SPC BioGrid UV Steriliser

Installation, Operation & Maintenance Manual

IOM 86 Issue 2

Contents

1. General

1.1 Description

The SPC BioGrid is a self-contained, fan-assisted UV steriliser unit designed for recessed installation into suspended T bar or plasterboard ceiling. The unit can be freely suspended if required.

Size WxLxH	595mm x 595mm x 300mm
Weight	15kg
Power supply	230V/1Ph/50Hz
Fan type	Forward curved double inlet
Motor type	EC (brushless DC)
Maximum power draw	38W
Lamp type	Low pressure UVGI

Table 1. General information

1.2 Receipt and Preparation

The units are wrapped and display the SPC works order number, model reference, site reference (where appropriate) and site details.

On receipt check that all details are correct to the customer schedules prior to opening the packaging. Damages should be reported to the carrier and to the SPC Sales Office immediately.

It is recommended that the packaging is kept in place and the units stored in a safe area until the necessary services are complete in order to avoid the possibility of site damage.

If the unit is c/w a QR code then please scan and register the unit for warranty.

2. Installation

2.1. Mounting general

Units should be installed at a minimum of 1.8m above the floor and a recommended maximum height of 3.5m.

2.2. Installation in suspended/T bar ceiling

The BioGrid Plus has a nominal size of 600mm x 600mm and is suitable for replacing a standard ceiling tile. The inlet/outlet eggcrate grille will sit inside the suspension bars and the grille core is hinged to allow internal access. Ceiling tiles adjacent to the position of the unit should be removed during installation to allow unimpeded access around the exterior of the unit.

The units are suitable for suspension using either rod or wire but always of a gauge commensurate with the weight of the unit shown above. Having marked and fitted ceiling anchors the unit should be secured to these via the holes provided in the turned out flanges on the top of the casing. The grille is laid onto the suspensions/T bars and the height of the suspended unit can then be adjusted to fit around the flanges of the grille.

Ensure that the grille is oriented in such a way that the hinge is on the side indicated or it will not sit flush or open properly.

The unit must not be allowed to rest just on the suspended ceiling without attachment to the soffit/main ceiling which is load bearing.

