DSX100 Specifications

Main frame	Zoom ratio		16x optical zoom (0.125x-2.0x), 30x with digital zoom
	Mountable objective lens	DSX Dedicated objective lens	DSXPLFL1X,DSXPLFL3.6X
	Illumination(objective lens)	Light	LED ring light illumination mounted on the objective lens
	Camera	Image sensor	1/1.8 inch, 2.01 megapixels, Color CCD (Total pixels : 2.10 megapixels) Total pixels : 1688(H) x 1248(V) Available pixels : 1628(H) x 1236(V) Effective pixels : 1600(H) x 1200(V)
		Cooling method	Peltier colling
		Scan mode	Progressive scan
		Frame rate	15fsp / 27 fsp with binning mode
		Image size	Normal : 1194×1194(1:1) / 1592×1194(4:3) Fine : 1194×1194(1:1) / 1592×1194(4:3) Super fine : 3594×3594(1:1) / 4792×3594(4:3)
		Sensitivity	ISO100 / 200 / 400 / 800 / 1600 equivalent
	Fine focusing (motorized)	Stroke	30 mm
		Resolution	0.4 µm
Frame	Coarse focusing (manual)	Stroke	50 mm
	Maximum specimen height	Standard	80 mm
		To ensure U-centric operation in tilted operation: 50mm	50 mm
	Tilt mechanism	Type	Manual, lock/release handle
		Tilt angle	Left/Right 45°
Stage	U-SIC4R (Manual)	Stroke	100 × 100 mm
		Load capacity	1 kg
LCD Monitor		Size	23" with Touch panel and Full HD color LCD monitor
		Resolution	1920(H) x 1080(V)
Weight		Approx. 36.5 kg (Main frame, Motorized stage, LCD monitor, Control box, PC)	
Input rating		100-120V/220-240V, 185VA, 50/60Hz	

DSX100 Objective lens

Series	Model	Perforcal distance	N.A.	W.D. (mm)	Actual F.O.V. (µm)*1	Total Magnification*2
DSX dedicated objective lens	DSXPLFL1X	167 mm	0.025	138	46,621-2,539	7x-107x
	DSXPLFL3.6X	79 mm	0.09	50	11,284-705	24x-386x

*1 At aspect ratio 1:1 (with factory default value) *2 At aspect ratio 1:1

www.olympus-ims.com/opto-digital/

- **OLYMPUS CORPORATION is ISO14001 certified.**
- **OLYMPUS CORPORATION is FM553994/ISO9001 certified.**
- This device is designed for use in industrial environments for the EMC performance (IEC61326-1 Class A device). Using it in a residential environment may affect other equipment in the environment.
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- Images on the PC monitors are simulated.
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OLYMPUS®

Your Vision, Our Future

Opto-digital Microscope

DSX100

NEW

Discover another dimension

When You Need to See a New Dimension, Olympus Provides the Answer

The DSX Series of opto-digital microscopes set a new standard for industrial microscopes. Born of Olympus' leading-edge opto-digital technology, these scopes offer operating simplicity and a level of reliability unheard of among so-called digital microscopes. DSX100, for example, offers a free-angle function that lets you examine the sample at an angle without touching the sample at all, and it has a precise optical 16x wide zoom range. With DSX scopes, any operator, regardless of experience, can get complete inspection and precise measurement every time.

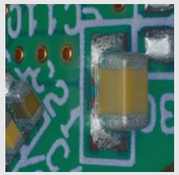
Superb Operating Simplicity × **Absolute Performance Reliability**

Opto-digital Microscope DSX100

DSX100 Offers a New World of Observation and Measurement

Observation with Four-Segment LED Ring Light and Free Angle Tilting Makes Scratches and Defects Easier to Identify

The four-segment LED ring light lets you illuminate the sample from front, back, left, or right, and the free-angle function allows you to change the angle of observation without moving the sample. This means hard-to-see scratches or defects are now easily identified.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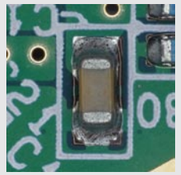
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Right 45 degree

Page 06-07
08-09

Digital Clarity Exceeds the Naked Eye, with Superb High-definition Sample Surface Images

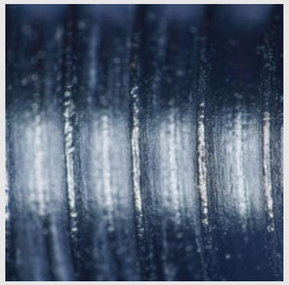
In addition to advanced optics, use of HDR (High Dynamic Range) or WiDER (Wide Dynamic Range) clearly shows hard-to-see microscopic textures as well as samples prone to halation, which were difficult to see before.

