

SAFETY

Peer-reviewed studies from multiple research institutions over the past decade corroborate that Far-UVC, a narrow band of wavelengths within the broad UV spectrum, is a highly effective germicide and does not require UV protective equipment. While studies demonstrate usage of skin coverings and UV eye shield is not required, current occupational health standards have not yet accounted for this new information. Therefore, operating modes for the Healthe Space Cylinder COMPLY with the UV Threshold Limit Values (TLV) outlined by the American Conference of Governmental Industrial Hygienists (ACGIH).

To fall below the TLV, the maximum time spent directly beneath the Cylinder (3 feet away) is 8 hours in a day. If you have any questions about the operation or setup of your Healthe Space Cylinder, please refer to the Sanitization Setup Guide section of this manual. It will help to you to determine and select the most suitable mode for your sanitization needs. If you need further assistance, please contact Healthe's customer service department by visiting <http://healthelighting.com/pages/contact-us/>.

SAFETY NOTICES

- ⚠ WARNING:** Risk of electric shock. Disconnect power at the fuse or circuit breaker before installing or servicing.
- ⚠ WARNING:** risk of fire or electric shock. Installation of this retrofit assembly requires a person familiar with the construction and operation of the luminaire's electrical system and the hazard involved. If not qualified do not attempt installation. Contact a qualified electrician.
- ⚠ WARNING:** Risk of fire or electric shock - install this kit only in luminaires that have the construction features and dimensions identified in the drawings.
- ⚠ WARNING:** To prevent wiring damage or abrasion, do not expose wiring to edges of sheet metal or other sharp objects.
- ⚠ WARNING:** Risk of Electric Shock. Do not open. There are no user serviceable parts inside. Turn the power off before inspection, installation or removal.
- ⚠ WARNING:** Risk of Shock and fire hazard. Do not use when enclosure is broken.
- ⚠ WARNING:** Risk of Electric Shock. Do not make or alter any open holes in an enclosure of wiring or electrical components during kit installation.
- ⚠ WARNING:** Risk of Injury and Burn Hazard. DO NOT touch the surface of the UVC module while the Cylinder is powered on or immediately after powered off.
- ⚠ CAUTION:** Far-UVC source has not been tested for photosensitive individuals or those exposed to photo-sensitizing agents.
- ⚠ CAUTION:** The Healthe Space Cylinder will help to reduce the number of germs and microbes, but it will not eliminate them completely.
- ⚠ NOTE:** The Healthe Space Cylinder is designed to provide passive and continuous air and surface sanitization in occupied spaces using far ultraviolet C (Far-UVC). Independent researchers at Columbia University and other academic institutions have shown Far-UVC light to be as or more effective in inactivating microbes than UVC light. Unlike conventional UVC, Far-UVC does not require use of UV protective equipment. [1] [2] [3]
- ⚠ NOTE:** The actual inactivation rate of microbes in space will vary based on the type of microorganisms, length of exposure time, and the distance from the Cylinder.
- ⚠ NOTE:** Based on American Conference of Government Industrial Hygienists (ACGIH) Threshold Limit Values (TLV), the maximum recommended time spent directly beneath a Cylinder (≥ 3 feet away) is 8 hours in a day.
- ⚠ NOTE:** The use of Healthe Space Cylinder is an adjunct and not intended as a replacement or modification to an existing cleaning and sanitization program.
- ⚠ NOTE:** Far-UVC emitter has a nominal operational life of >3000 hours. The emitter radiates a dim violet glow during operations. If the visible dim violet glow is no longer detected, the Cylinder must be replaced.
- ⚠ NOTE:** In the event the Far-UVC emitter malfunctions or fails, please contact the manufacturer for a replacement.
- ⚠ NOTE:** The minimum operating temperature is 0 F (-18 C).
- ⚠ NOTE:** NOT SUITABLE FOR USE WITH STANDARD IN-WALL DIMMERS.
- ⚠ NOTE:** DO NOT INSTALL THIS EQUIPMENT IN A DWELLING.

FDA DISCLAIMER – FOOD AND DRUG ADMINISTRATION STATEMENT

The statements made within this manual have not been evaluated by the U.S. Food and Drug Administration. These statements and the products of this company are not intended to diagnose, treat, cure or prevent any disease.

