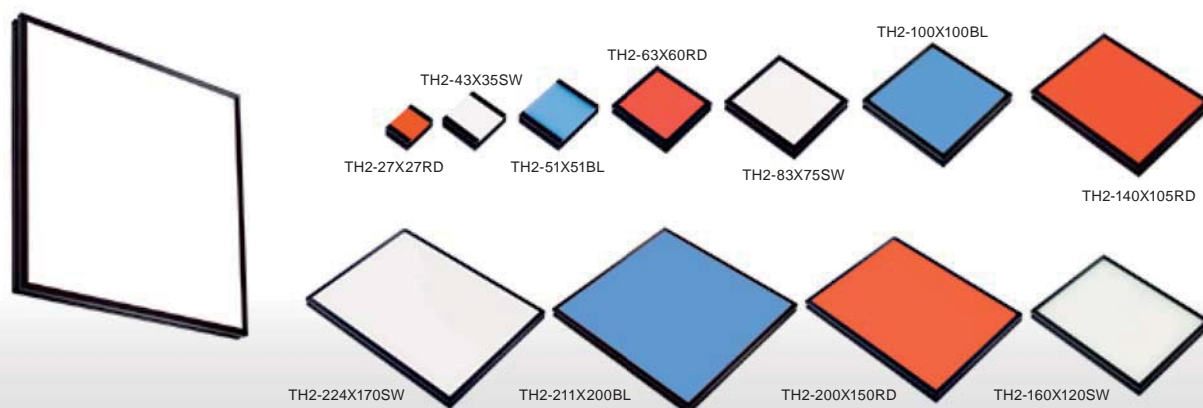


Diffused Lighting

Flat Lights

TH2 Series High-Luminance Type

Diffuse illumination from a flat emitting surface



Applications

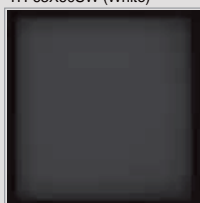
Inspection of liquid surface level in PET bottles, inspection of the appearance of electronic or automobile components, inspection of pinholes, inspection for burr of metal components, etc.

➤ Achieved Further-Higher Luminance

With their increased brightness, these Flat Lights are available at high-speed production lines.

■ Increased output greater than that of the conventional products

Conventional product
TH-63X60SW (White)



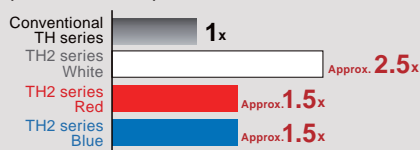
Shutter speed: 1/10,000
Amount of light: 100% intensity

TH2-63X60SW (White)



Shutter speed: 1/10,000
Amount of light: 100% intensity

Graph of the radiance comparison

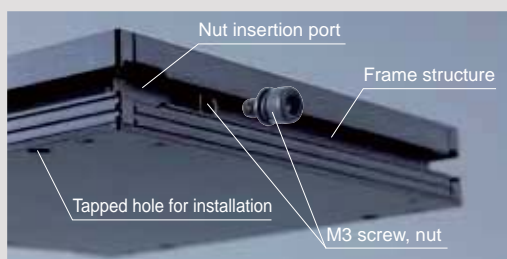


For the high-luminance type 63 x 60 models

The data included is for reference only. Actual values may vary.

■ Install freely to match your environment

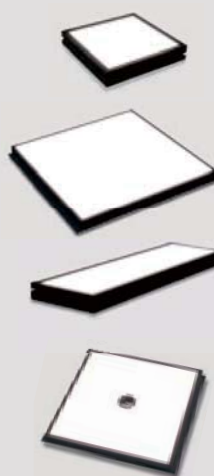
Uses installation method by frame structure. Tapped holes for installation are included not only on the unit side but also on the bottom.



➤ Rich Product Lineup

Our abundant product lineup can meet a wide range of needs. A total of 73 models of different types of Flat Lights.

For transmission purpose
For reflection purpose



High-directivity type ▶ P.71

High-directivity of light.
Ideal for dimension measurements.

Large type ▶ P.75

Good for inspecting large workpieces.
Expands the region of inspection.

Rectangular type ▶ P.77

Optimum for use with sheet shaped workpieces.
Applicable to imaging with a line sensor camera.