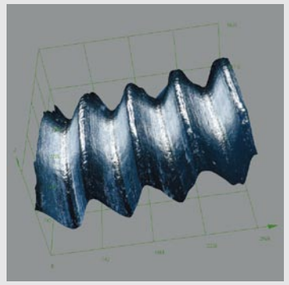

HDR's high luminance differential enables clearer, more accurate observation

Page 08-09

Measure the Sample Surface Exactly as It Is

Building a 3D image from the surface of the sample allows you to examine it from various angles. Further, the 3D image shows both area and height of extruding items.


A 2D image with everything in focus


3D images at a touch

Page 10-11

Panoramic Photos Include Areas beyond the Field of Vision

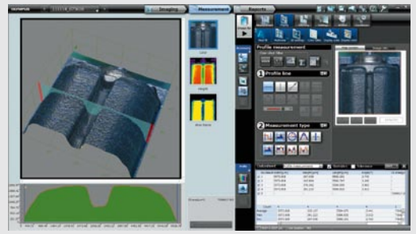
Panoramic photos let you easily take photos of areas beyond the field of vision, which are automatically synthesized into a screen image to show a very broad field in high definition. 2D, EFI, and 3D can all be synthesized.


Panorama image

Page 10-11

Standard Features Enable a Huge Variety of Measurements, So All Your Measurement Objectives Are Met

All items for 2D and 3D industrial microscope measurements are standard features, so it is easy to quantify measurement results. In addition to the standard methods of surface measurement, profile measurement, uneven surface measurement, area and volume measurement, options include both caliper measurement and profile measurement.

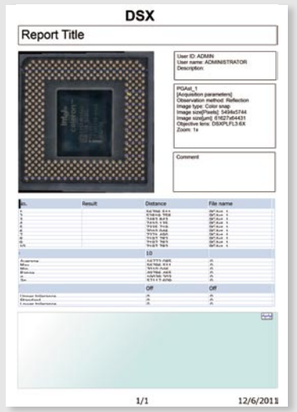

3D profile measurement

Page 13

Quick Simple Measurement with a Report Function

One click sets the report function in motion to record and create a report of the images and results of measurements and observations. The system can be set to follow applications and greatly improve efficiency.


A click can generate a report



Report output

Page 09

Tutorial Mode
Eliminates the confusing aspects of operating a microscope. Just follow the suggestions the system gives for excellent output every time.

Operator Mode
This mode is customizable for speedy routine work. Most efficient when the same task is done repeatedly.

Advanced Mode
Makes jobs super easy for the experienced operator. Laid out for action. Powered controls make operation much speedier.

Three user-selectable modes — Choose your mode according to fit the measurement environment

Operating Simplicity that Guides Operators to Optimum Output, Regardless of Their Experience

A new way to see. No peering through microscope eyepieces, because everything shows on the GUI screen. So you operate the scope with touch panel, mouse, or computer. What's more, virtually anybody can use this new operating system, whatever their experience. The screens guide the operator through the procedure, from inspection to measurement and analysis to final report. Short, simple steps. Quick results.

Three Modes to Set According to Operator Experience and Job Demands

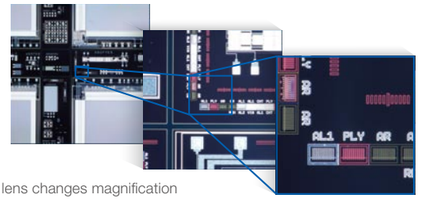
Select Tutorial Mode or Advanced Mode to match the experience of the operator and the job at hand. And Advanced Mode can be customized to match operator experience or to do routine work. The operator's ID and password open the application, and it automatically sets the scope to the operator's preferred observation, analysis, or measurement settings along with the screen visual the operator normally uses.

