

Small, Lightweight 2.11 Megapixel Digital CCD Microscope

MSX-500Di

2 Megapixel CCD 3.5 inch TFT LCD

RoHS Directive CE Marking

Large magnification range

Autoscale (with automatic display of magnification factor)

Large depth of field

Flexible lighting control



* XY Stage and stand shown on the photograph sold separately



Perfectly usable as a stand-alone product, the MSX-500Di can also be connected to a PC via USB cable to enable viewing, measurement, and camera control from a PC.

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★ Comes with SCM Measure, image viewing and measuring software

Viewing, measurement, and recording. All of the conveniences in just one compact body.

- 2 megapixel digital microscope MSX-500Di.
- Features a built-in 3.5-inch LCD monitor.
Can take and save images in stand-alone mode.
- USB connection allows for image previews as well as camera control and file transfers (for mass storage) with a PC. (Compatible with Windows® only)
- Lens magnification from ∞ to 500x.
(Magnification factor calculated with 14" monitor as a reference)
- Equipped with 27 white LEDs for optimal lighting for any subject.

Small, Lightweight 2.11 Megapixel Digital CCD Microscope

MSX-500Di



PC Connection Functions

PC



Viewer software screen

- ① Measurements can be performed in the LIVE state, including point-to-point, area, angles, and more
- ② Guideline display function makes locating the measurement points easy.
- ③ By displaying scale information, angles and figures as guides beforehand, the microscope is also easily adaptable to such use as continuous visual examination.
- ④ All the required information such as magnification, measurement results and scale display can be pasted and saved together on the image.
- ⑤ High accuracy, repeatable size measurements due to improvement of the magnification display, which is two times more fine than the previous model.
- ⑥ Supported operating systems:
Windows XP (SP3), Windows Vista™ (SP2), Windows 7

Autoscale

The scale at many magnification steps throughout most of the amplitude of the microscope from 10x to 500x is finely factory-calibrated. It is thus possible to conduct measurements without scale corrections with both video and still images at any magnification. (Scale correction is still recommended for measurements requiring high accuracy.)

Information regarding magnification at any given time is shown in "x00" format on the magnification display bar of the PC Viewer software; scale is also displayed. (Magnification value displayed is calculated with 14" monitor as a reference.)

* Please note that the depth of field is greater for the lower magnification range, which can result in larger measurement errors.

Magnification Automatically Saved

When an image is acquired, the magnification is automatically stored in the image information and can be saved to the SD card. Direct measurements can then be taken when image is accessed in the provided software.

Stand-Alone



Stand-Alone Functions



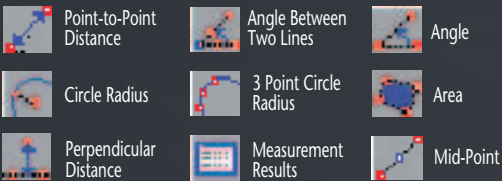
* Using magnification display calculated with 14" monitor as a reference

LCD Monitor Display

- Screen display with all current settings visible at a glance
- Digital display of both magnification and scale information
- **New function** Three line settings can be displayed on the screen: center, grid, and # lines
- **New function** The display of magnification can be set up to use either the 3.5" built-in LCD or a 14" monitor as a reference.

Still Image Measurements

* Performed by included image measurement software SCM Measure

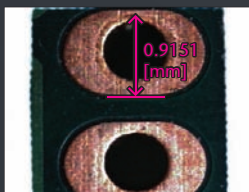


Point-to-Point Distance



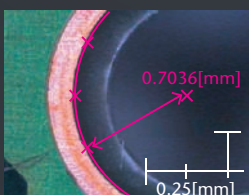
Wafer Circuit

Perpendicular Distance



Through-hole in a board

3 Point Circle Radius



Circuit Board

* When high accuracy measurements are required, please use the software after using a scale, etc. beforehand.

Easy Playback of Saved Images

The procedure for displaying saved images on the built in display is simple. Use \triangleright button to view pictures starting from the newest, or \triangleleft button to view pictures starting from the oldest.

