during cleanroom inspection.

- Microscope shielding maximizes measurement accuracy
- Can be fixed directly to the dedicated workstation for maximum stability
- An elegant and minimalistic design

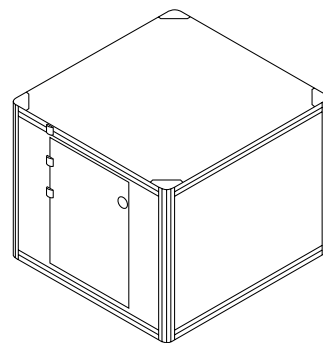


Environmental Control Box for Standard LEXT OLS5100 Models

- Designed specifically for use with standard LEXT OLS5100 models, including the EAF, SAF, and SPF
- 2 large windows provide easy access to all parts of the LEXT system with room for addition or removal of height blocks
- Provides efficient shielding of samples for cleanroom inspection of electronics such as PCBs and silicon wafers

Environmental Control Box for the LEXT OLS5100 Customized TM

- Specifically designed for the LEXT CUS TM
- A large front window simplifies sample placement and enables easy manual Z drive adjustment
- Extends the benefits of microscope shielding to larger or heavier samples such as automotive parts



Article code	Material name	Type	Dimensions in mm
E0437205	CUS-LEXT-EAF-NP BOX	Environmental control box for OLS5100 SAF,EAF,SMF	850 × 600 × 810
E0437206	CUS-TM-NP BOX	Environmental control box	1050 × 1000 × 860

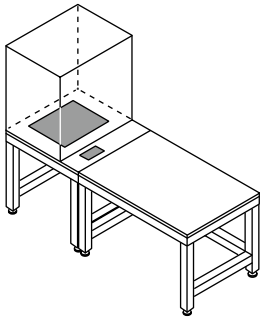
Workstation Configurations

LEXT Workstation

Standard LEXT System

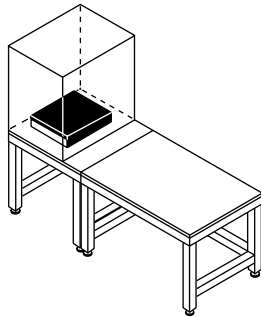
Customized TM

Integrated AV Stand



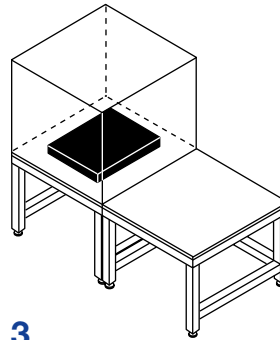
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AV on Top of the Stand



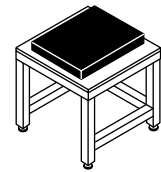
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High-Stability Stand with EV Box



3

High-Stability Stand



4

	Article code	Material name	Type	Dimensions in mm
1	E0437205	CUS-LEXT-EAF-NP BOX	Environmental control box for OLS5100 SAF,EAF,SMF	850 × 600 × 810
	E0437207	CUS-LEXT-EAF-WS-i4-400x500	Workstation with integrated active antivibration system & drill pattern for environmental control box	800 × 800 × 760
	E0437209	CUS-LEXT-MT	Table for monitors	1200 × 800 × 760
2	E0437205	CUS-LEXT-EAF-NP BOX	Environmental control box for OLS5100 SAF,EAF,SMF	850 × 600 × 810
	E0437261	CUS-LEXT-EAF-T-NP Box	CUS-LEXT-EAF- Table for EV control box	800 × 800 × 760
	E0438521	AC-AVT-i4	AV table small for CUS EAF	400 × 500 × 90
	E0437209	CUS-LEXT-MT	Table for monitors	1200 × 800 × 760
3	E0437206	CUS-TM-NP BOX	EV control box	1050 × 1000 × 860
	E0437208	CUS-LEXT-TM-T-NP Box	Stable workstation with screws for NP box	1000 × 1050 × 760
	E0438566	AC-AVT-i4 antiv. table, large	Active antivibration unit	550 × 700 × 92
	E0437209	CUS-LEXT-MT	Table for monitors	1200 × 800 × 760
4	E0433874	AC-ST-i4	AV stand	1000 × 1050 × 760
	E0438566	AC-AVT-i4 antiv. table, large	Active antivibration unit	550 × 700 × 92
	E0437209	CUS-LEXT-MT	Table for monitors	1200 × 800 × 760