New User Interface Changes Thinking about Microscope Operation

Where an operator had to make complicated adjustments before, with DSX100, it's simple. Once the sample is in place, everything is controlled by computer mouse, or touch screen — focus, zoom, illumination, and choice ofvseveral inspection and operation methods. And auto-focus/auto-gain function automatically adjusts the illumination and focus on the sample.

Optical Zoom Gives Close-up and Wide-angle as Needed

Change magnification as needed, even by slight degrees, with the view in focus as the change is being made. A single lens gives you optics of 16x and digital zoom for a maximum of 30x.

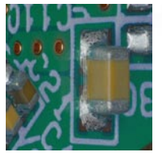


Zoom lens changes magnification

The Free Angle Function Gives Angled Views without Touching the Sample

Conventional microscopes require the sample position to be changed if it is to be observed from an angle, which means it must be recalibrated, and perhaps the microscope must be refocused. With the DSX100, merely tilt the head to change the viewing angle. And, it's designed with ample frame strength and a low center of gravity, so moving the zoom head does not knock the microscope itself out of alignment.

The DSX100 zoom head — Swings smoothly and stably from side to side for angled observation



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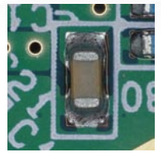

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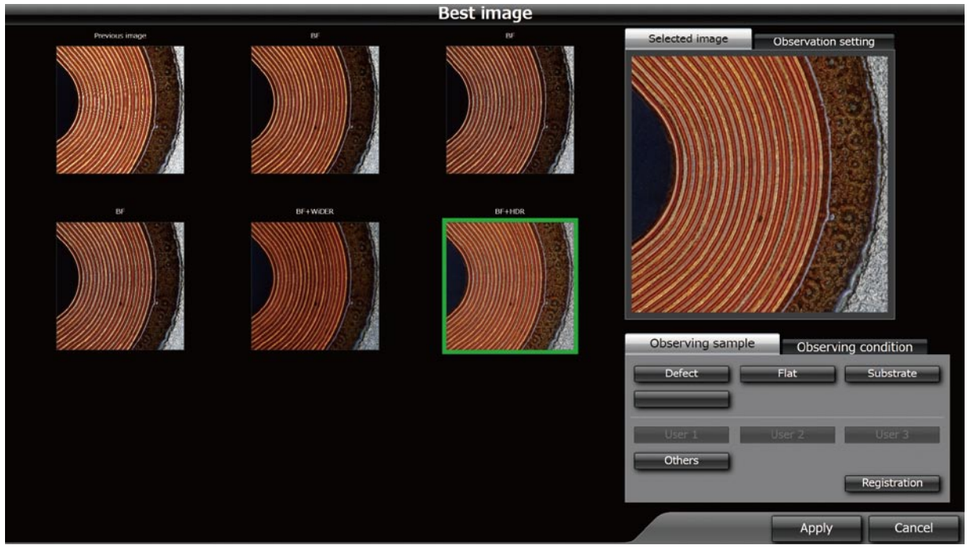
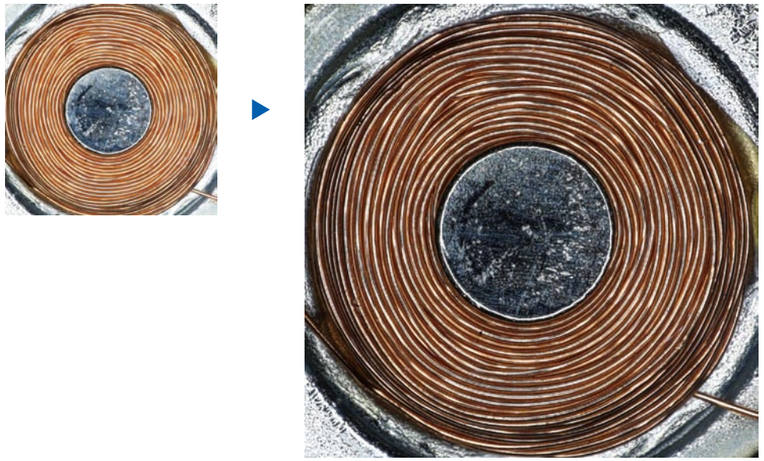
Right 45 degree



