

Patent Pending



New, High Output Flat Light



The NEW TH SERIES

Flat Lights Reborn! Transformation from the LDL-TP Series to the TH Series

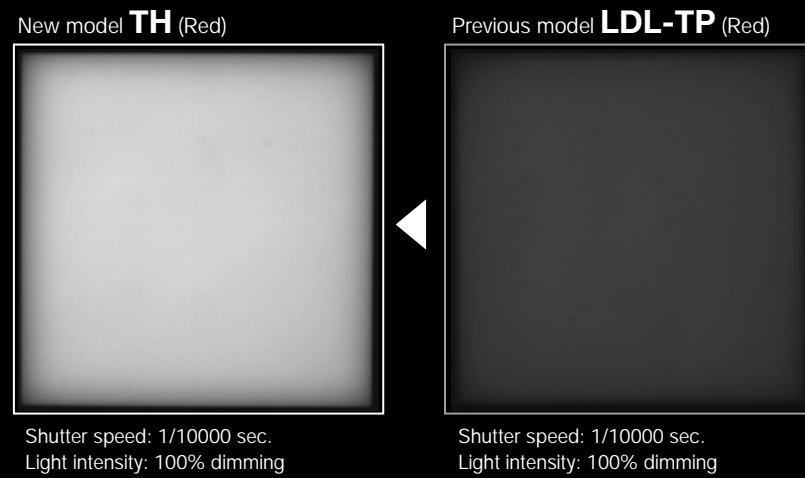
Full Model CHANGE 

1st CHANGE

Brightness Significantly Increased! 7X more than previous models!

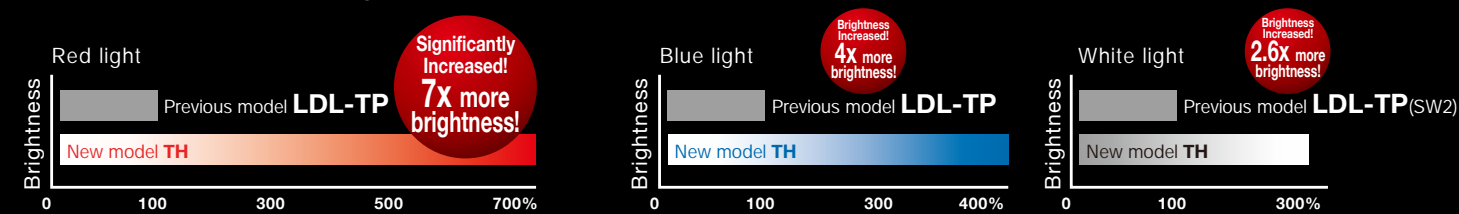
*Red light brightness comparison

By redesigning the optical system and improving illumination efficiency we achieved a flat light with unprecedented high output. Achieved a significant red light brightness increase seven times greater than previous products. Brightness has also been enhanced for white and blue light as well.



New model TH (Red)
Shutter speed: 1/10000 sec.
Light intensity: 100% dimming

Previous model LDL-TP (Red)
Shutter speed: 1/10000 sec.
Light intensity: 100% dimming



*The brightness depends on the spectral sensitivity characteristics of the camera.

*The graphs provided in this brochure are for reference only. They do not guarantee product quality.

2nd CHANGE

Various Sizes Available!

There are over 11 various emitting surface sizes ranging from the smallest at 27 mm x 27 mm (Available for purchase soon) to the largest at 211 mm x 200 mm.

