PIERLITE®

AETHER
LED TROFFER
HEPA FILTER WITH UV-C LED

99.995% reduction in airborne viruses
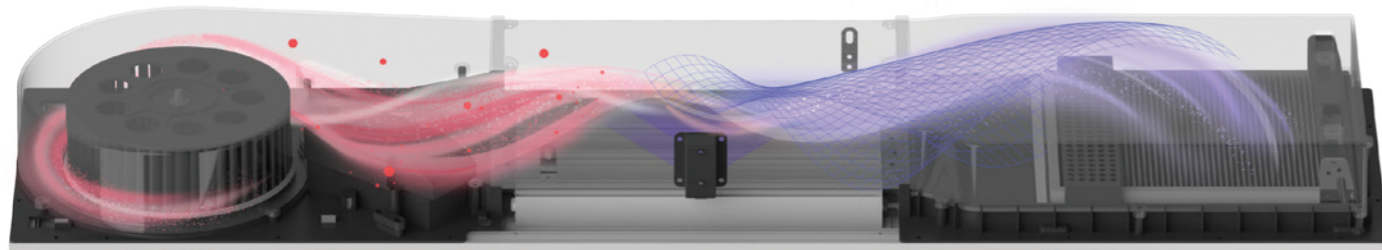proven to provide safer environments

FOR ANY ENVIRONMENT WHERE SAFETY IS IMPORTANT.

Pierlite has developed the Aether fitting to protect communities and individuals in offices, hospitals, schools, waiting rooms and more.

Aether combines two proven and powerful methods of cleansing the air.

UV-C technology in a contained chamber pro-actively inactivates pathogens as the air passes through the fitting.

An in-built HEPA filter scrubs the air by filtering the inactivated viruses and particulate, pushing cleaner, safer air back into the environment.

The resulting air is cleansed of 99.995% of airborne pathogens such as COVID-19 and influenza. Cleaner air means safer spaces, and reduced impact from infection.
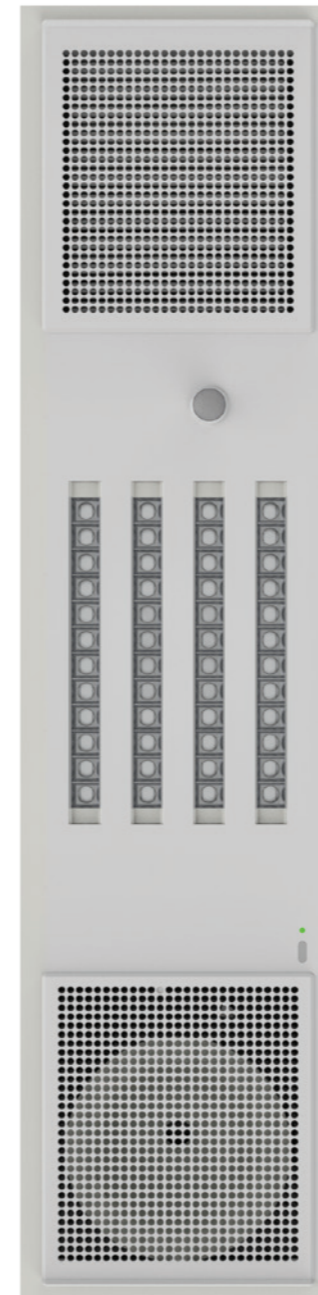
The air is circulated through the UVC LED chamber which inactivates bacteria and viruses.
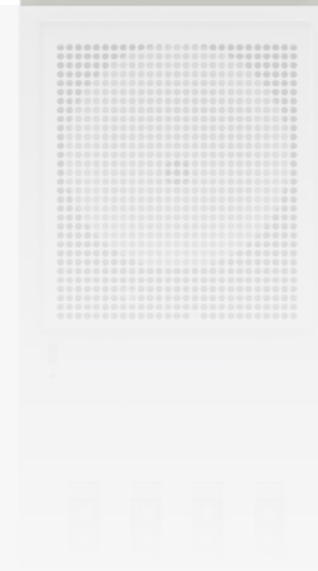
Air inlet grill with filter screen and DC motor continuously pulls air from the environment into the fitting.

HEPA filter traps airborne contaminants and dusts, and the cleansed air is pushed back into the environment.

A single pass of air through the Aether fitting inactivates 99.995% of virus particles.

- Patented air-purifying LED Troffer with HEPA filter and UV-C LED

- Concealed UVC LED air disinfection chamber integrated into a 1190mm x 290mm LED troffer with no direct UVC radiation exposure to the room environment

- Efficient low glare 4K troffer that drops seamlessly into existing lighting layouts

- Aesthetically pleasing design operates quietly

- H13 Medical Grade HEPA Filter with Germagic Technology.