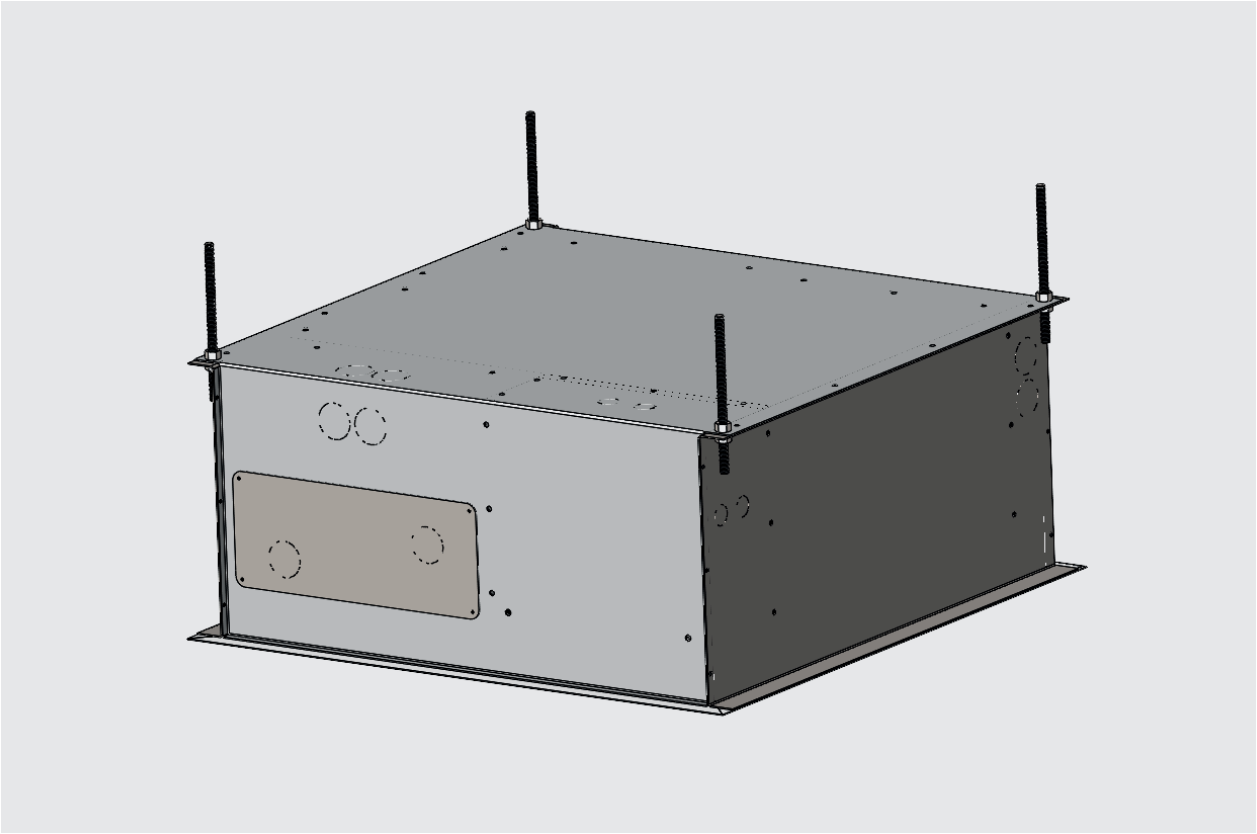

Figure 1. Ceiling mounting

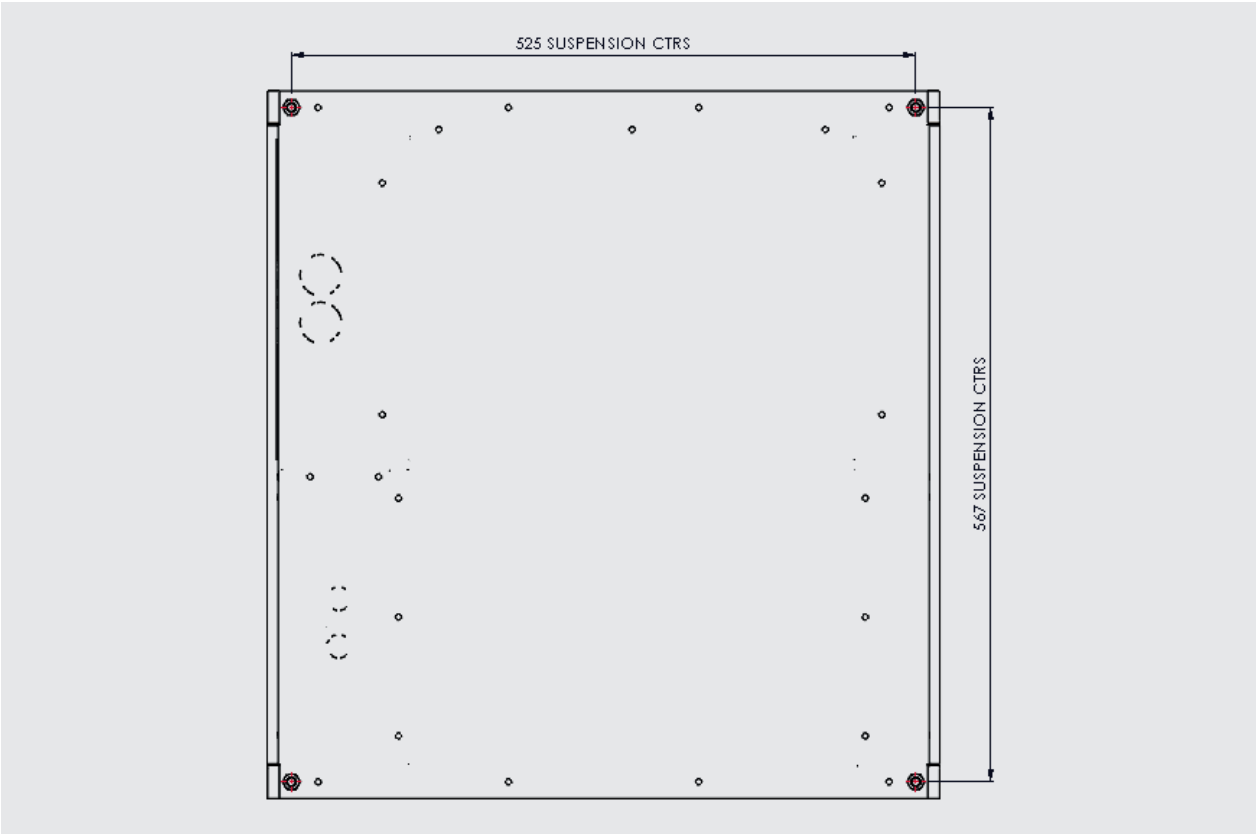

Figure 2. Mounting hole positions

2.3. Installation in finished/plasterboard ceiling

The same four suspension holes on the flanges of the casing are used as above and the ceiling needs to be marked out and appropriate anchors fitted.

