

NEW

Digital Microscope

HRX-01 | RX-100



Hirox Co.,Ltd. <https://www.hirox.com>
 2-15-17 Koenji Minami,Suginami-ku,Tokyo166-0003,Japan
 Tel:(+81) 3-3311-9911 Fax:(+81) 3-3311-7722 E-mail:tokyo2@hirox.com

Hirox-USA Inc. <https://www.hirox-usa.com>
 100 Commerce Way, Hackensack, NJ 07601
 Tel:(201)342-2600 Fax:(201) 342-7322
 Toll-Free:(866)HIROX-US E-mail:info@hirox-usa.com

Hirox China Co.,Ltd. <http://www.hirox.com.cn>
 Room 809, 8th Floor, Fortune International Plaza,
 No.43 Guo-Quan Road, Shanghai 200433, China.
 Tel:+86-21-6564-7772 Fax:+86-21-3362-5017 Email:info@hirox.com.cn

Hirox Korea Co.,Ltd. <http://www.hiroxkorea.com>
 B-501 Acrotower Bldg, 1591 Gwanyang-dong, Dongan-ku, Anyang-city,
 Gyeonggi-do, 431-908, Korea
 Tel:+82-31-385-1130 Fax:+82-31-385-9730 E-mail:yon@hiroxkorea.com

Hirox Asia Ltd. <http://www.hirox-asia.com>
 Unit 827, 8/F, Ocean Centre, Harbour City, 5 Canton Road,
 Tsimshatsui Kowloon, Hong Kong
 Tel:+852 8198-9679 Fax: +852 3015-7657 E-mail:info@hirox-asia.com

Hirox Europe Ltd. <https://www.hirox-europe.com>
 Jyfel, 300 RN 6 Le Bois des Côtes, Bâtiment A F-69760 Limonest, France
 Tel:+33 426 25 03 40 Fax:+33 426 23 68 13 E-mail:info@hirox-europe.com

Contact

The products in this catalog may be changed at any time, without notice.

PHP-2009-C061-A
APP-P2009-0109

Fully Motorized | Ultra High Resolution | 3D Digital Microscope

Motorized Lens, Motorized Stand

Improve Usability

We developed full electric, full automatic digital microscope system by combining XYZ-axis motorized stand and motorized lens (zoom parts, turret parts, light selector parts).

Putting the object on the stage, any users can easily operate it just by clicking the menu on the application.

- One click changing magnification with Motorized Zoom Lens
- Precision control with Motorized Stand
- Full Automatic System Enable Remote Observation



Absolute high resolution image

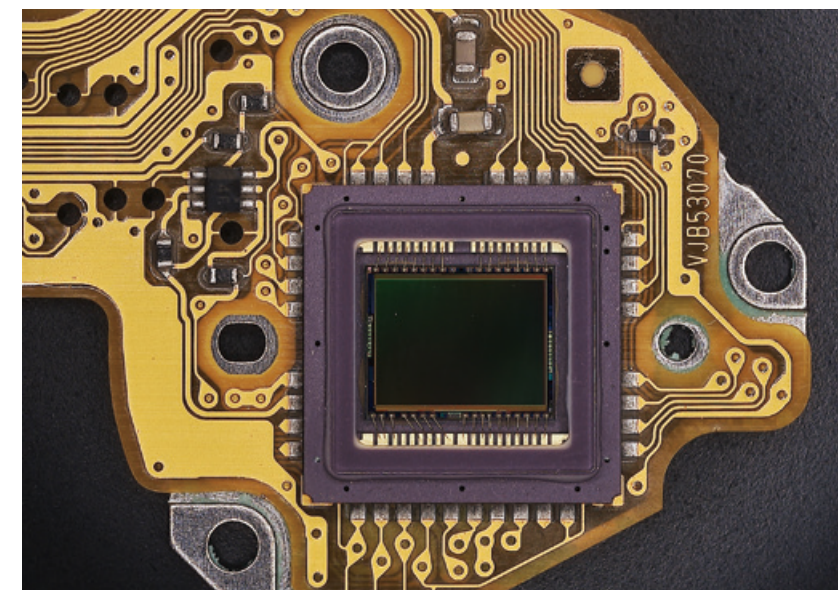
HR-1020E

Telecentric Ultra High Resolution Motorized Zoom Lens (10-200x)

Astounding resolution, Accuracy, Usability.
Aggregating the potential of telecentric lenses to the maximum

Introducing the new Hirox masterpiece: the new motorized telecentric zoom lens HR-1020E is the result of over 40 years of optical manufacturing and engineering excellence. Combined with the HRX-01, intelligent sensors compute in real time the lens zoom information, detect illumination adapters, register XY and Z position and record those conditions to redefine completely the user experience.

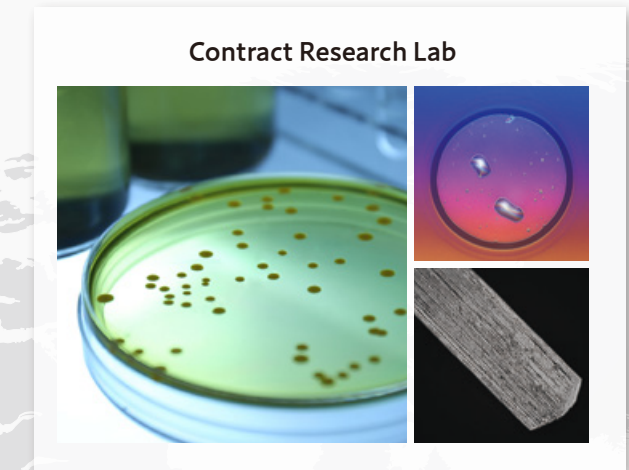
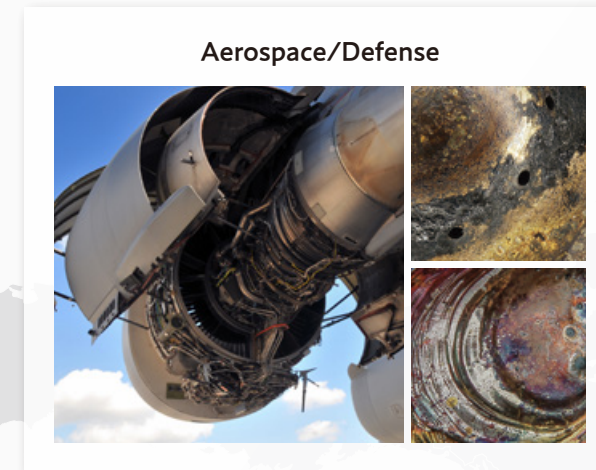
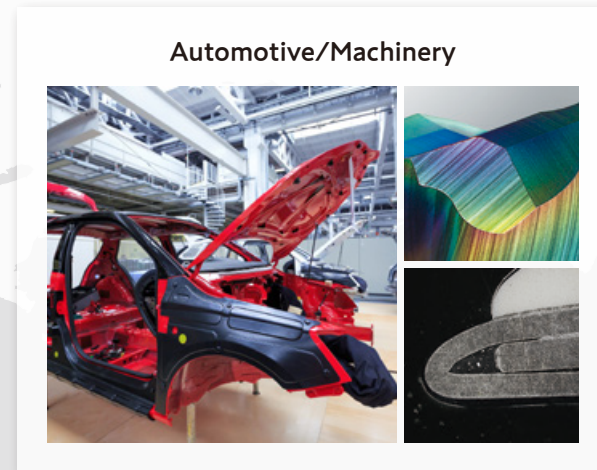
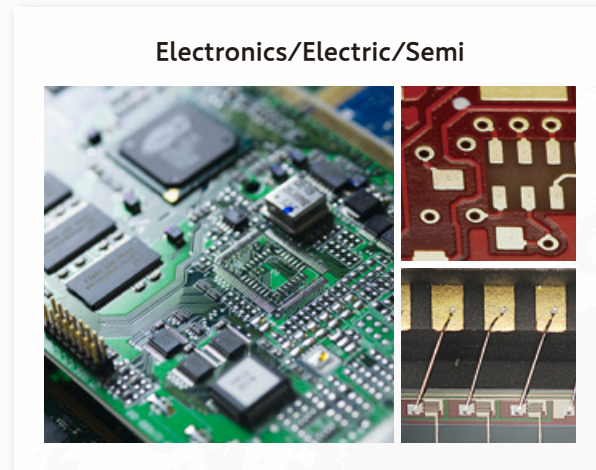
- Large aperture lens provides super high resolution and crystal clear image
- Fully motorized zoom lens for easy operation and improved accuracy
- Telecentric lens without distortion for precise measurement
- Wide angle high resolution one-shot observation with magnification starting from 10x



Mounted board(10x)

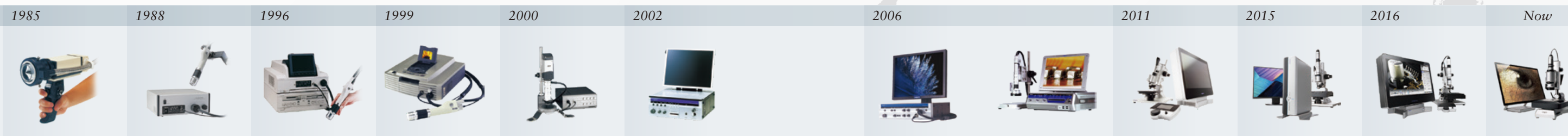
What's a Digital Microscope?

A digital microscope (DM), is a microscope that has a camera (CMOS) attached instead of an eyepiece and displays the digitally acquired image on a large monitor. In addition to observation, it can also have various extended functions such as dimension measurement, recording of still images and moving images. It is utilized in a wide range of scenes such as research and development, production technology and quality assurance of various private enterprises and government agencies with stress-free observation environment and ease of handling.



Digital Microscope made by optical manufacturer "Hirox"

From the time of our founding until now, we have three creeds that we continue to protect. First, a comfortable, stress-free observation environment. We aim to develop human-friendly equipment that is easy to handle so that it will become part of the body of the viewer. Next is absolute reality. With the lens technology cultivated over many years as the core, we pursue true images to the fullest. At the end, sincerity to meet user expectations and produce results. Being able to handle detailed custom-made products is one of the strengths of Hirox, which has a small turning radius. Manufacturing that does not allow compromise. It is a mission as a pioneer in the industry.



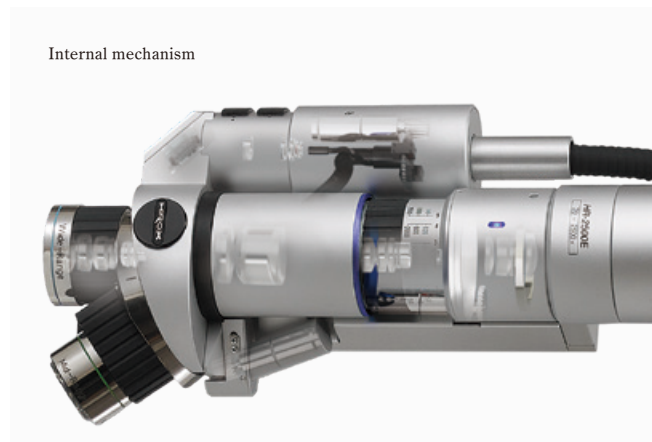
Automatic Adapter Recognition

With the new lens series, the adapter attached to the lens is automatically recognized. The operators never forgets to register the adapter information to the application. In addition, the magnetic type makes it easy to attach and detach.



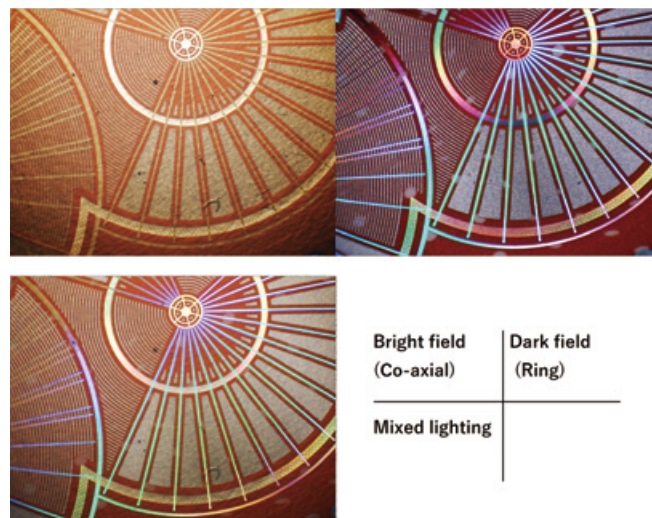
Motorized Zoom Lens

You can change the magnification simply by clicking the menu in the application without touching the lens when changing the magnification. Even an operator who has never touched the lens can easily operate the lens. In addition, automatic operation is possible, so even if the operator is not present, remote operation can be realized with the in-application menu.



