



Broadband Excitation Illuminator for Fluorescence

Microscope

Hyper E340 User Manual



TABLE OF CONTENT

1. Product Introduction	3
2. Cautions and Warnings	3
3. Illuminator System Accessories	4
4. Illuminator / Controller Function Introduction	6
5. Installation and Setup	7
6. Operation Instructions	9
6.1 Manual Control - Controller Box	9
6.2 Remote Operation - USB	11
6.3 Remote Operation - TTL	15
7. Spectral Output	15
8. Product Specifications	16
9. Routine Maintenance and Troubleshooting	17
10. Customer Service	18
11. Warranty	18

1.Product Introduction :

The new generation Hyper E340 can effectively increase the LED light source intensity by 22% to 143% or more.

The Hyper E340 lighting system provides wide-range LED illumination with a spectral coverage range of 350 nm to 730 nm, which can satisfy the fluorescence commonly used in most experimental research, such as DAPI, GFP/FITC, mCherry/Texas Red, Cy3, Cy5 (or Cy7). It can help you work efficiently and energy-savingly.

The Hyper E340 lighting system comes with a comprehensive microscope adapter that can be applied to most existing microscopes or connected to a 3.0mm liquid light guide. The on/off and light source intensity adjustment of the light source output are controlled by the electronic control box and adjusted by the dimming knob.

In addition, the LED has a long lifespan, so you don't have to worry about replacing bulbs. YODN Hyper E340 is the best choice for fluorescence microscopy research.

2.Cautions and Warnings:

Simple operation to ensure the normal operation of the light box.

Safety instructions:

Before operating the Hyper E340 lighting system, please read and follow all safety instructions provided. Failure to comply with safety instructions may result in fire, electric shock, or personal injury and may cause equipment damage or malfunction. Please keep all safety instructions.

Safety definitions:

Danger: Statements indicating a risk of death, serious injury, equipment damage, and procedures.

Warning: Statements indicating a risk of personal injury or procedures.

Notice: Statements indicating a risk of equipment damage or procedures.

Safety items:

Warning: Do not use unapproved power sources. Please use the YODN-provided power source for the Hyper E340 lighting system. The range of the external voltage input is 100~240 VAC, the voltage output is 12 VDC, and the maximum current output is 15.0 A.

Danger: Do not stare at UV bright light. The light source output of the lighting system includes UV light, which may cause harm to the eyes or skin. Do not stare at the light source output. To avoid exposure of eyes and skin to the beam, it is essential to wear goggles and protective clothing. The brightness of the lighting system is higher than that of most commercial lighting devices and is mainly used for coupling with microscopes or other biological analysis instruments.

Notice: Do not open the casing of the light box or change external devices in any way. Opening the lighting system casing will void the product warranty because there are no repairable or replaceable parts outside the lighting system.

Notice: Do not place liquid containers on top of the light box. The spilled liquid may damage the light box.

Notice: Do not drop or suddenly apply external force to the light box. The vibration caused by falling onto a hard surface, external impact, or collision may damage or displace the internal components of the lighting system, causing malfunction.

Note: The liquid light guide should not be subjected to impact or bending with a minimum bending radius greater than the standard value.

RISK GROUP 3
WARNING IR emitted from this product. Do not look at operating lamp CAUTION UV emitted from this product . Eye or skin irritation may result from exposure. Use appropriate shielding.

3. Illuminator System Accessories :



3.1 DC Power Supply : GST160A12-R7B (YODN P/N : H006-0114311) ◦

3.2 AC Power Cord (optional according to region) :

- (1)H006-0067312 - Taiwan
- (2)H006-0067311 - North America
- (3)H006-0068311 - Europe
- (4)H006-0069311 - U.K.
- (5)H006-0070311 - West Germany
- (6)H006-0070311 - South Korea
- (7)H006-0071312 - China/Australia
- (8)H006-0372311 - Japan

3.2 Adaptor (Optional according to the microscope model) :

Microscope Model	P/N
Adaptor for Nikon	H600-0024310
Adaptor for Nikon-T	H600-0025310
Adaptor for Zeiss	H600-0026310
Adaptor for Leica	H600-0027310
Adaptor for Motic	H600-0028310
Adaptor for Evident (Olympus)	H600-0029310

