

SLG-600V SLG-600V-FC

Instruction Guide CE

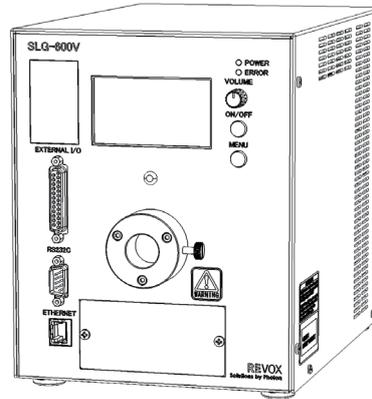
Thank you for purchasing a REVOX product. To ensure proper use of the product, please read this Instruction Guide before use and keep it for your future reference.

These light sources are mainly used as ultra-high intensity fiber optic illuminators for image processing and industrial inspections. They are used with light guides attached. This enables the selection of a lighting pattern that is suitable for the application.

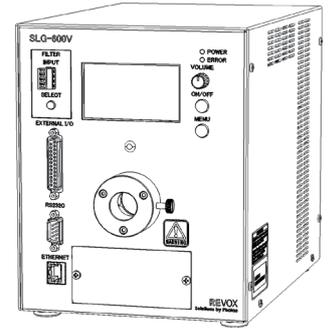
Note: A light guide adapter is not provided with this product. Order one separately.

Features

- The light intensity can be controlled in up to 1024 steps.
- Status confirmation and operation settings can be performed on the LCD.
- In addition to the manual control from the front panel, external control with parallel communications (including digital intensity control and analog intensity control), Ethernet communications, and RS-232C communications are also possible.
- Intensity feedback function is available to suppress fluctuations in the illumination.
- High speed strobe lighting control in accordance with external trigger signals is available.



SLG-600V



SLG-600V-FC
(with filter changer)

WARNING LABEL **RISK GROUP 3**

RISK GROUP 3
WARNING IR emitted from this product. Avoid eye exposure. Use appropriate shielding or eye protection.
CAUTION Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.

**CLASS 1
LASER PRODUCT**

Warning IR emitted from this product. Avoid eye exposure. Use appropriate shielding or eye protection.

Caution Possibly hazardous optical radiation emitted from this product. Do not stare at operating lamp. May be harmful to the eyes.

Light Emitted by the Product

This product is Class-1 Laser product compliant to EN60825-1 : 2014. It is a RISK GROUP 3 product and emits high-intensity visible light. Because light-absorbing materials convert incident light into heat, heat-sensitive or flammable light-absorbing materials may be damaged. Always observe the following precautions when you use the product. Incorrect usage of the product may jeopardize safety.



- Never look directly into the opening of the light guide adapter, a light guide exit or reflected light while light is being emitted. There is a risk of damage to your cornea and retina.
- Never cover the light guide adapter or light guide exit with your hand or other part of your body. There is a risk of burn injury.
- Never cover the light guide adapter or light guide exit. Doing so may result in fire.
- Direct illumination to human body may cause burn injury. Never illuminate flammable material, as there is a risk of fire.

1 Important Information for Equipment Safety - Read Before Use -

This product has been designed with full consideration of safety. Incorrect usage of the products may result in fire, electric shock, or other serious accidents. Observe the following precautions for prevention of accidents.

■ Hazards caused by incorrect usage and their levels are classified with the following indication:

Warning	Items with this mark indicate that incorrect usage may result in serious injury or death.	Caution	Items with this mark indicate that incorrect usage may result in injury or property damage.
----------------	---	----------------	---

■ Items and its details to be observed are classified into the following indication:

<p>The above marks show the items prohibited.</p>	<p>The above marks show the instruction which must be observed.</p>
---	---

Warning	
Avoid places where the unit might be exposed to water such as near humidifiers, water faucets or outside. If water gets into the product, it may result in fire or electric shock.	Avoid places with high temperature, high humidity or corrosive gas. Such environments may damage the product or result in fire or electric shock.
Be sure to connect to ground using AC cable with 2-flat-blade and a round grounding pin for prevention of electric shock.	Disassembling except for installation and replacement of filters is strictly prohibited to prevent fire and electric shock.
Follow the instructions properly and avoid improper environment or improper usage such as overvoltage. Improper use may cause fire, electric shock, or the product malfunction.	DO NOT look at the light beam directly. It may lead to loss of vision or blindness.
DO NOT touch the product with wet hands. It may cause electric shock.	DO NOT use the product if it emits smoke, fire, unusual smells, strange sounds or becomes unusually hot. Turn off and unplug the unit immediately under these conditions.
DO NOT touch the parts inside. The product has high voltage parts. Touching these parts may result in electric shock or burns.	DO NOT touch the product during operation, because the surface temperature may be from 40 to 50 degree C, and the temperature of the light guide adapter may be over 70 degree C. Wait for a while until it is cool enough to handle in order to prevent burns.
Be sure to use heat-resistant light guide so as to prevent melting or burning of fibers. Ask info@revox.jp for more details.	

Caution	
When disconnecting the cables, be sure to hold the plug or connector, not the cord. Pulling the cord itself may damage it and cause fire or electric shock.	Check the fan and ventilation holes regularly to make sure they are not covered with dust or debris. Inadequate ventilation will keep heat inside the product and may cause fire.
DO NOT drop or give shocks to the product. It may damage the product and cause malfunction.	Supply the product with stable voltage power. Voltage fluctuations may cause unstable performance or malfunction.
Prevent any dust getting into through the air ventilation holes. Dust may cause malfunction, damage to the product or fire.	Be sure to turn off the power, before disconnecting cables. It may cause malfunction or damage the product.
Be sure to keep the product and attached cables as far away from any electrical noise source as possible. Shield the product from any electrical noise source, such as an inverter and high voltage cables. A power cable or communication cables connected to the product should be 5 m or shorter.	Maintain a constant operating ambient temperature in accordance with this document. Sudden change of temperature may cause variation of illuminance, malfunction or fire.(e.g. Near the outlet of air conditioners and heaters) If you use exhaust air duct, keep the air exhaust amount over 2.3 m ³ /min.
Avoid dusty places to prevent any dust getting into the body through the ventilation holes. Dust may damage the product and result in fire or malfunction.	Install the product unit on a stable surface, placing the bottom-side with rubber feet down. If it falls down, it may cause injury or malfunction.
Be sure to install the unit in a well-ventilated room. In order to ensure enough room for air circulation around the unit, maintain the clearance 100 mm or more at the front and the back and 50 mm or more on the top and the side.	

2 Names and Functions of Parts

Caution

Do not place any objects within 50mm of air vents on the side panel. Insufficient ventilation may cause heat to accumulate inside the product and result in fire.

External Input Screw Terminal Block for Filter Changer

(Only for SLG-600V-FC)

..... Page 8

Filters can be selected by external input through the connector.

Filter Select Button

(Only for SLG-600V-FC)

..... Page 8

Filters can be selected by pushing this button which is available only in panel mode.

LCD

..... Page 3
Displays the status of the product and the Setting Screen.

Contrast Adjustment Screw

Remove the rubber cap and adjust the contrast of the LCD with a flat bladed screwdriver.

EXTERNAL I/O Connector

..... Page 5~6
Connect an External I/O cable to this connector.

RS-232C Communication Connector

..... Page 7
Connect an RS-232C communication cable to this connector.

Ethernet Communication Connector

..... Page 6 to 7
Used for Ethernet communications. Connect an Ethernet cable to this connector.(RJ-45)

Filter Changer Cover

(The cover only for SLG-600V-FC can be used for replacement)

..... Page 8

Remove this cover to exchange filters inside.

Cooling Fan Air Inlet

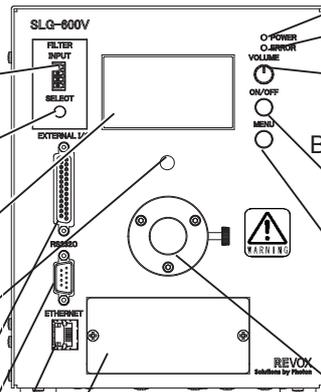
Power Switch

Turns the power ON and OFF.

AC Inlet

Supplies power to the product.(EN60320-1 certified C14 type)

Front face



Power Lamp

Lit while the power is turned ON.

Error Lamp

Lit if an error occurs. Flashes when FB is unavailable.

Operating Knob

..... Page 3

Turn: Selects the item or changes the settings. Increases/

decreases the intensity during manual control.

Press: Sets the selected item.

Selects the step magnification used to increment

/decrement the intensity during manual control.

Press for approx. 3 sec.: Locks the Operating Knob and

ON/OFF Button. They will be released when this button is

pressed for approx. 3 sec.

ON/OFF Button

Turns the light source ON and OFF.

This button can be used only during manual control.

MENU Button

..... Page 3

Press: Displays Operation Screen on LCD.

Press for approx. 4 sec.: Displays MENU Screen.

