

OMRON

Model ZX-LT□□□

Through-beam Sensor Heads for ZX-LDA□□ Smart Sensors

INSTRUCTION SHEET

Thank you for purchasing an OMRON ZX-LT□□□

Through-beam Sensor Head for ZX-LDA□□ Smart

Sensors.

To ensure safety, read this Instruction Sheet carefully before using the Sensor. In addition, keep this Instruction Sheet in an easily accessible location for quick reference when needed.

TRACEABILITY INFORMATION:

Representative in EU:
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Wegalaan 67-69
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The Netherlands

Manufacturer:
Omron Corporation,
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Kyoto 600-8530 JAPAN
Ayabe Factory
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Ayabe-shi, Kyoto 623-0105 JAPAN

The following notice applies only to products that carry the CE mark:
Notice:
This is a class A product. In residential areas it may cause radio interference, in which case the user may be required to take adequate measures to reduce interference.

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PRECAUTIONS ON SAFETY

●Notation for Safety Information

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.

●Explanation of Signs

	● Laser beam Indicates caution on potential laser beam hazard.
	● Do not disassemble Indicates prohibition when there is a risk of minor injury from electrical shock or other source if the product is disassembled.

●Alert Statements / Messages d'alerte

WARNING / AVERTISSEMENT	
Looking into the Outgoing light continuously may cause visual impairment. Do not look directly into the Outgoing light. Caution-Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.	
Fixer en continu la lumière sortante peut provoquer des troubles visuels. Ne pas fixer directement la lumière sortante. Attention-L'utilisation des commandes ou réglages ou l'exécution des procédures autres que celles spécifiées dans les présentes exigences peuvent être la cause d'une exposition à un rayonnement dangereux.	
Do not disassemble this product. Doing so may cause exposure to the built-in light source which can damage eyes and skin. Never disassemble it.	
Ne pas démonter ce produit. Cela pourrait provoquer une exposition à la source lumineuse intégrée, qui peut endommager les yeux et la peau. Ne jamais le démonter.	

PRECAUTIONS FOR CORRECT USE

■Ratings and Performance

- Cleaning
Do not use thinners, benzine, acetone, or kerosene for cleaning.
If dust or oil adheres to the filter on the front of the Sensor Head, use the following procedure to clean.
(a)Use a blower brush (used to clean camera lenses) to blow large dust particles from the surface. Do not blow the dust away with your mouth.
(b)Use a soft cloth (for lenses) with a small amount of alcohol to remove the remaining dust. Do not use a scrubbing action when cleaning because scratches on the filter could result in Sensor inaccuracy.
- Mounting
Tighten the screws to a torque of 0.3 N·m or less.

■Environment

- Do not use the Sensor in strong electromagnetic fields or in an environment where the operation of the Sensor is subject to the reflection of intense light (such as other laser beams or electric arc-welding machines.)
- Do not install the Sensor Head in any location where dust, oil drops, or other contaminants will collect on the filter on the front of sensor.

■Compatibility

All Sensor Heads and Amplifier Units are compatible. Different Sensor Heads may be purchased at a later date and used with existing Amplifier Units.

■Mutual Interference

Two Sensor Heads can be used together, without danger of mutual interference, by connecting the ZX-CAL Calculating Unit between two Amplifier Units.

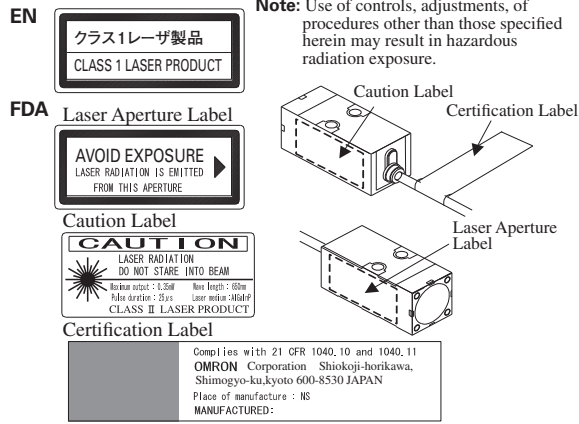
LASER SAFETY / SÉCURITÉ LASER

- Use this product as specified in this instruction sheet. Otherwise, you may be exposed to hazardous laser radiation.
- Be careful not to expose your eyes directly to the laser radiation or indirectly to laser radiation reflected from mirror or shiny surfaces.
- To avoid exposure to hazardous laser radiation, do not displace nor remove the protective housing during operation, maintenance, and any other servicing.
- The user should return the product to OMRON for all repair and servicing.
- For further details about laser safety, refer to ZX-series Smart Sensors Operation Manual (Z157).

Laser safety measures for laser devices are stipulated both in Japan and overseas. Here, five cases are described.