- Standard recessed with optional surface mount, or suspended ceiling application.

- Remote control with status indicator light for site visibility of operation and maintenance

- Plug and Play Quick Fit to the existing 1200mm x 300mm ceiling cavity making ideal for retrofit or new construction.

- Optional IoT sensor integration

- Cyanosis compliant to AS/NZS1680.2.5 for general health care applications

CERTIFICATION AND VALIDATION

Standard	LAB	Testing
AS/NZS IEC 60335-2-65	TÜV Rheinland	Household and similar electrical appliances - Safety, Part 2.65: Particular requirements for air-cleaning appliances
AS/NZS 60598.2.2	TÜV Rheinland	Luminaires Particular requirements - Recessed luminaires
AS/NZS CISPR 15	TÜV Rheinland	Limits and methods of measurement of radio disturbance characteristics of electrical light and similar equipment
Virucidal Activity Test by UV Irradiation for Viosys LED	KR Biotech, Korea	COVID-19 (SARS-CoV-2) Cell Line E6 inactivation test
Virucidal hard-surface efficacy test on Germagic HEPA filter	Microbac	COVID 19 Log reduction on HEPA Germagic Thyme
Analysis of inactivation rates of airborne microorganisms using MS2 Surrogate Virus	Biotech Gmbh Lab, Germany	Inactivation studies viruses (bacteriophages)
		Reduction of bacterial spores
		Reduction of the total microbial count
IEC 62471:2006	Steve Jenkins and Associates Australia NATA Accredited	UVC radiation leakage from the luminaire
Safe Work Australia Standards	Steve Jenkins and Associates Australia NATA Accredited	Ozone production
AS/NZS14644.3	Opira Pty Ltd Australia	Air change rates validation
		Airborne microbiological sampling

INACTIVATION ANALYSIS OF PATHOGENS

AETHER UVC TROFFER WITH HEPA FILTER & COMPONENTS

Biotec GmbH lab in Germany conducted an independent study on airborne virus inactivation rates with the Aether UVC Air Purifier Troffer.

Inactivation virus studies (bacteriophages): Aether UVC Air Purifier Troffer inactivation rates were determined by using MS2 virus as a surrogate for airborne COVID-19. MS2 phages are non-enveloped, ssRNA-phages and a widely used surrogate for RNA viruses. The Coronavirus is an enveloped RNA virus with an ssRNA genome.

This Luminaire has been proven to inactivate 4.27 logs of viral load with an inactivation rate of 99.995%. It also reduces the spore load by more than 2.72 log levels and achieved an inactivation rate of >99.8%

Average Reduction of MS2 in the air with a single pass through the Aether Troffer air disinfection system.

HEPA	UVC LED	Temperature (°C)	Relative Humidity (%)	Virus Concentration (PFU / m^3)	Log Reduction	Inactivation Rate (%)
On	On	14.5	55.8	1.82 x 104	4.27	99.995

Reference: December 2021, Biotec GmbH Germany, Final report on the research project: Laboratory report titled "Inactivation analysis of airborne viruses"

The clinical validation and reduction of viral load in the air stream was performed by Good Laboratory Practice (GLP) accredited **Guangdong Detection Centre of Microbiology** in China using the TGA recommended Human Corona Virus HCoV-229E Host Cell Huh-7. The Troffer system was able to reduce the viral load of Log 3.66 reduction with an inactivation rate of >99.98%.

The reduction of total germs or Viral load in a defined test room (30 m3) with 2.2 x 10^6 TCID50/m3 (Tissue Culture Infectious Dose) reduce to <2.4 x 10^2 TCID50/m3 at a removal rate of < 99.98%

Reference: January 2022, Guangdong Detection Centre of Microbiology, China, Report Number 2021SP13349R01D, Aether UVC Troffer Report for Analysis.

Virucidal Activity Test by UV Irradiation was conducted by the **KR Biotech Co Ltd** Institute of Infectious Disease Control in Seoul Korea using the Seoul Viosys VSM+ UVC LED Chips.

The sterilization test using UV radiation from Vyosys VSM+ LED chips resulted in a 99.9999% virucidal inactivation against COVID-19 (SARS-CoV-2 Cell line Vero E6).

Reference: November 2020, KR Biotech Co. Ltd, Report Number KR-2011-065-SVS-02, Virucidal Activity Test by UVC Irradiation

Microbac Laboratories Inc, USA conducted a Hard Surface Efficacy test on HEPA filters. Tests against COVID-19 (SARS-CoV-2 Cell line Vero E6) showed a reduction of 3Log10 on the surface.

Reference: July 2020, Microbac Laboratories Inc, Report Number 1025-101, Virucidal Hard Surface Efficacy Test

HEPA FILTER

HEPA Type: Medical Grade H13 GERMAGIC™

- **Quality**
  H13 are within the highest tier of HEPA and are considered medical grade quality.