Light Guide Adapter

..... Page 2

The shape of the light guide adapter depends on the details

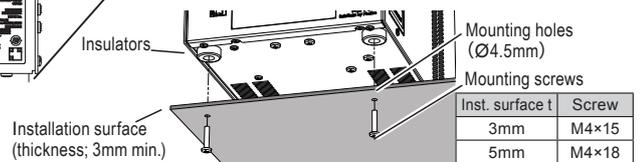
of the order.

Warning

- This product emits high-intensity visible light. Refer to Light Emitted by the Product on Page 1, and take suitable safety precautions.
- This product generates high temperatures. Do not touch the area around the light guide adapter while the product is turned ON or immediately after it is turned OFF. Burning may result.

Insulator

To secure the product on the bottom side, remove the mounting screws and tighten them again from behind mounting holes prepared in the installation surface.



3 Connections

Warning

Before connecting the product, make sure that the power is turned OFF.

Making connections while the power supply is ON may result in burn injury, electric shock, fire, or damage to the product.

1 Mount a light guide adapter(sold separately)to the product.

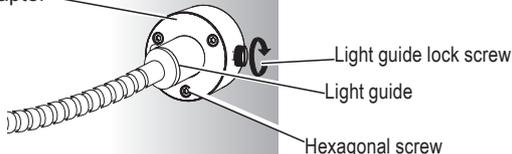
Remove the protective film from the front panel before you attach the light guide adapter and secure the adapter with the hexagonal screws.

2 Insert the light guide into the insertion port, then tighten the screw to secure the light guide.

Warning

Use a heat-resistant light guide.
Please inquire (info@revox.jp) for the details.

Light guide adapter



Light guide lock screw

Light guide

Hexagonal screw

3 To control the product from an external device, connect a suitable cable for the control method.

• Controlling Operation with Parallel Communications

You must provide a cable with a length of 3 m max.

The CBL-D25-3 Cable (sold separately, 3m in length) is available for connection.

• Controlling Operation with Ethernet Communications

You must provide an Ethernet cable with a length shorter than 30 m.

This product uses auto MDI/MDI-X to automatically recognize either a cross cable or a straight cable. Cycle the power if you change the cable type.

• Controlling Operation with RS-232C Communications

You must provide a cross cable with a length of 3 m max. RS232C-9SU-9SU-CR1-E-(length in "m") sold by MISUMI Group Inc. is recommended for connection.

4 Connect the AC power cord to the AC inlet and a wall socket.

The AC power cable included with the product is for 100 to 120V AC. If you use the Product with 200 to 240V AC, an appropriate AC cable shown below is required.

Recommended Specifications	Wire diameter	1.0mm min.
	Line-to line insulation withstand voltage	100MΩ min.
	Ratings	250 V min., 10A min.
	Withstand voltage	2,000 VAC/minute
Socket standards	EN 60320-1 certified C13 type	

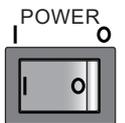
5 Turning ON the Power

Press the left of the power switch to turn ON the power supply. Press the right of the power switch to turn OFF the power supply.

When the power supply is turned ON, the Initialization Screen will appear on the LCD and it will be followed by the Operation Screen. Also, the power lamp will light.

Note: When you turn OFF the power, leave it OFF for at least 10 seconds before you turn it back ON.

For SLG-600V-FC, the filter No.1 is positioned behind the light guide adapter.(Refer to Page 8 for the details.)



6 Adjusting the Light Intensity (in manual control)

The default operating mode of the product is manual control. Turn the Operating Knob to increase or decrease the light intensity displayed on the left side of the LCD.

When you press the Operating Knob, the display under the intensity will change in the following order: x1, x10, and x100. In this way, you can set the step magnification that is used to increment/decrement the intensity. Press the ON/OFF Button to turn ON and OFF the light source.

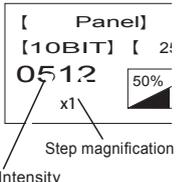
To change the operating mode to enable using external control, change the setting on the MODE Setting Screen. Refer to Operations on the LCD on Page 3 for information on the MODE Setting Screen. You can set one of the following methods of external control in the product. The default status of the light source is OFF for external control:

- Parallel Communications with Digital/Analog Intensity Control:

Refer to Page 5, Control with External I/O Connector

- Ethernet Communications: Refer to Page 6, Control with Ethernet Communications

- RS-232C Communications: Refer to Page 7, Control with RS-232C Communications



Step magnification

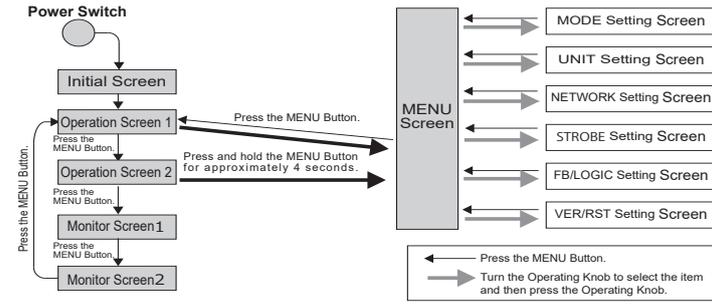
Intensity

4 Operation with LCD

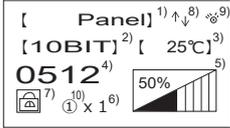
When the Power Switch is turned ON, the Initial Screen will appear on the LCD and it will be followed by Operation Screen 1.

To confirm the status or set up the operation of the product, you can change the screen by operating the MENU Button and the Operating Knob.

Screen transitions



Operation Screen 1



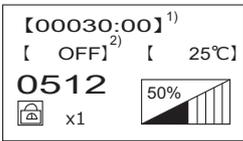
* 1 Refer to Error Information Screen on Page 8 for the details.

* 2: When you press the Operating Knob, the magnification will change in the following order: x1, x10, and x100.

* 3: Refer to FB/LOGIC Setting Screen on Page 4 for the details.

#	Item	Description
1	Operating Mode	The operating mode that is set on the MODE Setting Screen is displayed.
2	Resolution	The total number of steps in the light intensity is displayed.
3	Light Source Temperature	The temperature of the light source module (hereinafter referred to as LS) is displayed.
4	Intensity	The current setting of the light intensity is displayed.
5	Intensity Indicator	The intensity is shown as a percentage. If an error is detected*, icon ⊗ will be displayed.
6	Magnification	The step magnification that is used to increment/decrement the intensity is displayed.*2
7	Lock Icon	This icon is displayed while operation on the front panel is locked after the Operating Knob is pressed for approximately 3 sec.
8	FB Icon	This icon is displayed when feedback control*3 is enable.
9	LS ON Icon	This icon is displayed while the light source is ON.
10	Filter No.	The number of the selected filter is displayed. (Only for SLG-600V-FC)

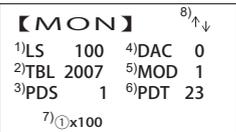
Operation Screen 2



#	Item	Description
1	Total time (min.)	The total time of irradiating period of the light source module is displayed.
2	Strobe settings	OFF · INT · EXT (Refer to STROBE Setting Screen.)

Time for strobe lighting is not accumulated.

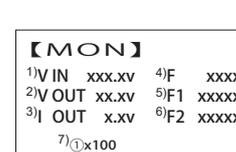
Monitor Screen 1



#	Item	Description
1	LS (Light source)	Light intensity level (10BIT) (8BIT)
2	TBL	Brightness obtained in calibration
3	PDS	Current brightness obtained
4	DAC	DAC value
5	MOD	Feedback Mode
6	PDT	Temperature of light source module
7	Filter No.	No. of filter selected(only for SLG-600V-FC)
8	FB icon	Indicated when FB control is available.

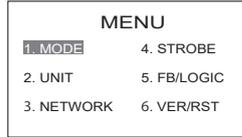
FB control is the function which make up for the difference between TBL and PDS. FB operation will stop in case TBL/PDS is within $\pm 2\%$. In case FB is unavailable, the Error Indicator LED will flash at an interval of 0.5 sec.

Monitor Screen 2



#	Item	Description
1	V IN	Power supply input voltage
2	V OUT	Power supply output voltage
3	I OUT	Power supply input current
4	F	Number of rotation by fan for power supply (RPM)
5	F1	Number of rotation by Fan 1 (RPM)
6	F2	Number of rotation by Fan 2 (RPM)
7	Filter No.	The number of the selected filter is displayed. (Only for SLG-600V-FC)

MENU Screen



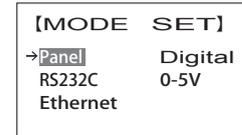
Highlighting shows the position of the cursor. Turn the Operating Knob to move the cursor. Select the required item and press the Operating Knob to change to one of the following setting screens.

You can set up the operation of the product on the following screen.

An arrow (→) is displayed to the left of the current setting. Turn the Operating Knob to move the cursor to the required item and then press the Operating Knob to set the corresponding item. Press the MENU Button to go back to the MENU Screen from a Setting Screen. After you move from the MENU Screen to the Operation Screen, the settings on the Setting Screen are stored in the product, and operation settings are updated (except for settings on the NETWORK Setting Screen).