Best image — Just choose the image you want from the previews on the screen



HDR — enables ultra high-definition inspection in dark-field and DIC images with one click

Quickly Guided to the Best Possible Output

With DSX Series scopes, simply choosing from the menu shown on the GUI screen causes the necessary function to operate. And you can change observation methods or image processing with a single touch. Depending on the observation method used with the DSX100, you can choose the visual you need from the previews shown on the touch screen. A few simple steps let you perform the best possible observation very quickly.

Best Image Function Ensures Optimum Microscope Performance

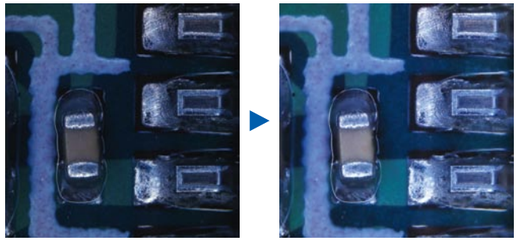
Now you can operate your microscope just by choosing, and leave the inspection method up to the microscope. That ensures the best possible image, whether looking for defects, uneven surfaces, or foreign objects. Anyone can operate the system, beginner or expert.

HDR Gives Ultra High-definition Visuals that Go beyond The Human Eye

Defects in the sample are easy to see in still visuals that capture the sample in ultra-high resolution that show the surface of the sample exactly as it is.

WiDER Provides Easy Inspection of Samples with High Luminance Difference

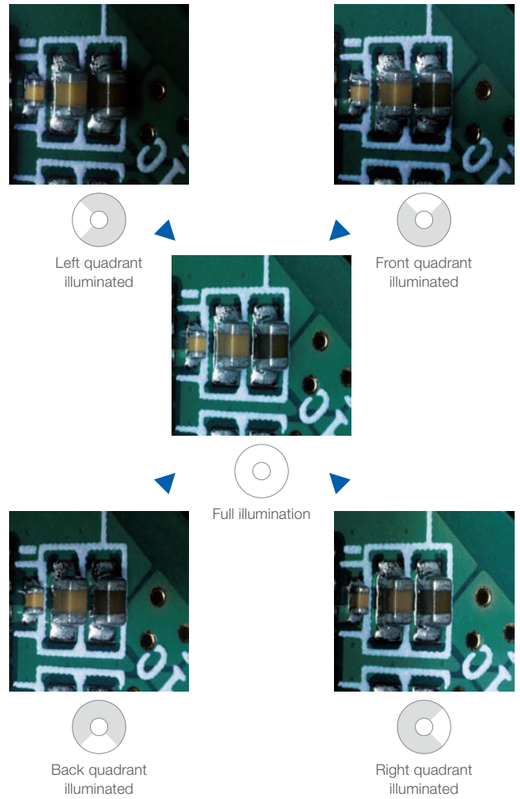
If the shadowed areas black out, merely upping the illumination power is often not enough, because then halation occurs. Olympus intelligent image processing technology eliminates these problems with WiDER, a proprietary system ready to go at the click of a button. It takes care of the high contrast problems without reducing the frame rate. No blackouts. No halation.