- Usage in Japan
The JIS C6802:2014 standard stipulates the safety precautions that users must take according to the class of the laser product. The ZX-LT□□□ is classified into class 1 defined by this standard.
- USA
When a laser device is exported to the USA, it falls under the laser regulations of the FDA(Food and Drug Administration). The ZX-LT□□□ is classified as a class-II laser by 21CFR1040, and it has already been registered with the CDRH(Center for Devices and Radiological Health). Ask your OMRON representative for details.
Technical standards have been provided with the ZX-LT□□□. When exporting to the USA, refer to the following illustration and replace the label with the caution label.
It is assumed that the ZX-LT□□□ will be incorporated into a final system device. When incorporating the ZX-LT□□□, comply with the following technical standards:
US Federal Law 21 CFR 1040.10 and 1040.11.

Label indications

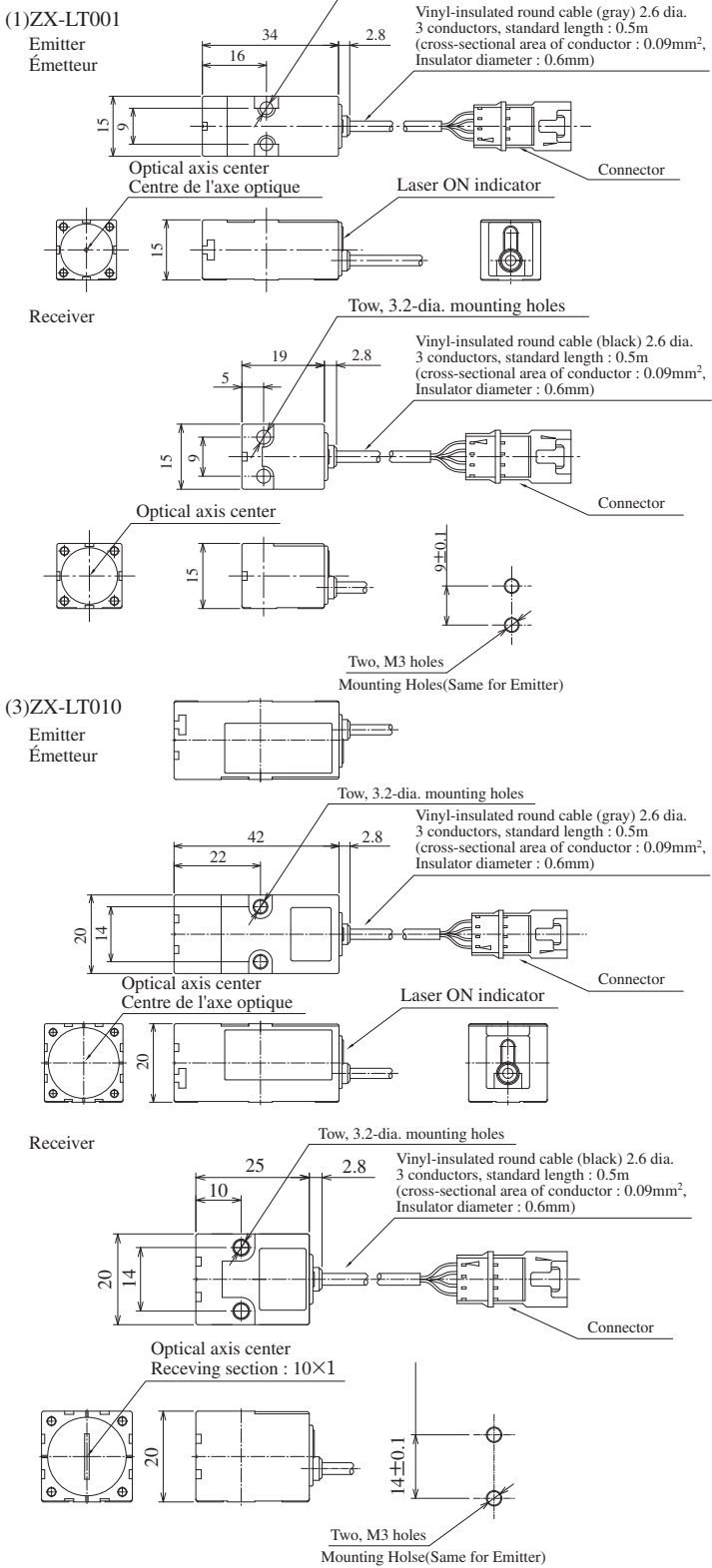


- China
The ZX-LT□□□ is classified into Class 1 by the GB/T 7247.1-2024 standard.
(1类激光产品)
- Canada
The ZX-LT□□□ is classified into Class 1 by the IEC60825-1:2014 standard.
Le ZX-LT□□□ est classé dans la classe 1 selon la norme IEC 60825-1:2014.
- For countries other than Japan, U.S., China and Canada
When Usage in countries other than Japan, U.S., China and Canada, the ZX-LT□□□ is classified into Class 1 by the IEC 60825-1:2014 / EN 60825-1:2014+A11:2021 standard.
Note: Use of controls, adjustments, or procedures other than those specified herein may result in hazardous radiation exposure.

