User's Manual

Model SU1007A
AQ4270-01
LD Light Source (1310/1550 nm)

YOKOGAWA
Yokogawa Meters & Instruments Corporation

IM SU1007A-01E
3rd Edition

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Attached Drawings

- AQ4270-01: LD Light Source External View
- SU2005A-*** Universal Adapter (Optional): External View

1. Before Using the Product

1-1 Introduction

Thank you for purchasing the AQ4270-01 LD Light Source. This instruction manual explains the functions, operation methods, precautions and other aspects of this product. For proper use, please read this manual carefully prior to operation. Subsequently, the manual should be kept within easy access when the product is being used.

1-2 Features

The AQ4270-01 is a handy type high-performance LD light source. It allows selection of wavelength from 1310nm and 1550nm, and outputs CHOP light in addition to CW light.
Using it with AQ2160 series enables measurement of light loss.
It features high output stability, is small and lightweight, battery-powered and has easy operation. In addition, introduction of a cleanable universal type adapter provides increased ease of maintenance, making the product suitable for field applications. The product can also be used in research, development and manufacture of optical related products.

1-3 Warranty

All Yokogawa's products have been inspected to meet our stringent quality assurance standards. However, should any problems arise due to manufacturing flaws, as a result of delivery transportation or under normal use, contact your vendor. Yokogawa Electric will repair at no charge, such defective product(s) that occur within one year of the original date of product delivery. However, the repair of problems arising from operational errors, modifications, retrofitting by the customer or any defects or damage due to natural disasters are charged.

1-4 Checking Package Contents

Check the following before using this product. If a wrong product has been delivered, if anything is missing, or if anything appears abnormal, contact your vendor. This product consists of the main unit of the AQ4270-01 LD Light Source and the accessories shown in the List of Standard Accessories below.
We recommend that you keep the container that the product came in, which is useful during transportation.

■ List of Standard Accessories

No.	Description	Quantity
1	Instruction manual	1
2	AA batteries (alkali)	2
3	Neck strap	1
4	Carrying pouch	1

The following optional accessory is available separately. A universal adapter suitable for the connector to be used is also required. For inquiries or to place an order, contact your vendor.

■ Optional Accessory

No.	**Item name**	**Type name**	**Specifications**
1	Universal adapter	SU2005A-SCC -FCC -STC -LCC -DIN -DIA	SC FC ST LC DIN DIA
2	Protector	SU2003A	
3	AC adapter	SU2007A-M -C -F -G -J	PSE conforming type (2-pin) UL/CSA standard type (UL2P) VDE standard type (CEE-C2) AS standard type (AS2P) BS standard type (BS2P), square type
4	Soft carrying case	SU2006A	

1-5 For Safe Use

Precautions in this section are intended to ensure safe and correct use of the product and thus prevent hazards that could occur to users or other persons or result in damage to property. Make sure that the following precautions are observed when the product is used.
If the product is not used as specified in this manual, the it's protection functions may become impaired. Our responsibility and warranty are not applicable to any damage arising from such incorrect use of the product.

■ The following chart shows the degree of danger or damage which may occur if the product is used improperly.

Danger	This symbol indicates situations that may lead to imminent risk of death or serious injury.
Warning	This symbol indicates situations that may lead to death or serious injury.
Caution	This symbol indicates situations that may lead to injury or property damage.

■ The following symbols show precautions that must be observed.

	Prohibited		
	The product must not be disassembled.		The product must not be used in locations subject to exposure to water.
	The product must not be handled with wet hands.		
	Compulsory actions		The power plug must be removed from the outlet.

Indicates a potential hazard by laser.

Read the instruction manual carefully and use the product according to the designated procedures.

When a safety alert symbol (Warning, Danger or Caution mark) is indicated, use the product according to the instructions in the manual.

Class 1 Laser Product

The AQ4270-01 LD Light Source is classified as a Class 1 laser product and conforms to “IEC60825-1:2007”. Observing an output laser beam within a distance of 100 mm by a certain optical means (e.g. loupe, magnifying glass, microscope) may result in damage to the eyes.

Specifications of the Laser Product.

	AQ4270-01
Laser type	FP-Laser
Laser class IEC 60825-1:2001 21CFR 1040.10 (*1)	1
Maximum output power (*2)	4mW
Diameter of mode field	10μm
Numerical Aperture (NA)	0.1
Wavelength	1310/1550nm

(*1) This specification complies with "21 CFR 1040.10" except for deviation points arising from strict observation of "Laser Notice No.50" issued on June 24, 2007.

