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for Microscope Units

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Diagram for Microscope

Color Camera

Catalog Code W2043

LED Light Source Device

Catalog Code W5023

Zoom Microscope

SZL (only Main Body)

SZLM (only Main Body)

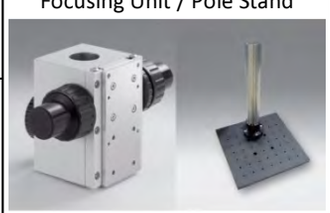
Catalog Code W2007

Intelligent Positioning System

Dedicated cable required

Catalog Code W9102

Focusing Unit / Pole Stand



Catalog Code W2039

Ring Light Guide

Catalog Code W2038

Long Working Distance Objective Lenses

Catalog Code W2009

Ultra Long working Distance Objective Lenses

Catalog Code W2063

Front Convertor Lenses

Catalog Code W2063

■ Combination table

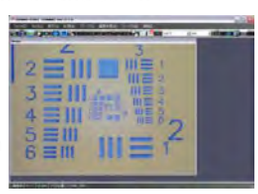
Product Name	Zoom Lens Barrel	Objective Lens
LWZ-15	SZL	**ZOL-15**
LWZ-30		**ZOL-30**
LWZ-50		**ZOL-50**
LWZ-15M	SZLM	**ZOL-15**
LWZ-30M		**ZOL-30**
LWZ-50M		**ZOL-50**

Product Name	Zoom Lens Barrel	Objective Lens	Front conversion Lens
ULWZ-100	SZL	**UZOL-15**	
ULWZ-200		**UZOL-7**	-
ULWZ-300			**UFCL-300**
ULWZ-400			**UFCL-400**
ULWZ-500			**UFCL-500**
ULWZ-100M	SZLM	**UZOL-15**	
ULWZ-200M		**UZOL-7**	-
ULWZ-300M			**UFCL-300**
ULWZ-400M			**UFCL-400**
ULWZ-500M			**UFCL-500**

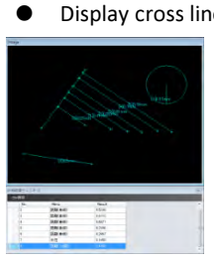
[Image Measurement Software SGMMSE]

Catalog Code W2010

This is an integrated software system that easily can be used by a PC mouse, and it enables to carry out image measurement and analysis, image storage, focus synthesis and so on to support the zoom microscope.

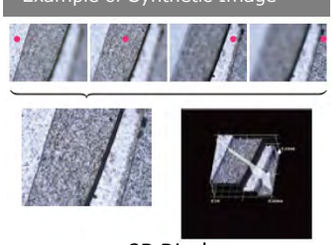


- Image Save (BMP,JPG,TIFF,PNG)
- Save thumbnail/ Display function
- Save video (AVI)
- Measurement function (Distance between 2 points, Perpendicular line distance, Angle, Radius/Diameter, Count)
- Store measurement result (CSV format)
- Display cross line, scale



Measuring result

Example of Synthetic Image



3D Display

Diagram for Observation unit with coaxial illumination

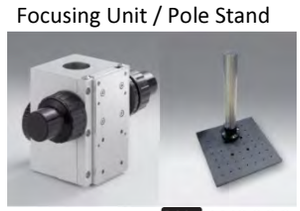
Color Camera

Catalog Code W2043

C Mount Adapter

Catalog Code W2042

Focusing Unit / Pole Stand



Catalog Code W2039

LED Light Source Device

Catalog Code W5023

Observation unit with coaxial illumination

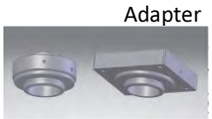
Catalog Code W2012

LED Spot Illumination /Power Supply for LED Spot Illumination

Catalog Code W5036

Catalog Code W5037

Adapter



Catalog Code W2016

Dichroic Mount for Laser Introduction

Catalog Code W2041

Manual Revolving Nosepiece

Catalog Code W2062

Intelligent Positioning System

Catalog Code W9102

Motorized Lens Positioners

Catalog Code W2016

Actuator for Objective Lens

Catalog Code W9078, W9056

Objectives / Glass Thickness Compensation Objective Lenses

Visible

UV

Near-ultraviolet

Near-ultraviolet

Tokyo Head Office
5F, SIGMA KOKI Tokyo Head office 1-19-9,
Midori, Sumida-ku,Tokyo, 130-0021, JAPAN
TEL.+81-3-5638-8228 / FAX.+81-3-5638-6550
E-mail international@sigma-koki.com

Components & Units

Catalog Code	Part Number / Product Name	Products image	Feature	Specification
2007	LWZ/LWZ-M Zoom Microscope		*12x zoom ratio optical performance *Manual/Automatic types *Coaxial epi-illumination	(Main Body SZL/SZLM) Focal length: 58.3 - 700mm Corrected Wavelength range:400 - 700nm
2008	ULWZ /ULWZ-M Long Working distance Zoom Microscope		*Manual/Automatic types *WD can be changed by assembling front converter lens on exclusive objective lens (UZOL-7).	(Main Body SZL/SZLM) Focal length: 58.3 - 700mm Corrected Wavelength range:400 - 700nm
2009	ZOL Long Working Distance Objective Lenses		*Long WD objective lens for zoom lens tube(SZL/SZLM)	Focal length 3 types 46.7、23.3、14mm Working distance 46.2、35.2、14mm Optical magnification：1.25 - 50x When assembled with zoom lens tube (SZL or SZLM)
2063	UZOL/UFCL Ultra-Long Working Distance Objective / Front Conversion lens		*Front converter lens (exclusive for ZOL-7) to change the WD and ultra long WD objective lens.)	Focal length: 46.7 - 255.5mm* Working distance 101 - 502mm* (*When assembled with zoom lens tube (SZL or SZLM)
2012	OUCI-2 Observation unit with coaxial illumination		*Infinite distance correction optical system *2 port model available *Can assemble C mount camera	
2039	ZAS/PS Focusing unit / Pole stand		*ZAS：Travel 30mm *PS：Pole Diameter ϕ32mm, 2 type of plate size	Plate Size (PS-S) 300×220mm, (PS-L) 400×320mm (Common) M4 tapped holes on 25×25mm matrix