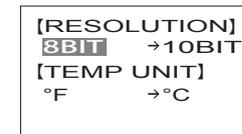
1. MODE Setting Screen

Set the operating mode on this screen. (Default: Panel)



Item	Description
Panel	Sets the mode for manual control from the front panel.
RS232C	Sets the mode for external control with RS-232C communications.
Ethernet	Sets the mode for external control with Ethernet communications.
Digital	Sets the mode for external control with parallel communications with a digital intensity control input. You can specify the intensity with a digital signal input.
0-5V	Sets the mode for external control with parallel communications with an analog intensity control input. You can specify the intensity with an analog signal input from 0 to 5V. The intensity on the Operation Screen is displayed in 256 or 1024 steps.

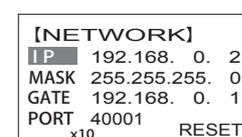
2. UNIT Setting Screen



Screen for setting intensity steps and the unit for temperature value to be shown. (Defaults: 10 bits and °C)

Item	Description
8BIT	Sets the total number of light intensity steps for all operating modes to 8 bits (256 steps).
10BIT	Sets the total number of light intensity steps for all operating modes to 10 bits (1024 steps).
°F	Sets the temperature unit for the Operation Screen to degrees Fahrenheit.
°C	Sets the temperature unit for the Operation Screen to degrees Celsius.

3. NETWORK Setting Screen



Use this screen to change the network settings.

Turn the Operating Knob to move the cursor to the required item and then press the Operating Knob.

Turn the Operating Knob to change the digits. When you press the Operating Knob for the IP*, MASK, or GATE item, the cursor will move between the digits that are separated by periods.

To return to the previous status so that you can move the cursor between items, press the MENU Button.

* If you have made changes on the NETWORK Setting Screen when you move to the MENU Screen, a message to confirm whether to save the settings will be displayed. If you have saved the settings when you move to the Operation Screen, a message that prompts you to restart the product will be displayed. Follow the instructions on the screen and turn on the power again.

Item	Description	Default
IP	Sets the IP address of the product.	192.168.0.2
MASK	Sets the subnet mask of the product.	255.255.255.0
GATE	Sets the default gateway of the product.	192.168.0.1
PORT	Sets the port number to receive the data that is sent from the external device.*	40001
RESET	Resets all items on this screen to the default settings.	—

* If you change the port number, the step magnification will be displayed. When you press the Operating Knob, the step magnification will change to x1, x10, x100, or x1000.

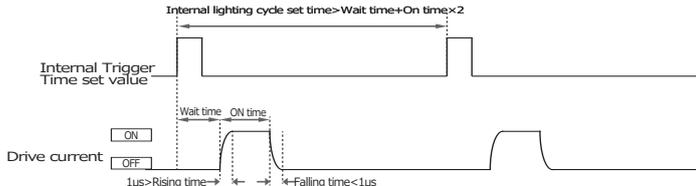
4. STROBE Setting Screen

#	Item	Description	Default	Min.	Max.
1	OFF	Disables STROBE function.	OFF	-	-
2	INT	Sets Internal Trigger ^{*2}	--	-	-
3	EXT	Sets External Trigger ^{*3}	-	-	-
4	TRUP	Sets Trigger Rising.	TRUP	-	-
5	TRDN	Sets Trigger Falling.	-	-	-
6	Wait	Sets the lighting delay time(Unit:μ sec.) ^{*1}	0	0	9999
7	On	Sets the lighting time (Unit:μ sec.) ^{*1}	10	1	9999
8	Cycle	Sets the internal lighting cycle time (Unit:μ sec.) ^{*1}	20	2	99999

*1 When you press the ON/OFF Button, the step magnification will change to x1, x10, x100, or x1000.

*2 INT (Internal Trigger Operation Timing)

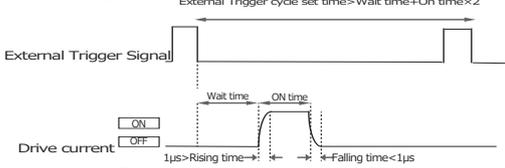
Internal Trigger: External trigger input signal is not used, and the light source is turned ON/OFF in accordance with internal lighting cycle set value and timing set by ON WAIT time and LS ON time.



Note: In case WAIT is 0 and intensity level is the highest, the response time to LS ON is within 1μs.

*3 EXT(External Trigger Operation Timing)

External Trigger: Light source is turned ON/OFF in accordance with the external trigger signal and timing set by ON WAIT time and LS ON time.

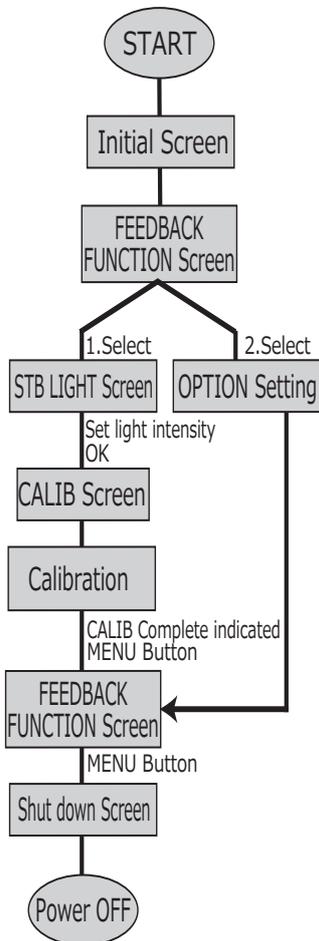


Note: In case WAIT is 0 and intensity level is the highest, the response time to LS ON is within 1μs.

5 Light Intensity Feedback Control

To move to FEEDBACK FUNCTION Screen, turn on the Power Switch pushing MENU Button and release MENU Button after the Initial Screen is displayed. Change the screen by rotating the Operating Knob to select the menu item and pushing the knob. After settings in each setting screen, be sure to push Menu Button to move to the Shut-down Screen, then turn off the power. By cycling the power, the settings become valid.

Screen Transitions



5. FB/LOGIC Setting Screen

[FB]	ON → OFF
[LOGIC]	negative → positive

Use this screen to enable/disable feedback control(FB) and set the logic of pins 2 to 13 on the External I/O Connector and External Input Screw Terminal Block for Filter Changer. (Default: OFF and positive logic) Feedback control should be selected after STB LIGHT Setting and CALIB setting (described in "5. Light Intensity Feedback Control") are done. In case strobe lighting is valid, FB control is invalid.

Item	Description
ON	Enables feedback control to suppress fluctuations in the illumination. The FB icon (↑↓) will be displayed at the top-right of the Operation Screen.
OFF	Disables feedback control to suppress fluctuations in the illumination. To set maximum light intensity, set "OFF" in STB LIGHT Setting Screen.
negative	Applies negative logic to pins 2 to 13 on the External I/O Connector and External Input Screw Terminal Block for Filter Changer.
positive	Applies positive logic to pins 2 to 13 on the External I/O Connector and External Input Screw Terminal Block for Filter Changer. The descriptions in this document are based on positive logic.

Note: If you set negative logic, you will need to interpret the descriptions for when the photocoupler is ON as for when the photocoupler is OFF. For example, for positive logic, the light is turned OFF when the photocoupler turns ON for Pin 13 during manual control. For negative logic, the light is turned OFF when the photocoupler turns OFF.

6. VER / RST Setting Screen

[VERSION]	Ver 100
[RESET]	Total hour <input type="checkbox"/>
	System <input type="checkbox"/>
	OK? <input type="checkbox"/>

[VERSION(VER)] This screen shows the version of the control software in the product. If you inquire about the operation of the product, inform REVX of the version number given on this screen.

[RESET(RST)] On this screen, you can reset the total time and the items on the Setting Screen into their default settings(except for the items on the NETWORK Setting Screen).

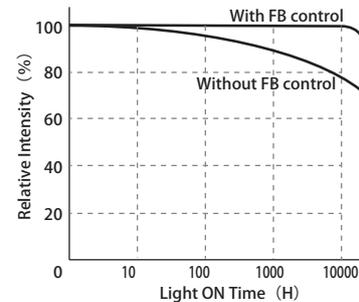
Turn the Operating Knob to move the cursor between the items. Press the Operating Knob to tick a box next to the required item to select it.

Item	Description
Total hour	Resets the accumulated time shown on the Operation Screen.
System	Initializes the settings in MODE Setting, UNIT Setting, Strobe Setting and FB/LOGIC Setting.
OK?	Cancels the selection of the item above.

Light Intensity Feedback Control

Light intensity correction range is determined by correcting intensity under the actual usage conditions.

Example of FB effect (STB LIGHT = 10000H ②)



In case feedback control is unavailable, the Error Lamp continuously flashes.

FEEDBACK FUNCTION Screen

FEEDBACK FUNCTION
1.STB LIGHT
2.OPTION

#	Item	Description
1	STB LIGHT	Sets the period of stabilized intensity. (Refer to "STB LIGHT Setting".)
2	OPTION	Defines variable figures shown in "Option Setting Screen".