LEXT™ Fixtures

For Repeatable Sample Inspections

3

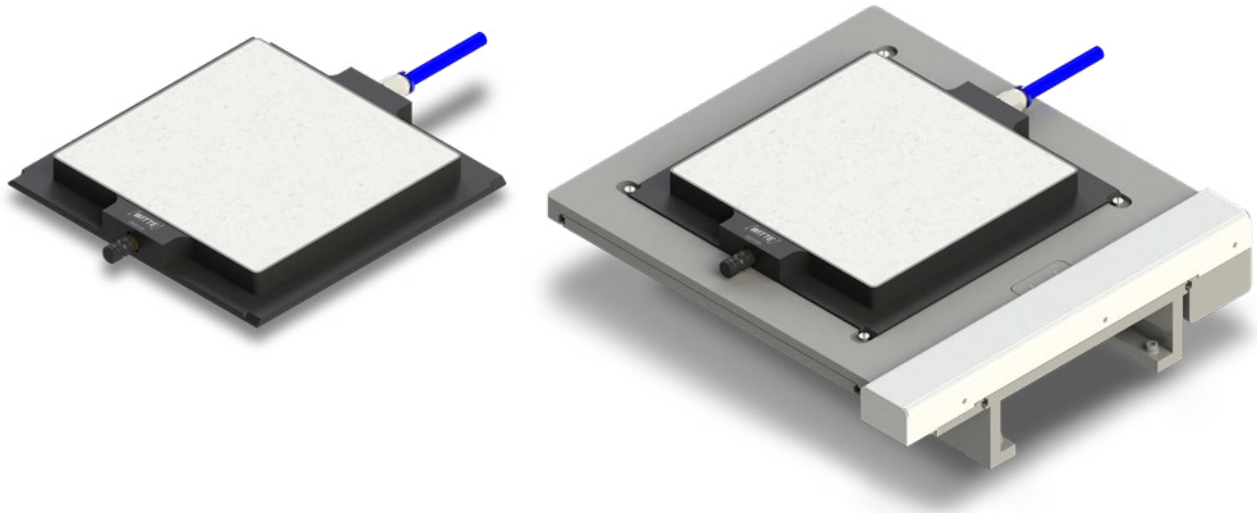
OLYMPUS

Customized LEXT OLS5100 Sample Holders

Reliable Inspection of Delicate or Irregular Samples

Rapid and straightforward sample navigation is a crucial requirement for routine visual inspection of samples such as wafers, PCBs, or irregular samples.

Customized microscope accessories for the LEXT system include vacuum and non-vacuum sample holders for efficient inspection of delicate electronics and rotatable holders designed to streamline inspection of silicon wafers.



Microporous Vacuum Chuck

Maintaining the Integrity of Delicate Samples

For thin and delicate samples such as RFID films, solar panels, and silicon wafers, it is important that sample fixation produces minimal deformation of the sample.

By fixing samples with uniform suction via micropores instead of suction grooves or holes, the microporous vacuum chuck maintains the flatness and integrity of delicate samples during inspection.

- Designed specifically for silicon wafer inspection
- Uniform suction enables efficient inspection of other thin-walled substrates such as foils, papers, and PCBs
- Innovative design minimizes sample movement, increasing measurement repeatability

Article code	Material name	Type	Comment
E0437210	CUS-POR-VAC-INS	Stage Insert	Compatible only with 200 mm for LEXT & DSX

Vacuum Rotatable Wafer Holder

Enhancing Wafer Inspection Efficiency

Sample navigation via rotation is an effective strategy to increase the speed and reproducibility of routine visual inspection.