3.3-Liquid light guide : Diameter (effective inner diameter)φ3 mm

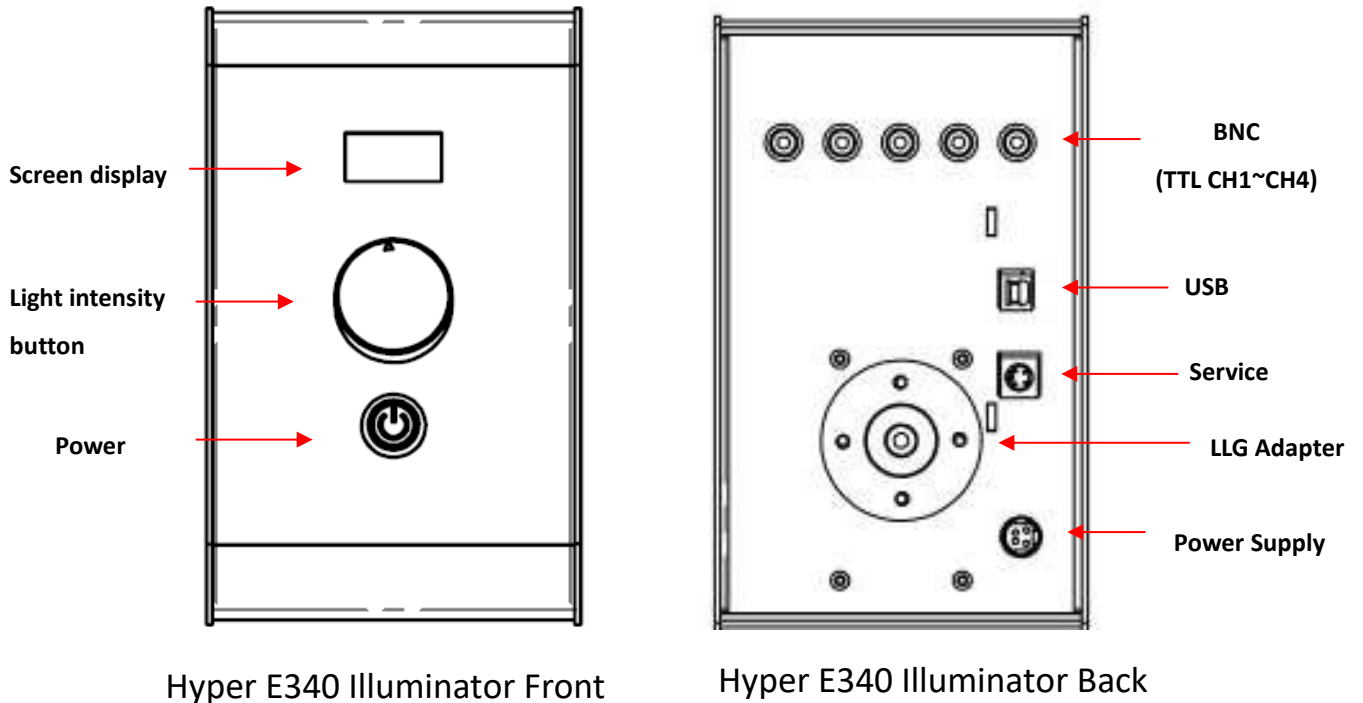
Description	P/N
Φ3mm*1500mm LLG, Series380, STD	H600-0009311
Φ3mm*1800mm LLG, Series380, STD	H600-0010311
Φ3mm*3000mm LLG, Series380, STD	H600-0011311
LLG Adapter	H600-0030310

3.4 Collimator :

Description	P/N
Collimator for Evident (Olympus) (Φ3LLG)	H600-0015311
Collimator for Leica (Φ3LLG)	H600-0016311
Collimator for Zeiss (Φ3LLG)	H600-0017311
Collimator for Nikon (Φ3LLG)	H600-0018311
Collimator for Motic (Φ3LLG)	H600-0020310
Collimator for Nikon-T(Φ3LLG)	H600-0022310

4.Hyper E340 Function Introduction :

4.1 Illuminator :



Hyper E340 Illuminator Front

Hyper E340 Illuminator Back

Before operating the device, please ensure that the optical fiber is correctly installed into the optical fiber port. Installation method: remove the protective covers on both sides of the optical fiber, loosen the hand-twist screw, and slide the optical fiber completely into the optical fiber socket without interference. After inserting the optical fiber to the bottom position, gently tighten the hand-twist screw to secure the optical fiber without loosening, to prevent over-tightening and damaging the optical fiber.

The bending of the optical fiber must not exceed the specifications of the minimum bending radius (80mm or 3.2 inches). Excessive bending of the optical fiber may cause permanent deformation and reduce the amount of light output.

Note: Before turning on the light, please ensure that the protective covers on both sides of the liquid optical fiber have been removed, and the output end of the optical fiber is placed in a safe position, away from flammable and unprotected objects. The output light of the optical fiber (including UV light output) should not be directly viewed by human eyes to avoid high-intensity light and UV light radiation damage to the operator and others.

4.2 Illuminator installation and operation :

After turning on the power on the back of the Hyper E340 light source box, the light source box enters a standby state, and the startup switch displays "red." Before starting the light source, make sure that the display panel shows an intensity of 000%, and then manually press the front panel startup switch to turn on or turn off the light source. Pressing the startup switch can turn on the light source. When the light source is turned on, the startup switch displays "blue," and the output intensity is set to the minimum intensity of 000%. Use the front panel knob to adjust the intensity by rotating it (for example, 000% → 010% →... → 100%) or press the knob and rotate it to fine-tune the intensity (for example, 010% → 011% →... → 100%). The light source intensity is displayed on the panel.



Note: When the illuminator is turned on, take necessary protective measures to protect yourself and others from exposure to strong light (including UV light).

The illuminator does not have a safety interlock device. When the optical fiber is disconnected from the light source box during operation, the light source box continues to output light. Please take necessary protective measures to protect personnel and items from exposure to strong light (UV light).

