

Instruction Manual

Got Questions? Ready to Place an order?
Contact Ramco Innovations today!

Safety Precautions

Carefully read and understand the safety precautions before operation.
The important information is provided to protect your health and property.
Do not apply any other installing or operating procedure other than that described in this manual.

Meanings of Safety Symbols



WARNING

Indicates a possible hazard that may result in death, serious injury, or serious property damage if the product is used without observing the stated instructions.



CAUTION

Indicates a possible hazard that may result in personal injury or property damage if the product is used without observing the stated instructions.

Mandatory Requirements



WARNING

- This product is not an explosion-proof construction. Do not use the product under flammable, explosive gas or liquid environment.
- Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
- The light source of this product applies the visible light semiconductor laser.
- Do not disassemble or modify the product since it is not designed to automatically stop the laser emission when open. Disassembling or modifying at customer's end may cause personal injury, fire or electric shock.
- Do not stare into the laser beam directly, install at eye-level of the people around, nor expose the beam to the human body intentionally.
- Use the exclusive amplifier unit to connect the product. Not doing so may result in an accident or product damage.
- Wiring or disconnecting with the power ON is danger. Never fail to turn OFF the power supply.

This product cannot be used as a safety device to protect human body.

Operating Precautions



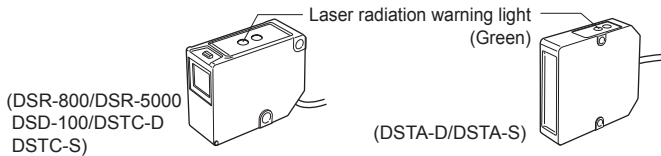
CAUTION

- Installing in the following places may result in malfunction:
 1. A dusty or steamy place
 2. A place generating corrosive gas
 3. A place directly receiving scattering water or oil
 4. A place suffered from heavy vibration or impact
- Do not use the sensor outside nor expose the detection surfacedirectly to ambient light (laser light, incandescent light and sunlight).
- Do not use the sensor in transient state after power on approx. 100 ms).
- The sensor performance may depend on the individual units.
- Wipe off dirt on the emitting/receiving parts to maintain correct detection. Also, avoid direct impact on the product.
- The tightening torque should be 0.25N·m or less.
- Don't bend the cable when the temperature of the cable or atmosphere is below freezing.

Precautions for using laser

■ Laser emission warning light

Confirmation of laser emission is available with the laser emission warning light.
It starts lighting after turning the power on and keeps lighting while the laser is being radiated. It is also possible to confirm with the exclusive amplifier unit.



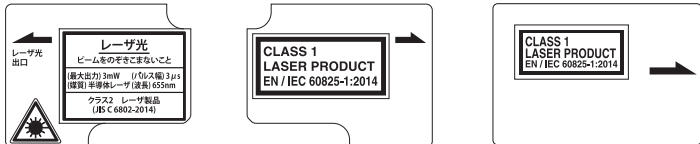
■ Laser label

This product is classified as a Class 2 (II) Laser Product by JIS C6802 / IEC / FDA Laser Safety Standard as this radiates the visible laser beam. The warning label and the description label in English are attached on the side face of the sensor head indicating the CLASS 2/Class II.

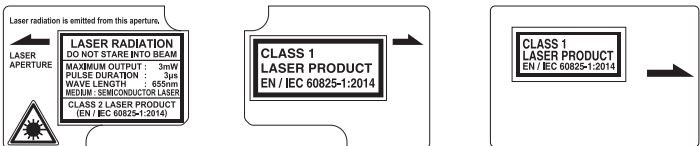
* The emitters DSTC-D/DSTA-D and DSTC-S/DSTA-S of DST-200/M8 and DSTA-200/-M8 are rated as Class II by the FDA standard (when exporting to the US). However, the class 1 is applied for the JIS/IEC standard.

Exchange the label enclosed with the product.

● Japan

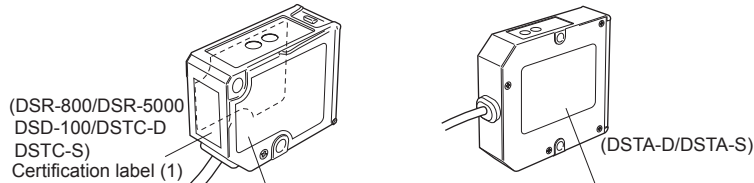


● Other countries (except US)

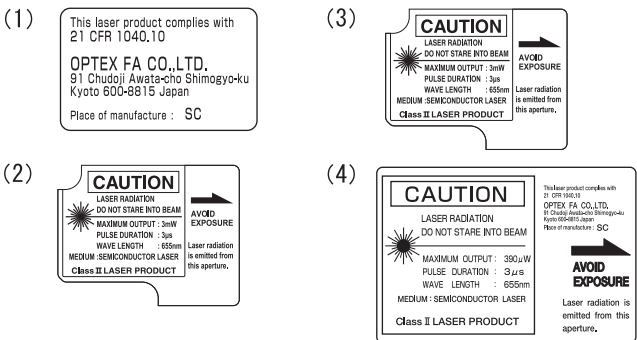


● US

When exporting this machine to the US, the US laser control, FDA (Food and Drug Administration) is applied. This product has been already reported to CDRH (Center for Devices and Radiological Health). For details, contact our Customer Service.



