



August 28, 2020

A Pandemic is the Mother of Invention:

Technologies to keep your people safe and your factory running.

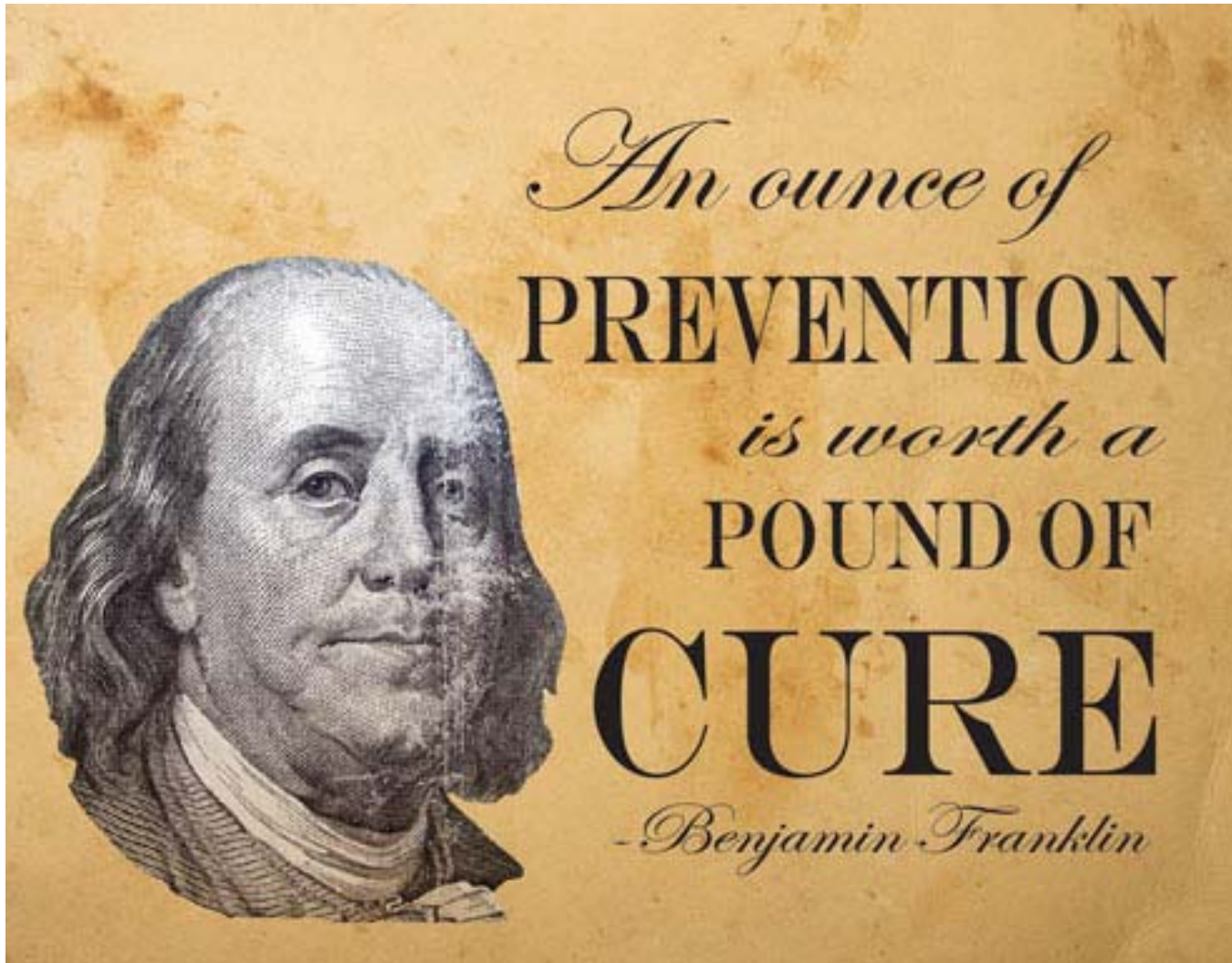
PRESENTATION BY:



MOVE YOUR ENVIRONMENT FORWARD



The Council of Industry
The Manufacturers Association of the Hudson Valley





Still
^
THEY NEED A PLAN.

| A Pandemic is the Mother of Invention



What is your company's CV-19 mitigation policy?