Before turning off the illuminator, please make sure that the light source has been turned off. When the light source is turned off, the startup switch displays "red," and the cooling fan runs for at least 3 minutes before turning off the power of the light source box.

5. Installation and operation :

5.1 Carefully remove the components from the cardboard box.

5.2 You can choose to use the Hyper E340 lighting unit through either manual control or remote Operation.

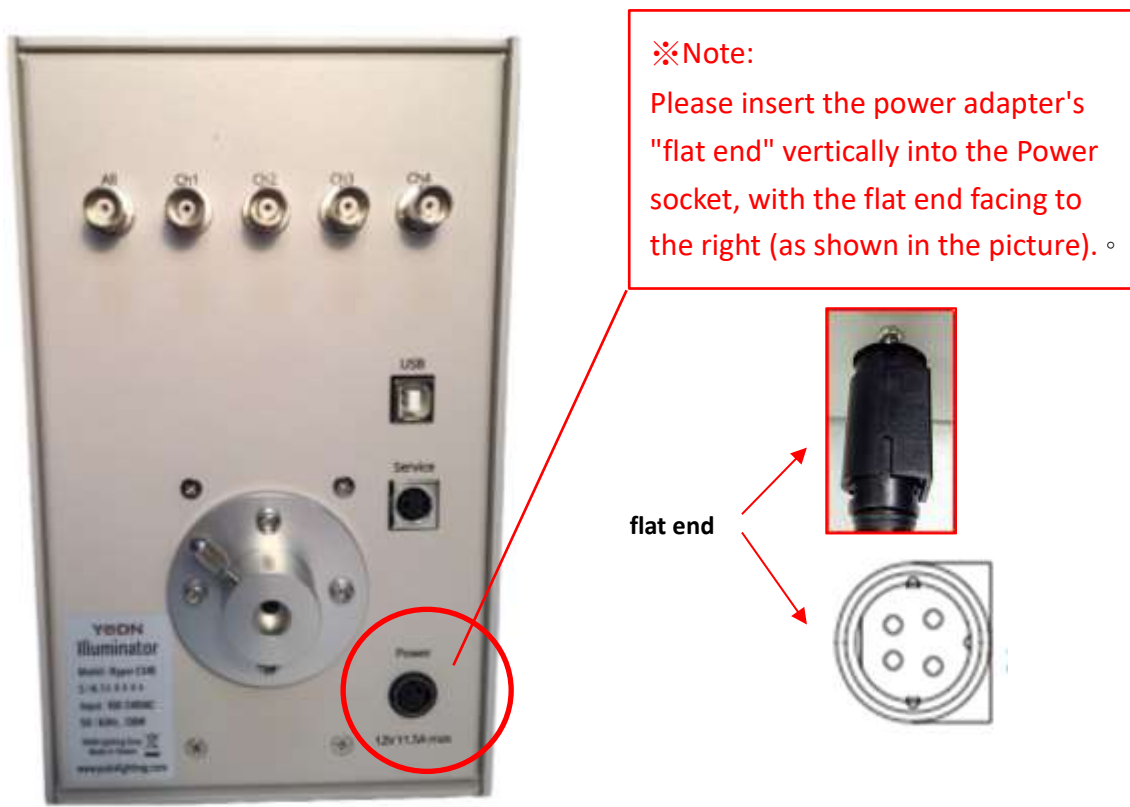
5.2.1 Remote operation - RS232: Connect one end of the USB cable to the host and the other end to the computer.

5.2.2 Remote operation - TTL: Connect via BNC in order to trigger the LED with an external switch.

5.3 Connect the power cord to the Power socket on the back of the host, and the other end to a power outlet. Once powered on, the blue light on the power supply will remain on.



※ Please ensure that the DC power supply provided with the product is used, otherwise it may damage the light source and void the warranty.



5.4 Liquid light guide installation method :

- a. Secure the light guide adapter to the light source lens port of the Hyper E340 unit.
- b. Attach the condenser lens to your microscope's light receptacle.
- c. Remove the protective covers from both ends of the light guide, insert one end into the light guide adapter, and the other end into the condenser lens.
- d. After inserting the light guide into the port, gently tighten the screw by hand until the light guide is securely fixed in place. Over-tightening may cause damage to the light guide.

6. Operating instructions :

6.1 Manual control box - screen display :

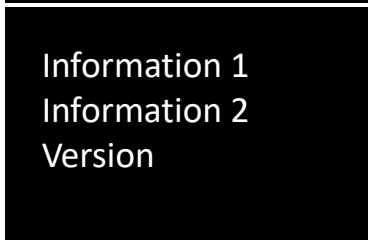
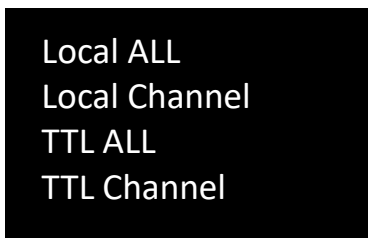
6.1.1 Startup page