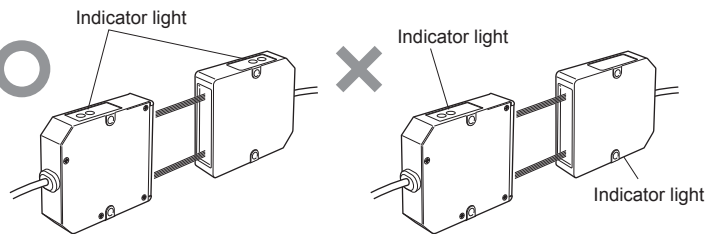
(DSR-800/DSR-5000, DSD-100/DSTC-D, DSTC-S) Certification label (1)
FDA warning / Laser open label (2)(3)
FDA warning / Laser open / Certification label (4)



■ Precautions in using DSTA-200 / DSTA-200-M8

When using DSTA-200 or DSTA-200-M8 for length measurement, follow the instructions below.

- Emitter is applied to gray cable and Receiver is applied to black one.
- Install the sensor so that the sensor of flood beam is positioned in the center of the light receiving part. (Install so that the indication value of amplifier unit is maximum.)
- Install the flooding/receiving device in the same direction. Refer to each label or indicator light as a standard.



Specifications

Model		Retro reflection type		Diffuse reflection type	Through beam type	Through beam/Length measurement type
	Cable	DSR-		DSD-100	DSTC-200	DSTA-200
		800	5000		Emitter: DSTC-D	Emitter: DSTA-D
					Detector: DSTC-200	Detector: DSTA-200C
	M8 Relay-type	-	-	DSTC-200-M8	DSTA-200-M8	
	Emitter M8	-	-	DSTC-S	DSTA-S	
Detector M8	-	-	DSTC-R	DSTA-R		
Adaptable amplifier unit		DSA-M□□ / DSA-M□ -M8 / DSA-S□□				
Light source		Visible light semiconductor laser 650nm				
Output		max. 3mW			max. 390 μW	
IEC/JIS CLASS		CLASS 2			CLASS 1	
FDA CLASS		Class II				
Detection distance *1	Long	8 m	0.5…50 m	1 m	2 m	2 m
	Standard	5 m	0.3…35 m	0.7 m		Length measurement mode: 0.5 m (Only Long and Standard)
	Fast	2 m	0.1…20 m	0.25 m		
Beam size *2		Approx. 2 mmφ (Distance: 2 m)		Approx. 1 mmφ (Distance: 1 m)	Approx. 2 mmφ (Distance: 2 m)	Approx. 30 x 2.5 mm (Distance: 2 m)
Repeat accuracy *3		0.2 mm		0.2 mm	0.2 mm	0.3 mm
Indicator light		Laser radiation indicator light: Green Output indicator light: Orange				
Operating temperature/humidity		-10 to +55°C/35 to 85 %RH (No condensation or freezing)				
Store temperature/humidity		-25 to +70°C/35 to 85 %RH (No condensation or freezing)				
Ambient light		3,000 lx (Incandescent light)			10,000 lx (Sunlight)	
Shock resistance		10 to 55 Hz Double-amplitude 1.5 mm 2 hours at each direction of X, Y and Z				
Protection category		IP67				
Material		PC (Case, Cover) PMMA / Glass (Front glass)				
Weight (including the codes)*4		45g			90g	115g

* 1 DSD-100 : With white paper (90 %) of 200 x 200 mm

DSR-800 : With the reflector MP-45 (accessory)

DSR-5000 : With the reflector P250F (accessory)

* 2 Defined with center strength 1/e² (13.5%). There may be leak light other than the specified spot size. The sensor may be damaged when there is a highly reflective object around the targets

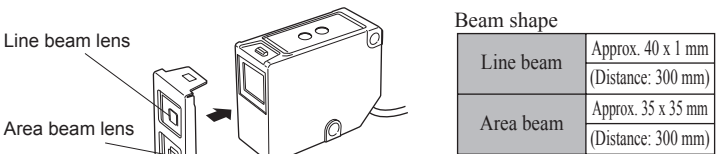
* 3 Right angle to sensing axis. (to 2m)

* 4 The weights of DSTC-200 and DSTA-200 include the emitter and the detector.

Accessories and others

■ Lens attachment (Model BL-W130L-1:Optional)

Installing the attachment to DSR-800•DSR-5000 allows two types of beam shape: Line beam and area beam. Attach the beam-shape lens and the optical axis to use together.



Beam shape	
Line beam	Approx. 40 x 1 mm (Distance: 300 mm)
Area beam	Approx. 35 x 35 mm (Distance: 300 mm)

* The beam form may depend on the individual products.

* Do not use for DSD-100. Uninstallable to DSTA-200, DSTA-200-M8, nor DSTA-S.

