



**PURO**AIR

## Fighter – UV Air HVAC



Specifically designed to disinfect the air, our compact germicidal UV-C Kit works with fan coils and air handling units.

### Safety Notes

Heed all warnings. Failure to use the equipment in the manner specified may impair the fixture from providing the desired protection.

According to the circumstances, the appropriate recommendations made in these instructions must be made available, together with any other relative information, to any company or person involved in the installation of PURO Air products.

If the product is wrongly operated or a purpose other than its intended use, liability cannot be accepted for any damage. The manufacturer will not be responsible for damage to people, animals, and objects caused by use or operation of the product contrary to these instructions.

As with all electrical products the safety information and precautions contained in this booklet must be carefully observed, including following:

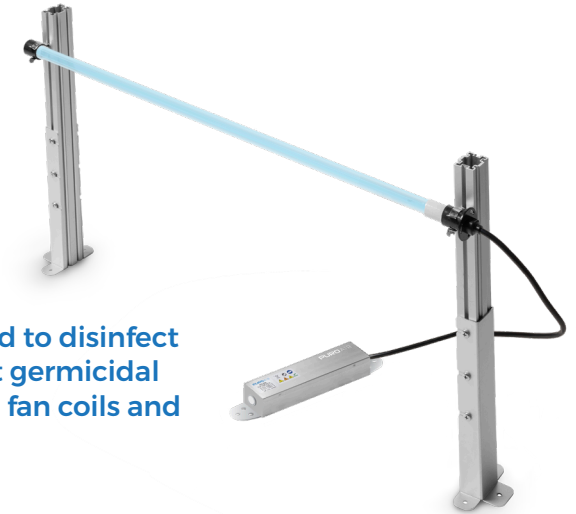
- Device is only intended for use within HVAC systems and in unit ventilators, where there is no risk of accidental exposure.
- Ensure the product is switched and unplugged from the supply mains before maintenance or cleaning.
- Installation, maintenance, and repairs should only be performed by a qualified operator.
- Contact your PURO Lighting representative for repairs or replacement parts.

Improper repairs may damage the product, place the user at serious risk, and void the warranty.

### Warning

- Accidental exposure to UV-C radiation emitted by germicidal lamps may cause severe conjunctivitis and erythema.
- Product is intended to be used as a germicidal lamp for disinfection.
- The lamp, as supplied, cannot be modified or designed for use with accessories or tools.
- Ensure the device is turned off when performing maintenance on the HVAC system.

## Fighter – UV Air HVAC



Specifically designed to disinfect the air, our compact germicidal UV-C Kit works with fan coils and air handling units.

### Product Symbol Key



Recycle the lamps according to your local laws



Appropriately recycle the components of this product



Consult the instructions before using the product



Danger of electrical shock; disconnect power before installation or maintenance



Danger



Danger of exposure to UV-C radiation



This device is RoHS compliant



Use protective gloves



Wear protective glasses

## Application

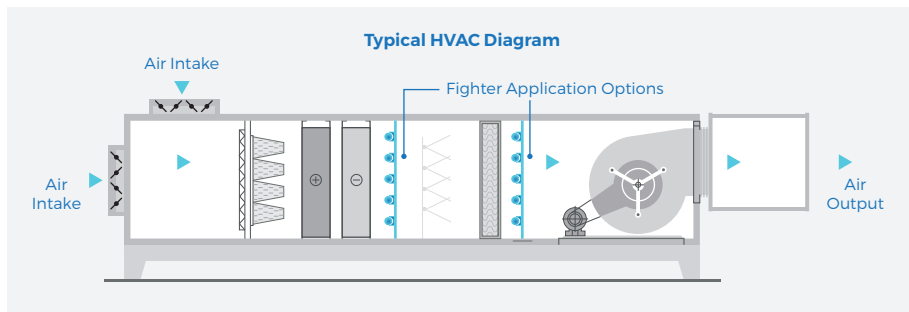
### Air Disinfection in Unit Ventilators

The Fighter UV-C germicidal system can be used to disinfect and prevent growth of pathogens and mold in the conditioned air, on the heat exchange coils, and in the condensation within a compact unit ventilator. The Fighter UV-C lamp(s) can be easily installed inside a new unit ventilator and can easily be retrofitted into installed units. The lamp ballasts are compact and are equipped with a quick release plug/socket that simplifies installation and replacement. This solution improves the indoor air quality in applications with unit ventilators such as hotels, apartments, offices, patient rooms, and schools.