LED On/Off status

memory value

6.1.2 Main menu



6. 1.3 Submenu -Local All



LED On/Off status

4 LEDS energy sync adjustment : 0~100%

6. 1.4 Submenu -Local Channel

```
Local          OFF
CH1 UV : 0%
CH2  B : 0%
CH3  G : 0%
```

CH1 UV LED intensity setting
CH2 Blue LED intensity setting
CH3 Green LED intensity setting

```
Local          OFF
CH4  R : 0%
```

CH4 Red LED intensity setting

6. 1.5 Submenu -TTL All (TTL Functional status and ALL LEDs intensity setting)

```
TTL          OFF
ALL : 100%
```

TTL Functional status (ON/OFF)
4 LEDS energy sync adjustment : 0~100%

6. 1.6 Submenu -TTL Channel (LEDS Self-adjustment of energy)

```
TTL          OFF
CH1 UV : 0%
CH2  B : 0%
CH3  G : 0%
```

TTL Functional status (ON/OFF)
CH1 UV Trigger energy setting
CH2 Blue Trigger energy setting
CH3 Green Trigger energy setting

```
TTL          OFF
CH4  R : 0%
```

CH4 Red Trigger energy setting

6. 1.7 Submenu -Information1

Information 1 CH1 UV : 25°C CH2 B : 25°C CH3 G : 25°C	CH1 UV LED temperature CH2 Blue LED temperature CH3 Green LED temperature
Information 1 CH4 R : 25°C	CH4 Red LED temperature

6. 1.8 Submenu -Information2

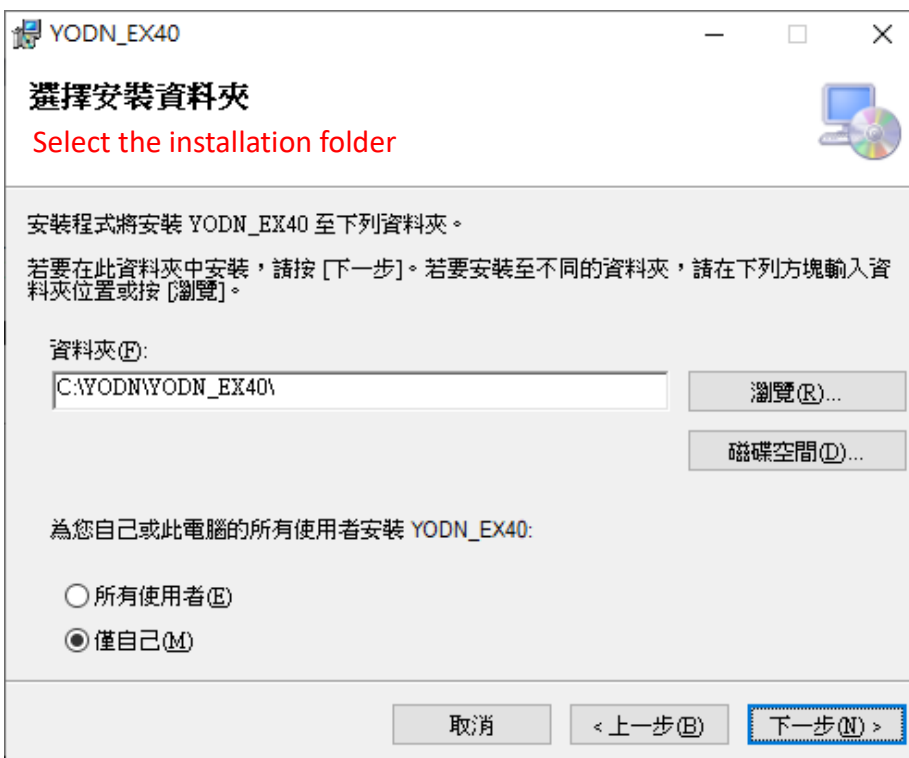
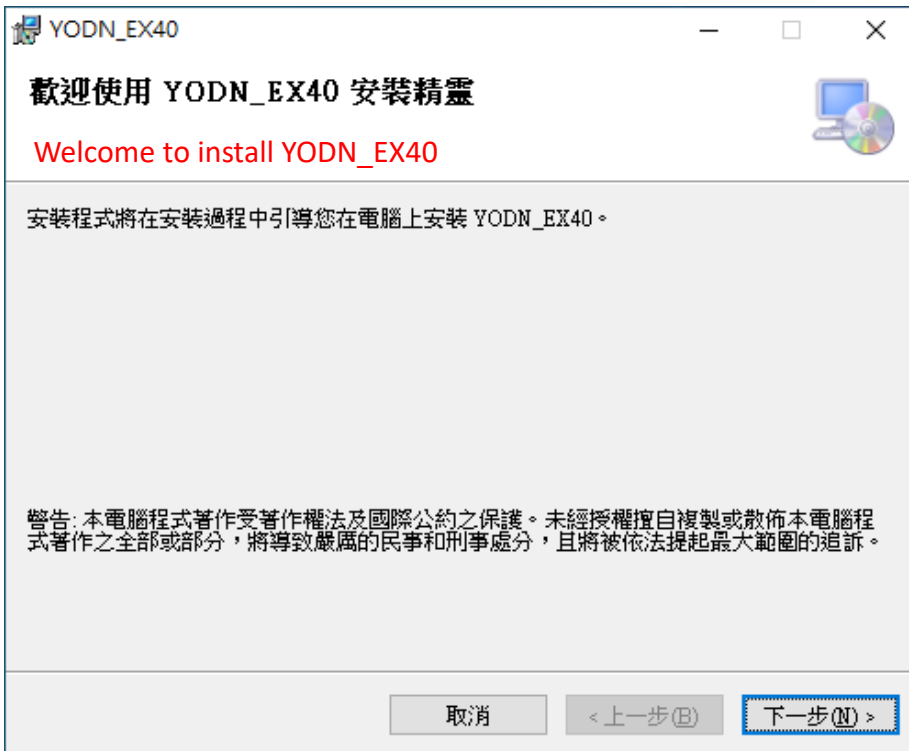
Information 2 CH1 UV : 0H CH2 B : 0H CH4 R : 0H	CH1 UV LED hours used CH2 Blue LED hours used CH3 Green hours used
Information 2 CH4 R : 0H	CH4 Red LED hours used