Motorized Light Select

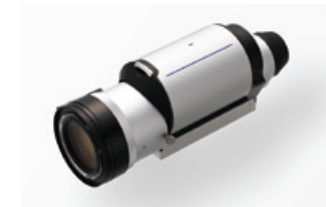
It is possible to automatically switch the illumination of the high-Range Motorized Zoom Lens (HR-2500E HR-5000E) that has three illumination functions: dark field, bright field, and mixed illumination. The optimal lighting for the target can be adjusted with one click.



Hirox Lens Series

| | 0x | 20x | 40x | 100x | 200x | 500x | 1000x | 2000x | 5000x | 10000x |
|--------------------|----|----------|----------|----------|-----------|------|-----------|-------|------------|------------|
| HR-10CE / HR-10C | | 35x-350x | 70x-700x | | | | | | 350x-3500x | 700x-7000x |
| HR-5000E / HR-5000 | | | | | | | 20x-5000x | | | |
| HR-2500E / HR-2500 | | | | | 20x-2500x | | | | | |
| HR-5040E / HR-5040 | | | | 50x-400x | | | 20x-800x | | | |
| HR-2016E / HR-2016 | | | 20x-160x | | 6x-320x | | | | | |
| HR-1020E | | | 10x-200x | | | | | | | |
| MXB-050Z | | 0x-50x | | | | | | | | |
| MXB-MACRO | | 0x-20x | | | | | | | | |

※ Magnification with adapter



Telecentric Ultra High Resolution Motorized Zoom Lens 10-200x
HR-1020E



High Range Turret Motorized Zoom Lens 20-2500x
HR-2500E

High Range Turret Zoom Lens 20-2500x
HR-2500



Super High Range Turret Motorized Zoom Lens 20-5000x
HR-5000E

Super High Range Turret Zoom Lens 20-5000x
HR-5000



Low Range Motorized Zoom Lens 20-160x
HR-2016E

Low Range Zoom Lens 20-160x
HR-2016



Middle Range Motorized Zoom Lens 50-400x
HR-5040E

Middle Range Zoom Lens 50-400x
HR-5040



High Resolution Motorized 10x Zoom Lens 35-10000x
HR-10CE

High Resolution 10x Zoom Lens 35-10000x
HR-10C



Macro Zoom Lens 0-50x
MXB-050Z



Macro Lens 0-20x
MXB-MACRO

Hirox Lens Series

Telecentric Ultra High Resolution Motorized Zoom Lens 10-200x

HR-1020E

Hirox developed a new and unique telecentric zoom lens covering a wide zoom range from 10x to 200x with guaranteed measurement results. This high resolution motorized lens captures images with NO distortion and a wide field of view.



- high resolution
- ideal for measurement
- perfect for 3D at low zoom
- long wd

| | | | | | | | | | | |
|---------------------------|----------------------|-----|-----|-----|-----|------|------|------|------|--|
| Item Number | HR-1020E | | | | | | | | | |
| Magnification | 10x | 20x | 30x | 50x | 90x | 100x | 120x | 150x | 200x | |
| Working Distance(mm/inch) | 54(2.13) | | | | | | | | | |
| Horizontal View(mm/inch) | 30.5(1.2)~1.52(0.06) | | | | | | | | | |
| Motorized Control | Zoom | | | | | | | | | |

High Range Turret Motorized Zoom Lens 20-2500x

HR-2500E

The very popular Hirox revolver zoom lens has been updated, covering now a wider magnification zoom, from 20 up to 2500 times, for seamless observation from low to high magnification. The motorized zoom, objective change and illumination selection (bright field, dark field or mixed) offer unprecedented ease of use and performance.

High Range Turret Zoom Lens 20-2500x

HR-2500

Super High Range Turret Motorized Zoom Lens 20-5000x

HR-5000E

For high demanding customers in need of very fine details, the super high range motorized revolver zoom lens can zoom up to 5000x, with an optical magnification ratio of 250 times without need for dismantling the lens. A universal lens that supports various objects and observation scenes. And just like the HR-2500E, zoom, objective change and illumination selection (bright field, dark field or mixed) are motorized.

Super High Range Turret Zoom Lens 20-5000x

HR-5000



- huge zoom ratio
- from low to high magnification
- Multiple built-in lighting
- perfect for 3D at high zoom

| | | | | | | | | |
|---------------------------|---|------|------|-------|---------|-------|-------|--|
| Item Number | HR-2500E | | | | HR-2500 | | | |
| Magnification | Wide-Range | 20x | 30x | 50x | 80x | 120x | 140x | |
| | Mid-Range | 140x | 200x | 400x | 600x | 800x | 1000x | |
| | High-Range | 350x | 500x | 1000x | 1500x | 2000x | 2500x | |
| Working Distance(mm/inch) | Wide-Range : 18(0.71) / Mid-Range & High-Range : 10(0.39) | | | | | | | |
| Horizontal View(mm/inch) | 15.4(0.61) ~ 0.12(4.72mil) | | | | | | | |
| Motorized Control | Zoom/Turret/Light Select(Bright Field, Dark Field or Mixed) | | | | — | | | |

| | | | | | | | | |
|---------------------------|--|------|-------|-------|---------|-------|-------|--|
| Item Number | HR-5000E | | | | HR-5000 | | | |
| Magnification | Wide-Range | 20x | 30x | 50x | 80x | 120x | 140x | |
| | Mid-Range | 140x | 200x | 400x | 600x | 800x | 1000x | |
| | High-Range | 700x | 1000x | 2000x | 3000x | 4000x | 5000x | |
| Working Distance(mm/inch) | Low-Range : 18(0.71) / Mid-Range : 10(0.39) / High-Range : 3(0.13) | | | | | | | |
| Horizontal View(mm/inch) | 15.4(0.61) ~ 0.06(2.36mil) | | | | | | | |
| Motorized Control | Zoom/Turret/Light Select(Bright Field, Dark Field or Mixed) | | | | — | | | |

Hirox Lens Series

Low Range Motorized Zoom Lens 20-160x

HR-2016E

Low Range Zoom Lens 20-160x

HR-2016

This high-performance zoom lens features compact body and high resolution image covers a total magnification range from 6-320x, while offering a large optical depth of field. This lens can be used as handheld in contact or have a working distance over 130 mm depending on the adapter. The new magnetic mounting system allow quick change of adapters, including the world's famous Hirox Rotary Head, covering a very wide range of applications.



| Item Number | HR-2016E | | | | HR-2016 | | | |
|---------------------------|----------------------|-----|-----|-----|-------------|------|------|------|
| Magnification | 20x | 30x | 40x | 50x | 80x | 100x | 130x | 160x |
| Working Distance(mm/inch) | 44(1.73) | | | | | | | |
| Horizontal View(mm/inch) | 15.4(0.61)~2.0(0.08) | | | | | | | |
| Adapter Recognition | Yes | | | | | | | |
| Motorized Control | Zoom/Rotary-Head | | | | Rotary-Head | | | |

※By Attaching Low-Magnification / High-Magnification Adapter to lens, it covers magnification range of 6-320x, changes field of view and working distance.

Middle Range Motorized Zoom Lens 50-400x

HR-5040E

Middle Range Zoom Lens 50-400x

HR-5040

This mid range zoom lens offers a large depth of field, with a long working distance, good resolution and realistic observation unique to large aperture lenses. With a wide zoom range, this lens is for customer that needs fast and easy observation at mid zoom of objects with high altitude differences.



| Item Number | HR-5040E | | | | HR-5040 | | | |
|---------------------------|----------------------|------|------|------|-------------|------|------|------|
| Magnification | 50x | 100x | 150x | 200x | 250x | 300x | 350x | 400x |
| Working Distance(mm/inch) | 54(2.13) | | | | | | | |
| Horizontal View(mm/inch) | 6.1(0.24)~0.78(0.03) | | | | | | | |
| Adapter Recognition | Yes | | | | | | | |
| Motorized Control | Zoom/Rotary-Head | | | | Rotary-Head | | | |

※By Attaching Low-Magnification / High-Magnification Adapter to lens, it covers magnification range of 20-800x, changes field of view and working distance.

High Resolution Motorized 10x Zoom Lens 35-10000x

HR-10CE

High Resolution 10x Zoom Lens 35-10000x

HR-10C

With seven interchangeable objective lenses, this optical zoom lens incorporates high expandability and the highest resolution in the series, covering a magnification range of 35-10000x. A directional lighting adapter is included for coaxial vertical lighting to achieve the finest optical observation at sub-micron level.



| Item Number | HR-10CE | | | | | HR-10C | | | | |
|---------------------------|---|-------|-------|-------|-------|--------|-------|-------|-------|--------|
| Magnification | OL-35 | 35x | 50x | 75x | 100x | 125x | 150x | 200x | 250x | 350x |
| | OL-70II | 70x | 100x | 150x | 200x | 250x | 300x | 400x | 500x | 700x |
| | OL-140 | 140x | 200x | 300x | 400x | 500x | 600x | 800x | 1000x | 1400x |
| | OL-140II | 140x | 200x | 300x | 400x | 500x | 600x | 800x | 1000x | 1400x |
| | OL-350II | 350x | 500x | 750x | 1000x | 1250x | 1500x | 2000x | 2500x | 3500x |
| | OL-700II | 700x | 1000x | 1500x | 2000x | 2500x | 3000x | 4000x | 5000x | 7000x |
| | OL-1000 | 1000x | 1500x | 2000x | 3000x | 4000x | 5000x | 6000x | 8000x | 10000x |
| Working Distance(mm/inch) | OL-35:34(1.34) / OL-70II:21(0.83) / OL-140:30.5(1.2) / OL-140II:12(0.47) / OL-350II:10.6(0.42) / OL-700II:3.4(0.13) / OL-1000:1.0(0.04) | | | | | | | | | |
| Horizontal View(mm/inch) | 9.83(0.39)~0.04(1.18mil) | | | | | | | | | |
| Motorized Control | Zoom | | | | | — | | | | |

Macro Zoom Lens 0-50x / Macro Lens 0-20x

MXB-050Z / MXB-MACRO

Perfect for observation and documentation of large objects. The MXB-Macro is using available light with a zoom depending on the working distance, giving very good results at affordable price, while the MXB-050Z offers built in ring light and calibrated zoom for advanced macro observations up to 50x.

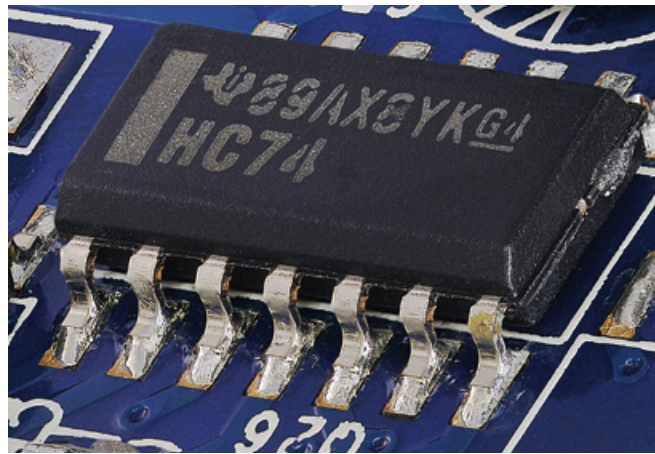


| Item Number | MXB-050Z | | | | | | MXB-MACRO | |
|---------------------------|-------------------|----|-----|-----|-----|-----|---------------------|-------|
| Magnification | 0-5x | 5x | 10x | 20x | 30x | 40x | 50x | 0-20x |
| Working Distance(mm/inch) | infinity~90(3.54) | | | | | | — | |
| Horizontal View(mm/inch) | ∞~61(2.40) | | | | | | infinity~15.4(0.61) | |

Hirox Accessory Series

Rotary - Head

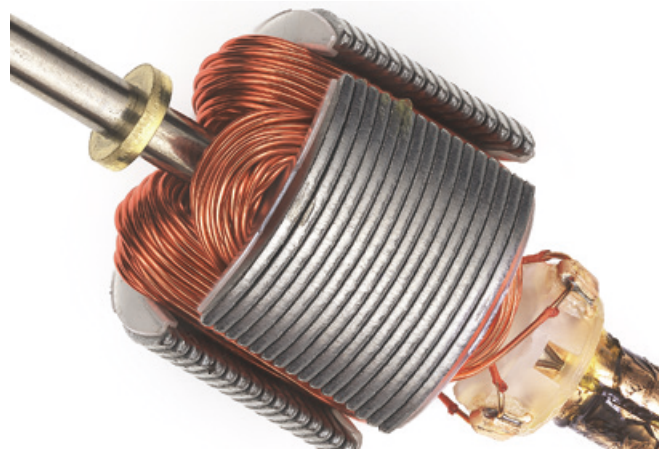
It enables observation of an object in 360 degrees of rotational inspection, with a 45 degree and various viewing angle. Through the observation of the moving object, the object's shape is better understood.



