

**ASR**



Fall 2019



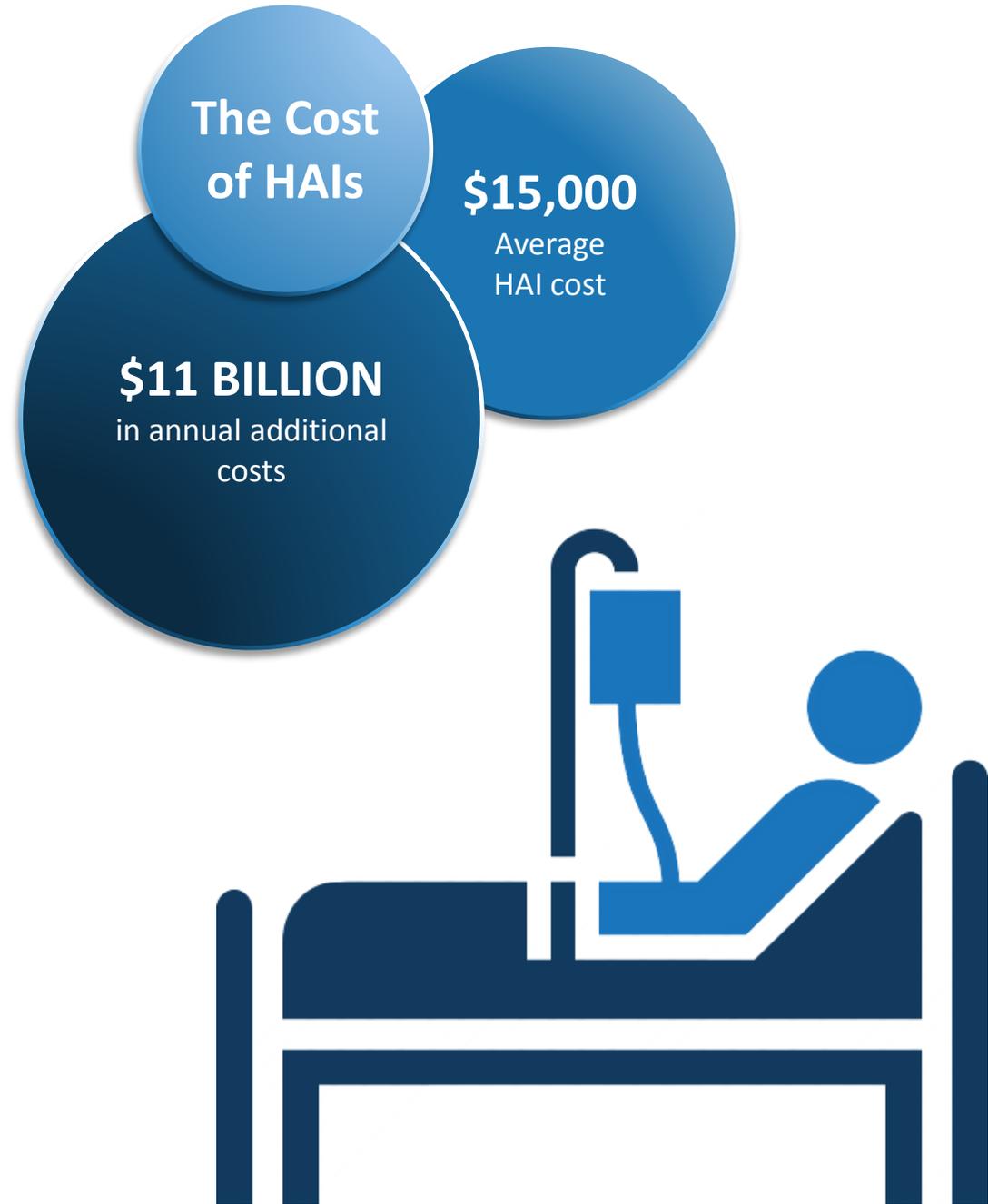
Puro was founded by a group of industry veterans in the commercial lighting and controls market. Our vision is to create an organization with a focus on **protecting people's health and promoting wellness** with specialized lighting technologies.

**ASR Healthcare**, an industry leader in Point-of-Care and Infection Prevention devices, will be your contact to help you reduce infections and cross contamination!