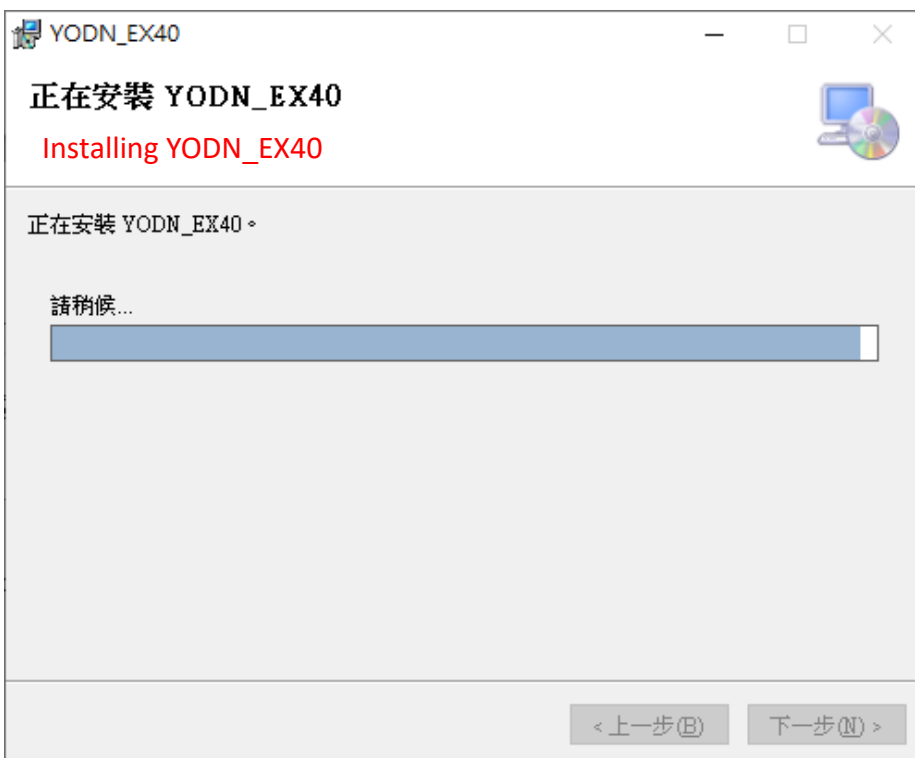
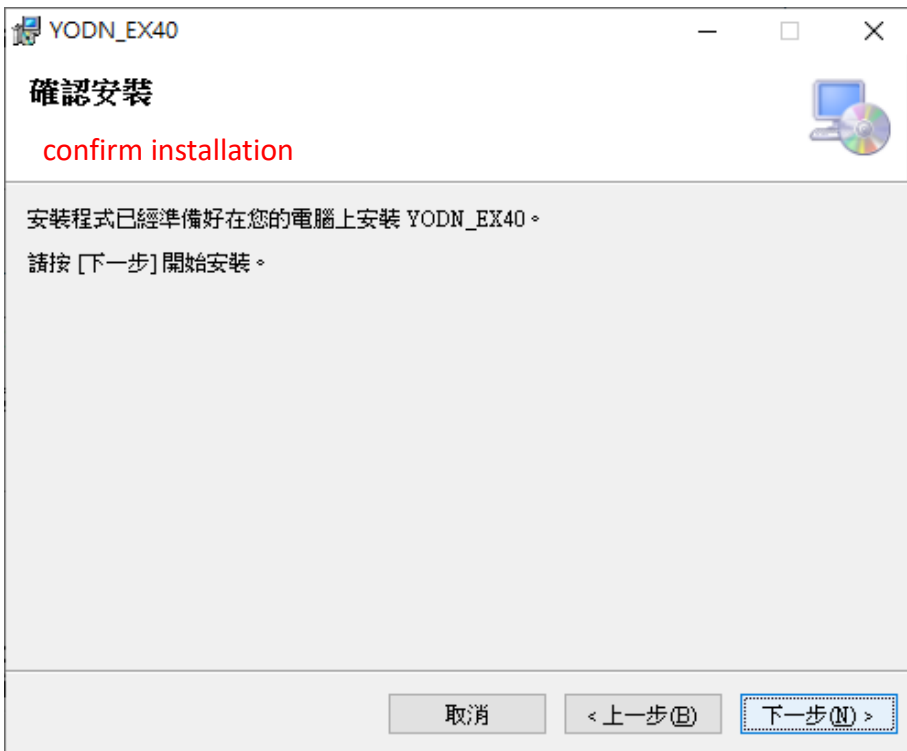
6. 1.9 Submenu -Version