PCB Soldering

Diffused Lighting

This adapter diffuses the light in all directions and creates soft illumination. Thanks to the multi directional lighting, the light is evenly distributed on the objects, reducing strong reflections. It is suitable for observing metal surfaces for example.



Motor

Low/High magnification Adapter

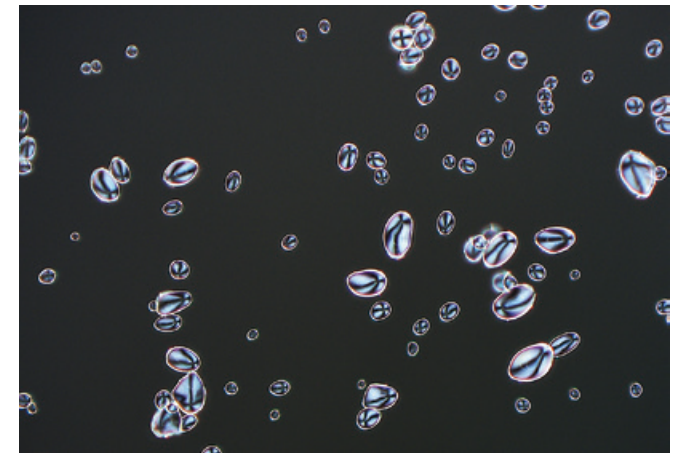
Low-magnification Adapter reduces the lens magnification while increasing the working distance enabling the inspection of larger objects/area. High-magnification Adapter doubles the lens magnification, enabling the inspection of smaller objects/ area.



Magnetic Head for HDD

Transmitted Polarized Lighting

Using a filter with the condenser, light can be restricted to a single direction of vibration. This filter can enhance an image by reducing light intensity and glare. This is especially useful with transparent biological samples, as different elements/features of the sample can be observed by changing the direction of the light.



Starch Particles

Variable Lighting

This adapter allows the illumination angles to change freely from epi-illumination to side illumination. It helps to find the optimal illumination angle for the best observation. This is an original Hirox design.



Fabric

Polarized Lighting

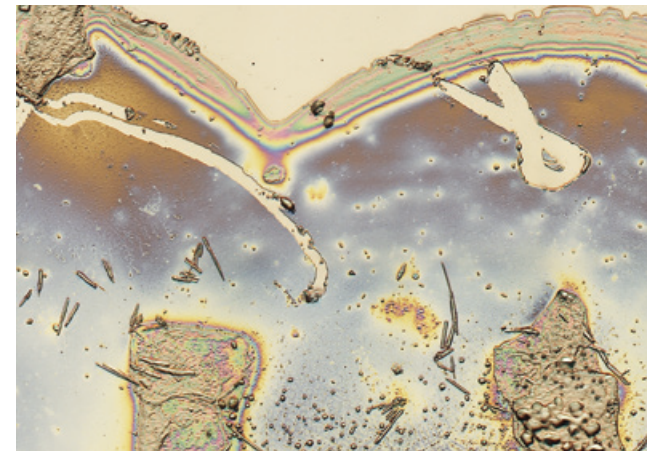
This adapter helps to reduce the reflection of the surface from the observed objects through polarizing filters. It is particularly effective for printed matters, substrates, coatings and other objects that are highly reflective.



Weld Penetration

Co-Axial Lighting

Observation through lighting that is parallel with the lens axis can be difficult to ascertain and inspect intensely reflective surfaces. With this adapter, the light is reflected perpendicular to the lens axis.



Dirt Of HDD Platter

Handheld Observation

Sometimes it is necessary to observe a large object that cannot be placed on the stage, such as inspection of wheels, paint on the car body surface, or a person's skin.



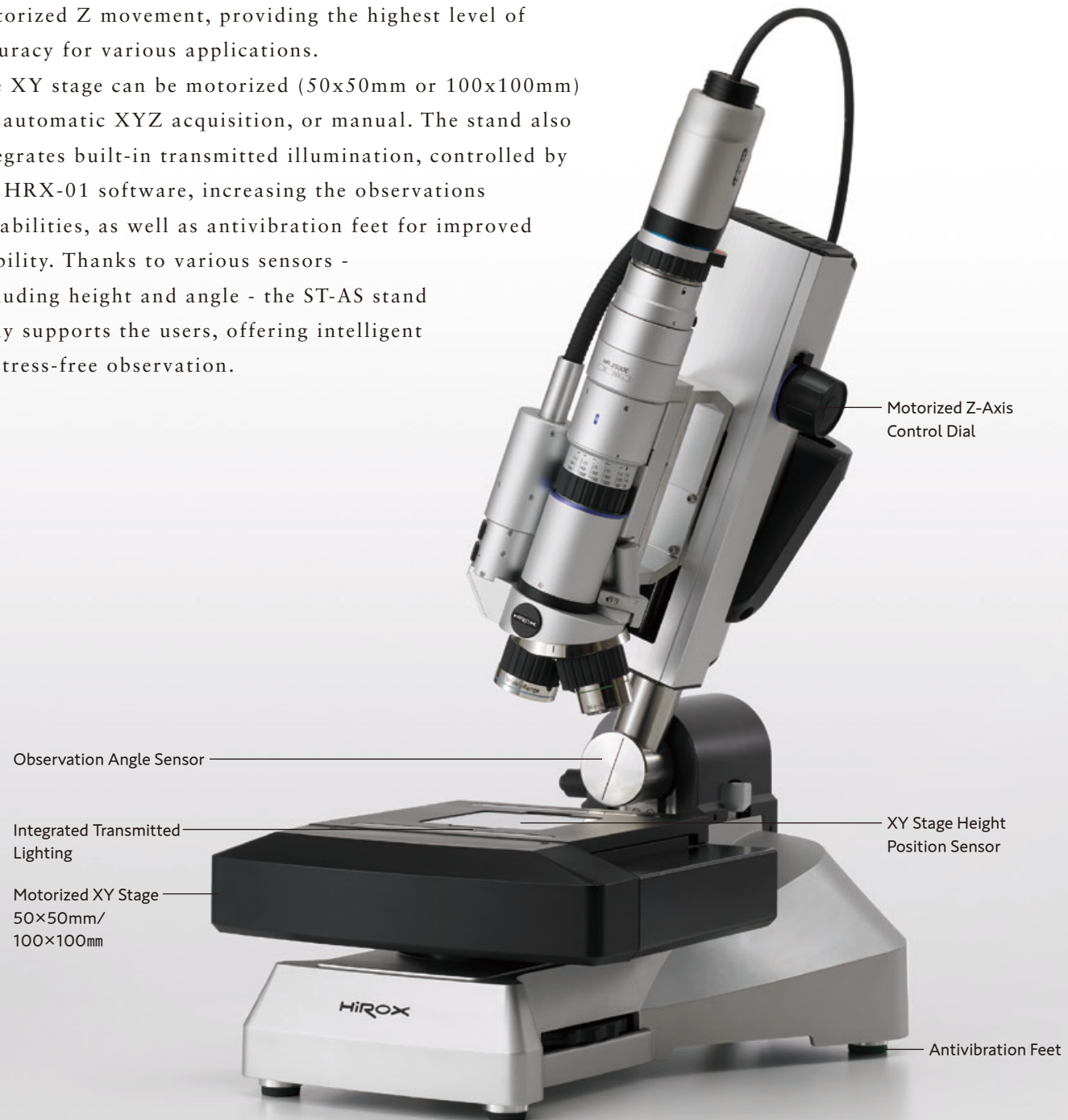
Front Bumper Of Automotive

NEW High Precision Free Angle Stand

Precision control of 0.05um

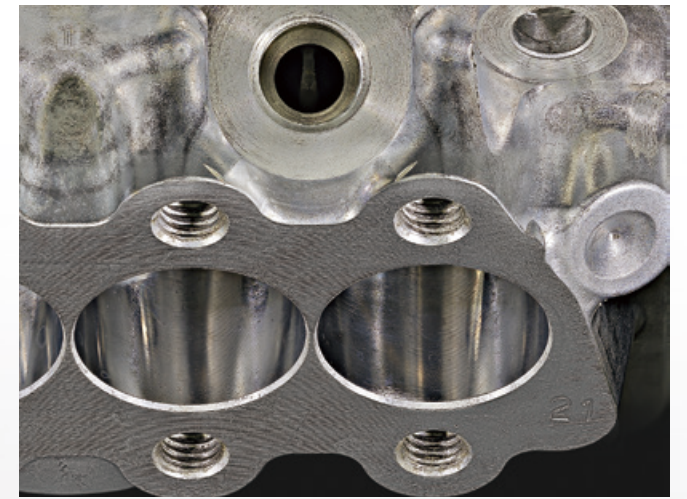
Hirox created a completely new inclination stand featuring multiple integrated sensors and a high precision 80 mm motorized Z movement, providing the highest level of accuracy for various applications.

The XY stage can be motorized (50x50mm or 100x100mm) for automatic XYZ acquisition, or manual. The stand also integrates built-in transmitted illumination, controlled by the HRX-01 software, increasing the observations capabilities, as well as antivibration feet for improved stability. Thanks to various sensors - including height and angle - the ST-AS stand truly supports the users, offering intelligent & stress-free observation.



Motorized XY-Axis Large stage

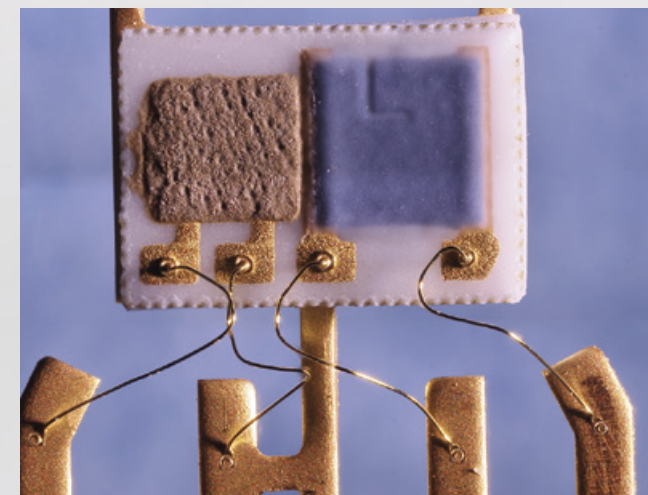
Large Motorized XY-Axis Stage allows for the observation of large samples with effective stroke of 110mm x 100mm . High intensity LED transmitted lighting is built in for observation of various samples.



Cylinder

Multiple Lighting Capability

The ST-AS stand can expand lighting options, such as transmission illumination, but also it allows controllable additional external lighting such as the newly developed dual side lighting option, offering higher flexibility of observation.



Component part

Rotation Stage

Rotation stage effective for wafer observation can be attached. It fixed 4inch, 5inch 6inch sizes by digging. Sizes over 8inches are also available.



Wafer

Selectable Digital Microscope System

Hirox reviewed all of the camera, lenses, and stand, and newly designed and developed a complete set of digital microscope systems.

In order to respond more precisely to the user's application, we have a lineup of two models, a flagship model and a standard model, each of which has a function that can be selected according to the application.