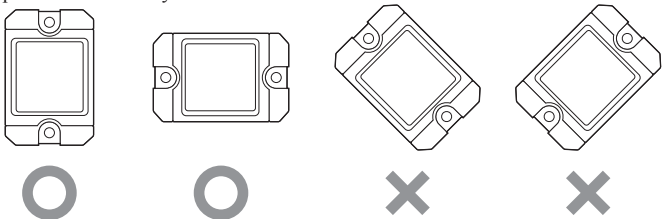
■ MP-45 Reflector (attached to DSR-800•DSR-5000)

● Instruction for use

1. When cleaning, blow off or lightly wipe with a soft cloth. Do not use thinner, benzene or kerosene.
2. Avoid strong push of the reflecting surface or direct impact. Doing so may result in damaging the prism and deteriorating the performance.
3. Avoid using outside or under the environment where oil or water scatters.

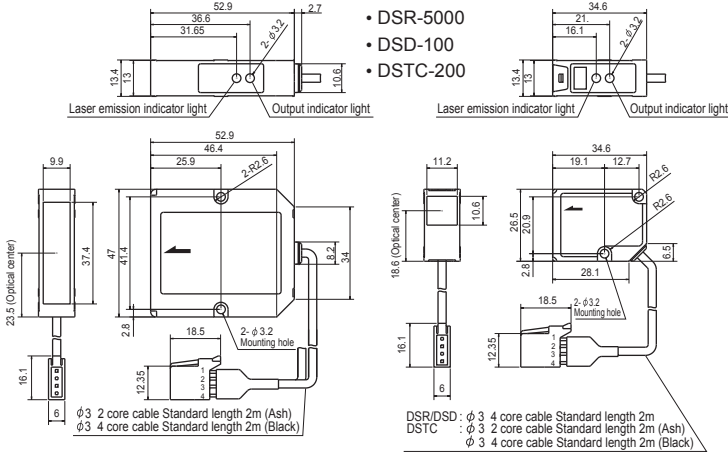
● Installation procedure

Refer to the figure below and use in the correct direction. Improper installation may cause malfunction.

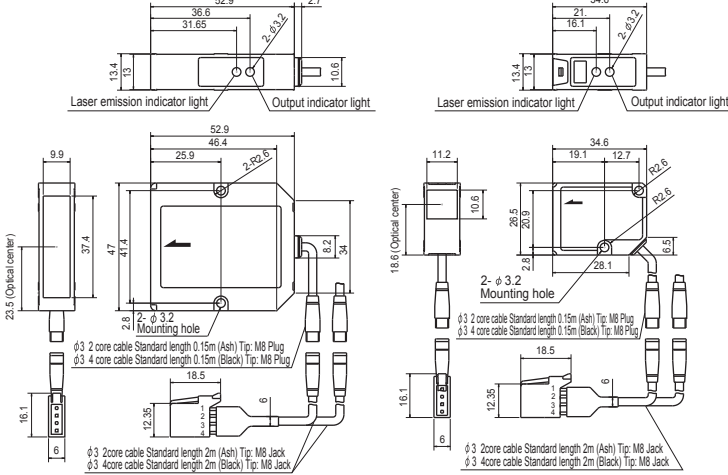


DIMENSIONAL DRAWING

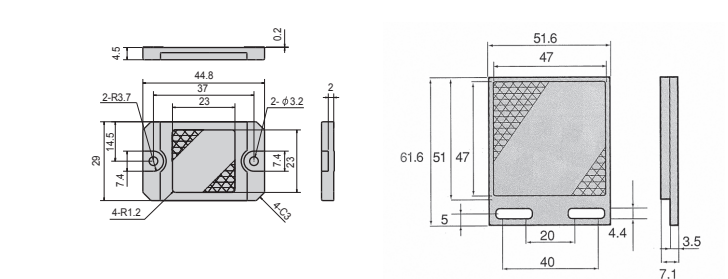
• DSTA-200



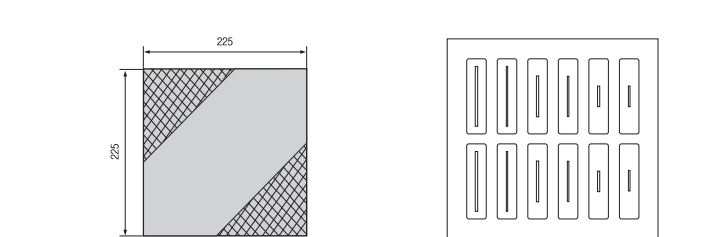
• DSTA-200-M8



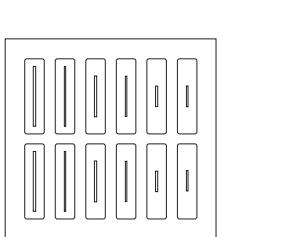
• MP-45



• MP-225 (Cutting type)



• BL-W130L-2 [Slit for DSTA-200]



① ⑩ → http://www.optex-fa.com/rohs_cn/

- The product specification may change without notice for improvement.
- For any inquiry, please contact the manufacture/vendor below.

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