### Air Disinfection in Air Handling Unit (AHU) and HVAC Systems

The Fighter UV-C germicidal system and coil mounting rack system disinfects and prevents growth of pathogens and mold in the conditioned air, on the heat exchange coils, and inside the HVAC systems. The customized coil mounting rack holding the lamps inside the air conditioning system allows UV-C radiation to disinfect the heat exchange coil and to prevent the growth of bacteria and mold, which compromises the proper functioning of the heat exchangers and their energy efficiency. Using the Fighter UV-C germicidal system within a HVAC system is a reliable and economical solution to disinfect pathogens and mold in the conditioned air before reaching occupied rooms while being safe for personnel since all irradiation is confined inside the HVAC system.

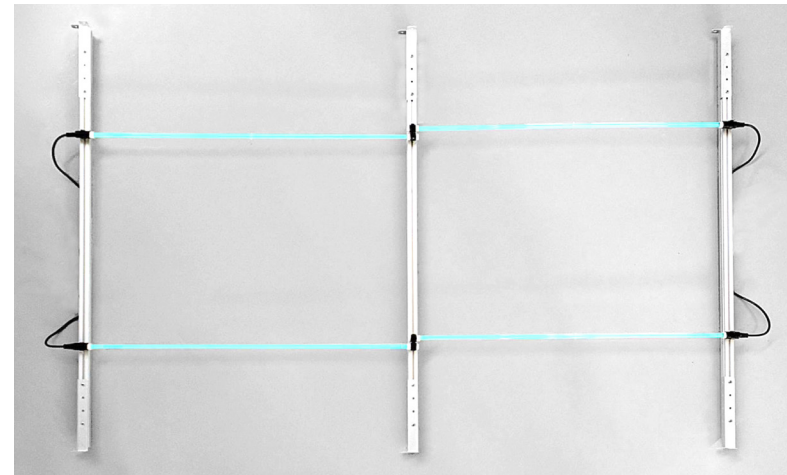


## Device Codes

<b>Model</b>	<b>FR</b> = Fighter Air HVAC
<b>Lamp Type</b>	<b>16</b> = 16W mercury vapor UV-C lamp <b>25</b> = 25W mercury vapor UV-C lamp <b>40</b> = 40W mercury vapor UV-C lamp <b>60</b> = 60W mercury vapor UV-C lamp <b>90</b> = 95W mercury vapor UV-C lamp
<b>Mounting</b>	<b>CP</b> = Clips only <b>RK</b> = Racking*
<b>RACK MOUNTING</b>	
<b>Vertical Upright</b>	<b>VU-20-XX</b> = Vertical upright, 19.69" length <b>VU-32-XX</b> = Vertical upright, 31.5" length <b>VU-43-XX</b> = Vertical upright, 42.5" length <b>VU-51-XX</b> = Vertical upright, 51.2" length <b>VU-63-XX</b> = Vertical upright, 63" length
<b>Feet</b>	<b>VU-FT-XX</b> = Foot for vertical upright, includes 2 square nuts M5 and 2 screws M5x6
<b>Joint</b>	<b>VU-J-XX</b> = Joint for vertical upright, includes 8 square nuts M5 and 8 screws M5x6

Example order: **FR-40-CP**

\*Please contact your dealer for custom racking solutions.



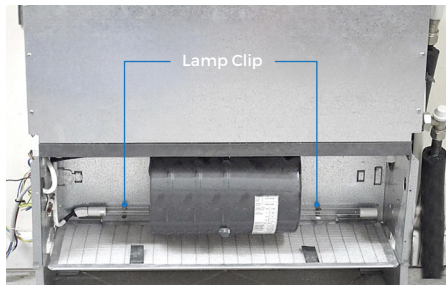
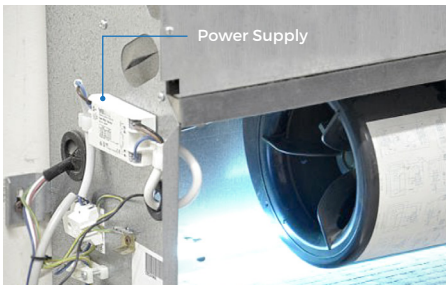
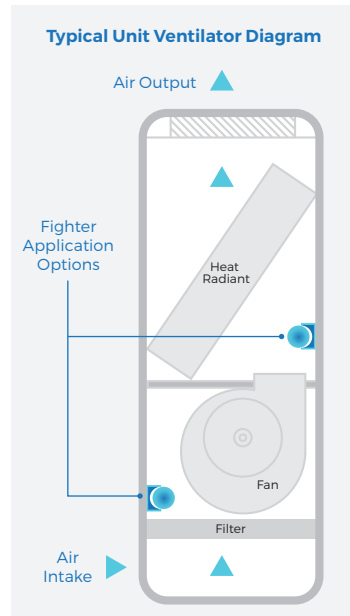
### Installation

