



# COBRA CURE MINI

Operations Manual 1.0



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## Photobiological Safety

### Important Safety Message for COBRA Cure™ Mini users:

Your COBRA Cure™ Mini Lamp is a LED-based radiation source, intended to be used as an OEM component. It must only be used inside a system such as, for example, a printing machine, and must never be used as a stand-alone product outside of the intended OEM system without proper safety precautions.

ProPhotonix light sources include protective guards to fully enclose electrical mechanisms that may cause operator harm during normal use. These fixed guards adhere to the appropriate international safety standards.

**Caution:** Do not operate the light sources or the machine in which they are installed while any safety guards are open, loose, damaged, or missing.

**Caution:** Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ProPhotonix light sources are classified as Risk Group 3 under IEC 62471 at a distance of 200mm.

Risk groups defined in IEC 62471:

**Exempt** means there is no photo-biological hazard for the end points in this standard.

**Risk Group 1** – Low Risk. Does not pose a hazard due to normal behavioral limitations on exposure.

**Risk Group 2** – Moderate Risk. Does not pose a hazard due to aversion response to very bright light sources or due to thermal discomfort.

**Risk Group 3** – High Risk. May pose a hazard even for momentary or brief exposure.

**Warning: DO NOT LOOK DIRECTLY AT THE UV LIGHT SOURCE. ALWAYS WEAR GOGGLES WHEN USING THIS PRODUCT.**

ProPhotonix recommends safety goggles with a minimum optical density value of 6 within the wavelength range 200-532nm.

**Note:** ProPhotonix UV LED products emit 90% or more of the total UV light energy in a narrow wavelength band.

| Wavelength | Band      |
|------------|-----------|
| 365nm      | 350-390nm |
| 385nm      | 370-410nm |
| 395nm      | 380-420nm |
| 405nm      | 390-430nm |

**Caution:** Only a portion of the UV light output is visible to the human eye. A light that appears dim can actually be operating at very high intensity.

Warning Labels

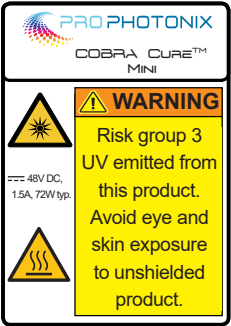
Below are the contents of warning labels that must be affixed to COBRA Cure™ Mini Lamp devices.

UV Safety Standards  
IEC Class

ANSI Risk Group 2  
3B

ANSI Risk Group 3  
3B

**Warning:** UV radiation emitted from this lamp. Skin or eye damage could result. Avoid exposure of eyes and skin to unshielded lamp.



| Symbol | Description                                                                                                         |
|--------|---------------------------------------------------------------------------------------------------------------------|
|        | Obey all safety messages that follow this symbol to avoid possible injury or death                                  |
|        | Warning indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury |
|        | Wear protective gloves and use appropriate shielding                                                                |
|        | Wear approved ultraviolet resistant eyewear and use appropriate shielding                                           |
|        | ULTRAVIOLET LIGHT hazard                                                                                            |
|        | Hot surface hazard                                                                                                  |
|        | Must not be disposed of in the trash                                                                                |

## Product Specifications

### General Characteristics

|                             |                                                                                                          |     |
|-----------------------------|----------------------------------------------------------------------------------------------------------|-----|
| Weight of Light Head        | 150                                                                                                      | mg  |
| Weight of Controller        | 160                                                                                                      | mg  |
| Noise at 0m                 | 75                                                                                                       | dBA |
| Noise at 1m                 | 54                                                                                                       | dBA |
| Maximum Ambient Temperature | 35                                                                                                       | °C  |
| Humidity Range              | 45 - 65                                                                                                  | RH  |
| Thermal Safety Switch       | Thermal safety sensor is mounted on the substrate. The LED junction is never exposed to over temperature |     |

### Electrical Characteristics

|                            |      |    |
|----------------------------|------|----|
| Maximum Electrical Current | 1250 | mA |
| Typical Electrical Current | 1100 | mA |
| Maximum Power Consumption  | 50   | W  |
| Typical Power Consumption  | 53   | W  |

### Optical Characteristics

|                       |                |    |
|-----------------------|----------------|----|
| Illumination Area     | 36 x 13.5      | mm |
| Beam Divergence Angle | 120 full Angle | °  |

## Control Interface Specifications

The illumination power of UV LED module will be controlled in continuous mode.

|                                 |                                                |     |                                                                                                                                                                      |
|---------------------------------|------------------------------------------------|-----|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Illumination Flux Level Control | Analog Voltage 1-10                            | V   | Illumination flux level control 10%-100% of full power. 1V = 10% of full power, 10V = 100% of full power. The response time of power adjustments is less than 2 msec |
| UV LED Fault Signal             | 0 - 4 V = 0 (Fault)<br>16 - 24 V = 1 (Ok)      | 0/1 | The signal signifies : Critical temperature of LED unit reached                                                                                                      |
| UV LED Enable Signal            | 0-4V=0 (Off/Disabled)<br>16-24V=1 (On/Enabled) | 0/1 | Switch On/Off, with response time better than 2.5 msec                                                                                                               |