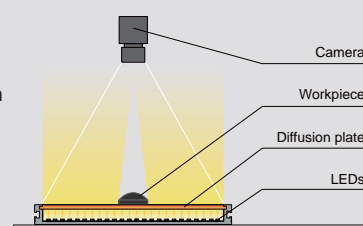
Camera-window type ▶ P.79

Provide a light from the same axis as the camera and a wide range of uniform illumination.
Available for reflection purpose.

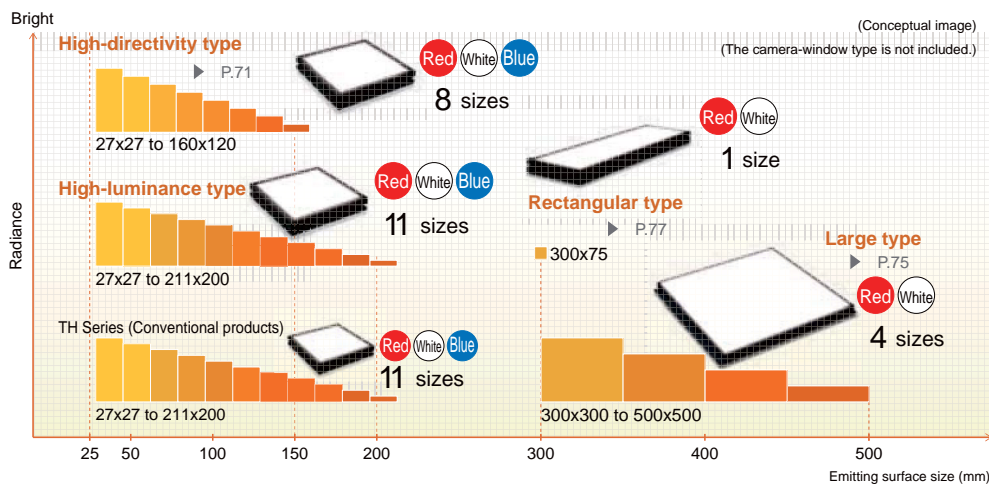
➤ Example Configuration

Achieved high output with a flat shape. Light from the LEDs is transmitted through the diffusion panel and illuminated on the rear of the workpiece.

TH2-140X105



Brightness and Size of Each Light Unit Type



Imaging Example: Imaging the Liquid Surface Level in PET Bottles



Workpiece image



PET bottles

TH2-140X105SW



Liquid surface level and the printed text are clearly imaged.

Imaging Example: Imaging the Appearance of Electronic Components

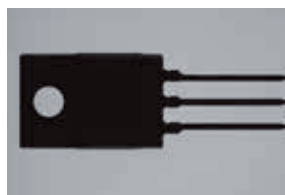


Workpiece image



Electronic components

TH2-63X60SW



The appearance of the resin part and pins are clearly imaged.

Imaging Example: Imaging the Appearance of Medicines (Individual Packaging)

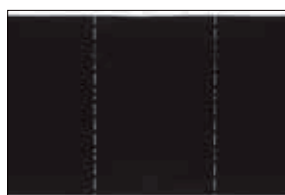


Workpiece image



Medicines (individual packaging)

TH2-200X150SW



The state of the cutting edge and perforations are clearly recognized.

Direct Lighting	LDR2 LDR2-LA LDR-LA1 SQR SQR-TP
Diffused Lighting	HPR2 LFR LKR FPR FPQ2
Direct Lighting	LDL2 LDLB HLDL2 HL
Diffused Lighting	TH2 (5 types) TH LFL HPD2 LDM2 LAV PDM LFX3 LFX3-PT LFV3
Coaxial Lighting	MSU MFU
Strobe Lighting	PF
Water-proof Lighting	HLDR-IP/ HSL-PCL
Ultraviolet Lighting	UV2 UV LNSP-UV-FN
Infrared Lighting	IR2
Intensity Control Lighting	IU
Spot Lighting, Etc.	HLV3 HLV2 LV LSP HFS/HFR HLV3-NR HLV3-3M-RGB-4 HLV2-NR HLV2-3M-RGB-3W PFB3 PFB2
Convergent Lighting	LNLP LNSP2 LNSP Coaxial Units LNSP-FN LN/LN-HK
Diffused Lighting	LNLD LND2 HLND LT LNV
Oblique-Angled Lighting	LNDG LNIS2 LNIS LNIS-FN
Lenses	Telecentric Lens Macro Lens