## Why Are We Here?

### 2 million PATIENTS infected annually

- 1 in 31 patients contract HAI
- Increased length of stay
- Increased cost
- Reduced reimbursement



## Current and Emerging Disinfection Practices

### HAND HYGIENE



### MANUAL CLEANING



### ENHANCED CLEANING



405nm Fixtures



UV Disinfection Pushcarts



Puro UV Fixtures

## Current and Emerging Disinfection Technologies: 405nm

- “Continuous Disinfection”, safe when occupied
- Only effective on some bacteria
  - Not viruses, fungus or mold
- 24hrs w/out occupancy kills 90% of some bacteria.
- Only slightly better than control
- Data doesn’t verify distance, only time
- Ask for data

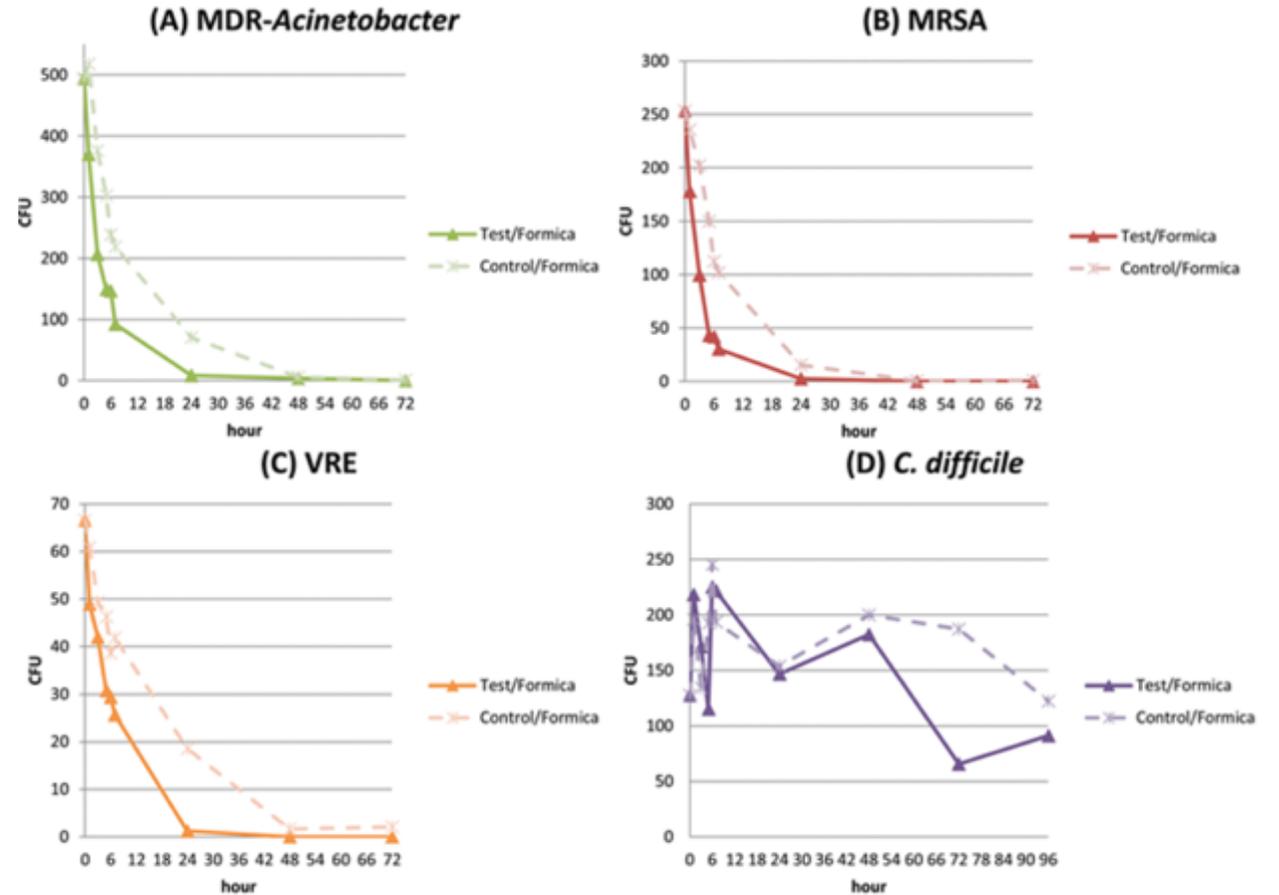


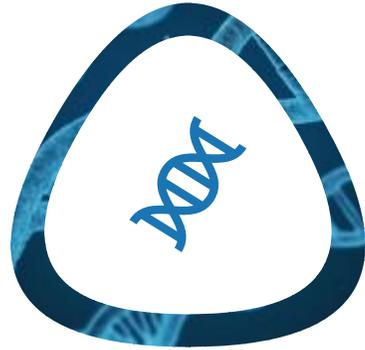
Figure 2. Survival in MDR-Acinetobacter (A), MRSA (B), VRE (C), and C. difficile (D) with Blue Light

Source: [https://academic.oup.com/ofid/article/3/suppl\\_1/267/2635988](https://academic.oup.com/ofid/article/3/suppl_1/267/2635988)

## History & Efficacy of UV



Germ killing properties discovered 140 years ago.



