

OMRON

Model FZD-LTW/LTPW

PATTERN-LIGHTING FOR MODEL FZD VISUAL INSPECTION SYSTEM

INSTRUCTION SHEET

Thank you for selecting OMRON product. This sheet primarily describes precautions required in installing and operating the product.
Before operating the product, read the sheet thoroughly to acquire sufficient knowledge of the product. For your convenience, keep the sheet at your disposal.

TRACEABILITY INFORMATION:

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Manufacturer
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NOTICE:
This product meets CISPR11 class A. The intended use of this product is in an industrial environment only.

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PRECAUTIONS ON SAFETY

● Meaning of Alert Symbols

WARNING Indicates a potentially hazardous situation which, if not avoided, will result in minor or moderate injury, or may result in serious injury or death. Additionally there may be significant property damage.

CAUTION Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury or in property damage.

● Alert statements

WARNING

To ensure safety, do not use this product for direct or indirect detection of data from human body. Do not use this product as a sensing device for the protection of the human body.

WARNING

Since this product emits a visible light, that may have an adverse effect on the eyes. Do not stare directly into the light emitted from the LED. If the subject has a specular reflective surface, take care not to allow reflected light enter your eyes.

CAUTION

There is fear of the burn for the high temperature when touching main unit. Note it enough when touching immediately after energizing and the power supply were turned off.

PRECAUTIONS FOR SAFE USE

Observe the following precautions to ensure safe use of the FZ-LTW/LTPW.
1. Installation Site

Do not install this product in locations subjected to the following conditions.

- Ambient temperature outside the rating
- Rapid temperature fluctuations (causing condensation)
- Relative humidity outside the range of 35 to 85%
- Presence of corrosive, flammable gases, dust, salt, or iron particles
- Direct vibration or shock
- Reflection of intense light (such as other laser beams, electric arc welding machines or ultraviolet rays)
- Direct sunlight or near heaters
- Water, oil, or chemical fumes or spray
- Strong magnetic or electric field
- Near high-voltage equipment or power equipment

2. Mounting the FZD-LTW/LTPW

- Tighten all screws securely during installation.

3. Others

- Do not use unspecified camera other than those that specified in this manual with the FZD-LTW/LTPW.
Connection with unspecified camera cable and/or strobe controller may malfunction at the worst case.
- Please adjust the lighting time to become 20% or less of duty*.
The FZD-LTW/LTPW might break down when used by 20% or more.
- Do not attempt to dismantle, repair, or modify the main unit.
- If you suspect an error or malfunction, stop using the controller immediately, turn off the power supply, and consult your OMRON representative.
- Dispose of FZD-LTW/LTPW components as industrial waste.

*duty = (Lighting time)/(Measurement time)

PRECAUTIONS FOR CORRECT USE

Observe the following precautions to prevent failure to operate, malfunctions, or undesirable effects on product performance.

1. Connection and Wiring for Main Unit
 - Be sure to turn off controller before connecting or disconnecting the cables.
2. Handling the FZD-LTW/LTPW
 - Do not connect the cable of pattern-lighting to any power supply other than that of 3D vision camera, otherwise it may cause fever or break.
 - A cap is attached on the lens-setting position with shipment. Before using, be sure to change the cap with the CCTV lens. You must prepare the CCTV lens separately referring to the Optical Diagram on the recto side.
 - Please adjust the lens and the setting-distance so as to bring the irradiation size of pattern-lighting into focus nearly the view of camera.
 - Do not touch the inside FZD-LTW/LTPW.
3. Maintenance
 - Do not use thinners, benzene, acetone, kerosene to clean the FZD-LTW/LTPW.
 - If large dust particles adhere to the pattern lens part, use a blowerbrush to blow them off. Do not blow the dust particles with your mouth.
 - Wipe off stubborn stains carefully with a piece of soft cloth that has been wetted with a quantity of alcohol.