Catalog Code	Part Number / Product Name	Products image	Feature	Specification
9102	GIP Intelligent Positioning System		*5 points preset function *Built in micro step driver	Number of Control Axes: 1 axis
2038	ZRL-ZOL Ring Light Guide		*Uniform lighting without shadow in 360˚ *only for Zoom microscope (LWZ-15/LWZ-15M)	Length: 1,000mm Bending radius: 60mm Inner Diameter: 31mm Covering: SUS flexible
5036	SLSI LED Spot Illumination		*Optimal for OUCI	Luminescence Color: Blue, Green, Red, White
5037	SPS-SLSI Power Supply for LED Spot Illumination		*Power supply unit exclusive for SLSI (Single purpose cable required)	
2016	LACR/LACS Lens Positioners		*Motorized turret and switching slider *LACR-4H：4 holes (1hole: datum hole, 3holes: one-directional center core adjustment) *LACS-2H-A： 2 holes (1hole: datum hole, 1holes: one-directional center core adjustment)	
2043	SK/SKDCE/STC Color Camera		*Digital camera and Analog camera are available	
2042	CACM C mount adapter			

Components & Units

Catalog Code	Part Number / Product Name	Products image	Feature	Specification
2062	MLT Manual Revolving Nosepiece		*compatible with our OUCI-2 *4 Holes (spaced at 90 degree intervals)	Compatible Objective Thread:ϕ26×0.706 (36 threads per inch) Compatible Barrel Thread: ϕ26×0.706 (36 threads per inch)
5023	SLA LED Light Source Device		*High brightness white LED light source *Low noise, fan less	Single purpose light guide available
2041	DIMC Dichroic mount for laser introduction		*OUCI Option Coaxially introduce laser light	Wavelength Range: 355nm, 532nm, 1064nm
9078	SGSP-OBL-3 Actuator for Objective Lenses		*Stepping motor type objective lens actuator *Travel: 3mm *Single purpose adapter is required to assemble with microscope or objective lens	

Microscope Systems ZMS

Catalog Code W2047

ZMS series are binocular microscopes which have long working distance. These can be used for making observations of sterically congested samples such as circuit boards ,or dynamic image of samples.

- Designed to continuously change magnification by zooming, smooth observations are fulfilled.
- Its longer filed of view makes it easier to make observations of uneven and complex samples.
- Not only standard binocular type with stand but also trinocular type with stand which has a port for connecting with camera is available. Additionally, we are preparing for trinocular type without stand for incorporating in systems.
- Long working distance makes it possible to contact samples with tweezers or probes.
- It is possible to observe in wearing glasses because folding rubber eye guards are attached to ocular lens.

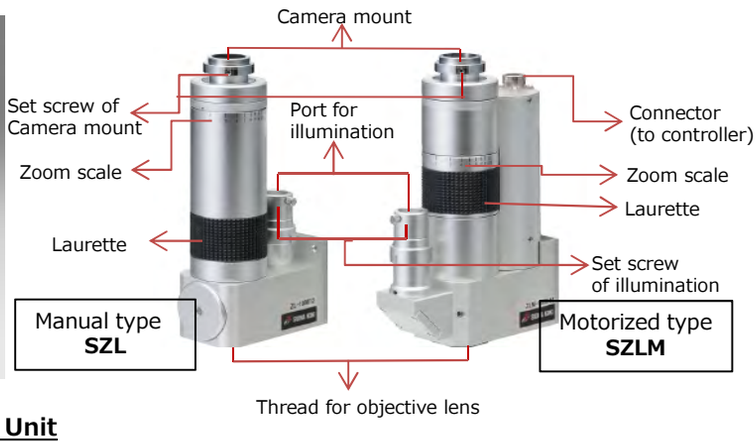


Specifications			
Part Number	ZMS-216	ZMS-316	ZMS-316H
Type	Binocular / with stand	Trinocular / with stand	Trinocular / without stand
Total Magnification	7x – 45x (Zoom type)		
Working Distance [mm]	100		
Focusing Rack & Pinion Travel [mm]	47		
Illuminators	Not included	Not included	Not included
Magnification of eyepiece (Field view)	10x (ϕ20mm)		
Weight [kg]	4.0	4.3	2.9

Objectives

Catalog Code	Part Number / Product Name	Products image	Feature	specification
3456	PAL/PAL-L Long Working Distance Objective Lenses		*Infinity correction function * Parfocal distance : 95mm	2x, 5x, 10x, 20x, 50x, 100x
3459	PFL-UV-A Ultra-violet Objective Lenses		*Infinity correction function * Parfocal distance : 95mm	10x, 20x, 50x, 80x
3458	PAL-NUV Near Ultra-violet (NUV) Objective Lenses		*Infinity correction function * Parfocal distance : 95mm	20x, 50x, 100x
3457	PAL-NIR Infrared (NIR) Objective Lenses		*Infinity correction function * Parfocal distance : 95mm	10x, 20x, 50x
3463	PFL-UV-AG-LC Glass Thickness Compensation Ultra-violet Objective Lenses		*Glass Thickness Compensation *Infinity correction function	20x, 50x, 100x
3464	PAL-NUV-LC Glass Thickness Compensation Near Ultra-violet Objective Lenses		*Glass Thickness Compensation *Infinity correction function	20x, 50x, 100x
3465	PAL-NIR-LC Glass Thickness Compensation Near Infrared Objective Lenses		*Glass Thickness Compensation *Infinity correction function	20x, 50x