(*2) This value is obtained under single-failure conditions.

Danger

	If power is supplied to the product via an AC adapter, be sure to use the specific AC adapter for the product. In addition, do not use this AC adapter for other devices, as a fire hazard, electric shock, or accidents can result.
	Do not use the product with power supplies other than that specified. In addition, do not use the product at power supply voltages other than those indicated, as a fire hazard, electric shock, or accidents can result.
	Connect the product directly to a dedicated outlet if it is connected to a commercial power supply. Do not use an extension cord, because it can heat up or cause fire.
	Keep the power cord away from heating devices, as a fire hazard or electric shock can result from damaged coating.
	Do not scratch, damage, or rework the power cord, as a fire hazard or electric shock can result.
	Do not throw used batteries into a fire, otherwise they can explode and cause possible injury.
	Do not insert a metal probe or drop anything into the openings as a fire hazard, electric shock, or accidents can result.
	The laser diode used in this product contains gallium arsenide (GaAs). Particles and vapors of GaAs are very dangerous. The product must therefore never be burnt, destroyed, cut, crushed or chemically disassembled. It must be separated from general industrial waste and household rubbish, and disposed of according to local regulations.

Warning

	Avoid disorderly, complex wiring from the power supply, otherwise overheating of the cable or fire can result.
	Do not forcibly bend, twist or pull the power cord, as a fire hazard or electric shock can result.
	If the power cord is damaged, contact your vendor for replacement. Continued use of such a cord can cause a fire hazard or electric shock.
	Do not insert or pull out the power plug with wet hands, as electric shock can result.
	Firmly insert the power plug into the plug outlet, as a fire hazard or electric shock can result if anything metal should touch the exposed power plug.
	Hold the plug portion when pulling the power cord out of the outlet, as a fire hazard or electric shock can result from the otherwise possibly damaged cord.
	Ensure that the power plug has been removed from the plug outlet and external connection cables have been disconnected prior to moving the product, as a fire hazard or electric shock can result from connections that may otherwise be damaged.
	If the product is not used for an extended period, the power plug must be removed from the plug outlet to ensure safety. Also when a thunderstorm breaks out, the power plug must be removed from the plug outlet to ensure safety. Otherwise, a fire hazard, electric shock or product failure can result.
	Do not use batteries which are not specified for the product. Also, do not use a combination of old and new batteries. Explosion or leakage of the batteries may result, possibly causing fire, injuries or contamination of the surroundings.
	Check the polarity indications (directions of +/-) before inserting batteries. Inserting them incorrectly may result in explosion or leakage, possibly causing fire, injuries or contamination of the surroundings.
	Do not expose the product to highly humid or dusty locations, as electric shock or product failure can result.

	Do not put the product in unstable locations such as on an uneven base or in an inclined place, as injury could result should it fall.
	Do not put the product in unstable locations such as on an uneven base or in an inclined place, as injury could result should it fall.
	Do not put the product in locations exposed to severe vibrations or shocks, as injury could result should it fall.
	Do not place small pieces of metal or containers of water or other liquids on or near the product, as a fire hazard, electric shock or product failure can result from spills or metal pieces falling into the product.
	Avoid exposure of the product to water, as a fire hazard, electric shock or product failure can result.
	Should abnormal states such as smoke, an unusual odor or no LCD indications (not operating) not be attended to, a fire hazard, electric shock or product failure can result. Turn the power off immediately, then remove the power plug from the plug outlet. Ensure that smoke is no longer present, and contact your vendor. Never try to fix the trouble on your own, as it is very dangerous.
	Should the product have been dropped or damaged, turn the power off, remove the power plug from the plug outlet, then contact your vendor.
	Should the product fail, never try to fix it on your own, as electric shock or injury can result. Our warranty does not apply to products repaired without having given us previous notice and receiving consent.
	Do not try to disassemble or retrofit the product, as a fire hazard, electric shock or accidents can result.
	While the laser beam is output, never stare into the optical output area, the end face of the optical fiber connected to this product, or the optical connector. Failure to observe this warning may result in exposure to dangerous laser emissions, leading to eye damage. Sufficient care must be taken when handing the product.
	If the control or adjustment is performed in incorrect manner not specified in this manual, you may be exposed to the hazardous laser beam.