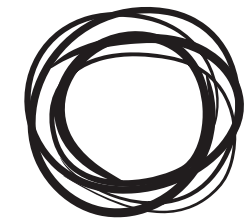
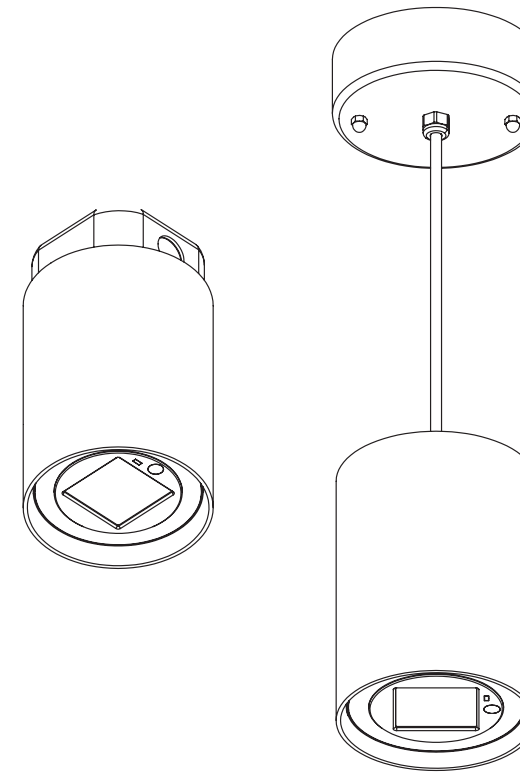
Not for sale or distribution in Hawaii, Indiana, New Mexico, Wyoming, Oklahoma, Colorado, Washington DC, and US Territory of Puerto Rico.

REFERENCES

[1] Welch, D., Buonanno, M., Grijl, V. et al. Far-UVC light: A new tool to control the spread of airborne-mediated microbial diseases. Sci Rep 8, 2752 (2018). <https://doi.org/10.1038/s41598-018-21058-w>

[2] Buonanno, M., Ponnaiya, B., Welch, D. et al. Germicidal Efficacy and Mammalian Skin Safety of 222-nm UV Light; Columbia University Medical Center; 2017; <https://pubmed.ncbi.nlm.nih.gov/28225654/>

[3] Manuela Buonanno, David Welch, Igor Shuryak, David J. Brenner; Far-UVC Light Efficiently and Safely Inactivates Airborne Human Coronaviruses; Columbia University Medical Center; 2020; <https://www.researchsquare.com/article/rs-25728/v1>



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Healthe® Space Cylinder Owner's Manual

Pendant and Surface Mount
Sanitization Downlight

INTRODUCTION

Thank you for choosing Healthe Space Cylinder. The Cylinder is a 2-in-1 solution that provides passive, continuous sanitization of air and surfaces along with comfortable illumination. The integral far ultraviolet C (Far-UVC) light source delivers 222 nanometer light that inactivates microbes to improve air quality and does not require use of UV protective equipment. [1] [2] [3]

SANITIZATION SETUP GUIDE

Once the Healthe Space Cylinder is properly installed, it will be operational upon turning on the power via the associated light switch. Both sanitization and illumination operation is user selectable to fit the application.

Users can choose between three (3) motion-controlled sanitization mode. Upon turning on the power to the Cylinder; you will enter a 30-second window to select the desired Sanitization Mode by using the IR remote controller. If you miss the 30-second window, you can perform a power cycle by turning the Cylinder off and on to re-enter the 30-second selection window.

Table 1: Operating Modes

Mode	Options Button	FAR-UVC OPERATION*	General Illumination Operation
A	Up Arrow	ON (will cycle, total ON time 42min/hr)	On
	Down Arrow	OFF when motion detected ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	On
	Left Arrow	ON (will cycle, total ON time 42min/hr)	Off
	Right Arrow	OFF when motion detected ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	Off
B Far-UVC ON for limited time when motion detected	Up Arrow	ON when motion detected (will cycle, total ON time 30min/hr) ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	ON when motion detected OFF 5 minutes after last motion detected
	Down Arrow	ON when motion detected (will cycle, total ON time 12min/hr) ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	
	Left Arrow	ON when motion detected (will cycle, total ON time 18min/hr) ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	
	Right Arrow	ON when motion detected (will cycle, total ON time 24min/hr) ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	
C Far-UVC always OFF when motion detected	Up Arrow	OFF when motion detected ON 5 min after last motion detected for 86 min (will cycle, total ON time 60min of the 86min)	ON when motion detected OFF 5 minutes after last motion detected
	Down Arrow		
	Left Arrow		
	Right Arrow		

*The Far-UVC cycles 70s ON and 30s OFF during all ON operations. Any specific time indicated denotes the total accumulated time of ON operations before emitter shuts off.

- As a factory default, the Cylinder is configured to Mode B suitable for occupied space where UV is configured to cycle and sanitize 30 minutes per every hour when motion is detected (as highlighted)
- To setup the Sanitization Mode, determine the mode and option desired by reviewing Table 1.
- Apply power to the Cylinder via associated light switch to turn on. General illumination light will be on and visible. You will enter a 30-second window to select the MODE.
- Point the IR remote control at the Cylinder and press the corresponding Mode Button.
- The visible light will flash to indicate the desired mode has been selected. Once the mode is configured, you have 10 seconds to select the desired option. Point the IR remote control at the Cylinder and press the corresponding Option Button.
- The visible light will flash again to indicate the desired option has been selected.