REACTIVE

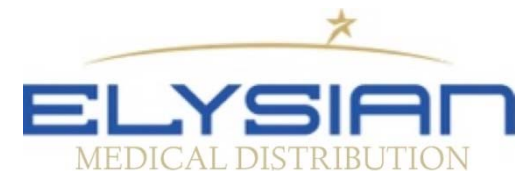
- Sending employees home who exhibit symptoms;
- Test folks who are ill;
- Shutting down plant for disinfection;

PROACTIVE

- Pandemic Preparedness, Prevention, and Response Plan;
- Implementation of technological solutions to prevent transmission;
- Work force testing strategy.

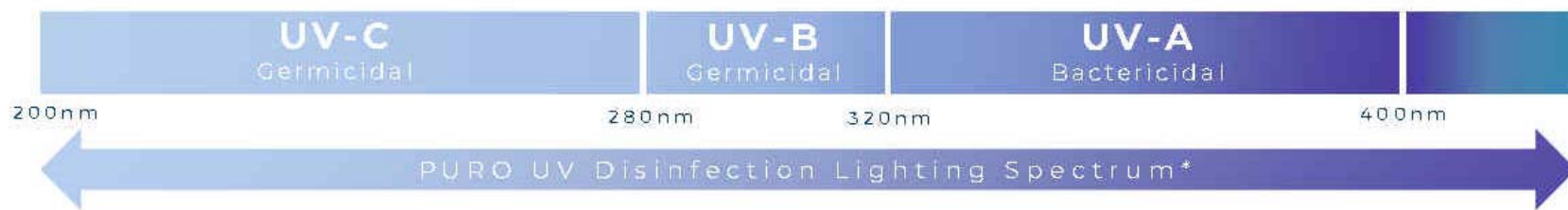
PROACTIVE SOLUTIONS

- Ultraviolet Lighting
- Thermal Scanning
- Disinfection
- HVAC Augmentation
- Employee Testing Strategy



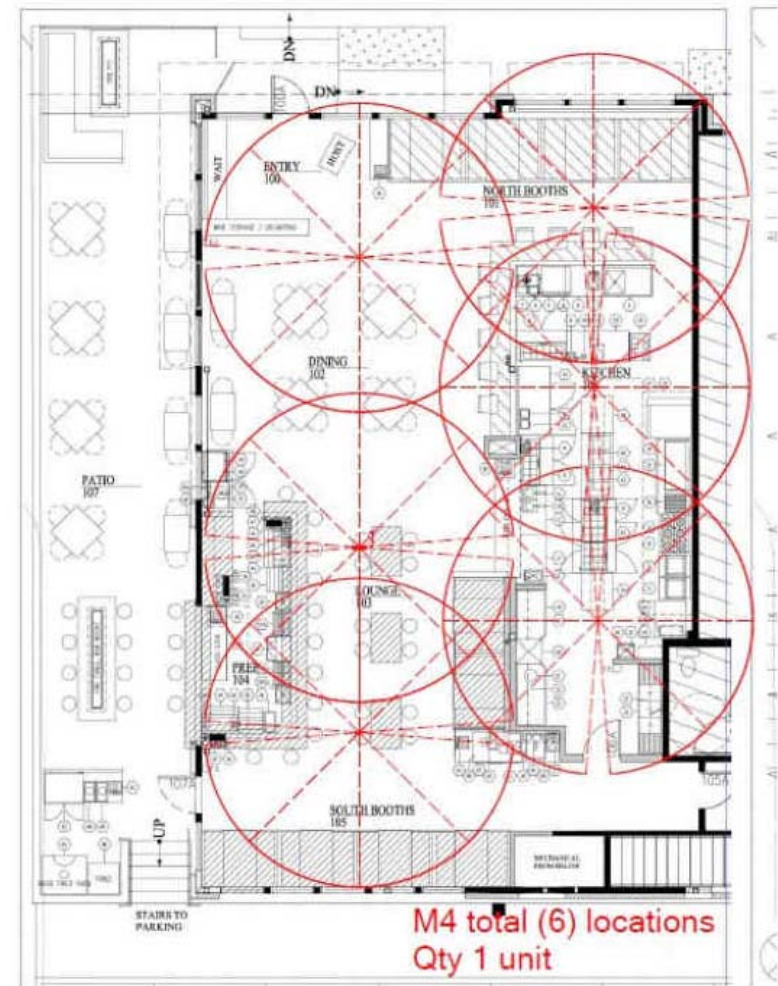
How does UV Light disinfection work?