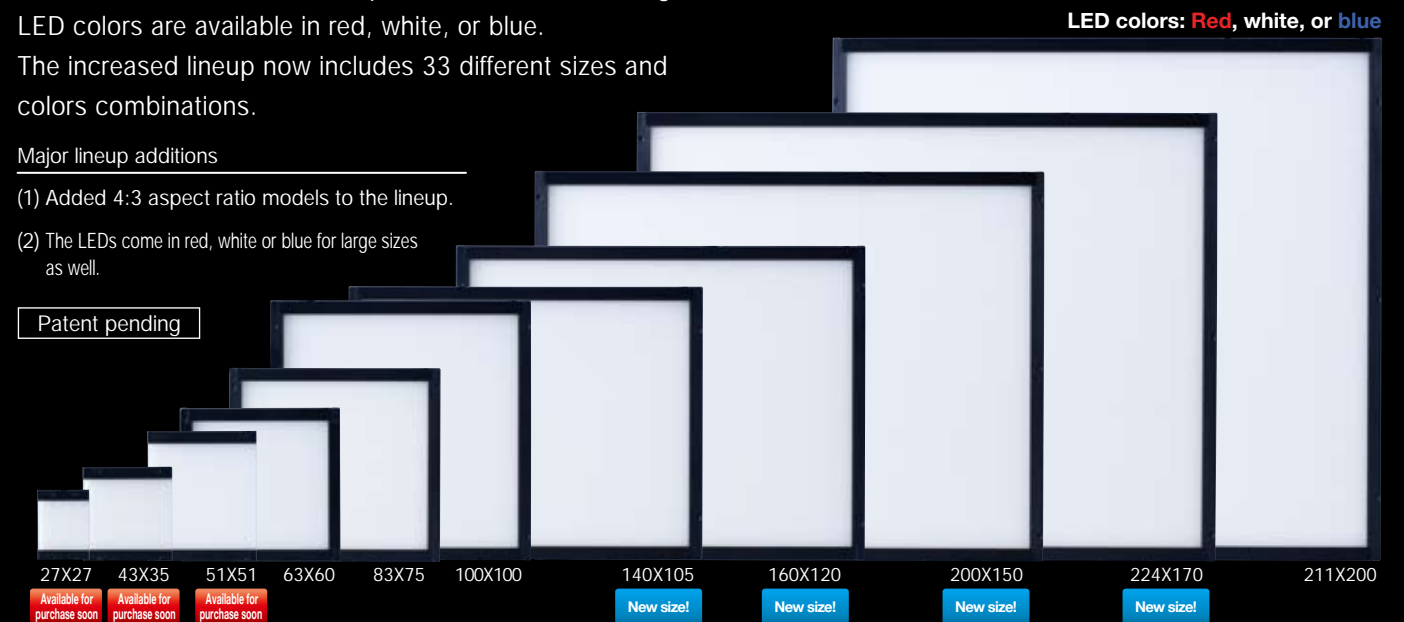
LED colors are available in red, white, or blue.

The increased lineup now includes 33 different sizes and colors combinations.

Major lineup additions

- (1) Added 4:3 aspect ratio models to the lineup.
- (2) The LEDs come in red, white or blue for large sizes as well.

Patent pending

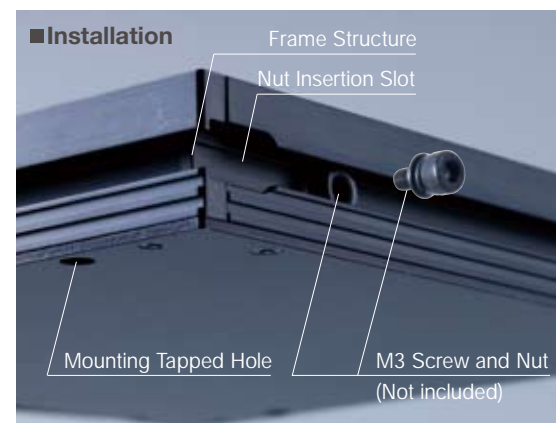


3rd CHANGE New Mounting Method

This product utilizes two mounting methods not found in the LDL-TP model: the frame structure mounting method or the tapped holes for mounting on the bottom of the product. Customer can select from the two methods for greater mounting versatility to match their installation environments.