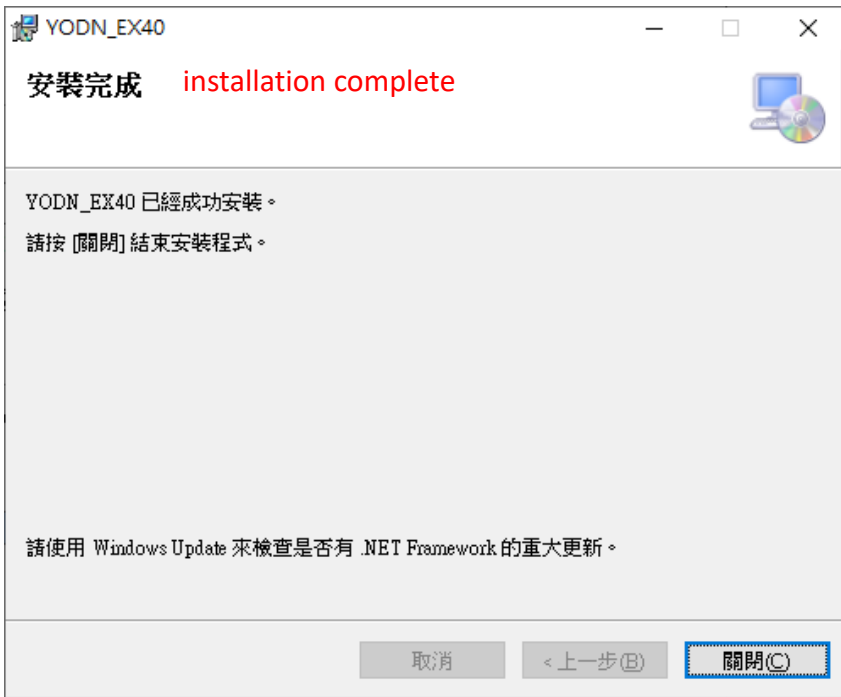
Main : E340-221128V00	Firmware version
--------------------------	------------------

6.2 Remote Operation - USB:

Before starting the USB mode for the first time, you can go to YODN official website (<https://www.yodnlighting.com/download/index/13>) to download the driver and operating software.





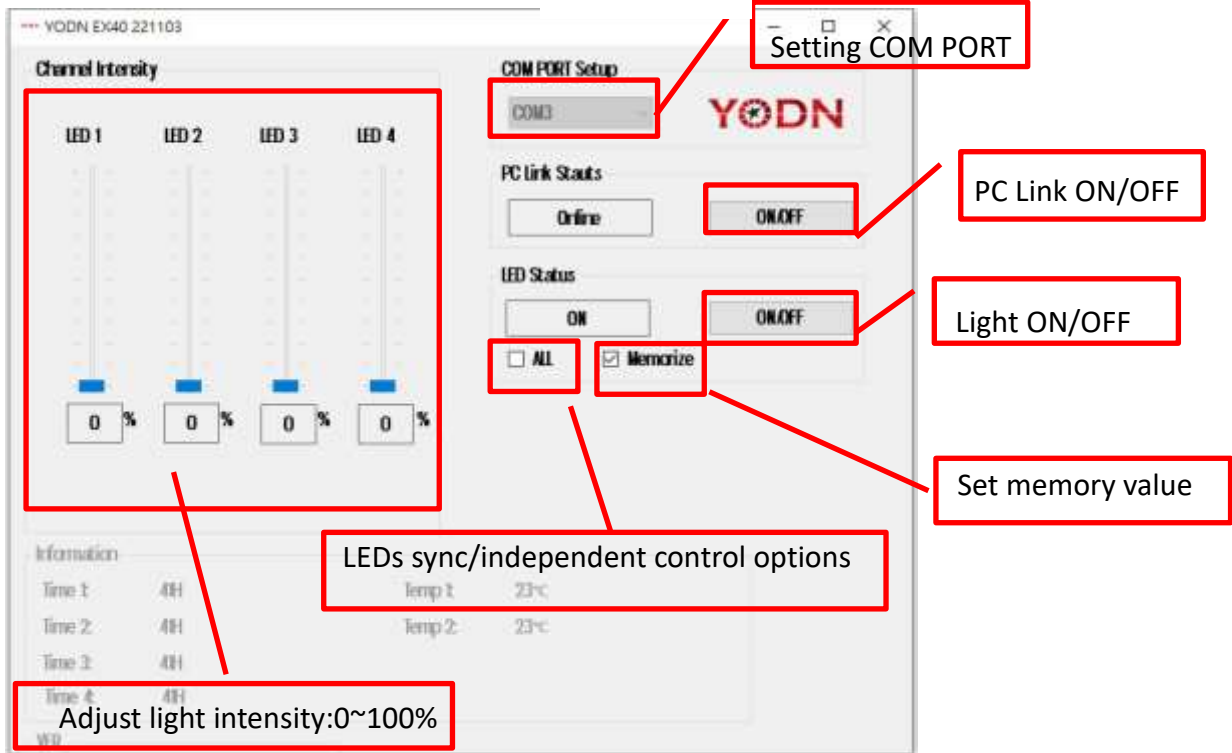


YODN_EX40 Operating instructions :