Zoom Microscope LWZ/LWZ-M

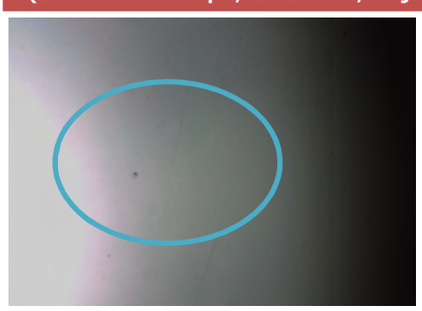


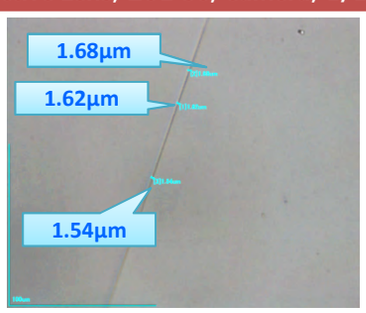
■Manual Zoom Unit

Can select from Epi/Transmit illumination. Optimal to measure size or shape.

Part Number	MSLWZ-TS-TI
JP Yen[¥]	1,221,000
Main component	Specifications
Coaxial epi illumination port with manual zoom observation lens tube	Magnification Ratio : 1.25x – 15x
	C mount camera
Camera	2 Mega-pixels USB
LED Light	White LED / w/ power supply unit
Manual Stage	Travel : 20mm
Software	Supported OS : Windows® 7/8/8.1/10

Sample Image
(Zoom Microscope; LWZ-30M, Objective Lens; ZOL-30, Camera; 1/1.8inch 2 Mega-pixels color camera)



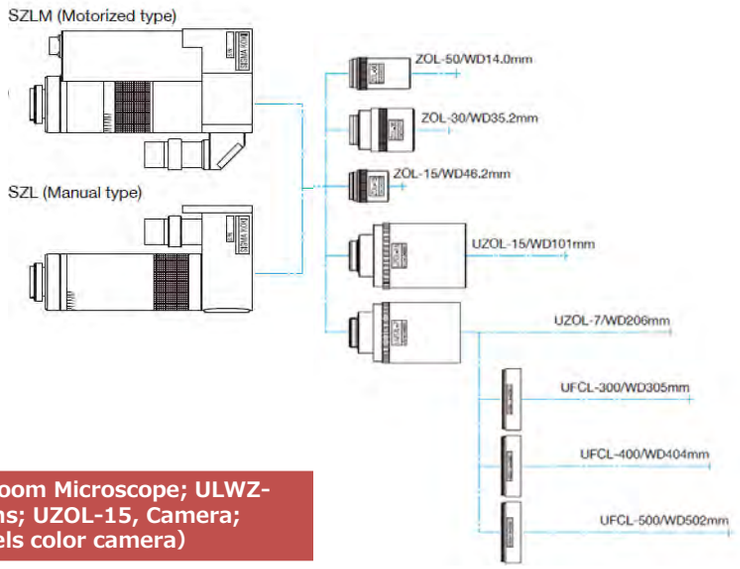


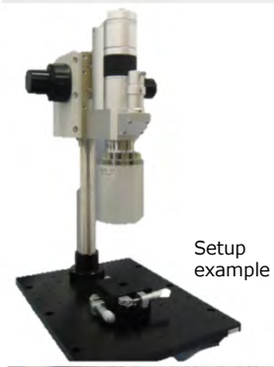
Plano-convex lens R40 Scratch damage (2.5x) Plano-convex lens R40 Scratch damage (30x)

NA	Field of vision
0.06 - 0.36 0.06 (Resolution 5.59µm*) 0.36 (Resolution 0.93µm*) *Calculated value : Reference wavelength 550nm	2.76mm × 2.16mm (Observation magnification 2.5x) 0.23mm × 0.18mm (Observation magnification 30x)

(Reference)	Manual type Specifications			Motorized type Specifications		
Part Number	LWZ-15	LWZ-30	LWZ-50	LWZ-15M	LWZ-30M	LWZ-50M
JP Yen[¥]	596,000	823,000	619,000	819,000	1,046,000	842,000
Optical magnification	1.25 – 15x	2.5 – 30x	4.16 – 50x	1.25 – 15x	2.5 – 30x	4.16 – 50x
N.A.	0.03 - 0.2	0.06 - 0.36	0.1 - 0.45	0.03 - 0.2	0.06 - 0.36	0.1 - 0.45
WD [mm]	46.2	35.2	14	46.2	35.2	14
Image size [mm]	ϕ8 (for 1/2 inch sensor size, C mount)					
Corrected Wavelength range[nm]	400 - 700					
Actual field of view [mm]	6.4 - 0.5	3.2 - 0.3	1.9 - 0.2	6.4 - 0.5	3.2 - 0.3	1.9 - 0.2
Resolution (at Mercury e-line)[µm]	11.18 - 1.68	5.59 - 0.93	3.36 - 0.75	11.18 - 1.68	5.59 - 0.93	3.36 - 0.75
Depth of field (at Mercury e-line)[µm]	±305.6 - ±6.9	±76.4 - ±2.1	±27.5 - ±1.4	±305.6 - ±6.9	±76.4 - ±2.1	±27.5- ±1.4

