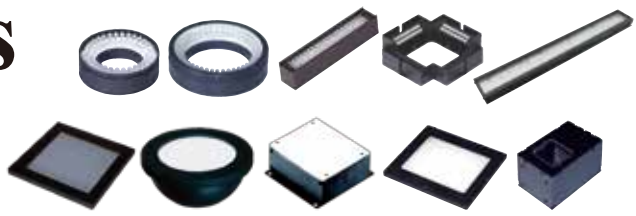
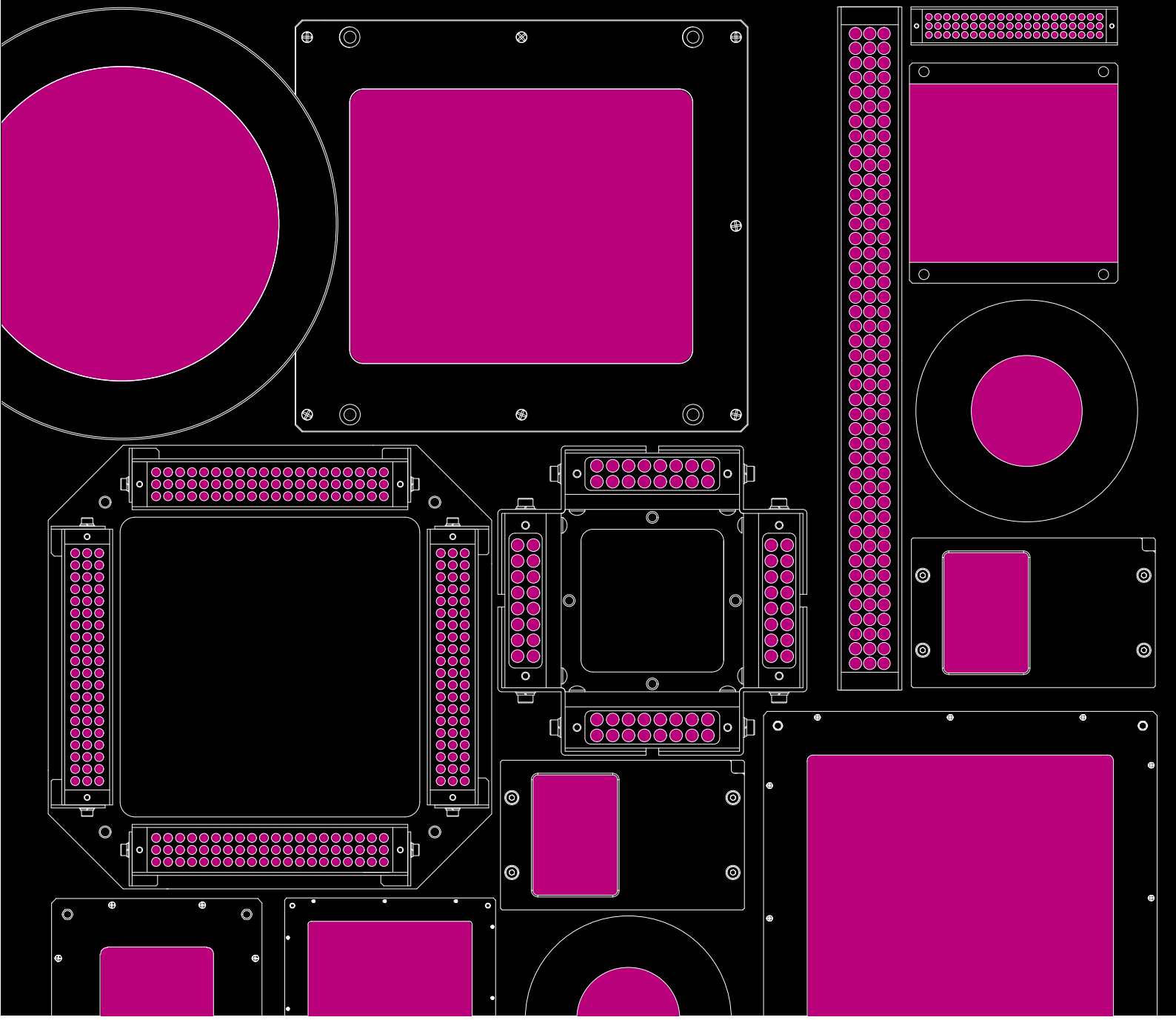
CREATING CUSTOMER SATISFACTION

Infrared LED Lights Product Lineup



Abundant lineup, total of 56 models

Available for various applications

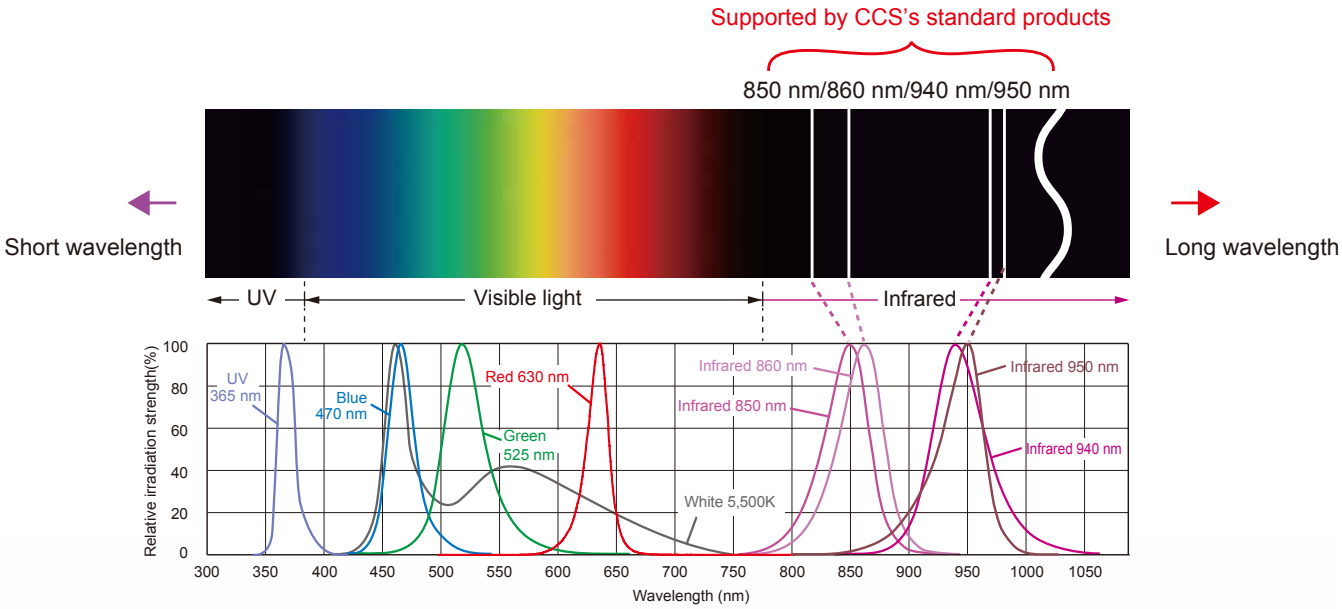


LIGHTING SOLUTION

CCS Inc.

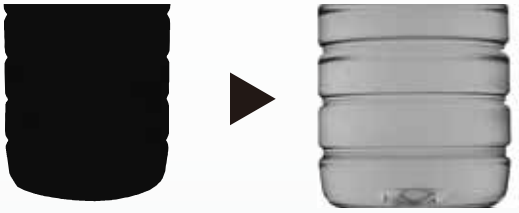
What is Infrared Light?