General Specifications

Item	Model	Model FZD-LTW	Model FZD-LTPW
Pattern-Shape		Line Pattern	Original Pattern
Power consumption		11W max. (DC12V 0.9A max.)	
Light source		White LED	
Longevity		10,000 hours(duty20% max.in use)	
Vibration resistance		10 to 150 Hz, 0.35-mm single amplitude, 10 times each in X, Y, and Z directions for 8 min	
Shock resistance		150 m/s ² , three times each in six directions (up/down, left/right, forward/backward)	
Ambient temperature		Operating:0 to 50°C, Storage:-25 to 60°C (with no icing or condensation)	
Ambient humidity		Operating and storage:35% to 85% (with no condensation)	
Ambient environment		Must be free of corrosive gas.	
Degree of protection		IEC60529, IP20	
LED Class※		Class 2	
Cable-Length		1m	
Extension cable length		max 5m (Model M-RCB40□L by Moritex Co.product.)	
Materials		Main unit:A5056 Mounting base,Resistance box:A5052P	
Weight		Approx. 470g(Including mounting base)	

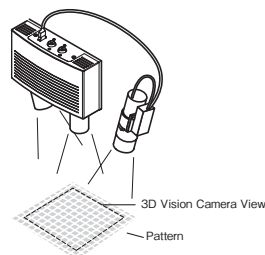
※Applicable standard
IEC60825-1:1993+A1:1997+A2:2001
JIS C6802:2005

Accessory

Main unit, Instruction sheet(this sheet),Mounting base,Base mounting screw(M4×8mm) 2 pieces,LED warning label(IEC) 1piece,Hexagon head wrench

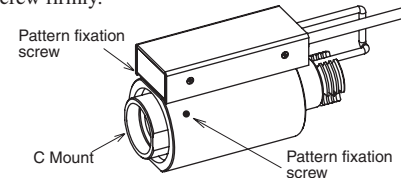
Setting

- Please connect the cable of the pattern-lighting to the strobe-controller; Model 3Z4S-LT MLEK-C100E1TS2 or to the lighting connector of the 3D vision camera; Model FZD-STC2M.
- Set up the pattern-lighting so that its mounting side is in the same direction with that of 3D vision camera.
- You can set up from anywhere if the view of 3D vision camera overlaps with the area of pattern-irradiation.
- Before using the pattern-lighting, make sure to hold the body firmly. You can use the attached setting-board, or also hold the body itself independently.
- Adjust it in the continuous lighting mode when you adjust the pattern focus. The continuous lighting mode can be adjusted by Pattern-lighting setup of '3D Camera Image Input' of model FZD controller.



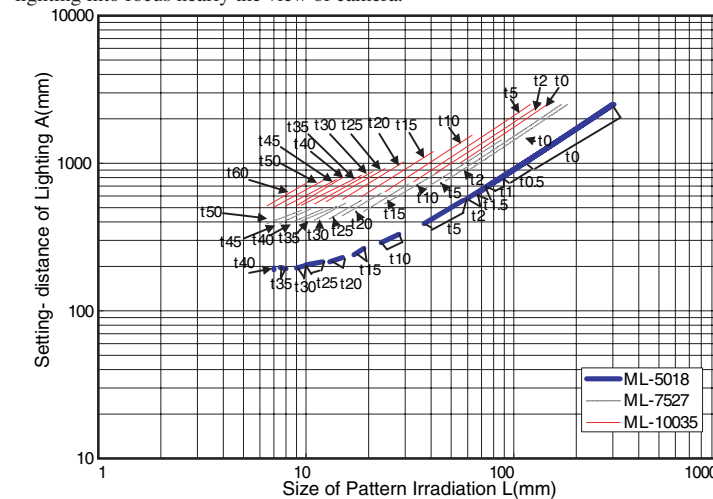
Adjustment of the Pattern's Angle

Please loosen two pattern-fixation screws with the attached hexagonal wrench, and adjust the angle turning C mount unit. After adjustment, tighten the each pattern-fixation screw firmly.



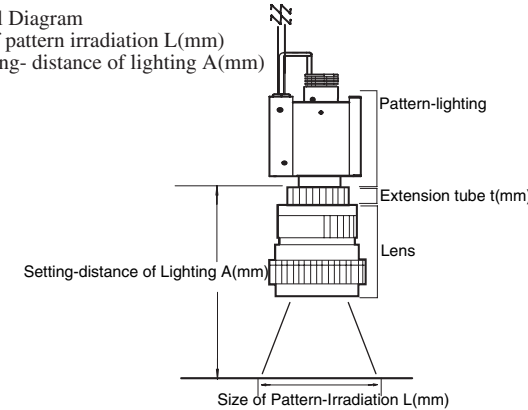
Optical Diagram

Please prepare the CCTV lens referring to the following table. The lens changes variously according to the size of works and the setting-distance of lighting. Please adjust the lens and the setting-distance so as to bring the irradiation size of pattern-lighting into focus nearly the view of camera.



