

COBRA Clean™ FX1

UVC LED Disinfection System



COBRA Clean FX1 provides a ready to use evaluation product tailored to support rapid development of UVC LED based disinfection applications.

The COBRA Clean is a compact, fan-cooled UVC LED lamp designed to facilitate the definition of multiple characteristics for maximized UVC disinfection system performance. The extended range now includes 265nm, 275nm, 285nm and 310nm lamps that provide a uniform line with a peak irradiance of up to 90mW/cm² and peak energy density (dose) of up to 90mJ/cm². The lamp is built utilizing LED technology for optimum intensity, uniformity and lifetime. It has been designed using an established and reliable platform which allows for numerous optical, mechanical and electronic configurations.

The COBRA Clean UVC LED system can provide an ideal evaluation unit for water, surface and air disinfection applications across a range of industries in particular, laboratory, medical, packaging, food and industrial applications. UVC LED lamps offer significant benefits versus traditional UV lamps. LED technology is a more sustainable technology as it is ozone and heavy metal free. Furthermore, no warm up time is required making it more energy efficient. LEDs offer more precise control and predictable light output over time.

COBRA Clean FX1 is patent protected, independently CE and UL certified.

Key Features

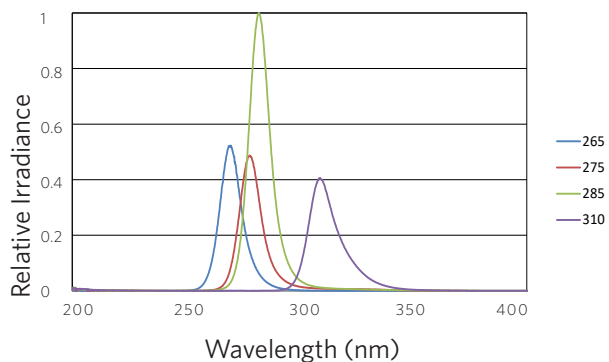
- Compact, fan-cooled UVC LED lamp
- Available in a range of wavelengths – 265nm, 275nm, 285nm and 310nm
- Peak irradiance of 90mW/cm² at 2mm
- Peak energy density (dose) of 90mJ/cm² at 2mm
- Field replaceable window
- CE and UL Certified

Key Applications

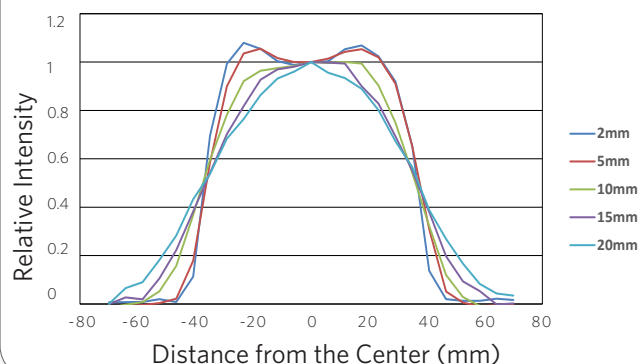
Water, surface and air disinfection in:

- Laboratory and medical
- Packaging materials
- Industrial applications
- Food processing