	The invisible laser beam is output from the optical output connector. The optical output connector is located on the upper portion of the laser product and the mark shown on the left is printed on the upper part of the front panel. The red LED on the OPT ON is lit while the laser beam is being output. The laser beam output is turned ON or OFF by pressing the OPT ON button. The OPT ON button is located on the POWER button on the front panel.
	Do not output the laser beam if the optical fiber is not connected to the optical output connector. Before disconnecting the optical fiber from the optical output connector, stop the optical output completely. Never look at the optical output connector or the top end of the optical fiber connected to the optical output connector while the laser beam is being output. ⇒ The invisible laser beam cannot be seen. However, if the laser beam enters your eye(s), this may cause eye injury and the eyesight to be ruined excessively.
	If the inside of the laser product is disassembled or modified, the high power laser beam may be output. If any repair is required, contact the address described at the end of this manual.

Caution

	Do not leave the product in high temperature locations such as in direct sunlight or in a vehicle under the blazing sun, as increased temperatures inside the product may result in malfunction.
	Do not swing the product by holding it from the neck strap, etc. as accidents such as injuries or damage may result.
	When putting the strap around your neck, be careful not to constrict your windpipe.
	When closing the open/close section in replacing batteries, for example, use caution not to pinch your fingers.

1-6 Specifications

■ Specifications for AQ4270-01 LD Light Source

Light Source Performance		
Light emitting element		Semiconductor laser diode (FP-LD)
Center wavelength		1310/1550±20nm (*1, *5)
Applicable optical fiber		SM (9/125μm)
Spectral band width (*1, *2, *5)		5nm or less (1310nm), 10nm or less (1550nm)
Optical output level		−7dBm or higher (Class 1 laser product)
Output level stability	Temperature stability	1.0dBpp or less (*3, *5)
	Time stability	Within ±0.05dB (*4, *5)
Optical output waveform		Selectable from CW and CHOP (270Hz/1kHz/2kHz)
Optical connector (*6)		Universal adapter (Optional)
Main Unit Performance/Functions		
Display		LED
Power save		When the product is run on batteries, power will be turned OFF automatically when the optical output is OFF and no keys are operated for approx. 10 minutes.
Battery check		An LED flashes when the battery voltage is low.
Mode/wavelength settings hold function		The optical output waveform mode and wavelength that were in effect when the product was turned OFF are restored.
Power supply		Two AA batteries (alkaline dry batteries, nickel hydride batteries) or AC adapter (optional)
Battery life (*7)		Approx. 24 hours (Measured at 25°C, with alkaline batteries and CW light output)
Environmental condition		Operating temperature: 0 to +50°C, Storage temperature: −25 to +70°C, Humidity: 80%RH or less (No condensation allowed)
Drip-proof		Conforms to JIS C 0920 Drip-proof Type I, IEC 60529 IPX1.
Size and weight		Approx. 72mm (W) × 158mm (H) × 32mm (D), Approx. 225g (main unit only)
Safety/EMC		Safety: EN61010-1 (Out of conformance since December 1, 2010.) EMC: EN61326-1 ClassB, Table2 (for use in industrial locations)

(*1) CW light at Ta=23°C (*2) RMS (2σ, −20dB) (*3) 0 to 40°C (12 hours)
(*4) Within 20 to 30°C±1°C (15 minutes)
(*5) SM (9/125μm), SC connector, SPC polishing, 2m-cable emission end, optical fiber stably fixed
(*6) Universal adapter (SC, FC, ST, DIN, DIA, LC)
(*7) Varies with the operating conditions and batteries used.