HRX-01

Flagship model

With the new HRX-01, Hirox keeps on leading the way for 3D Digital Microscopes! Hirox completely redesigned its successful PC based system with new high resolution camera, a newly developed intelligent stand combined with high end motorized lenses-bringing digital microscopy to a completely new level. Fully packed 4K system with multiple included functions such as advanced 2D measurement or 3D visualization that can be customized with 3D measurement, tiling and contamination.

RX-100

Standard model

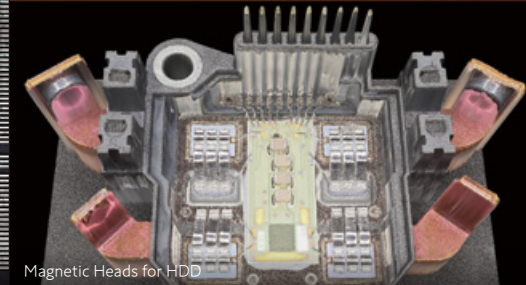
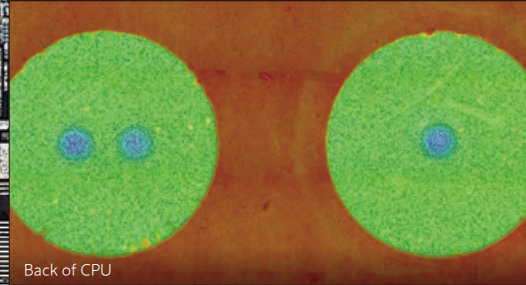
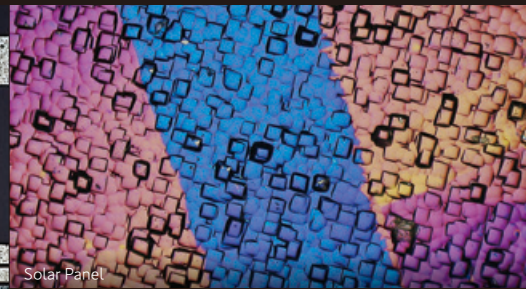
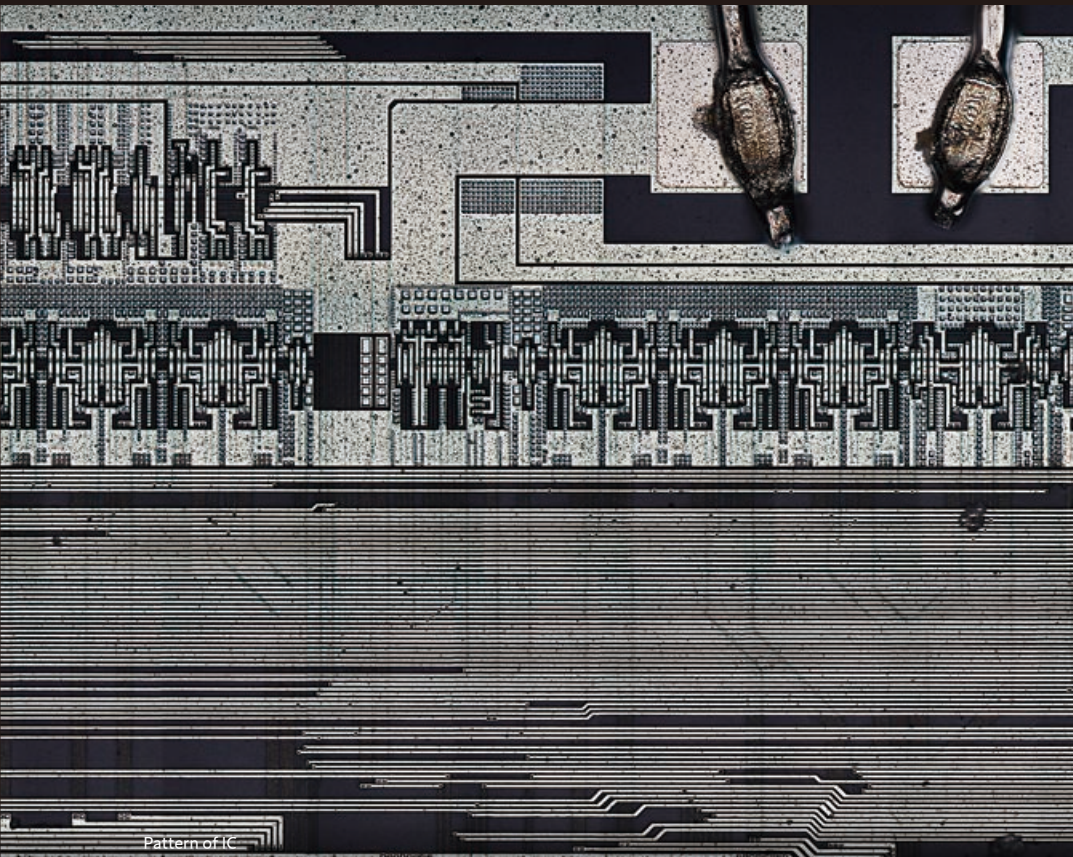
The RH-100 is based on the HRX-01 model, it is designed as an entry level system with adjusted resolution but without losing software features! With an attractive pricing, the RH-100 is using the resolution.

Fully compatible with the new stand ST-AS, it is using the same high quality lenses in manual version *1. The RH-100 can also be later upgraded to HRX-01 to evolve with your needs!

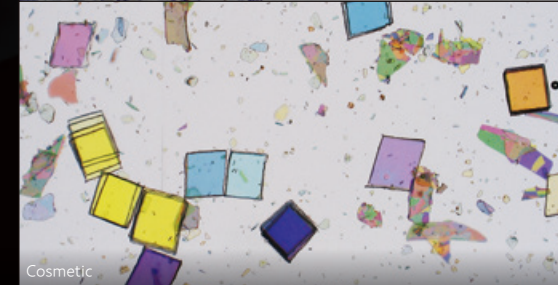
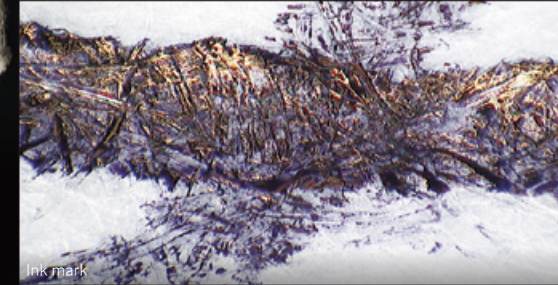
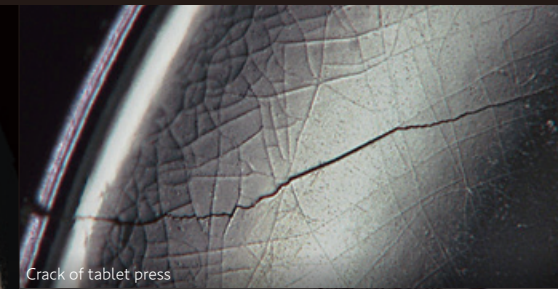
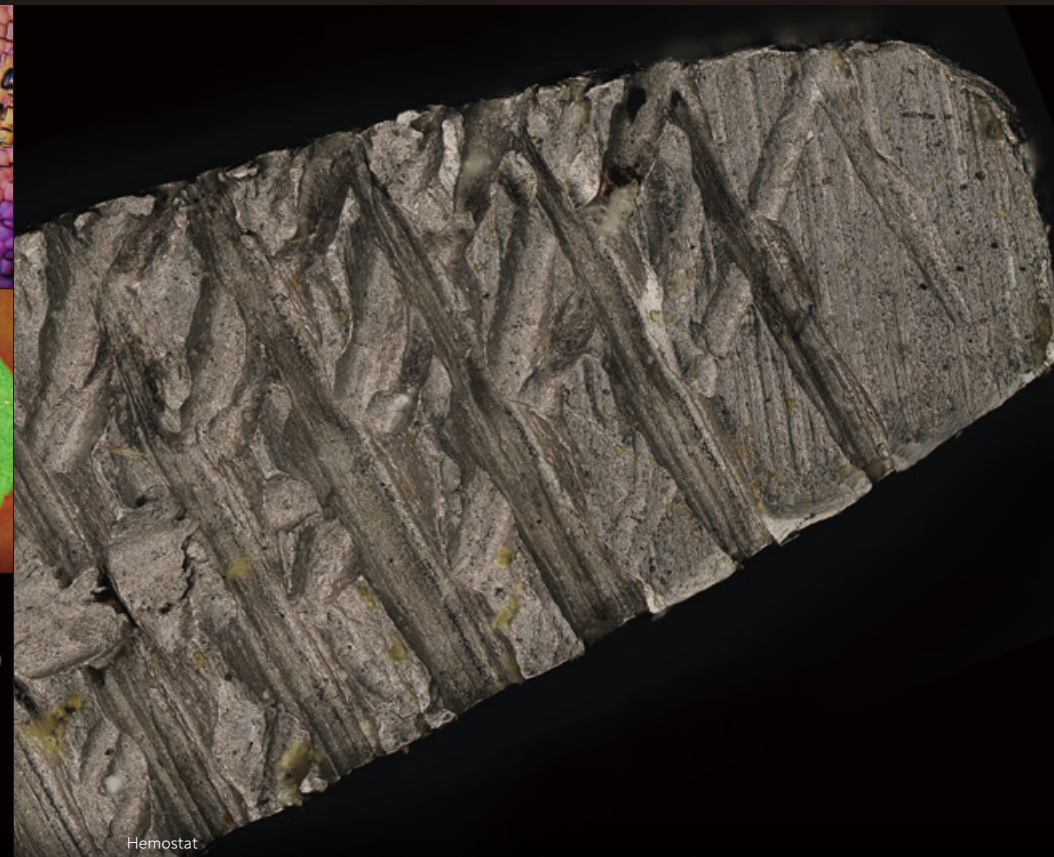


Sample Image

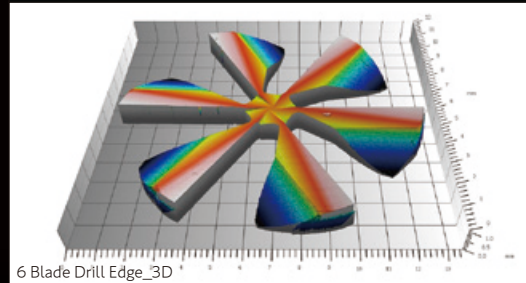
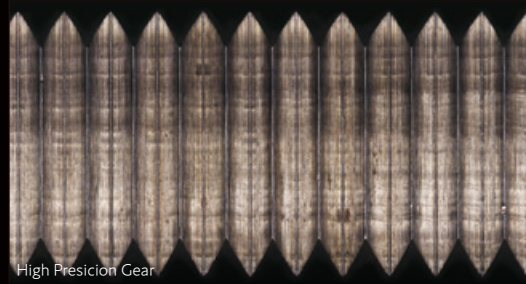
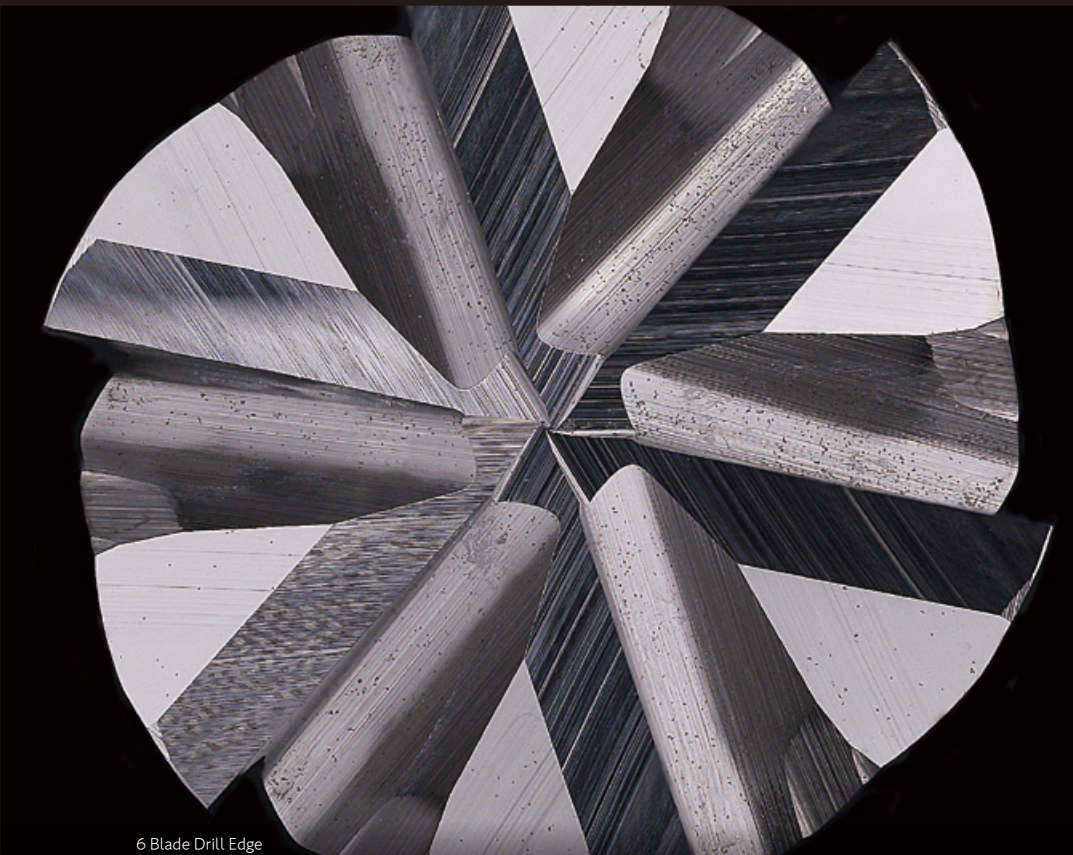
Electronics / Electric / Semi