Ultra Long Working Distance Zoom Microscope
ULWZ/ULWZ-M

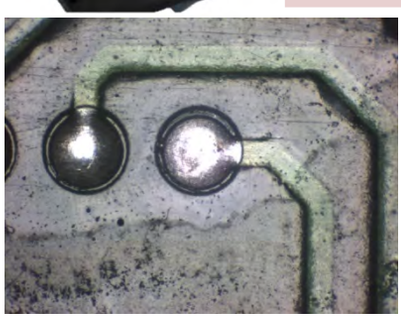




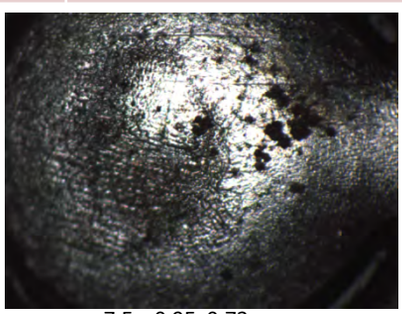
Setup example

Sample Image (Zoom Microscope; ULWZ-100M, Objective Lens; UZOL-15, Camera; 1.8inch 2 Mega-pixels color camera)

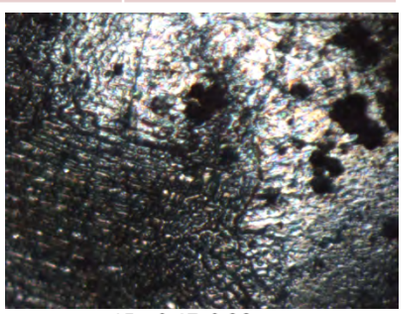
Magnification	NA	Field of vision
1.25 - 15x	0.03- 0.2 (Resolution 1.7µm - 11µm*) *Calculated value : Reference wavelength 550nm Resolution＝0.61×0.55/*NA*	1.25x : 5.7x4.3mm 15x : 0.47x0.36mm



1.25x 5.7x4.3mm



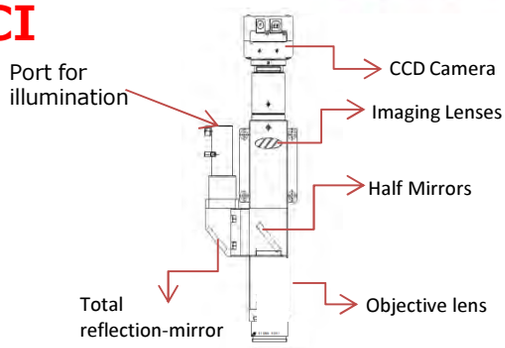
7.5x 0.95x0.72mm



15x 0.47x0.36mm

(Reference)	Manual type Specifications					Motorized type Specifications				
Part Number	ULWZ-100	ULWZ-200	ULWZ-300	ULWZ-400	ULWZ-500	ULWZ-100M	ULWZ-200M	ULWZ-300M	ULWZ-400M	ULWZ-500M
JP Yen[￥]	2,470,000	1,820,000	2,020,000	2,020,000	2,020,000	2,693,000	2,043,000	2,243,000	2,243,000	2,243,000
Optical magnification	1.25 – 15x	0.58 – 7x	0.37 - 4.48x	0.28 - 3.41x	0.23 - 2.74x	1.25 - 15x	0.58 - 7x	0.37 - 4.48x	0.28 - 3.41x	0.23 - 2.74x
N.A.	0.03 - 0.2	0.014 - 0.08	0.009 - 0.052	0.007 - 0.039	0.006 - 0.032	0.03 - 0.2	0.014 - 0.08	0.009 - 0.052	0.007 - 0.039	0.006 - 0.032
WD [mm]	101	206	305	404	502	101	206	305	404	502
Image size [mm]	ϕ8 (for 1/2 inch sensor size, C mount)									
Corrected Wavelength range[nm]	400 - 700									
Actual field of view [mm]	6.4 - .5	13.8 - 1.1	21.6 - 1.8	28.6 - 2.3	34.8 - 2.9	6.4 - 0.5	13.8 - 1.1	21.6 - 1.8	28.6 - 2.3	34.8 - 2.9
Resolution (at Mercury e-line)[µm]	11.2 - 1.7	24.0 - 4.2	37.3 - 6.5	47.9 - 8.6	55.9 - 10.5	11.2 - 1.7	24.0 - 4.2	37.3 - 6.5	47.9 - 8.6	55.9 - 10.5
Depth of field (at Mercury e-line)[µm]	±305.6 - ±6.9	±1403 - ±43	±3395 - ±102	±5612 - ±181	±7639 - ±269	±305.6 - ±6.9	±1403 - ±43	±3395 - ±102	±5612 - ±181	±7639 - ±269

Observation unit with coaxial illumination　OUCI



■Cost performance oriented configuration

Macro/Micro observation, measure size/shape function is achieved less than 1 million yen.

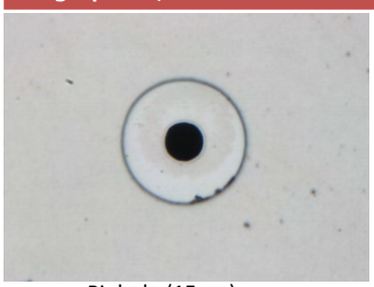
Part Number	MSOUCI-TS-LC4M
JP Yen [￥]	964,000
Main component	Specifications
Observation unit with coaxial illumination	Infinity corrected objective lenses
	C mount camera
Objective Lens ＋Manual Revolving Nosepiece	Infinity correction function
	Magnifications：5x、50x
Camera	2 Mega-pixels　USB Camera
LED Light	White LED　／　w/ power supply unit
Manuel XY axis stage	Travel ：20mm
software	Supported OS　：Windows® 7/8/8.1/10

■ Automatic Z axis allows 3D information acquisition.