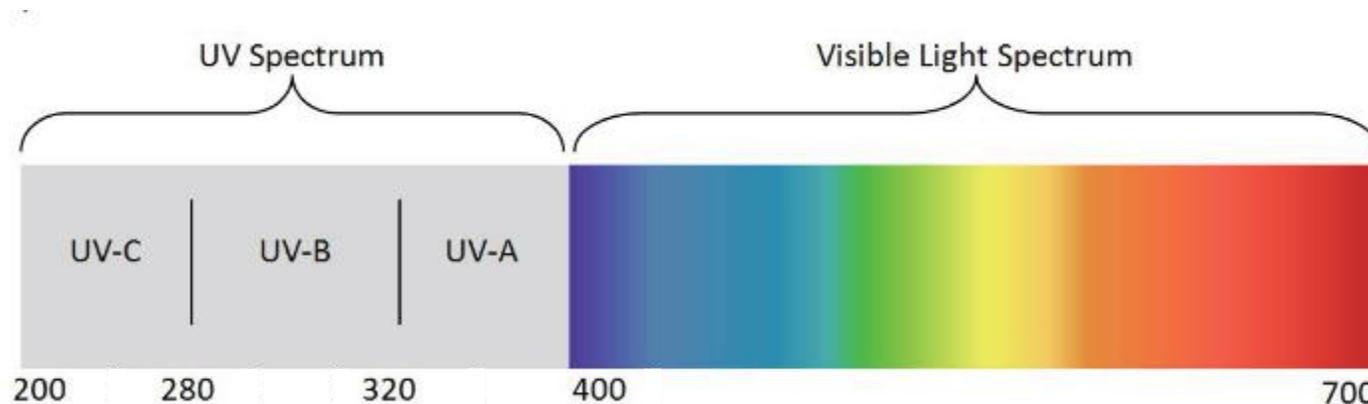
UV-C alters DNA structure of pathogens.



Pathogens can't develop resistance to UV light.



10 years of peer reviewed research proving efficacy reducing HAIs.



## IMPACT OF PULSED XENON ULTRAVIOLET LIGHT ON HOSPITAL-ACQUIRED INFECTION RATES IN A COMMUNITY HOSPITAL

In 2016, Researchers out of UCF documented a 29% reduction of VRE and MRSA infections, as well as a 41% decrease in C. diff infections when deploying pulsed xenon disinfection in conjunction with standard cleaning practices.

Source: [https://www.ajicjournal.org/article/S0196-6553\(15\)01064-0/pdf](https://www.ajicjournal.org/article/S0196-6553(15)01064-0/pdf)



## IMPLEMENTATION AND IMPACT OF ULTRAVIOLET ENVIRONMENTAL DISINFECTION IN AN ACUTE CARE SETTING

In 2014 researchers reported a 20% decrease in hospital-acquired infection rates for MDRO and C. diff during the 22-month UV disinfection period, as compared to the 30-month pre-implementation period.

Source: [https://www.ajicjournal.org/article/S0196-6553\(13\)01432-6/abstract](https://www.ajicjournal.org/article/S0196-6553(13)01432-6/abstract)

## MICROBIAL LOAD ON ENVIRONMENTAL SURFACES: THE RELATIONSHIP BETWEEN REDUCED ENVIRONMENTAL CONTAMINATION AND REDUCTION OF HEALTHCARE-ASSOCIATED INFECTIONS

In 2016 researchers at Duke and UNC found a 94% reduction in epidemiologically important pathogens when UV was added to the standard use of quaternary compound disinfectants. This resulted in a 35% decrease in colonization/infection.

