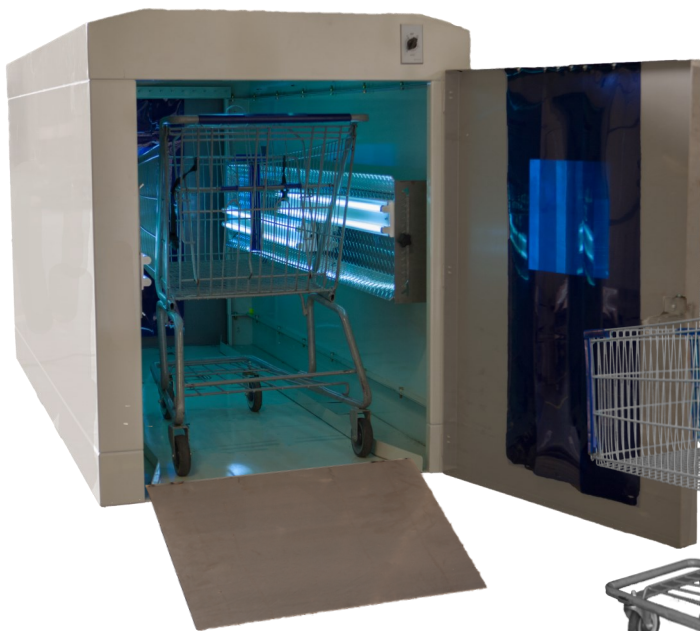


# ADVANTECH

SHOPPING CART DISINFECTION SYSTEM

## UVTech T-12



THE SAME DISINFECTING  
TECHNOLOGY UTILIZED IN AIR,  
FOOD, WATER, & MEDICAL  
INDUSTRIES



### FEATURED BENEFITS:

- Disinfects up to 99.99% of common viruses, bacteria, and fungi on surfaces
- 6-8 carts disinfected in 45 seconds
- Custom light settings and enclosure sizes available
- Designed to fit in current cart storage layout for in-process cleaning
- UV-C wavelength: 254 nm
- Rated Lamp Life: 9,000 hours
- The same disinfecting technology utilized in air, food, water, and medical industries

## FOREWORD

The current global Coronavirus pandemic has forever changed the way we think about customer and employee health. Safety protocols in the retail and grocer industry have intensified in the last three months. Shopping carts are one of the most contaminated items in these industries. Retailers and grocers worldwide are now faced with the monotonous task and costs of quickly and effectively disinfecting the carts to ensure customer and employee safety.

### **OUR SOLUTION: UVTech T-12**

The **UVTech T-12** utilizes ultraviolet technology and is rated to disinfect 6-8 shopping carts in 45 seconds.

## WHY ULTRAVIOLET TECHNOLOGY?

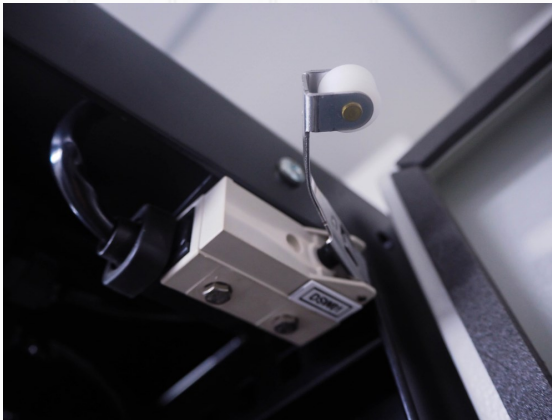
Ultraviolet (UV) light contains the optimal energy for inactivating viral, bacterial, and fungal organisms. Inactivation refers to the organism's ability to reproduce and infect a host. Viruses can have either DNA or RNA while bacteria and fungi contain DNA. The germicidal effectiveness of UV light is maximized at 265 nano meters (nm), which damages the DNA and RNA structures of the organism (REF 1). Ultraviolet germicidal irradiation (UVGI) is a reputable method of disinfection dating back to the 1800's:

- 1877: It was discovered that the intensity of sunlight affected the survival rate of bacteria. Higher intensities of sun rays neutralize more bacteria (REF 2).
- 1941: Upper-room UVGI was used in Philadelphia schools to prevent the spread of measles. There was a statistically significant difference between susceptible schools with and without upper-room UVGI, with respect to infection rates. 13.3% with upper-room UVGI, 53.6% without (REF 3).
- 2009: The Centers for Disease Control and Prevention (CDC) supported the use of upper-room UVGI to control TB in health-care industries (REF 4)

Over time, research and development has allowed UVGI to be applicable in water, air, and surface treatment with highly effective outcomes. **Hospitals are currently using autonomous robots and other tools equipped with UV-C lights to disinfect surfaces and rooms.** HVAC and other filtration units are also utilizing UV-C lights to eliminate mold.