CALIB Screen

[CALIB]
START LS 0/1023 ¹⁾
PDS 0 ²⁾
STOP PDT 24 ³⁾

Push Operating Knob to start calibration. During calibration, lighting is ON and "CALIB Start.." is indicated on the lowest part of the LCD. A cursor move to "STOP."

To stop calibration, push Operating Knob during calibration.(Set value will not be revised.) "User interrupt" is indicated on the lowest part of the LCD, and a cursor move to "START." CALIB value will not be revised.

Approx. 10 minutes is required for calibration. After calibration, the output value is changed to "0," and "CALIB Complete" is indicated.

After calibration, be sure to push MENU Button to return to FEEDBACK FUNCTION Screen.

Note: Be sure to perform CALIB again in case the light guide is replaced.

#	Item	Description
1	LS	Intensity level/1023
2	PDS	Illuminance detected
3	PDT	Temperature of light source module

• STB LIGHT Setting Screen

STB LIGHT	
→OFF	15000H
5000H	20000H
10000H	OK?

Set the period of stabilized intensity. In case "OFF" is set, feedback control will not function. In case 5000H, 10000H, 15000H or 20000H is set, intensity may be stabilized in accordance with each set period of intensity stabilization and the corresponding maximum intensity shown below. Then, you can move to CALIB Setting Screen by selecting "OK?"

Period of stabilization	Max. intensity	FB Availability
OFF	100%	Unavailable
5000H ①	80%	Available
10000H ②	70%	
15000H ③	60%	
20000H ④	50%	

- ① In case 5000H is set, 80% of maximum light intensity may be stabilized by intensity FB control for 5000 h.
- ② In case 10000H is set, 70% of maximum light intensity may be stabilized by intensity FB control for 10000 h.
- ③ In case 15000H is set, 60% of maximum light intensity may be stabilized by intensity FB control for 15000 h.
- ④ In case 20000H is set, 50% of maximum light intensity may be stabilized by intensity FB control for 20000 h.

Note: Set "OFF" to disable the light intensity feedback control for setting the light intensity to the maximum.

• Option Setting Screen

OPTION	
CONTINUOUS	1
PD SENSE	0

Variable figures	Description
0	CONTINUOUS disabled
1	Sets continuous CALIB

PD sensitivity can be changed by PD SENSE variable figures, in case higher sensitivity is required.

Variable figures	PD Sensitivity
0	200%
1	150%

Basically, PD sensitivity variable figure is "0(zero)" in case filters are not used, and "1" in case filters are used.

After all the settings are completed, be sure to push MENU Button to return to FEEDBACK FUNCTION Screen.

▣ Shut-down Screen

Feedback mode exit reboot system now!
--

After each setting in the above Setting Screens regarding Light Intensity Feedback Control, be sure to push MENU Button. This screen shows that all of the set variable figures have been recorded. The recorded variable figures will be activated by cycling the power.

Note: The startup mode after FEEDBACK FUNCTION Screen is Panel Mode.

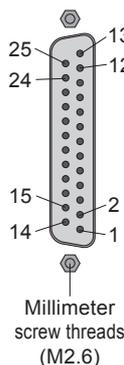
6 Control with EXTERNAL I/O Connector

You can set up operation and confirm the status of the product with signals that are input and output on the External I/O Connector.

▣ EXTERNAL I/O Connector Layout(25-pin D-sub socket)

The following figure shows the arrangement of the connector pins. The applicable pins depend on the operating mode that is set on the MODE Setting Screen.

Pin No.	Signal	Description	Applicability by Control Mode			
			Panel	RS232C/Ethernet	Digital	0-5V
1	IN COM	Input COMMON			•	•
2	B0	Digital intensity control input			•	
3	B1				•	
4	B2				•	
5	B3				•	
6	B4				•	
7	B5				•	
8	B6				•	
9	B7				•	
10	B8				•	
11	B9				•	
12	LOCK*	Intensity lock input				•
13	LS SW	Light ON/OFF input			•	•
14	TRIG_IN+	External trigger input +	•	•	•	•
15	TRIG_IN-	External trigger input -	•	•	•	•
16	MONITOR	MONITOR terminal output: Rising of lighting can be monitored with 0-3.3V output.	•	•	•	•
17	LS TEMPALM	Temperature Alarm: Light source module (hereinafter referred to as LS) temperature reached to the one to be alerted to.	•	•	•	•
18	LS ERR	LS error output: (Refer to Page 8 Error Information Screen.)	•	•	•	•
19	LS TMP	LS temperature abnormality output: LS temperature is out of limitation.	•	•	•	•
20	LS ON	LS ON output	•	•	•	•
21	OUT COM	Output COMMON_GND	•	•	•	•
22	MONITOR GND	Monitor Terminal GND	•	•	•	•
23	NC	-				
24	AN IN	Analog intensity control input				•
25	AN GND	Analog intensity control GND				•



Legend •: Applicable

▣ Digital Intensity Control Inputs

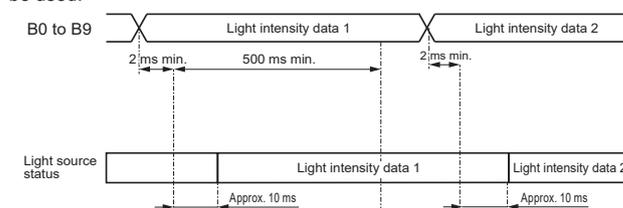
The light intensity is controlled with parallel signal inputs. Use pins 2 to 11 (B0 to B9). Refer to the following logic table for the settings.

Logic Table

SET VALUE	B9	B8	B7	B6	B5	B4	B3	B2	B1	B0	Radiant quantity
0	0	0	0	0	0	0	0	0	0	0	Min.
1	0	0	0	0	0	0	0	0	0	0	
2	0	0	0	0	0	0	0	0	0	1	Max.
255	0	0	1	1	1	1	1	1	1	1	
1022	1	1	1	1	1	1	1	1	1	0	
1023	1	1	1	1	1	1	1	1	1	1	

1: Photocoupler ON 0: Photocoupler OFF

Note: When "8BIT" is set on the UNIT Setting Screen, only pins B0 to B7 can be used.



▣ Input signal

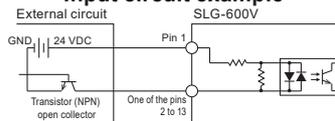
Pins 1 to 13 are used for input signals that turn ON the photocouplers inside the product to set and write data.

Input signal specifications					
Rated input voltage	Maximum input voltage	ON voltage/ ON current	OFF voltage/ OFF current	Response time	Input impedance
24 VDC	26.4 VDC	20 VDC min./ 6 mA min.	3 VDC max./ 1 mA max.	Approx. 10 ms	12 kΩ (per terminal)

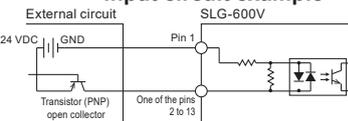
Both sinking (NPN) and sourcing (PNP) inputs are supported.

Sinking

Input circuit example



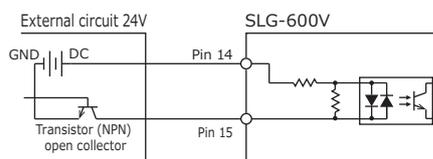
Sourcing Input circuit example



Pins 14 and 15 are used to input signals of external triggers only for sinking (NPN).

Input signal specifications					
Rated input voltage	Maximum input voltage	ON current	OFF current	Response time	Input impedance
24 VDC	26.4 VDC	12 mA min.	1 mA max.	Approx. 100 nsec.	1.8kΩ (per terminal)

Input circuit example



* If "0-5V" is set on the MODE Setting Screen, you can use the intensity lock input (LOCK). Note: The logic of pins 2 to 13 depends on the setting on the FB/LOGIC Setting Screen.

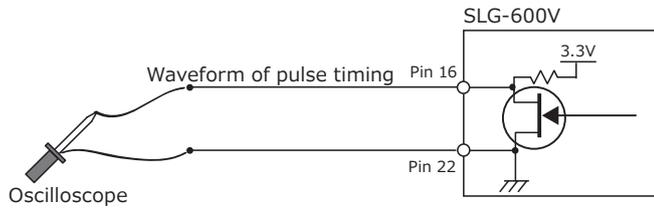
▣ Light ON/OFF input

When "Digital" or "0-5V" is set on the MODE Setting Screen: Input a signal to Pin 13 (LS SW) to turn ON the photocoupler and turn ON the light source (Response time: 10ms typ.).

Output signals

Pin 16 is the output terminal for monitoring lighting timing in STROBE Control with an oscilloscope or other equipment.

