



Broadband Excitation Illuminator for Fluorescence

Microscope

# Hyper E740 User Manual



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## 1. Product Introduction :

The Hyper E740 illumination system provides wide-field LED illumination with an output spectrum ranging from 350 nm to 650 nm, covering most commonly used fluorescent probes in research experiments such as DAPI, GFP/FITC, mCherry/Texas Red, Cy3, Cy5 (or Cy7). It enables you to perform your work in an energy-efficient manner with ease.

The Hyper E740 illumination system features comprehensive microscope adapters that are compatible with most existing microscopes or 3mm liquid light guides. The on/off and light intensity adjustment of the light source output are controlled by the electronic control box.

In addition, the LEDs have a long lifespan, eliminating the need for bulb replacement. The YODN Hyper E740 is the optimal choice for fluorescent microscope research.

## 2. Cautions and Warnings :

Simple operations should be performed to ensure the normal operation of the lightbox.

### Safety precautions:

Before operating the Hyper E740 illuminator, please read and follow all provided safety instructions. Failure to follow the safety instructions may result in fire, electric shock, personal injury, and equipment damage or failure. Please keep all safety instructions for future reference.

### Safety definitions:

**Danger:** Statement indicating the potential for death, serious injury, equipment damage, and actions.

**Warning:** Statement indicating the potential for personal injury or actions.

**Caution:** Statement indicating the potential for equipment damage or actions.

### Safety items:

**Warning:** Do not use unauthorized power sources. Please use the power supply specially provided by YODN for the Hyper E740 illuminator. The input voltage range is 100~240VAC, the output voltage is 12VDC, and the maximum current output is 11.5A.

**Danger:** Do not stare directly at the UV light. The light output of the illuminator includes UV light, which may cause harm to the eyes or skin. Do not stare at the light output. To avoid exposing the eyes and skin to the beam, it is necessary to wear protective goggles and clothing. The illuminator's brightness is higher than most commercial lighting devices and is mainly used for couplers connected to microscopes or other biological analysis instruments.

**Caution:** Do not open the lightbox shell or change external devices in any way. Opening the illuminator shell will void the product warranty, as there are no parts that need to be repaired or replaced externally.

Caution: Do not place liquid containers on the lightbox. Spilled liquids may damage the lightbox.

Caution: Do not drop or apply sudden external force to the lightbox. Vibrations caused by falling onto a hard surface, external impact, or collision may damage or displace the internal components of the illuminator, causing malfunction.

Caution: Liquid light guides cannot be subjected to collisions or impacts, and the minimum bending radius must be greater than the specifications (80mm or 3.2 inches). Please make sure to remove the protective cover from both sides of the light guide before outputting or installing the light source. Failure to follow the above precautions will result in damage to the light guide, leading to a decrease or failure of the light source output, and the liquid light guide is not covered by the warranty.

Caution: The Hyper E740 illuminator uses a fan air cooling system. When using, please place the illuminator on a stable surface, and ensure that there is a space of more than 10cm on both sides of the host for ventilation holes, to avoid obstruction or interference at the air inlet and exhaust outlet on the shell, affecting the normal operation of the illuminator's cooling system. When the cooling system is obstructed or interfered with, the equipment will operate at high temperatures, which may shorten the life of the illuminator or cause premature failure.

Please use a slightly damp cloth to regularly clean the external casing of the box under the condition of unplugging the power.

