



EQUIPMENT Operation Manual



Loctite[®] CL10 Quad LED Controller

Part Number 1514634



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1 Caution

Info:

【Warning instructions in this manual and on labels are classified as described below.】



WARNING: This means that possible death or serious injury to the operator may result if these instructions are ignored and the equipment is handled incorrectly.



Forbidden: This symbol means that the instruction describes a prohibited item or action.



ELECTRICAL EQUIPMENT: This symbol means there is a possibility of serious injury by high voltage.



Heating: This symbol means there is a possibility of serious injury due to high temperatures.



Info



Ultraviolet radiation warning: This symbol means that a possible serious injury may occur due to ultraviolet radiation. Wear safety glasses.

1.1 Safety Instruction



Make sure to read these “safety Instructions” carefully before starting to use the equipment and observe them during operation. Please familiarize yourself with warning instructions and labels.



Forbidden

- Disassembly and modification is prohibited.
- Do not touch the display or repair the equipment when something is wrong with the equipment.
- In case of power plug damage, stop using the equipment.
- Should an abnormal condition found such as smoking, abnormal smell or noise, turn off the power immediately and then disconnect the power cable from the AC outlet.



When internal inspection or repair is needed, contact the selling agent or Marketing Department of Henkel AG & Co. KGaA.



Warning

- Disassembly and modification is prohibited.
- Make sure that the power voltage in use complies with specifications.
- Disconnect the power supply after finishing working.
- Please hold power plug when pulling out the power cable. Don't hold the cable, it is possible to be injured by electrical shock.
- Do not allow liquid to enter the equipment.
- Disconnect the power supply before cleaning the equipment. Do not use an organic solvent to clean the cabinet.
- In the case of an abnormal condition, stop using the equipment immediately.

1.2 Out of Box Inspection

Open Loctite® CL10 Quad LED Controller package carefully and check if components were damaged during delivery. Please inform carrier if unit is damaged. Make a claim for damage with the carrier and inform manufacturer immediately.

1.3 Packing list

CL10 Quad LED Controller	x1
220V Power Cable	x1
97201 Foot Switch	x1
Q1 Adapter	x1

2 Overview

Loctite® CL10 Quad LED Controller, the UV light source is in accordance with JIS C6802 “LED Safety Standard”, LED product classifications: 3B, wavelength: 365 or 405nm, meets the requirement of UV curing in Optical, Electronic, Optical Fiber, communication and printing industry.

Advantage:

1. Long working time, more than 20,000 working hours.
2. Thermal radiation free, low temperature change on irradiated surface, resolves heat damage issues.
3. Uniform distribution of irradiating.
4. PB free.
5. Low energy consumption, as compared with mercury lamp systems, up to 90% energy savings.
6. Small and easy to carry and install.
7. Low maintenance cost.

There are 5 production modes integrated in this equipment, C.C mode, OPT mode, PWM mode, step mode and manual mode. Can meet the requirements for most industries. Equipment can be connected with up to four foot switches, or can connect with a PLC I/O, easy to manage the production line. There is a LED over heating warning inside.

3 Technical Data

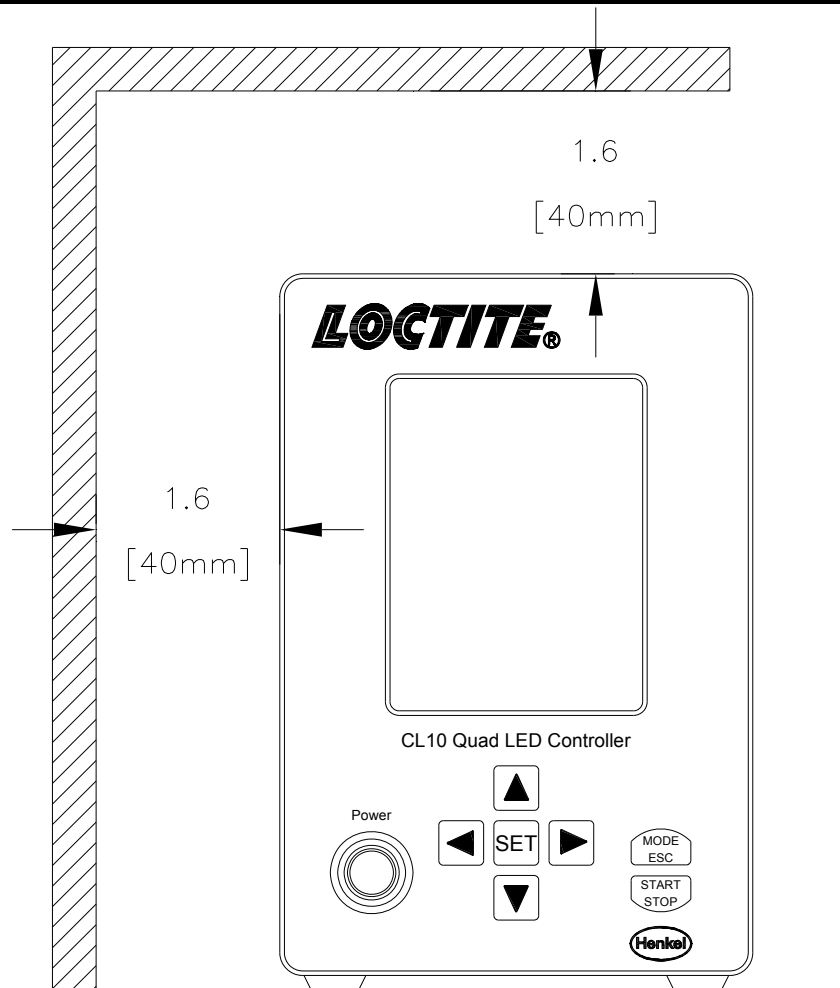
Type	LOCTITE 1514634	
MODE	C.C.	Intensity (0%~100%), Time (0.1~999.9 seconds)
	Manual	Intensity (0%~100%), Time: Manual control
	OPT	Lens bonding
	STEP	10 steps, each step can define intensity and time independently.
	PWM	Intensity (0~100%) , Time (Max.999.9 seconds)
Power Supply	AC100-220V 50/60Hz MAX 1.5A	
Power consumption	30W	
Cooling method	Natural air cooling	
Temperature range	Operating:+5~+35°C , Storage:-15~+65°C	
Humidity Range	20~85%	
Cabinet Material	aluminum	
Quantity	2Kg	
Wavelength	365nm, 405nm	