Source: <https://www.researchgate.net/publication/313338846>



## Barriers to Deploying UV



### FINANCIAL COST

\$75k - \$125k per unit depending on manufacturer

### OPERATION COST

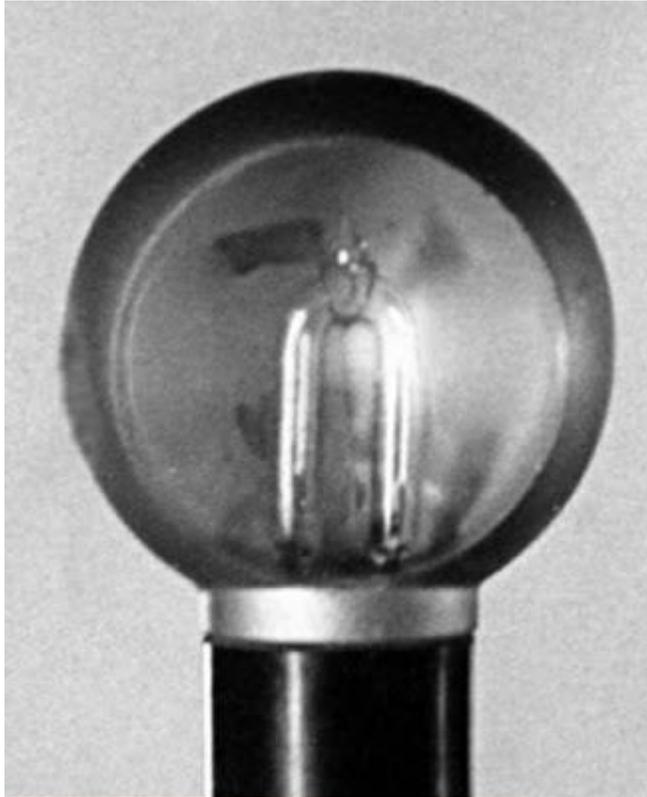
Staffing, Training & Scheduling

### MAINTENANCE COST

\$5k - \$10k in annual lamp and filter maintenance

### TIME COST

Effective range of 10-12 feet from light source makes large areas difficult to disinfect



**Pulsed Xenon**  
Invented: 1960s



**UV Transmissive Polymer**  
Invented: 1920s

## Puro Technology



### XENON Light Source

At the heart of our products is the pulsed Xenon UV Light Engine, powered by *Violet Defense™* technology.

**Xenon** is generated from an odorless and colorless gas that is heated by a small amount of electricity, resulting in **lighting** that is brighter and better than most halogen and incandescent **light** sources.

Our patented **polymer lense** allows significant UV energy transmission without fogging, cracking or discoloration that occurs over time when using non-UV transmissive lens materials. The groundbreaking design enables miniaturization of the UV disinfecting units, which allows smaller, lightweight units that can be positioned in a ceiling or wall.

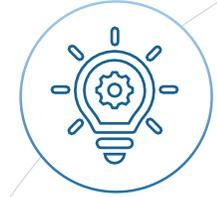


## Established Technology Innovative Delivery

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### LENSING TECHNOLOGY

The lens doesn't fog or melt over time, and it intensifies the delivery of full spectrum UV light.



### MINIATURIZATION

For the first time in history, hospital grade UV disinfection can be installed in commercial ceilings.



### DISINFECT ON DEMAND

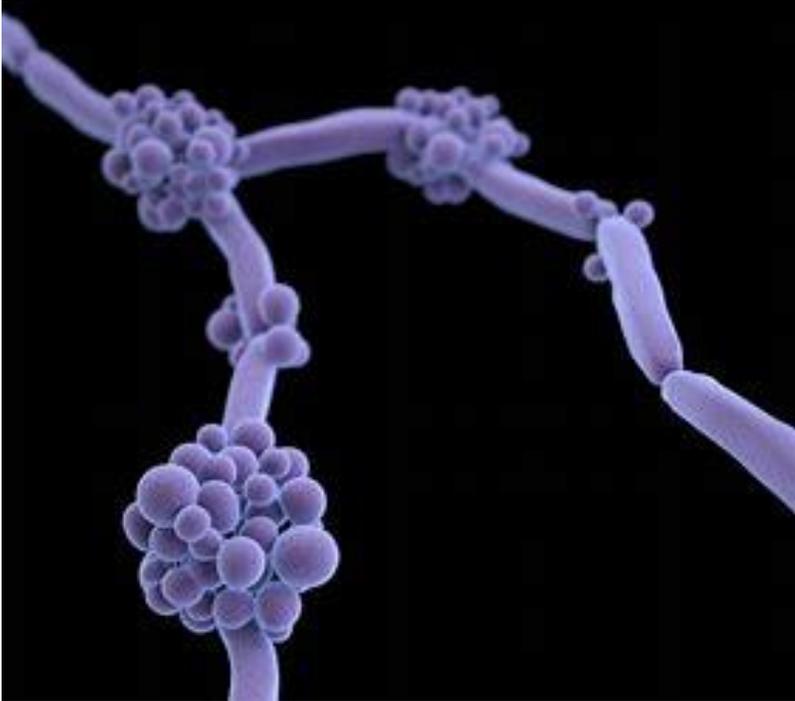
Our fixtures can be scheduled to run autonomously, and disinfect an entire facility at once, as often as needed, no staff required.