■ New Mounting Method Features

1. The frame structure allows the product to be mounted on any side.
*Depending on the size, there may be two mounting slots.
2. The lighting position and mounting location are freely adjustable.
3. For convenience, the internal grooves for sliding the securing nuts, comply with JIS standard M3 nuts.
4. The frame structure enhances heat dissipation.



4th CHANGE 24 VDC Input for All Colors

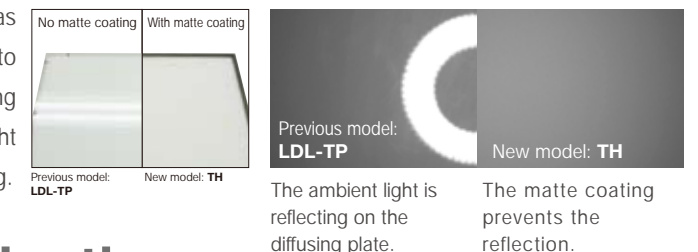
With 24-V input, the power that is supplied is the same for all light colors.

In previous models, 12 V was used for red light so a separate power supply was required.

For the TH series, the voltage is 24 V for all colors so the power supply is universal for all models.

5th CHANGE New Diffusing Plate with Anti-Reflection Effect

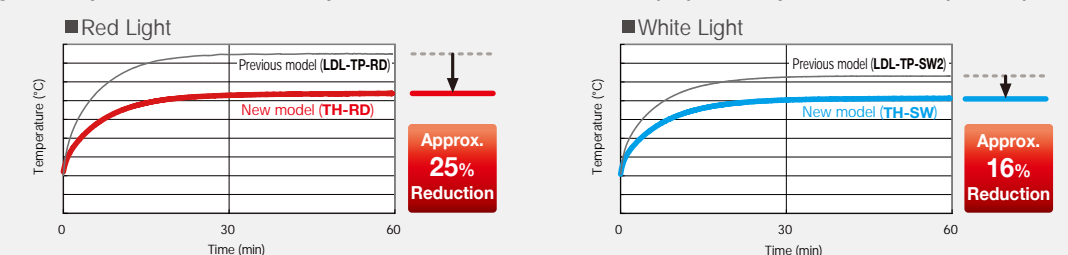
Previously, there were cases in which the camera lens was subjected to secondary reflections which caused glare to appear on the image. For the TH series, the matte coating on the surface of the diffusion plate eliminates light reflections. This expands the possibilities of image taking.



6th CHANGE Enhanced Heat Dissipation

Now employs heat radiating fins and the frame structure significantly increases the surface area over the previous models. This makes it possible to efficiently dissipate generated heat. Reduction of temperature prevents the deterioration of the LED and contributes to the longer life time of products.

■ Change in Temperature over Time Comparison between the new models (TH) and the previous models (LDL-TP)

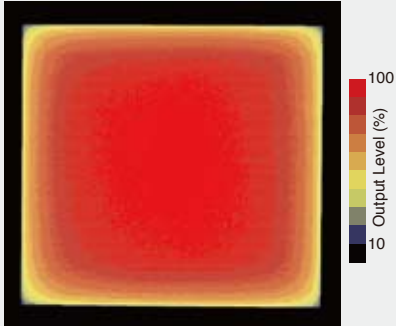


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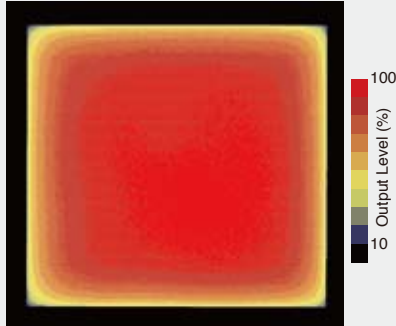
Flat Lights Reborn! Transformation from the LDL-TP Series to the TH Series