4 Installation



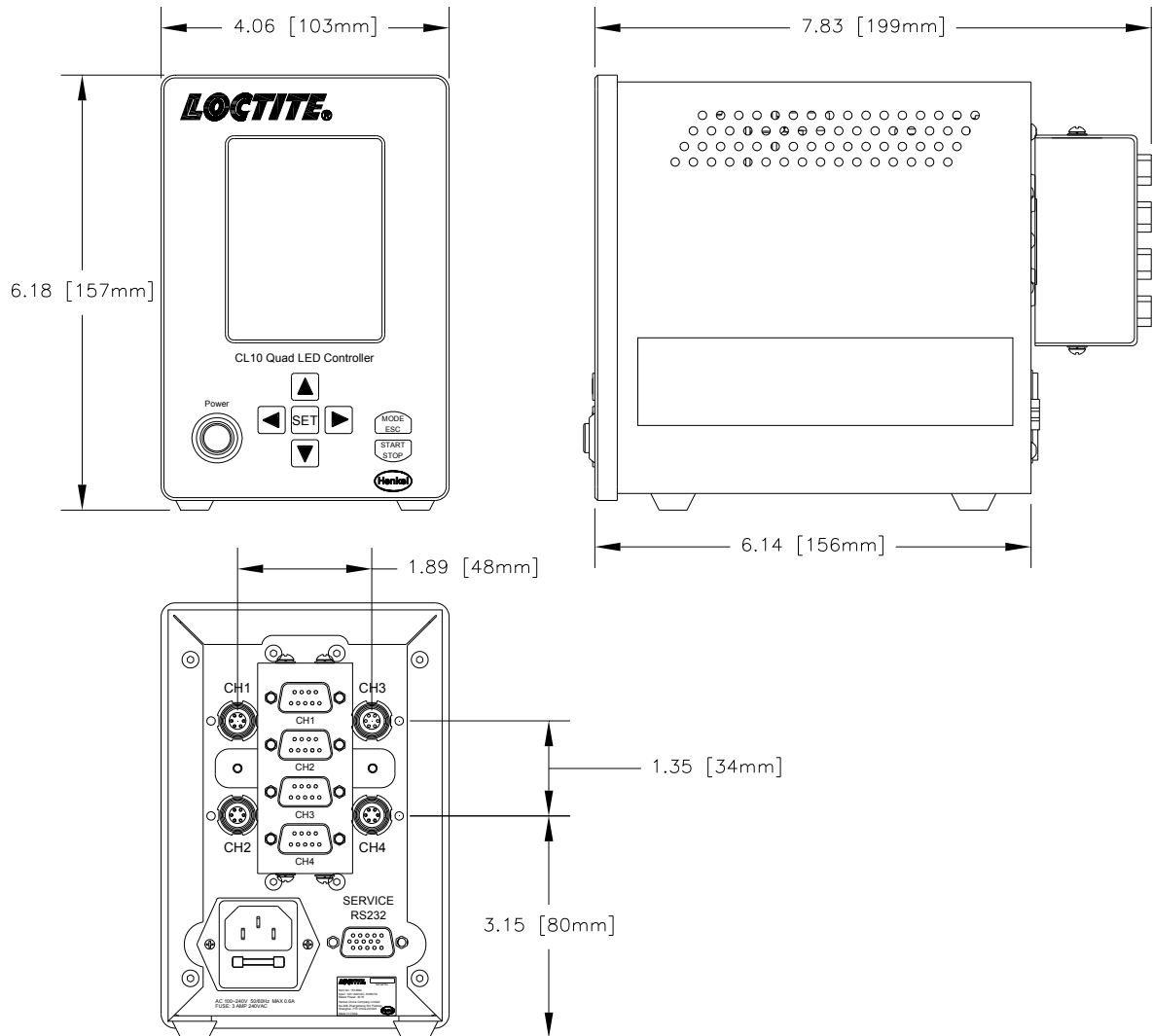
Please check the unit for any mechanical defects. If there is any breakage due to delivery, please stop using equipment and return to supplier.

4.1 Capacity



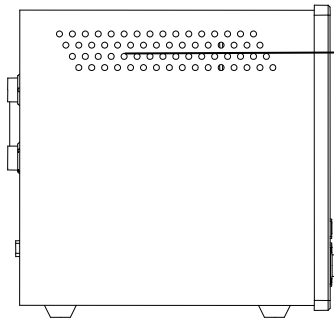
Minimum space required for the equipment.

4.2 Dimensions



4.3 Caution

- Set the unit horizontally on a level surface. Failure to do so can cause the equipment to stop working normally, over heat, or other damage can occur.
- Avoid places with high voltage machinery.
- Make sure nothing can be placed on power cable, and that it will not be reachable by the operator.
- Keep away from heating sources.
- Avoid places with high temperatures or extreme cold.
- Allow for adequate ventilation so that exhaust from the heat outlet does not remain around the equipment.

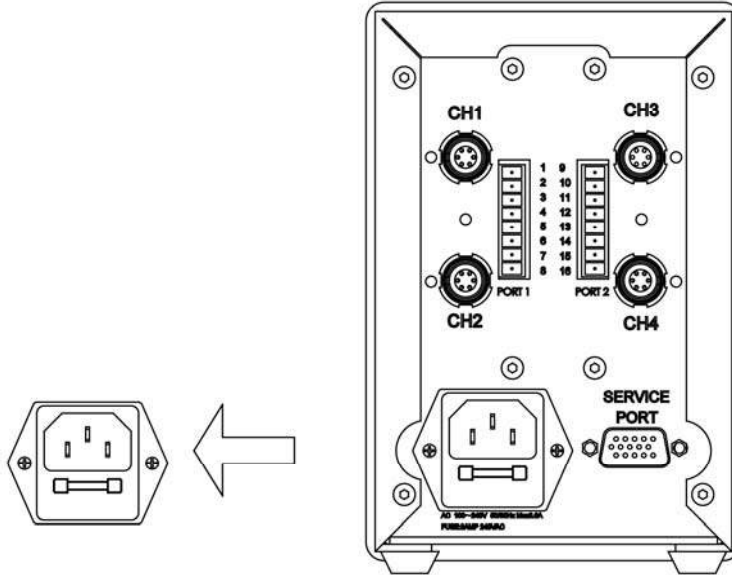


Info:

- Where there are ventilation holes, please do not block
- Make sure unit is well ventilated