a. click "YODN_EX40" software



b. Operation interface

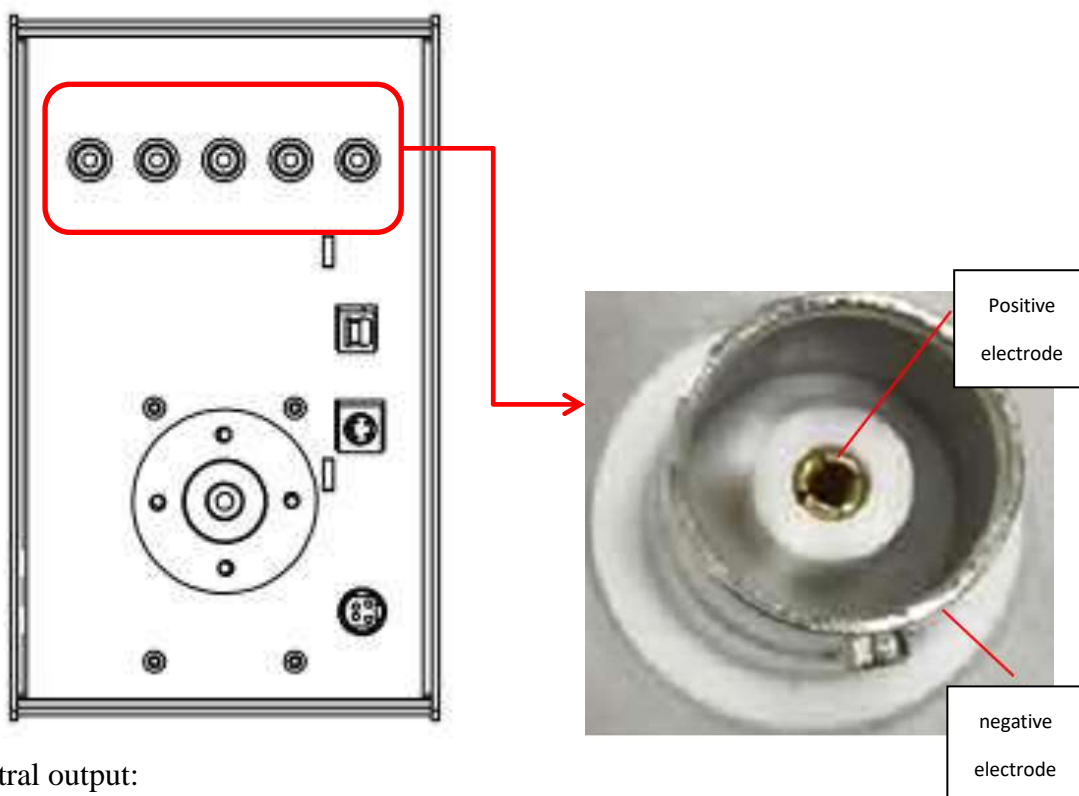


6.3 Remote operation-TTL:

6.3.1 TLL Input specifications :

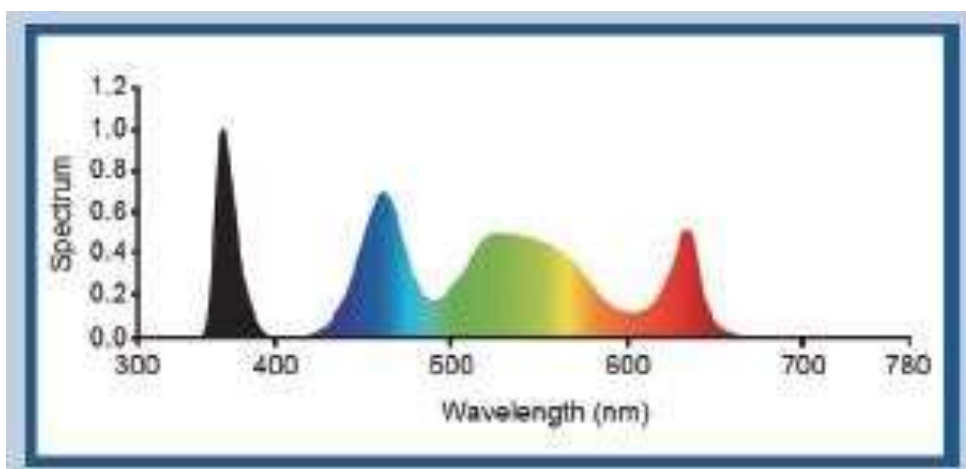
- a. Connector type: BNC (female port)
- b. Minimum low level : +0V
- c. Maximum low level : +1.5V
- d. Minimum high level : +4.0V
- e. Maximum high level: +5.5V
- f. Typical input current: 450 μ A

