

# Effective Air Safety Measurement & Purification in the workplace



ThinkLite®

Air® Grow® Energy®

Venus  
Supplies Company  
A Woman Owned Business

- 12 years
- 3 Divisions
- 14 Countries
- 2015 – using bioengineering to improve human life



# Who We Are

- ThinkLite was born in 2009 as an innovative technology company that manufactured products in energy efficiency, building automation and bioengineered solutions in the life sciences industry.
- Well before the pandemic, we have gotten into the world of clean air monitoring and purifying for healthcare facilities, where second hand transmission of airborne pathogens is the number one cause our country's deaths.
- In 2020, with the beginning of the global pandemic, the entire world realized that airborne pathogens exist and spread in all indoor areas, not just hospitals. This naturally evolved our offering into all kinds of indoor applications, well beyond healthcare
- Our clients include Siemens, Ascensions Hospital Group, Partners Healthcare, ABM Facilities Management, CBRE and more.



# Customers Include



# Today

- Air Quality at work is the # 1 concern
- Risk of sick leave associated with outdoor air supply rate, humidification, and occupant complaints
- Office air quality may affect employees' cognition, productivity



**The New York Times**

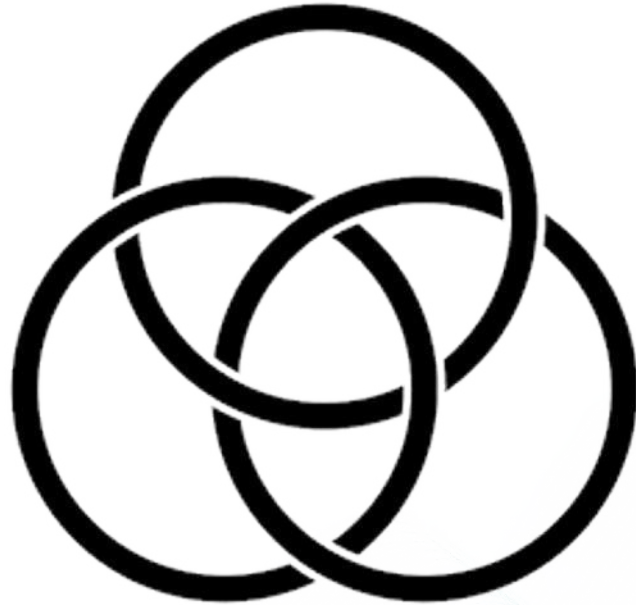
# The Rise of New Standards

Driven by IAQ



# The 3 Rings of Defense

The ThinkLite 3 Rings of Defense program will clean your air in the safest and most efficient way possible.



## 1 Air Monitoring:

Get real time information, trends, analytics, and alerts on your indoor air quality with ThinkLite Flair.



## 2 PuriLux:

ThinkLite air purifying LEDs products delivers a seamless, continuous cleansing process, while saving energy in your buildings.

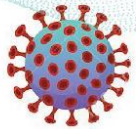


## 3 ICON Air Heater:

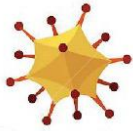
Integrate the Air Heater to fully ensure there are no harmful pathogens existing anywhere in the facility, even when people tend to crowd in a smaller areas.

# Measuring what counts

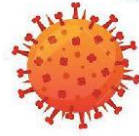
Ability to measure particulate matter as small as **0.1 microns** in all states:  
solids, liquid aerosol and gaseous