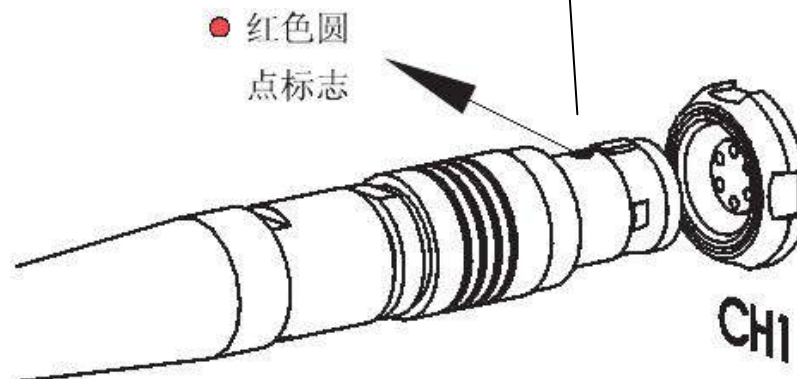
4.4 Installation Flow

1. Place the controller properly.
2. Connect power cable to the controller, as pictured below.

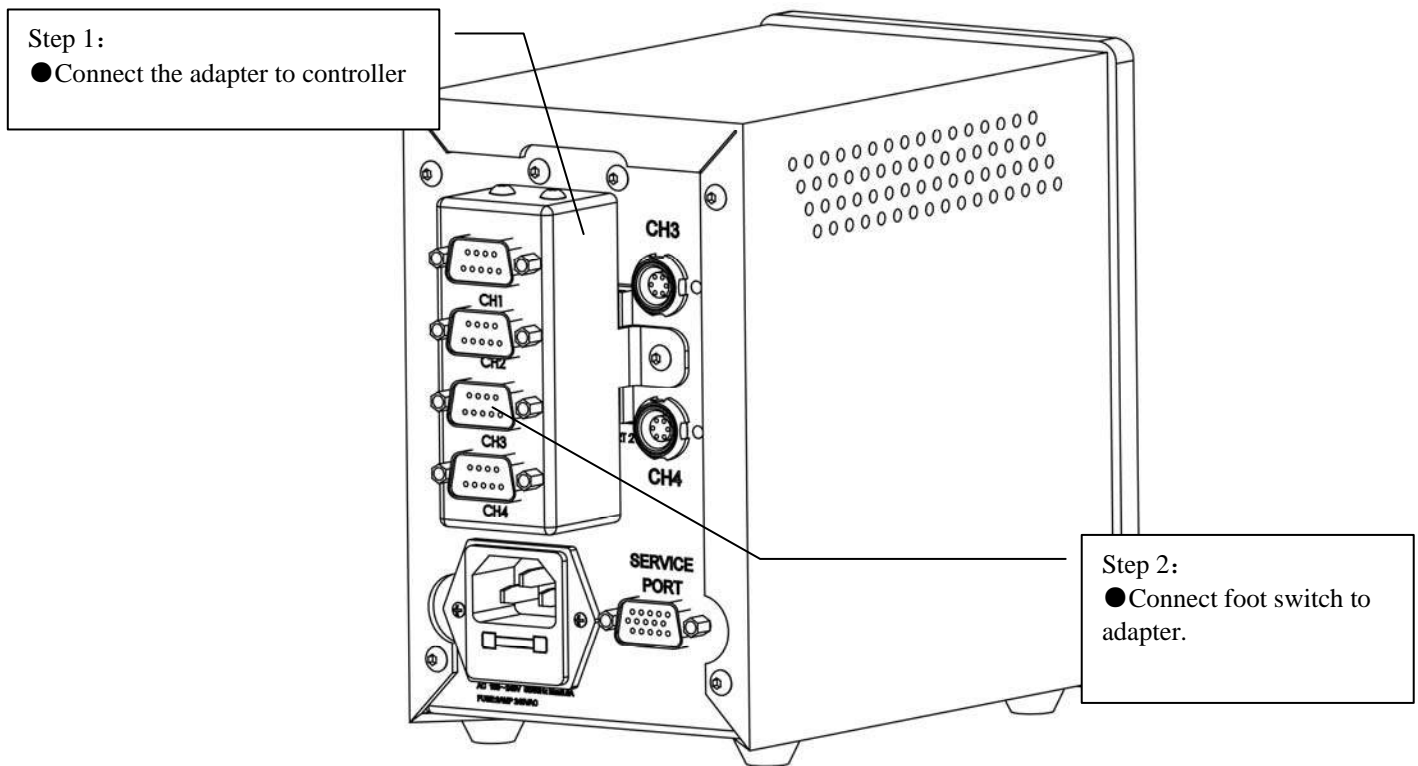


3. There are 4 LED head connectors on the back side of the controller named CH1, CH2, CH3, CH4. Connect LED heads one at a time.

Align the groove on the main unit and red point on the LED head unit, with the cable plug.



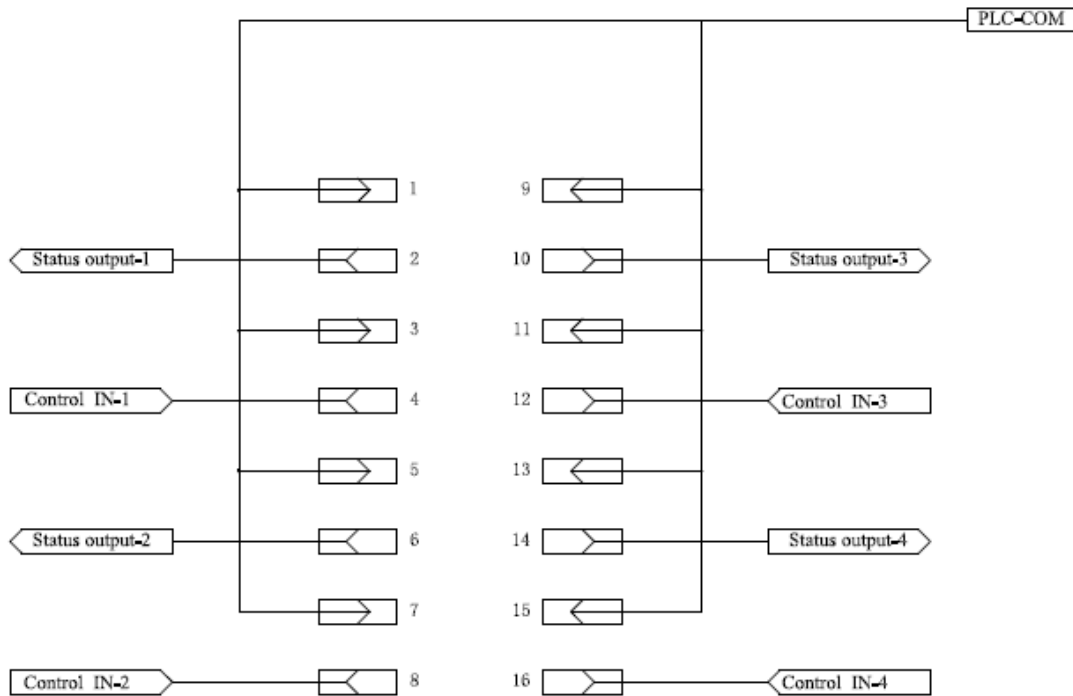
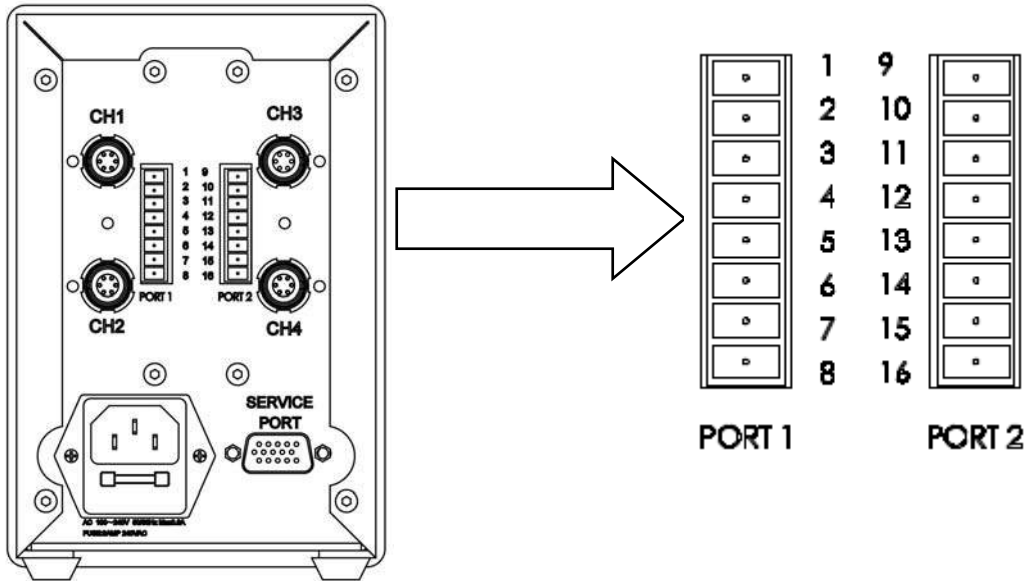
4. Connect foot switch (option)