Uniformity Data *Typical Examples

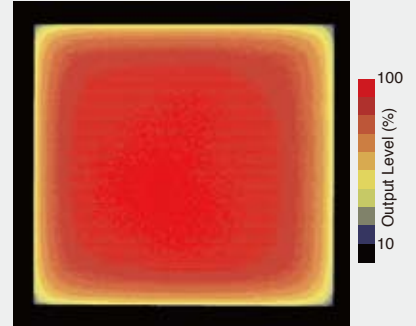
TH-63X60RD



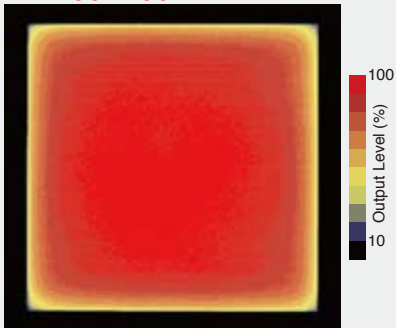
TH-63X60SW



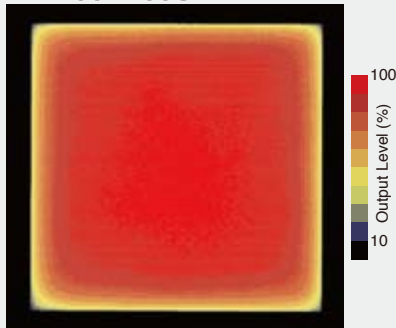
TH-63X60BL



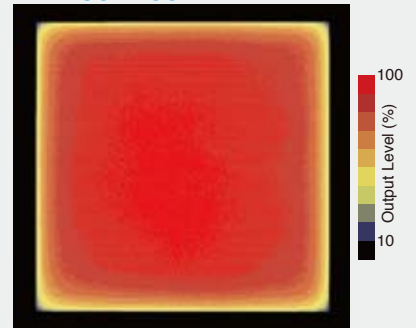
TH-100X100RD



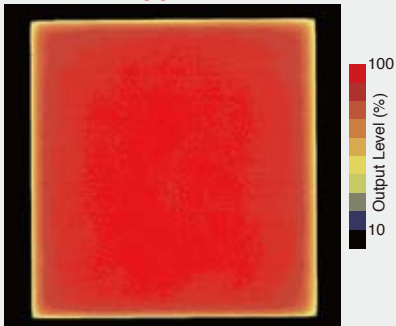
TH-100X100SW



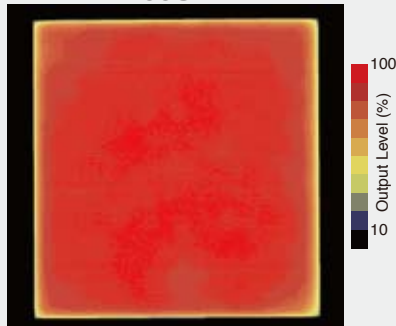
TH-100X100BL



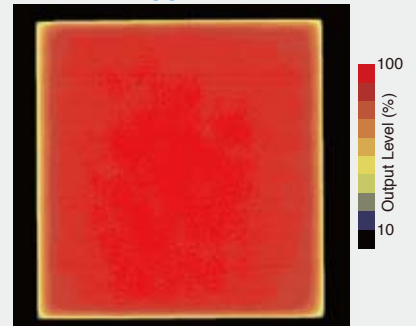
TH-211X200RD



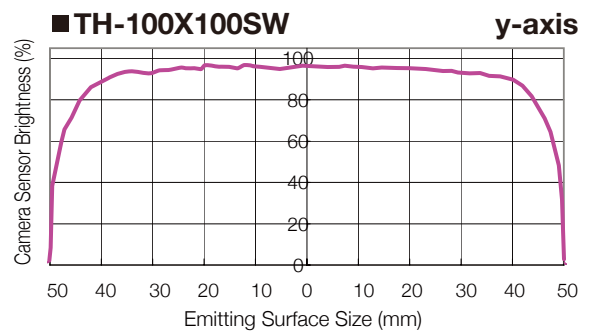
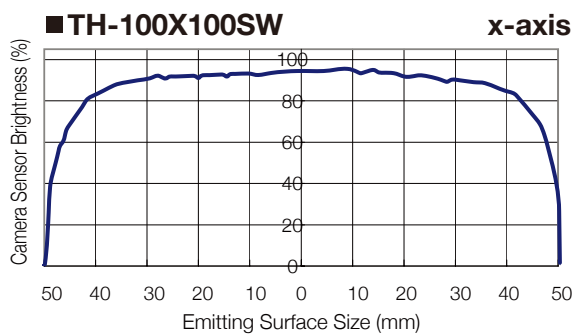
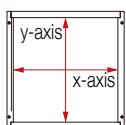
TH-211X200SW



TH-211X200BL



*Uniformity measurement conditions: 100% dimming, Shutter speed: 1/10000 sec. (Values not guaranteed.)



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Image Samples

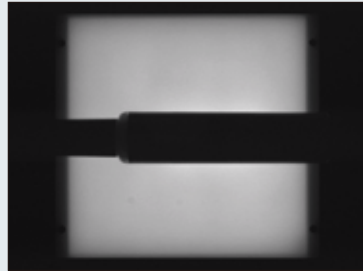
Example of Image Taken Using a Flat Light of Optimal Size

Visual Inspection

Object: Marker pen

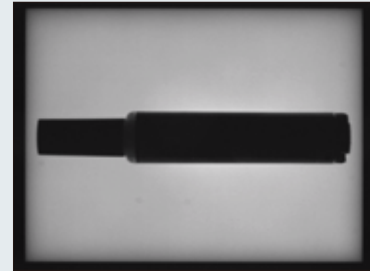


Previous model: **LDL-TP-100X100**



The emitting surface size and the field of view size do not match.

New model: **TH-140X105RD**