Infrared light is light that has a wavelength longer than that of visible red light and cannot be seen by the human eye. Compared to visible red light, infrared light has a low scattering rate and high transmittance rate, and therefore is used in imaging which penetrates printed patterns or liquids.



Features (1)

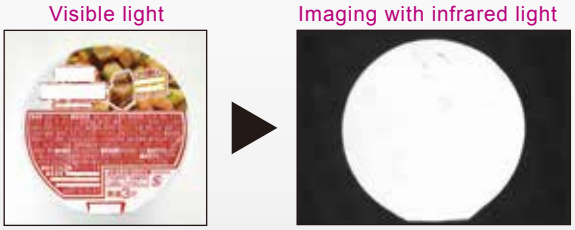
Penetration



Infrared irradiation penetrates the liquid to make inside visible.

Features (2)

Cancellation



Infrared irradiation cancels out the printing to image the surface evenly.

Application examples

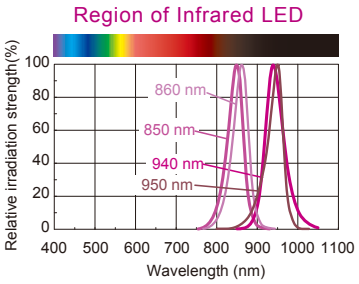
- Foreign material detection by penetrating the liquid
- Appearance inspection by cancelling the surface printings
- Contents inspection for the food package
- Various inspections utilizing a difference in spectral reflectance

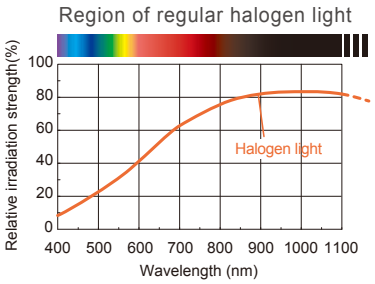
and more

Merits

	Infrared LED	Regular halogen light
Irradiation heat	Extremely low	Heat-generating
Influence on the workpiece	Small heat damage	Huge heat damage

Irradiation of the Infrared LED includes only the energy of specific region of wavelength, so that the irradiation heat is extremely low compared to the halogen lights and gives less damage on the workpiece.





Total of 56 Models CCS has an extensive lineup of Infrared Lights.

Ring Lights

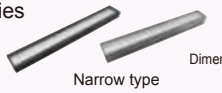
Size (mm)
(Outer diameter)

LDR2 series (850/940 nm)		Dimensions p.6	Ø50 Ø70 Ø90
LDR2-LA series (850/940 nm)		Dimensions p.6	Ø74 Ø132

50 60 70 80 90 100 110 120 130 140 150

Bar Lights

Size (mm)
(Emitting surface length)

LDL2-33X8IR850 (850 nm)		Dimensions p.7	33
LDL series (850/940 nm)		Dimensions p.7	42 74 82 130 180
LDQ series (850/940 nm)		Dimensions p.7	34x34 82x82
HLDL2 series (860 nm) Wide type / Narrow type		Dimensions p.10	150 300 450 600 750 900 1,050 1,200

50 100 150 300 450 600 700 800 900 1,000 1,200

Dome Lights/Flat-Dome Lights

Size (mm)
(Outer diameter)

HPD2 series (860 nm)		Dimensions p.9	Ø91 Ø116 Ø166 Ø216 Ø266 Ø424
LFX2 series (850 nm)		Dimensions p.10	50x50 75x75 100x100 150x150 200x200 (Emitting surface)

50 60 70 80 90 100 150 200 250 300 400

Flat Lights

Size (mm)
(Emitting surface)

LDL series (850/940 nm)		Dimensions p.8	60x60 100x100
LFL series (850/940 nm)		Dimensions p.8	100x80

50 100

Coaxial Lights

Size (mm)
(Emitting surface)

LFV3-CP series (860/950 nm)		Dimensions p.8	20x20
LFV3 series (850/940 nm)		Dimensions p.8	38x34 52x52

10 20 30 40 50

* The LFV3-CP series and LFV3 series have different wavelength.

If you need a wavelength of 1,000 nm or more, please contact your CCS sales representative about the custom product.

Ready for the test with infrared light over 1,000 nm wavelength

CCS is deploying infrared-sensitive CCD cameras in the testing rooms where you can perform workpiece tests directly for yourself using our LED Lights. Please feel free to make an appointment. We are looking forward to helping you.

Near-infrared CCD camera

Optimal for infrared imaging

Specifications
BOBCAT-320 (manufactured by Xenics)
- InGaAs sensor
- Wavelength: 0.9 to 1.7 µm
- 320 × 256 pixels
- Uncooled
- C mount

Our personalized staff will be happy to suggest the lighting solution for getting optimal images.

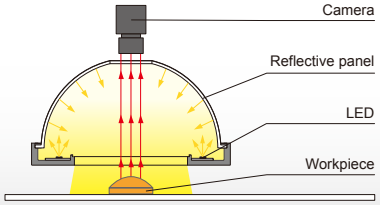
Imaging examples

Various applications utilizing characteristics of the infrared light

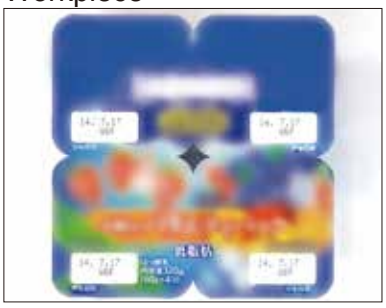
Imaging the appearance of food container

Light from the surface-mounted LED is scattered inside of the dome-shaped reflective diffusion panel. The scattered light from the wide uniform region is illuminated onto the workpiece surface evenly.

■ HPD2 series

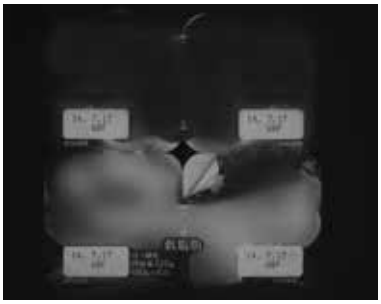


Workpiece



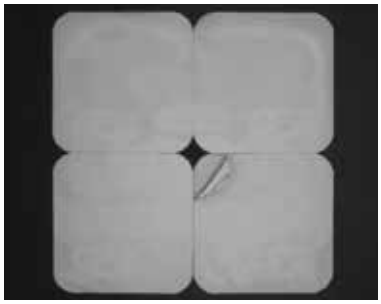
Food container

Visible light Dome Light



Imaging with visible light captures characters and patterns on the container.

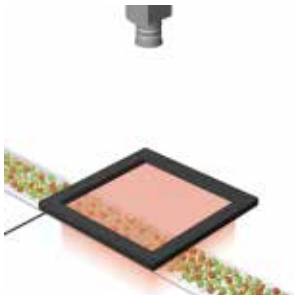
Infrared HPD2-400IR860



Imaging with infrared light erases the characters and patterns on the container, and captures the turning up of the cover.

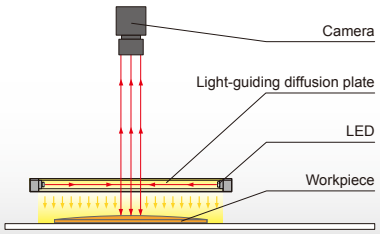
* This workpiece was processed by CCS for sample imaging.