- Handle with care: fragile material
- Inspect packaging for damage
- Inspect unit immediately for damage
- Remove the protective film from the device

### Installation in Unit Ventilator

Follow these instructions:

- 1) Identify location to install the Fighter. Ideally install the Fighter in between the blower and coil.
- 2) Install lamp clips into the sheet metal using sheet metal screws or self tapping screws.
- 3) Install lamp by gently pushing into lamp clips.
- 4) Install ballast and plug into lamp.
- 5) Connect power supply to 120 - 277V supply mains.
- 6) CAUTION: To avoid accidental UV exposure do not apply power until unit ventilator is fully closed.

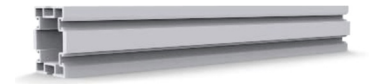


### Installation for On-Coil Disinfection

The modular mounting rack for the Fighter assembly includes the following items:

#### Vertical Upright

- VU-20-XX** = Vertical upright, 19.69" length
- VU-32-XX** = Vertical upright, 31.5" length
- VU-43-XX** = Vertical upright, 42.5" length
- VU-51-XX** = Vertical upright, 51.2" length
- VU-63-XX** = Vertical upright, 63" length



#### Feet

**VU-FT-XX** = Foot for vertical upright, includes 2 square nuts M5 and 2 screws M5x6

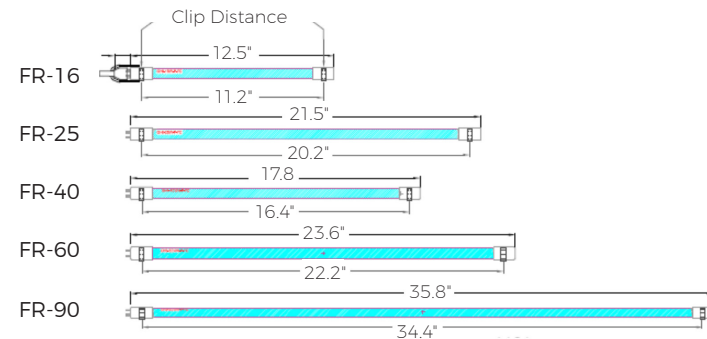


#### Joint

**VU-J-XX** = Joint for vertical upright, includes 8 square nuts M5 and 8 screws M5x6

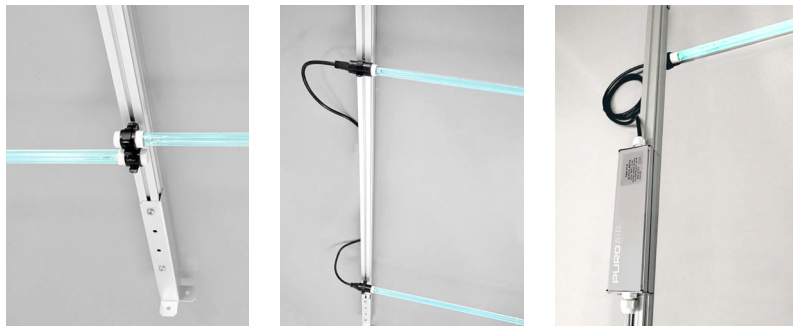
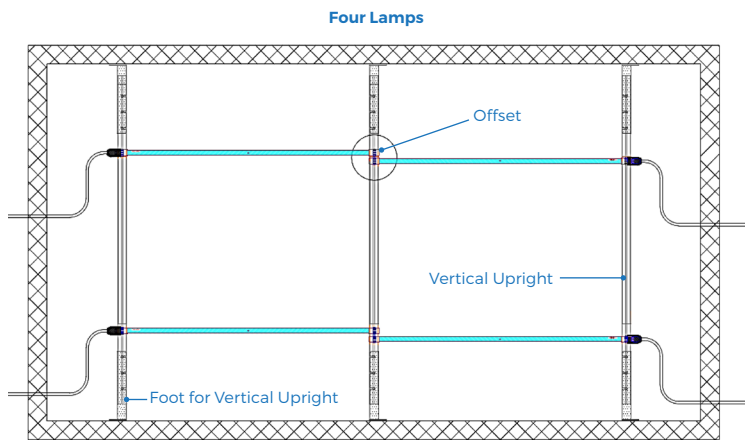
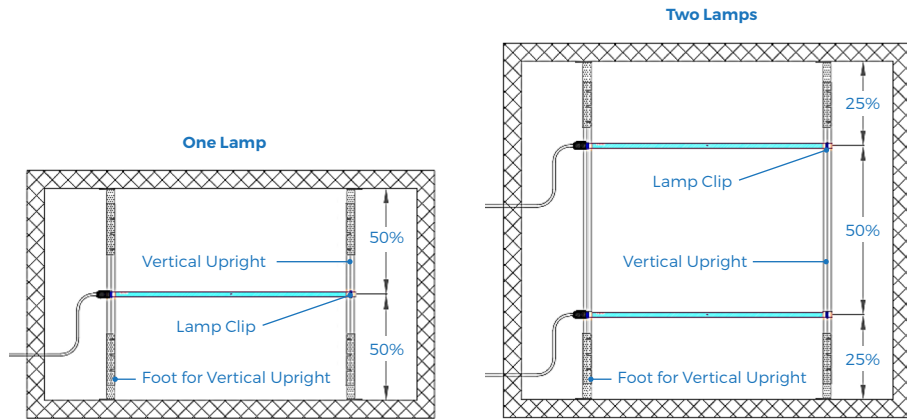


