



# PYROIS TECH

## COB-series User Manual

Fiber coupled  
LED light source  
UV-VIS-NIR



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## 0. Introduction

Thank you for purchasing this COB light source from Pyroistech.SL. This document describes the COB light source and provides you with instructions for its correct operation. Please do not hesitate to contact us through [info@pyroistech.com](mailto:info@pyroistech.com) if you have any questions or doubts about this manual.

The COB series comprises high power LED light sources with peak wavelengths that range from UV to NIR (270 – 940 nm). They are conceived as user friendly, compact and silent tools, being ideal for fluorescence, spectroscopy and general optical fiber illumination applications.

These light sources have been designed to obtain a high coupling efficiency to optical fiber through a selectable SMA/FC connector. In addition, they can be operated either in continuous (CW) or pulse width modulation (PWM) modes.

## 1. Technical Specifications

### Optical characteristics

Reference	$\lambda$ (nm)	Power <sup>1</sup> (mW)	FWHM (nm)
COB-270	270	0.05	15
COB-280	280	0.05	15
COB-310	310	0.38	15
COB-365	365	3.5	12
COB-385	385	4.5	12.5
COB-395	395	5.0	16
COB-405	405	4.7	20
COB-457	457	5.0	20
COB-6500 White	-	5.0	-

Reference	$\lambda$ (nm)	Power <sup>1</sup> (mW)	FWHM (nm)
COB-460	460	9.0	24
COB-523	523	1.5	36
COB-590	590	1.0	15
COB-623	623	4.5	17
COB-660	660	5.0	18
COB-740	740	3.5	18
COB-840	840	6.0	33
COB-940	940	5.0	40
COB-3000 White	-	1.0	-

(1) Typical output power measured with an optical fiber (core diameter 600 $\mu$ m) and a Si photodiode (OPHIR™)

### Electrical characteristics

Power input	$V_{IN}$	10 - 18 V
	$I_{IN}$	1.5 A max
	Connector type	DC female 2.1mm
Signal input for pulsed mode	$V_{IN}$	5V
	$I_{IN}$	5 mA typ.
	Connector type	SMA female

### Other characteristics

Output connector	SMA 905 or FC
Working T	0 - 50 °C
Humidity	< 80% RH
Equipment Surface T	40°C
Stabilization time	25 min typ.
Size	10.5 x 11.5 x 8 cm
Weight	500 g

## 2. Operation

### 2.1 Package Content

- Requested COB light source
- Power source: input 100 - 240 V~, 50 - 60 Hz; output 18 V, 2 A; 99 x 50 x 33 cm, cord length 1.5 m.
- Power cord 1.85 m long
- User's manual

Inspect carefully the devices and make sure there is no damage. On the contrary, do not employ the light source and please contact us through [info@pyroistech.com](mailto:info@pyroistech.com) for repair or replacement information.

### 2.2 Before use

Insert the plug of the power cord into the power supply and connect the power cord to the power outlet. Then, introduce the plug of the power supply into the light source power input (DC female type).

Unscrew the cap of the SMA 905/FC connector on the front face of the light source and connect the fiber cable. Always do this step before turning on the light source. Now, the COB light source is ready to be used.

The COB source is designed to have intensity control in continuous and modulation modes. The easy user interface permits to select the desired mode (see section [2.4](#)).

### 2.3 Maintenance

The output connector of the light source should be periodically cleaned employing compressed air to remove the dust. It is recommended to have the output connector with the cap on it whenever the light source is not being used. The connector of the fiber used with the light source also has to be clean to ensure the best possible performance.

## 2.4 COB-series diagrams

1	Intensity regulator (20% - 100%) in CW mode
2	LED indicator
3	Switch (ON-OFF-PWM)
4	PWM input (5V max)
5	Power input (10 – 18 V, 1.5 A max)
6	SMA 905/FC output connector



## 2.5 Operation Modes

The controls feature a three way switch (3) to select the operation mode: continuous, PWM or off. A second control (1) is used to manually adjust the drive current in continuous mode. A connector allows (4) to introduce a control signal in the PWM mode.

### • OFF mode

The switch (3) on the right of the frontal face of the light source has to be on the middle position ('OFF'). It is suggested to have the switch in this position when connecting the power supply to the light source through (5).

### • CW mode

To select the continuous mode, please move the switch (3) to the left position ('ON'). In this mode, the left knob (1) controls the intensity. The intensity can be adjusted between 20% (fully counter-clockwise) and 100% (fully clockwise) of maximum intensity.

### • PULSED mode

To work in pulsed mode, please move the switch (3) to the right position (pulsed signal drawing). In this mode, the intensity can be adjusted between 0% and 100% of maximum intensity changing the duty cycle of the PWM signal introduced through the PWM input connector (4) of SMA female type.

The PWM signal must vary between 0 and 5 V. Voltages out of this range can damage the PWM input and disable the PWM mode. Voltages below 1.5 V will be recognized as low level while tensions above 2.8 V will be considered high level. Pulsed frequencies up to 1MHz are suggested for better operation accuracy although higher frequencies can also be used.

Whenever the LED is on, either in CW mode or in pulsed mode; the green LED indicator (2) located on the front face of the light source will be on. In case of being in pulsed mode, the LED indicator will blink in the same way as the light source.

The light comes out through a connector (6) that can be SMA 905 or FC depending on the customer's choice and that has been specially designed to ensure that the optical fiber can be correctly screwed to the light source.



### 3. Important Safety Notes

- Do not remove or alter any installed safety device on this equipment. Doing so will cancel your warranty and create an unsafe operating environment.
- There are NO user serviceable parts inside. Dangerous currents are present in this device. Only allow qualified personnel to service this unit.
- Inspect this unit and its power supply before using it for the first time. Do not use the unit if it is damaged in any way. Contact us for repair or replacement information.
- During operation do not cover the source or obstruct the air flow for its refrigeration. Avoid exposure to direct sun light. A rise in the light source's temperature could affect its operation or even damage its components.
- The output connector of the light source may get hot during operation. After its employment, allow enough time to cool down before handling.
- Optical radiation can damage your eyes. Do NOT stare directly at the light beam.



#### **CAUTION !**

Do NOT stare directly at the light beam

- Proper protective eyewear must be worn when using light sources that emit UV radiation (COB-270, COB-280, COB-310, COB-365, COB-385, COB-395, COB-405). Avoid exposure to the beam. It is hazardous to skin and eyes ,and may cause cancer.



#### **WARNING ! UV LEDs**

Avoid eye and skin exposure to the emitted UV light

- COB-840 and COB-940 emit non visible infrared light, which can be hazardous depending on total system configuration (including, but not limited to optics, drive current and temperature). Observe safety precaution given in IEC 62471 when operating these light sources.

## 4. Warranty

The COB light source is covered by Pyroistech's 2 years warranty.

## 5. Compliance

This device has been tested and complies with the following standards:

**EMC** IEC 61000-4-2:2008 IEC 61000-4-8:2009  
IEC 61000-4-3:2006 CISPR 11:2009  
IEC 61000-4-4:2012 Directive 2014/30/EU  
IEC 61000-4-5:2014 EN 61326-1:2013  
IEC 61000-4-6:2013

**Safety** IEC 61010-1:2010



EMC 2014/30/EU  
RoHS-compliant



WEEE  
Compliance

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