Can take an image of the entire object.

Other Image Examples

Liquid Level Inspection

Object:
Plastic drink bottle



New model: **TH-200X150RD**



Sharply captures the liquid level.

Defects Inspection

Object:
Cotton-tipped swab



New model: **TH-140X105RD**

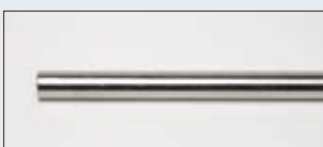


Can check for lid deformations and the quality of the seal of the transparent case.

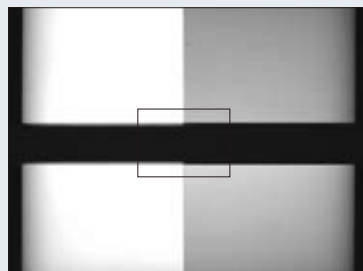
Examples of Images Taken Using Light Control (LC) Films

Dimension Measurement
Inspection

Object: Metal rod

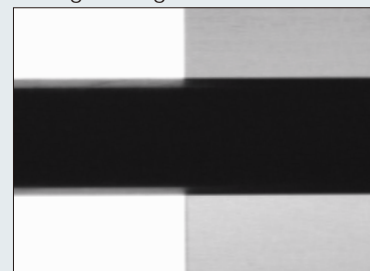


New model: **TH-100X100RD**



Left: Without LC film Right: With LC film

Enlarged image



On the left side, light diffraction occurs.
On the right side, the outline is accurately inspected.

Flat Lights Reborn! Transformation from the LDL-TP Series to the TH Series

●Direct number: You can easily access the web page providing information on a desired product by simply entering the 7-digit direct number in the space provided. (Refer to Machine Vision Applications on the CCS website.)