- UV C and B kills microorganisms, germs, pathogens and viruses by destroying nucleic acids and disrupting their DNA;
- Full-spectrum UV light kills pathogens on surfaces *and* in the air;



UV Light Technology Benefits

- Disinfect on Demand
- Flexibility
- Miniaturization
- Affordability
- Speed
- No chemicals, no crews



PURO™

UV Disinfection Lighting

HELO SERIES



HELO F1

\$3,699

Helo Fixture Single UV Light Engine,
No Flange, 6ft. Plug, Manually or
BACnet Commissioned, 110V
Up to 100 sq. ft. coverage

SKU: H-F1-6-P-COM-110



HELO F1-12

\$3,799

Helo Fixture Single UV Light Engine,
12.75 X 12.75 Flange, 6ft. Plug, Manually
or BACnet Commissioned, 110V
Up to 100 sq. ft. coverage

SKU: H-F1-12-6-P-COM-110



HELO F1-24

\$3,999

Helo Fixture Single UV Light Engine,
24 X 24 Flange, 6ft. Plug, Manually or
BACnet Commissioned, 110V
Up to 100 sq. ft. coverage

SKU: H-F1-24-6-P-COM-110



HELO F2

\$7,099

Helo Fixture Dual UV Light Engine, 6ft.
Plug, Manually or BACnet
Commissioned, 110V
Up to 144 sq. ft. coverage

SKU: H-F2-6-P-COM-110

SENTRY SERIES



SENTRY M1-1

\$3,799

Sentry Mobile Single UV Light Engine,
Tripod Stand, 15ft. Plug, 110V
Up to 100 sq. ft. coverage

SKU: S-M1-1-T-15-P-110



SENTRY M1-2

\$7,499

Sentry Mobile Two Single UV Light
Engines, Tripod Stand, 15ft. Plug, 110V
Up to 200 sq. ft. coverage

SKU: S-M1-2-T-15-P-110



SENTRY M2-T

\$8,499

Sentry Mobile Dual UV Light Engine,
Tripod Stand, 15ft. Plug, 110V
Up to 144 sq. ft. coverage

SKU: S-M2-T-15-P-110



SENTRY M2-C

\$9,199

Sentry Mobile Dual UV Light Engine,
Locking Casters, 15ft. Plug, 110V
Up to 144 sq. ft. coverage

SKU: S-M2-C-15-P-110



SENTRY M4

\$20,999

Sentry Mobile Two Dual UV Light
Engines, Locking Casters, 15ft. Plug, 110V
Up to 300 sq. ft. coverage

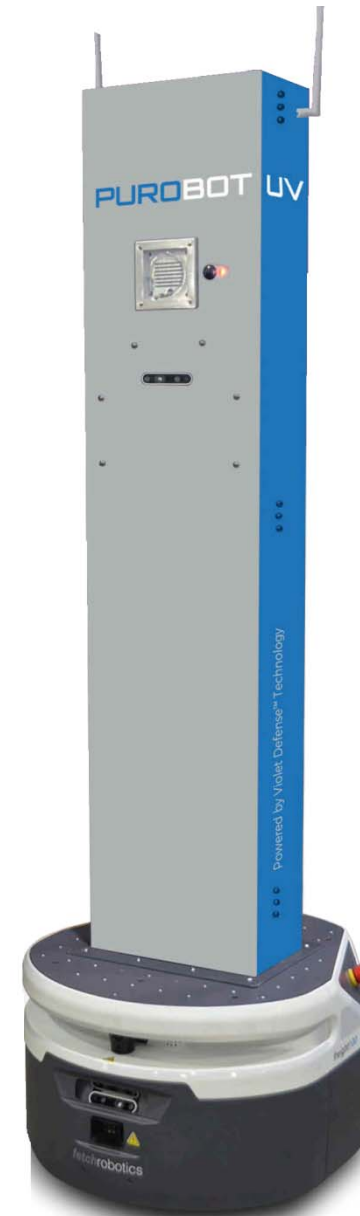
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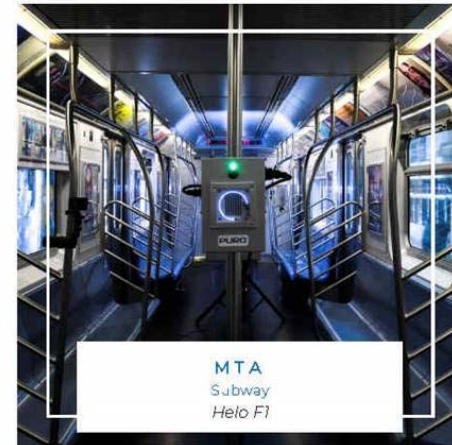
UV Robots

- Leasing options available (2 to 7 years);
- Roughly \$3,500 to \$6,500/month;
- \$140 to \$200/day



Considerations when evaluating UV solution?