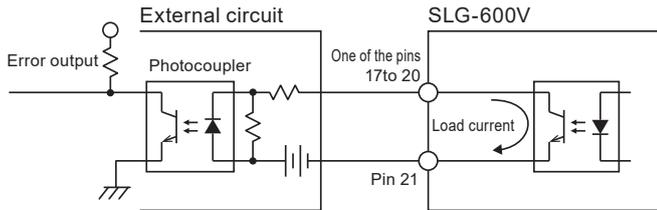
Example of output and input circuit



The status between Pin 21 and one of the pins 17 to 20 on the External I/O Connector changes from open to closed to report the status of the product.

Output signal specifications			
Rated input voltage	Maximum input voltage	Load current	Leak current
24VDC	DC26.4V	10mA max	50uA max.

Example of Output circuit



Status output

If the temperature of the light source module (hereinafter referred to as LS) has reached the one to be alerted, the circuit between Pin 17 (LS TMP) and Pin 21 (OUT COM) is closed.

If an light source error (open or shorted) is detected, the circuit between Pin 18 (LS ERR) and Pin 21 (OUT COM) is closed.

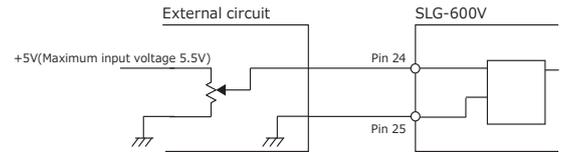
If an LS temperature is out of limitation, the circuit between Pin 19 (LS TMP) and Pin 21 (OUT COM) is closed.

While the LS is ON, the circuit between Pin 20 (LS ON) and Pin 21 (OUT COM) is closed.

Analog Intensity Control Input

The light intensity is controlled with a voltage from 0 to 5V applied to Pin 24 (AN IN). Pin 25 (AN GND) is the ground. The light intensity is from the minimum at DC0V to the maximum at DC5V.

Input circuit example



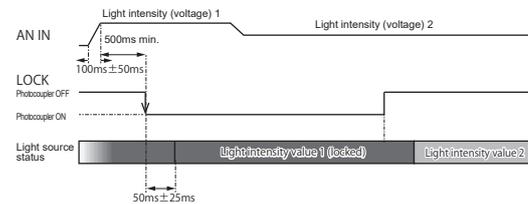
Note: When you use the analog intensity control input, you can use the intensity lock input to suppress intensity fluctuations caused by fluctuations in the analog voltage.

Note: The light intensity that is set with the analog input is not stored in the product.

Intensity Lock

If "0-5V" is set, you can input a signal to Pin 12 (LOCK) to turn ON the photocoupler.

The light intensity control is locked (disabled) while the photocoupler is ON. During that time, even if the voltage that is applied to Pin 24 on the External I/O Connector fluctuates, the intensity will remain stable.



※ If you cycle the power while the intensity control is locked, the intensity is locked to "0(ZERO)."

Release the lock to continue operation.

7 Control with Ethernet Communications

You can set up operation and confirm the status of the product with commands input and output through the Ethernet Connector. When you control operation with Ethernet communications, set "Ethernet" on the MODE Setting Screen. Also, set the network addresses on the Network Setting Screen to enable connecting the product to the network. Refer to *Operations on the LCD* on page 3 for information on the MODE Setting Screen and the Network Setting Screen.

Communication Specifications

TCP/IP, UDP/IP protocol, and Ethernet (Baud rate: 10 Mbps or 100 Mbps, automatically detected; Transmission medium: 10BASE-T or 100BASE-TX)

No Keypalve function is equipped with the product. The Number of TCP connection is 8.

Command Formats

An external device such as a PLC or image processing device sends the send data to the product. The external device can get the receive data as an execution result. Commands are exchanged by ASCII code. Commands should begin with a header code and end with an end code as control codes.

Send Data for Setting Commands

Function	Description	Header	Send command		End Code	Default ¹⁾
			Instruction	Data		
Light Intensity Setting	Sets the light intensity of the product.	STX (0x02)	WDA	When 10BIT is set on the UNIT Setting Screen 0000 to 1023. (0000: Minimum intensity, 1023: Maximum intensity)	ETX (0x03)	0000 or 000
			WDB	When 8BIT is set on the UNIT Setting Screen 000 to 255. (000: Minimum intensity, 255: Maximum intensity)		
ON/OFF Setting	Turns the light source ON or OFF.		WDD	0: OFF, 1: ON		
Pulse Mode Setting	Selects OFF, INT or EXT.		WPSET	0: OFF, 1: INT, 2: EXT		
Pulse Trigger Setting	Sets the rising edge or falling edge.		WPEDG	0: Rising, 1: Falling		
OnWait Setting	Sets OnWait time.(μ sec)		WWAIT	0000 to 9999		
OnTime Setting	Sets OnTime.(μ sec)		WONTM	0001 to 9999		
Cycle Setting	Sets internal pulse cycle time.(μ sec)		WPRD	00002 to 99999		
Filter No. Setting	Sets the number of filter (Only for SLG-600V-FC).		WFC	1 to 5		
Reply IP Address Setting	Sets the IP address to which the product sends the execution result.		WIP	000.000.000.000 to 255.255.255.255 (Specify all digits, e.g., specify 192.168.000.005 instead of 192.168.0.5) ²⁾		
Reply Port Setting	Sets the port number to which the product replies the execution result.	WPT	0000 to 65535 (Specify all digits, e.g., specify 04561 instead of 4561.) ²⁾	30001		

* 1 Any changes to the above default settings will be retained after the power supply is turned OFF except for the ON/OFF setting and the filter No. setting.

* 2 Changes to settings made with instructions from E01 to E06 are enabled after the power supply to the product is cycled.

Send Data for Query Commands

Function	Description	Header	Send command	End Code
			Instruction	
Setting Query for Light Intensity	Gets the light intensity set with the Ethernet communications.	STX (0x02)	RDA	ETX (0x03)
Query for ON/OFF Setting	Gets the light ON/OFF setting status.		RDD	
Version Query	Gets the version of the control software in the product.		V	
Temperature Query	Gets values for the light source temperature.		RDT	
Status Query	Gets the error status of the product.		REC	
Filter No. Query	Gets the number of filter. (Only for SLG-600V-FC)		RFP	
Total Time Query*	Gets total time of irradiation by the light source.		RTM	

* Time for strobe lighting is not accumulated.

• Receive Data for Setting Commands

Function	Header		Receive command		End Code
	Normal send data	Send data error	Instruction	Data	
Light Intensity Setting, ON/OFF Setting, Reply IP Address Setting and Reply Port Setting	ACK (0x06)	NAK (0x15) ^{*1}	Sent Command	Sent data	ETX (0x03)

*1 In case MODE is other than Ethernet, NAK will be replied to ON/OFF setting command.

• Receive Data for Query Commands

Function	Header		Receive command		End Code
	Normal send data	Send data error	Instruction	Data	
Query for Light Intensity Commands	ACK (0x06)	NAK (0x15)	RDA	nnnn ^{*1}	ETX (0x03)
Query for ON/OFF Setting			RDD	0:OFF 1:ON	
Status Query			REC	nnnnn ^{*2}	
Temperature Query			RDT	nnn	
Version Query			Ver	n.n.n.n ^{*3}	
Filter No. Query(only for SLG-600C-FC)			REP	n	
Total Time Query			RTM	hhhh:mm:ss	

*1 RDA commands should be in 4 digits in both cases of 10 BIT and 8 BIT is set on the Unit Setting Screen.

*2 Each "n" shows status as shown below.

REC command reply		1st "n"	2nd "n"	3rd "n"	4th "n"	5th "n"
Data	Status Query	Total irradiation time	Light source temperature status	Light source open	Light source short	FAN speed
0	Normal	Normal	Normal	Normal	Normal	Normal
1	Warning/LIGHT can be ON	Over 30000 hours	Not available	Not available	Not available	Not available
2	Warning/LIGHT forcibly OFF	Not available	Abnormal	Abnormal	Abnormal	Not available

*3 Version number is set. e.g) 1.0.0.0

▣ Examples of Command Settings

• Set Commands

Function	Instruction	Description	Send data	Receive data for normal send data	Receive data for send data error [*]
Light Intensity Setting	WDA	Sets the intensity to 512 in the product.	<STX>WDA0512<ETX>	<ACK>WDA0512<ETX>	<NAK>WDA0nn<ETX>
ON/OFF Setting	WDD	Turns LIGHT OFF	<STX>WDD0<ETX>	<ACK>WDD0<ETX>	<NAK>WDDnn<ETX>
Reply IP Address Setting	WIP	Sets 192.168.0.2 as the reply address.	<STX>WIP192,168.000.002<ETX>	<ACK>WIP192,168.000.002<ETX>	<NAK>WIPnn,nn.nn.nn<ETX>
Reply Port Setting	WPT	Sets 13484 as the reply port.	<STX>WPT13484<ETX>	<ACK>WPT13484<ETX>	<NAK>WPTnn<ETX>
Pulse Mode Setting	WPSET	Disables strobe control.	<STX>WPSET0<ETX>	<ACK>WPSET0<ETX>	<NAK>WPSETnn<ETX>
OnWait Setting	WWAIT	Sets 100-μs OnWait.	<STX>WWAIT0100<ETX>	<ACK>WWAIT0100<ETX>	<NAK>WWAITnn<ETX>
OnTime Setting	WONTM	Sets 1-ms OnTime.	<STX>WONTM1000<ETX>	<ACK>WONTM1000<ETX>	<NAK>WONTMnn<ETX>
Cycle Time Setting	WPRD	Sets the internal Cycle to 1000-μs.	<STX>WPRD01000<ETX>	<ACK>WPRD01000<ETX>	<NAK>WPRDnn<ETX>
Filter No. Setting	WFC	Sets No.5 in the product. (Only for SLG-600V-FC)	<STX>WFC5<ETX>	<ACK>WFC5<ETX>	<NAK>WFCnn<ETX>

*Actual data received by the product is replied.