Chemical / Medical / Pharma



Automotive / Metal / Machinery



Bio / Agriculture / Food



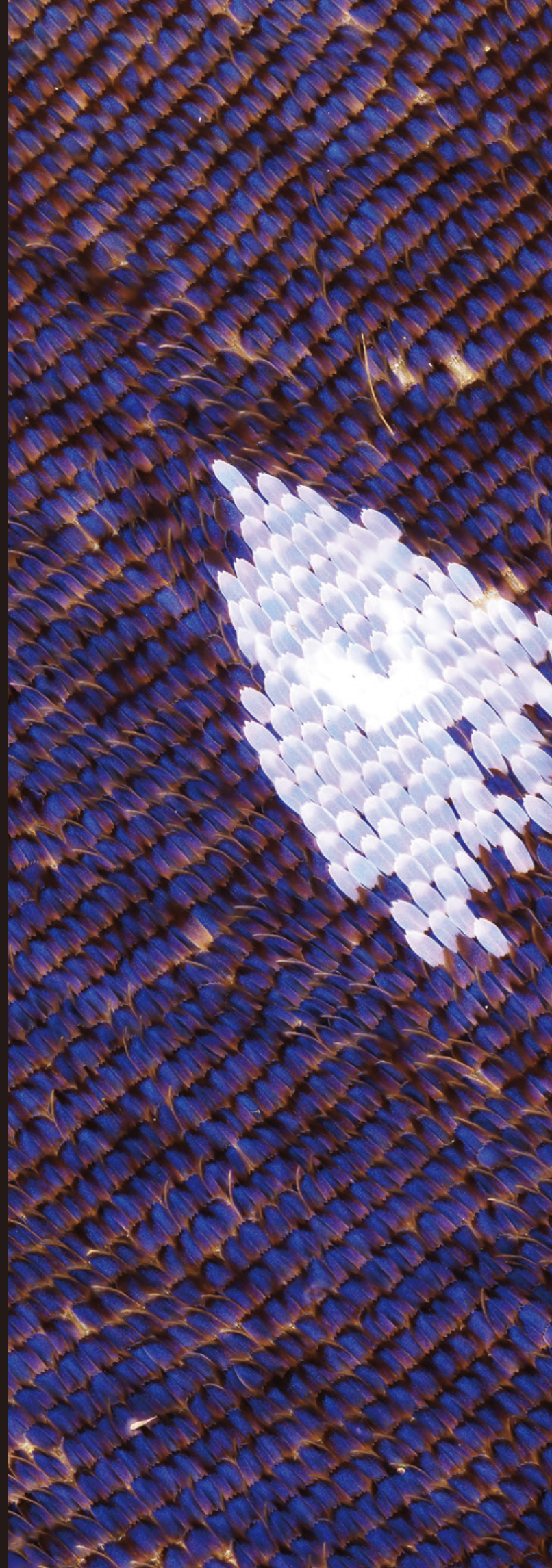
Observation

Ultimate Observation Performance Pursued With a New Camera and Lens

Live-Focus

This standard function instantaneously creates a fully focused image of the area even for objects with high differences in height. Anyone can easily perform this expanded observation without being limited by the depth of field.

Butterfly Wings



Live HDR - Automatic Optimization of Live Images

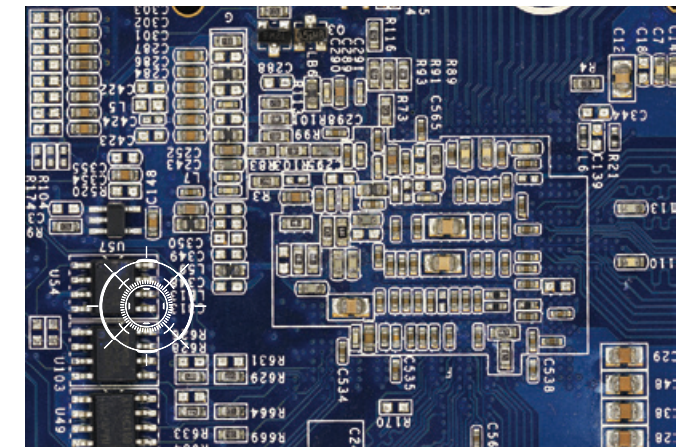
The HRX-01 artificial intelligence automatically select the optimal observation settings according to the observation scene and object.



Connector

Guide Map

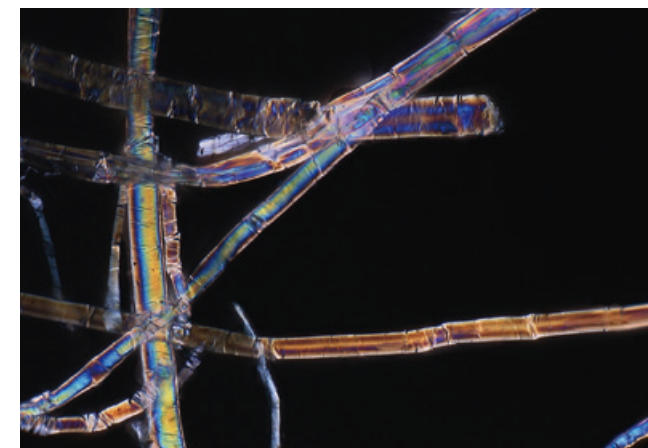
The captured image becomes a guide map linked with the position information of the electric XY stage. By using a low-magnification image as a map, you can see at a glance which position you are observing even when the field of view is narrowed at high magnification.



Mounted Board

Restore Cam Settings

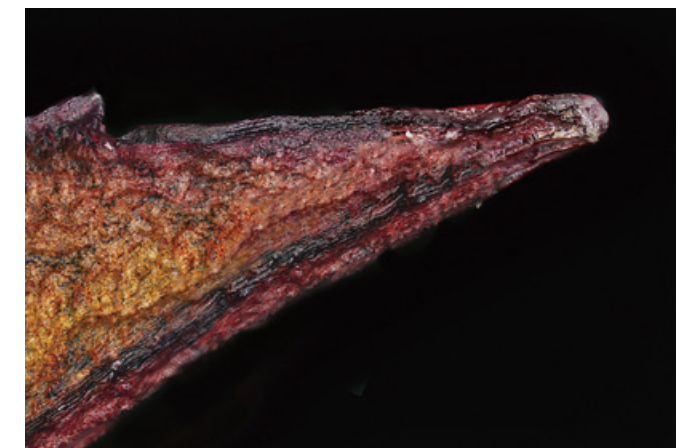
The shooting conditions of saved images can be reflected in the shooting conditions of real-time images. It is possible to always observe and shoot under the same conditions when the target is the same system as the one shot in the past.



Blond Hair

Optimization

Switch the optimal camera settings for real-time images with one click. We also provide detailed shooting settings for users who need subtle color adjustments.



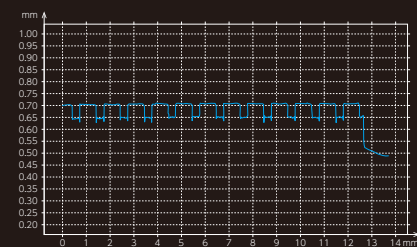
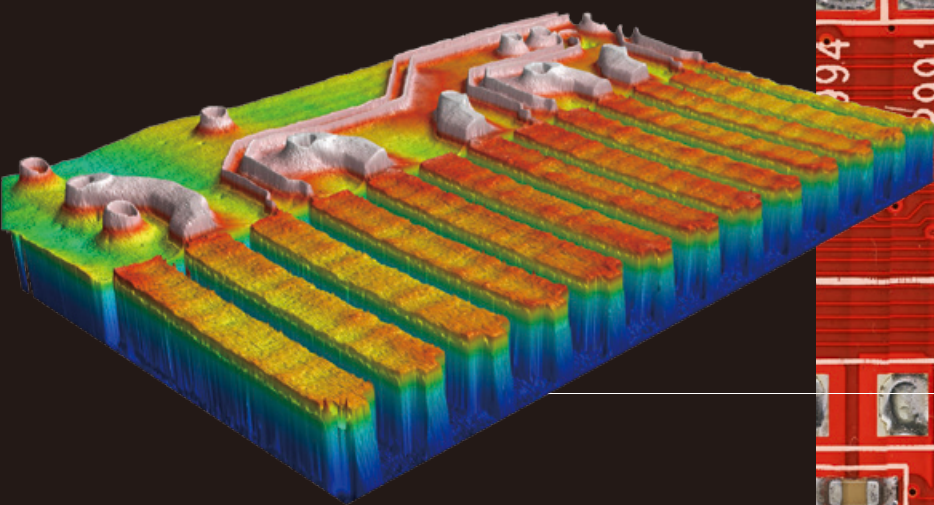
Plant (Leaf)

Recording

High-quality
Recording the shape
and texture of an
object as it is

High-Quality Image Capture

It can capture a still image in different formats (TIFF / BMP/ JPEG). Every saved JPEG image is ingrained with the camera, calibration, and magnification information, allowing for confirmation of recording date, camera settings, and intensity of light used. It can record video for up to 200 minutes.