## Connector Pin Functions

| PIN # | Functionality                                                               |
|-------|-----------------------------------------------------------------------------|
| 1.    | Ground                                                                      |
| 2.    | Intensity Control                                                           |
| 3.    | Enable, 0 - 4V = OFF, 16 - 24V = ON                                         |
| 4.    | Fault line , 0 - 4 V = Fault, 16 - 24 V = Ok, external load must be greater |
| 5.    | Ground                                                                      |
| 6.    | +48V DC                                                                     |
| 7.    | Ground                                                                      |
| 8.    | +48V DC                                                                     |
| 9.    | Ground                                                                      |
| 10.   | +48V DC                                                                     |
| 11.   | Ground                                                                      |
| 12.   | +48V DC                                                                     |
| 13.   | Ground                                                                      |
| 14.   | Not connected                                                               |

The data & DC power connector on the LED Light head is a 12-pin PUD (S12B-PUDSS-1(LF)(SN), JST America).

## COBRA Cure Mini Status LED Codes

| Description                 | Colour | Flashes |
|-----------------------------|--------|---------|
| No Errors                   | Green  | 1       |
| LED Error (Chain 1)         | Orange | 1       |
| LED Error (Chain 2)         | Orange | 2       |
| LED Error (Chain 3)         | Orange | 3       |
| LED Error (Chain 4)         | Orange | 4       |
| PCB Temperature Error       | Red    | 1       |
| Substrate Temperature Error | Red    | 2       |
| Flexi Error                 | Red    | 3       |
| Power in Warning            | Red    | 4       |
| Power in Error              | Red    | 5       |
| Excessive DAC Duty Error    | Red    | 7       |

### Choosing the Correct ProPhotonix Power Supply

All wiring and connections must be implemented before plugging the power supply into the wall. Power supply choice depends on the number of modules required to run simultaneously. Power supplies can be purchased using product code PSU-48V-120W-XX, where XX is the country code. Wall plug power supplies can be ordered with part number PSA-48V-120W-XX where XX is the country code.

### DIN Rail Mounting of Power Supplies

ProPhotonix offers power supplies that can be mounted on DIN rails, for example TS35/7.5 or 15.

### Connecting the Wall Plug Leads to the Power Supplies

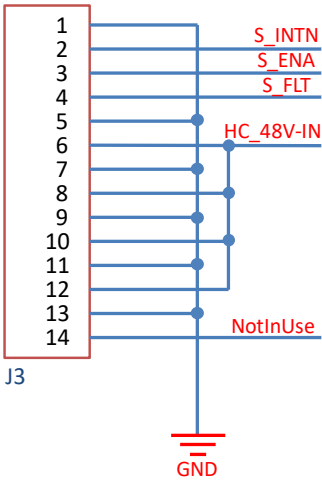
The flying leads of the power supply cable must be connected to the 3-pole screw terminal block on the power supply. Use a Philips or Pozi head screwdriver. The correct connections are shown in the tables below.

| Function | Label on PSU                                                                      |
|----------|-----------------------------------------------------------------------------------|
| Live     | L                                                                                 |
| Neutral  | N                                                                                 |
| GND      |  |

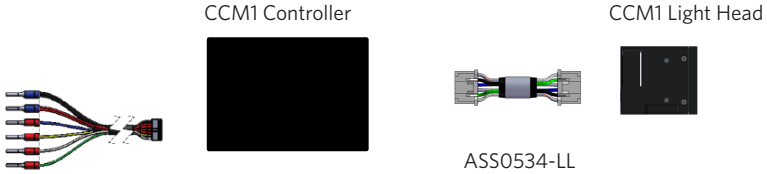
Mains or Wall Plug Connection

| Power Supply connection |
|-------------------------|
| GND (-V)                |
| 48 V DC supply (+V)     |

Power Supply Output Connection



### COBRA Cure Mini Connected to Flying Lead Cables



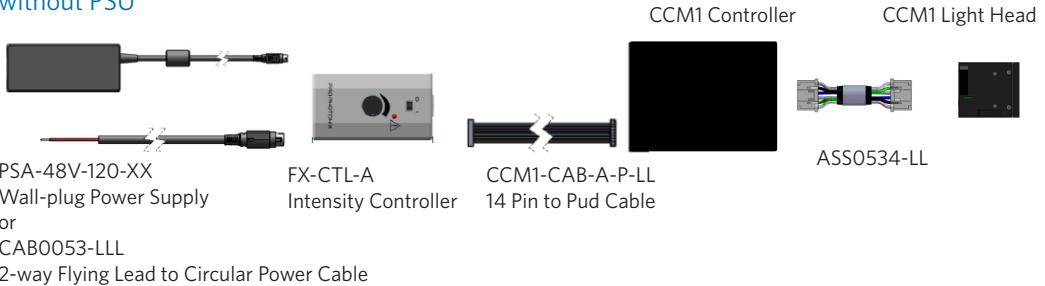
CCM1-CAB-F-P-LL

14 PIN Ribbon Cable to 6-way Flying Lead Cable

This connection scheme allows the user to configure their own power and control scheme. These cables allow the Mini module interface to be connected to external power supplies and controllers via flying leads. The intensity is adjusted by varying the voltage using a 1-10V control signal on the control wire. Activation/Enable is achieved by applying a 16-24V signal on the enable wire. This connection configuration also allows the user to monitor the operating status through the status wire.