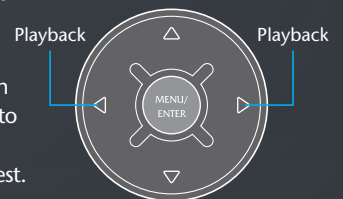
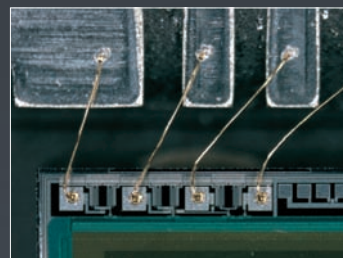
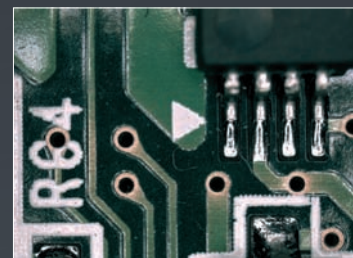


Image Examples



CCD Camera Bonding



Circuit Board

Letter size



Size comparison with Letter Size (215.9mm x 279.4mm)

Letter size



Complete Lighting Control



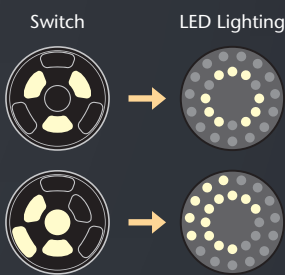
Complete control of LED illumination allowing blocks of LEDs to be turned on and off. The unit's LED lighting array consists of 27 white LEDs. In order to enable optimal lighting for every subject, we divided these into 7 blocks, thus making complete control over illumination possible.

LED illumination switch



The switch indicator lights on the panel show which LEDs are currently on.

Example



SD Card Slot

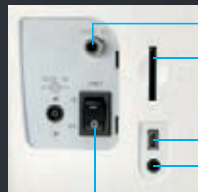
Unit is equipped with a SD card slot for image storage, enabling easy saving of images in high definition. (BMP/JPEG)



Storage capacity per image

Symbol	SD card	JPEG (Approx.)	BMP (Approx.)
S	640 x 480	130KB	900KB
M1	800 x 600	190KB	1400KB
M2	1280 x 960	440KB	3600KB
L	1600 x 1200	730KB	5600KB

* Sizes may vary depending on the subject photographed.



Video output terminal
SD card slot
Mini USB terminal
External FREEZE input terminal (optional)

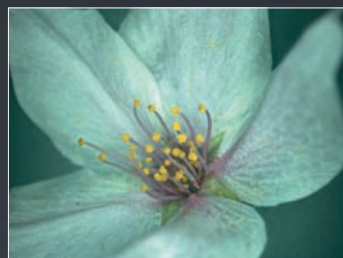
Power switch



Molded Plastic Part Burrs



Granulated Sugar



Plant



Leaf Stoma

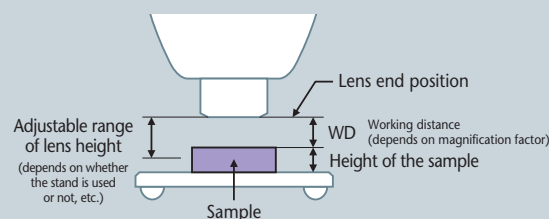
Broadening the possibilities with various options

Option stand



Maximum height of examinable sample (mm)

Display magnification (On a 14" monitor)	WD (mm)	MSX-500Di	MSX-500Di	MSX-500Di	MSX-500Di	MSX-500Di	MSX-500Di
		Stand-alone	+ MSX-XY	+ MSX-Stand	+ MSX-Stand + XY-A Stage	+ Transmitted Illumination (EasyLED LightStage)	+ Transmitted Illumination (EasyLED LightStage) + Leg Adapter for Transmitted Illumination
10	53.5	2.5	2.5	182.5	125	Not available	2.5
20	30.9	25.1	25.1	205.1	147.6	9.1	25.1
50	17.3	38.7	38.7	218.7	161.2	22.7	38.7
100	12.8	43.2	43.2	223.2	165.7	27.2	43.2
200	10.6	45.4	45.4	225.4	167.9	29.4	45.4
300	9.8	46.2	46.2	226.2	168.7	30.2	46.2
400	9.4	46.6	46.6	226.6	169.1	30.6	46.6
500	9.2	46.8	46.8	226.8	169.3	30.8	46.8



Optional Illumination Products

Shadowless LED Ring Illumination

Since the field of view angle is large, LED illumination installed in the unit can be reflected from the sample and captured in the image. In such cases, it is effective to turn off all LED illumination installed in the unit and use Shadowless LED Ring Illumination instead. For such purposes, we recommend using the combination shown on the right.

* Since the WD becomes longer at low magnification, in cases where the size (height) of the sample is large an MSX-Stand may be needed.

MSX Ring Light Adapter

- * Adapter ring used to attach LED Ring Illumination.
- * Outer diameter: 123mm
- * Inner diameter: 44mm
- * Illuminated area ø110mm

LED Ring Illumination MSRL-CW44

Power Source for LED Lighting MLEK-A080W1LR-100V

- * Output: one-channel output max. 0.8A
- * Size: 75mmx90mmx150mm
- * Weight: 1kg

Transmitted Illumination

We highly recommend the Light Stage of the EasyLED Illumination Series made by SCHOTT as a source of transmitted illumination for microscopes. This large white transmitted illumination source has an outer diameter of 84mm and works with an AC adaptor (included).