### AFFORDABLE

By using the miniaturized technology, we can permanently install it in your space at a fraction of the cost of previously available technology.





This month, we announced that we kill up to **99.9%** of *C. auris*, the deadly fungal pathogen that was first discovered in 2009 in Japan, now found in 11 states & 35 countries.

Multiple drugs are ineffective against it and multiple types of standard cleaning methods do not work.

By showing we can kill this, we show we can kill most other pathogens. Other "lighting" disinfection companies have not made any claims (and likely cannot) versus hard to kill healthcare associated pathogens.

Press release:

<https://www.linkedin.com/feed/update/urn:li:activity:6561990442865479680>

## Puro Technology: Helo Fixtures

### Protection From Above



**HELO F2**

- Lab Verified to kill 99.9% pathogens @ 3m/9.8ft in 30 minutes
- Pulse Xenon lamp rated for 2 million+ pulses
- BACnet compatible
- Dual light engine unit covers 12x12 area on a 10ft ceiling
- 120V Compatible
- 7 Amps at peak output
- 120W over 1 hour



**HELO F1**

- Lab Verified to kill 99.9% pathogens @ 2m/6.6ft in 30 minutes
- Pulse Xenon lamp rated for 2 million+ pulses
- BACnet compatible
- Covers 10x10 area on 10ft ceiling
- 120V Compatible
- 4 Amps at peak output
- 40W over 1 hour

## Sentry Mobile Series

Protection that follows you



**Sentry M4**

The M4 has 4 full spectrum UV light engines on a mobile stand to bring germ-killing power to nearly any space.