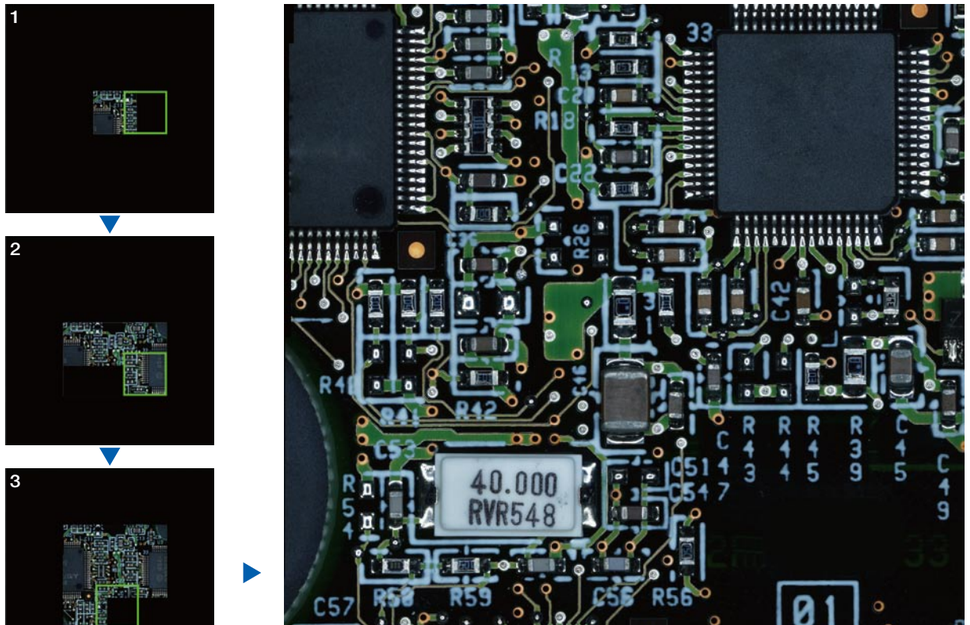


When high contrast problems occur, a click lets you see everything in real time

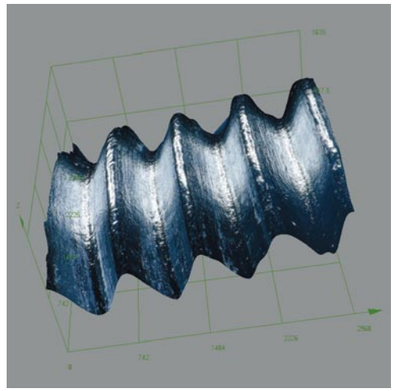
Four-Segment LED Ring Light Makes Scratches and Defects Easy to See

Long-life energy-saving low-running-cost LEDs are the source of illumination. And because the color temperature does not change with illumination intensity, there's no need to adjust white balance with every change in brightness. The ring light is divided into quadrants that allow many directions of illumination, making scratches and defects easier to find.





Live Panorama — A large field can be easily stitched by moving the sample stage



3D measurement — enables to observe the sample as it is

A Simple Operation Lets You See Now What You Couldn't See Before

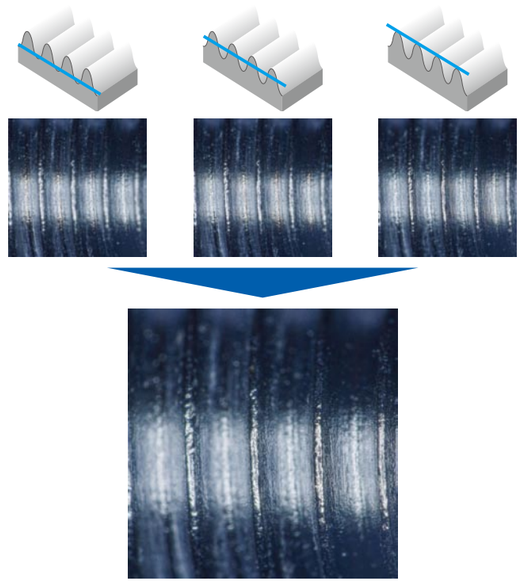
The DSX100 requires no extensive knowledge or special techniques to show you exactly what you want to see. By calling on leading-edge electronic technology, you can now see what was unclear or impossible before. Of course, there are no difficult processes either. Just press the buttons on the menu, and these simple operations let you get exactly the image that meets your objectives.

Panoramic Photos Include Areas beyond the Field of Vision

No such thing as "outside the field of vision." As the stage is moved, images automatically stitch into a single larger field of view. Where conventional microscopes reduce field area with increases in magnification, Panoramic View maintains the original field while giving close-up clarity – with 2D, expanded focus, or 3D, or any combination of one or all.