Imaging the foreign materials in food product



The dot pattern on the surface of the light-guiding diffusion plate controls the diffusion and transmission of the illuminated light. It can illuminate uniform diffused light onto the workpiece.

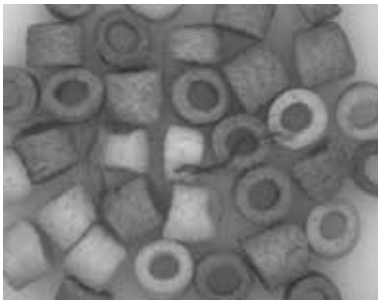
■ LFX2 series



Workpiece

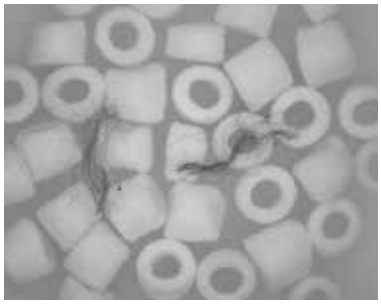
Snack confectionery

Visible light Dome Light



It is difficult to capture the foreign materials with visible light imaging.

Infrared LFX2-200IR850



Imaging with infrared light cancels the difference in color density and captures the foreign materials.

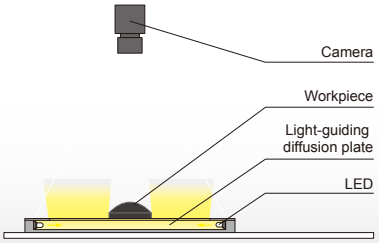
* This workpiece was processed by CCS for sample imaging.

These images were acquired with a infrared-sensitive camera.
The sample workpieces used in this pamphlet have been processed specifically for sample imaging. They are not intended to represent product quality and performance.

Imaging the foreign materials in disinfectant product

LEDs embedded around the outside of a square light-guiding diffusion plate. Diffused illumination from a flat emitting surface.

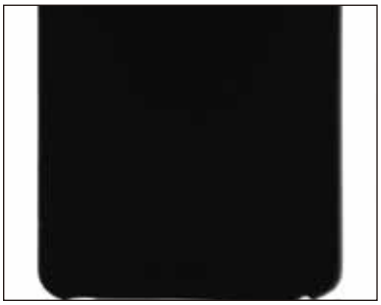
■ LFL series



Workpiece

Disinfectant product

Visible light Flat Light



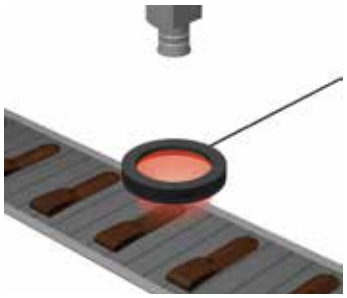
It is difficult to check the inside with visible light imaging.

Infrared LFL-100IR940

Imaging with infrared light penetrates the liquid and captures the foreign materials.

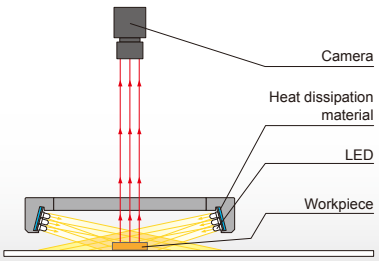
* This workpiece was processed by CCS for sample imaging.

Imaging the appearance of leatherware



By mounting LEDs on a flexible circuit board in a steep angle, it becomes possible to converge light in the center section from a low position.

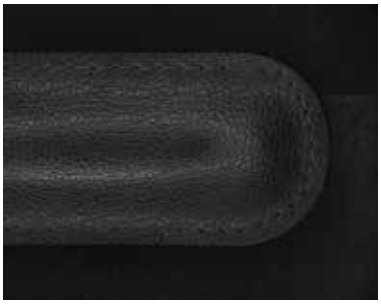
■ LDR2-LA series



Workpiece

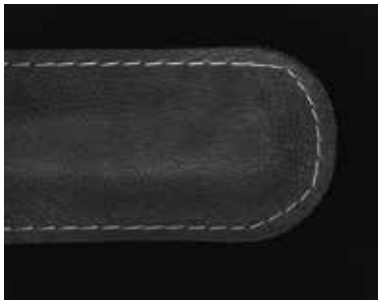
Leatherware

Visible light Ring Light



The leather and the threads are of the same color, so that it is difficult to capture the stitching.

Infrared LDR2-132IR2-850-LA



Infrared light penetrates the dye to highlight the threads and captures the stitching.

These images were acquired with a infrared-sensitive camera.
The sample workpieces used in this pamphlet have been processed specifically for sample imaging. They are not intended to represent product quality and performance.

Model name has been changed from “IR” to “IR2.”

Infrared Lights IR series have been renewed

Features

(1) **Unified 24 VDC input**

All models are 24 VDC input and the same Control Unit is applicable for the Light Unit of equal size, regardless of the LED color such as red, white, blue, green, ultraviolet, and infrared.

(2) **Revamped lineup**

New size has been supported by the Flat Lights.
Coaxial Lights have been changed to the latest LFV3 series.

(3) **Improved output (940 nm type)**

State of the art LEDs improved the emitting efficiency. Increased output is 1.5 times the output of the previous models. Available for wider range of applications.

IR series Specifications of the previous IR series (Scheduled to be discontinued)

Model name	Peak wavelength	Input voltage	Power consumption	Weight
LDR2-50IR850	850 nm	12 V	3.8 W	50 g
LDR2-50IR940	940 nm			
LDR2-70IR850	850 nm		7.6 W	130 g
LDR2-70IR940	940 nm			
LDR2-90IR850	850 nm		14 W	170 g
LDR2-90IR940	940 nm			
LDR2-74IR850-LA	850 nm		5.7 W	90 g
LDR2-74IR940-LA	940 nm			
LDR2-132IR850-LA	850 nm		16 W	270 g
LDR2-132IR940-LA	940 nm			
SQR-56IR850	850 nm		3.8 W	80 g
SQR-56IR940	940 nm			
LDL-42X15IR850	850 nm		1.9 W	40 g
LDL-42X15IR940	940 nm			
LDL-74X27IR850	850 nm		6.9 W	80 g
LDL-74X27IR940	940 nm			
LDL-82X15IR850	850 nm		3.8 W	60 g
LDL-82X15IR940	940 nm			
LDL-130X15IR850	850 nm		6.1 W	90 g
LDL-130X15IR940	940 nm			
LDL-180X16IR850	850 nm		8.4 W	110 g
LDL-180X16IR940	940 nm			
LDQ-78IR850	850 nm		6.1 W	110 g
LDQ-78IR940	940 nm			
LDQ-150IR850	850 nm		16 W	530 g
LDQ-150IR940	940 nm			
LDL-100X100IR850	850 nm	24 V	21 W	650 g
LDL-100X100IR940	940 nm			
LFL-100IR850	850 nm	12 V	5.3 W	220 g
LFL-100IR940	940 nm			
LFV2-50IR850	850 nm		8.4 W	260 g
LFV2-50IR940	940 nm			

Applicable cable	12 V Extension cable
Applicable Control Unit	12 V Control Unit

* The LDL-100X100IR850/940 are 24 VDC input.