Part Number	MSOUCI-80XY-Z-LC4M
JP Yen [￥]	1,572,000
Main component	Specifications
Observation unit with coaxial illumination	Infinity corrected objective lenses
Observation lens tube	C mount camera
Objective Lens ＋ 4 Holes Automatic Revolver	Infinity correction function
	Magnifications：5x、10x、20x、50x
Camera	2 Mega-pixels　USB Camera
LED Light	White LED　/　w/ power supply unit
Manuel XY axis stage	Travel ：15mm
Software	Supported OS ：Windows® 7/8/8.1/10

Part Number (Observation unit with coaxial illumination)		OUCI-2	OUCI-M1M1	OUCI-M075M1
JP Yen [￥]		135,000	260,000	Contact US
Imaging lens magnification (Focal Range)	Port 1	1x (200mm)	1x (200mm)	0.75x (150mm)
	Port 2	-	1x (200mm)	1x (200mm)
Observation image		Bright Field Observation		
Camera mount		C mount (flange focus 17.526mm)		
Applicable camera size		less than 2/3 inch		
Light		Coaxially Epi-illumination		
Compatible Objective Lenses		Infinity correction function		
Mounting screw for Objective lens		M20.32 P = 0.706 / M26 P = 0.706		
Weight [kg]		0.65	1.25	1.25

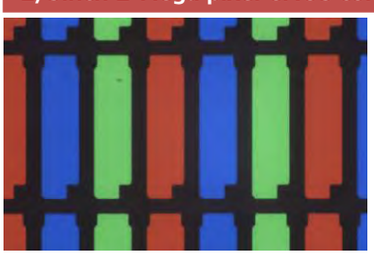
Sample Image (Observation unit with coaxial illumination; OUCI-2, Objective Lens; PAL-50, Camera; 2/3 2 Mega-pixels, CMOS color camera)



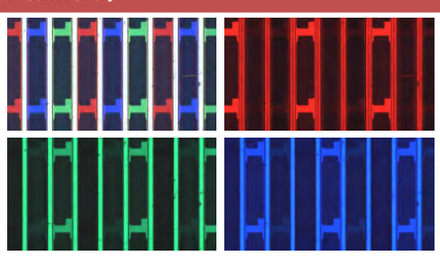
Pinhole (15µm)

NA	Field of vision
0.55 (Resolution 0.5µm*) *Calculated value : Reference wavelength 550nm	0.22mm × 0.12mm (Observation magnification 50x)

Sample Image (Observation unit with coaxial illumination; OUCI-2, Objective Lens; PAL-20-L-A, Camera; 2/3inch 2-Mega pixel CMOS color camera)



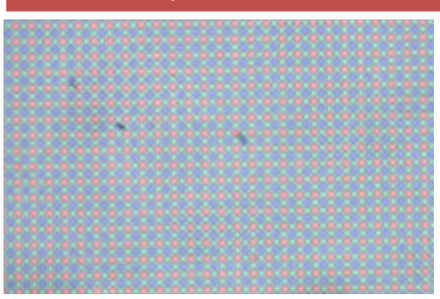
Color Filter (Transmitted lighting)



Color Filter (Epi illumination)

NA	Field of vision
0.3 (Resolution 0.9µm*) *Calculated value : Reference wavelength	0.55mm × 0.3mm (Observation magnification 20x)

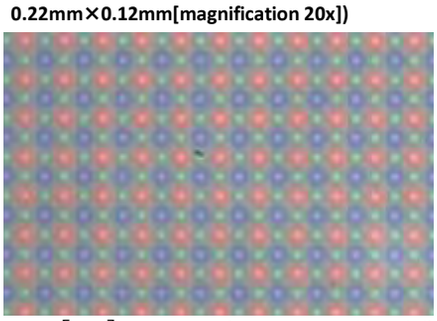
Sample Image (Observation unit with coaxial illumination; OUCI-2, Camera; 2/3inch 2-Mega pixel CMOS color camera)



CCD (20x)

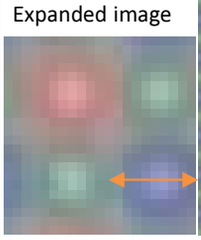
Objectives	NA	Field of vision
PAL-20-L-A	0.3 (Resolution 0.9µm*) *Calculated value : Reference wavelength 550nm	0.55mm × 0.3mm (Observation magnification 20x)

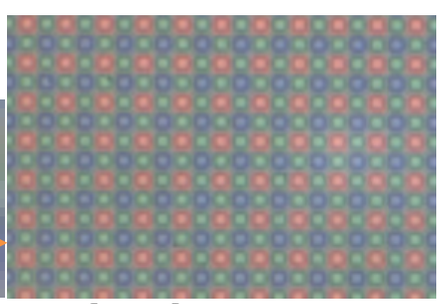
Comparison of sample image of conventional objective lens and HR objective lens
(Observation unit with coaxial illumination OUCI-2, 2/3 inch 2 million pixels CMOS color camera, filed of vision 0.22mm×0.12mm[magnification 20x])



CCD［50x］: PAL-50 (Conventional model)

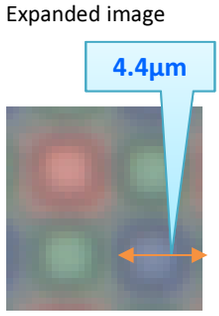
Expanded image





CCD［×50HR］: PAL-50-NIR-HR-LC00

Expanded image



Objectives Lens	PAL-50	PAL-50-NIR-HR-LC00
NA	0.55 (Resolution 0.5µm*) *Calculated value : Reference wavelength 550nm	0.67 (Resolution 0.4µm*) *Calculated value : Reference wavelength 550nm

Phase contrast microscope unit

Place the ring slit at the front focal point of the lighting condenser lens and place the ring shaped retardation plate at the back focal point of the objective lens conjugate with it.