Wide Product Lineup of the TH Series

New Model: TH Series						LDL-TP/LDL Equivalent
Direct Number	Model Name	LED Color	Emitting Surface Size	Power Consumption (max.)	Weight (max.)	Model Name
Available for purchase soon	TH-27X27RD	Red	27X27mm	1.9W	30g	LDL-TP-27X27 series
Available for purchase soon	TH-27X27SW	White		2.2W		
Available for purchase soon	TH-27X27BL	Blue				
Available for purchase soon	TH-43X35RD	Red	43X35mm	3.8W	40g	LDL-TP-43X35 series
Available for purchase soon	TH-43X35SW	White		3.0W		
Available for purchase soon	TH-43X35BL	Blue				
Available for purchase soon	TH-51X51RD	Red	51X51mm	5.1W	60g	LDL-TP-51X51 series
Available for purchase soon	TH-51X51SW	White		5.2W		
Available for purchase soon	TH-51X51BL	Blue				
1004307	TH-63X60RD	Red	63X60mm	8.1W	100g	LDL-TP-63X60 series LDL-60X60 series
1004308	TH-63X60SW	White		7.9W		
1004309	TH-63X60BL	Blue				
1004310	TH-83X75RD	Red	83X75mm	11W	140g	LDL-TP-83X75 series
1004311	TH-83X75SW	White		12W		
1004312	TH-83X75BL	Blue				
1004313	TH-100X100RD	Red	100X100mm	19W	200g	LDL-TP-100X100 series LDL-100X100 (Red)
1004314	TH-100X100SW	White		18W		
1004315	TH-100X100BL	Blue				
1004316	TH-140X105RD	Red	140X105mm	25W	260g	No equivalent
1004317	TH-140X105SW	White		24W		
1004318	TH-140X105BL	Blue				
1004319	TH-160X120RD	Red	160X120mm	28W	310g	
1004320	TH-160X120SW	White		30W		
1004321	TH-160X120BL	Blue				
1004322	TH-200X150RD	Red	200X150mm	38W	440g	
1004323	TH-200X150SW	White		37W		
1004324	TH-200X150BL	Blue				
1004325	TH-224X170RD	Red	224X170mm	41W	540g	
1004326	TH-224X170SW	White				
1004327	TH-224X170BL	Blue				
1004328	TH-211X200RD	Red	211X200mm	45W	580g	LDL-TP-211X200 series
1004329	TH-211X200SW	White				
1004330	TH-211X200BL	Blue				

*The specifications and design of products that are Available for purchase soon are subject to change without notice.

TH Series and Optional Products Compatibility Chart

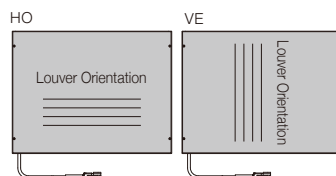
TH Series	Light Control (LC) Film				Mounting Bracket	
	Direct Number	Model Name	Direct Number	Model Name	Direct Number	Model Name
TH-27X27 series	Available for purchase soon	LC-TH-27X27-HO	Available for purchase soon	LC-TH-27X27-VE	4001031	BK-TH-LE12
TH-43X35 series	Available for purchase soon	LC-TH-43X35-HO	Available for purchase soon	LC-TH-43X35-VE		
TH-51X51 series	Available for purchase soon	LC-TH-51X51-HO	Available for purchase soon	LC-TH-51X51-VE		
TH-63X60 series	4000943	LC-TH-63X60-HO	4001003	LC-TH-63X60-VE		
TH-83X75 series	4000944	LC-TH-83X75-HO	4001004	LC-TH-83X75-VE		
TH-100X100 series	4000945	LC-TH-100X100-HO	4001005	LC-TH-100X100-VE		
TH-140X105 series	4000946	LC-TH-140X105-HO	4001006	LC-TH-140X105-VE		
TH-160X120 series	4000947	LC-TH-160X120-HO	4001007	LC-TH-160X120-VE		
TH-200X150 series	4000948	LC-TH-200X150-HO	4001008	LC-TH-200X150-VE		
TH-224X170 series	4000949	LC-TH-224X170-HO	4001009	LC-TH-224X170-VE		
TH-211X200 series	4000950	LC-TH-211X200-HO	4001010	LC-TH-211X200-VE		

●Light Control (LC) Film Louvers Direction

For the TH series, regarding louver direction, the long edge direction and the short edge direction are now selectable. The light can be installed in either way regardless of the direction of the Light Control (LC) Film.