Caution:

- When connecting the adapter to the controller, be sure to align the numbers as shown above. Be sure to insert the connector fully. After finishing, symbol “CH1”, “CH2”, “CH3”, “CH4” should in up direction.
- To operate CH’s switch, press one time to turn on the LED head, press again to turn off. Output signal follows PLC standard level .0V means LED head is working.

5. Connect PLC (Option)

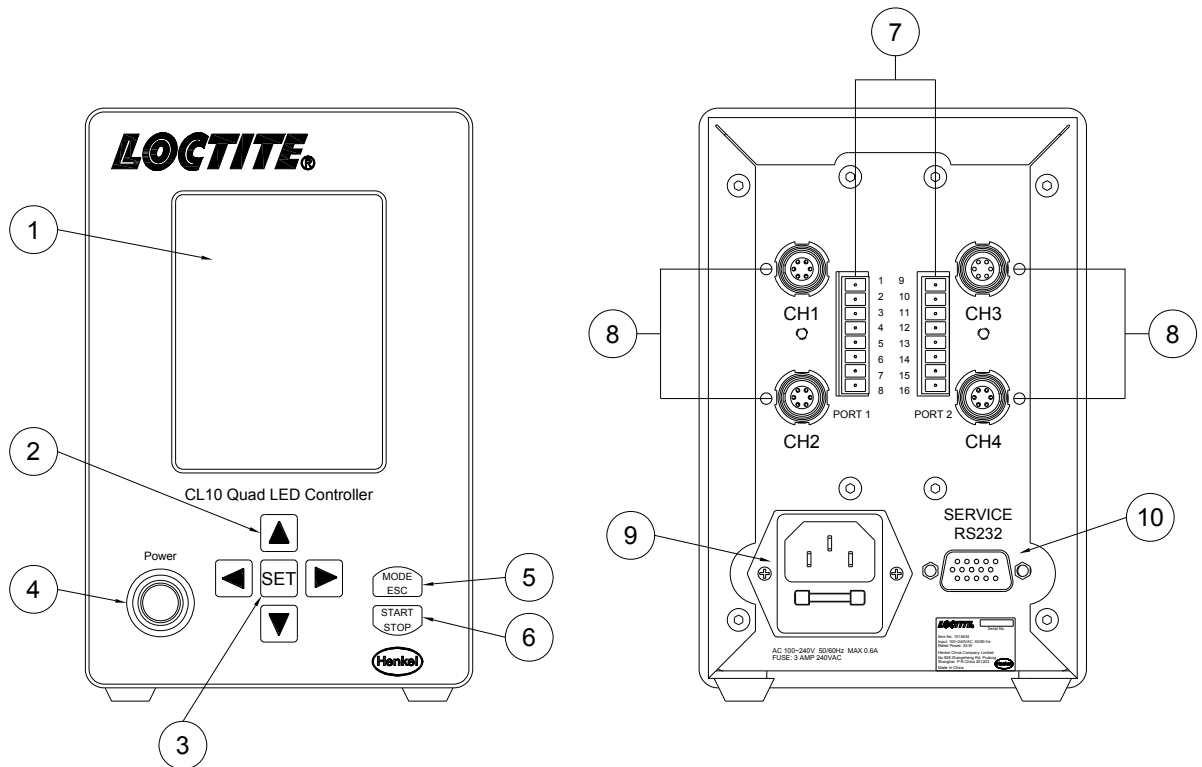


Note:

- To operate CH's switch, press one time to turn on the LED head, press again to turn off.
- Output signal follow PLC standard level 0~24V
- 0V means LED head is working.

5 Controller button and operating panel

5.1 Component name and function



1. LCD display: All settings data and information will be shown here.
2. Arrow Key: Move cursor up/down or left/right.
3. SET Button: Confirm or enter menu.
4. Power Switch: Power On/Off
5. Mode/ESC: Back or exit menu.
6. Start/Stop: Enter or exit pre-irradiance mode.

Note:

- ◆ Pre-irradiating mode: When controller is in pre-irradiating mode, you can turn on/off LED heads using the foot switch. (When turned on, <Working> will show on display. It will disappear when turned off.

7. Control port: LED head control signal input.
8. LED head connector.
9. Power cable connector.
10. Service port.

5.2 Button and operating panel instructions

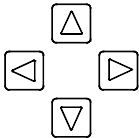
5.2.1 Controller button instruction



Mode/ESC: Back or exit menu without change.



Start/Stop: Enter or exit pre-irradiance mode.

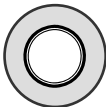


Arrow Keys: Move cursor up/down or left/right.



SET Button: Confirm or enter menu.

Power



Power Switch: Power On/Off.

5.2.2 LCD Display Instruction



<OK>: Confirm change.



<STEP>: Go to step panel.



<Version>: To version information.



<Parameter>: To Parameter panel.



<Language>: To language panel.



<R/S>: Enter or exit Pre-irradiance mode.

5.2.3 Parameter cursor status



unchangeable: Cursor is dark, means it cannot be changed.



changeable: Cursor in half dark, means it can change mode and parameters through the arrow keys.

5.2.4 Information on LCD display



Pre-irradiance mode: In Pre-irradiance mode, LED head unit on/off is controlled by the foot switch or PLC signal.



Parameter setting information: Parameter change successful.



Language setting information: Language change successful.