Query Commands

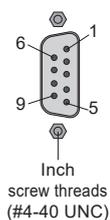
Function	Instruction	Description	Send data	Receive data for normal send data
Light Intensity Setting	RDA	Gets light intensity.	<STX>RDA<ETX>	<ACK>RDA0512<ETX>
ON/OFF Setting	RDD	Gets ON/OFF setting.	<STX>RDD<ETX>	<ACK>RDD0<ETX>
Status Query	REC	Gets error status.	<STX>REC<ETX>	<ACK>REC00000<ETX>
Temperature Query	RDT	Gets light source module temperature.	<STX>RDT<ETX>	<ACK>RDT023<ETX>
Filter No. Query	RFP	Gets Filter No. (Only for SLG-600V-FC)	<STX>RFP<ETX>	<ACK>RFP3<ETX>
Total Time Query	RTM	Gets total light ON time.	<STX>RTM<ETX>	<ACK>RTM00015.58.30<ETX> Total time is 15 hours, 58 minutes and 30 seconds.

8 Control with RS-232C Communications

You can set up operation and confirm the status of the product with command input or output on the RS-232C Communications Connector. When you control operation with RS-232C communications, set "RS232C" on the MODE Setting Screen.

▣ RS-232C Communication Connector Layout (9-pin D-sub Male Connector)

The following figure shows the arrangement of the connector pins.



Pin No.	Signal	Pin No.	Signal
1	NC	4	NC
2	Rx	5	GND
3	Tx	6 to 9	NC

Character Code
ASCII

Communication specifications				
Communication protocol	Baud rate	Data bit length	Parity bits	Stop bits
EIA-232C compliant	38400 bps	8 bits	None	1 bit

*Use a cross cable of 3-m length max.

▣ Command Formats

An external device such as a PLC or image processing device sends the send data to the product. The external device can get the receive data as the execution result. Commands are exchanged by ASCII code. Commands should begin with a header code and end with an end code as control codes.

For the set commands and query commands, refer to page 6, "Controlling Operation with Ethernet Communications."

* "NAK" is replied to Light intensity setting commands and ON/OFF setting commands sent NOT with RS-232C communications.

9 Operation instructions for filter changer (Only for SLG-600V-FC)

1 Filter size

The filter of the size shown below could be used.

	Diameter	Thickness
Filter size	26.5(±0.5) mm	1.0(±0.2) mm

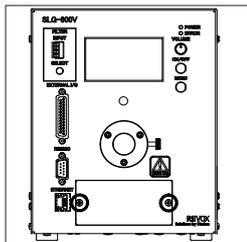
Recommended filters

Filter Model No.	Filter color
DFY-520A	Yellow
DFM-495A	Magenta
DFC-590A	Cyan
DFB-500A	Blue
DFG-505A	Green
DFR-610A	Red

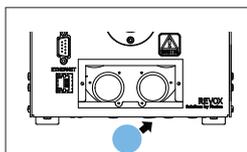
2 Filter installation

Place the product with front panel upright on a working table. Use a magnetic head screw driver so that no screws are dropped in the product. After turning off the power, the filter changer can be turned by hands.

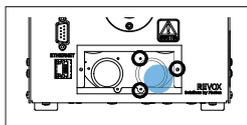
1. Turn off the power. Untighten the two screws marked with circles and remove the filter changer cover. Turn the filter changer so that the hole on which a filter should be placed is around the center of the opening.



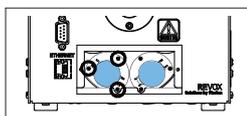
2. Place a filter onto a hole as shown in the right figure.



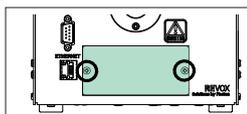
3. Put a filter holder on the filter and secure it with three screws enclosed with filter holders in the carton box. Screw position is marked with three circles in the right figure.



4. Repeat the above procedures to install all filters required.

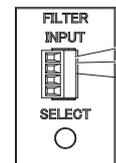


5. Reattach the filter changer cover and secure it with screws.



3 Control methods

Filter changer can be controlled in the following three control methods: When the power is turned on, the filter No.1 is positioned behind the light guide adapter.

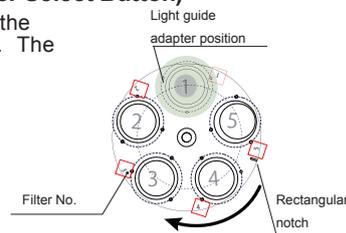


▶ Ethernet/RS-232C communications control

Filter No. can be selected by Filter No. Setting Commands. Refer to Page 6 to 7.

▶ Panel mode control (with Filter Select Button)

When you push the button once, the filters shift to another one by one. The changer will turn clockwise.



▶ Parallel communication control with external input (External Input Screw Terminal Block for Filter Changer)

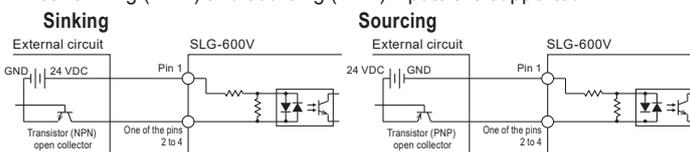
Filter No. Input Terminals (4 pins) are mounted. Through the External Input Screw Terminal Block, input the Filter No. in binary as shown below.

Pin No.	Function	Filter No.	Pin 4 (BIT 2)	Pin 3 (BIT 1)	Pin 2 (BIT 0)
1	Input COMMON	1	OFF	OFF	OFF
2	Filter No.BIT 0	2	OFF	OFF	ON
3	Filter No.BIT 1	3	OFF	ON	OFF
4	Filter No.BIT 2	4	OFF	ON	ON
		5	ON	OFF	OFF

Note: The above settings are in case the setting of FB/LOGIC Setting Screen is POSITIVE. In case NEGATIVE is set, the logic is reversed.

Input signal specifications					
Rated input voltage	Maximum input voltage	ON voltage/ ON current	OFF voltage/ OFF current	Response time	Input impedance
24 VDC	26.4 VDC	20 VDC min./ 6 mA min.	3 VDC max./ 1 mA max.	Approx. 10 ms	12 kΩ (per terminal)

Both sinking (NPN) and sourcing (PNP) inputs are supported.



Note: The AWG of the cables connectable to the External Input Screw Terminal Block should be from 16 to 28.

Note: Filter changer response time is 100m±20ms.

Note: Whether the filter setting is completed can be confirmed by checking the filter number indicated on LCD has been changed or not. The filter number shown on LCD is selected.

10 Error Information Screen

The item that corresponds to the error will be highlighted. For example, a shorted drive circuit is indicated in the screen shown below.



#	Item	Description	Restoration Method	Error Lamp
1	Light Source Module Temperature Abnormality Output	The temperature of the light source module has reached to the one to be alerted to. The light output will stop.	Turn off the power. After the light source module temperature decreases, turn on the power again.	Lighting
2	Light Intensity Feedback Control Error Status	Intensity Feedback Control is unavailable. The light output will not stop.	1. Disable intensity feedback control. 2. Retry STB LIGHT setting.	Flashing
3	Light Source Module Status Detection	An open or shorted drive circuit has occurred. The light output will stop.	Please inquire REVOX (info@revox.jp).	Lighting

Press the MENU Button to switch between the Operation Screen and this screen. If the light output stops, the ⊗ icon will be displayed at the center of the intensity indicator on the Operation Screen.

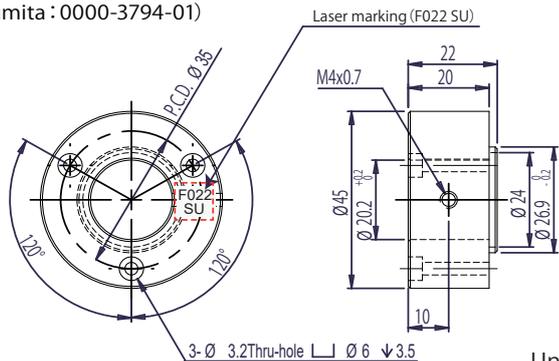
Eliminate the cause of the error and then cycle the power. If the error continues after cycling the power, contact REVOX (info@revox.jp).