- UV spectrum (A, B, C, or full range);
- Coverage (square feet);
- ROI;
- Safety considerations;
- Voltage required (e.g., 110v);



Thermal Imaging Solutions

- Elevated body temperature monitoring solution;
- Contactless;
- Enhances traffic flow;
- Tri-pod or mounted;



Thermal Imaging Solutions (cont.)



Residual Disinfectants



- Most disinfectants have an efficacy of minutes;
- Patented technology comprises 4 compounds:
 - 1) Chemical that breaks surface tension which increases coverage of antimicrobial;
 - 2) Antimicrobial that forms a covalent bond to the substrate;
 - 3) Nitrogen compound that positively charges the substrate drawing in negative charged microbes;
 - 4) Long carbon chain that mechanically disrupts the cell structure of the microbe, killing and creating a surface persistent killing field.

Residual Disinfectants (cont.)



- Long lasting
- Broad spectrum kill
- Non flammable
- Does not leach
- Water stable
- 30 month shelf life
- Adhesion to difficult substrates;
- Thermal stability
- UV resistance
- Low surface tension

Residual Disinfectants (cont.)



Commercial Clientele

- EXXON
- Target
- NJ Performing Arts Center
- 90+ McDonalds
- PSE&G
- Multiple first responders

Government, Schools, etc.

- NYS Governors Office
- PA Atty General's Office
- Naval Academy
- SUNY schools
- Fort Vienna, Ohio
- Clay and Cobb Counties (CA)
- University of South Carolina

Residual Disinfectants (cont.)

Cost Analysis

- Victory VP300ES (electrostatic sprayer)
- Tank 2.25 gallons
- Setting 3
- Coverage 13,300 sq. ft.
- List price of concentration 55 gal drum: \$8,100
- Volume following dilution: 385 gal
- Dilution for concentrate: 1:6
- Usable gallon cost: \$21.04
- Cost per square foot: \$0.00155



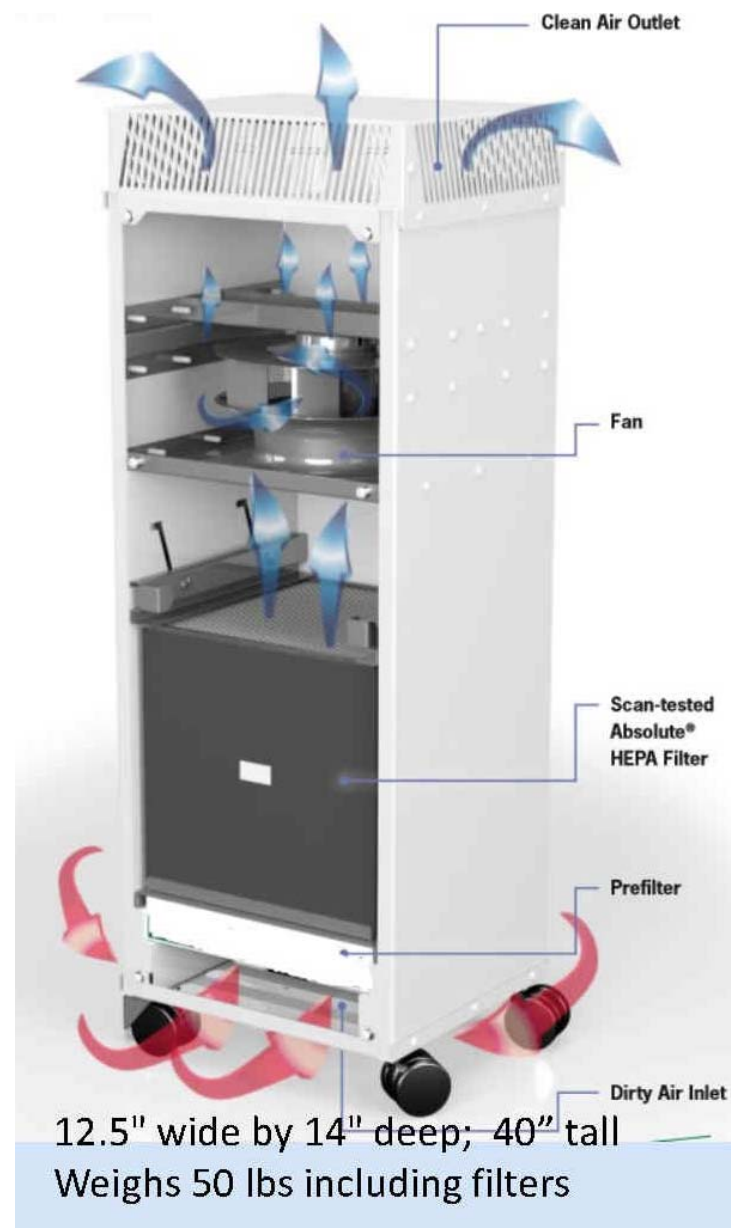
HVAC Augmentation

- Versatile ambient filtration units
- 2,000 or 4,000 CFM
- Roller cart avail for 2k unit
- Requires 240 or 480V
- Optional 120V outlet with step-up transformer
- Can lower energy costs (takes load off HVAC)



HVAC Augmentation (cont.)