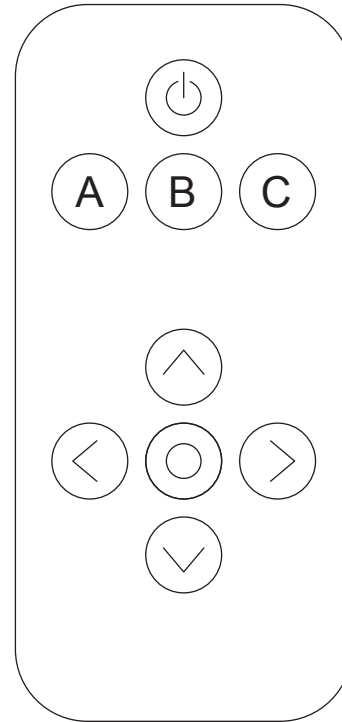
Table 2: Light Output Selection

Light Mode	Options Button	Light Output Level
○	Up	600Lm (100%)
	Down	150Lm (25%)
	Left	300Lm (50%)
	Right	450Lm (75%)

The output for the general illumination can be adjusted to the preconfigured light output levels as shown in Table 2.

- As a factory default, the general illumination of Cylinder is configured full brightness (as highlighted).
- To setup, first determine light output levels desired from Table 2.
- Apply power to the Cylinder via associated light switch to turn on. General illumination light will be on and visible. You will enter a 30-second window to select the light level option.
- Point the IR remote control at the Cylinder and press "O" Button. You have 10 seconds to select the desired option.
- Point the IR remote control at the Cylinder and press the corresponding Option Button to the desired light output level.
- The visible light will flash to indicate the desired light output has been selected.

Once installed and sanitization mode selected, your Cylinder is ready for use. The Sanitization Mode can be changed anytime to any of the 3 preconfigured modes by performing a power cycle (turning on and off the Cylinder) to enter the 30-second mode selection window and pointing the IR remote to the Cylinder to change the Sanitization Mode.



CLEANSE CYLINDER PENDANT INSTALLATION GUIDE

1. Before starting installation, make sure POWER is turned off at the source to the location that you are installing the Cylinder.

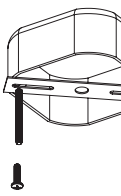
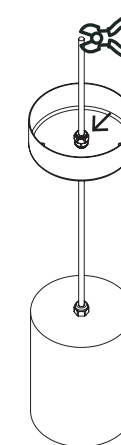
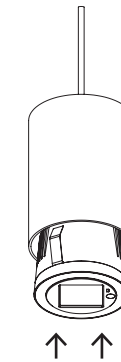
2. Connect the wires from the Healthe Space Cylinder Pendant to the corresponding wires of the Cylinder Far-UVC Module using the provided wire nuts, connecting black to black (active), white to white (neutral), and green to green (ground).

3. Push the Healthe Space Cylinder Far-UVC Module up into the Cylinder Pendant can. Make sure the metal prongs of the Far-UVC Module are engaged with the side walls of the Cylinder can and wires are not pinched.

4. To trim the power/suspension cable, loosen the strain relief nut inside the canopy and cut cable to desired length. Tighten the strain relief nut to secure position.

5. Screw the (2) long screws to each side of the mounting bracket. With the long screw pointing down, attach the mounting bracket to the junction box with the (2) short screws.

6. While holding the entire fixture toward the ceiling, connect the wires from the Cylinder Pendant's canopy to the junction box, connecting black to black (active), white to white (neutral), and green to green (ground).



7. Push the Cylinder's Canopy up to cover the junction box. With the two long screws protruding from the Canopy, secure the fixture by attaching the (2) corresponding cap nuts.

CLEANSE CYLINDER SURFACE MOUNT INSTALLATION GUIDE

1. Before starting installation, make sure POWER is turned off at the source to the location that you are installing the Cylinder.

2. Push the Healthe Space Cylinder Far-UVC Module up into the Cylinder can. Make sure the metal prongs of the Far-UVC Module are engaged with the side walls of the Cylinder can and wires are not pinched.

3. Feed wires from junction box through the center hole of Cylinder's circular plate. Screw in the circular plate into the junction box with the (2) provided short screws.

4. Connect the wires from the Far-UVC Module inside the Cylinder Surface to the junction box using the provided wire nuts, connecting black to black (active), white to white (neutral), and green to green (ground).

5. Attach the Cylinder to its circular plate by turning the Cylinder clockwise onto the plate until fully engaged and secured.