## IS ULTRAVIOLET TECHNOLOGY SAFE? WE MAKE IT SAFE!

UV-C radiation is bounded by lower wavelengths around 200 to 280 nm. Direct exposure to the light should be avoided as erythema (reddening of the skin) and conjunctivitis (inflammation of the mucous membranes of the eye) can be caused by this form of radiation (REF 6). T-12 is designed to prevent any UV-C light leakage during use. The interlocking system ensures that operation can only take place when both doors are closed.



*Image 1 depicts the interlocking system built into the doors and the frame of T-12. The enclosure cannot be turned on until both doors are in a closed position, activating the limit switches.*

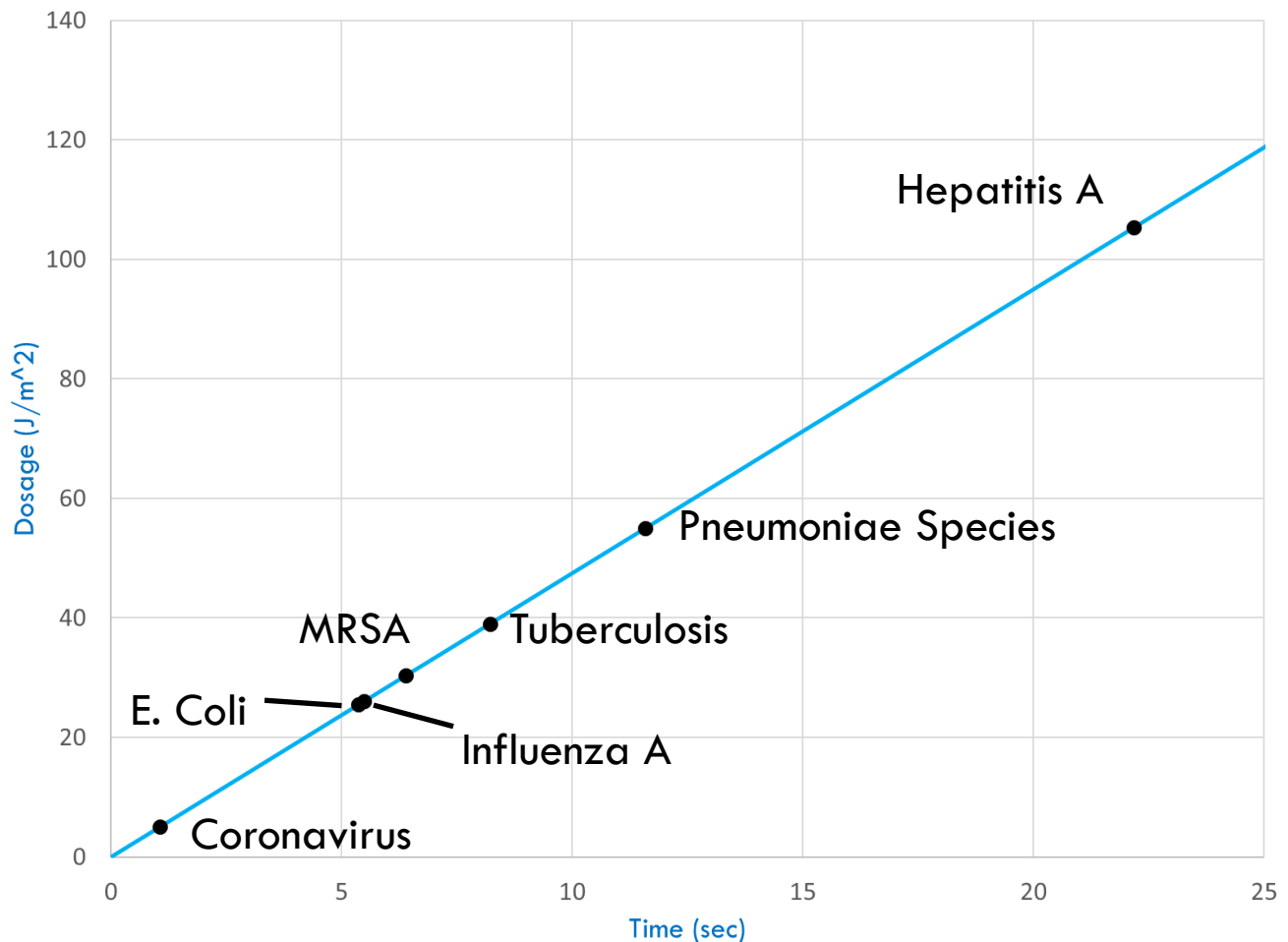
## COMPARABLE ADVANTAGES OF T-12

Manual Disinfecting	T-12 Automated Disinfecting
<ol style="list-style-type: none"><li>1. The area of disinfection is not maximized when wiping down a cart using cleaning chemicals.</li><li>2. Employees are exposed to bacteria, viruses, and fungi while manually cleaning the carts.</li><li>3. The job is monotonous and takes up valuable work time (labor costs).</li><li>4. The customer is unsure to trust that the cart has been cleaned thoroughly.</li></ol>	<ol style="list-style-type: none"><li>1. 99.99% of viruses, bacteria, and fungi on the cart surface exposed to the light will receive ultraviolet germicidal irradiance.</li><li>2. Improved employee safety and reduces labor costs.</li><li>3. Valuable work time not spent manually cleaning carts</li><li>4. Improved customer perception and safety while using the carts.</li></ol>

