

Optional Parts

Direct Number : A direct number is a 7-digit number assigned to a CCS product. You can easily access the web page providing information on any desired product by simply entering the direct number in the space provided on the CCS website pages for machine vision. (Refer to the back cover of this brochure.)

Filter

Blocks ambient light out of red wavelength range

Sharp Cut Filters

R60 Series



R64 Series



Mounted in front of a lens, R60 blocks light of 600nm or less, and R64 light of 640nm or less, and both transmit approximately 85% of light in wavelength bands longer than these.

Direct number	Model Name	Notes	Direct number	Model Name	Notes
4000658	R60-C	For C-mount	4000508	R64-C	For C-mount
4000657	R60-16	M16.0 P0.5	4000493	R64-16	M16.0 P0.5
4000609	R60-25	M25.5 P0.5	4000494	R64-25	M25.5 P0.5
4000489	R60-27	M27.0 P0.5	4000495	R64-27	M27.0 P0.5
4000490	R60-30	M30.5 P0.5	4000496	R64-30	M30.5 P0.5
4000491	R60-40	M40.5 P0.5	4000498	R64-40	M40.5 P0.5
4000659	R60-46	M46.0 P0.75	4000500	R64-46	M46.0 P0.75

Blocks ambient light out of blue wavelength range

Blue-light Filters

V44 Series

(Longpass filter)



*
Mounted on front lens thread to transmit approximately 47% of in a wavelength band centered on 440nm in the wavelength range from 350 to 520 nm.

Direct number	Model Name	Notes
4000539	V44-C	For C-mount
4000534	V44-25	M25.5 P0.5
4000535	V44-27	M27.0 P0.5
4000536	V44-30	M30.5 P0.5
4000537	V44-40	M40.5 P0.5
4000538	V44-46	M46.0 P0.75

*With the V44 Series you cannot attach any other filters or Lens Attachment Rings (MR Series) on the workpiece side.

Prevents glare from the light

Polarizing Filters

PL Series



Screw the polarizing filter onto the front of the camera lens. The filter eliminates reflections and glare from the surface in combination with the polarizer.

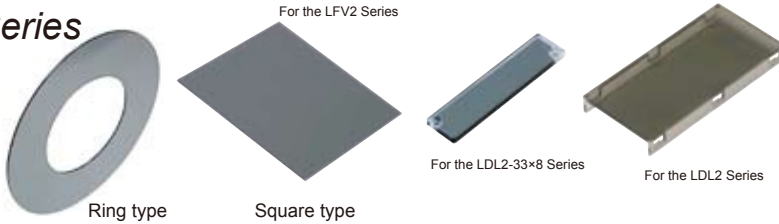
Direct number	Model Name	Notes
4000370	PL-25	M25.5 P0.5
4000372	PL-25-NL	M25.5 P0.5 (With lock)
4000374	PL-27	M27.0 P0.5
4000376	PL-27-NL	M27.0 P0.5 (With lock)
4000377	PL-30	M30.5 P0.5
4000379	PL-30-NL	M30.5 P0.5 (With lock)
4000383	PL-40	M40.5 P0.5
4000384	PL-40-NL	M40.5 P0.5 (With lock)
4000388	PL-46	M46.0 P0.75

Polarization Plate

Prevents glare from the light

Polarizer

PL Series

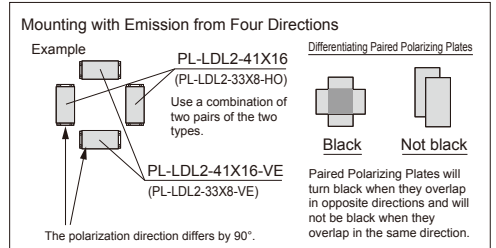


Attach the polarizer to lights. It eliminates reflections and glare in combination with the polarizing filter.

Direct number	Model Name	Direct number	Model Name	Direct number	Model Name	Direct number	Model Name	Direct number	Model Name
4000428	PL-LDR-32	4001389	PL-LFV3-35	4000458	PL-LFV2-35	4001028	PL-LDL2-33×8-HO	4000854	PL-LDL2-146×30
4000430	PL-LDR-42	4001390	PL-LFV3-50	4000459	PL-LFV2-50	4001029	PL-LDL2-33×8-VE	4000851	PL-LDL2-218×30
4000432	PL-LDR-50	4001391	PL-LFV3-50X100	4000460	PL-LFV2-70	4000847	PL-LDL2-41×16	4000853	PL-LDL2-266×30
4000623	PL-LDR2-70*	4001392	PL-LFV3-70	4000455	PL-LFV2-100	4000848	PL-LDL2-80×16	4000888	PL-LDL2-41×16-VE
4000441	PL-LDR-90	4001393	PL-LFV3-100	4000456	PL-LFV2-130	4000849	PL-LDL2-119×16	4000889	PL-LDL2-80×16-VE
4000424	PL-LDR-120-40	4001394	PL-LFV3-130	4000457	PL-LFV2-200	4000850	PL-LDL2-74×30	4000890	PL-LDL2-119×16-VE
4000465	PL-SQR-56	4001395	PL-LFV3-200						

*PL-LDR2-70 comes with an adaptor for installation.