### Lamp Type and Sizes



**Installation for On-Coil Disinfection**

The lamps must be evenly distributed, see examples below:

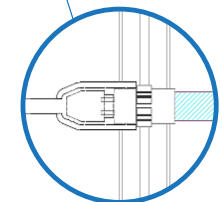
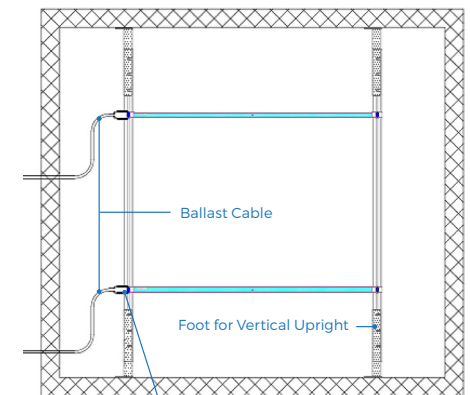
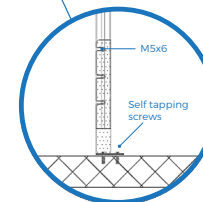
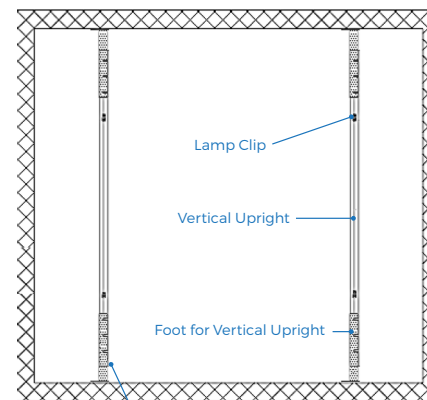
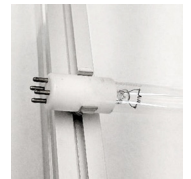


Ballast installed on upright

- Handle with care: fragile material
- Inspect packaging for damage
- Inspect unit immediately for damage
- Remove the protective film from the device

**Follow these instructions:**

- 1) It is recommended that the mounting rack is assembled near the coil.
- 2) Cut the vertical upright 10-20 cm less than the total height of the space. The remaining space will be covered by the feet.
- 3) Install lamp holder clips on the vertical uprights. Position the lamps to be evenly spaced along the vertical uprights.
- 4) Install the feet on the vertical uprights using the M5x6 and the M5 nuts. Slide the M5 nuts along the vertical upright and tighten screws.
- 5) Install the feet at the bottom of the AHU floor with self tapping screws, then slide them along the upright, then fix the feet on top of the AHU ceiling. Use a level to fix the upright perfectly vertical.
- 6) Install the lamps onto the clips (handle the lamp with care using gloves).
- 7) Connect each 4-pin power cable with each lamp. Please pay attention to the exact position of each pin, do not force connection.
- 8) Install the ballasts inside in an enclosure outside the AHU. Connect the 4-pin power cable to the ballast.

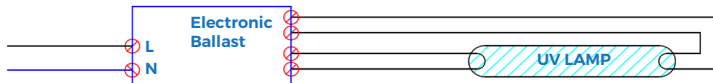


### Electrical Connections

- It is recommended that the device is installed by a qualified electrician.
- Connect to an individual properly grounded branched circuit protected by a 15 or 20 amp circuit breaker.
- Use only UL or IEC approved wire for input/output connections. Minimum size 18 AWG.
- Follow all NEC and local codes.
- Avoid placing the power supply cable near a source of heat and protect it from sharp corners and moisture since they may damage the device.
- In order to avoid accidental exposure to UV radiation, it is recommended to install automatic sensors, as position switches on the doors, to switch off the UV lamps in case of personnel entry into the coil room; otherwise, provide warning pictograms on the AHU doors/walls.