Error, has recovered

Errors can happen with equipment due to incorrect operation, and can be recovered. If this happens frequently, please contact the manufacturer.

Please re-set parameter

Parameter missing due to interrupt or incorrect operation, please reset parameter.

Please wait...

Equipment is processing data, please wait.

5.3 Operation

5.3.1 Startup



Warning



- Please place this equipment in a stable space.
- Avoid a place with high voltage machinery.
- Please do not block its ventilation holes.
- Don't expose to flammable gas.
- Don't use in high temperatures or extreme cold.
- To avoid electric shock, don't use the equipment when servicing.

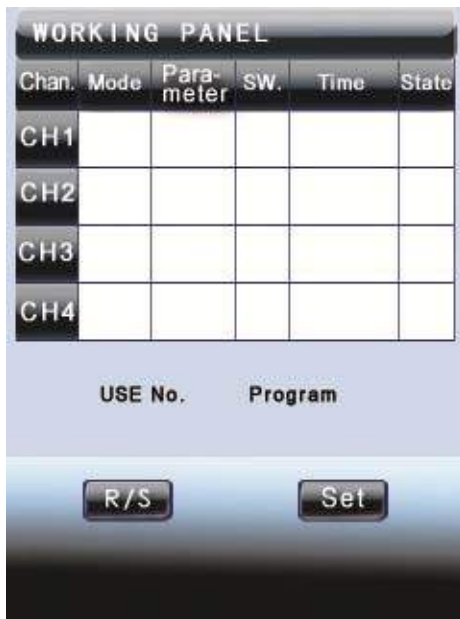


Caution

- To avoid button damage, please don't press the button with high pressure.
- Please avoid metallic foreign matter from entering the LED head connector, will cause short, damage and fire.
- Don't connect any non LED head cable to the connector, it will cause error and damage.

5.3.2 Starting Controller

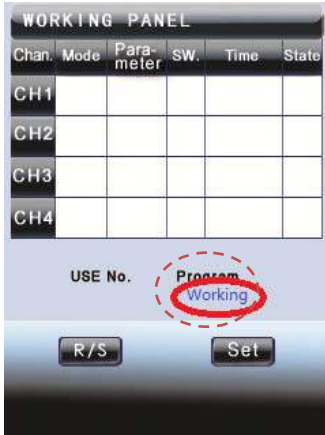
After finishing installation, plug in power cable, then press . When the red LED light inside of  turns on, the LCD will show processing as follows:



- To avoid incorrect operation, all buttons will be forbidden except <Start/Stop> button in Pre-irradiance mode.

5.3.3 Working Mode:

- In working panel, move the cursor to **R/S**, pressing **SET**, or **START STOP**, will enter working mode. <Working...> will show on display. At that time, you can control LED head by using a foot switch or PLC.



5.3.4 Exit Working Mode:

- Press **START STOP**, then press **SET** to confirm. Equipment will stop running. Foot switch and PLC controlling will be disabled.



5.3.5 Standby Mode Setting:



- Enter Parameter Panel
- Move cursor here
- Choose “Enable” and “Disable” by pressing the Up/Down arrow key.

Note:


- ◆ “Enable”——Controller will enter Pre-irradiance mode automatically during startup.
- ◆ “Disable”——Controller can enter standby mode by operating manually.

5.3.6 Password setting in Parameter Panel

When this panel is shown, key in the password as shown in the following step:

- Key in password:




- Move cursor to “*”.
- Change (0~9) by Up/Down arrow key, Change target by Left/Right arrow key.
- Press  to confirm.



Change password:





- Move cursor to "*".

● After keying in password, press  to change the password

● Change (0~9) by Up/Down arrow key, Change target by Left/Right arrow key.

● Press  to confirm after keying in new password. After two times keying in, press , the password is changed.

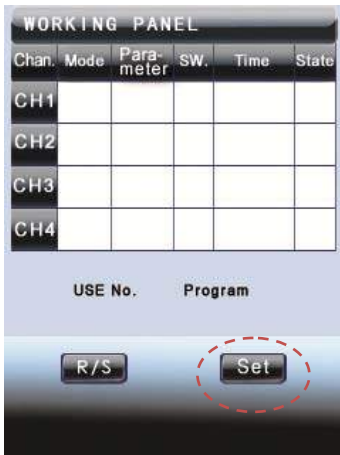
Note:

- To reset password, hold  and  when turning on controller. The password will reset back to default.
- Default password: 1234.

5.4 Parameter Setting

5.4.1 Enter Parameter Panel

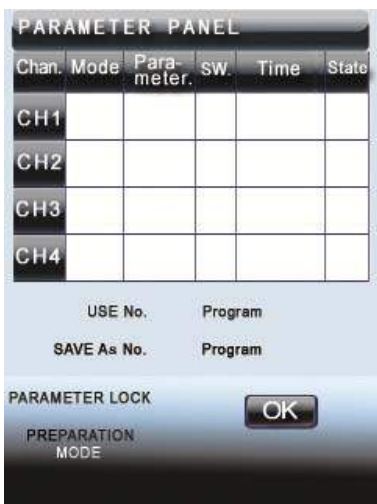
1. Move cursor to **SET**



2. Press **SET** to enter <Menu>, move cursor to **Parameter**



3. Press **SET** to enter parameter panel.



5.4.2 Working Mode Setup

- Move cursor to the cell that is under <Mode>

Chan.	Mode
CH1	PWM
CH2	C.C.
CH3	OPT
CH4	STEP

- Press  to change, cursor goes to half dark.



Chan.	Mode
CH1	PWM
CH2	C.C.
CH3	OPT
CH4	STEP

- Change mode type using arrow key.

Chan.	Mode
CH1	MAN
CH2	C.C.
CH3	OPT
CH4	STEP

- Press  to confirm.

Chan.	Mode
CH1	MAN
CH2	C.C
CH3	OPT
CH4	STEP

- Move cursor to , then press  to confirm change and save data.



- Repeat the flow if needed to change other data in parameter panel.

5.5 Working Mode Description

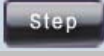

5.5.1 C.C Mode

When selecting constant current mode, the associated head will work with a fixed intensity. The LED head starts working when pressing the foot switch, while the timer counts down. The LED head will stop working when the timer goes to zero. The data in Parameter cell is the output intensity.

5.5.2 PWM Mode

In PWM mode, the associated LED head will work in pulse states. The head starts to work when the foot switch is pressed and the timer counts down. The LED head will stop working when it returns to zero. Data in Parameter means duty-cycle.

5.5.3 Step Mode

Note: In step mode, **Parameter** and **Time** will be unchangeable. You may edit data in step panel. (Move cursor to  in Menu and press  to enter.)

In this mode, the LED head will work step by step after process is finished. There are 10 steps in one action, time and power will follow each step's setting in step panel. For detail please check chapter <STEP MODE>.