IR2 series Specifications of the latest IR2 series

Model name	Peak wavelength	Input voltage	Power consumption	Weight	Overdriving(Strobing)
LDR2-50IR2-850	850 nm	24 V	3.8 W	50 g	Applicable
LDR2-50IR2-940	940 nm				
LDR2-70IR2-850	850 nm		7.6 W	130 g	Applicable
LDR2-70IR2-940	940 nm				
LDR2-90IR2-850	850 nm		14 W	170 g	Applicable
LDR2-90IR2-940	940 nm				
LDR2-74IR2-850-LA	850 nm		6.9 W	90 g	Applicable
LDR2-74IR2-940-LA	940 nm				
LDR2-132IR2-850-LA	850 nm		16 W	270 g	Applicable
LDR2-132IR2-940-LA	940 nm				
LDL-42X15IR2-850	850 nm		2.3 W	40 g	Applicable
LDL-42X15IR2-940	940 nm				
LDL-74X27IR2-850	850 nm		6.9 W	80 g	Applicable
LDL-74X27IR2-940	940 nm				
LDL-82X15IR2-850	850 nm		3.8 W	60 g	Applicable
LDL-82X15IR2-940	940 nm				
LDL-130X15IR2-850	850 nm		6.1 W	90 g	Applicable
LDL-130X15IR2-940	940 nm				
LDL-180X15IR2-850	850 nm		8.4 W	110 g	Applicable
LDL-180X15IR2-940	940 nm				
LDQ-78IR2-850	850 nm		6.1 W	110 g	Applicable
LDQ-78IR2-940	940 nm				
LDQ-150IR2-850	850 nm		16 W	530 g	Applicable
LDQ-150IR2-940	940 nm				
LDL-60X60IR2-850	850 nm		7.6 W	140 g	Applicable
LDL-60X60IR2-940	940 nm				
LDL-100X100IR2-850	850 nm		21 W	650 g	Applicable
LDL-100X100IR2-940	940 nm				
LFL-100IR2-850	850 nm		7.6 W	260 g	Applicable
LFL-100IR2-940	940 nm				
LFV3-CP18IR2-860	860 nm		2.6 W	70 g	Applicable
LFV3-CP18IR2-950	950 nm				
LFV3-35IR2-850	850 nm		3.1 W	175 g	Applicable
LFV3-35IR2-940	940 nm				
LFV3-50IR2-850	850 nm		9.1 W	335 g	Applicable
LFV3-50IR2-940	940 nm				

* The wavelength of the LFV3-CP series is different from that of the LFV3 series.

Applicable cable	24 V Extension cable (FCB series, FRCB series)
Applicable Control Unit	24 V Control Unit (PD3/PD2/PSB/BB series, CC-ST-1024)

* Please contact your CCS sales representative if you would like to use the Light Unit in combination with a Strobe Control Unit (overdrive type).
* Refer to the back cover for other specifications.

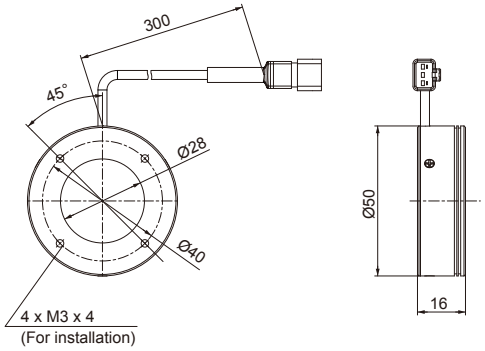
Refer to our website for product details. CCS IR ▶ Search
Use a search engine.
You can also use your smartphone or cell phone.

Dimensions (mm)

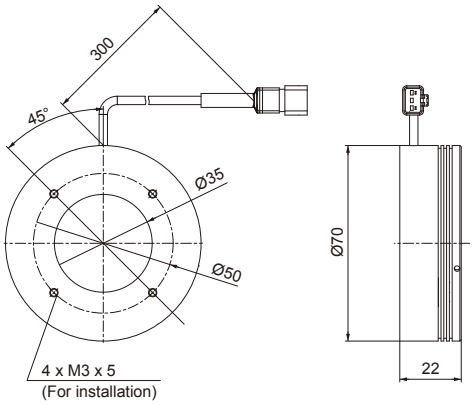
Ring Lights
LDR2 series

Specifications p.5

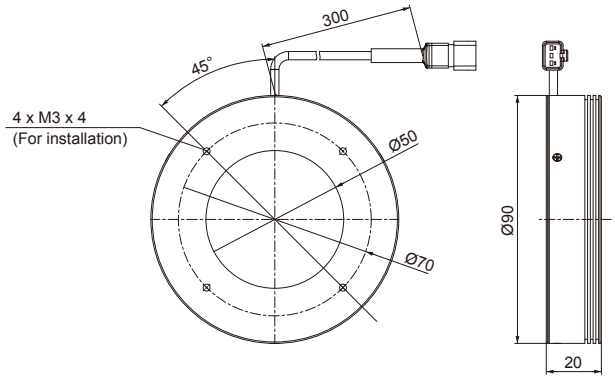
LDR2-50IR2-850/-940



LDR2-70IR2-850/-940



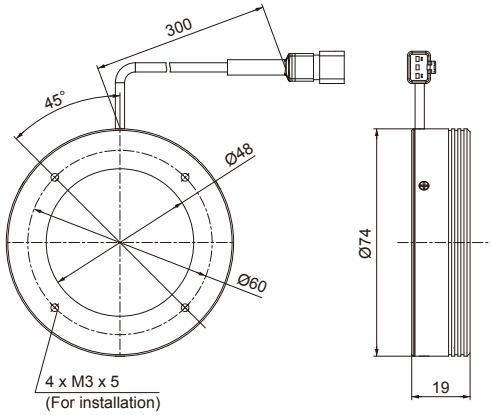
LDR2-90IR2-850/-940



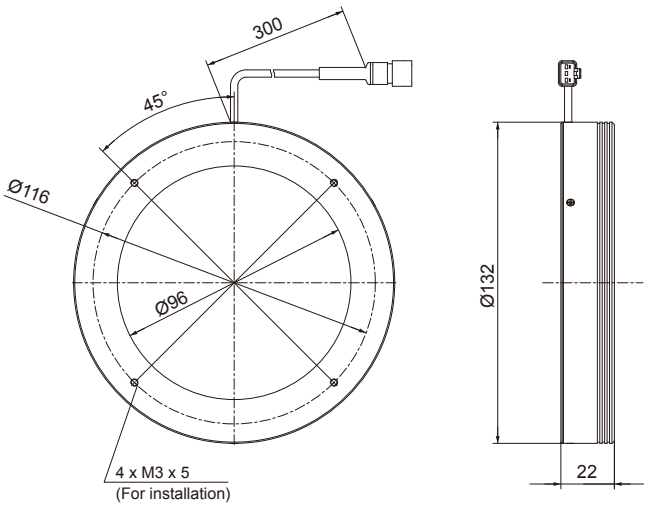
Low-angle Ring Lights
LDR2-LA series

Specifications p.5

LDR2-74IR2-850-LA/-940-LA



LDR2-132IR2-850-LA/-940-LA



We have various materials.