COVID-19



SARS



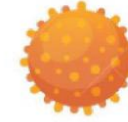
Influenza



Tuberculosis



Pertussis

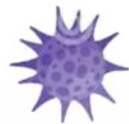


Norovirus

**PM 2.6-10**  
MICRONS INCLUDE



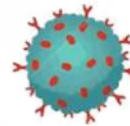
Smoke



Soot



Pollen



Dust

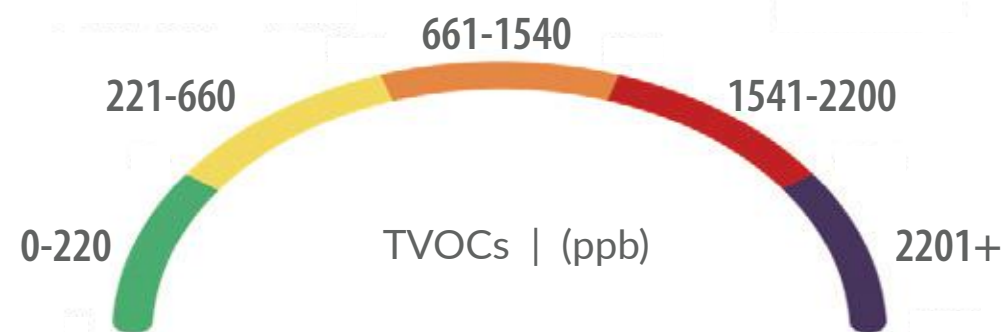






# TVOCs

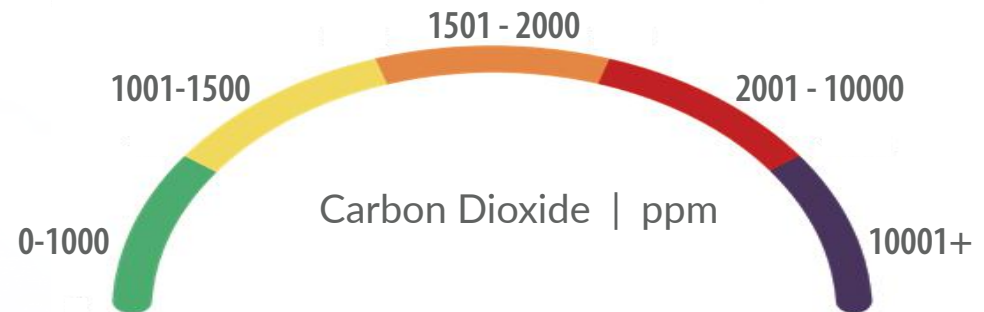
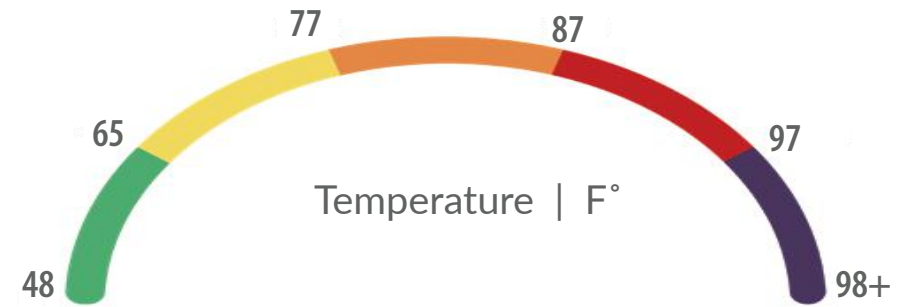
- TVOCs are Total Volatile Organic Compounds.
- Organic chemicals that have high vapor pressure at ordinary room temperature.
- Inhaling large amounts of them is not safe for your respiratory system.
- The smaller particulates mentioned above, including viruses and biological pathogens, will attach to TVOCs. This will allow them to live longer and travel through the air more easily.
- TVOCs are measured in parts per billion (ppb) which refers to the number of particles that are VOCs out of every billion air particles.





## Temperature, Humidity and Carbon Dioxide (CO2):

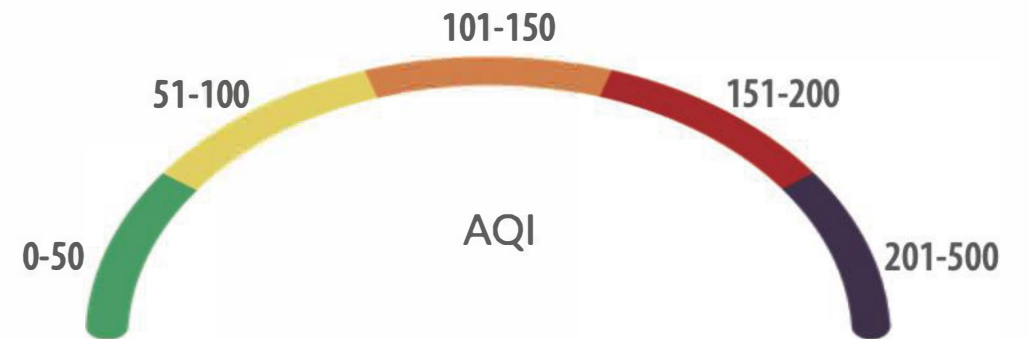
- These factors in your environment make it easier for pathogens to linger longer in the air.
- Germs and bacteria are more likely to fester in your air at certain humidity, temperature and CO2 levels.
- TVOCs also stay in the air longer based on the concentration of CO2 and at unique combinations of humidity and temperatures in the room.





## Air Quality Index (AQI):

Air Quality Index (AQI) refers to the EPA's index for reporting air quality, on a scale from 0 - 500. This index keeps in mind all the major pollutants, pathogens and risks in the air that directly effect health



- Accuracy for large commercial areas: up to 5,000 square foot coverage for open areas
- Integrating and synchronizing with other devices



## Indoor air quality monitors

Select up to 8 of your configured devices

Siemens 11|

**Siemens 11**  
Siemens

Select

### Information Density

Detailed

Show every device with the selected pollutants

Merged

Average the data from all selected indoor devices and display it as one device.