**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

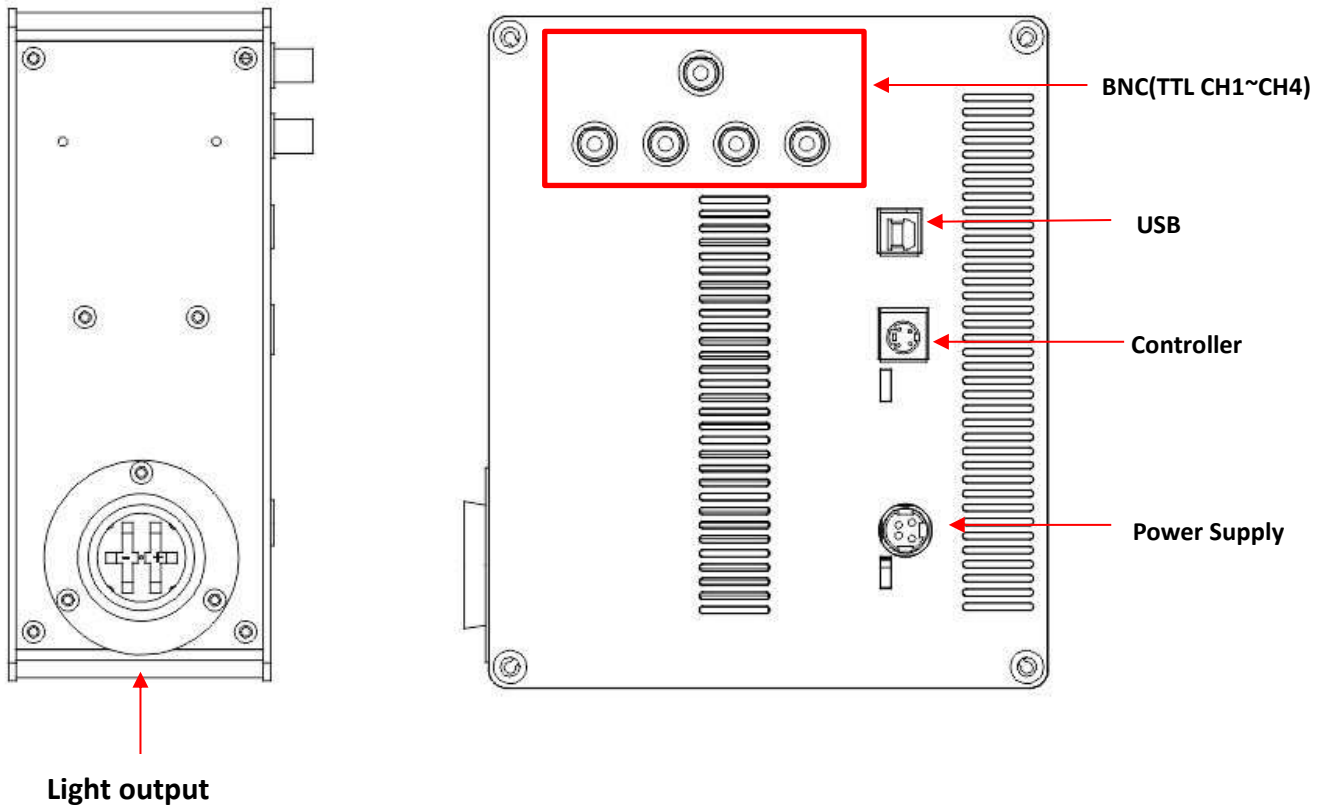
Description	P/N
Φ3mm*1500mm LLG, Series380, STD	H600-0009311
Φ3mm*1800mm LLG, Series380, STD	H600-0010311
Φ3mm*3000mm LLG, Series380, STD	H600-0011311
LLG Adapter	H600-0030310

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 E740 Function Introduction :

##### 4.1 Illuminator :



##### 4.2 Controller :



(When idle > 10 minutes, the screen goes to sleep)

The illuminator does not have a safety interlock device. When the light guide is disconnected from the illuminator during operation, the illuminator continues to output light. Necessary protective measures should be taken to protect personnel and objects from exposure to intense light (UV light).

## 5. Installation and Setup:

5.1 Carefully remove the components from the cardboard box.

5.2 Connect the controller connection cable or USB to the illuminator, then connect the power cord to one end of the illuminator and connect the other end to the power socket.

※Please make sure that the DC power supply must be the power supply provided with the product, otherwise the light source may be damaged and the warranty will be void.



5.3 You can choose to connect the Hyper E740 illuminator to either a "microscope" or "liquid light guide":

5.3.1 Connecting to a microscope:

- a. Loosen the stop screw on the side of the "lens adapter ring" and fix the adapter ring to the light source output of the Hyper E740 illuminator.
  - b. Connect the light source lens end of the Hyper E740 illuminator to the light source input of your microscope, making sure it is secure and does not loosen.
- ※ Please purchase a compatible lens adapter ring according to your microscope brand, and ensure that the illuminator and microscope are level during installation.

5.3 You can choose to connect the Hyper E740 illuminator unit to either a "microscope" or a "liquid light guide":

#### 5.3.1 Microscope connection method:

- a. Loosen the stop screw on the side of the "lens adapter ring" and fix the adapter ring to the light source output port of the Hyper E740 illuminator unit.
  - c. Connect the light source end of the Hyper E740 illuminator unit to the light source receiving port of your microscope and ensure it is secure and does not loosen.
- ※ Please purchase a compatible lens adapter ring according to your microscope brand and ensure that the illuminator unit and microscope are level during installation.
- ※ If your connected microscope is Olympus ix73 / ix83: please contact an authorized agent of YODN to purchase the following adapter accessories separately:

- (1) H600-A033310 X-T100-CP
- (2) H600-A043310 X-L200C

#### 5.4 Liquid light guide connection method:

- a. Fix the light guide adapter to the light source end of the Hyper E740 illuminator unit.
- b. Fix the collimator to your microscope's light receiving port.
- 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 collimator.
- d. After inserting the light guide to the bottom position, gently tighten the screw by hand until the light guide is fixed and not loose. Over-tightening may cause damage to the light guide.