The plasterboard needs to be cut prior to installing the unit; an aperture of 575mm x 575mm is required.

The unit should be passed through the plasterboard and secured to the ceiling using rod or wires attached to the anchors. The height of the unit should then be adjusted such that it finishes just above the level of the plasterboard.

The grille is located just below the plasterboard and pushed upwards such that the flanges of the grille pass into the unit itself. A 3.5mm bit should be used in 4 places (2 on one side, 2 opposite) and drilled through the grille and unit sides to be used to hold the grille in position. The 3.5mm holes in the grille flange should be opened out to 5mm and No.8 screws used to hold it in position.

2.4. Free-hanging

While the units are intended for recessed installation they can be free-hanging if required. The units should be suspended from the ceiling as above and the grille attached to the unit as in the instructions for plasterboard installation given above.

3. Wiring

3.1. Power cabling

Units incorporate high efficiency EC motors directly coupled to the fan. Power to the units is from a standard 230V/1Ph/50Hz supply and transformation and rectification is provided by the motor. The same power supply to the unit feeds the UV lamp via its ballast/power supply; the table above gives details of the power draw.

All wiring should be undertaken by a certified electrician in line with the latest version of the wiring regulations. The unit should be isolated prior to working on it or opening the hinged grille. It is recommended that each unit is powered from a dedicated fused/switched spur. An earth connection must be provided as part of the power supply.

Electrical connections, both power and control, are made direct to a terminal block in the electrical housing inside the unit. Knock-outs are provided for cable entry or holes can be cut in other place ensuring that no internal components are damaged. All cable openings must have glands/grommets. See diagram below.

IMPORTANT

Under no circumstances must the cover to the UV chamber be removed until the unit has been electrically isolated. Extended exposure to the energised UV lamp will cause injury to skin and eyes. The unit is provided with micro-switches to ensure that should the covers be removed the power to the lamp is automatically broken.

3.2. Lamp replacement

Access to the lamp must only be gained after electrical isolation of the unit. The cover to the UV chamber can then be removed by removing the retaining screws. The pins of the lamp then just simply push into the receptacle after pulling out the existing lamp. It is recommended that lamps are changed out after around 2 years of continuous use. The old lamp should be responsibly disposed of as per other fluorescent tubes.

4. Control

A range of control options are available with the unit and a wiring diagram is provided with each. Controls for BioGrid units will be remote and will consist of on/off switching and a 24V relay available for enabling/disabling the unit via BMS or other controller/sensors. If the wiring diagram is lost please contact SPC for a replacement.

5. Commissioning

Commissioning of BioGrid units require the following:

- Check rotation of the fan
- Check operation of any controls
- Check no excessive and/or unexpected noise
- Ensure UV lamp functions (look for a pale blue glow)

6. Maintenance

To ensure effective and safe operation of the unit it is imperative that the internal surfaces remain clean. In order to maintain the heater at maximum efficiency it is recommended, especially when mounted in dusty areas, that the unit is cleaned internally using a vacuum cleaner nozzle attachment and that this should be done at least once every 3 months depending on the environment. Alternatively, a dry cloth can be used but the unit must not be cleaned using water or spray. Under no circumstances should moisture be allowed in contact with the internal surfaces of the unit. Access to the inside of the unit can be achieved by hinging of the eggcrate grille. **Always ensure that the unit is electrically isolated prior to opening the grille for cleaning etc**. The external panels can be cleaned using a dry cloth or mild detergent but moisture must not be allowed to seep inside the casing.

Details of lamp replacement are given above.

Fan bearings – the forward curved fan incorporates sealed for life bearing and no lubrication is required.

7. Fault finding

Below is a list of common faults and the steps required to resolve them.

Fault	Cause	Remedy
Fan not running	No power	Check electricity supply to unit
	Fuse blown	Check unit fuse and any circuit breakers
	Controls	Check controls are not preventing fan from operating
	Damaged fan/motor	Replace faulty fan assembly
UV lamp not illuminated	Lamp burned out	Replace lamp as described above
	Power supply/ballast damaged	Contact SPC for replacement ballast

8. Disposal

Units have a low pressure UV germicidal lamp which contains mercury. The lamp should be separately disposed of as you would standard fluorescent tubes. Mixed materials and printed circuit boards should be disposed of separately and in line with WEEE directives. It is not recommended that the units are disposed of with domestic waste but that the components are recycled as far as possible.

SPC House
Evington Valley Road
Leicester
LE5 5LU

T: 0116 249 0044
E: spc@spc-hvac.co.uk
spc-hvac.co.uk