TH2 Series

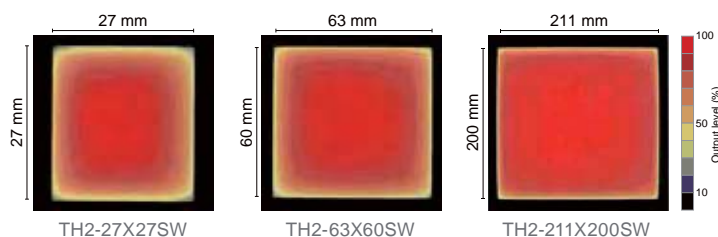
High-Luminance Type



Data: Uniformity (Representative Example)

The data included is for reference only. Actual values may vary.

Uniformity (Relative radiance)



Lineup

Model name	LED color	Power consumption	Peak wavelength / correlated color temperature ³	Options	Extension cables	Recommended Control Units	Weight
TH2-27X27RD	Red	24 V / 2.3 W	635 nm	<div>Light control film</div> <div>Bracket</div>	<div>FCB^{*2} Straight Cable</div> <div>FCB-W^{*3} 2-branch Cable</div> <div>FCB-F 4-branch Cable</div> <div>FRCB Robot Cable</div> <div>*2 The cables with a model name that ends with "-ME7", "-EL2", "-PF", or "-PF-EL9" are not included.</div> <div>*3 The cables with a model name that ends with "-EL2" are not included.</div>	<div>PD3</div> <div>CC-ST-1024</div> <div>PSB</div> <div>POD^{*1}</div>	30 g
TH2-27X27SW	White	24 V / 2.9 W	5,800 K				40 g
TH2-27X27BL	Blue	24 V / 2.7 W	465 nm				
TH2-43X35RD	Red	24 V / 4.9 W	635 nm				60 g
TH2-43X35SW	White	24 V / 4.8 W	5,800 K				
TH2-43X35BL	Blue	24 V / 4.8 W	465 nm				100 g
TH2-51X51RD	Red	24 V / 6.5 W	635 nm				
TH2-51X51SW	White	24 V / 8.2 W	5,800 K				140 g
TH2-51X51BL	Blue	24 V / 8.2 W	465 nm				
TH2-63X60RD	Red	24 V / 9.9 W	635 nm				200 g
TH2-63X60SW	White	24 V / 9.7 W	5,800 K				
TH2-63X60BL	Blue	24 V / 9.7 W	465 nm				260 g
TH2-83X75RD	Red	24 V / 15 W	635 nm				
TH2-83X75SW	White	24 V / 16 W	5,800 K				310 g
TH2-83X75BL	Blue	24 V / 16 W	465 nm				
TH2-100X100RD	Red	24 V / 26 W	635 nm				440 g
TH2-100X100SW	White	24 V / 25 W	5,800 K				
TH2-100X100BL	Blue	24 V / 25 W	465 nm				540 g
TH2-140X105RD	Red	24 V / 28 W	635 nm				
TH2-140X105SW	White		5,800 K				580 g
TH2-140X105BL	Blue		465 nm				
TH2-160X120RD	Red	24 V / 35 W	635 nm				540 g
TH2-160X120SW	White		5,800 K				
TH2-160X120BL	Blue		465 nm				540 g
TH2-200X150RD	Red	24 V / 45 W	635 nm				
TH2-200X150SW	White	24 V / 44 W	5,800 K				540 g
TH2-200X150BL	Blue	24 V / 44 W	465 nm				
TH2-224X170RD	Red	24 V / 66 W	635 nm				540 g
TH2-224X170SW	White		5,800 K				
TH2-224X170BL	Blue		465 nm				580 g
TH2-211X200RD	Red	24 V / 67 W	635 nm				
TH2-211X200SW	White	24 V / 65 W	5,800 K				580 g
TH2-211X200BL	Blue		465 nm				

LED Properties: Light Spectrum ▶ P.326

Extension Cables ▶ P.308

Control Unit Selection Guide ▶ P.251

List of Control Unit Specifications ▶ P.253

^{*1} The correlated color temperature is the same as that of the conventional product.
TH2: 5,800 K (A value for the Light Unit), Conventional products TH: 6,600 K (A value for individual LEDs)

Options



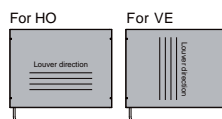
In this plastic film are fine louvers with extremely narrow gaps between them. It reduces light diffusion in a particular direction and increases parallelism.