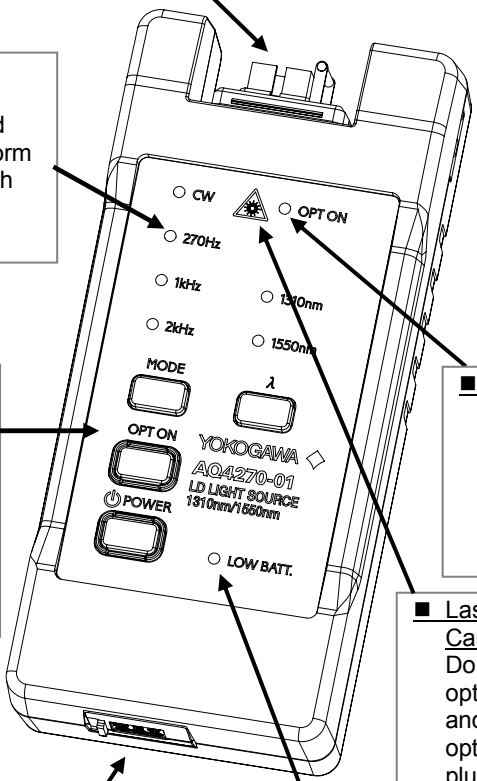
2. Functions

2-1 Names and Functions

■ Optical Output Connector
Outputs a laser power.
Connect the universal adapter (optional) to this connector. Refer to pages 2, 16 and 26.

■ Strap Holes
Attach the neck strap or the connector protective cap string to these holes. (Holes are provided on both sides of the product.)

■ Mode/Wavelength Display Area
Displays the selected optical output waveform mode and wavelength using green LEDs.
Refer to page 21.



■ Key Switches
- MODE key
- λ key
- OPT ON key
- POWER key

Four key switches are provided to control the product.
Refer to page 10.

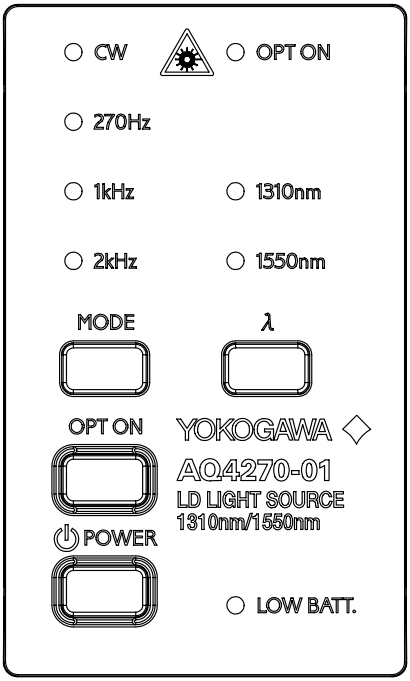
■ OPT ON Display Area
Displays whether optical output is ON or OFF using a red LED.
Refer to page 21.

■ Laser Emission Caution Mark
Do not stare into the optical output area and the end of the optical connector plugged into the product. Refer to page 19.

■ AC Adapter Terminal
Open the cap and connect the AC adapter (optional) to this terminal.

■ LOW BATT. Alarm Display
The red LED flashes when the battery voltage drops below a certain level.
Refer to page 11.

2-2 Key Switches



POWER	Power key
Used to turn ON/OFF the product.	
MODE	Mode selector key
Used to switch the optical output waveform mode. Each time the key is pressed, the modulation frequency of CW (continuous light) and CHOP light changes as follows. → CW → 270Hz → 1kHz → 2kHz →	
λ	Wavelength selector key
Used to switch the optical output wavelength. Each time the key is pressed, the wavelength switches between 1310nm and 1550nm alternately.	
OPT ON	Optical output key
Used to turn ON/OFF the optical output.	

2-3 Other Functions

2-3-1 Mode/wavelength Settings Hold Function

Condition	Function
Power is OFF by the POWER key or power save function.	The currently selected optical output waveform mode and wavelength are saved, and they are used when the product is turned ON next time.

There is no guarantee that this hold function is effective during "LOW BATT." alarm. This function will be disabled and set in initial state when the product is in no-power state.

No-power state: The AC adapter or batteries are not connected. The product has been shut down due to low battery voltage.

Initial state: Optical output waveform mode: CW, Wavelength: 1310nm

2-3-2 Power Save

Condition	Function
Product is run on batteries. Optical output is OFF.	The power is turned OFF automatically if no keys are operated for 10 minutes.
Optical output is ON.	The power save function is disabled.
Product is run on AC power (AC adapter).	The power save function is disabled if the product is run on AC power (using the AC adapter).

If the product is run on both AC power (AC adapter) and batteries, the power save function will be enabled when supply of AC power (from AC adapter) is stopped.

When supply of power from the AC adapter starts while the product has been run on batteries only, the power save function will be disabled.