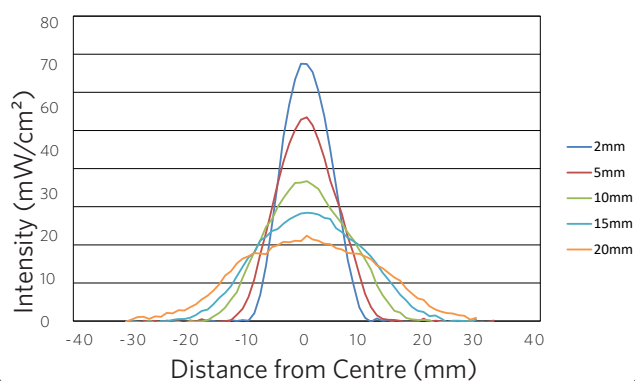
Relative Irradiance versus Wavelength



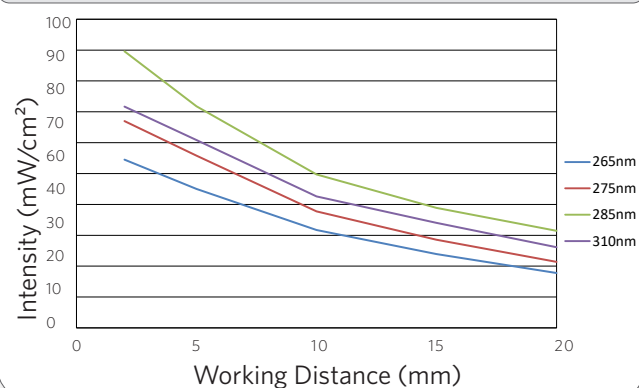
Longitudinal Intensity Profiles



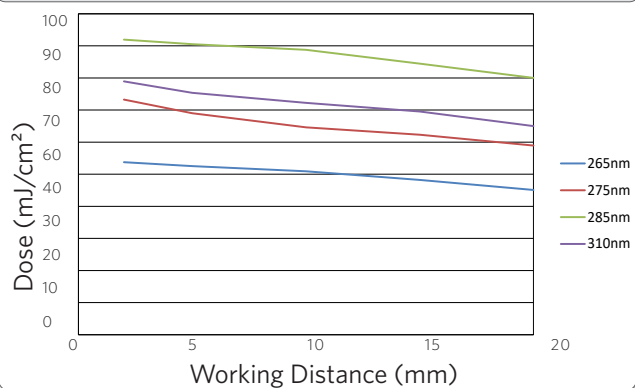
Lateral Intensity Profiles



Intensity versus Working Distance



Dose versus Working Distance



Wavelength (nm)	Optical Configuration	Output Angle (°)	Working Distance (mm)	Factory Set Dose (mJ/cm²)	Nominal Intensity (mW/cm²)
265	D4	40	2	72	78
275	D4	40	2	75	72
285	D4	40	2	90	92
310	D4	40	2	55	78

The stated wavelength is the peak wavelength ± 5 nm. Working distance is the distance from the window to the point at which the intensity and dose is measured. The dose is set at the factory. The dose was measured using a ILT 950UV. It was scanned at a speed of 10mm/sec (0.6 m/min). Nominal intensity is the intensity expected at the specified dose level.

General Characteristics (per 75mm lamp)	Values	Units
Weight	0.26	Kg
Noise sound pressure level at 0m	84*	dBA
Noise sound pressure level at 1m	54*	dBA
Maximum ambient temperature	35	°C
Mounting hole maximum tread depth	6	mm

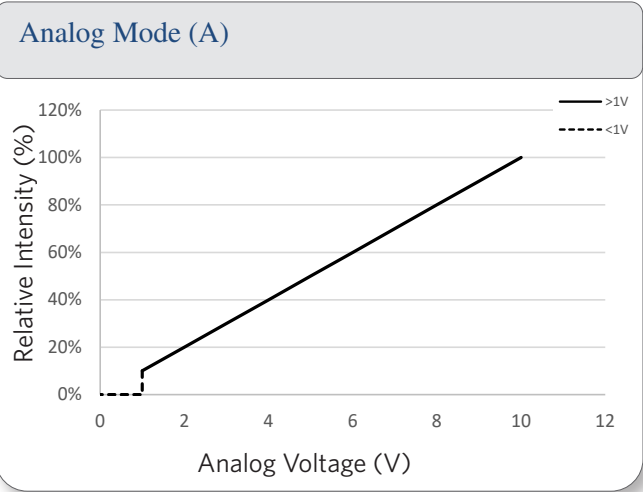
*For every subsequent module add 3dBA.

Field Replaceable Window

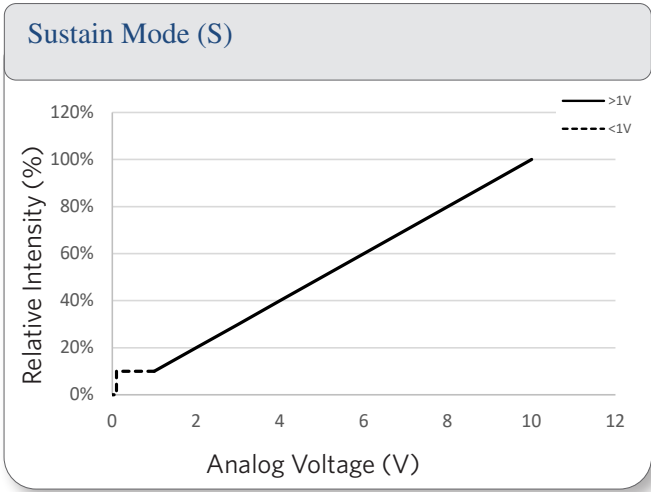


The outer window of the lamp can be easily removed for cleaning. As shown in the images a hinge mechanism can be pulled back to allow the window to slide out of the housing. Once cleaned or replaced, the window can be slid back into the lamp in the same way.