There are two types of Polarizing Plates for the LDL2-33×8 and LDL2 Series. They are used together as shown below.



Using Polarizing Filters and Polarizing Plates

Methods

The Polarizing Filters and Polarizing Plates are used together. Regular reflective components are cut out and the effects can be observed when the polarizing direction of the polarizing plate installed on the Light Unit and the polarizing direction of the filter attached to the camera are at a right angle (90°) to each other.

Application Instructions

1. Install the Polarizing Plate on the light-emitting side of the Light Unit.
2. Attach the Polarizing Filter to the tip of the camera lens.
3. Rotate the Polarizing Filter so that the angle of polarization is a right angle (90°) in relation to the Polarizing Plate.

Imaging Samples

No Polarizing Plate



With a Polarizing Plate



Sharp-cut Filter Application Example



When you want to view a workpiece as a silhouette, contrast cannot be made with only a red backlight via ambient light (due to indoor lighting or other factors). However, you can use a sharp-cut filter to cut out ambient light and allow only the red light to pass through. This allows you to capture a clear contrast of the shape of the workpiece.

Protective Plate

Protects the emission section

Protector

CV Series



For the LDL2 Series

The plate protects the emission section of the Light Unit.

Direct number	Model Name
4000860	CV-LDL2-41×16
4000861	CV-LDL2-80×16
4000862	CV-LDL2-119×16
4000863	CV-LDL2-74×30
4000864	CV-LDL2-146×30
4000865	CV-LDL2-218×30
4000866	CV-LDL2-266×30

Note: The Protective Plate is not intended to provide protection against dust or water droplets.

Diffusion Plate

Prevents shine and glare

Diffuser

DF Series



Ring type

Low-angle type

For the LDL2-33×8 Series

For the LDL2 Series

Square type

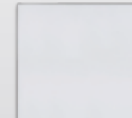
Attaches to many different lights to reduce shine from glossy applications.

Direct number	Model Name	Direct number	Model Name
4000140	DF-LDR-32	4000146	DF-LDR-48LA
4000143	DF-LDR-42	4000160	DF-LDR-74LA
4000147	DF-LDR-50	4000123	DF-LDR-100LA
4000156	DF-LDR-70	4000129	DF-LDR-132LA
4000164	DF-LDR-90	4000134	DF-LDR-170LA
4000125	DF-LDR-120-45	4000138	DF-LDR-208LA
4000201	DF-SQR-56		

Direct number	Model Name	Direct number	Model Name
4001026	DF-LDL2-33×8	4000844	DF-LDL2-146×30
4000840	DF-LDL2-41×16	4000845	DF-LDL2-218×30
4000841	DF-LDL2-80×16	4000846	DF-LDL2-266×30
4000842	DF-LDL2-119×16		
4000843	DF-LDL2-74×30		

For the Lfv3 Series

Light-color Diffuser



Transmittance: High

Dark-color Diffuser



Transmittance: Low

You can attach these Diffuser Plates to a Coaxial Light to reduce the brightness variation. You can change the transmittance to suit your imaging environment.

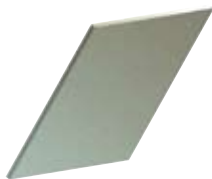
Direct number	Model Name	Direct number	Model Name
4001358	DF-LFV3-35	4001365	DF-LFV3-35-UF
4001359	DF-LFV3-50	4001366	DF-LFV3-50-UF
4001360	DF-LFV3-50X100	4001367	DF-LFV3-50X100-UF
4001361	DF-LFV3-70	4001368	DF-LFV3-70-UF
4001362	DF-LFV3-100	4001369	DF-LFV3-100-UF
4001363	DF-LFV3-130	4001370	DF-LFV3-130-UF
4001364	DF-LFV3-200	4001371	DF-LFV3-200-UF

Light Control Film

Converts diffused light into parallel light

Light Control Films

LC Series



Plastic film arrayed with fine louvers suppresses the diffusion of light in specific directions and improves parallelism.

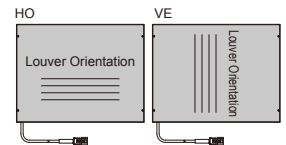
The TH Series offers a selection for louver direction: longitudinal or transverse.

HO:

The direction of louvers is horizontal when installing LC film on the TH series as shown on the right-hand side.

VE:

The direction of louvers is vertical when installing LC film on the TH series as shown on the right-hand side.



Mounted to back lights to suppress light diffraction for visual inspections, enabling sharp imaging of profiles.