3D Photo Feature Shows the Sample as It Actually Is

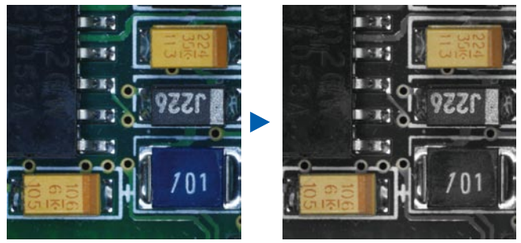
Where conventional microscopes can focus only at one place, DSX100 Extend Focal Image (EFI) maintains focus across the entire target surface area. This makes uneven surfaces easy to inspect. 3D imaging shows the sample in relief, and the sample can be viewed or photographed from virtually any angle.



EFI image

Color Enhancement Feature Shows Only What You Want to See

If you put what you need to see in color and leave the rest in monotone, it's much easier to find defects, if any exist. And you can photograph just that part, too, which makes reports even more effective.

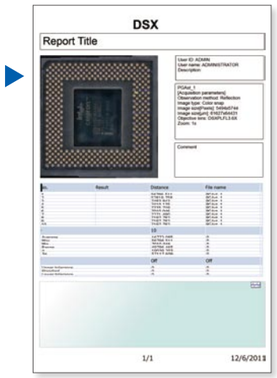


Inspection is easier when you can highlight possible defects or contamination for inspection

The Report Function Gathers the Results Together Efficiently

With DSX100, you can do observation or measurement, and the operator's workflow includes preparation of relevant reports that can be output in rich text (rtf), or PDF formats.

A click can generate a report



Report output

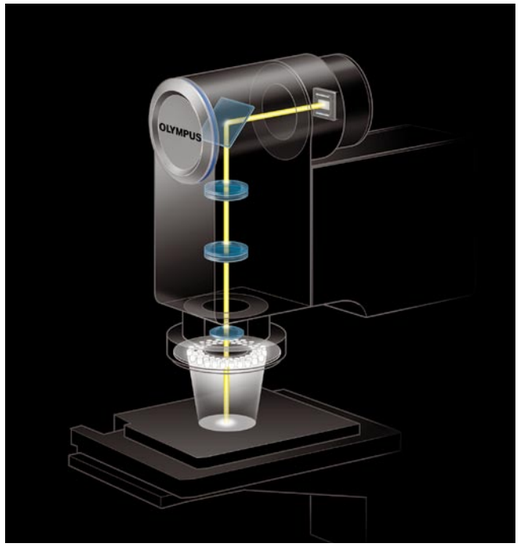
The optics technology and dedicated lenses — Complete with Olympus DNA

DNA from Olympus Gives DSX Microscopes the Ability to See What Digital Microscopes Cannot

Olympus guarantees the reliability of all DSX100 microscopes because they are born of Olympus optics and opto-digital technology. Halation is minimal and color reproduction is real.
And to make sure of that, Olympus uses the perfect combination of CCD chips and graphic boards. The sample is reproduced with such accuracy it's like a new dimension.

Ultra High-Quality Optics Let You See into Another Dimension

Olympus DNA includes superior engineering and design capabilities as well as proven manufacturing quality. In the clear images produced by the DSX100 opto-digital microscope, you'll find neither flare nor distortion. That's something no digital microscope can claim.

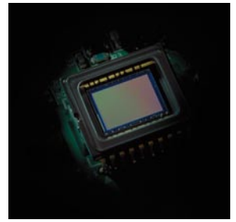


The optics technology and dedicated lenses – complete with Olympus DNA

18MP Images Reproduced in Very High Resolution with High-Performance CCD*

As the engine that shows exactly what the high-quality optics reveal, exceptionally high-performance CCD reproduces the colors precisely. The image shift function ensures very high fidelity with fine detail processing of images, so the detail clarity extends from corner to corner.

*4800x3600 pixels, 3CCD mode conversion triples the pixel count

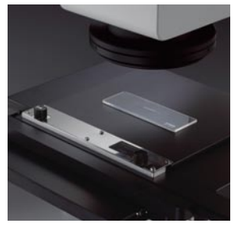


High performance CCD

Auto-Calibration Eliminates Result Scatter

Proper calibration is basic to precise measurement, and with Olympus DSX100, any operator can calibrate simply and accurately. This eliminates scattering that naturally comes when different operators calibrate, and naturally increases reliability of readouts. In addition, the system's calibration report shows who did the calibration and when.