Intensity Response to Analog Control



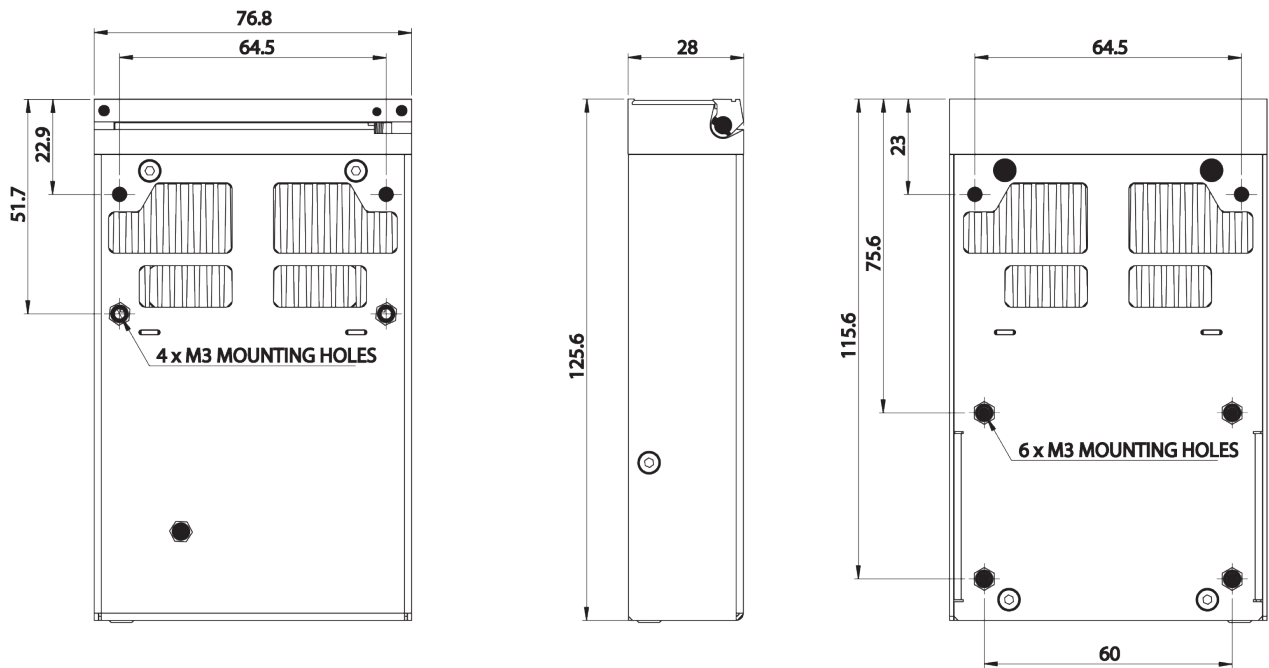
Turns off at 1V



From 300mV to 1V, lamps operate at 10% intensity.

Dimensional Diagram

COBRA Clean FX1 (D4)



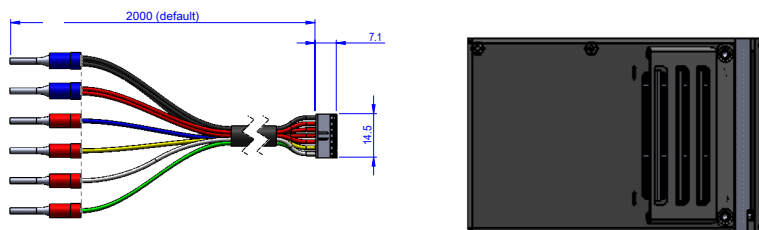
COBRA Clean FX1 Connection Schemes

COBRA Clean™ FX1 lamps can be used in two basic configurations. All configurations allow the user to control the intensity of the modules.