5.5 You can choose to use the Hyper E740 illuminator through manual control or remote operation.

5.5.1 Remote operation-RS232: Connect one end of the USB cable to the illuminator unit and the other end to the computer.



5.5.2 Remote operation-TTL: Connect using a BNC connector to trigger the LED with an external switch.

6. Controller Operating instructions :

6.1 Manual control box - screen display :

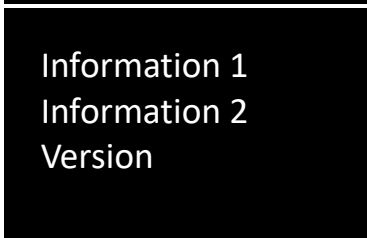
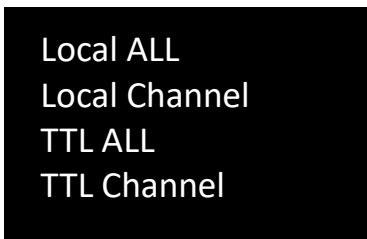
6.1.1 Startup page



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%	CH1 UV intensity setting
CH2 B	: 0%	CH2 Blue intensity setting
CH3 G	: 0%	CH3 Green intensity setting

Local	OFF	
CH4 R	: 0%	CH4 Red intensity setting

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

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

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

TTL	OFF	TTL Functional status (ON/OFF)
CH1 UV	: 0%	CH1 UV Trigger energy setting
CH2 B	: 0%	CH2 Blue Trigger energy setting
CH3 G	: 0%	CH3 Green Trigger energy setting

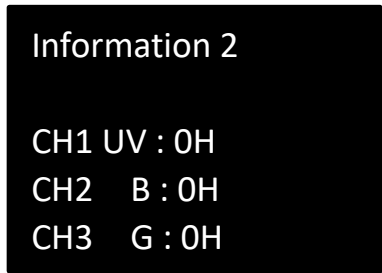
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TTL	OFF	
CH4 R	: 0%	CH4 Red Trigger energy setting