5.5.4 OPT Mode

Use the OPT (Optical) mode for lens bonding. We suggest time settings between 0.1~0.2s. Single click foot switch, head works as long as the set time. During that time it is easy to adjust the lens position and also can be sure that the adhesive will not be curing. After adjustment, double click the foot switch, the head will work until the foot switch is clicked again. The Data in Parameter cell means output intensity.

5.5.5 Manual Mode

In manual mode, the LED head starts to work when the foot switch is actuated and stops when is released. The Data in Parameter cell means output intensity.

5.6 Parameter (Intensity) Setting

Chan.	Mode	Parameter
CH1	MAN	100%
CH2	C.C	100%
CH3	OPT	100%
CH4	STEP	100%

- Move cursor to target cell.
- Press **SET** to change the status to changeable. **100%**
- Edit data by up/down arrow keys, press left/right arrow keys to change unit, ten and hundred.
- Finish editing, press **MODE** **ESC** to confirm, cell status goes to unchangeable **100%**.
- Move cursor to **OK** and press **SET** to save.
- Use arrow key to move cursor to the target and edit data as flow

Chan.	Mode	Parameter
CH1	MAN	100%
CH2	C.C	100%
CH3	OPT	100%
CH4	STEP	100%

Note:

If set data >100%, after confirm the data will change to 100% automatically.

If the data set to 0% and confirm & save, related head's output goes to 0, means no output.

5.7 Foot Switch Setup:

Chan.	Mode	Parameter	Sw.
CH1	MAN	100%	1
CH2	C.C	100%	2
CH3	OPT	100%	3
CH4	STEP	100%	4

- Move cursor to target cell
- Press **SET** to change the status to changeable **1**
- Press up/down arrow key to edit data (1~4).
- Select related foot switch, press **MODE ESC** to confirm. Data go to unchangeable. **1**
- Move cursor to **OK** and press **SET** to save.
- Use arrow key to move cursor to the target and edit data as flow.

Note:

Data in Sw. column relates to CH1, CH2, CH3 and CH4 on adapter.
1=CH1, 2=CH2, 3=CH3, 4=CH4.

5.8 Time Setting:

Chan.	Mode	Parameter	Sw.	Time
CH1	MAN	100%	1	010.0s
CH2	C.C	100%	2	999.9s
CH3	OPT	100%	3	001.0s
CH4	STEP	100%	4	020.0s

Time range:
0.1s~999.9s

Note:

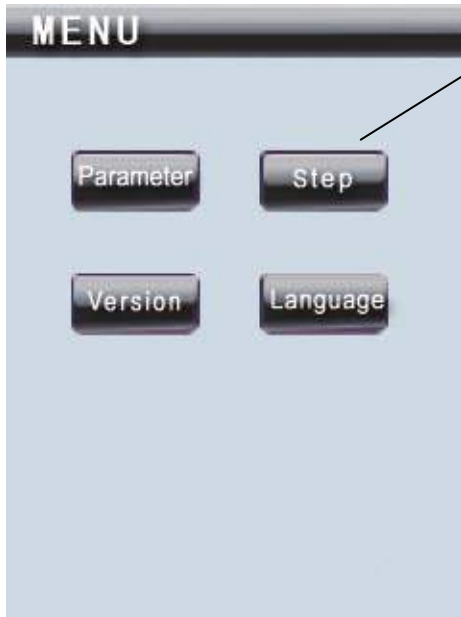
If set time <0.0s, will change to 0.1s automatically after confirm and save. In manual mode, time setting is not working.



- Move cursor to target cell
- Press **SET** to change the status to changeable
010.0s
- Edit data by up/down arrow keys, press left/right arrow key to change units, ten and hundred.
- Select related foot switch, press **MODE** **ESC** to confirm. Data goes to unchangeable **010.0s**.
- Move cursor to **OK** and press **SET** to save.
- Use arrow key to move cursor to the target and edit data as flow.

5.9 Step Mode

In this mode, LED head will work step by step after process finishes. There are 10 steps in one action, time and power will follow each step's setting in step panel.

Setting flow:



- Enter Menu panel
- Move cursor to 
- Press  to step panel (as following picture)



	TIME	POWER
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Note:

1~10: Means from step 1 to step 10

Time: working time for each step

Intensity: Intensity for each step

5.9.1 Time Setup in Step Mode

- Move cursor to target cell
- Press **SET** to change the status to changeable

002.0s

- Edit data by up/down arrow keys, press left/right arrow keys to change unit, ten and hundred.

- Select related foot switch, press to confirm. Data go to unchangeable

**MODE
ESC**

002.0s

- Move cursor to **OK** and press **SET** to save.

	TIME	POWER
1	002.0s	10%
2	010.0s	20%
3	010.0s	30%
4	010.0s	40%
5	010.0s	50%
6	010.0s	60%
7	010.0s	70%
8	010.0s	80%
9	010.0s	90%
10	010.0s	100%

OK

Note:

- ◆ If set time <0.0s, will change to 0.1s automatically after confirm and save.

5.9.2 Intensity Setting

STEP PANEL		
	TIME	POWER
1	010.0s	010%
2	010.0s	20%
3	010.0s	30%
4	010.0s	40%
5	010.0s	50%
6	010.0s	60%
7	010.0s	70%
8	010.0s	80%
9	010.0s	90%
10	010.0s	100%

OK

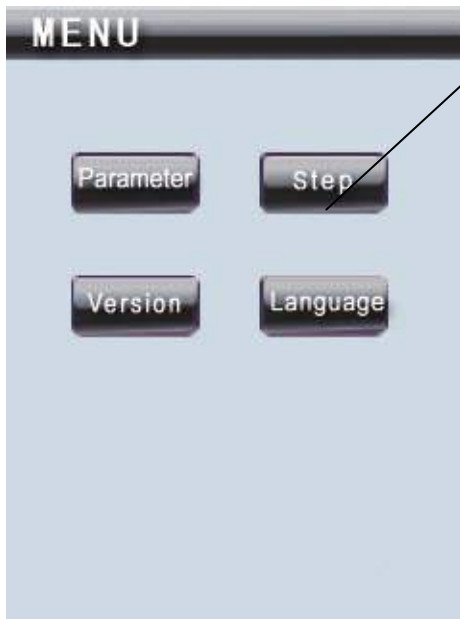
- Move cursor to target cell
- Press **SET** to change the status to changeable **010%**
- Edit data by up/down arrow keys, press left/right arrow keys to change unit, ten and hundred.
- Select related foot switch, press **MODE** **ESC** to confirm. Data goes to unchangeable **010%**.
- Move cursor to **OK** and press **SET** to save.

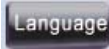

Note:

If set data is >100%, after confirm the data will change to 100% automatically.

If the data set to 0% and confirm & save, related head's output goes to 0, means no output.


5.10 Language Setting



- Enter <Menu>.
- Move cursor to 
- Press  to language panel

- Move cursor to the language type that you want to select.

