ADVANTECH

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

SHOPPING CART DISINFECTION SYSTEM

UVTech T-12

FEATURED BENEFITS:

- **Disinfects up to 99.99% of common viruses, bacteria, and fungi on surfaces**
- **6-8 carts disinfected in 45 seconds**
- **Optimized light settings and custom 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**

Russ Garland: 859-797-4460 | Dave Blackburn: 859-576-2398

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 industries have intensified in 2020. 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 capable of disinfecting 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 no longer 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.

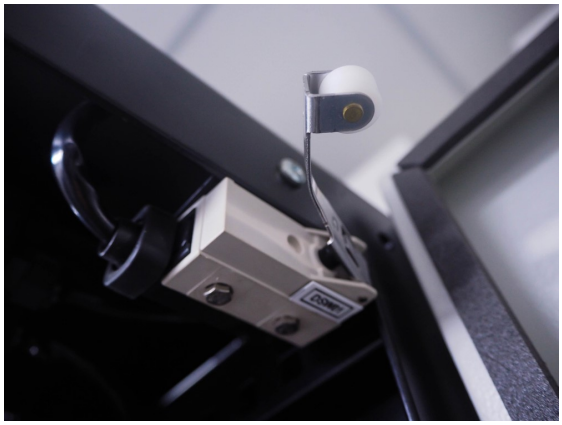

Image 1 depicts the interlocking system built into the doors and the frame of T-12. The enclosure cannot be turned on until both doors are in a closed position, activating the limit switches.

COMPARABLE ADVANTAGES OF T-12

Manual Disinfecting	T-12 Automated Disinfecting
1. The area of disinfection is not maximized when wiping down a cart using cleaning chemicals.	1. 99.99% of viruses, bacteria, and fungi on the cart surface exposed to the light will receive ultraviolet germicidal irradiance.
2. Employees are exposed to bacteria, viruses, and fungi while manually cleaning the carts.	2. Improved employee safety through minimal contact with shopping carts.
3. The job is monotonous and takes up valuable work time (labor costs).	3. Saved labor time to be allocated as needed.
4. The customer is uncertain that the cart has been cleaned thoroughly, thus risking the relationship between the customer and the store.	4. Improved customer safety and perception while using the carts. Improving customer and store relations and loyalty among consumers.

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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.

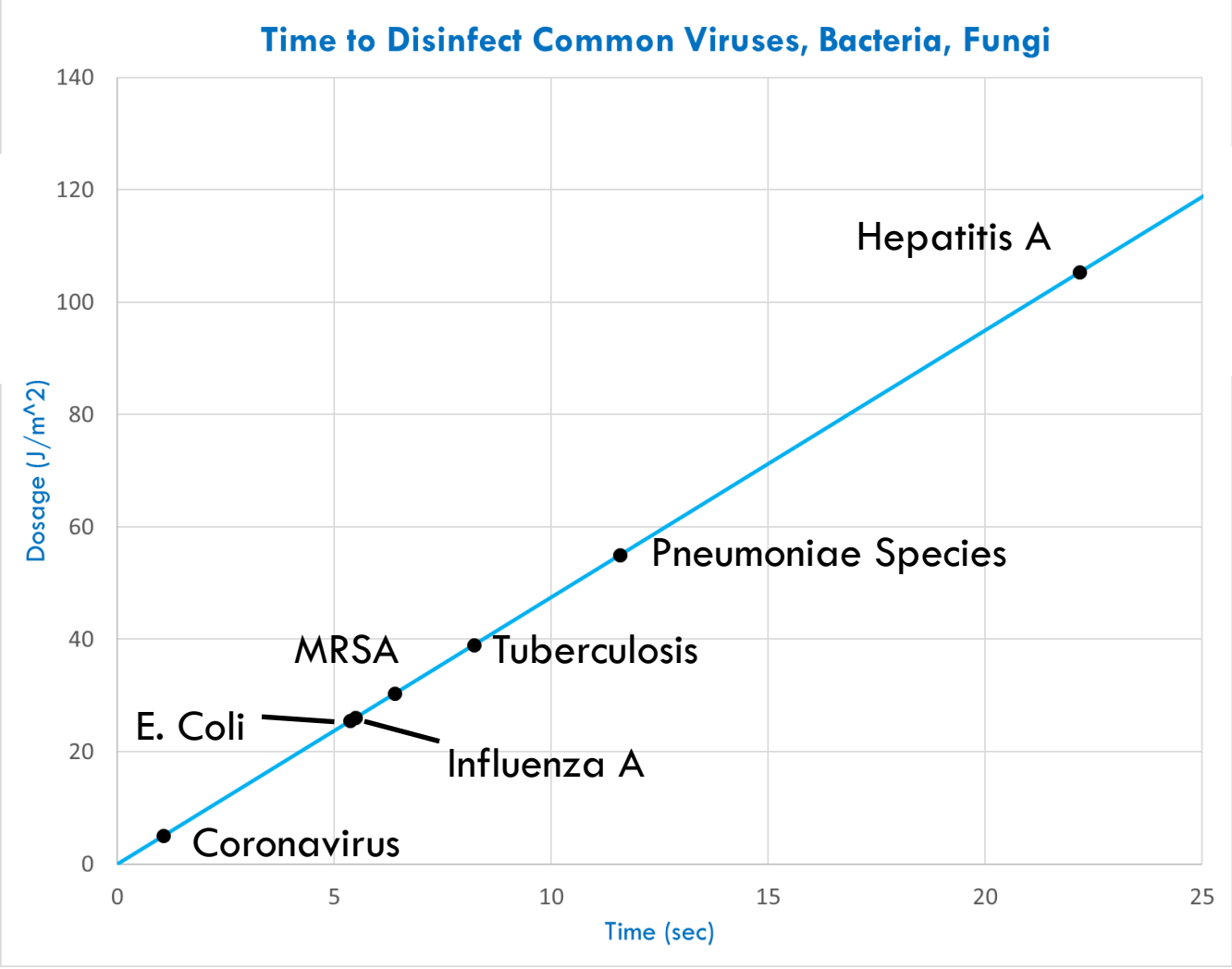

Image 2 compares dosage data from T-12 with inactivation levels of well known viruses, bacteria, and fungi

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SPECIFICATIONS

- Enclosure dimensions: 110” x 42” x 55”
- Heavy duty 12 gauge construction
- Powder coat finish
- 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

- Advantech: 859-408-2112
- Russ Garland: 859-797-4460
- Dave Blackburn: 859-576-2398

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7. *Image 1 credit: engineer story/Shutterstock.com*

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