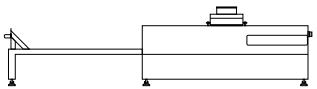
Air Science®

UVBOX™

UV Decontamination Chamber

- Designed for Ultraviolet Germicidal Irradiation (UVGI) Decontamination and Reuse (DR) Devices
- Portable Lab Grade N95 Filtering Face Respirator (FFR)
- UV Surround for High Intensity Exposure Masks and Small Items
- Tunnel Design for Easy Loading, High Throughput

UVB-40



Important: Air Science® USA LLC does not provide direction on decontamination of FFRs. Air Science has designed a commercially available laboratory grade FFR-DR UVGI device based on UVGI criteria outlined in the Final Report, Research to Mitigate a Shortage of Respiratory Protection Devices During Public Health Emergencies, by Applied Research Associates Inc, on behalf of the United States Food and Drug Administration (FDA), under contract number HHSF223201400158C.

ENERGY STAR PARTNER

CERTIFIED
ISO 9001:2015
ISO 14001:2015

Get a Quote.

INTRODUCTION

The UV Decontamination Chamber is a high-efficiency tunnel enclosure designed to create light emission conditions known to safely decontaminate masks and other small items while providing a safe work environment for the operator. The tunnel contains UV lamps positioned within the chamber which emit shortwave ultraviolet light at 254 nm known to create light emission conditions to destroy exposed surface viruses and bacteria.

APPLICATIONS

Hospitals \ Pharmacies \ Clinics \ Food Service

Deep into its second generation, Air Science embraces the diversity and cultural heritage of the founders and co-workers who are continuing a tradition of excellence. Demonstrating a commitment to adaptation, inclusion and quality output from a United States-based company with a domestic and global reach.

KEY FEATURES

- Eight 254 nm UV lamps surrounding the grated loading tray create light emission conditions known to destroy exposed viruses and bacteria on items placed within the chamber.
- Microprocessor control with color viewscreen provides programming capabilities, status and safety functions.
- A tray interlock interrupts operation in the event of an accidental opening.
- Both HEPA and activated carbon filters capture pathogens and vapors emitted as a byproduct of decontamination, protecting the user and the environment.

DESIGN FEATURES

A. Easy slide stainless steel drawer with tray.

B. Perforated tray for maximum exposure of contents to UV light.

C. UV lamp chamber with light-tight door.

D. Natural airflow inlet is strategically located to keep each UV bulb cool.

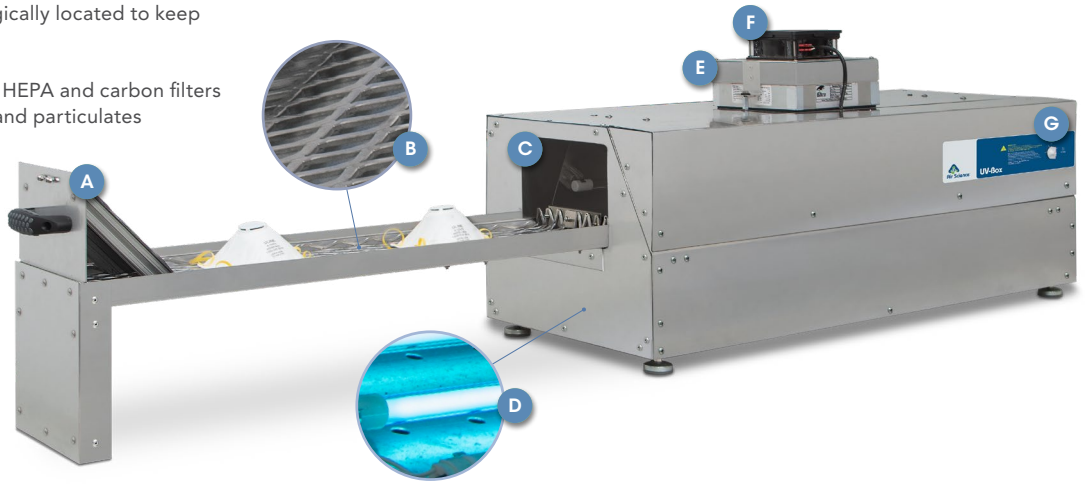
E. Negative airflow system with HEPA and carbon filters scrubs exhaust air of vapors and particulates and cools each bulb to extend bulb life.