- Press  to confirm.

- Press  to go back to <Menu>.

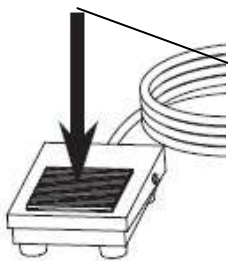
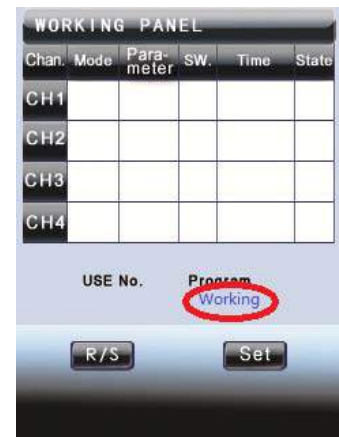


5.11 LED Head Unit and Foot Switch



- Please measure and define working distance properly before using LED head.
- Don't touch the head in use it may cause injury by high temperature.

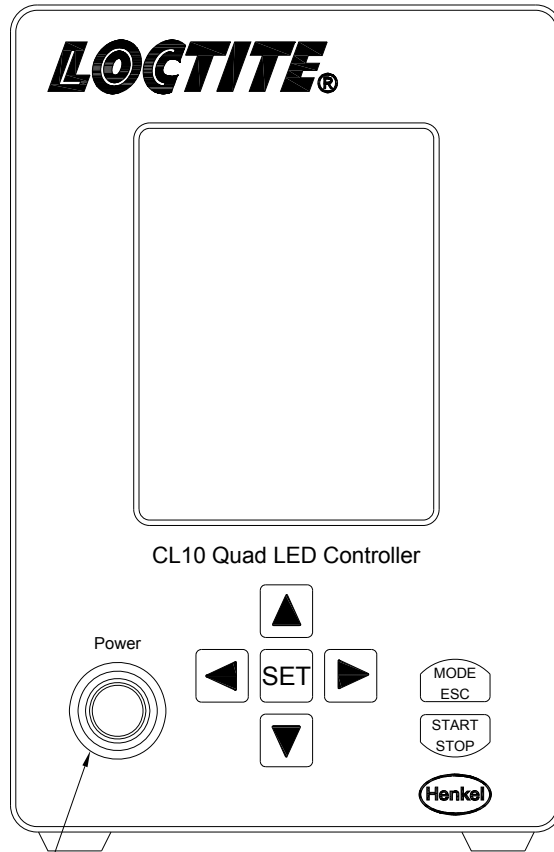
●Working panel will be shown during running.



●Click foot switch, LED head will work as set parameter

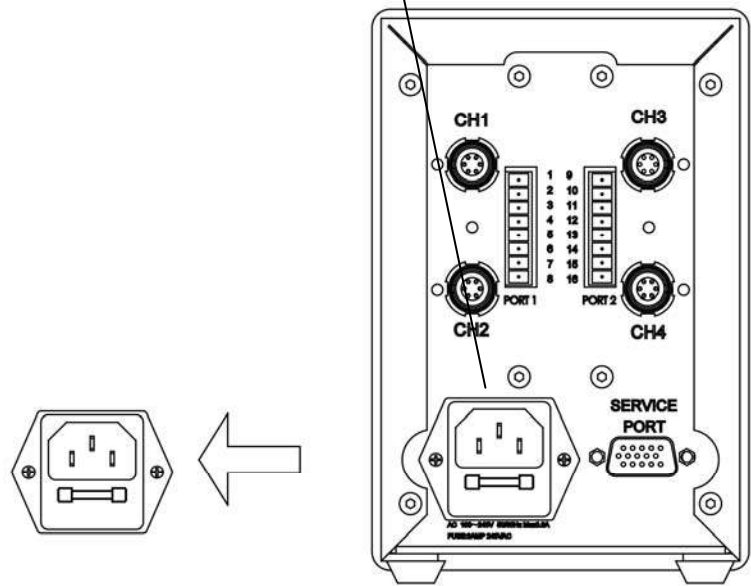
Note:

- The equipment can run following timer setting.
- Intensity of LED head output can be adjusted, adjust range: 0%~100%.



Press power button to turn off controller, red indicator will turn off at the same time.

Step 2: Disconnect power cable.



6 Troubleshooting

Error	Cause/Demonstration	Action
1. Display not on when turning on power button	Please check if power cable is plugged in properly.	Plug in power cable properly.
	Please check the fuse	Fuse type: 3AMP, 240VAC
2. Cannot set parameter	Please check if LED head is in working status.	Exit working status, enter preparation.
	Please check if the controller is locked.	Key in password, unlock controller.

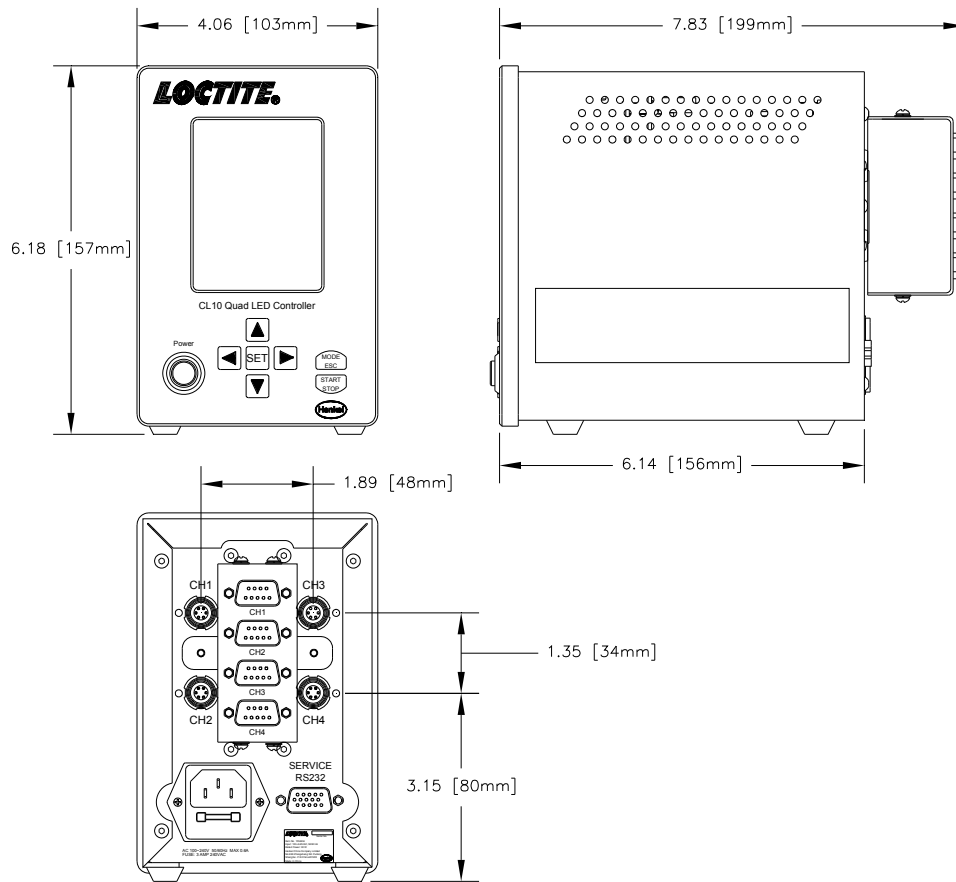
3. LED head working abnormally.	Please check if equipment is working in your required mode.	Go to parameter and set mode as you want.
4. No UV output when clicking foot switch.	Please check the LCD display in working panel, or if it is in pre-irradiance status.	Enter working panel and make sure controller in pre-irradiance status.
5. LED head cannot connect with channel's connector.	Please check alignment of the groove on the main unit and red point on the LED head.	Please check item 3, chapter 4.4
6. Time that is shown on LCD has gone to 0, but the LED head is still working.	Please check if controller is in manual mode.	Set to C.C mode.
7. LED head cannot reach setting intensity when working.	Please check the working distance.	Set the working distance properly.
8. In working panel, the channel's cell shown in red, means head over heating.	Please check if LED head is wrapped by something.	Make sure there is good heat exhaust for LED head.
	Please check the environment's temperature.	