Light control film

There are two types of light control films: the HO and the VE. For details, refer to P.304.

Model name	Applicable Light Unit (Common for all colors)
LC-TH-27X27-HO	TH2-27X27
LC-TH-27X27-VE	
LC-TH-43X35-HO	
LC-TH-43X35-VE	TH2-43X35
LC-TH-51X51-HO	
LC-TH-51X51-VE	
LC-TH-63X60-HO	TH2-51X51
LC-TH-63X60-VE	
LC-TH-63X60-HO	TH2-63X60
LC-TH-63X60-VE	

▶ P.304



Model name	Applicable Light Unit (Common for all colors)
LC-TH-200X150-HO	TH2-200X150
LC-TH-200X150-VE	
LC-TH-224X170-HO	TH2-224X170
LC-TH-224X170-VE	
LC-TH-211X200-HO	TH2-211X200
LC-TH-211X200-VE	



Bracket

This is a dedicated bracket for affixing the TH2 series Light Units. The TH2 series can be affixed in four points.

Model name	Applicable Light Unit (Common for all colors)
BK-TH-LE12	Installation bracket common to all TH2 models (includes 4)

▶ P.305

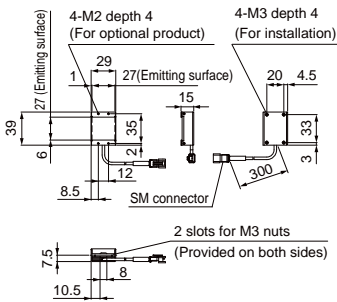
Various technical documents available.

PDF Drawings	DXF Drawings	Product Brochures	Instruction Guides	3D CAD	Data Sheets	Imaging Examples	Digital Catalogs
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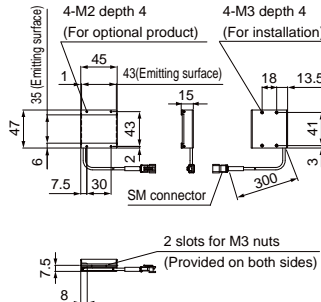
Dimensions (mm)

Even for the Light Units of the same emitting surface size, the thickness and other dimensions of the product differ between the high-luminance and high-directivity type Light Units. Be sure to check the dimension diagrams before installing the Light Units.