11 Optional Accessories (Sold Separately)

Light Guide Adapter (Applicable to light guide of OFφ8 to 14)

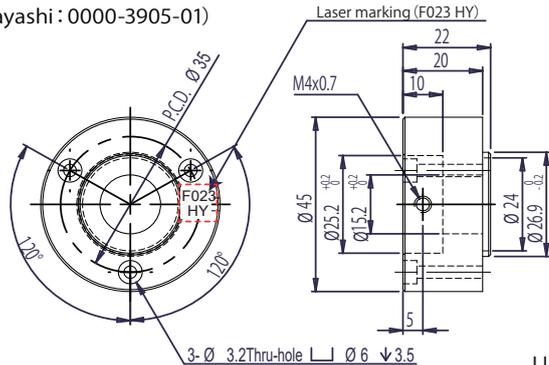
F022

(For Sumita : 0000-3794-01)



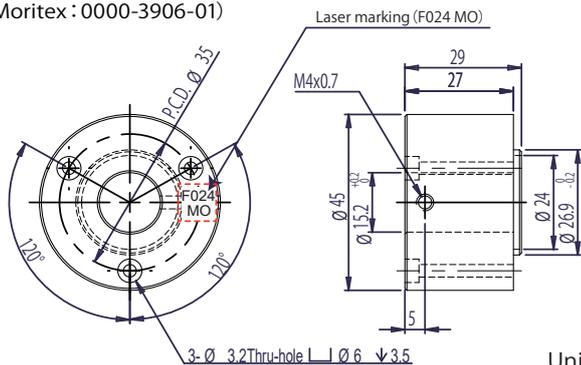
F023

(For Hayashi : 0000-3905-01)



F024

(For Moritex : 0000-3906-01)

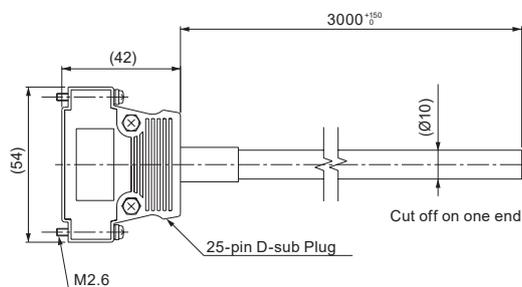


*A light guide adapter is not provided with the product. Please order one separately.
*For light guide adapters other than those shown above, please inquire REVOX.

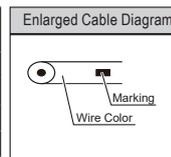
External I/O cable

CBL-D25-3

(Supports digital intensity control and analog intensity control.)

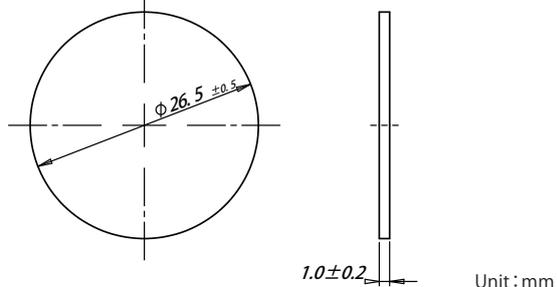


Pin No.	Wire color	Marking color	Pin No.	Wire color	Marking color
1	Black	-	16	Blue	Black
2	White	-	17	Purple	Black
3	Red	-	18	Gray	Black
4	Green	-	19	Pink	Black
5	Yellow	-	20	Light Green	Black
6	Brown	-	21	Black	White
7	Blue	-	22	Red	White
8	Purple	-	23	Green	White
9	Gray	-	24	Yellow	White
10	Pink	-	25	Brown	White
11	White	Black	NC	Blue	White
12	Red	Black	NC	Purple	White
13	Green	Black	NC	Gray	White
14	Yellow	Black	NC	Pink	White
15	Brown	Black	NC	Light Green	White



Dimensions of recommended filter

FILTER (φ26.5±0.5×1.0±0.2)

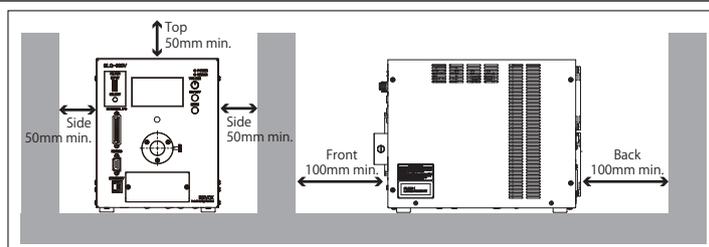


Recommended Filters

Filter Model No.	Filter color
DFY-520A	Yellow
DFM-495A	Magenta
DFC-590A	Cyan
DFB-500A	Blue
DFG-505A	Green
DFR-610A	Red

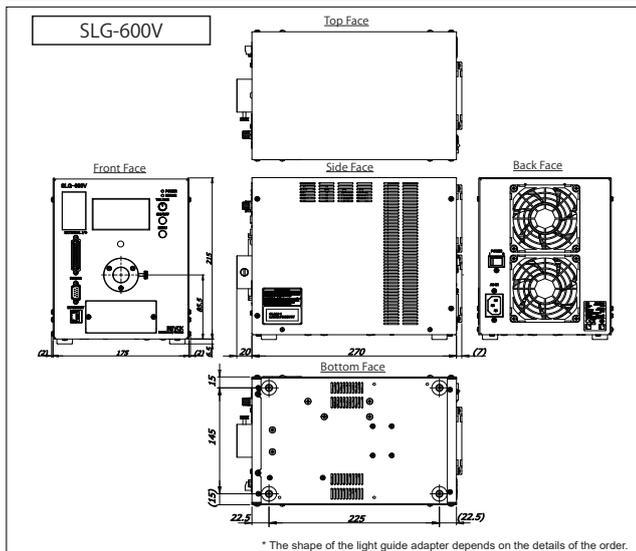
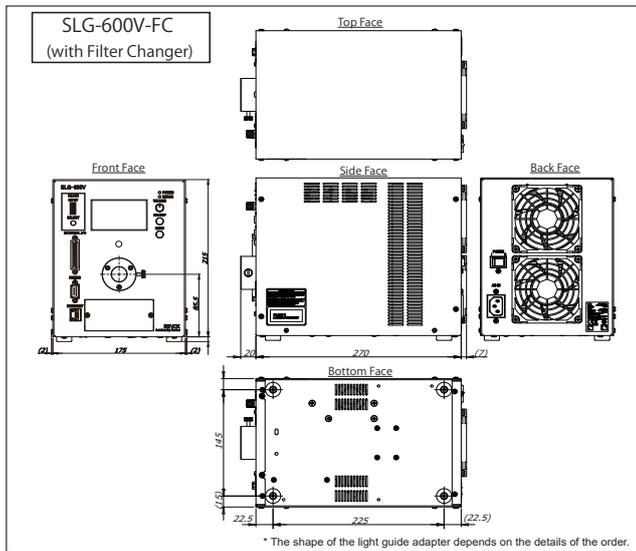
12 Installation Instructions

Be sure to install the product in a well-ventilated room. In order to ensure enough room for air circulation around the unit, maintain the clearance 100 mm or more at the front and the back and 50 mm or more on the top and the side.



13 Main Specifications

Product name	Ultra-High Intensity Fiber Optic Illuminator	
Model	SLG-600V	SLG-600V-FC (with filter changer)
Applicable fiber bundle diameter	Ø8 to 14 mm	
Light color	White	
Correlated color temperature	5600K (typ.)	
Light distribution angle	30° (Full angle)	
Drive method	Constant-current drive	
Light control method	Variable-current control	
Number of channels	1 channel	
Input power supply	100 to 240 VAC (±10%), 50/60 Hz	
Power consumption (typ.)	350 VA(100VAC), 370VA(240VAC)	
Inrush current (typ.)	40A from a cold start	
Ground leakage current	0.5 mA max. (240 VAC, 60 Hz, with 100% load)	
Insulation withstand voltage (Input-Output) (Input-FG)	1,500 VAC for one minute, cutoff current: 10 mA, 500 VDC, 20 MΩ min.	
Operating environment (indoor use only)	Temperature: 0 to 40°C, Humidity: 20% to 80% (with no condensation) Altitude: 2,000m max. AC Overvoltage: Category II Pollution Degree: 2	
Storage environment	Temperature: -15 to 60°C, Humidity: 20% to 85% (non-condensing)	
Cooling method	Forced cooling	
CE	Safety standard : conforms to EN61010-1,EN62311-2008 EMC standard : conforms to EN61000-6-2, EN61000-6-4, EN50581-2012	
RoHS Directive	Compliant	
Material, coating, and surface processing	Aluminum alloy (Red alumite)	
Weight	8kg max.	8.5kg max.
Accessories	One Instruction Guide, One 2-m-long 3-pole AC power cable with ground terminal, (Only for SLG-600V-FC) five filter holders and 18 screws for filter holders	



Environmental Regulation

EU RoHS Directive

The RoHS Directive is short for the "restriction of use of certain hazardous substances in electrical and electronic equipment." As a directive, it restricts the use of specific hazardous substances for new electrical and electronic equipment marketed in the EU on or after July 1, 2006, and restricts the use of six substances, which are (1) lead, (2) mercury, (3) cadmium, (4) hexavalent chromium, (5) polybrominated biphenyl (PBB), and (6) polybrominated diphenyl ether (PBDE)

NOTE: Standards for "RoHS Directive-Compliant Products"

Lead	Mercury	Cadmium	Hexavalent chromium	PBB	PBDE
100ppm max.	100ppm max.	100ppm max.	100ppm max.	100ppm max.	100ppm max.