Note: 2000mm are the normal stocked lengths for these cables.

### COBRA Cure Mini Connected to Flying Lead Power Cables and Intensity Controller with or without PSU



PSA-48V-120-XX

Wall-plug Power Supply

or

CAB0053-LLL

2-way Flying Lead to Circular Power Cable

FX-CTL-A

Intensity Controller

CCM1-CAB-A-P-LL

14 Pin to Pwd Cable

ASS0534-LL

This Connection scheme allows the user to configure their own power scheme while utilizing ProPhotonix' Intensity Controller to control the intensity of the lamp. The Intensity Controller has 2 manual inputs. The slider switch is used to activate/enable the unit and there is a rotary potentiometer to adjust the intensity. The controller also incorporates a LED light that illuminates a fault when detected. The controller can be powered by a wall plug power supply (ProPhotonix Part Number: PSA-48V-120-XX, where XX is the country).

The controller can also be controlled using the customers own power supply by circular connector to flying lead cables or circular connector to M4 ring cables (not pictured). The circular connector to flying lead cable ProPhotonix part number is CAB0053-LLL. The circular connector to M4 ring cable ProPhotonix part number is CAB0053-4R-LLL. LLL is the length of the cable. The controller can also be controlled using the customers own power supply by circular connector to flying lead cables (ProPhotonix part number: CAB0053-LLL) or circular connector to M4 ring cables (ProPhotonix part number: CAB0053-4R-LLL ). LLL refers to the length of the cable.

LED Lifetime

The LED-based COBRA Cure™ Mini Lamps are designed so that, if they are operated at an ambient temperature of 35°C. Running the units in environments having temperatures higher than 35°C will result in the accelerated aging of the LED sources.

Warranty

Do not attempt to disassemble your COBRA Cure™ Mini Lamp. Any such action will void the warranty.

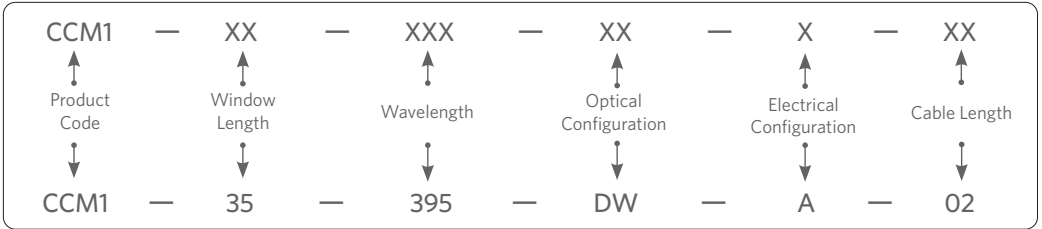
COBRA Cure™ Mini Lamps and accessories are guaranteed by ProPhotonix to be free from material and manufacturing defects for a period of 12 months from the date of shipment. Should a product fail during this period, ProPhotonix will, at its discretion, either repair or replace the damaged unit. Repaired units or replacement units will be covered for the remainder of the original warranty period. The warranty does not apply to units that have failed due to abuse, acts of God, mishandling, alteration, improper installation, or negligence.

Ordering Part Numbers

| Product Code | Window Length (mm) | Wavelength (nm) | Optical Configuration | Electrical Configuration | Cable Length |
|--------------|--------------------|-----------------|-----------------------|--------------------------|--------------|
| CCM1         | 35                 | 365             | DW                    | A - Analog               | 01           |
|              |                    | 385             |                       | S - Sustain              | 02           |
|              |                    | 395             |                       |                          |              |

LL represents the cable length in meter. The standard length is 2m

To order your COBRA Cure™ Mini- Use product code (CCM1) - Select Window Length (35) - Select Wavelength (XXX) - Select Optical configuration (DW) - Select Electrical Configuration (X) - Select Cable Length (XX)



## Accessories Part Number

| Accessory                                        | Part Number     |
|--------------------------------------------------|-----------------|
| Input Power Cable                                | CCM1-CAB-F-P-LL |
| 14 Pin to Pud Cable                              | CCM1-CAB-A-P-LL |
| Intensity Controller                             | FX-CTL-A        |
| 2-way Flying Lead to Circular Power Cable        | CAB0053-LLL     |
| Air Filters & Adaptors (Pack of 25 = 5 Adaptors) | CCM1-FLT-25     |

LL represents the cable length in meter. The standard length is 2m

For more information contact us at [sales@prophotonix.com](mailto:sales@prophotonix.com) or visit us at [www.prophotonix.com](http://www.prophotonix.com)

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