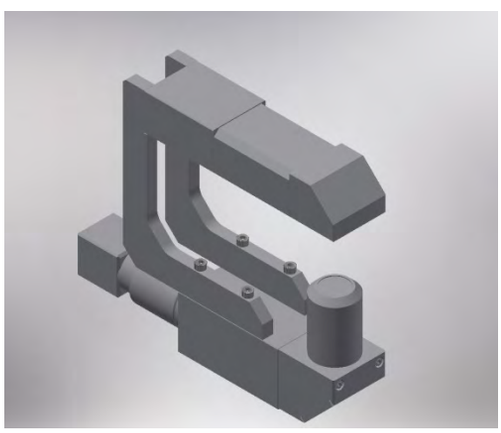
When light passing through the ring slit reaches the specimen, the light is divided as below.
(a) Light go straight not influenced by specimen [straight light without specimen information]
(b) Light delayed in phase influenced (refractive index difference) of the specimen [diffracted light including specimen information].

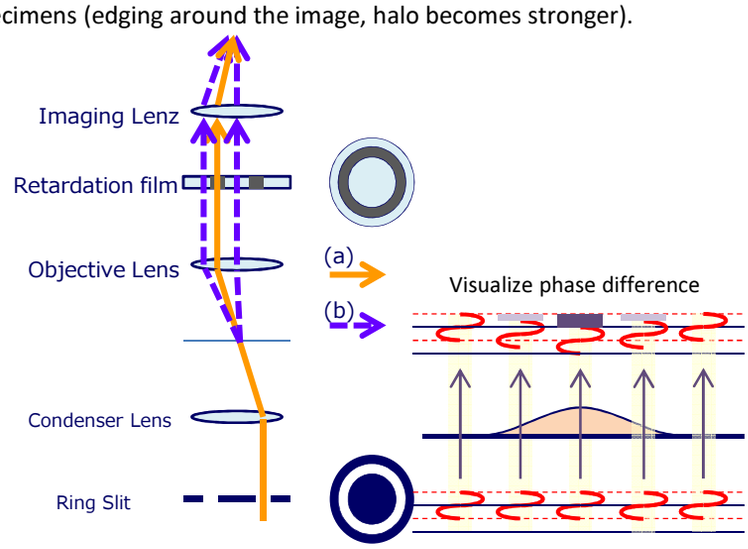
After passing through the objective lens
Light (a) pass the ring-shaped retardation plate, and light (b) doesn't pass the retardation plate.

By appropriately selecting the retardation plates to cause (a) and (b) to interfere each other, the phase shift due to the difference in refractive index can be visualized.

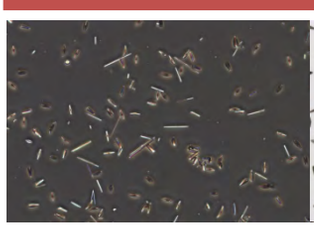
Even for transparent specimens, images with bright and dark contrast are obtained.

Since there is no need for staining, it can be used to observe living cells.
However, it is not suitable to observe thick specimens (edging around the image, halo becomes stronger).



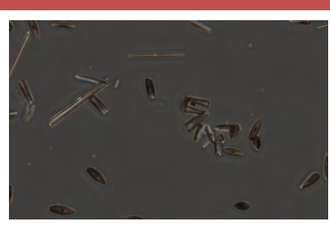


Sample Image (Camera; 2/3 inch 2-Mega pixels CMOS color camera)



Phase Difference Observing (Diatom)

Bright Field Observation (Diatom)



Phase Difference Observing (Diatom)

Bright Field Observation (Diatom)

Objectives Lens	NA	Field of vision
CFI Plan Flour DL 4x (Nikon)	0.13 (Resolution 2μm*) *Calculated value : Reference wavelength 550nm	2.8mm × 1.5mm (Observation magnification 4x)

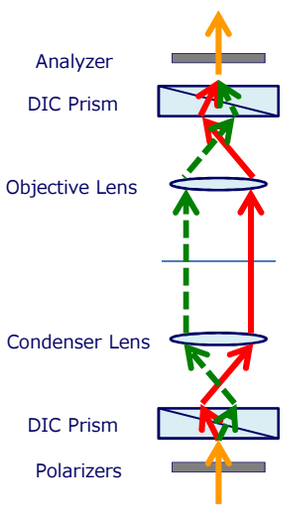
Objectives Lens	NA	Field of vision
CFI Plan Flour DLL 10x (Nikon)	0.3 (Resolution 0.9μm*) *Calculated value : Reference wavelength 550nm	1.1mm × 0.6mm (Observation magnification 10x)

Differential interference microscope unit

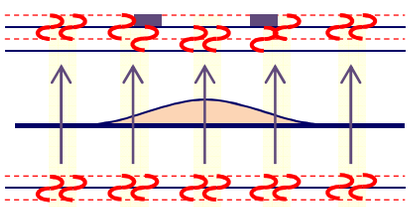
Pass two light slightly separated by polarization using DIC prism in the specimen.
Two light are synthesized using DIC prism again and interfered.

When the light pass the specimen, optical path length difference (phase difference) corresponding to the difference in refractive index is generated.
The phase contrast is shaded by interference and transparent specimens can be visualized.

Since there is no need for staining, it can be used to observe living cells. It is also possible to observe thick specimens. However, since polarized light is used, a plastic container or the like which disturbs polarized light can not be used.