* Since it is 16mm thick and the WD becomes longer at low magnification, in cases where the size (height) of the sample is large a leg adapter for the transmitted illumination or an MSX-Stand may be needed.

Transmitted Illumination EasyLED "Light Stage"

- * Maximum light density: 12,000cd/m²
- * Built-in switch and light adjustment dial
- * Outer diameter: 84mm
- * Illuminated area ø50mm
- * 16mm thick

EasyLED Backlight Adapter (Leg Adapter for Transmitted Illumination)

PRODUCT SPECIFICATIONS

Product Name	SCOPEMAN MSX-500Di
Camera	1/1.8" interline CCD image sensor, 2.11 megapixel total
Number of Effective Pixels	2.01 megapixels
Scanning Method	Interlace
Magnification	∞ to 500X calculated with 14" monitor magnification *
Light Source	27 high luminance white LEDs; light up switch / light adjustment function
LCD Monitor	3.5" TFT color LCD (LED backlight)
Interface	VIDEO OUT
	USB Ver1.1 Mass storage / UVC compatible
	*Compatible with Windows XP (SP3), and Windows Vista™ (SP2), Windows 7 (Recommended PC / CPU: Pentium 4, 1GHz or higher; memory: 512 MB or higher)
Recordable Media	SD card (not compatible with SDHC or SDXC)
Recordable Formats	BMP/JPEG (still image)
Software	Measurement between two points, angles, area (all manual measurement)
Temperature Range	5C to 40C
Power	AC Adapter: AC100 - 240V; DC12V; 3A
Unit Dimensions (mm)	164.20mm (width) X 220.72mm (height) X 181mm (depth)
Weight	Approximately 2.1kg (not including AC adapter)
Accessories	SD card, USB cable, Video cord, AC adapter, Software CD-ROM; User manual

WD/Field of View

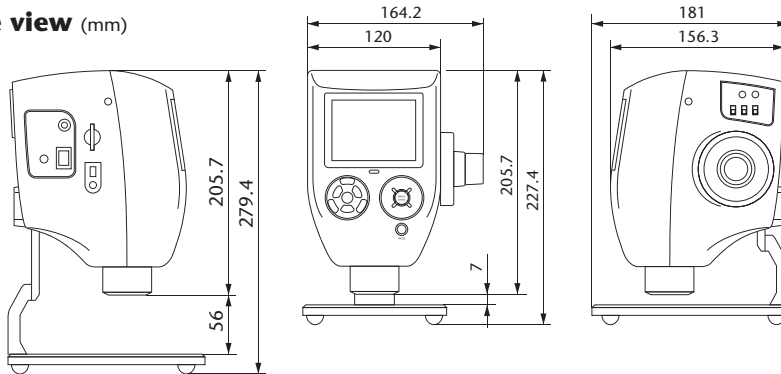
Display Magnification	WD (mm)	Field of view (mm)	Magnification at 3.5" monitor
∞x	460	284 x 214	∞
10x	53.5	28.4 x 21.4	2.5x
20x	30.9	14.2 x 10.7	5x
50x	17.3	5.7 x 4.3	12.5x
100x	12.8	2.8 x 2.1	25x
200x	10.6	1.4 x 1.1	50x
300x	9.8	0.95 x 0.71	75x
400x	9.4	0.71 x 0.54	100x
500x	9.2	0.57 x 0.43	125x

* The values are to be used for reference only.

*∞ stands for infinity as the distance to the subject

* Microsoft and Windows are either registered trademarks of Microsoft Corporation in the United States and other countries

Outline view (mm)



Options

<p>PL Adapter for MSX500Di</p>	<p>Easy LED "Light Stage" (Transmitted Illumination)</p> <p>* AC Adapter included</p>	<p>MSX Ring Light Adapter</p> <p>MSRL-CW44 (Shadowless LED Ring Illumination)</p>	<p>XY-A Stage</p> <p>Size Body: 172mm x 132mm x 53mm Stage: 107mm x 76mm</p>	<p>MSX-Stand</p> <p>Size Stage: 230mm x 350mm</p>	<p>MSX-XY (Stand with a small XY stage)</p> <p>Size Body: 130mm x 181mm Stage: ø100mm</p>
<p>Diffuser Adapter for MSX500Di</p>	<p>Remote-Switch</p>	<p>MLEK-A080W1LR-100V (Power Source for MSRL-CW44)</p>	<p>Adapter for XY-stage</p> <p>Size 170mm x 130mm x 20mm</p>		

Specifications and design may be improved or changed without notice.

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