Mounted Board

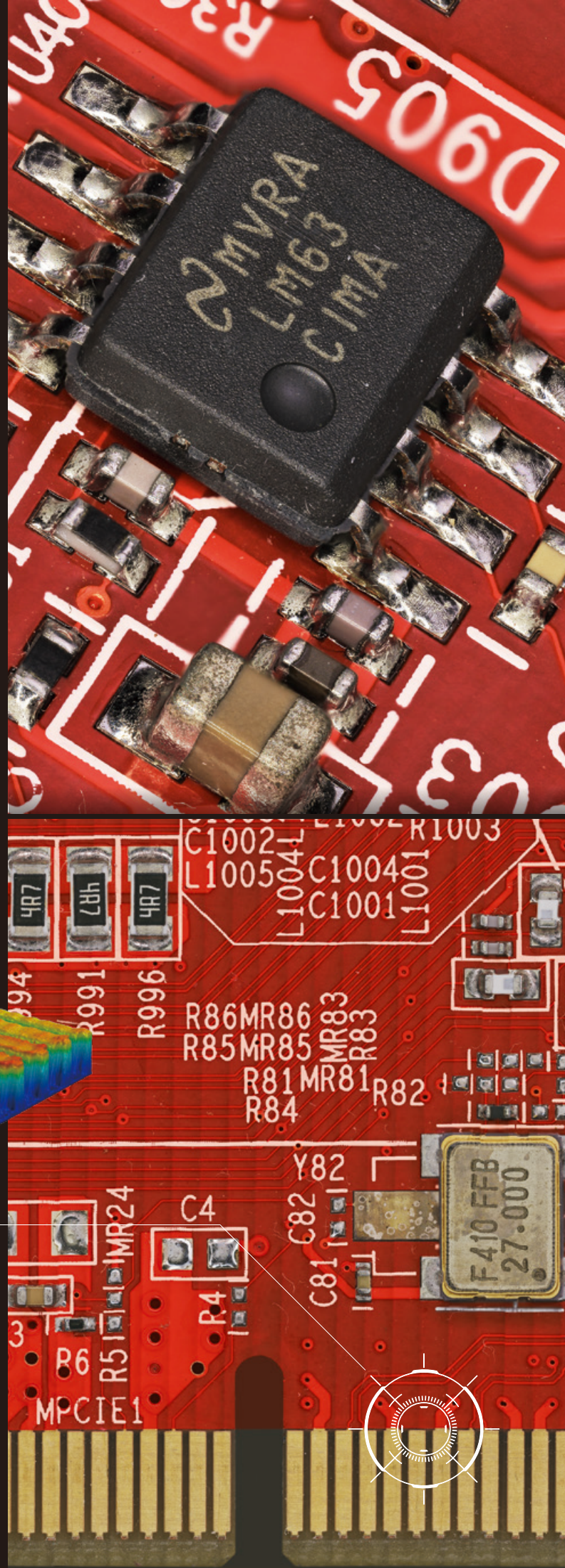
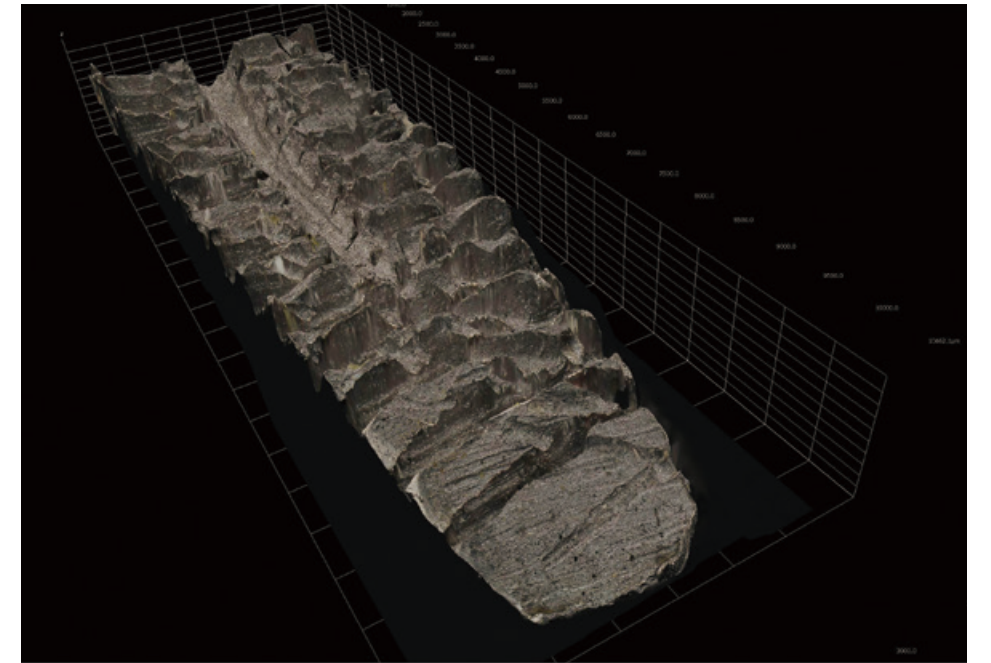


Image Tiling

Just select the area of interest and the image will automatically begin stitching seamlessly in real-time with the motorized XYZ stage creating amazing high optical resolution images with a wide field of view simultaneously. And with the "map" function, the tiled image is displayed on the screen so you just need to click on the map to bring the stage to the clicked position.



Scratches on Metal

Coordinate Capture

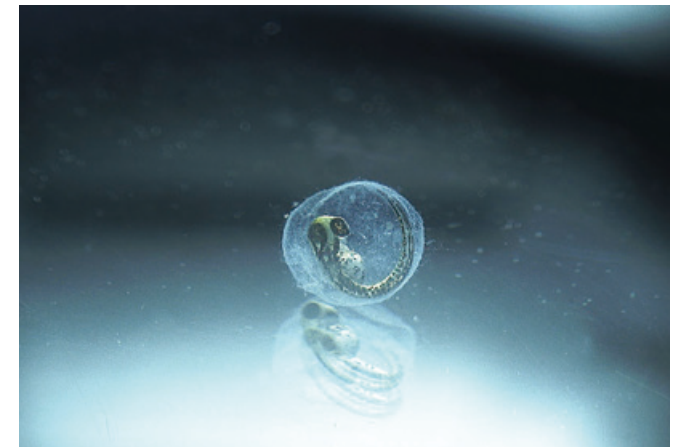
It automatically moves to the XY coordinate values registered in advance and record one after another. The auto-focus function makes it possible to take pictures with clear focus.



Cutting Tool(Drill)

Time Lapse Recording

The HRX-01 RX-100 can automatically take a sequence of frames at a specified interval to record changes over a set duration. To help reduce energy consumption, the LED lamp is only turned on when necessary.



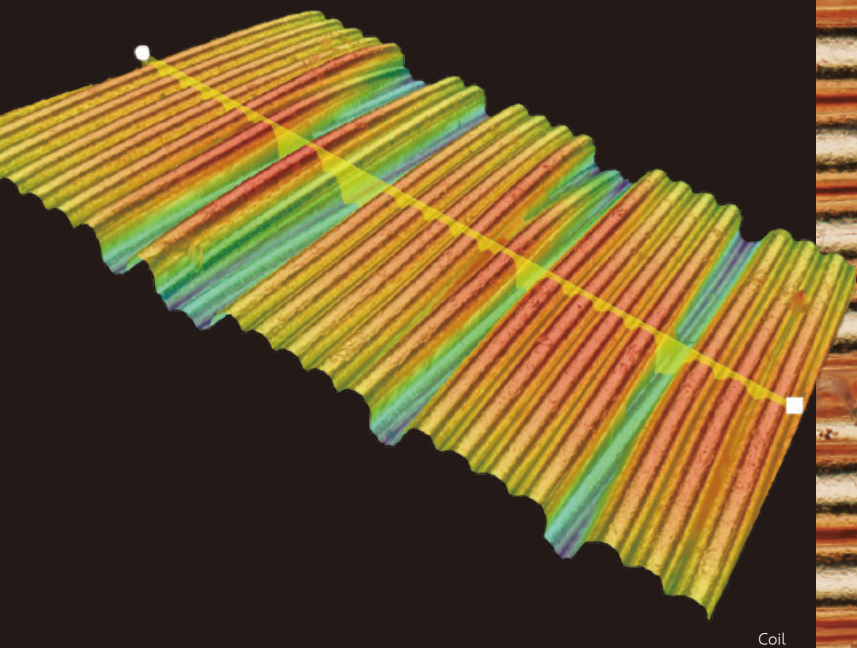
Egg of Zebrafish

Measurement

Intuitive Measurement
Apprication
Enable use in various
inspection scenes

Various Measurement Apprication

In addition to observing the size and depth of scratches on objects, finished dimensions and height dimensions of precision parts, a numerical approach is also realized. We support a variety of practical and easy-to-use measurement tools such as 3D measurement of depth, height, volume, as well as 2D measurement of the length, angle, area, and arc of the object.

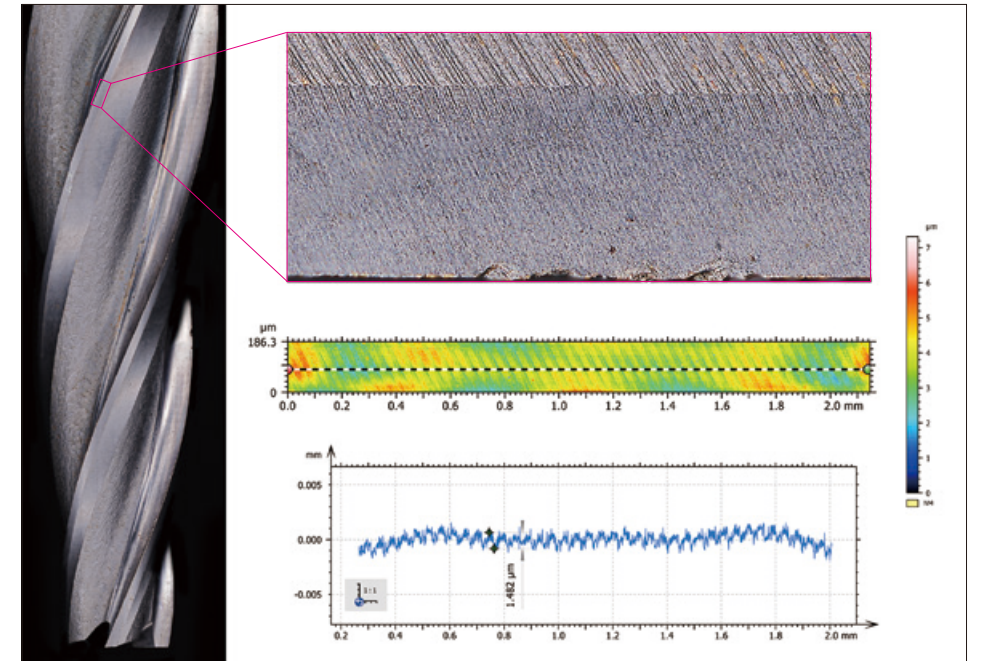


Coil



Roughness(Ra, RZ)

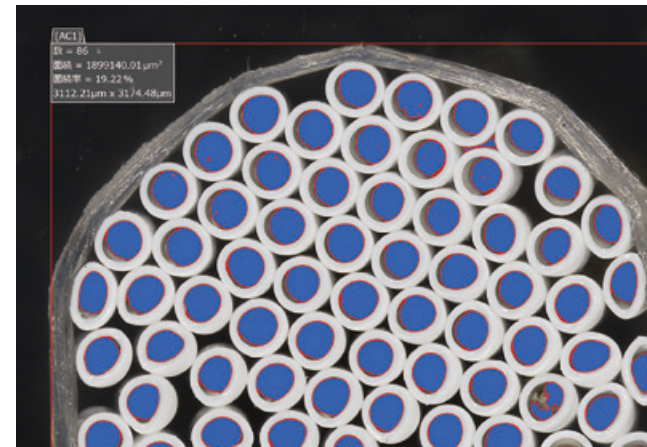
The powerful 3D software enables accurate line roughness measurement in Ra and Rz (ISO4287:1997) and is compatible with optional surface roughness measurements (Sa, Sq, and many more).



Blade Tip of Drill

Auto Count Functions

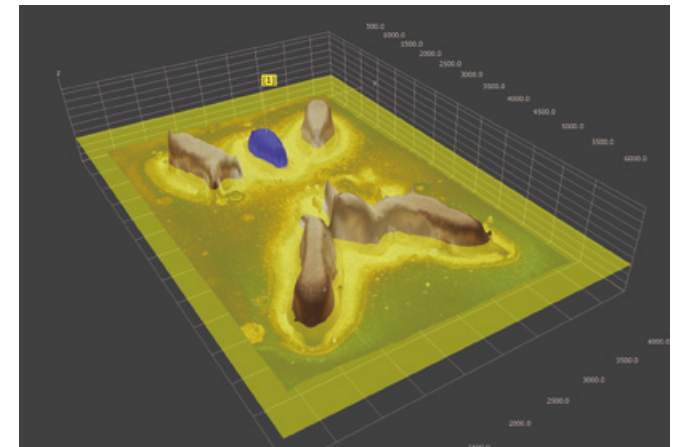
Advanced software algorithm allows automatic detection and count of particles, based on contrast or color values. With 1 click the system automatically counts parts that have similar colors, with Advanced statistics.



Hollow Yarn

Volume and Area

Volume and area can also be measured on the 3D object by adjusting the horizontal cross section and clicking on the area of interest.