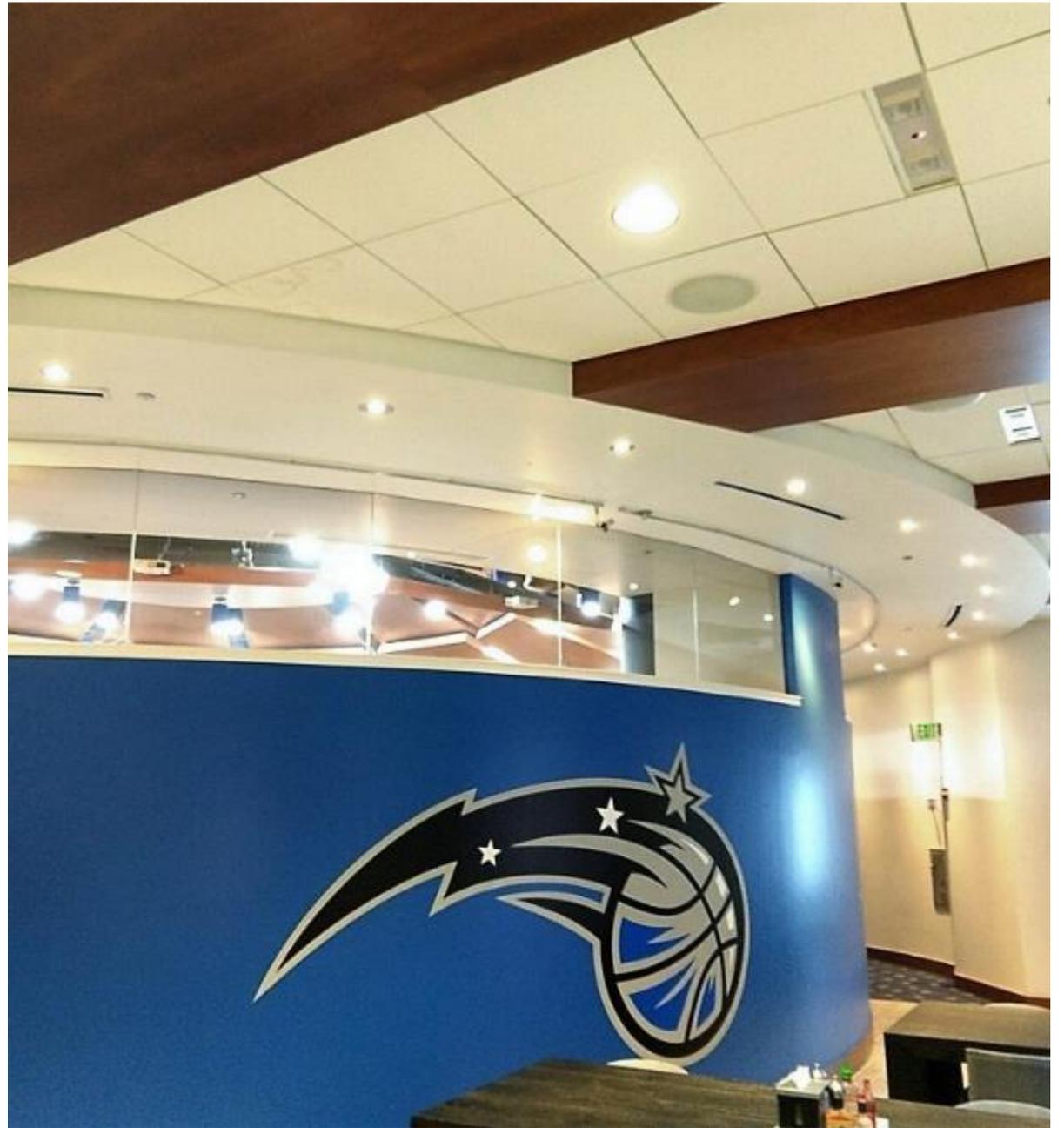
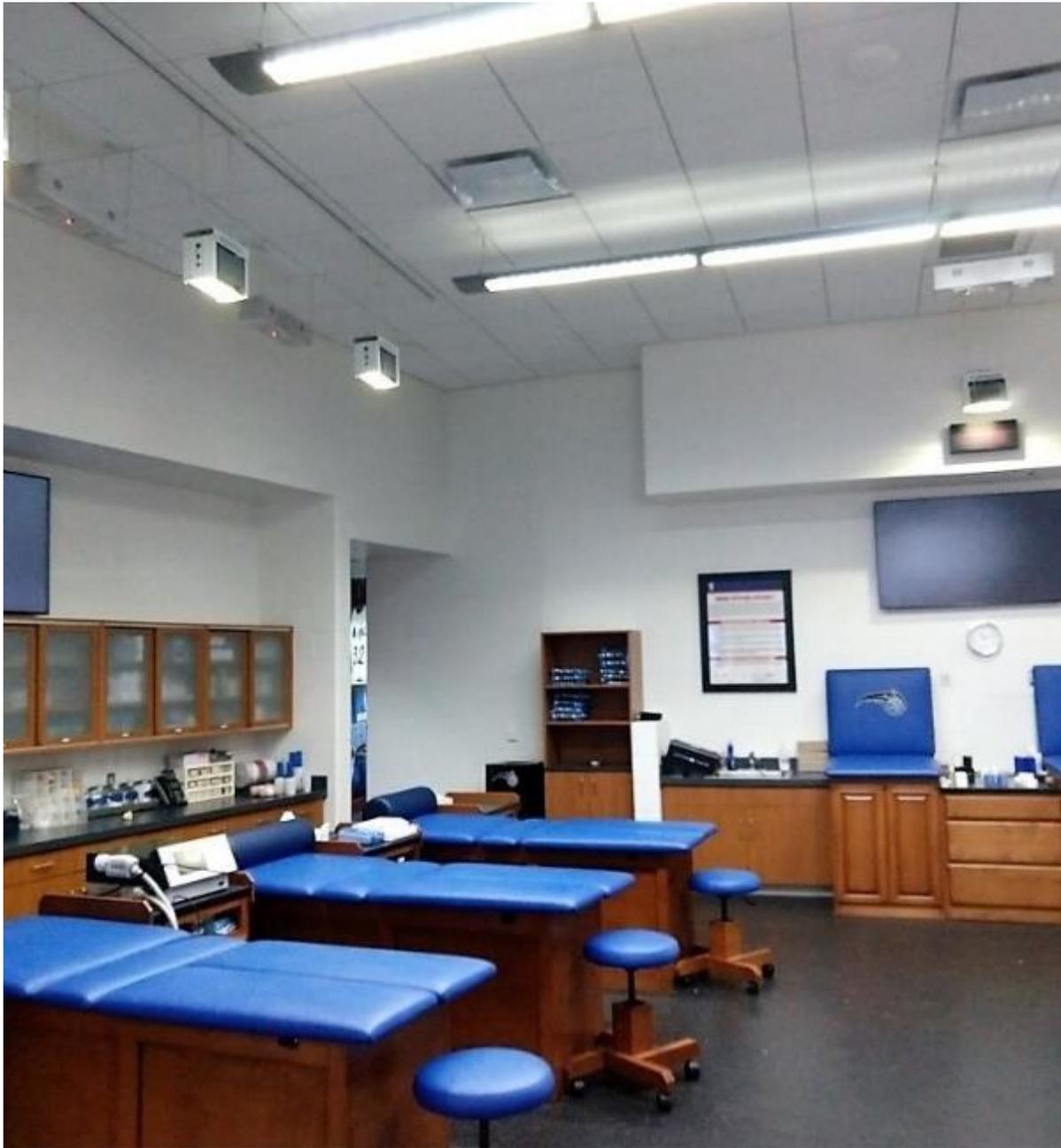
**Sentry M2-C**