The vacuum rotatable wafer holder has a range of design features that enhance silicon wafer inspection:



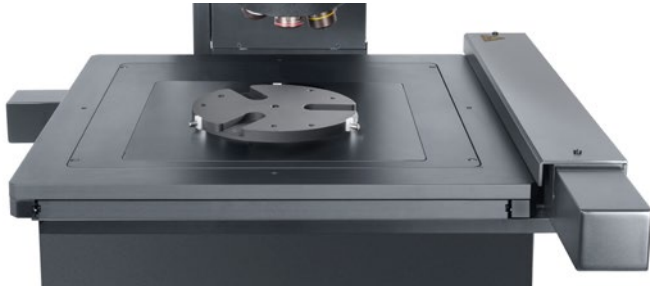
- Uniformly distributed vacuum force provides unparalleled wafer stability and enables accurate nm scale measurements
- The holder can accommodate 4 in., 6 in., 8 in., and 12 in. wafers
- Stepped design and 30 mm wide grooves enable convenient sample placement
- Can be fixed directly onto a 300 mm stage or onto a 200 mm stage using an adapter plate

Article code	Material Name	Type	Comment
E0433651	CUS-VAC-Wafer-Holder	Stage insert	Compatible with 300 mm stage. Compatible with SCAN 200 (E0430767 M-MS-MX61-4), but only in combination with the metal insert adapter E0433896

Rotatable Wafer Holder

Simplifying Sample Fixation

Using the rotatable wafer holder with the LEXT OLS5100 system provides a straightforward and economic alternative for sample fixation where vacuum suction is not required:



- A stepped design with 30 mm wide grooves simplifies sample placement
- Sample rotation simplifies navigation and increases inspection efficiency
- Evident also offers a dedicated 8 in. wafer holder for DSX microscopes

LEXT Insert with Screw Holes

Unparalleled Versatility for Custom Fixtures



Prism is not included with the insert



Prism is not included with the insert

When inspecting irregular objects such as pipes or cubes, it is often necessary to use custom fixtures to hold samples in place. However, these custom fixtures can be difficult to fasten to the OLS5100 with standard inserts.

The insert with screw holes features 68 uniformly distributed M3 thread holes and measures 150 mm x 110 mm x 5.5 mm, meaning that it can easily accommodate a variety of custom fixtures and deliver versatile sample fixation.

Article code	Material Name	Type	Comment
E0433667	CUS-LEXT-Apertured plate	Stage Insert	Compatible only with 100 mm for LEXT & DSX microscopes

LEXT Software

For Automated Inspection



TMELD Software

Boosting Efficiency Through Automation

Automating routine visual inspection processes is a powerful method to increase efficiency and measurement reproducibility.

TMELD is a customized software solution for the LEXT™ OLS5100 system that has multiple features that streamline visual inspection of samples such as wafers, PCBs, or other electronics:

- An intuitive graphical user interface makes inspection protocols easy to set up and run, even for users with no prior experience using LEXT systems
- TMELD provides advanced stage alignment and high-precision pattern recognition functions that automatically bring samples into view and minimize misalignment
- Automated inspection protocols make repeated processes such as quality control or shipping inspection faster and easier



Article code	Material name	Type
N9051964	OLS50C-TMELD	Automation software for LEXT systems
E0437143	CUS-TMELD-HALCON-RTL	Halcon image processing software run license
E0437144	CUS-TMELD-HALCON-USB	USB for Halcon run license

Fully Customized Solutions

Custom-made, application-specific products that meet your individual inspection needs

Don't see exactly what you need? In addition to our off-the-shelf solutions, we also offer tailored customized solutions that add application-specific features to your equipment, helping you overcome your specific inspection challenges quickly and effectively.

To find the solution that meets your needs, simply send us your request, and our engineers will conduct a brief feasibility assessment and be in touch with our suggestion for your tailored solution.