●Caption of the Optical Diagram

Horizontal axis: Size of pattern irradiation L(mm)
Longitudinal axis: Setting-distance of lighting A(mm)



Types and Dimensions of CCTV Lens

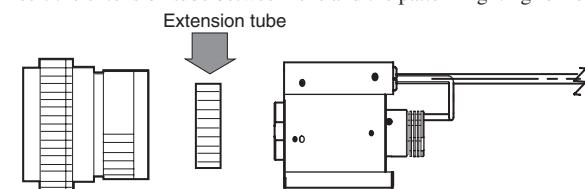
Model 3Z4S-LE ML-5018 Model 3Z4S-LE ML-7527 Model 3Z4S-LE ML-10035



	50mm	75mm	100mm
Focus	50mm	75mm	100mm
Brightness	F1.8	F2.7	F3.5
Max.O.D.	32Dia mm	32Dia mm	32Dia mm
Total length	37mm	42.5mm	43.9mm
Filter size	M30.5×P0.5	M30.5×P0.5	M30.5×P0.5
Lock mechanism	Attached- Focus-Iris variable lock screw		

Extension tube

Please insert the extension tube between lens and the pattern-lighting for focusing.

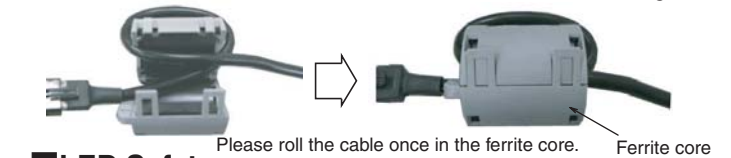


Model	Max.O.D.	Thickness
Model 3Z4S-LE ML-EXR	30Dia mm	0.5mm, 1mm, 2mm, 5mm, 10mm, 20mm, 40mm 7sets

※0.5mm, 1.0mm and 2.0mm extension tubes shall not be overlapped.
Since it's installed at spiral sections of lens and other extension tubes, overlapping of over 2 tubes will lead to unstable fixation.
※Extension exceeding 30mm shall be enhanced according to different vibrating conditions.

Extension cable

The cable of the pattern lighting can be extended up to 5m or less (Model M-RCB40□L by Moritex Co.product.) Detach the ferrite core (largeness) installed near the connector when you extend and install near the camera side as shown in figure.



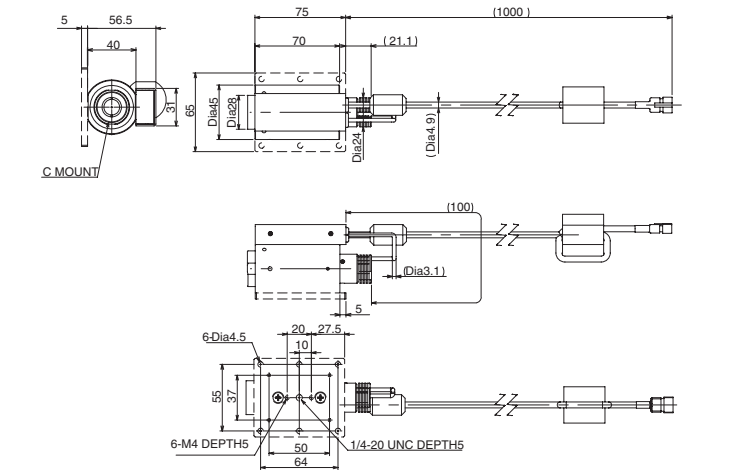
LED Safety

Various safety standards regarding LED devices are stipulated depending on the country of use.

Using in a country other than Japan.
For countries other than Japan, warning label must be replaced by English one (supplied with the product).IEC60825 is provided for products used in Europe, and the content of this standard differs.
The FZD-LTW/LTPW is categorized as a Class 2 device as stipulated in IEC60825-1.



Dimensions



(UNIT:mm)

Suitability for Use

THE PRODUCTS CONTAINED IN THIS SHEET ARE NOT SAFETY RATED. THEY ARE NOT DESIGNED OR RATED FOR ENSURING SAFETY OF PERSONS, AND SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR SUCH PURPOSES. Please refer to separate catalogs for OMRON's safety rated products.

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of the products in the customer's application or use of the product.

Take all necessary steps to determine the suitability of the product for the systems, machines, and equipment with which it will be used. Know and observe all prohibitions of use applicable to this product.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

See also Product catalog for Warranty and Limitation of Liability.

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