6.3.2 BNC(TTL) Port :



7. Spectral output:

Hyper E340 light box spectrum is as follows:

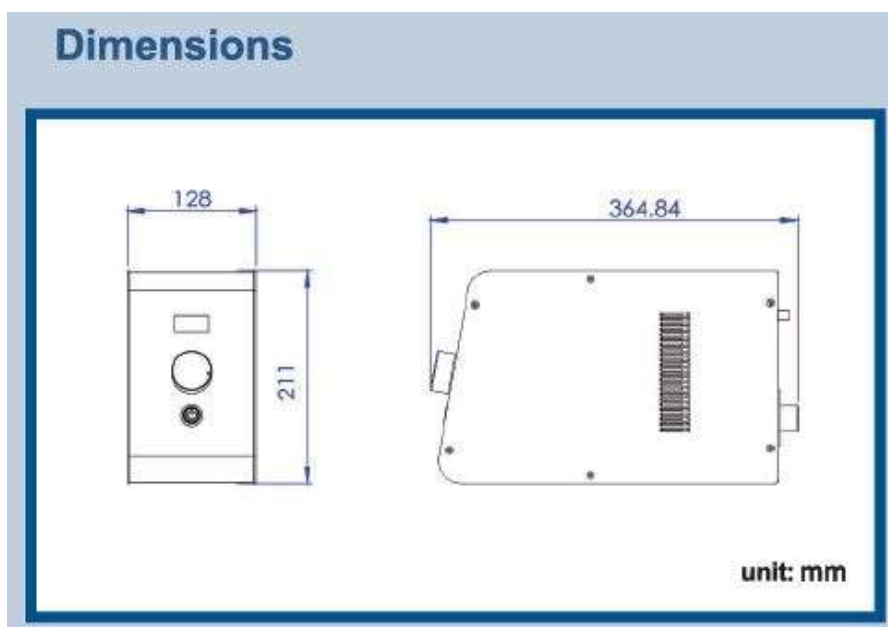


8. Product specifications:

8.1 Relevant operating and storage environmental conditions and detailed specifications:

Product Specification		
1	Wavelength range	350~730 nm
2	LED peaks/FWH	365/20 nm, 460/40 nm, 560/80 nm, 630/20 nm; (Optional: 405/20 nm, 730/20 nm)
3	External power supply	Universal input 100-240VAC 50/60 H
4	Power consumptio	85W
5	LED on/off respons	1 ms
6	LED expected life	25000 hours
7	Control Pad	1.ON/OFF 2.LED intensity control 10-100% 3.Color separation output control
8	External control	TTL Trigger & PC control (RS232 command /USB B-type connector)
9	Demension (mm)	Illminator : 12/*365*211 Power supply :67*167*35
10	Weight	Approx. 5.5 Kg (including power supply)
11	Warranty	Illminator : 24 Months
12	Option	1.5M/φ3 mm liquid light guide/ Adaptor, collimators
13	Certifications	CE(TBA)

8.2 Dimensions :



9. Daily Maintenance and Troubleshooting:

9.1 Daily Maintenance:

Please use a suction device to remove any accumulated dust or lint from the air intake/outlet of the device to ensure stable air supply for cooling. In dusty or smoky environments, it is recommended to clean the air intake/outlet with a suction device at least every 6 months.

The Hyper E340 lighting fixture does not have any parts or components that customers can replace themselves. Opening the outer casing of the lighting fixture will void the warranty.

9.2 Troubleshooting:

Only basic troubleshooting information is provided depending on the condition of the Hyper E340 lighting fixture. If the Hyper E340 lighting fixture needs repair, it can only be performed by authorized technicians.

9.2.1 Unable to Start:

- a. Make sure the power cord is properly connected to the power outlet.
- b. Make sure the power cord is properly connected to the power supply socket.
- c. Make sure the power supply connector is properly connected to the Hyper E340 lighting fixture.
- d. If the main power of the Hyper E340 lighting fixture is turned on, the blue light of the power supply should be constantly lit.



9.2.2 Low Light Intensity:

- a. Remove the screw from the collimator lens by hand, insert the light guide into the collimator lens, and secure the light guide with the screw.
- b. Make sure the collimator lens is compatible with the microscope and securely fix the collimator lens to the microscope.



9.2.3 Control Box Operation Failure: Please make sure the control box connector is securely installed and connected to the Hyper E340 lighting fixture.

10. Customer Service:

For technical support related to the product, please call +886-3-5637218, send an email to Sales@yodnlighting.com, or visit <https://www.yodnlighting.com/contact/getInTouch> to contact us.

You can also find relevant information on the YODN website at <http://www.yodnlighting.com>.



11. Warranty:

YODN offers a 2-year warranty for the Hyper E340 lighting fixture to end-users, starting from the date of shipment. The warranty for peripheral accessories of the lighting fixture does not cover liquid light guides.