- 1) Connect the 4-pin power cable to the lamp pins.
- 2) Connect the ballast to the 120 – 277V supply mains.

Line: 120-277V 50/60 Hz



### Scheduling

Once power is provided to the unit, the UV lamp will ignite.

### Maintenance

- Always switch off power supply before maintenance.
- Approximately every 1,000 hours of use clean the lamp with a cloth and methylated spirits.
- Lamp must be replaced after 18,000 hours of use



Danger of exposure to UV-C radiation



Use protective gloves



Wear protective glasses

### UV Lamp Replacement

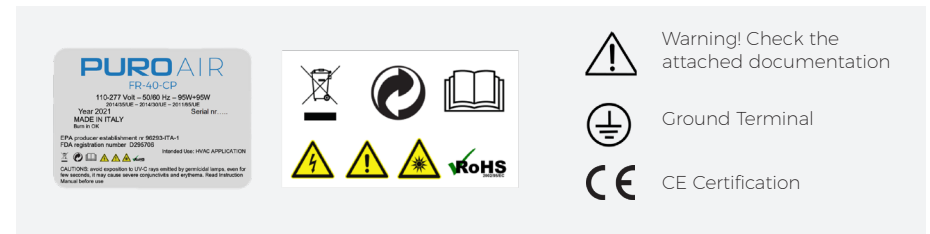
- 1) Uninstall the lamp.
- 2) Install new lamp into clips.
- 3) Install 4-pin power cable.

### Troubleshooting

#### Ballast

If the ballast needs replacement always switch off power supply before maintenance.

### Label and Symbols



### Technical Features

Table 1: Specifications

Fighter UV Air HVAC	FR-16	FR-25	FR-40	FR-60	FR-90
Average Lamp Lifetime* (hrs)	≤18,000	≤18,000	≤ 18,000	≤18,000	≤18,000
Power (W)	16	21	40	60	85
Lamp Length (in)	12.5	21.5	17.8	23.6	35.8
Distance Between Clips	11.18	20.20	16.42	22.24	34.45
Weight (lbs)	0.4	0.7	1.5	1.7	1.8

\*Continuous operation

Table 2: Parts

Fighter UV Air HVAC	FR-16	FR-25	FR-40	FR-60	FR-90
Replacement Lamp	GH3-FR-16W	GH5-FR-25W	GH4-FR-40W	GH6-FR-60W	GH9-FR-90W
Ballast Part Number	B-FR-40	B-FR-40	B-FR-90	B-FR-90	B-FR-90

### Warranty

For warranty information please visit [purolighting.com/warranty](http://purolighting.com/warranty).

For technical support and warranty inquiries please contact [support@purolighting.com](mailto:support@purolighting.com) or call (877) 452-8785.



## Declaration of Compliance

The Fighter UV Air HVAC meets the following certifications and standards.

### UV Fan Series

- EEC directive **2014/30/EU** (Electromagnetic Compatibility)
- EEC Machinery Directive dispositions **2006/42/EU**
- EEC Low Voltage Directive **2014/35/EU**
- EEC (RoHS) **2011/65/EU** (D.Lgs 4 Marzo 2014, n.27)

### Technical Standards Applied

**UNI EN ISO 12100:2010** — Safety of Machinery – Basic Concepts, General Principles for Design – Risk assessment and risk reduction

**UNI EN ISO 13857:2008** — Safety of Machinery – Safety Distances to prevent danger zones being reached by the upper and lower limbs (2008)

**ISO 14120:2015** — Safety of Machinery – Guards – General Requirements for the Design and construction of fixed and movable guards

**UNI EN ISO 13849-1:2016** — Safety of Machinery – Parts of the Control System related to the Safety – Part 1: General Design Principles

**UNI EN ISO 14119:2013** — Safety of Machinery – Interlocking devices associated with guards – Principles for design and selection

**CEI EN 60204-1:2016** — Safety of Machinery – Electrical Equipment of Machines, Part 1: General Rules (2010)

**EN 61439-1:2011** — Low-voltage Switchgear and Control Gear Assemblies, Part 1: General rules

### Further Technical Standards Applied:

**IEC EN 60335-1** "Safety of household electrical appliances and similar"

Electronic Ballasts for the control of the lamps in accordance with the standard **EN 60928**.

Germicidal UV-C Lamps in accordance with **EN 61199**.

Electrical Protective Measures in accordance with **IEC 70-1**, **EN 60229**.

Adrian Armijo, 4/15/21

Responsible for Standards: Adrian Armijo