2-3-3 Battery Check

Condition	Function
Battery voltage drops below a certain level.	The red LOW BATT. LED begins to flash. → Replace the batteries with new ones immediately.
Battery voltage further drops below a certain level.	The product is shut down automatically and put in no-power state.

If nickel hydride batteries are used, the product may be shut down immediately after the LOW BATT. LED begins to flash.

2-3-4 Alarm Warning

Condition	Function
Excessive optical output due to certain reasons or excessive current running through the laser diode	These symptoms are detected as an alarm, and power to the laser diode is stopped automatically for safety reasons to turn OFF the optical output. In this case, all the green LEDs (for output waveform mode and wavelength) will begin to flash, showing that the product is abnormal.

If the above alarm occurs, carry out the following steps.

1. Press the POWER key to turn OFF the product.
2. Remove the optical connector (optical fiber) and attach a protective cap to the connector.
3. Remove the AC adapter and batteries to stop supply of power to the product.
4. Contact the distributor from whom the product was purchased.

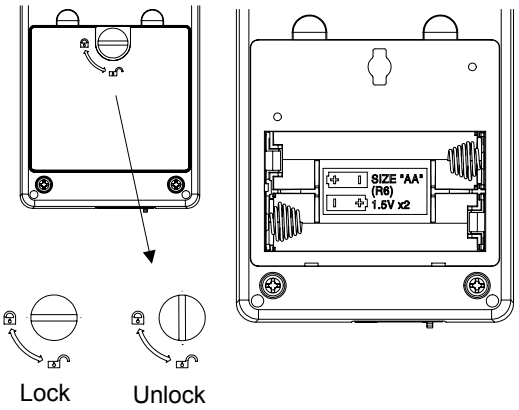
Repairing the product by oneself is dangerous, and should never be attempted.

3. Operation

3-1 Preparation

3-1-1 Inserting the Batteries

Using a coin, for example, turn the screw on the back, remove the cover and insert the batteries. The screw is locked or unlocked by turning it in the direction indicated in the figure.



Insert two AA batteries into the battery holder in the correct direction (indicated by the polarity marks), and replace the cover.

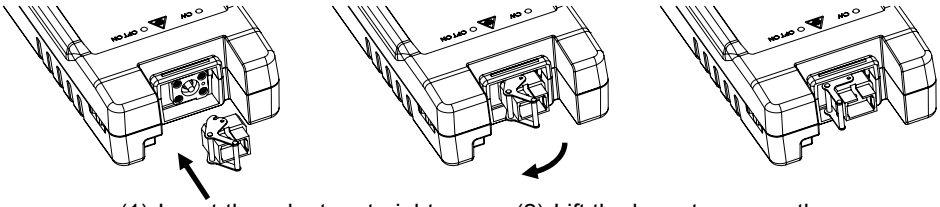
If the LOW BATT. alarm blinks, immediately replace the batteries with new ones. Alkaline AA batteries will last about 24 hours (depending on operating conditions).

3-1-2 Attaching a Universal Adapter

To connect an optical connector to the product, an optional universal adapter (SU2005A-***) is required. Use a universal adapter that is suitable for the optical connector to be used.

Before attaching the adapter, make sure that optical output is turned OFF.

Example: Attaching a Universal Adapter (SU2005A -SCC)



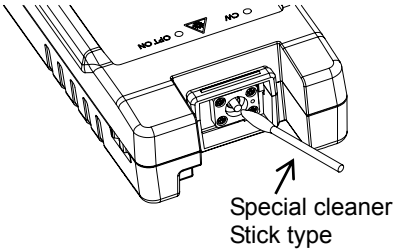
(1) Insert the adapter straight as far as it will go.

(2) Lift the lever to secure the adapter.

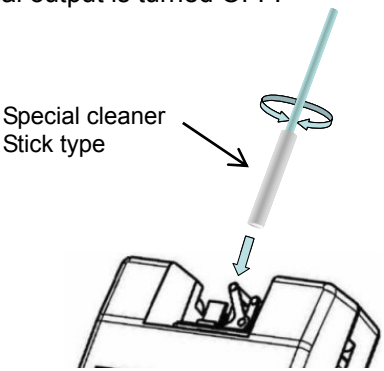
Keep the optical output area clean. Since entry of foreign matter, like dirt, may affect measurement or result in breakdown, be sure to attach a connector protective cap when the product is not used.