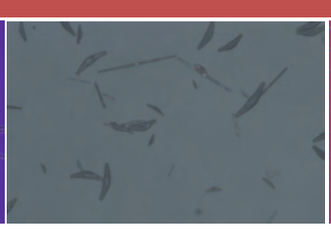


Visualize phase difference of two light

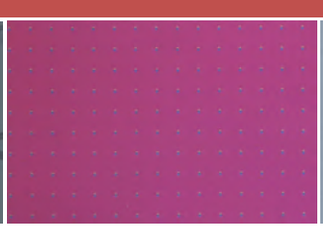


Sample Image (Camera; 2/3inch 2-Mega pixels CMOS color camera)

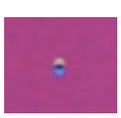
DIC observation (Diatom)



Bright Field Observation (Diatom)



DIC observation (Pinhole ϕ5μm)



Bright Field Observation (Pinhole ϕ5μm)

Objective Lens	NA	Field of vision
PAL-10-A DIC Prism: U-DICR (Olympus)	0.3 (Resolution 0.92μm*) *Calculated value : Reference wavelength 550nm	1.1mm × 0.6mm (Observation magnification 10x)

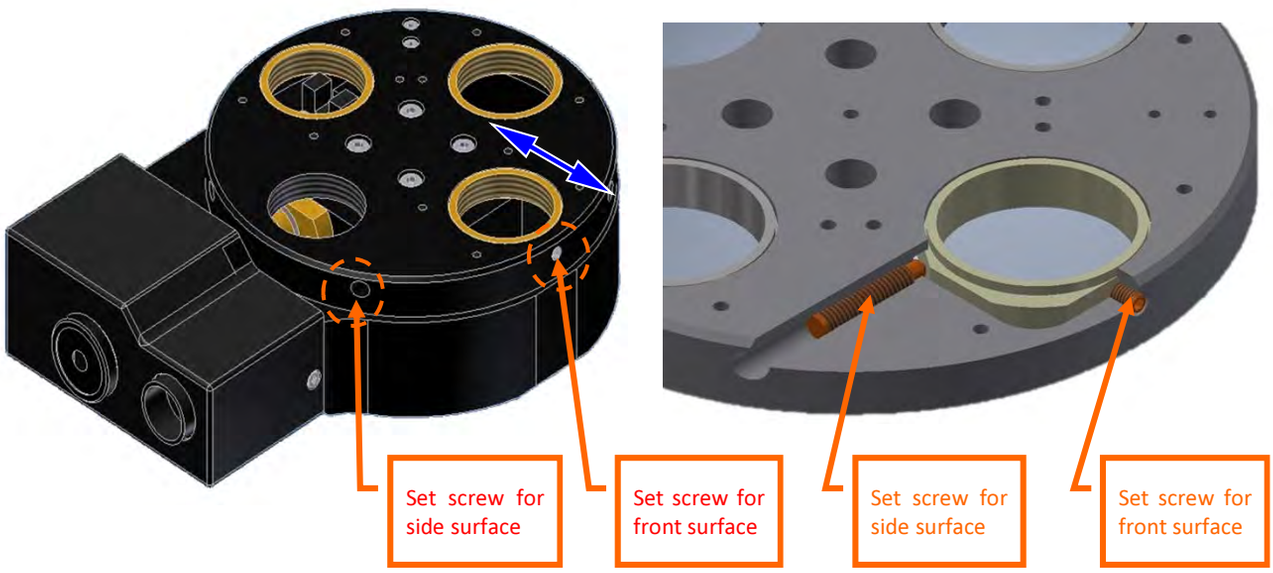
Objective Lens	NA	Field of vision
PAL-10-A DIC Prism: U-DICR (Olympus)	0.3 (Resolution 0.92μm*) *Calculated value : Reference wavelength 550nm	1.1mm × 0.6mm (Observation magnification 10x)