7 Replacement Parts

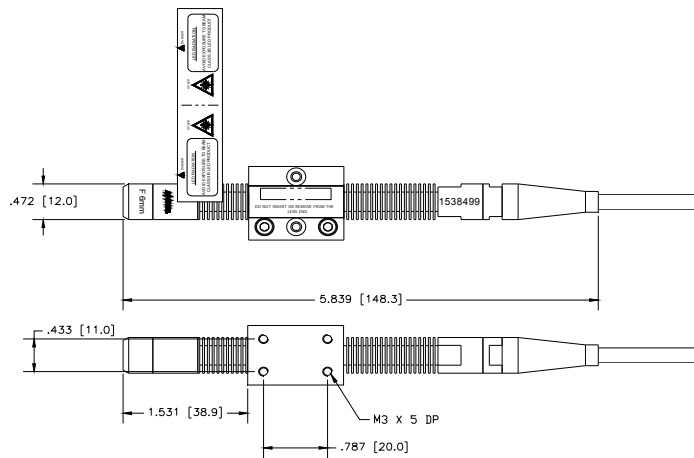
Name		Loctite® Item No.
Controller	CL10 Quad LED Controller	1514634
LED Head	CL10 365nm 6mm LED Head, 2.7M Cable	1538499
	CL10 405nm 6mm LED Head, 2.7M Cable	1746633
Spare Parts		
Lens	CL10 365nm, 6mm LED Lens	1538496
	CL10 405nm, 6mm LED Lens	1750074
Foot Switch	Foot Switch Assembly	97201
Radiometer	Visible Light (365nm) Radiometer / Dosimeter	1390323
Radiometer	Ultraviolet Light (405nm) Radiometer / Dosimeter	1265282
	CL10 Radiometer Tip Locator	1403402

8 Appendix: Dimension

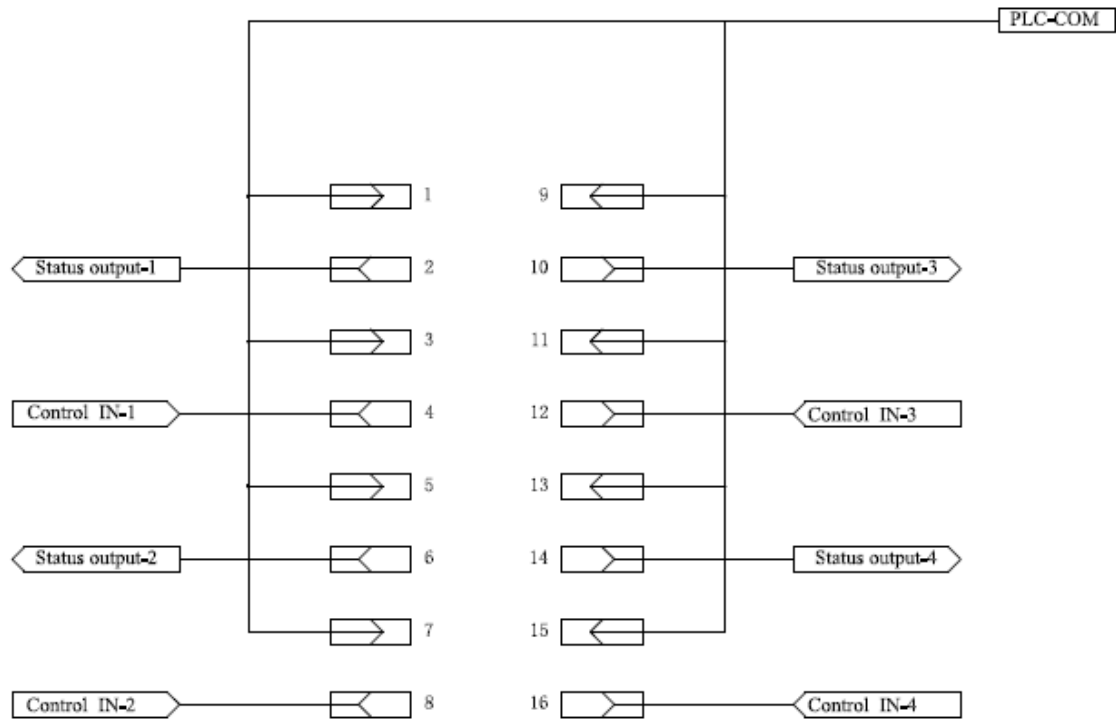
CL10 Quad LED Controller



LED Head



9 Appendix: PLC I/O



Caution:

- To operate CH's switch, press one time to turn on the LED head, press again to turn off.
- Output signal follow PLC standard level 0~24V.
- 0V effective

Note:

Q1 adapter is only for using foot switch to control. Please use PLC connector below when trying to connect a PLC and want to use PLC to control the controller.

PLC connector is not included in package.

Manufacturer: Phoenix Contact

Model No.: MC 1.5/8-ST-3.81

Article Number: 1803633



10 WARRANTY

Henkel expressly warrants that all products referred to in this Instruction Manual for (1514634 Loctite® CL10 Quad LED Controller) (hereafter called “Products”) shall be free from defects in materials and workmanship. Liability for Henkel shall be limited, as its option, to replacing those Products which are shown to be defective in either materials or workmanship or to credit the purchaser the amount of the purchase price thereof (plus freight and insurance charges paid therefore by the user). The purchaser’s sole and exclusive remedy for breach of warranty shall be such replacement or credit.

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