

Olympus Confocal microscope LEXT OLS3100

Description:

Confocal laser scanning microscopes allow for observations of three-dimensional shapes, such as high-density semiconductors and micro-fabricated MEMS. The LEXT microscope uses a laser scanning head for both direct imaging of the surface and for surface profile measurements.

Specifications

Features:

1. Resolution of 0.12 μ m.
2. The microscope is equipped with a 408 nm violet opto-system. Improved Z measurement repeatability of $3\mu=0.05+0.002L\mu$ m with the standard error, where L is the measurement length in μ m.
3. Allows for color 3D observations and brightfield, darkfield and differential interference observations.
4. Provides simultaneous observations of darkfield or differential interference contrast observations and laser observations on the same screen.

	Structure	Special frame				
	Outside dimensions	464 x 559 x 614.5				
	Weight	* Not including the vibration-isolating stand				
	Weight	56.9kg				
Measurement part	Maximum height of specimen	100mm				
	Load capacity	10kg				
	XY stage	Manual: 100 x 100(mm), Electric: 150 x 100(mm)				
	Quantity	5				
Objectives	Magnification	5x	10x	20x	50x	100x
	Working distance: mm	20.0	10.1	3.1	0.33	0.35
	Numerical aperture	0.15	0.3	0.46	0.95	0.95
Observation and measurement range	Horizontal (H): μ m	2,560	1,280	640	256	128
	Vertical (V): μ m	2,560	1,280	640	256	128
Magnification on monitor		100 - 600	200 - 1200	400 - 2400	1000 - 6000	2000 - 12000
Optical zoom		1x - 6x				

Confocal method		Pinhole
Photo detector		Photo multiplier
Measurement laser	Light source Wave length / Output	Purple semiconductor laser 408nm / 0.9μW (JIS Class 2)
Image import method		CFO search (Fine, Fast) Step search
Image import mode		Contrast Mode, Enhance Mode
Planar (XY) display resolution		1024 x 1024 (pixel)
Frame memory		Brightness: 1024 x 1024 x 12bit Height: 1024 x 1024 x 16bit
Frame rate		12Hz
Planar(XY) measurement	Minimum resolution	0.12μm
	Measurement repeatability	$3\sigma(n-1)=0.02$ * No limitation on object line width
	Measurement range	10mm
Height(Z) measurement	Minimum movement resolution	0.01 μm
	Minimum display resolution	0.001 μm
	Height scale	Open control by linear scale
	Measurement repeatability: μm	$3\sigma(n-1)=0.05+0.002L$
Main unit control		Auto focus / Auto gain / Band scan Width measurement / Bump measurement / Surface area
Image processing, processing, and processing	2D image measurement / 3D image roughness measurement	Volume measurement / Line roughness measurement / Surface roughness measurement / Report function / 2-channel display