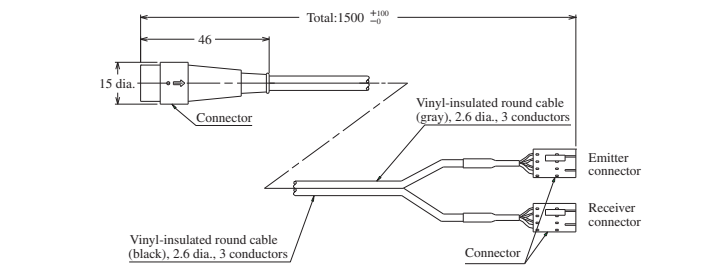
■Ratings

Item	Model	ZX-LT001	ZX-LT005	ZX-LT010
Applicable Amplifier Units		ZX-LDA11/41		
Light source		Visible-light semiconductor laser with a wavelength of 650 nm ; JIS Class1, IEC/EN Class1, FDA Class II		
	Maximum output	0.2mW	0.35mW	
Measurement distance		0 to 500 mm	500 to 2,000 mm	0 to 500 mm
Measurement width		1-mm dia.	1- to 2.5 -mm dia.	5 mm 10 mm
Minimum sensing object		8μm dia. (opaque)	50μm dia. (opaque)	0.05-mm dia. (opaque) 0.1-mm dia. (opaque)
Resolution (See note 1.)		4 μm (See note 2.)	---	4 μm (See note 3.)
Temperature characteristic		0.2% FS /°C. (F.S.:full scale)		
Ambient illumination		Incandescent lamp: 10,000 lx max.		
Ambient temperature		Operating: 0 to 50°C, Storage: -25 to 70°C (with no condensation)		
Ambient humidity		Operating and storage: 35% to 85% (with no condensation)		
Degree of protection		IP40		
Weight (packed state)		Approx. 220g		
Materials		Case: Polyetherimide, Case cover: Polycarbonate, Unit cover: Glass		
Accessories		Optical axis adjustment seal, sensor head-amplifier connection cable,instruction sheet		

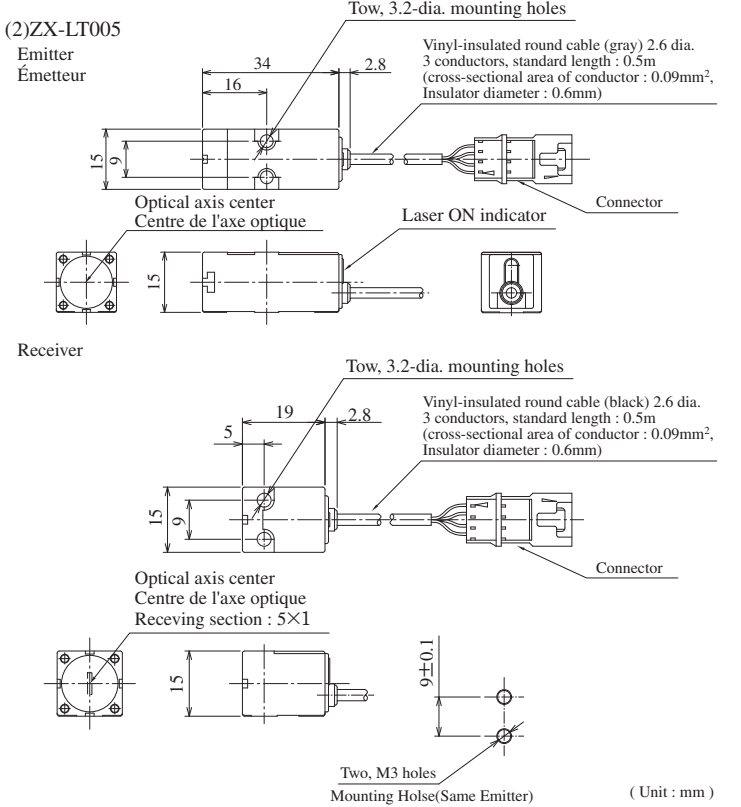
■Dimensions



(4) Sensor Head-Controller Connecting Cable



- Note 1. This value is obtained by converting the deviation ($\pm 3\sigma$) in the linear output that results when the Sensor Head is connected to the Amplifier Unit, into the measurement width.
2. For a measurement distance of 0 to 500 mm and an average count of 64. The value is 5 μm for an average count of 32. This is the value that results when a minimum sensing object blocks the light near the center of the 1-mm measurement width.
3. For an average count of 64. The value is 5 μm for an average count of 32.



An Operation Manual (Cat. No.Z157) that describes ZX-L Series Smart Sensor functions and operation is also available (sold separately). Ask your OMRON representative.

This manual can also be downloaded free of charge from the following site :
<http://www.fa.omron.co.jp/smart/>

■ Serial number

The serial number "YMTSSS" on the label on the product indicates the date of manufacture.
Y: Year code (2020=0, ..., 2028=8, 2029=9, 2030=A; resets every 10 years)
M: Month code (Jan.=A, Feb.=B, ..., Dec.=L)
T: Model type code ("1"=LT001, "2"=LT005, "3"=LT010)
SSS: Serial number (three digits; e.g. 001, 100, 101)

Suitability for Use

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT 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(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

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D May, 2025	