F. Air is drawn through a HEPA filter exhaust for operator protection.

G. UV timer allows user to set specific decontamination time and cycle.

ADDITIONAL FEATURES

- UV lamps are strategically positioned to assure uniform irradiation surrounding the tray load.
- The loading drawer slides completely in and out for loading and unloading.
- Professional design and construction features enhance user convenience, ergonomic operation and easy cleaning.
- Simplified components reduce maintenance. HEPA and carbon filters and UV lamps are easily accessible for replacement.
- Laboratory grade T316 stainless steel construction withstands high demand processes.



120 6th Street, Fort Myers, FL 33907
Toll Free. 800-306-0656 \ **www.**airscience.com

Get a Quote.

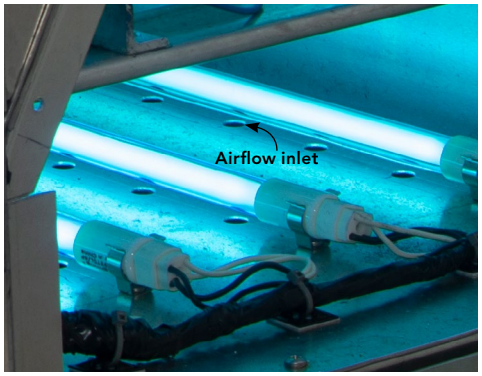
UVSurround

UV TECHNOLOGY

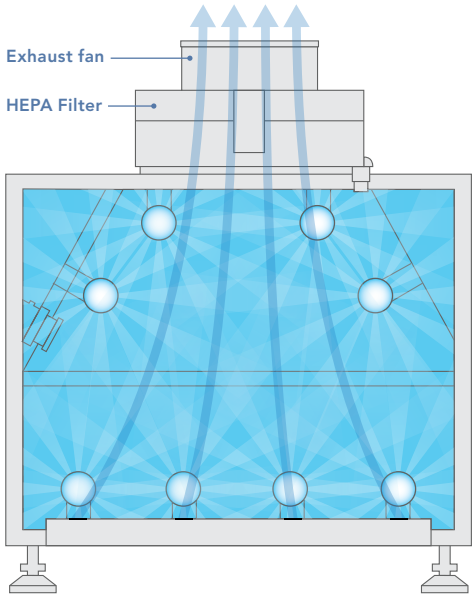
UV lamps generate a narrow 254 nm bandwidth emission which is toxic when directly applied to microorganisms, but outside the 185 nm bandwidth which generates ozone toxicity. Ultraviolet light affects DNA by causing Pyrimidine dimers to form when adjacent Pyrimidine bases on the DNA strand become covalently linked (i.e. chemically bonded to one another). The dimer disrupts the normal replication of the DNA or transcription to make protein. Lamp ON time is determined by the user and generally accepted protocols.

EXCEPTIONS

Before using, laboratory and facility safety officers must establish acceptable processes and procedures that account for material compatibility with UV light. Many plastics and other materials do not tolerate prolonged exposure. Frequency of decontamination cycles and observation of material degradation should be documented before placing the chamber into service. The UV chamber provides surface decontamination only and does not offer sterilization typical of autoclaves or steam sterilizers with vacuum and pressure cycles capable of reaching into wrapped goods or other porous materials.



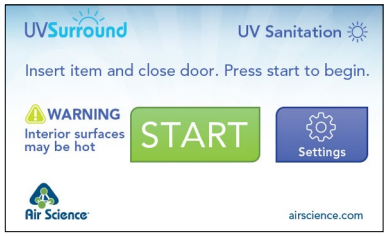
Natural airflow inlet is strategically located to keep each UV bulb cool.

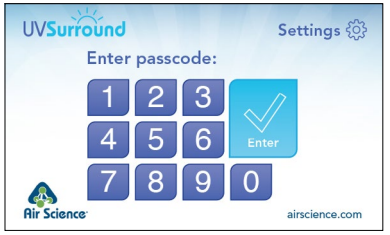


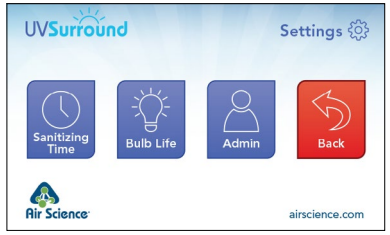
Air is drawn through a HEPA filter exhaust for operator protection.