HO:

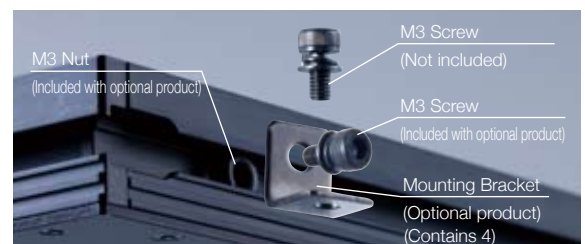
The direction of louvers is horizontal when installing LC film on the TH series as shown on the right-hand side.



VE:

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

●Mounting Bracket Installation



Dimensional Diagrams (mm)

<p>TH-27X27 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>2 slots for M3 nuts (Provided on both sides)</p> <p>Available for purchase soon</p>	<p>TH-43X35 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>2 slots for M3 nuts (Provided on both sides)</p> <p>Available for purchase soon</p>	<p>TH-51X51 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>2 slots for M3 nuts (Provided on both sides)</p> <p>Available for purchase soon</p>
<p>TH-63X60 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	<p>TH-83X75 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	<p>TH-100X100 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>
<p>TH-140X105 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	<p>TH-160X120 Series</p> <p>4-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	<p>TH-200X150 Series</p> <p>6-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>
<p>TH-224X170 Series</p> <p>6-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	<p>TH-211X200 Series</p> <p>6-M2 depth 4 (For optional product) 4-M3 depth 4 (For installation)</p> <p>4 slots for M3 nuts</p>	
<p>Nut Slot Detail Diagram</p>	<p>BK-TH-LE12 (Optional Products, Sold Separately)</p> <p>(Contains 4)</p> <p>Included: 4 M3 screws 4 M3 screws</p> <p>*The specifications and design of products that are Available for purchase soon are subject to change without notice.</p>	

Common Specifications

LED color	Red (RD)	White (SW)	Blue (BL)
Input voltage	24 VDC		
Peak wavelength (typ.)	635 nm	-	470 nm
Relative color temperature (typ.)	-	6,600 K	-
Cable length	0.3 m		
Input connector	SMR-03V-B		
Polarity, signal	1: Anode (+) brown, 2: NC, 3: Cathode (-) blue		
Case material	Aluminum alloy		
Operating temperature and humidity	Temperature: 0 to 40°C, Humidity: 20% to 85%RH (with no condensation)		
Storage temperature and humidity	Temperature: -20 to 60°C, Humidity: 20% to 85%RH (with no condensation)		
Cooling method	Natural air cooling		
Spectral distribution	<p>The graph plots Relative irradiation strength (%) on the y-axis (0 to 100) against Wavelength (nm) on the x-axis (380 to 780). Three curves are shown: White (grey), Blue (blue), and Red (red). The White curve has a broad peak around 470 nm. The Blue curve has a sharp peak at approximately 470 nm. The Red curve has a sharp peak at approximately 635 nm.</p>		

*The peak wavelength for Red lights is 635 nm. If a sharp-cut filter is required, use a R60 Filter (optional).

*The brightness and uniformity data provided in this brochure are for reference only. They do not guarantee product quality.

Notes:

- Carefully read the product's instruction manual before use to ensure correct operation. ● Product specifications and design are subject to change without notice.
- Examples of workpiece imaging in this catalog are a guide that may be informative for choosing illuminations. Please check the functions of the equipment and requirements when choosing.



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