PDF Drawings | DXF Drawings | 3D CAD | Instruction Guides | Product Fliers

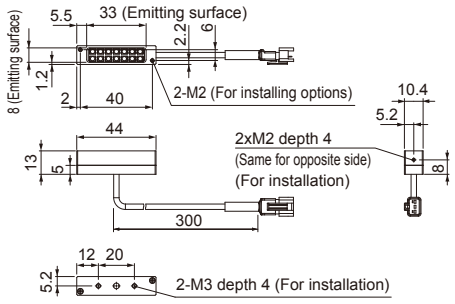
Download here.
http://www.ccs-grp.com/dl/

Dimensions (mm)

Bar Lights
LDL series

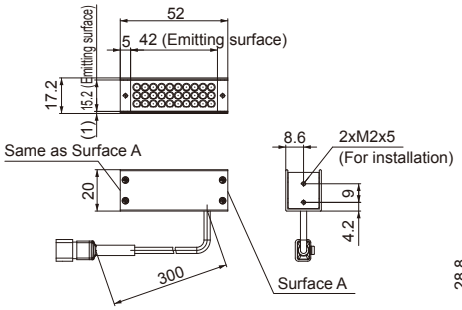
Specifications p.5

LDL2-33X8IR850

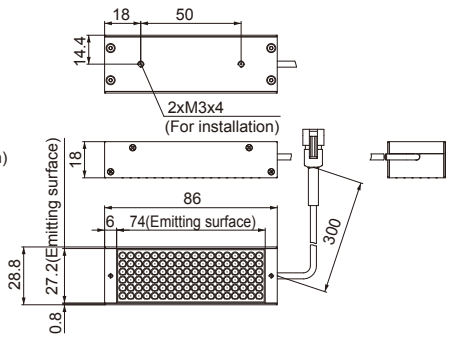


Model name	Peak wavelength	Input voltage	Power consumption	Weight
LDL-33X8IR850	850 nm	24 V	1.3 W	20 g

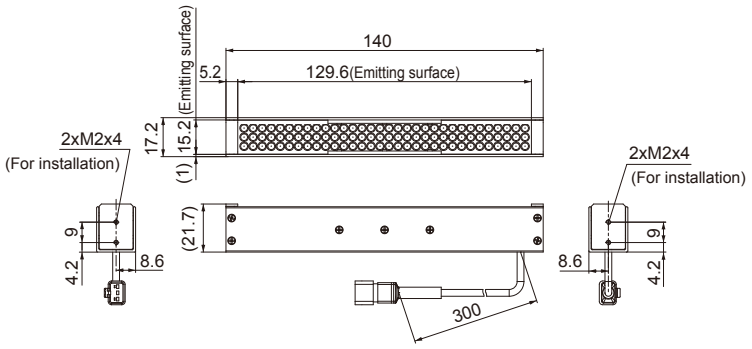
LDL-42X15IR2-850/-940



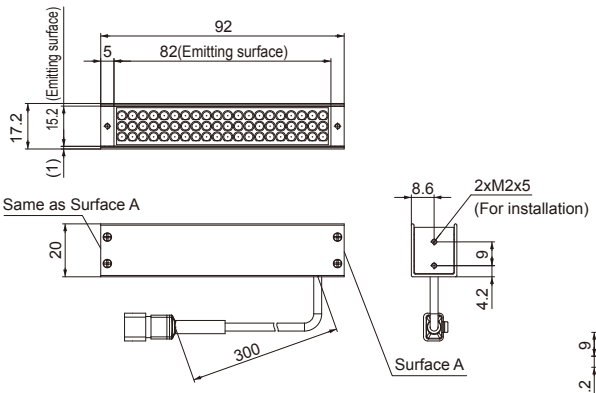
LDL-74X27IR2-850/-940



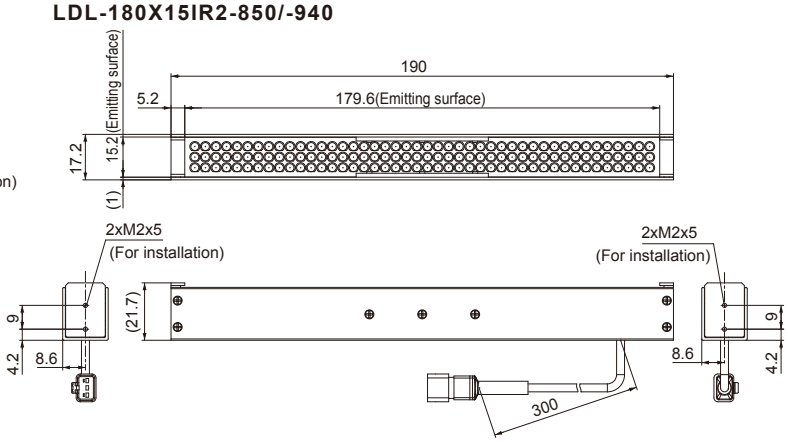
LDL-130X15IR2-850/-940



LDL-82X15IR2-850/-940



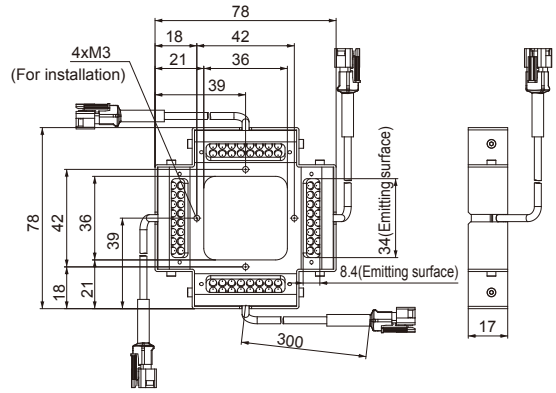
LDL-180X15IR2-850/-940



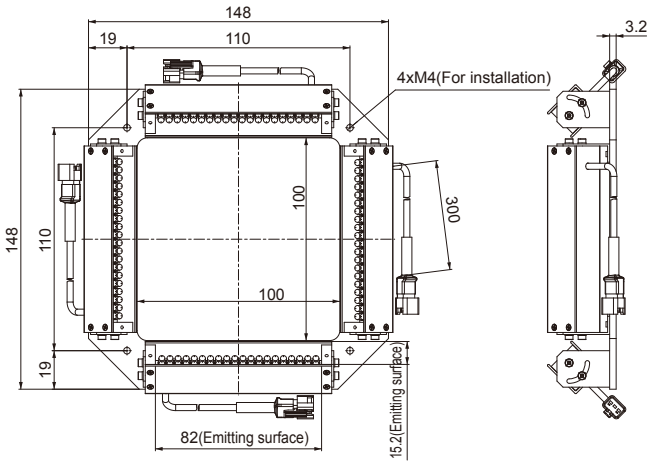
Bar Lights (4-way irradiation)
LDQ series