*A special calibration sample is necessary

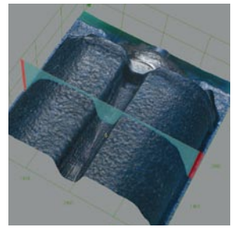


Dedicated DSX100 Field Lenses Make High-Grade Image Dissection a Simple Matter

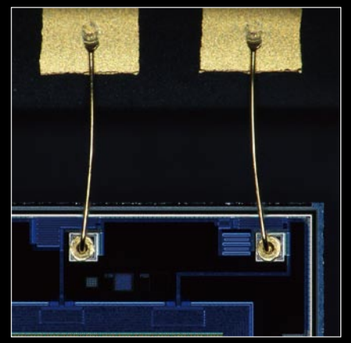
The optical objective lenses were designed and engineered specifically for DSX100 scopes—one of 1x and one of 3.6x. Aberration is corrected to a very high degree and illumination unevenness is virtually eliminated. The lenses are ideal for observation and inspection. Each lens has embedded LEDs that are designed to achieve optimal illumination with that particular lens.

Long List of Measurement Items Include Both 2D and 3D Choices

Any DSX100 microscope comes equipped for both 2D and 3D images. That means you can measure along the X,Y axis, or along X, Y, and Z axes. Observe, inspect, or mea- sure from any angle. And the result of inspection can be reported by the same application.

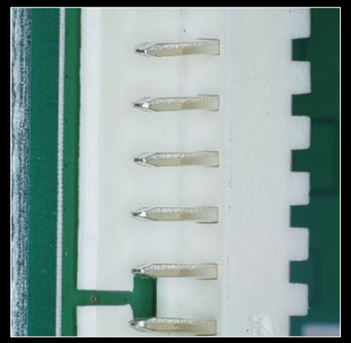


Today, DSX100 Gives Ease of Operation and High-resolution Images that Were Impossible Yesterday. This Opto-digital Microscope Improves Microscopic Examination Efficiency and Quality in Any Industrial Application

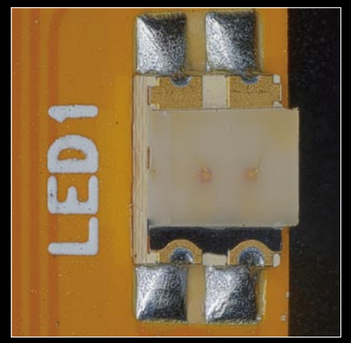


Bonding wire
(Ring illumination)

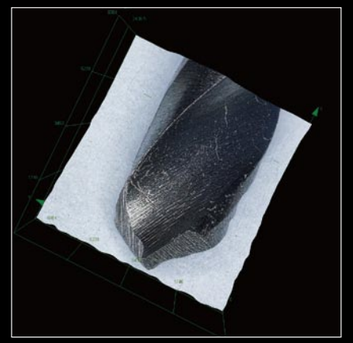
Cloth
(Ring illumination)



Connector
(Ring illumination)



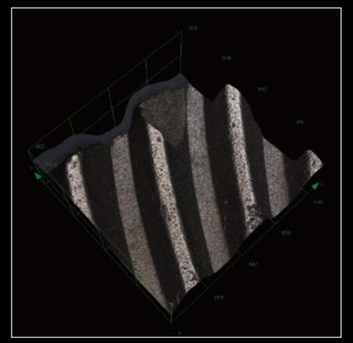
LED chip
(Ring illumination+ HDR)



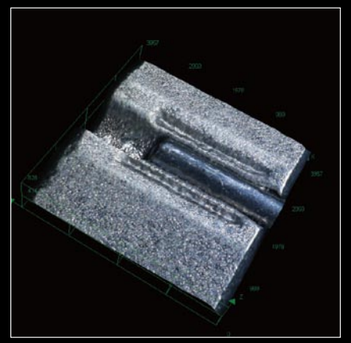
Tool
(Ring illumination+ HDR)