TIP Cleaning the tip of the ferrule (in the optical output area) with a special cleaner is recommended. The following cleaners are available: “OPTIPOP S” (by NTT-AT), CLETOP Stick-Type (by NTT-ME).

Before cleaning, make sure optical output is turned OFF.



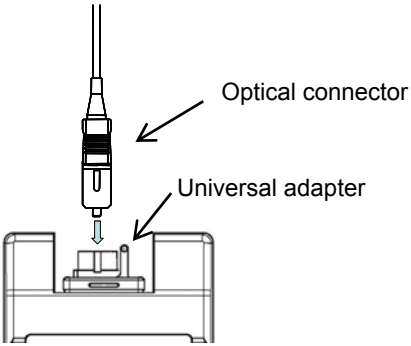
Example of cleaning the end of the ferrule

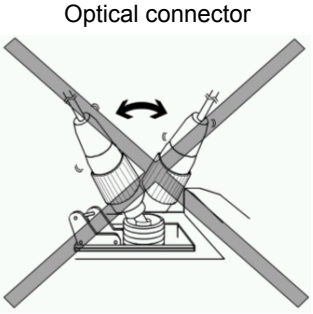


Example of cleaning the universal adapter

3-1-3 Connecting an Optical Connector (Fiber)

Before connecting an optical connector, make sure that optical output is turned OFF.
The connector must be inserted as far as it will go. If it is not fully connected, measurement cannot be performed properly.





The connector must be slowly inserted perpendicular to the universal adapter.

If it is slanted or shaken sideways or inserted by force, the universal adapter or optical connector may be damaged.

- Optical fibers
  The following optical fibers are supported:
  Single mode: SM (9/125 µm)
- Ferrules
  The following polishing types are supported:
  PC polishing, FLAT polishing (not angled polishing)

Make sure that an optical connector that is supported by this product is connected. In addition, clean the ferrule's end using special cleaner before connecting the connector.

TIP The following optical connector cleaners are available: "OPTIPOP R" (by NTT-AT), CLETOP Real-Type (by NTT-ME).

Make sure that an angled polished ferrule is not connected. Use of such a ferrule **may damage** the optical output area. In addition, make sure that a bare fiber adapter is not used. Protruding fiber may damage the optical output area.

When this product is not in use, attach a protective cap to the optical connector to protect it from dirt, dust and such like.

While the laser beam is output, never stare into the optical output area, the end face of the optical fiber connected to this product, or the optical connector. Failure to observe this warning may result in exposure to dangerous laser emissions, leading to eye damage. Sufficient care must be taken when handing the product.

3-1-4 Affixing the Neck Strap

Run the neck strap through the strap holes.

Do not swing the product by holding it from the neck strap, etc. as accidents such as injuries or damage may result. When putting the strap around your neck, be careful not to constrict your windpipe.

3-2 Turning ON/OFF the Power

3-2-1 Turning ON the Power

Operation key	Display
POWER	All the LEDs light up, and then the green LEDs for output waveform/wavelength light up. (One of the optical output waveform modes and one of the wavelengths light up.)

If the product is running on batteries, the power save function is enabled. In this case, the power will be turned OFF automatically if the optical output is OFF and no keys are operated for 10 minutes.
However, the power save function will be disabled if the optical output is ON and the product is running on AC power (AC adapter).

The AC adapter is available as an option. (SU2007A-*)

Do not use any AC adapter/power cables other than those exclusively provided for this product, since use of such AC adapter/power cables may cause accidents or breakdown.

3-2-2 Turning OFF the Power

Operation key	Display
POWER	LEDs in the display area go off.

Remove the optical connector (optical fiber) and attach a protective cap to the connector.

3-3 Making Operation Settings

3-3-1 Selecting an Optical Output Waveform Mode

Operation key	Display	Description
MODE	The green LED corresponding to the selected mode lights up. → CW → 270Hz → 1kHz → 2kHz →	Each time the MODE key is pressed, the mode switches from one to another.

The optical output waveform mode can be changed while the optical output is ON.

3-3-2 Selecting a Wavelength

Operation key	Display	Description
λ	The green LED corresponding to the selected wavelength lights up. Either "1310nm" or "1550nm" LED lights up.	Each time this key is pressed, the wavelength switches from one to another.