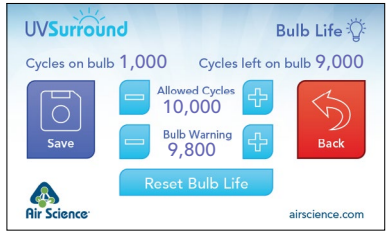
CONTROL

Optional intuitive color touchscreen controls manage all user inputs and performance. Functions include programmed ON cycle time with repeat memory, 1 to 15 minute dwell times and cycle countdown. The controller retains cycle lamp life elapsed and remaining to help plan for replacement. Password protection prohibits unauthorized use.



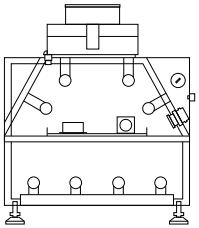




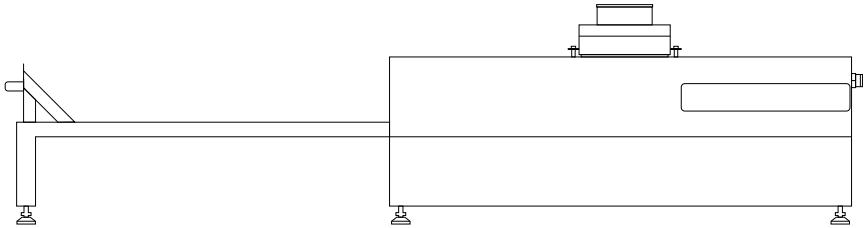


120 6th Street, Fort Myers, FL 33907
Toll Free. 800-306-0656 \ **www.**airscience.com

Get a Quote.



UVB-40



Side View

MODEL	DIMENSIONS			WEIGHT (LBS/KG)	
	Internal Height	External (W x D x H)	Shipping (W x D x H)	Net	Ship
UVB-40	11.25" / 286 mm	56.60" x 16.25" x 19" / 1438 x 413 x 483 mm	40" x 40" x 40" / 1016 x 1016 x 1016 mm	35 / 16	95 / 43

OPTIONS & ACCESSORIES

Base Stand, Mobile, With Casters	The mobile cart provides a lower storage shelf; accommodates wheelchair access. Locking casters fix the unit in place.	CART-70
UV Surround Controller	Intuitive color touchscreen that manages all user inputs and performance.	UV-SURD

PRODUCT SPECIFICATIONS

Construction	UVB-40
Finish	<… Stainless steel. …>
Door	<… Sliding stainless steel drawer with tray …>
UV Timer	<… Adjustable 0-4 min. …>
Electrical	<… 120V, 60Hz or 230V, 50Hz voltages available. Specify when ordering. Other voltage options available …>

Efficiency	UVB-40
UV Lamps	<… 8 x 254 nm 60 watt bulbs emitting 52.5 watts of UVC radiation. …>

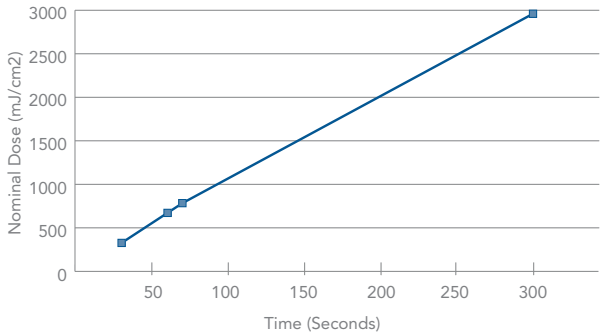
UV EXPOSURE, NOMINAL

Unit	Maximum	Minimum	Average
mW/cm²	10.941	10.900	10.993

UV irradiation measured from the tray, center during a 5 minute cycle suggests that the system is sufficient to destroy pathogens on facemasks and other items comprised of materials that will tolerate UV radiation.

Source: ajicjournal.org/article/S0196-6553(18)30140-8/pdf

AGGREGATE RADIATION



Seconds	30	60	70	300
mJ/cm²	327	672	784	2,960

The aggregate radiation produced by the UV lamps is dependent on time. A proximate value is illustrated above.

120 6th Street, Fort Myers, FL 33907
Toll Free. 800-306-0656 \ **www.**airscience.com

Get a Quote.

RESOURCES

Information associated with UV decontamination are available from the following sources. Content from these websites is owned by their respective publishers and Air Science LLC, USA is not responsible for updates or changes.