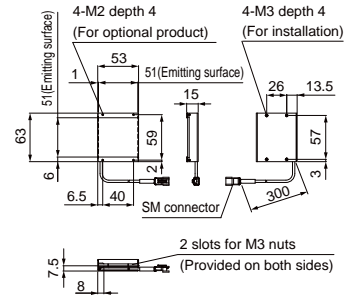
TH2-27X27RD/SW/BL



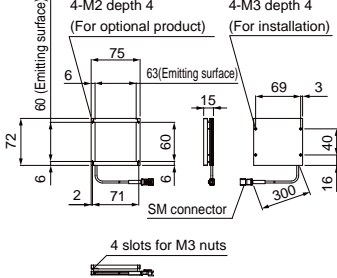
TH2-43X35RD/SW/BL



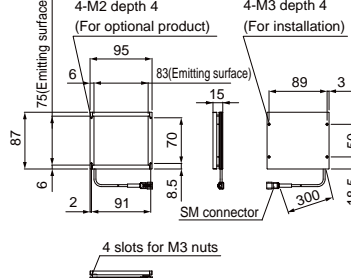
TH2-51X51RD/SW/BL



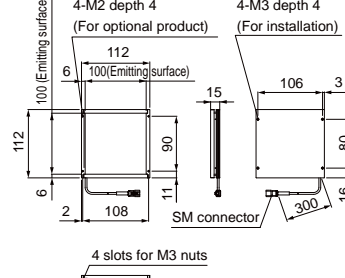
TH2-63X60RD/SW/BL



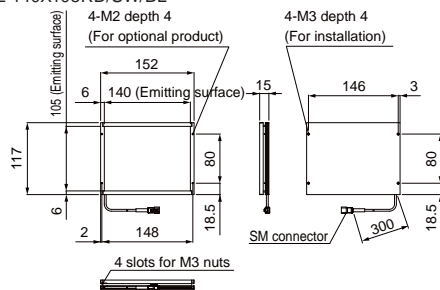
TH2-83X75RD/SW/BL



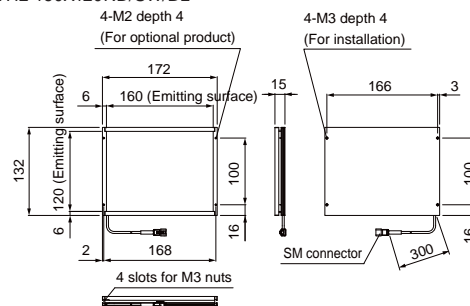
TH2-100X100RD/SW/BL



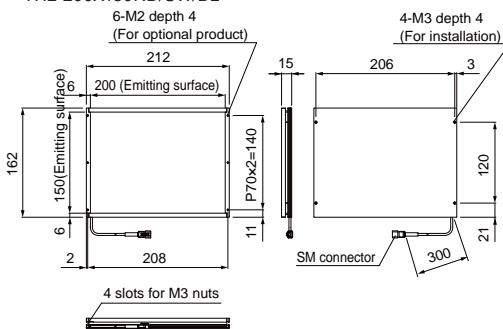
TH2-140X105RD/SW/BL



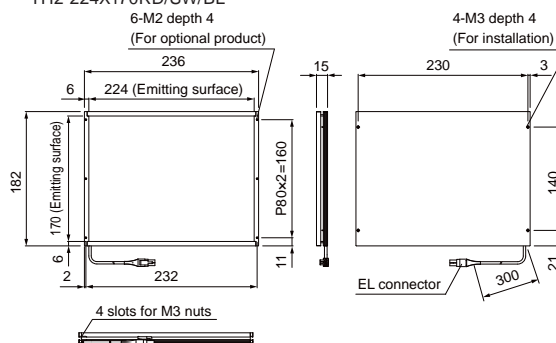
TH2-160X120RD/SW/BL



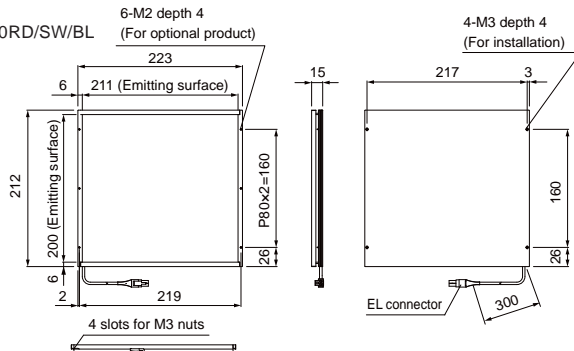
TH2-200X150RD/SW/BL



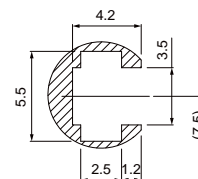
TH2-224X170RD/SW/BL



TH2-211X200RD/SW/BL



Nut slot detail diagram



You can change the connectors of the Light Unit cable. Choose between M12 connectors and flying leads. Refer to P.5 for details.

Direct Lighting	LDR2
	LDR2-LA
	LDR-LA1
	SQR
Diffused Lighting	SQR-TP
	HPR2
	LFR
	LKR
Direct Lighting	FPR
	FPQ2
	LDL2
	LDLB
Diffused Lighting	HLDL2
	HL
	TH2 (5 types)
	TH
Direct Lighting	LFL
	HPD2
	LDM2
	LAV
Diffused Lighting	PDM
	LFX3
	LFX3-PT
	LFV3
Direct Lighting	MSU
	MFU
Diffused Lighting	PF
	HLDR-IP/
	HSL-PCL
	UV2
Direct Lighting	UV
	LNSP-UV-FN
	IR2
	IU
Direct Lighting	HLV3
	HLV2
	LV
	LSP
Diffused Lighting	HFS/HFR
	HLV3-NR
	HLV3-3M-RGB-4
	HLV2-NR
Direct Lighting	HLV2-3M-RGB-3W
	PFBR
	PFB3
	PFB2
Diffused Lighting	LNLP
	LNSP2
	LNSP
	Coaxial Units
Direct Lighting	LNSP-FN
	LN/LN-HK
	LNLD
	LND2
Diffused Lighting	HLND
	LT
	LVN
	LNDG
Direct Lighting	LNIS2
	LNIS
	LNIS-FN
	Telecentric Lens
Diffused Lighting	Macro Lens