[Reference] List of Objectives

Type	Magnification	Part Number	Description	NA	WD
Visible Normal type	2x	PAL-2-B	MplanApo 2×	0.055	34
	5x	PAL-5	MplanApo 5×	0.14	41
	10x	PAL-10-A	MplanApo 10×	0.3	34
	20x	PAL-20	MplanApo 20×	0.42	20
	50x	PAL-50	MplanApo 50×	0.55	13
Visible Super long type	20x	PAL-20-L-A	MplanApo SL 20×	0.3	31.1
	50x	PAL-50-L-A	MplanApo SL 50×	0.42	20.7
	100x	PAL-100-L	MplanApo SL 100×	0.53	12.1
UV(266 532) Normal type Air gap	10x	PFL-10-UV-AG	Mplan UV 10×	0.2	13.5
	20x	PFL-20-UV-AG-A	Mplan UV 20×	0.36	15.07
	50x	PFL-50-UV-AG-A	Mplan UV 50×	0.42	12
	80x	PFL-80-UV-AG-LC00	Mplan UV 80×	0.55	10
UV(266 532) Glass Thickness Compensation (t0.7)Type Air gap	20x	PFL-20-UV-AG-LC07-A	LCD Mplan UV 20× (t0.7)	0.36	15.15(Air)
	50x	PFL-50-UV-AG-LC07-A	LCD Mplan UV 50× (t0.7)	0.42	11.99(Air)
	80x	PFL-80-UV-AG-LC07	LCD Mplan UV 80× (t0.7)	0.55	9.78(Air)
UV(266 532) Glass Thickness Compensation (t1.1)Type Air gap	20x	PFL-20-UV-AG-LC11-A	LCD Mplan UV 20× (t1.1)	0.36	15.2(Air)
	50x	PFL-50-UV-AG-LC11-A	LCD Mplan UV 50× (t1.1)	0.42	12.02(Air)
	80x	PFL-80-UV-AG-LC11	LCD Mplan UV 80× (t1.1)	0.55	9.65(Air)
NUV(355･532) Normal type	20x	PAL-20-NUV-A	Mplan NUV 20×	0.4	17.25
	50x	PAL-50-NUV-A	Mplan NUV 50×	0.45	15.1
	100x	PAL-100-NUV-A	Mplan NUV 100×	0.57	11.23
NUV(355･532) HR type	50x	PAL-50-NUV-HR-L	Mplan NUV HR 50×	0.65	10
	100x	PAL-100-NUV-HR	Mplan NUV HR 100×	0.7	10
NUV(355･532) Glass Thickness Compensation (t0.7)Type	20x	PAL-20-NUV-LC07-A	LCD Mplan NUV 20× (t 0.7)	0.4	17.35(Air)
	50x	PAL-50-NUV-LC07-A	LCD Mplan NUV 50× (t 0.7)	0.45	15.05(Air)
	100x	PAL-100-NUV-LC07-A	LCD Mplan NUV 100× (t 0.7)	0.57	11.17(Air)
NUV(355･532) Glass Thickness Compensation (t1.1)Type	20x	PAL-20-NUV-LC11-A	LCD Mplan NUV 20× (t 1.1)	0.4	17.4(Air)
	50x	PAL-50-NUV-LC11-A	LCD Mplan NUV 50× (t 1.1)	0.45	15.01(Air)
	100x	PAL-100-NUV-LC11-A	LCD Mplan NUV 100× (t 1.1)	0.57	11.13(Air)
NUV(355･532) HR Glass Thickness Compensation (t0.7)Type	50x	PAL-50-NUV-HR-L-LC07-A	LCD Mplan NUV HR 50× (t 0.7)	0.65	9.91(Air)
NUV(355･532) HR Glass Thickness Compensation (t1.1)Type	50x	PAL-50-NUV-HR-L-LC11-A	LCD Mplan NUV HR 50× (t 1.1)	0.65	9.89(Air)
NIR(1064･532) Normal type	10x	PAL-10-NIR	Mplan NIR 10×	0.3	31
	20x	PAL-20-NIR-LC00	Mplan NIR 20×	0.4	20.2
	50x	PAL-50-NIR-L	Mplan NIR 50×	0.45	15.1
	100x	PAL-100-NIR-L	Mplan NIR 100×	0.53	12.14
NIR(1064･532) HR type	20x	PAL-20-NIR-HR-LC00	Mplan NIR HR 20×	0.45	20
	50x	PAL-50-NIR-HR-LC00	Mplan NIR HR 50×	0.67	10
	100x	PAL-100-NIR-LC07	LCD Mplan NIR 100× (t0.7)	0.53	12.18
NIR(1064･532) Glass Thickness Compensation (t0.7)Type	20x	PAL-20-NIR-LC07	LCD Mplan NIR 50× (t0.7)	0.4	19.98(Air)
	50x	PAL-50-NIR-L-LC07	LCD Mplan NIR 20× (t0.7)	0.45	15.01(Air)
NIR(1064･532) Glass Thickness Compensation (t0.7)Type	20x	PAL-20-NIR-LC11	LCD Mplan NIR 50× (t1.1)	0.4	19.85(Air)
	50x	PAL-50-NIR-L-LC11	LCD Mplan NIR 20× (t1.1)	0.45	14.97(Air)
	100x	PAL-100-NIR-LC11	LCD Mplan NIR 100× (t1.1)	0.45	12.16(Air)
NIR(1064･532) HR Glass Thickness Compensation (t0.7)Type	50x	PAL-50-NIR-HR-LC07	LCD Mplan NIR HR 50× (t0.7)	0.67	10.48(Air)
UV/NUV(266 355 532) Normal type Air gap	10x	PFL-10-UV/NUV-AG	Mplan UV/NUV 10	0.2	13.5
	20x	PFL-20-UV/NUV-AG-A	Mplan UV/NUV 20	0.36	15.07
	50x	PFL-50-UV/NUV-AG-A	Mplan UV/NUV 50	0.42	12
Femtosecond NIR (780) Glass Thickness Compensation (t0.7)Type	20x	PAL-20-NIR(780)-LC07	LCD MpanApo NIR(780) 20×(780)	0.45	17.2(Air)
	50x	PAL-50-NIR(780)-LC07	LCD MpanApo NIR(780) 50×(780)	0.8	3.8(Air)

[Reference]

To align electric revolver



① To adjust the angle in rotation the direction, adjust the number of pulses of the controller.
② One-way center adjustment (blue arrow direction) can be performed as electric revolver.
③ By adjusting the M4 set screw on front/side, can adjust front/rear of about ± 0.3 mm.
④ Centering can be adjusted at three points wit the same adjustment.

[Optimal controller for revolver]

Intelligent Positioning System　GIP-101B

②STOP button :
Immediately stop the motorized stage.

①ORIGIN button :
Button which returns to the machine origin.

③Operation knob :
Turn the knob to drive the motorized stage.
Motorized stage is driven according to angle of knob fast when turn from side to side while pushing operation knob.

④Position selecting button (1-5) :
Used to drive the motorized stage to memorized position

[Move to a position]
After pressing a position button, Position button will blinking the motorized stage will move to the position that was memorized and stop. (Lamp of position button will light up.)
***) At factory shipment, position selecting buttons 1 to 5 All 0 positions (origin) are memorized.**

[Memorizing a position]
Move the stage to the location to be memorized using the manual operation knob.
Press a Position selecting button (1-5) and hold it until it stops blinking.
When the light changes from blinking to on, the position is memorized.

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SIGMAKOKI CO.,LTD.

Tokyo Head Office
5F, SIGMA KOKI Tokyo Head office 1-19-9,
Midori, Sumida-ku, Tokyo, 130-0021, JAPAN
TEL: +81-3-5638-8228 / FAX: +81-3-5638-6550
E-mail international@sigma-koki.com