(Items that are exempted in the RoHS Directive are excluded from these standards.)

China RoHS Directive

China RoHS Directive is formally known as "Management Methods for Restricting Hazardous Substances Used in Electric and Electronic Products", which was implemented on July 1, 2016 in China. Same as EU RoHS Directive, this regulation restricts the usage of six substances such as lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyl (PBB), and polybrominated diphenyl ether (PBDE). This regulation requires electronic information products which are manufactured or imported, and sold in China, to clearly disclose contents of the 6 restricted substances listed below.

Names and contents of hazardous substances

Usage Deadline for Environmental Protection	Product name	Names and contents of hazardous substances					
		Lead (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent chromium (Cr(VI))	PBB	PBDE
10	Light, Control Unit, or Optional product	×	○	×	○	○	○

(This table is made in compliance with SJ/T11364 regulations.)

○ : Indicates that this toxic or hazardous substances contained in all the homogeneous materials for this part, according to GB/T26572 is within the limit requirement.

× : Indicates that this toxic or hazardous substance contained in all the homogeneous materials for this part, according to GB/T26572, is over the limit requirement.

*Lead and cadmium are excluded in EU RoHS

Usage deadline for environmental protection

The number used in this logo is based on "Management Methods for Restricting Hazardous Substances Used in Electric and Electronic Products" and related regulations from People's Republic of China. It shows the product usage duration in years for environmental protection. After finishing a product usage, the product needs to be re-used or discarded appropriately following local law and regulations, complying with safety and usage caution.

环保使用期限	产品	产品中有毒物质的名称及含量					
		铅 (Pb)	汞 (Hg)	镉 (Cd)	六价铬 (Cr(VI))	多溴联苯 (PBB)	多溴二苯醚 (PBDE)
10	照明、电源或任选附件	×	○	×	○	○	○

(本表格依据 SJ/T11364 的规定编制。)

○ : 表示该有毒有害物质在该部件所有均质材料中的含量均在 GB/T26572 标准规定的限量要求以下。

× : 表示该有毒有害物质至少在该部件的某一均质材料中的含量超出 GB/T26572 标准规定的限量要求。

(注) 铅和镉中的 "×", 因欧洲 RoHS 没有限定, 故用 "○" 表示。

环保使用期限

此标志的数字是根据中华人民共和国电器电子产品有害物质限制使用管理办法以及有关标准等, 表示该产品的环保使用期限的年限。遵守产品的安全和使用上的注意, 在产品使用后采取适当的方法根据各地法律, 规定, 回收再利用或进行废弃处理。

Warranty Information

EXCEPT FOR THE EXPRESS WARRANTIES STATED IN THIS DOCUMENT, REVOX MAKES NO ADDITIONAL WARRANTIES, EXPRESS, IMPLIED, OR STATUTORY, AS TO ANY MATTER WHATSOEVER. IN PARTICULAR, ANY AND ALL WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. EXCEPT AS EXPRESSLY SET FORTH HEREIN, REVOX MAKES NO WARRANTIES WITH RESPECT TO THE PRODUCTS.

WARRANTY PERIOD: ONE YEAR, STARTING FROM REVOX Inc. SHIPPING DATE.

REVOX Inc. WILL REPAIR OR REPLACE THE PRODUCT FREE OF CHARGE IF IT SHOULD FAIL TO FUNCTION OR IF THE RADIANT QUANTITY OF THE PRODUCT SHOULD DROP TO 50% OR LESS OF ITS INITIAL RADIANT QUANTITY WITHIN THE SPECIFIED WARRANTY PERIOD. IF EITHER OF THESE CONDITIONS OCCURS, PLEASE TAKE THE PRODUCT TO YOUR REVOX SALES REPRESENTATIVE.

WARRANTY TERMS

- REVOX Inc. WILL REPAIR OR REPLACE THE PRODUCT FREE OF CHARGE IF IT SHOULD FAIL TO FUNCTION UNDER USE ON OUR SPECIFIED CONDITION IN ACCORDANCE WITH THE INSTRUCTION GUIDE AND OTHER WRITTEN CAUTIONS DURING THE INDICATED WARRANTY PERIOD OF TWO YEARS.
- REVOX Inc. WILL REPAIR OR REPLACE THE PRODUCT FREE OF CHARGE IF ITS RADIANT QUANTITY SHOULD DROP TO 50% OR LESS OF ITS INITIAL RADIANT QUANTITY UNDER USE ON OUR SPECIFIED CONDITION IN ACCORDANCE WITH THE INSTRUCTION GUIDE AND OTHER WRITTEN CAUTIONS DURING THE INDICATED WARRANTY PERIOD OF ONE YEAR.
- REVOX Inc. WILL CHARGE A REPAIR FEE UNDER THE FOLLOWING CONDITIONS:
 - IF THE PRODUCT HAS BEEN SUBJECT TO MISUSE, UNAUTHORIZED REPAIRS, OR MODIFICATION FROM ITS ORIGINAL DESIGN.
 - IF THE PRODUCT HAS BEEN DAMAGED FROM IMPACTS DUE TO INAPPROPRIATE HANDLING.
 - IF DAMAGE TO THE PRODUCT RESULTS FROM EXTERNAL CAUSES INCLUDING ACCIDENTS, FIRE, POLLUTION, RIOTS, COMMUNICATION FAILURES, EARTHQUAKES, THUNDERSTORMS, WIND AND FLOOD DAMAGE, OR ANY OTHER ACT OF PROVIDENCE, OR FROM ANY EXTRAORDINARY CONDITIONS SUCH AS ELECTRICAL SURGES, WATER LEAKAGE, CONDENSATION, OR THE USE OF CHEMICALS.
 - IF THE DAMAGE RESULTS FROM CONNECTION TO ANY POWER SUPPLY OR TO ANY EQUIPMENT WHICH REVOX Inc. DOES NOT MANUFACTURE OR DOES NOT SPECIFY FOR USE.
- REVOX ASSUMES NO LIABILITY FOR ANY PURCHASER'S SECONDARY DAMAGE (DAMAGE OF EQUIPMENT, LOSS OF OPPORTUNITIES, LOSS OF PROFITS, ETC.) OR ANY OTHER DAMAGE RESULTING FROM A FAILURE OF OUR PRODUCT.

THIS WARRANTY INFORMATION PROVIDES THE SCOPE OF REVOX'S PRODUCT WARRANTY WITHIN THE SPECIFIED PERIOD, AND DOES NOT INDICATE OR IMPLY ANY FURTHER GUARANTEE BEYOND THE WARRANTY TERMS.

CONTACT REVOX FOR INQUIRIES OR INFORMATION ON REPAIRS TO THE PRODUCT AFTER THE EXPIRATION OF THE WARRANTY.

NOTE: THE RADIANT QUANTITY REFERS TO THE WATTAGE OF PHYSICAL ENERGY RADIATED FROM AN LIGHT SOURCE. IT REFERS TO THE RADIATION LUMINOSITY OF THE LIGHT SOURCE MEASURED UNDER CONDITIONS SPECIFIED BY REVOX OR THE RADIATION ILLUMINATION OF THE LIGHT SOURCE UNDER SPECIFIED IRRADIATION CONDITIONS. REVOX SPECIFIES THE RADIANT QUANTITY FOR EACH LIGHT BECAUSE THE MEASUREMENT AND IRRADIATION CONDITIONS VARY FROM THE FORM, THE APPLICATION AND THE IRRADIATION WAVELENGTH.

Do not use the product in the following situations.

- Under conditions or in an environment not described in this instruction guide.
- In nuclear energy control systems, railroad systems, aviation systems, vehicles, combustion equipment, medical equipment, amusement machines, or safety equipment.
- In applications involving serious risk to life or property, particularly applications demanding a high level of safety.

- Contents of this Instruction Guide may be changed without prior notice.
- Illustrations used in this Instruction Guide may differ from actual products.
- REVOX maintains the copyright on this Instruction Guide. Unauthorized transfer or reproduction is strictly prohibited.

- For information on compliance with product standards and environmental regulations, refer to the REVOX website or to product catalogs.

Ask any product queries to the following.

REVOX, Inc.
Solutions by Photon

Headquarters Kamimizo1880-2 SIC-3, Chuuo-ku, Sagami-hara-shi, Kanagawa 252-0243 Japan

Phone : +81-42-786-0371 Fax : +81-42-786-0372 E-mail : info@revox.jp

Use our website for the detail. <http://www.revox.jp>