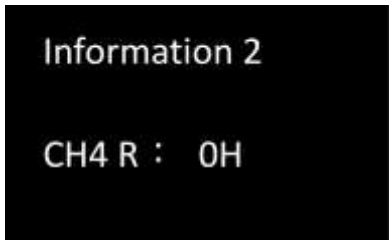
### 6. 1.7 Submenu -Information1

Information 1	Temp1 temperature
Temp 1 : 23°C	Temp2 temperature
Temp 2 : 23°C	

6. 1.8 Submenu -Information2

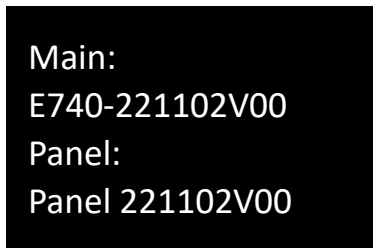


CH1 UV LED Hours used  
CH2 Blue LED Hours used  
CH3 Green Hours used



CH4 Red LED Hours used

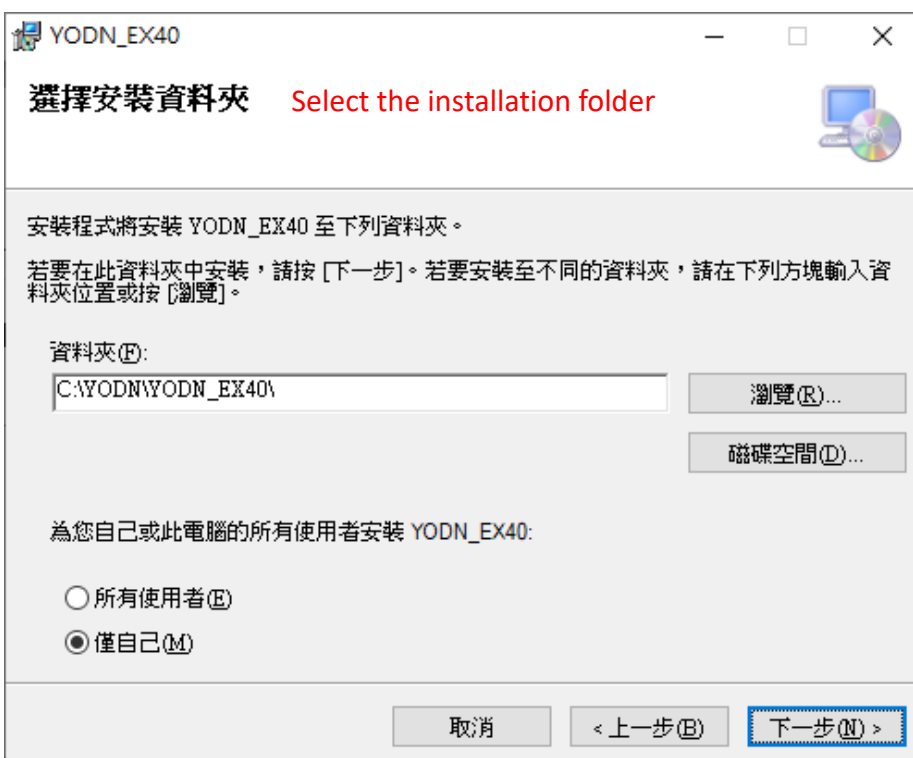
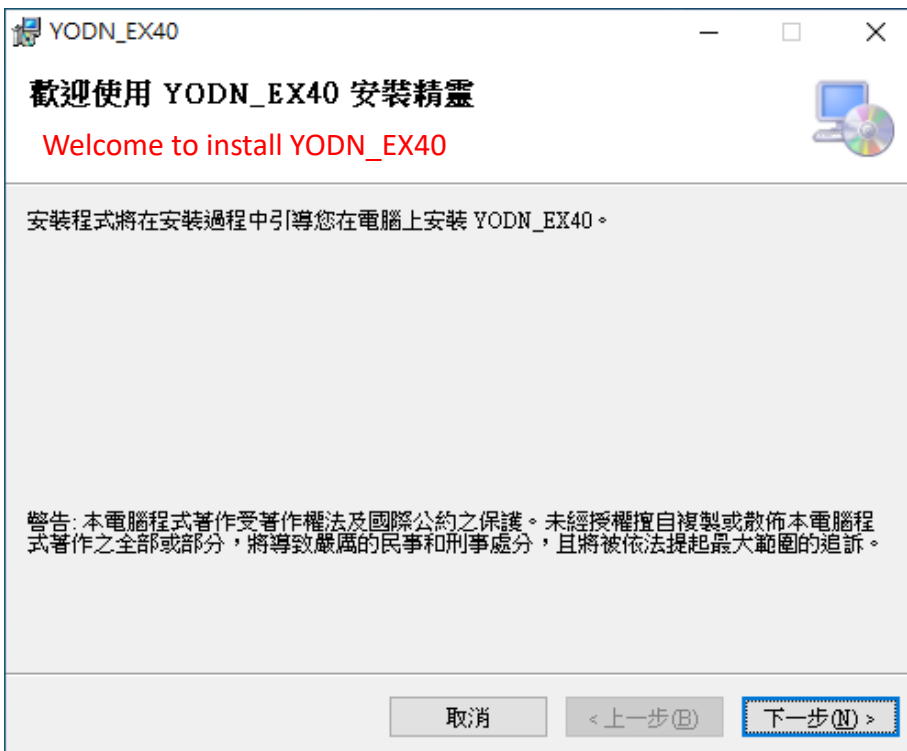
6. 1.9 Submenu -Version