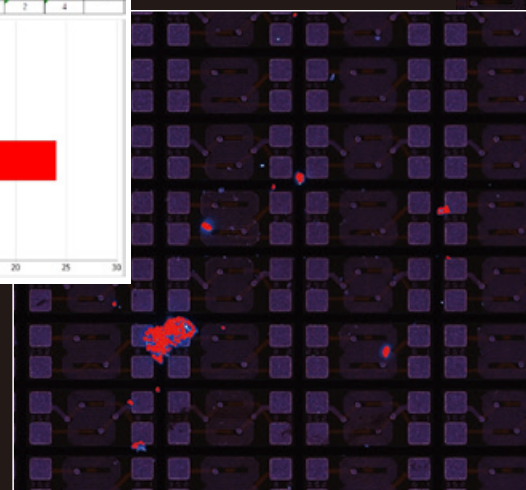
Copper Precision Parts

Measurement

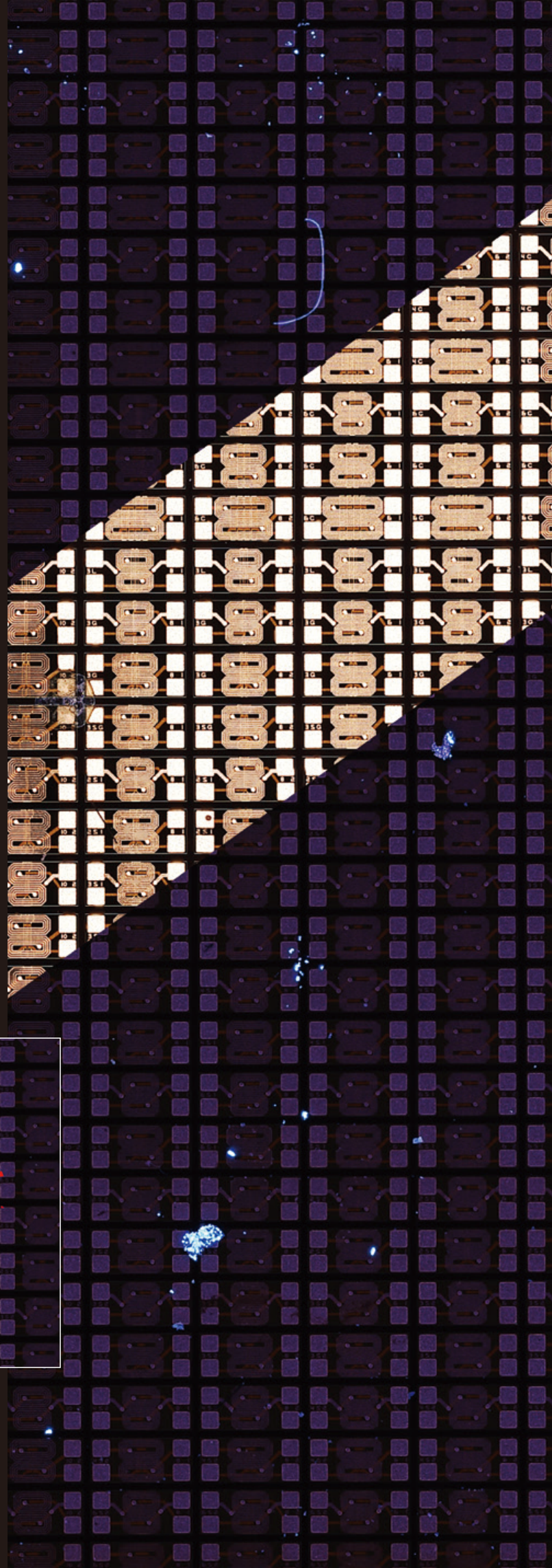
Other Functions

Contamination Analyzer (ISO 16232 Compliant)

Particles are automatically detected with pass/fail judgment by settable threshold. Advanced statistical data with histogram and frequency distribution are automatically calculated and displayed in Excel. It's very easy to measure the shape of every particle or cells, from metal particles to animal cells.

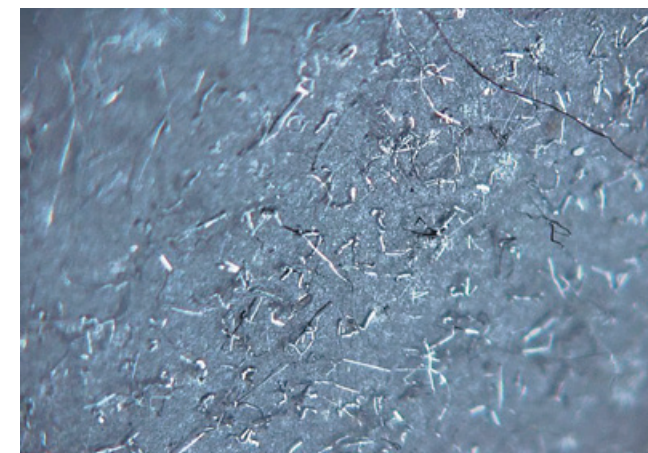


Contamination on IC Pattern



Fiber Particle Measurement

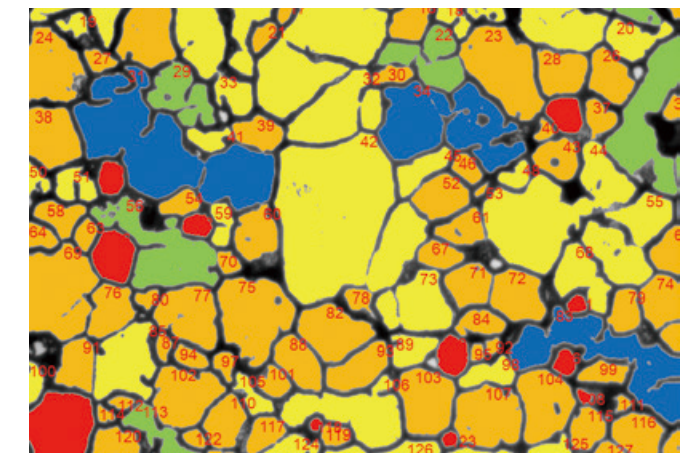
Even when fiber particles are crossed, it is possible to separate them one by one, measuring the length and number, the width and fiber ratio of the fiber particles.



Glass Fiber

Metal Grain Boundary Measurement

When observing polished metal structures, particle size and area can be measured by recognizing and separating normal non-binarizable boundaries using a special algorithm.



Metal Structure

Excel Reports with One Click

This feature enables one-click export of images, measurement results, statistics & image information into an Excel sheet. The report format can be easily customized so that you can create your own report with company information. The integration between the HRX-01 and Windows is seamless and offers great flexibility.



Remoto Observation

The electric zoom lens and electric stand system enable propose a new observation style. Regardless of the internet or company network, if you install the dedicated software on a computer connected to the network, you can perform magnification operation and stage operation from another place, and you can observe, measure, and record in real time.



※ This spread page function requires optional software separately.

Customize Line Up

Observe Paintings with a Digital Microscope

The HIROX EUROPE staff participated in a project to verify Vermeer's "Girl with a Pearl Earring" in the Dutch Museum. The project took place in the museum for two weeks and was held in a glassed space for visitors to see. In order to shoot the whole painting, we have created an XYZ 3-axis motorized stand with a very large working area.

The installation and verification of the observation system is available on our website, which is a QR code.



Verification landscape

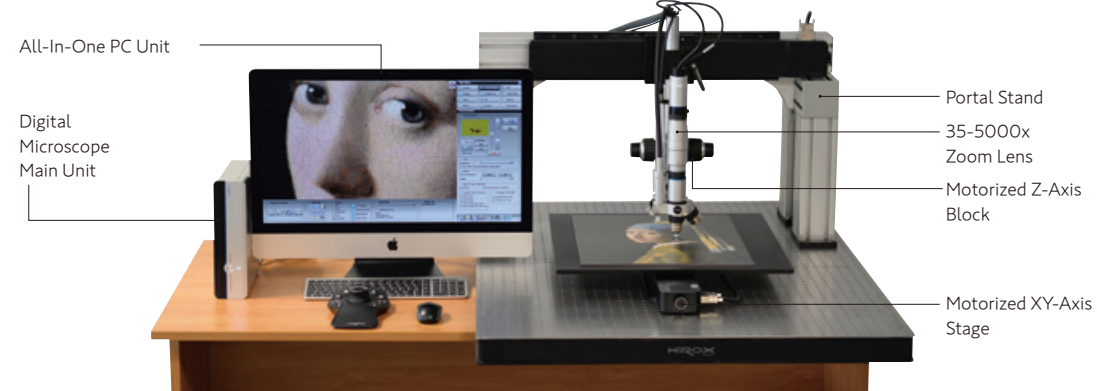


Setting up Systems

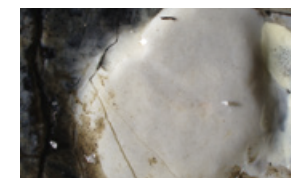


Copyright : Mauritshuis « Girl with the pearl Earring - Johannes Vermeer »

System Configuration



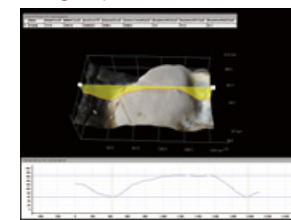
Copyright : Mauritshuis « Girl with the pearl Earring - Johannes Vermeer »



1 Right Eye 140x



2 Earring 35x



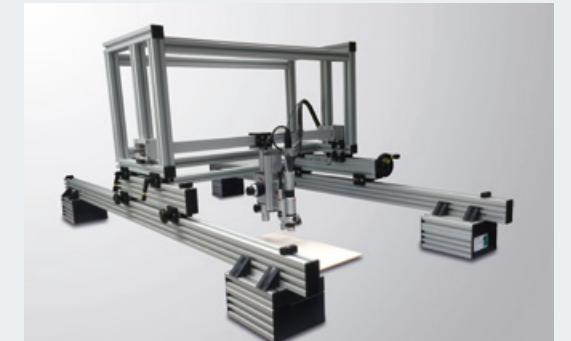
Height Measurement



3 Lips 140x

※ The entire painting was shot 35 times and over 9,000 shots were made into data. With the lens unique to optical manufacturers, each image is projected in a realistic and clear manner even when the ink is cracked. In addition, we photographed the areas of interest, such as the eyes, earrings, blue scarf, and lips, at 140x, and converted them into 3D data to measure the ink thickness.

Other Case



A large stand for large objects such as glass plates, large substrates, and paintings.



A portable type that allows you to observe large objects without riding on the stage.