Specifications p.5

LDQ-78IR2-850/-940



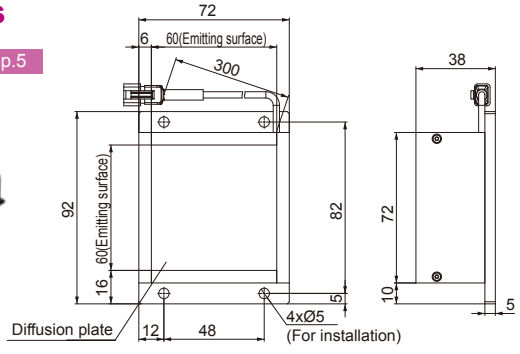
LDQ-150IR2-850/-940



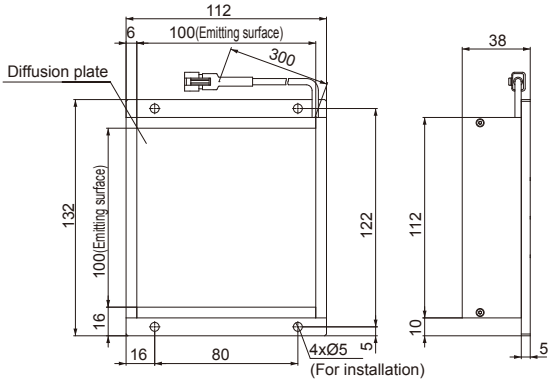
Flat Lights LDL series

Specifications p.5

LDL-60X60IR2-850/-940



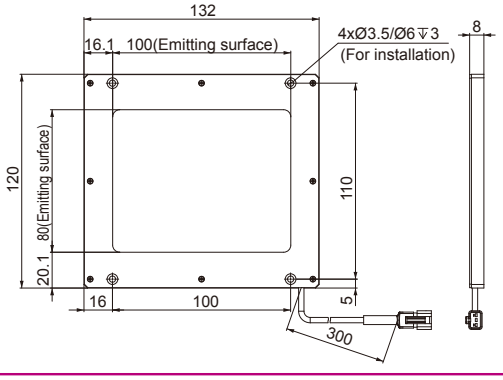
LDL-100X100IR2-850/-940



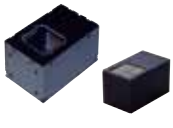
Flat Lights (Thin type) LFL series

Specifications p.5

LFL-100IR2-850/-940

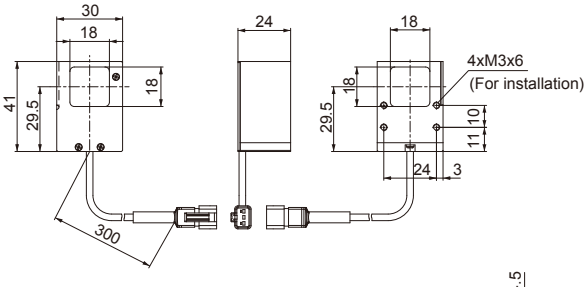


Coaxial Lights LFV3 series

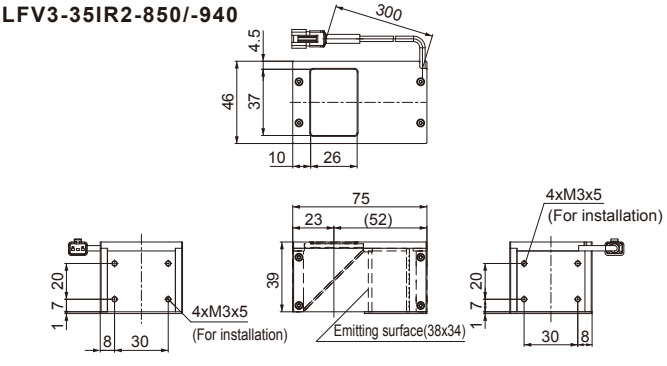


Specifications p.5

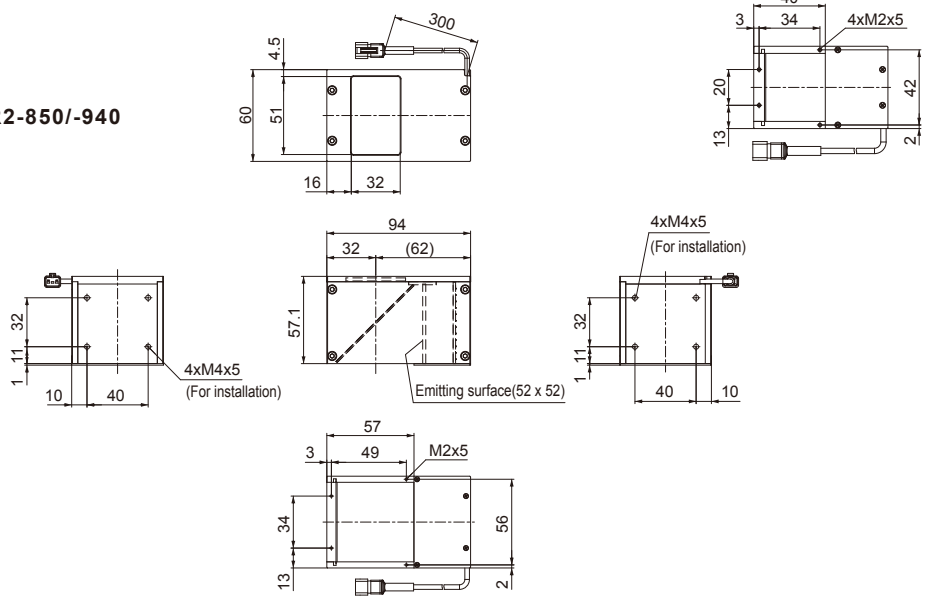
LFV3-CP18IR2-850/-940



LFV3-35IR2-850/-940



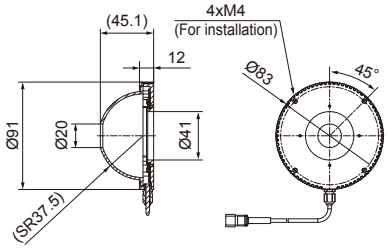
LFV3-50IR2-850/-940



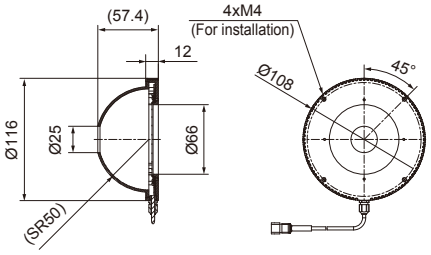
Dimensions (mm)