Direct number	Model Name	Direct number	Model Name	Direct number	Model Name	Direct number	Model Name	Direct number	Model Name
4001043	LC-TH-27×27-HO	4000946	LC-TH-140×105-HO	4001046	LC-TH-27×27-VE	4001006	LC-TH-140×105-VE	4000300	LC-LFL-100
4001044	LC-TH-43×35-HO	4000947	LC-TH-160×120-HO	4001047	LC-TH-43×35-VE	4001007	LC-TH-160×120-VE	4000301	LC-LFL-180
4001045	LC-TH-51×51-HO	4000948	LC-TH-200×150-HO	4001048	LC-TH-51×51-VE	4001008	LC-TH-200×150-VE	4000302	LC-LFL-200
4000943	LC-TH-63×60-HO	4000949	LC-TH-224×170-HO	4001003	LC-TH-63×60-VE	4001009	LC-TH-224×170-VE		
4000944	LC-TH-83×75-HO	4000950	LC-TH-211×200-HO	4001004	LC-TH-83×75-VE	4001010	LC-TH-211×200-VE		
4000945	LC-TH-100×100-HO			4001005	LC-TH-100×100-VE				

By mounting this on a coaxial light, the parallelism of light is improved and the particularities of a workpiece can be effectively imaged.

Direct number	Model Name	Direct number	Model Name
4001344	LC-LFV3-35	4000315	LC-LFV2-35
4001345	LC-LFV3-50	4000316	LC-LFV2-50
4001346	LC-LFV3-50X100	4000317	LC-LFV2-70
4001347	LC-LFV3-70	4000312	LC-LFV2-100
4001348	LC-LFV3-100	4000313	LC-LFV2-130
4001349	LC-LFV3-130	4000314	LC-LFV2-200
4001350	LC-LFV3-200		

Caution

Heat may cause deformation or discoloring depending on the operation environment. Make sure that countermeasures against overheating are implemented and that the temperature does not exceed the operating limit.

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Bracket

Securing the Light

Brackets

BK Series



For the LDL2 Series (Contains 2)



For the LDL2 Series



For the LDL2-33x8 Series

When you secure the light, the angle of the irradiation can be adjusted as desired.

A variety of methods are available for securing the Light Units, such as parallel emission from two directions or enveloped emission from four directions.

Direct number	Model Name	Notes
4000867	BK-LDL2	Shared with LDL2 Series

Direct number	Model Name	Notes
4000985	BK-LDQ2-41x16	Four-way Mounting Bracket for LDL2 Series
4000986	BK-LDQ2-80x16	
4000987	BK-LDQ2-119x16	
4000988	BK-LDQ2-74x30	
4000989	BK-LDQ2-146x30	
4000990	BK-LDQ2-218x30	
4000991	BK-LDQ2-266x30	

Direct number	Model Name	Notes
4001027	BK-LDQ2-33x8	Four-way Mounting Bracket for LDL2-33x8 Series

Bracket

Securing the Light

Brackets

BK Series



For the TH Series (Contains 4)

When you secure the light, the angle of the irradiation can be adjusted as desired. A variety of methods are available for securing the Light Units, such as parallel emission from two directions or enveloped emission from four directions.

Direct number	Model Name	Notes
4001031	BK-TH-LE12	Shared with TH Series

Fixing adapter

To install a diffusion plate or polarizing plate

Light Adapter Rings

AD Series



For use with LDR2-32, 42, 50, 90, and 120. This is used for mounting a diffuser panel and a polarizing plate on a light

Direct number	Model Name	Notes
4000679	AD-LDR-32	Common use for LDR2-32 / LDR-32
4000680	AD-LDR-42	Common use for LDR2-42 / LDR-42
4000681	AD-LDR-50	Common use for LDR2-50 / LDR-50B
4000686	AD-LDR-90	Common use for LDR2-90 / LDR-90B
4000675	AD-LDR-120	Common use for LDR2-120 / LDR-120B

Holder

Attaches to filter section of lens

Lens Attachment Rings

MR Series



For use with LDR2-32, and 50. A light can be directly attached onto the thread for a lens filter using this. Suitable for use in installations in restricted spaces.

Direct number	Model Name	Notes
4000692	MR-LDR-32-M25	M25.5 P0.5
4000693	MR-LDR-32-M27	M27.0 P0.5
4000694	MR-LDR-32-M30	M30.5 P0.5
4000697	MR-LDR-50-M25	M25.5 P0.5
4000698	MR-LDR-50-M27	M27.0 P0.5
4000699	MR-LDR-50-M30	M30.5 P0.5

Secures any type of light

Flexible Arms

FA Series



Holds a 10mm or 12mm rod for light attachment. Can be secured at any angle for easy light adjustment.

Direct number	Model Name	Notes
5000051	FA-12	Ø12 mm rod
5000050	FA-10	Ø10 mm rod