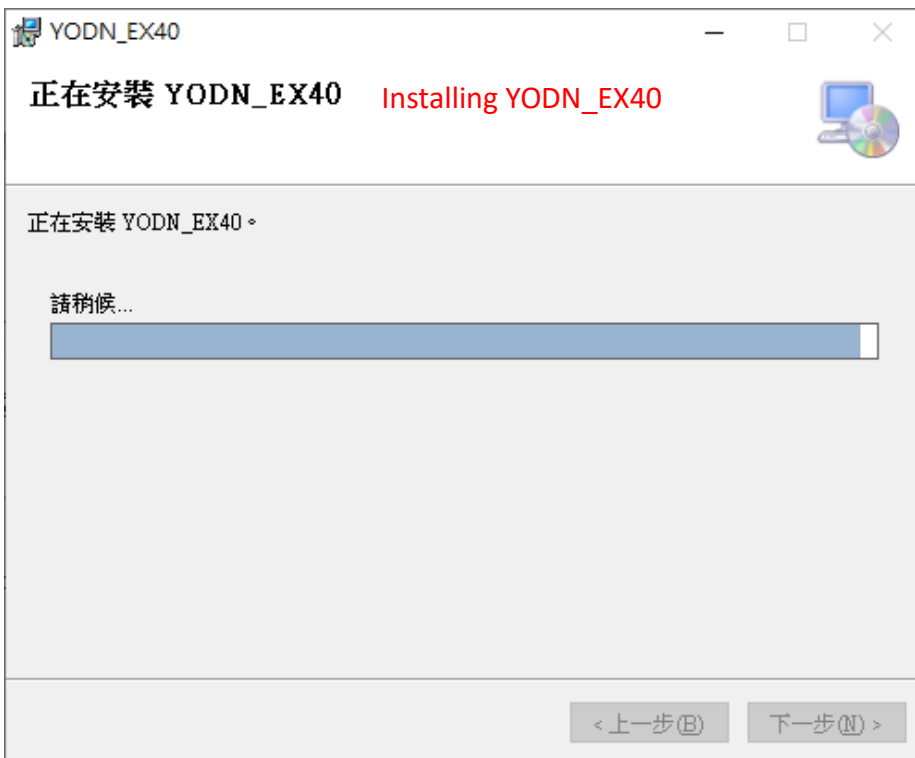
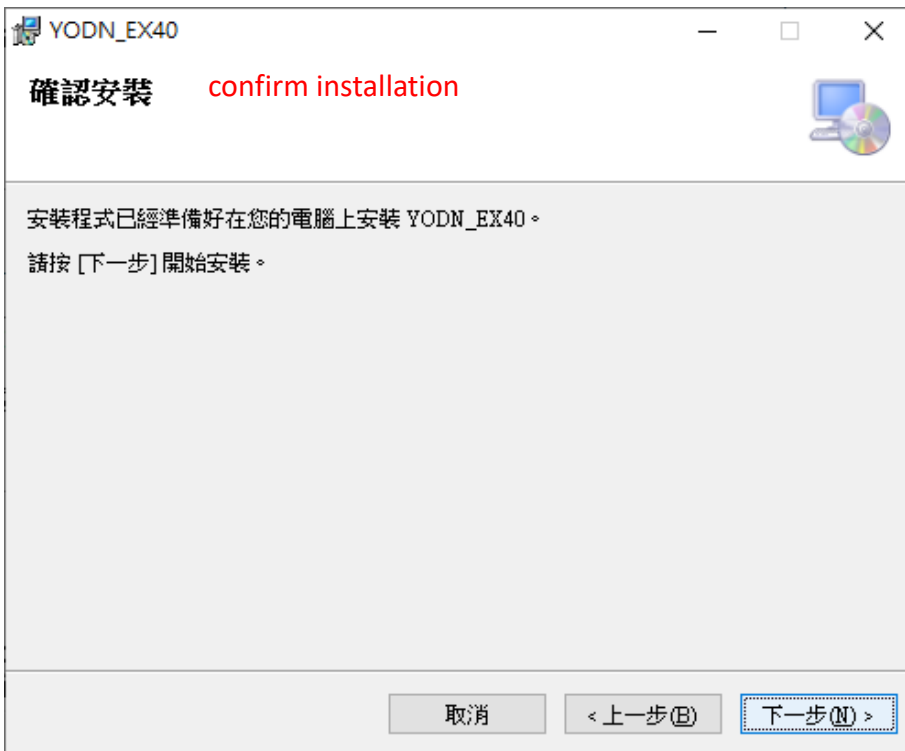


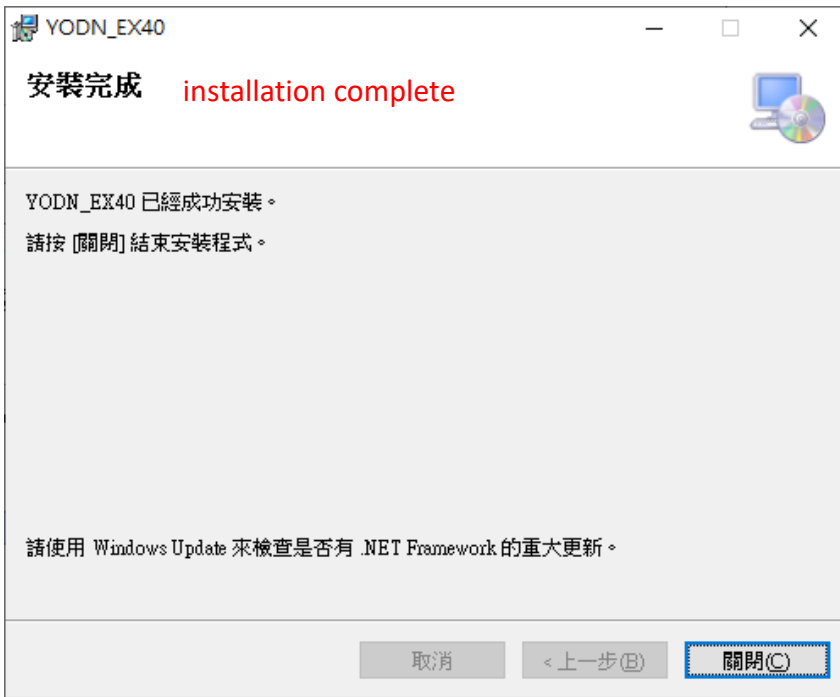
Firmware version

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.