FX1 Connected to Flying Lead Cables

FX1-CAB-F-A-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 FX1 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.

FX1 Connected to Flying Lead Power Cables and Intensity Controller with or without PSU



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.

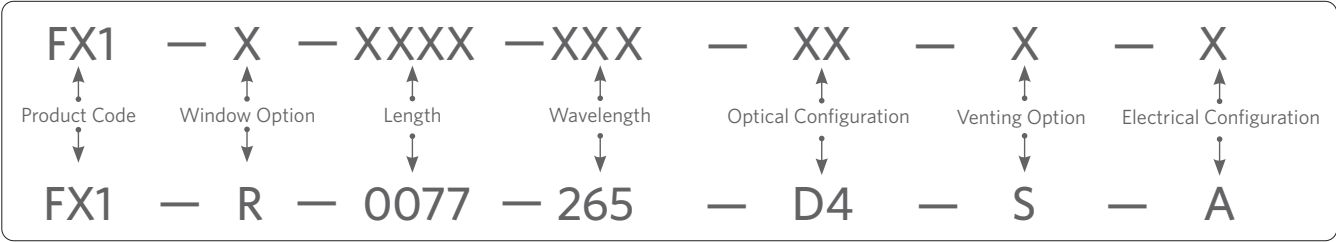
The controller can be powered by a wall plug power supply (ProPhotonix Part Number: PSA-48V-120 -XX, where XX is the country). The controller can also be controlled using the customer's own power supply by circular connector to flying lead cables or circular connector to M4 ring cables (not pictured). The circular connector to flying lead cable ProPhotonix part number is CAB0053-LL. The circular connector to M4 ring cable ProPhotonix part number is CAB0053-4R-LL. LL is the length of the cable.

Note: The Wall Plug Power Supply and ribbon cables are normally stocked in 500mm lengths. 2000mm are the normal stocked lengths for Flying Lead or M4 to Power Connector cables.

Part Number

Product Code	Window Option	Length (mm)	Wavelength (nm)	Optical Configuration	Venting Option	Electrical Configuration
FX1	R - Replaceable	77	265	D4 - Divergent	S - Side Vented	A - Analog
			275			S - Sustain
			285			
			310			

To order your COBRA Clean FX1- Use product code (FX1) - Select Window Option (X) - Select Length (XXXX) - Select Wavelength (XXX) - Select Optical configuration (XX) - Select Venting Option (X) - Select Electrical Configuration (X)



Accessories Part Number

Accessory	Part Number
48V Power Supply	PSU-48V-120W-XX
Replaceable Window (pack of 5)	FX1-W-0077
Wall Plug Power Supply	PSA-48V-120W-XX
14 Pin Ribbon Cable	FX1-CAB-A-A-LL
Intensity Controller	FX-CTL-A
14 Pin Ribbon Cable to 6 way Flying Lead Cable	FX1-CAB-F-A-LL
2-way Flying Lead to Circular Power Cable	CAB0053-LL

LL represents length of cable. The standard length is 2m. Example 1: Require 2m cable, the product number is then FX1-CAB-F-A-02. Example 2: Require 0.5m cable, the product number is then FX1-CAB-F-A-0.5. XX represents Region Code: US, EU, UK.

Example Ordering Options

Control lamp directly from customers system and powered by ProPhotonix power supply

Connection Scheme 1
FX1-R-0077-265-D4-S-A
FX1-CAB-F-A-02
PSU-48V-120W-EU

Control lamp using ProPhotonix controller and powered by ProPhotonix power supply

Connection Scheme 2(a)
FX1-R-0077-265-D4-S-A
FX1-CAB-A-A-02
FX-CTL-A
PSA-48V-120-EU

Control lamp using ProPhotonix controller and powered by customer power supply

Connection Scheme 2 (b)
FX1-R-0077-265-D4-S-A
FX1-CAB-A-A-02
FX-CTL-A
CAB0053-02

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US Sales

Tel: +1 603-893-8778
sales@prophotonix.com

EMEA & ROW Sales

Tel: +44-1279-717170
sales@prophotonix.com

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