## T-12 PERFORMANCE

The novel Coronavirus is known to live on surfaces lasting between six hours to nine days. The biggest issues with Coronavirus are the high secondary infection rate, rapid spread, and fatality rate (REF 5). Any residual contamination can pose a threat to customers and employees. T-12 is proven to reduce surface contamination by 99.99%, and is capable of disinfecting 6-8 shopping carts in 45 seconds. *Image 2* displays the T-12 output (units dosage) per second. Common viruses, bacteria, and fungi are found on the graph with their respective dosage limits and the time at which the T-12 inactivates them.

**Time to Disinfect Common Viruses, Bacteria, Fungi**



*Image 2* compares dosage data from T-12 with inactivation levels of well known viruses, bacteria, and fungi

## SPECIFICATIONS

- Enclosure dimensions: 110" x 42" x 55"
- Electric Ratings: 120V / 5A / 432W
- UV-C Lamp Type: 36 Watt G36T8 Phillips UV-C TUV Germicidal light bulb (or equivalent)
- UV-C Wavelength: 254 nm
- Rated Lamp Life: 9,000 hrs
- **\*\*All electrical systems are assembled with UL approved products\*\***

## CONTACT US

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- **Dave Blackburn:** (859) 576-2398

## REFERENCES

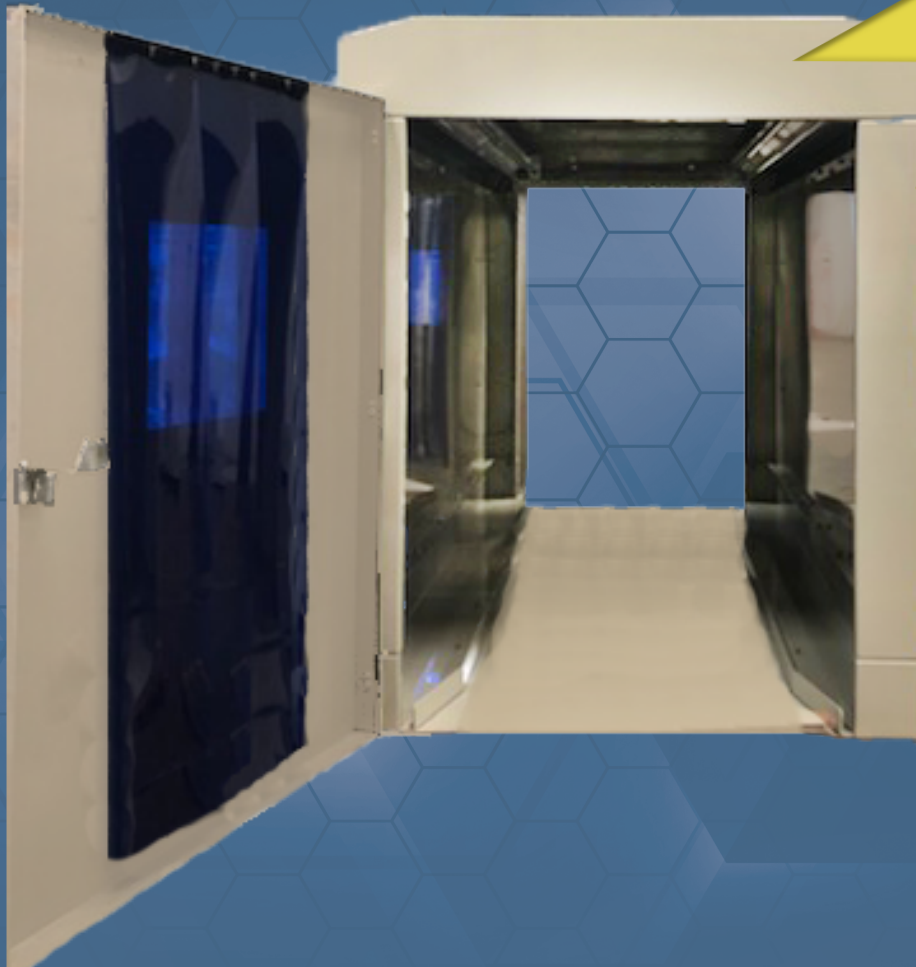
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3. AIR DISINFECTION with ultraviolet irradiation; its effect on illness among school children. Spec Rep Ser Med Res Counc (G B). 1954;283:1-88.
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5. Kowalski, Wladyslaw & Walsh, Thomas & Petraitis, Vidmantas. (2020). 2020 COVID-19 Coronavirus Ultraviolet Susceptibility. 10.13140/RG.2.2.22803.22566.
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7. Image 1 credit: engineer story/Shutterstock.com