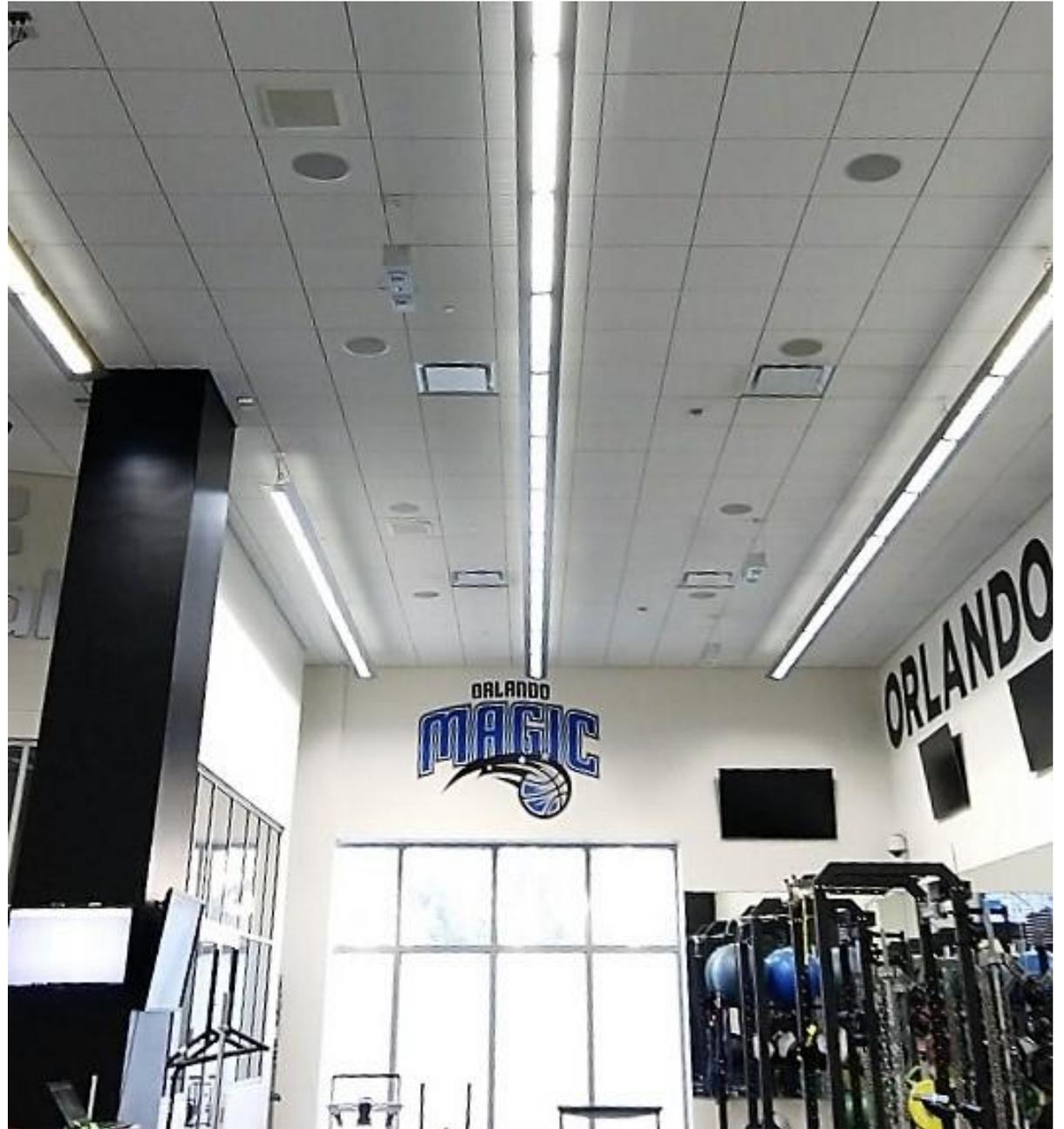
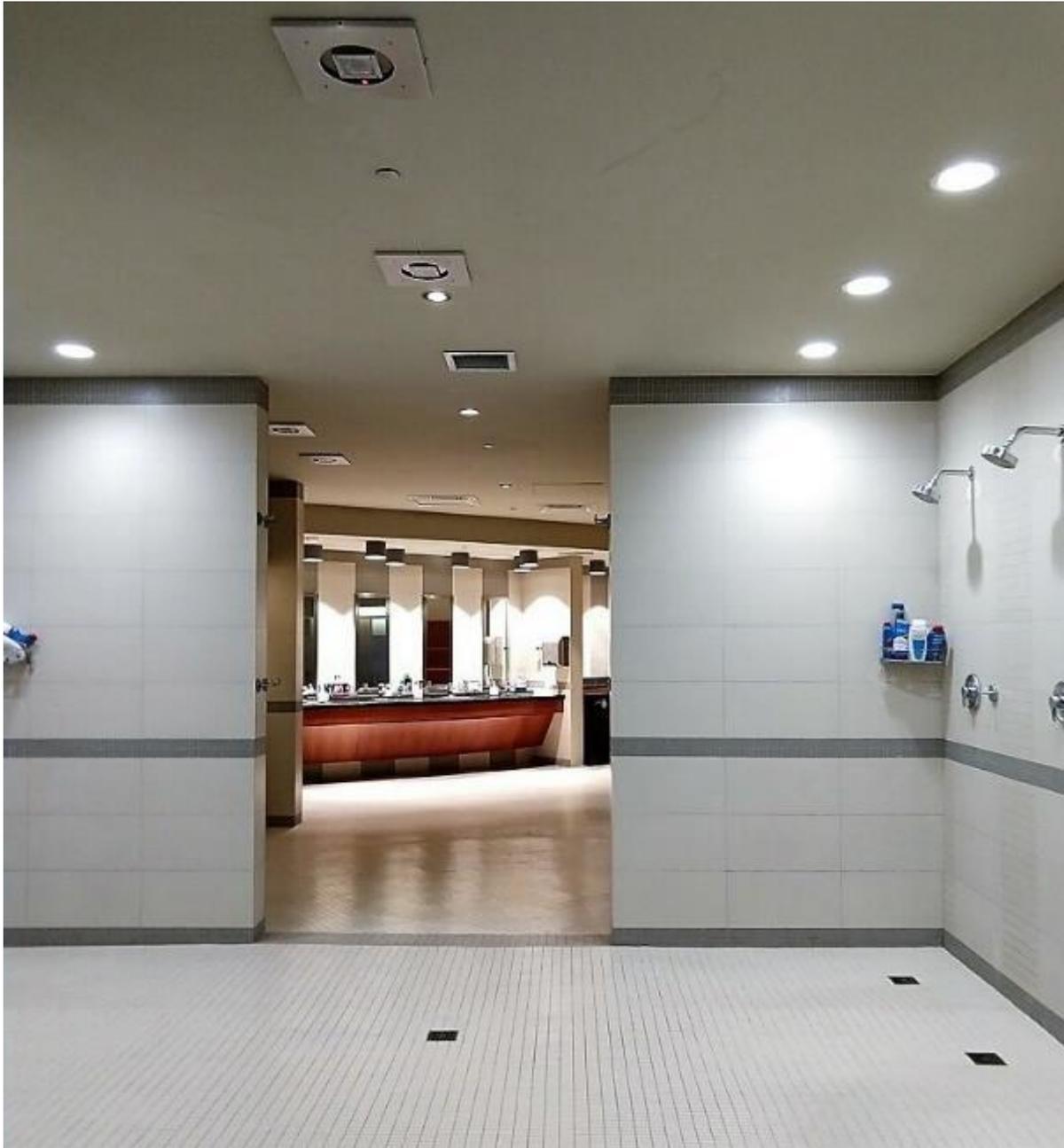
The M2-C is designed to bring the same Pulsed Xenon technology to spaces with a compact, yet stable design.



**Sentry M2-T**

The M2-T shines when you need a truly mobile option that can be easily transported up the stairs or on uneven terrain.







## Why Choose PURO?

- PURO fixtures kill up to **99.9%** of bacteria and viruses
- Significantly reduce the **growth** of new mold and fungus when used at the recommended spacing and runtimes
- Ability to **disinfect any room, any size, on demand in minutes.**
- The **first-known** high intensity full spectrum UV fixture that can be installed in a ceiling, suspended, or wall-mounted
- **Automatically** schedules to run overnight or integrates into Bac-Net automation system
- Quick & Simple; needs **no staff** and cleans a room in **30 minutes**
- **Finally... it's AFFORDABLE.**



# ***ASR***

Let's get started

Contact us at  
770.623.0071

[www.asrhealthcare.com](http://www.asrhealthcare.com)