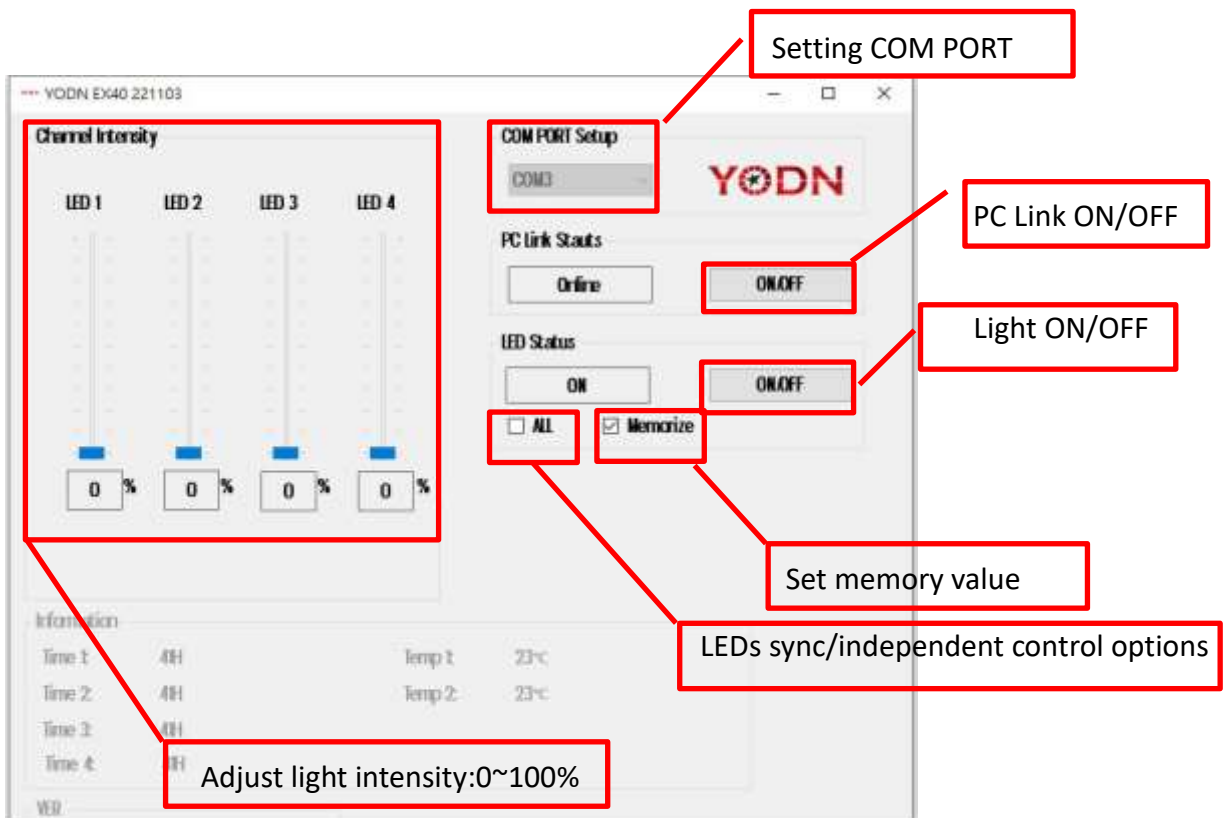






YODN\_EX40 Operating instructions :