Bolt
(Ring illumination + HDR)

PGA tilt observation
(Ring illumination)

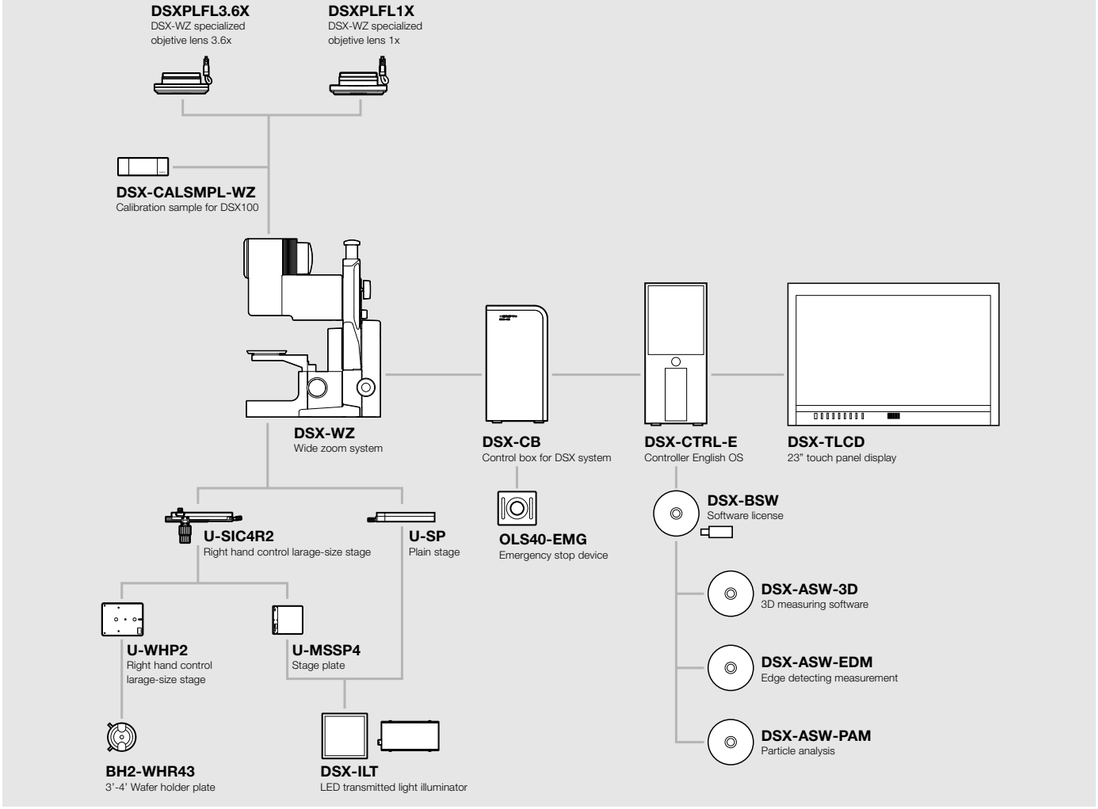


Gear
(3D)

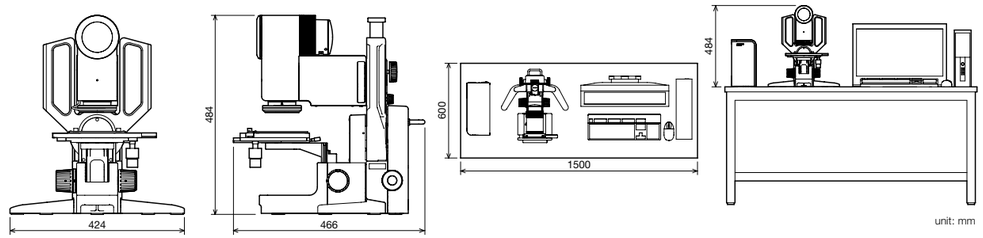


Micro motor
(3D)

DSX100 System diagram



DSX100 Dimensions



unit: mm

DSX Series

DSX500
High-resolution
Upright scope

DSX500i
High-resolution
Inverted scope