# UV SANITATION STATION

VERSATILE | USER FRIENDLY | 120 V STANDARD

NEW  
PRODUCT



## ADVANTAGES:

- FLEXIBLE SPEED TO MARKET
- DESIGNED FOR TODAY'S SANITARY REQUIREMENTS
- CUSTOMIZATION IS OUR STANDARD
- CARTS AND ACCESORIES AVAILABLE

# ADVANTECH

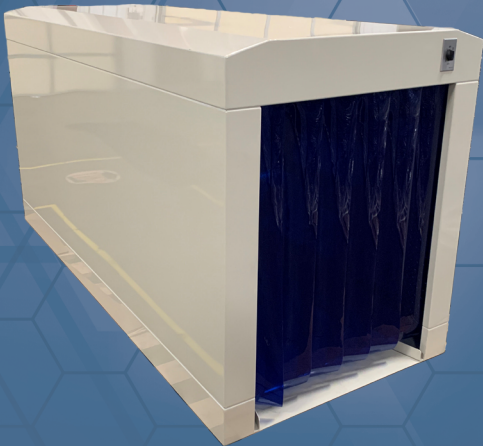
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# UV SANITATION STATION

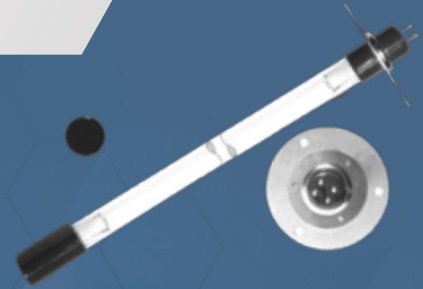
## DESIGN:

- User Friendly Controls
- 120V Electrical Control
- Plug & Go Stand Alone Unit
- Powder Coated Steel Construction
- Modular Design
- Portable Options Available
- Conveyor Options Available
- Custom Sizes for Width and Length
- Kill Step Validation Options Available



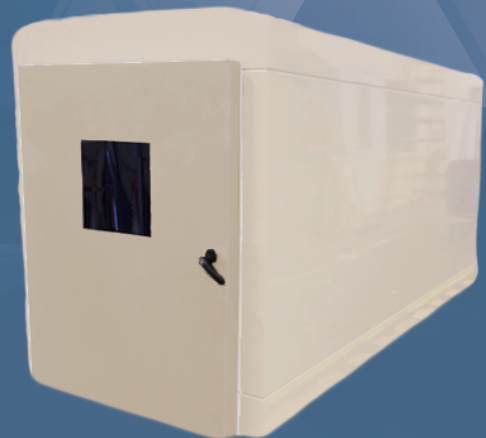
## APPLICATIONS:

- Prepared Foods
- Production Tooling
- Operator Tooling & Equipment
- Inbound & Outbound Shipments
- Operator Interface Devices & Electronics
- Personal Protection Equipment Sanitation



## SPECIFICATIONS:

- UVC Wavelength=254 nm
- Rated Lamp Life=9000 Hours
- Electrical Ratings:120V/5A/432W (UVC Light Bulb)
- 36 Watt G36T8 Philips UV-C TUV Germicidal Bulb (Or Equivalent)
- Kills up to 99.99% of Common Viruses, Bacteria & Molds
- Disinfect in as Little as 20 Seconds, Depending on Target Distance
- All Electrical Systems Consist of UL Approved Components



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