Dome Lights
HPD2 series

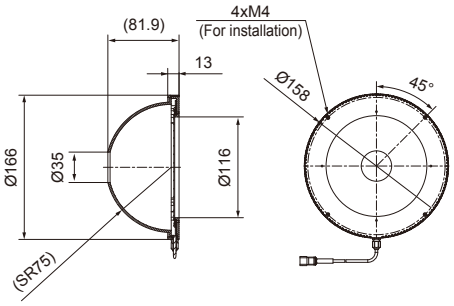
HPD2-75IR860



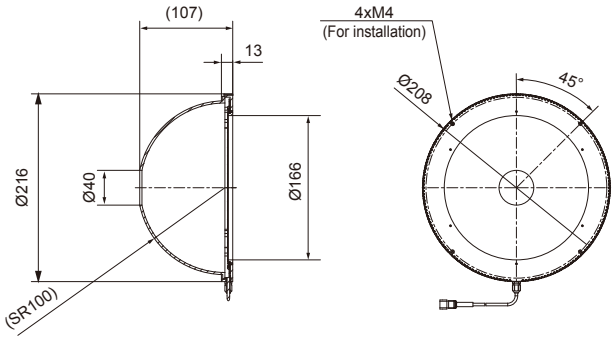
HPD2-100IR860



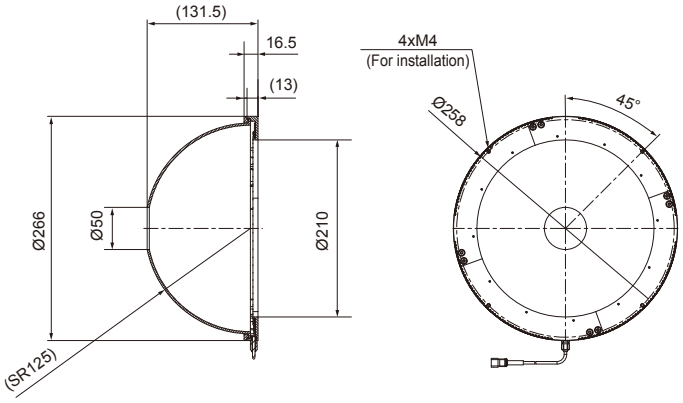
HPD2-150IR860



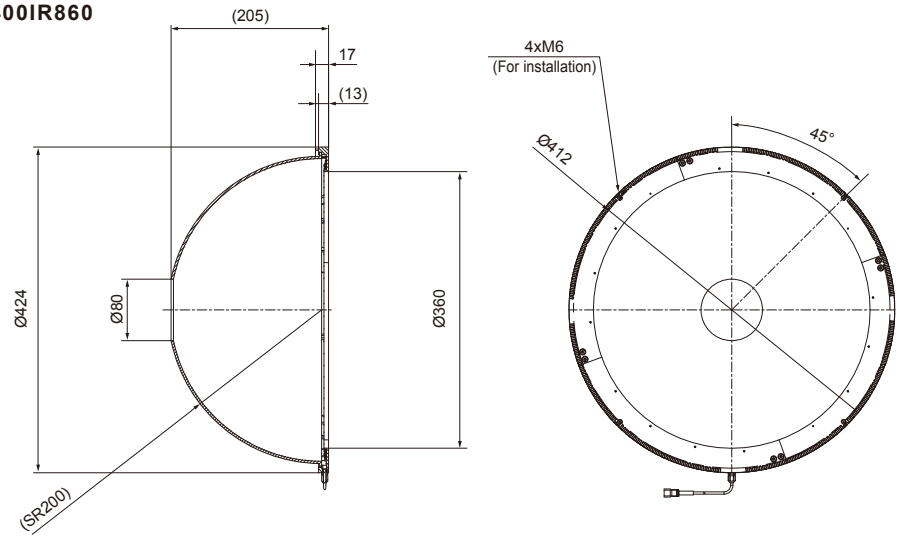
HPD2-200IR860



HPD2-250IR860



HPD2-400IR860



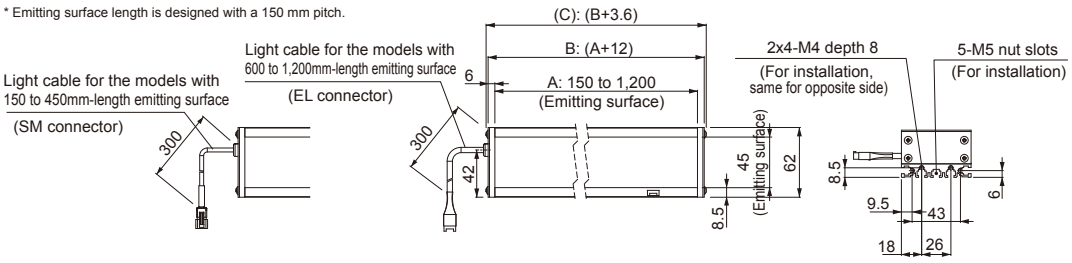
Model name	Peak wavelength	Input voltage	Power consumption	Weight	Model name	Peak wavelength	Input voltage	Power consumption	Weight
HPD2-75IR860	860 nm	24 V	12 W	140 g	HPD2-200IR860	860 nm	24 V	46 W	460 g
HPD2-100IR860			23 W	160 g	HPD2-250IR860				650 g
HPD2-150IR860			35 W	285 g	HPD2-400IR860				1,300 g

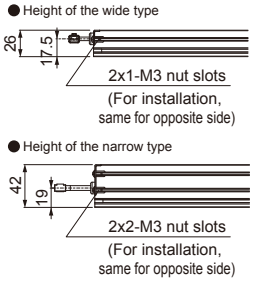
Refer to our website for product details. CCS IR ▶ Search
Use a search engine.
You can also use your smartphone or cell phone.

Large Bar Lights
HLDL2 series

HLDL2-(Emitting surface length)x45IR-DF-N/-W

* Emitting surface length is designed with a 150 mm pitch.

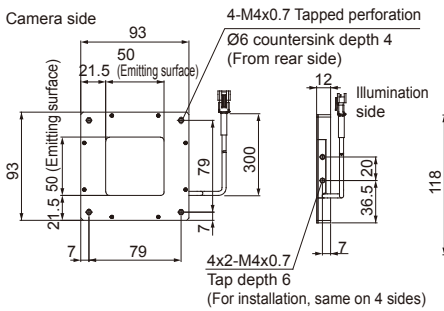




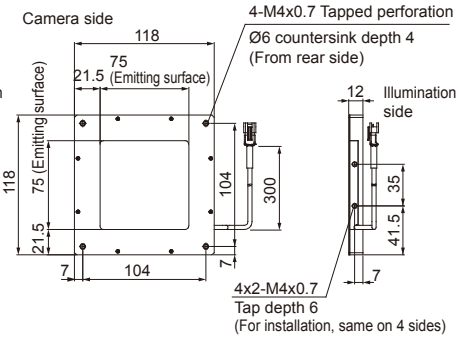
Model name (Narrow type)	Peak wavelength	Input voltage	Power consumption	Weight	Model name (Wide type)	Peak wavelength	Input voltage	Power consumption	Weight
HLDL2-150X45IR-DF-N	860 nm	24 V	12 W	390 g	HLDL2-150X45IR-DF-W	860 nm	24 V	12 W	300 g
HLDL2-300X45IR-DF-N			24 W	770 g	HLDL2-300X45IR-DF-W			24 W	590 g
HLDL2-450X45IR-DF-N			36 W	1,160 g	HLDL2-450X45IR-DF-W			36 W	880 g
HLDL2-600X45IR-DF-N			48 W	1,540 g	HLDL2-600X45IR-DF-W			48 W	1,170 g
HLDL2-750X45IR-DF-N			60 W	1,930 g	HLDL2-750X45IR-DF-W			60 W	1,460 g
HLDL2-900X45IR-DF-N			72 W	2,310 g	HLDL2-900X45IR-DF-W			72 W	1,750 g
HLDL2-1050X45IR-DF-N			84 W	2,700 g	HLDL2-1050X45IR-DF-W			84 W	2,040 g
HLDL2-1200X45IR-DF-N			96 W	3,080 g	HLDL2-1200X45IR-DF-W			96 W	2,330 g