- **Function**
  HEPA H13 traps 99.95% of Maximum Penetration Size Particles (MPPS). HEPA filters capture with extraordinary efficiency of 0.1 micron.

- **History & Testing**
  Experiments have shown that Medical Grade H13 HEPA filters can inactivate the most common influenza viruses.

UV-C LED

Seoul Violeds UV LED 254nm UV technology has been used.

These Violeds UV-C LED's are also used by NASA aboard the International Space Station (ISS) to provide a healthy, germ-free environment for astronauts.*

*https://www.ledinside.com/news/2015/9/seoul_viosys_and_seti_partner_up_in_uv_led_decontamination_in_space

Product Code	Description
AETUVC12349D	Aether LED Troffer with UVC LED and HEPA filter
AETHEPA	Aether H13 Germagic HEPA filter
AETUVCLED	Aether UVC LED Module
AETUVCSUFKIT	Aether Surface Mount Kit
	Suspension Kit available on request

SPECIFICATIONS

Size	L1190 X W290 X H98.5
Weight	7.5kg
Configuration	Standard recessed and optional surface mount, or suspended ceiling configuration including safety rope for seismic restrain
Finish	Powder coat white
Luminaire Construction	Aluminium housing for luminaire and ABS for optics
Supply Voltage/ Frequency	220-240v 50/60Hz
Power Factor	>0.9
Wattage (Lighting Load Only)	32W / 28W / 24W / 22W via NFC
Luminous flux	3200lm / 2800lm / 2400lm / 2200lm via NFC
Default Wattage & Luminous flux	28W / 2800lm
Efficiency	100lm/W
LED Chip	Samsung 2835 LED
Driver (Lighting Load)	Osram Intelligent NFC DALI 35/220-240/1A0 NFC
SDCM	3
UVC Chip	SEOUL CA3535 CUD7GF1B(U)275nm 11.5mW*2PCS
CCT	4000K (other CCT available on request)
CRI	90
Lifetime (40˚C) - Room Lighting	Minimum 50,000 Hours L70
Lifetime - UV-C	15,000 hours
Lifetime - HEPA Filter	6 months
HEPA Type	Medical Grade H13 GERMAGIC™
Temperature Range	40˚C
UGR	19
Beam Angle	80˚
Flicker	Flicker free
Certification	Safety, EMC, UV Leakage, Ozone, UV Wavelength, UV Sterilise
Motor	DC Motor 21.5W @ 1010 Rotation Per Minute (RPM)
Air Flow	170m³/h
Sound level	Maximum 50dB
IP Remote Control	UVC and Fan control
Clean Air Delivery Rate	170m³/h or 100 CFM or 47.22l/sec
Air Exchange Rate	8.55
Clean Air Delivery Room Size & Air treat-ment rate	Room Size: L 5000 x W 3000 x H 2400 (mm) Air treatment rate: Four times every hour when operated 24 x 7 operation.
Controls	Standard DALI Driver and optional IoT sensor
COI (Cyanosis Observer Index)	1.713

DESIGNED TO ENHANCE EVERYDAY LIVES

Engineered to fit into the space of a standard troffer, Aether is able to plug and play in most T-bar ceilings. Where that's not an option, Aether is also available as a surface or suspended fitting, ensuring every environment can benefit from its cleansing capabilities.

EASY TO INSTALL

1200 x 300, fits into a standard office ceiling.

Plug and play. Aether is fitted with a standard flex and plug.

Multiple mounting options.

Replacement filters available separately.

RECESSED

SURFACE

SUSPENDED

NEW SOUTH WALES

Phone: 1300 799 300 | Fax: 1300 789 300
96-112 Gow Street, Padstow NSW 2211
Postal Address: PO BOX 314 Padstow NSW 2211

QUEENSLAND

Phone: 1300 799 300 | Fax: 1300 789 300
54 Berwick Street, Fortitude Valley QLD 4006
Postal Address: PO Box 500 Fortitude Valley QLD 4006

VICTORIA / TASMANIA

Phone: 1300 799 300 | Fax: 1300 789 300
Unit 2, 20 Sabre Drive, Port Melbourne Vic 3207
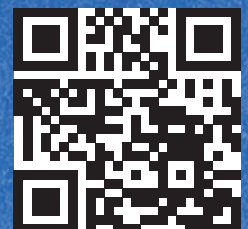
SOUTH AUSTRALIA / NORTHERN TERRITORY

Phone: 1300 799 300 | Fax: 1300 789 300
Level 2, 191 Fullarton Rd, Dulwich SA 5065

WESTERN AUSTRALIA

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AUCKLAND

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