CDC - Decontamination and Reuse of Filtering Facepiece Respirators:
cdc.gov/coronavirus/2019-ncov/hcp/ppe-strategy/decontamination-reuse-respirators.html

NIH Study Validates Decontamination Methods For Reuse Of N95 Respirators:
nih.gov/news-events/news-releases/nih-study-validates-decontamination-methods-re-use-n95-respirators

A Scientific Consortium For Data-Driven Study Of N95 Filtering Facepiece Respirator Decontamination:
n95decon.org

USER INFORMATION

As of product launch: (i) no regulatory agency that we are aware of has approved or cleared decontaminated FFRs for use in the US; and (ii) manufacturers of FFRs have not provided approval to use the decontamination techniques discussed on their products. Air Science USA LLC. in no way represents or warrants the effectiveness on these decontamination techniques nor its products for any purpose whatsoever. We do not recommend any particular course of action. A decision as to whether or not to decontaminate and reuse FFRs should be made in careful consideration with your legal, medical and public health advisors after considering all available information sources. The FDA does not endorse or guarantee the efficacy of any method, product, and/or data or potential applications described in the report HHSF223201400158C for FFR-DR, including Air Science products. Additionally, the views expressed in report HHSF223201400158C are those of the authors and do not necessarily represent those of the U.S. Food and Drug Administration nor should they be interpreted as official Agency policy or guidance. The article referenced is for information purposes only and does not validate the performance of any Air Science products in relation to FFR-DR.

ADDITIONAL INFORMATION SOURCES

1. Mills, Devin, Delbert A. Harnish, Caryn Lawrence, Megan Sandoval-Powers, and Brian K. Heimbuch. "Ultraviolet germicidal irradiation of influenza-contaminated N95 filtering facepiece respirators." American journal of infection control46, no. 7 (2018): e49-e55. https://doi.org/10.1016/j.ajic.2018.02.018

2. Chun-Chieh Tseng & Chih-Shan Li (2007) Inactivation of Viruses on Surfaces by Ultraviolet Germicidal Irradiation, Journal of Occupational and Environmental Hygiene, 4:6, 400-405, DOI: 10.1080/15459620701329012

3. Michael B. Lore, Brian K. Heimbuch, Teanne L. Brown, Joseph D. Wander, Steven H. Hinrichs, Effectiveness of Three Decontamination Treatments against Influenza Virus Applied to Filtering Facepiece Respirators, The Annals of Occupational Hygiene, Volume 56, Issue 1, January 2012, Pages 92–101. https://doi.org/10.1093/annhyg/mer054

4. Dennis J. Viscusi, Michael S. Bergman, Benjamin C. Eimer, Ronald E. Shaffer, Evaluation of Five Decontamination Methods for Filtering Facepiece Respirators, The Annals of Occupational Hygiene, Volume 53, Issue 8, November 2009, Pages 815–827. https://doi.org/10.1093/annhyg/mep070

5. William G. Lindsley, Stephen B. Martin Jr., Robert E. Thewlis, Khachatur Sarkisian, Julian O. Nwoko, Kenneth R. Mead & John D. Noti (2015) Effects of Ultraviolet Germicidal Irradiation (UVGI) on N95 Respirator Filtration Performance and Structural Integrity, Journal of Occupational and Environmental Hygiene, 12:8, 509-517. DOI: 10.1080/15459624.2015.1018518

6. Katelyn C. Jelden, Shawn G. Gibbs, Philip W. Smith, Angela L. Hewlett, Peter C. Iwen, Kendra K. Schmid & John J. Lowe (2017) Ultraviolet (UV)-reflective paint with ultraviolet germicidal irradiation (UVGI) improves decontamination of nosocomial bacteria on hospital room surfaces, Journal of Occupational and Environmental Hygiene, 14:6, 456-460. DOI: 10.1080/15459624.2017.1296231

Get a Quote. Warranty Info.

WARRANTY

This product is protected by the Air Science Legacy Limited Lifetime Warranty™.

For details visit the Warranty section of our website.

UVBOX BENCHTOP DECONTAMINATION CHAMBERS

The Air Science product line also include the **UVBOX™ Benchtop Decontamination Chamber**. This 1.9 cu.ft. high-efficiency cabinet designed to safely decontaminate contents while providing a safe work environment for the operator. High intensity UV lamps positioned within the cabinet produce short wave ultraviolet light at 254 nm to destroy exposed surface DNA and bacteria, leaving forensic evidence or other items free of contamination prior to other tests, analysis or procedures.

Air Science®

120 6th Street \ Fort Myles, FL 33907
T. 239-489-0024 \ **Toll Free.** 800-306-0656 \ **F.** 800-306-0677
www.airscience.com