The wavelength can be changed while the optical output is ON. In this case, the optical output will be turned OFF first, and then turned ON again automatically at the selected wavelength.

3-4 Turning ON/OFF the Optical Output

Operation key	Display	Description
OPT ON	The OPT ON LED (red) lights up while the optical output is ON. Pressing this key turns OFF the optical output, causing the LED to go out.	The optical output is turned ON and OFF alternately each time the OPT ON key is pressed.

4. Precautions

This section describes precautions in handling this product, which uses optical components based on ultrafine, high-precision processing technologies. Therefore, the product must be handled with sufficient care as described below to ensure its performance.

4-1 Handling Notes

(1) Do not subject the product to excessive shocks, such as by dropping it. Such shocks could damage internal optical parts even though the product is protected by a plastic cover.
(2) Do not expose the product to high temperatures or high humidity environments for extended periods, such as by leaving it in a vehicle in direct sunlight.
(3) Do not place the product adjacent to equipment or facilities which radiate strong electric waves or magnetic fields. This could result in malfunctioning of the product.
(4) Do not use the product and a mobile phone simultaneously in close proximity.
(5) This product is handheld and can also be used outdoors when it is battery operated. However, it is not waterproof. Care must be taken if you use it for work in rainy conditions.
(6) Do not disassemble the product.
(7) Use an optical connector supported by the product. Attempting to connect an unsupported connector to the product may cause damage to the optical output area.
(8) While the laser beam is output, never stare into the optical output area, the end face of the optical fiber connected to this product, or the optical connector. Failure to observe this warning may result in exposure to dangerous laser emissions, leading to eye damage. Sufficient care must be taken when handing the product.
(9) Do not connect optical fibers using the optical connectors of angle polishing ferrules, as these may damage the optical output area.
(10) Optimum function cannot be expected from this product if the optical connector is damaged or soiled when connected to the optical output connector. In the worst case, such conditions may impair the optical connections of this product.
(11) When the product is not being used, attach the optical connector protection cap to protect the connector from contamination by foreign substances such as dirt or dust.
(12) Clean any dirt or dust from the optical output surface or from the connector using special optical fiber cleaners.

4-2 Application Notes on Using Batteries

(1) Dirt on the +/- terminals of the battery holder can result in improper contact or turning off the power. Remove dirt from the +/- terminals with a dry cloth and keep them clean.
(2) Do not expose the batteries to water, including rain or salt water. Strong shocks must also be avoided.
(3) Batteries must be handled with care. If their +/- terminals are short-circuited by contact with metal, a large current will be drawn and the battery will be damaged or become hot.
(4) Do not try to disassemble the batteries. Nor should they be thrown into fire. Such actions are very dangerous.
(5) Do not dispose of used batteries along with other waste. (Some local regulations require batteries to be disposed of separately. In such cases, disposal must be carried out in accordance with the regulations.)
(6) Check polarity markings on the batteries carefully before inserting them in the battery holder of the main unit. Batteries inserted with wrong polarities may cause damage to the product.
(7) If the product is not to be used for a long time, remove the batteries from the battery holder. Liquid leakage from the batteries may damage the product.
(8) The product does not have a charging function. Users are requested to provide a dedicated battery charger to charge nickel hydride batteries.
(9) The product must be used in a way that conforms to the operating conditions of the batteries used.

4-3 Application Notes on Using the AC Adapter

The dedicated AC adapter, and the power cable conforming to local requirements that is included with the AC adapter, must be used. When using them, make sure that the power cable is connected to the inlet plug of the AC adapter, and that the output cable is connected to the AC adapter terminal on the product. Do not use any AC adapter/power cables other than those exclusively provided for this product, since use of such AC adapter/power cables may cause accidents.

4-4 Notes on Disposal of the Product

The laser diode used in this product contains gallium arsenide (GaAs). Particles and vapors of GaAs are very dangerous. The product must therefore never be burnt, destroyed, cut, crushed or chemically disassembled. It must be separated from general industrial waste and household rubbish, and disposed of according to local regulations.

5. Troubleshooting Guide

This section outlines the points to be checked when the product does not operate as intended.

5-1 The product does not operate when the power is turned on.

(1) Are the batteries inserted in the battery holder properly?
   → Use AA alkali dry batteries or nickel hydride batteries.
   → Check their polarities.

(2) Have old batteries been used?
   → Replace both of the batteries with new ones. Mixed usage of an old battery and a new one may cause leakage and damage the product.