- a. click "YODN\_EX40" software
- b. operation interface

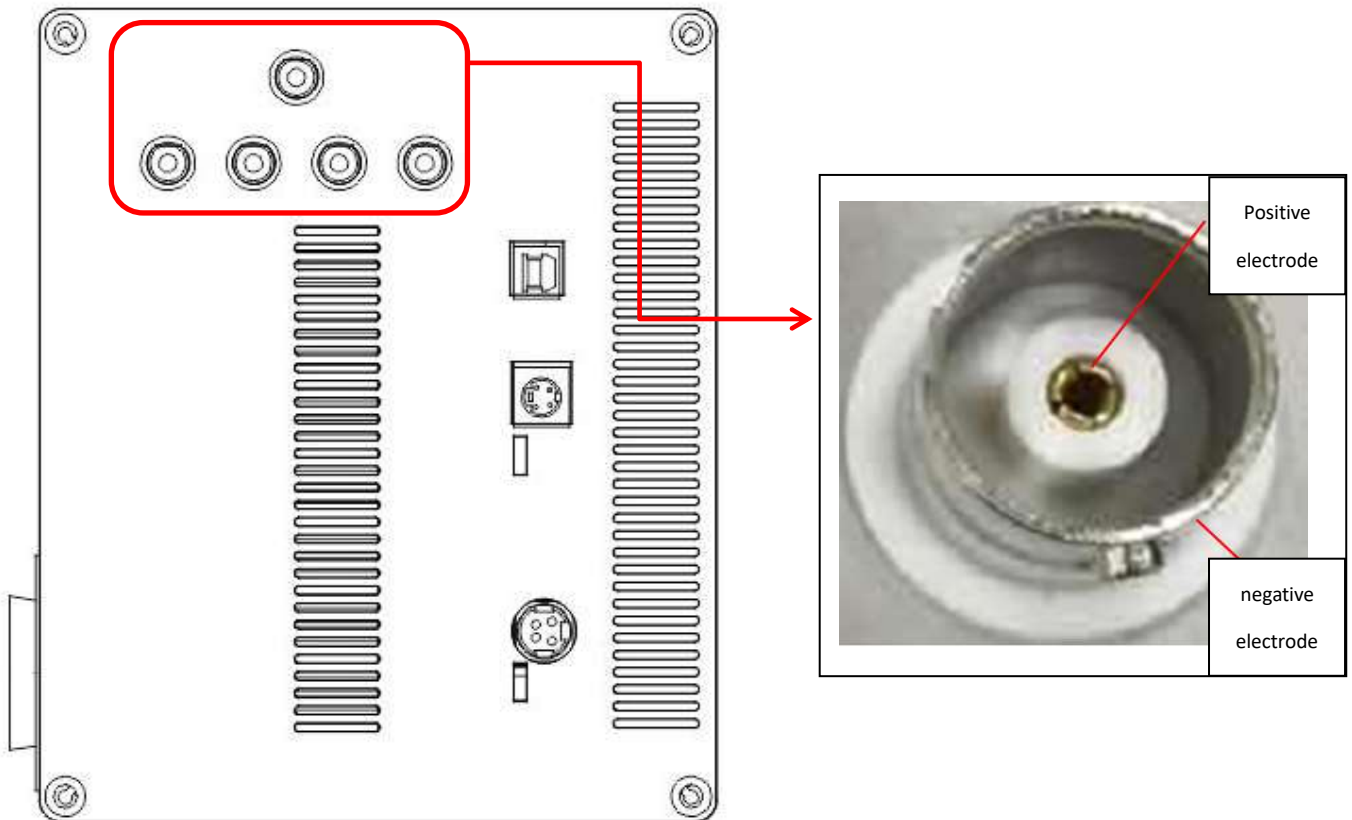


### 6.3 Remote operation-TTL:

#### 6.3.1 TLL Input specifications :

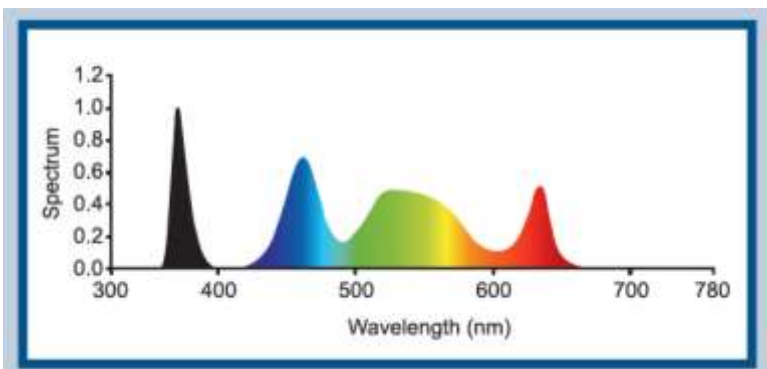
- a. Connector type: BNC (female port)
- b. Minimum low level : +0V
- c. Maximum low level : +1.5V
- d. Minimum high level : +4.0V
- e. Maximum high level: +5.5V
- f. Typical input current: 450  $\mu$ A

#### 6.3.2 BNC(TTL) Port :



### 7. Spectral output:

Hyper E740 illuminator spectrum is as follows:

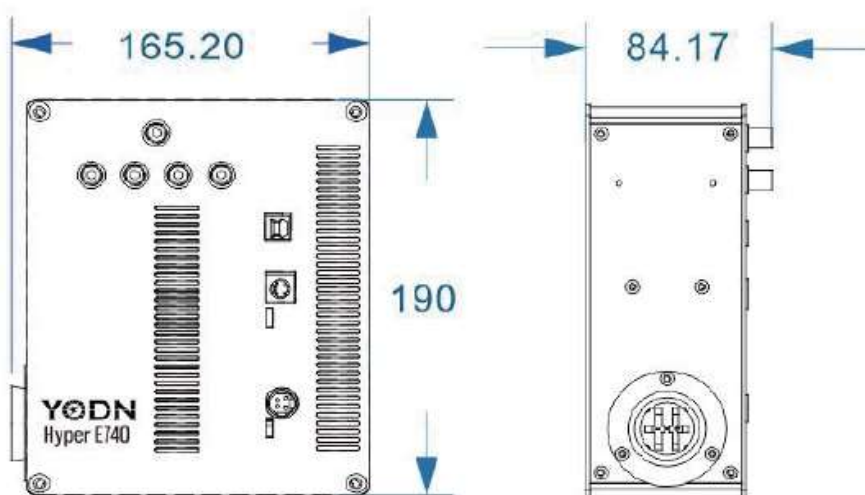


## 8. Product specifications:

### 8.1 Relevant operating and storage environmental conditions and detailed specifications:

Product Specification		
1	Wavelength range	350~650 nm
2	LED peaks/FWH	365/20 nm, 460/40 nm, 560/80 nm; (Optional: 405/20 nm)
3	External power supply	Universal input 100-240VAC 50/60 H
4	Power consumption	75W
5	LED on/off respons	1 ms
6	Controller	1.ON/OFF 2.LED intensity control 10-100% 3.Color separation output control
7	External control	TTL Trigger & PC control (RS232 command /USB B-type connector)
8	Dimensions (mm)	Illminator : 84*190*165 Controller : 133*80*35 Power supply :67*167*35
9	Weight	Approx. 1.9 Kg (including power supply, controller)
12	Warranty	Illminator : 24 Months
13	Main usage mod	Direct coupling
14	Option	1.5M/φ3 mm liquid light guide/ Adaptor, collimators
15	Certifcations	CE(TBA)

### 8.2 Dimensions : (mm)





## 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 Hyper E740 illuminator 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 six months.

The Hyper E740 illuminator does not have any user-replaceable parts or components. Opening the illuminator's casing will void the warranty.

### 9.2 Troubleshooting:

Only basic troubleshooting information is provided for the Hyper E740 illuminator based on the specific issue. If repair is needed, it must be performed by authorized technicians.

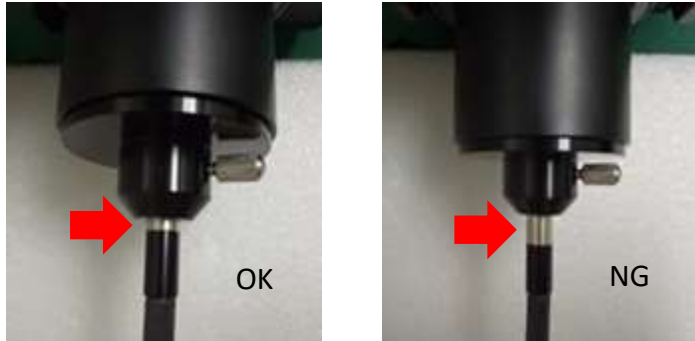
#### 9.2.1 Failure to start:

- a. Ensure the power cord is properly connected to the power outlet.
- b. Ensure the power cord is properly connected to the power supply socket.
- c. Ensure the power supply connector is properly connected to the Hyper E740 illuminator.
- d. Ensure the main power of the Hyper E740 illuminator is turned on, and the blue light on the power supply remains lit.



#### 9.2.2 Low light intensity:

- a. Remove the screw from the collimator by hand, insert the light guide into the collimator lens, and secure the light guide with the screw.
- b. Ensure that the collimator is compatible with the microscope model and securely mounted on the microscope.



9.2.3 Control box operation failure: Please ensure that the controller connector is securely connected to the Hyper E740 illuminator.

#### 10. Customer Service:

For technical support related to the product, please call +886-3-5637218, send an email to [Sales@yodnlighting.com](mailto:Sales@yodnlighting.com), or visit <https://www.yodnlighting.com/contact/getInTouch> for assistance. Additional information can also be found on the YODN website at <http://www.yodnlighting.com>.



#### 11. Warranty:

YODN provides a 2-year warranty for the Hyper E740 illuminator to end-users from the date of shipment. The warranty for peripheral accessories of the lighting fixture does not include liquid light guides.