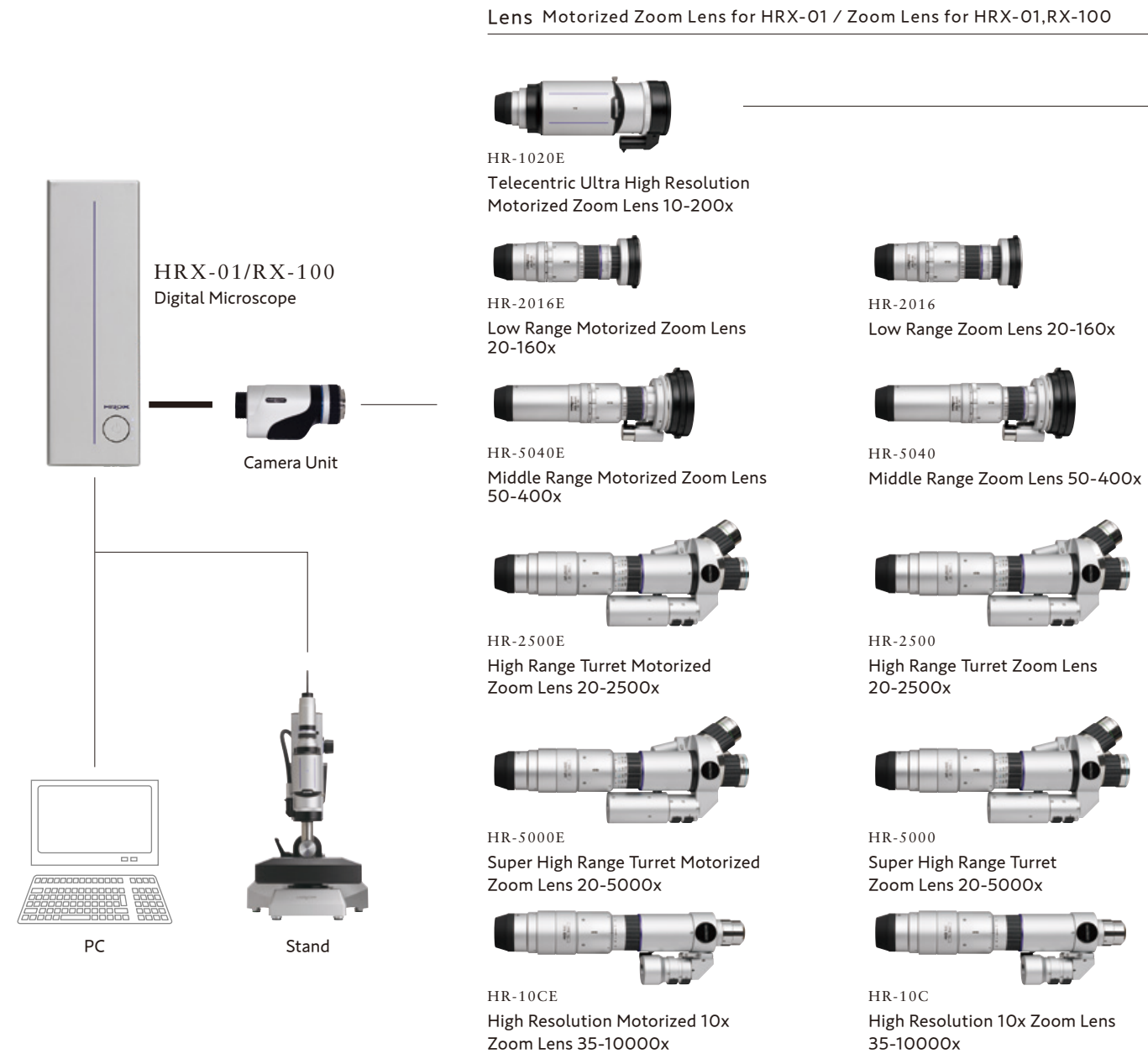


A stand that allows you to observe a disk-shaped object from the edge to the center while rotating it. Compatible with 12 inch wafers.



Flexible arm stand that is effective for objects that cannot be placed on the stage.

Hirox System Line Up



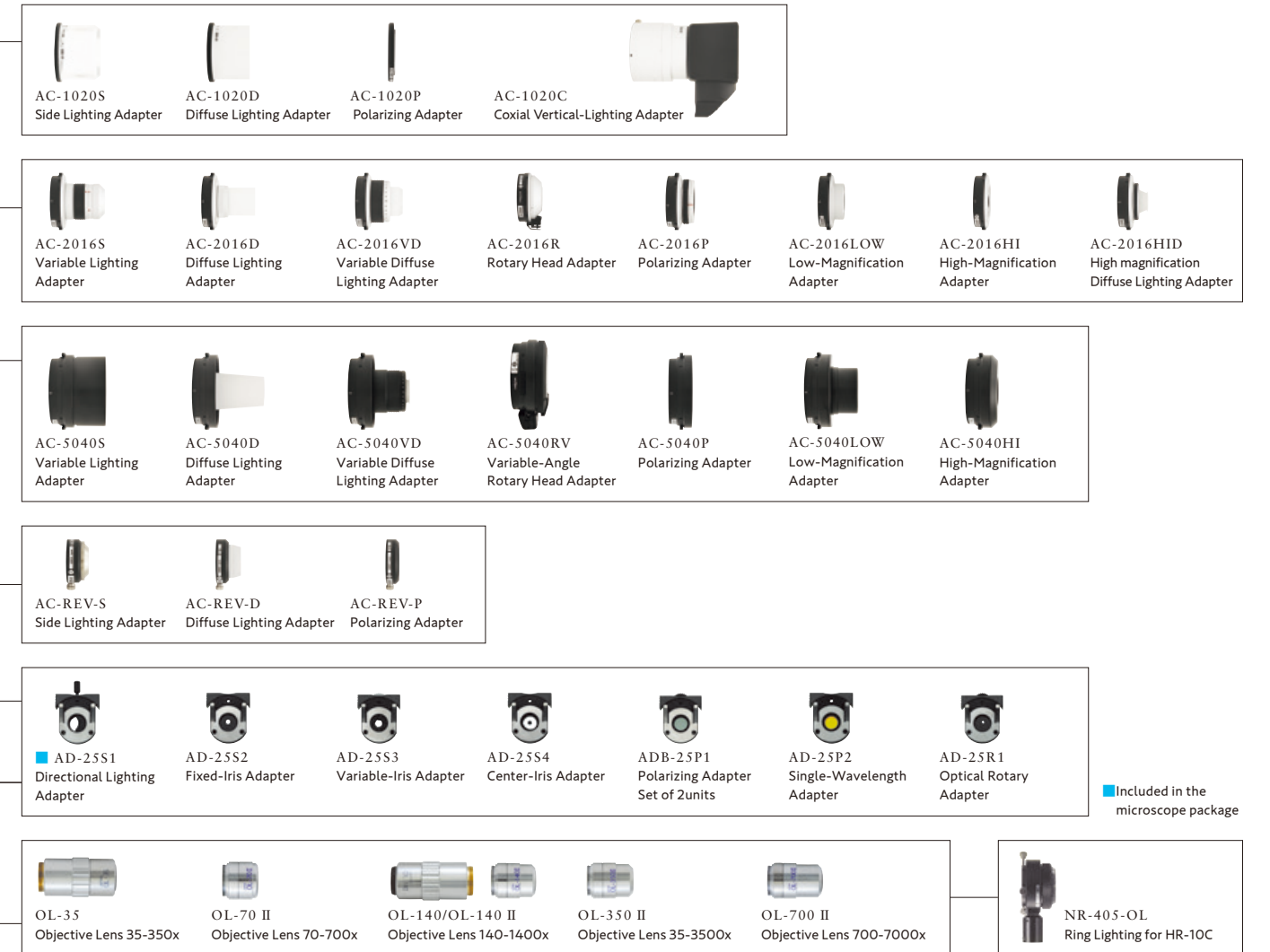
Software

| | |
|-------------|-------------------------|
| HRS-3D | 3D Measurement software |
| HRS-TL | Tiling Software |
| SP-Software | Contamination Analyzer |

| モデル | Basic System System with basic functions of Digital Microscope | | 3D Measurement System For those who often observe uneven shapes and 3D measurements | | Tiling System For those who often observe high resolution and wide field of view | | Full System For those who want to observe a wide variety of samples in various ways | |
|--------------------|---|-----------------|--|-----------------|---|-----------------|--|-----------------|
| | HRX-01 | RX-100 | HRX-01 | RX-100 | HRX-01 | RX-100 | HRX-01 | RX-100 |
| 2D計測 | ● | ● | ● | ● | ● | ● | ● | ● |
| 3D計測 | — | — | ● | — | — | — | ● | — |
| 画像連結 ^{※2} | — | — | — | — | ● | ● | ● | ● |
| 電動ズーム | ● | ▲ ^{※1} | ● | ▲ ^{※1} | ● | ▲ ^{※1} | ● | ▲ ^{※1} |
| PCモニタ解像度 | 4K | Full HD | 4K | Full HD | 4K | Full HD | 4K | Full HD |

※1 : HR-1020E can be connected to RX-100.
 ※2 : Motorized XY-Axis Stage is required

Adapter



Stand



Specification

Basic Functions: Camera Control Unit

| Model | | HRX-01 | RX-100 |
|--------------------------|----------------------|---|-----------------------------------|
| Camera | Imaging Device | 2/3-inch 5.07Megapixel CMOS Image Sensor - Global Shutter Type | |
| | Total Pixels | 2464(H)×2048(V) | |
| | Effective Pixels | 2448(H)×2048(V) / 2040(H)×1530(V) | 2448(H)×2048(V) / 2040(H)×1530(V) |
| | Visual Pixels | 2448(H)×2048(V) / 2040(H)×1530(V) | 1958(H)×1638(V) / 1632(H)×1224(V) |
| | Scanning Method | Progressive Scan | |
| | Frame Rate | 50Frame1 / Sec(Max) | |
| | Live HDR | 25Frame / Sec(Max) | |
| | Electronic Shutter | Auto, Manual 1~1/24000 | |
| | Gain | Auto / Manual 0dB~12dB | |
| | White Balance | AUTO(One Push), MANUAL(R,G,B) | |
| | Back Focus | NOT Required | |
| | Light Source | Lamp | High Intensity LED |
| Lamp Life | | 30,000hours(Average) | |
| Color Temperature | | 5700K(Typical) | |
| Output | PC Interface | USB 3.0 Series A | |
| | Camera | USB 3.0 Series B | |
| Input | Stand Controller | Special Cable | |
| | USB Ports | USB 3.0 Series A×2 | |
| Interface | Through PC | LAN, USB 3.0 / 2.0, HDMI, Others | |
| | Supply Voltage | AC100V~240V 50/60Hz | |
| Power | Consumption | 200W | |
| | Ambient Temperature | 5~40°C(41~104F) | |
| Environmental Resistance | Relative Humidity | 20~80% RH(No Condensation) | |
| | Atmosphere | Corrosive Gas Prohibited | |
| | Altitude | Below 2000Meter | |
| | Storage Temperature | -15°C~-50°C(No Condensation) | |
| | Contamination Degree | 2 | |
| | Overvoltage Level | II | |
| Weight | Main Unit | Approx. 2.5Kg(5.51lb) | |
| | Camera Unit | Approx. 1.0Kg(2.20lb) | |
| Dimension | Main Unit | 130mm(W)×243.6mm(H)×275mm(D) 5.11"(W)×9.59"(H)×10.83"(D) | |

Recommend Minimum PC Specification

| Work Station PC | CPU | Intel Core i7 7th Generation or Higher | Intel Core i5 7th Generation or Higher |
|-----------------|-----------|--|--|
| | LAM | 32GM Memory or Higher | 16GM Memory or Higher |
| | Monitor | 4K(3840×2160)Resolution | 1080×1920 Resolution |
| | Interface | USB 3.0 Series A×4 or more | |
| | HDD / SSD | 512GB or Higher | |
| | OS | Windows 10 - 64 bit | |

Basic Functions: Stand and Stage

| Model | | ST-AS |
|--------------|----------------------|--|
| Stand Base | Inclination | 150Degree(90Degree on Right and 60Degree on Left) |
| | Positioning | Inclination Angle Detection Sensor |
| | | XY Stage Vertical Movement and Height Detection Sensor |
| | Transmitted Lighting | Integrated High Intensity LED Lighting |
| | External Lighting | Dual Goose Neck Lighting(Optional) |
| | Weight | 11.5kg |
| Z Axis | Effective Stroke | 80mm(3.15") |
| | Resolution | 5Phases Stepping Motor |
| | | 0.05um(0.002 Mil) / Pulse |
| Travel Speed | 15mm / Sec at Max | |

| Model | | AS-50 | AS-100 | AS-M |
|----------|------------------|--------------------------------|------------------------|-------------------------|
| XY Stage | Effective Stroke | 50×50mm(1.97"×1.97") | 100×100mm(3.94"×3.94") | 76×51mm(2.99"×2.01") |
| | Effective Stroke | 2Phases Stepping Motor | | Manual |
| | | 0.15625um(0.006Mil) / Pulse | | N/A |
| | Travel Speed | 7.45mm / Sec at Max | 7.45mm / Sec at Max | N/A |
| | Load Capacity | 3.0kg | | 1.0kg |
| | Stage Plate Size | 170×170mm(6.69"×6.69") | 240×235mm(9.49"×9.25") | 240×180mm(9.49"×7.09") |
| | θ Stage | Center Disk Size 4", 5" and 6" | | N/A |
| | Dimension | 255(W)×228(D)×62(H)mm | 294(W)×293(D)×62(H)mm | 240(W)×180(D)×60.7(H)mm |
| | Weight | About 4kg | About 6kg | 1.5kg |

Recommend Minimum PC Specification

| Work Station PC | CPU | Intel Core i7 7th Generation or Higher | Intel Core i5 7th Generation or Higher |
|-----------------|-----------|--|--|
| | LAM | 32GM Memory or Higher | 16GM Memory or Higher |
| | Monitor | 4K(3840×2160)Resolution | 1080×1920Resolution |
| | Interface | USB 3.0 Series A×4 or more | |
| | HDD / SSD | 512GB or Higher | |
| | OS | Windows 10 - 64bit | |