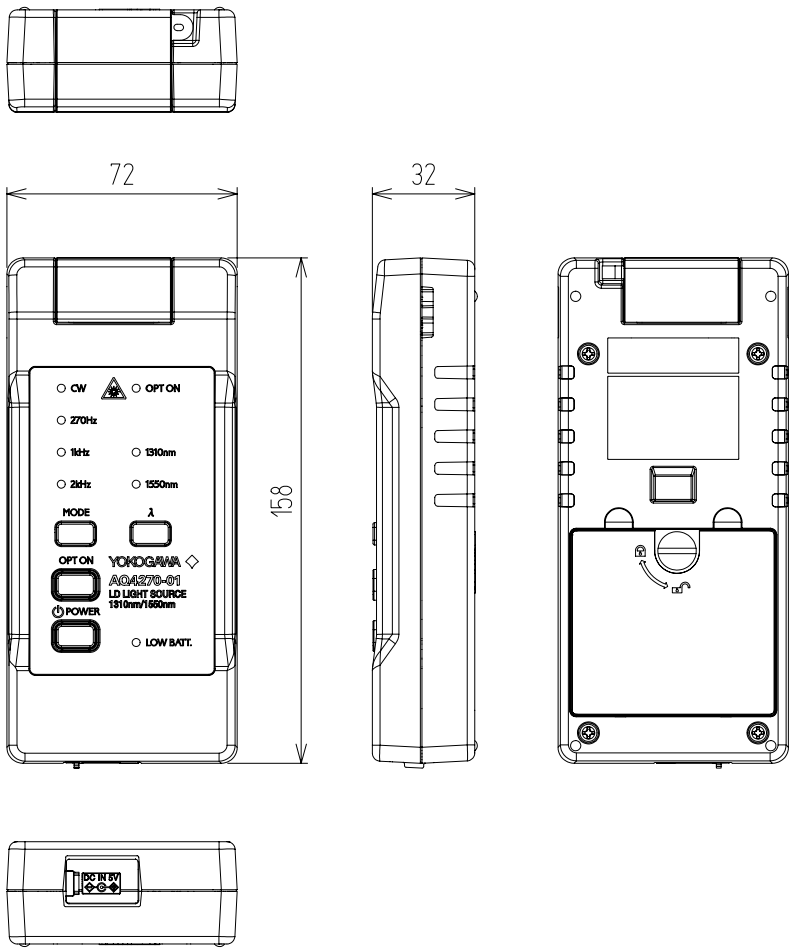
(3) Is the power supply cord of the (optional) AC adapter connected properly?

(4) Is the specific AC adapter being used?
   → Do not use any AC adapter/power cables other than those exclusively provided for this product, since use of such AC adapter/power cables may cause accidents.

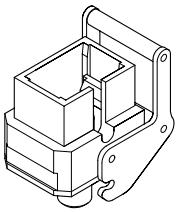
5-2 Optical output is not correct.

(1) Is the optical connector (optical fiber) connected properly?
   → The connector must be inserted as far as it will go. If it is not fully connected, measurement cannot be performed properly.

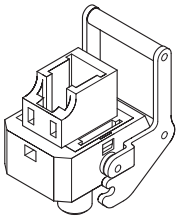
(2) Is the end surface of the ferrule clean?
   → Clean any dirt or dust from the optical output surface or from the connector using special optical fiber cleaners.



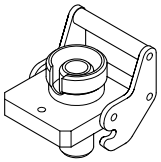
AQ4270-01: LD Light Source External View



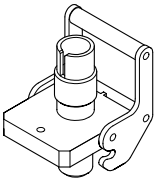
SCC



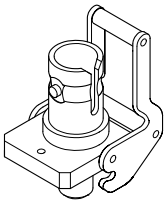
LCC



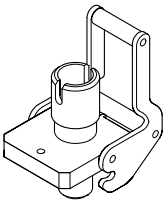
FCC



DIN



STC



DIA

SU2005A-* Universal Adapter (Optional): External View**

Product Inquiry

For inquiries regarding YOKOGAWA's measurement instrument products, access "T&M Worldwide Network" on the Web page at the URL indicated below. Then, contact your nearest YOKOGAWA dealer or representative shown on the page.

http://www.yokogawa.com/tm/

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