- Portable 500 CFM unit;
- Recirculates ambient through a 99.9% HEPA filter;
- Quiet motor
- Powered by standard outlet
- 12 air exchanges/hr in 2,500 ft³
- Classrooms, offices, hospital rooms, etc.



Workforce Testing Strategy



COVID-19 Testing Options



Rapid Response Antibody Tests (Serology):

Tests for the qualitative determination of COVID-19 IgM and IgG antibodies in human whole blood serum or plasma.

- **Pros**
 - **Speed of Testing:** Results in <15 min
 - **Low Cost** to administer: <\$21/test
 - **98.7% Accuracy** without the need for machines or lab to read
 - Can show "stage of infection" trimester
- **Cons**
 - Time lag for the body to produce antibodies
 - Subject can be infected and infectious before antibodies present



Antigen Tests: Tests for the direct qualitative detection of SARS-CoV-2 viral nucleoprotein antigens from human upper and/or lower respiratory secretions.

- **Pros**
 - **Speed of Testing:** Results in <15 min
 - **Low Cost** to administer: <\$21/test
 - **Easy to Use**/no equipment required
- **Cons**
 - Sensitivity not as high at RT-PCR RNA tests; positive results should be verified via molecular test



Viral RT-PCR RNA Tests: The RT-PCR RNA test detects a current SARS-CoV-2 infection. It tests for SARS-CoV2 genetic material, also known as RNA. If the viral RNA is detected, then the virus is likely present.

- **Pros**
 - **Accuracy:** proven sensitivity and specificity of >95%
 - **Lab Verified Results**
 - **"Gold Standard"** for diagnosing COVID-19
- **Cons**
 - Higher cost to administer: >\$100/test
 - Speed: results in 24-72 hrs
 - Requires CLIA lab to process specimen
 - Invasive collection process; usually uncomfortable

Workforce Testing Strategy (cont.)



Implementation – As Easy As 1, 2, 3!

1
Determine Testing Method

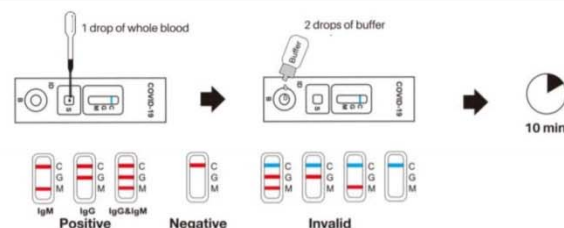
Rapid
Response
Antibody Test



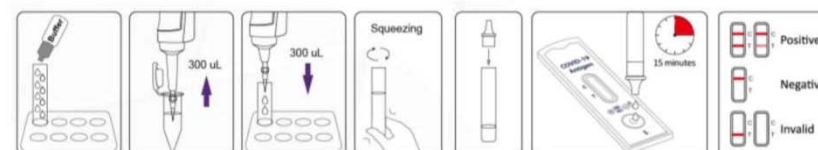
2
Collect Specimen



3
Analyze Specimen & Get Results



Rapid
Response
Antigen Test



Viral RT-PCR
RNA Test



Ship sample to lab via
overnight package; get
results in 24-72 hrs.

Workforce Testing Strategy (cont.)



COVID-19 Testing Scenarios

Potential Testing Scenarios	Tests Administered Per Person	Weeks to Community Control - Zero Positivity Rate	Cost Per Person Per Day
Twice Per Week 2x/Week – Rapid Antigen + PCR for positives	12	6	\$2.79
Once Per Week 1x/Week – Rapid Antigen + PCR for positives	8	8	\$1.86
Twice Per Month 2x/Month – Rapid Antigen + PCR for positives	6	12	\$1.40

Key Assumptions

- Initial positivity rate after first test = 0.5%
- 2x/Week Testing - Positivity rate decreases by 85% after each testing period
- 1x/Week Testing - Positivity rate decreases by 75% after each testing period
- 2x/Month Testing - Positivity rate decreases by 50% after each testing period
- Cost Per Person based on analysis of 2.5M population; Unit estimate to be used for smaller population set.

THANK YOU



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