Flat-Dome Lights
LFX2 series

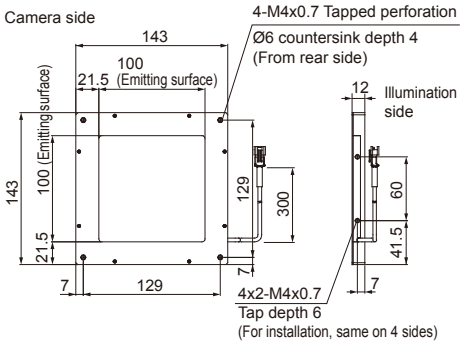
LFX2-50IR850



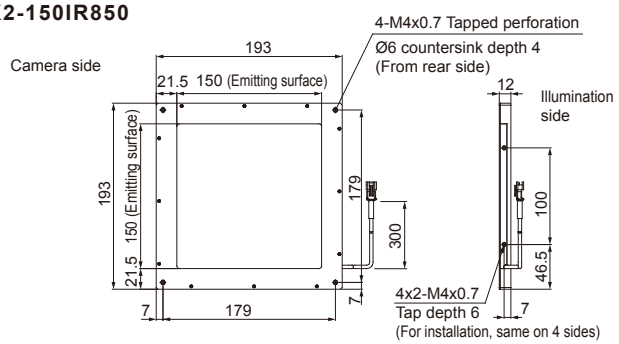
LFX2-75IR850



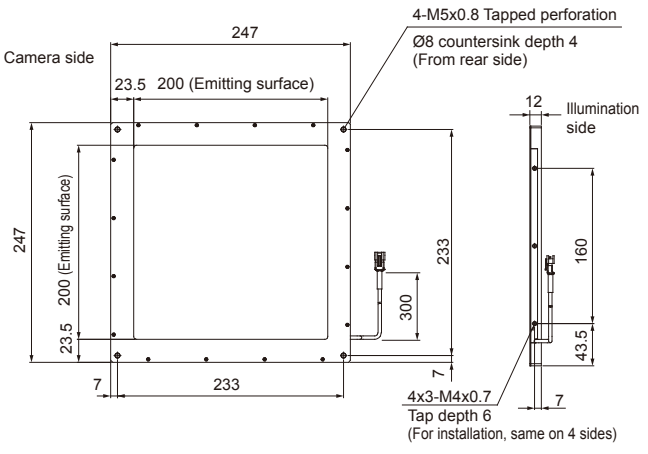
LFX2-100IR850



LFX2-150IR850



LFX2-200IR850

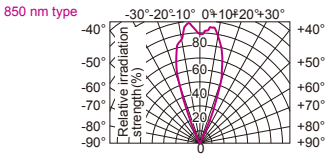
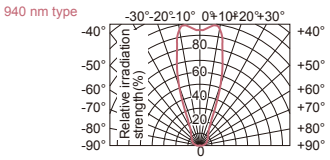
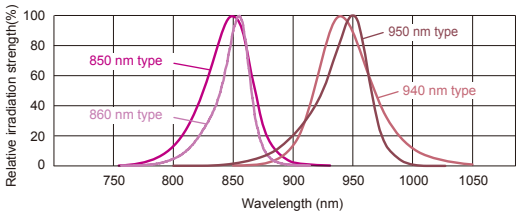


Model name	Peak wavelength	Input voltage	Power consumption	Weight
LFX2-50IR850	850 nm	24 V	6.6 W	180 g
LFX2-75IR850			14 W	270 g
LFX2-100IR850			14 W	350 g
LFX2-150IR850			20 W	570 g
LFX2-200IR850			27 W	920 g

We have various materials. PDF Drawings | DXF Drawings | 3D CAD | Instruction Guides | Product Fliers

Download here.
http://www.ccs-grp.com/dl/

Common specifications

LED color	Infrared	Cable length	300 mm
Peak wavelength (typ.)	850 nm(end of model name: 850)/860 nm(end of model name: 850, HLDL2 series)/ 940 nm(end of model name: 940)/950 nm(end of model name: 950)	Operating environment	0 to 40°C, Humidity: 20 to 85%RH (with no condensation)
		Storage environment	-20 to 60°C, Humidity: 20 to 85%RH (with no condensation)
Input voltage (max.)	24 VDC	Cooling method	Natural air-cooling
Connector	SM connector(SMR-03V-B)/EL connector(ELP-02V) *1	Directional characteristics • LDR2 series • LDR2-LA series • LDL series • LDQ series	850 nm type  940 nm type 
Polarity/signal	SM connector(1: (+), 2: NC, 3: (-))/EL connector(1: (+), 2: (-))		
CE marking	Safety standard: EN62471 compliant		
Environmental regulation	RoHS compliant		
Light spectrum			

* These data are for reference only and do not guarantee product quality.
*1 You can specify the connector of the Light Unit cable when you place an order. See below for details.

M12 Connector and Flying Leads Light Unit Cables are now available

For example, to order the " LDR2-50IR850 " with an M12 connector attached, specify the model name as **" LDR2-50IR850-M12 ."**

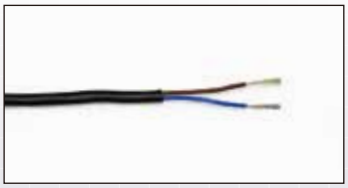
4-pin M12 Socket Connectors

Cable Length: 300 mm

Model name :
standard model name
+ **" -M12 "**

Polarity & Signal :
1 : (+ 24 VDC)
2 : No Connection
3 : (- GND)
4 : No Connection

Flying Leads



Cable Length: 2,000 mm

Model name :
standard model name
+ **" -FL "**

Polarity & Signal :
Anode(+)Brown/
Cathode(-)Blue

Custom ordered products

Please contact your CCS sales representative about the specifications which are not satisfied by the standard products.

Example

Wavelength change

Implementing the LEDs to achieve more than 1,000 nm-wavelength

Feel free to contact us about any other requests such as resizing the emitting surface, cable length, installation structure and so on.

CCS is deploying infrared-sensitive CCD cameras in the testing rooms where you can perform workpiece tests directly for yourself using our LED Lights. Please feel free to make an appointment. We are looking forward to helping you.

● For using infrared products

CAUTION

- Do not expose human eyes to infrared radiation. Also, make known to all personnel concerned the risk of infrared radiation.
- When you see the LEDs of the product, you may find some LEDs lit and others do not. This is because irradiation from the LEDs sometimes include visible light. The LED emits infrared radiation even when it seems not to light, so that do not look at the radiating surface of the product directly by the naked eye. To check out the lighting failure of the LED, use a camera to do it by indirect means. You can also check it out through an LCD display of the general-purpose digital camera or mobile phone.

● "CCS" and "LIGHTING SOLUTION" are registered trademarks or trademarks of CCS Inc.

CAUTION

- To ensure proper and safe use of the product, please read the Instruction Guide completely before using the product.
- The design and specifications of this product are subject to change without notification for product improvement.
- The workpiece imaging examples included in this pamphlet are intended to serve only as references to help you select a suitable Light Unit. Please verify the functionality and conditions required for your particular application before you make a final selection. The sample workpieces used in this pamphlet have been processed specifically for sample imaging. They are not intended to represent product quality and performance.

CCS Inc.

Headquarters
Shimodachiuri-agaru, karasuma-dori, kamigyo-ku,
Kyoto 602-8011 JAPAN
TEL : +81-75-415-8284 / FAX : +81-75-415-8278
URL : http://www.ccs-grp.com/
E-mail : sales@ccs-inc.co.jp

CCS America, Inc
5 Burlington Woods Suite 204 Burlington, MA 01803 USA
TEL : +1-781-272-6900 / FAX : +1-781-272-6902
URL : http://www.ccsamerica.com/
Email : info@ccsamerica.com

CCS Europe NV/SA
Bergensesteenweg 423, Bus 13
1600 Sint-Pieters-Leeuw, Belgium
TEL : +32-(0)2-333-0080 / FAX : +32-(0)2-333-0081
Email : info@ccseu.com

CCS Asia PTE LTD
63 Hillview Avenue #07-10, Lam Soon Industrial Building, Singapore 669569
TEL : +65-6769-1669 / FAX : +65-6769-3422
URL : http://www.ccs-asia.com.sg/
Email : sales@ccs-asia.com.sg

CCS Inc. Shanghai Office
Room 308B-309, CIMIC Tower No.1090 Century Avenue, Pu Dong New Area, Shanghai 200120, P.R. China
TEL : +86-21-5835-8728 / FAX : +86-21-5835-8928
Email : ccschina@ccs-inc.co.jp

CCS Inc. Shenzhen office
17B,China Economic Trade Building, 7Rd Zizhu, Zhuzilin, Futian District, Shenzhen 518040 P.R.China
TEL : +86-755-8279-0477 / FAX : +86-755-8279-0478
Email : ccschina@ccs-inc.co.jp

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