Generate link

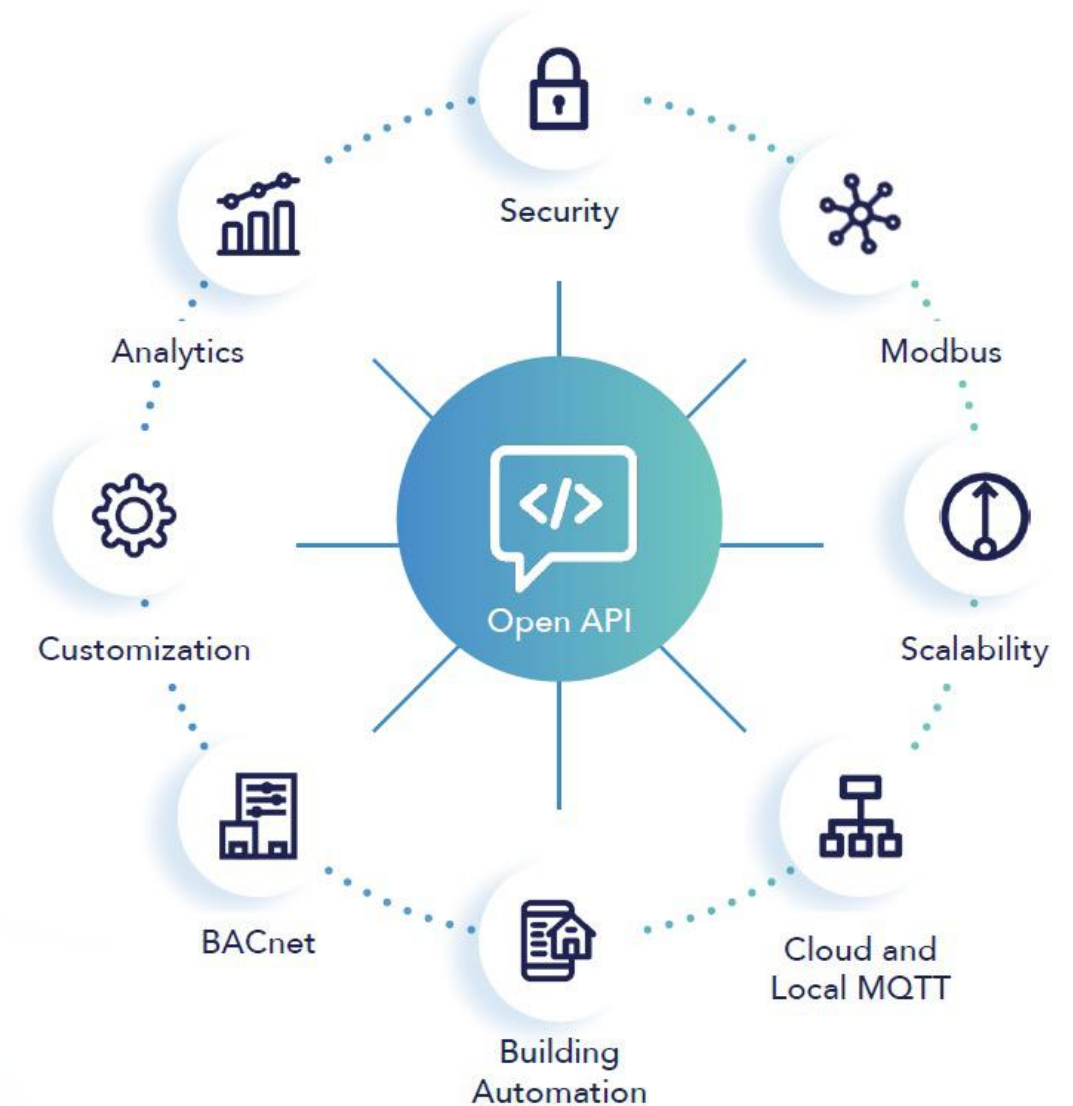
# Shareability is Critical



- Sharing critical data in real time Internally vs Externally
- Authorized App Access / Public shareable links and QR codes / browser based enterprise analytics platform / iOS & Android Applications
- Setting custom alerts for various user profiles

# Integration into BMS

- Optimize the performance of any appliances that are on a building management system (BMS).
- Integrate with HVAC control, smart thermostats, lighting, etc.
- Seamlessly integrate to your building's automation control system through our open API, BACnet, MODBUS and any custom integration that may be required.



# Software Features

**EarthSafe Chemical Alternatives** — 5 devices 5 members

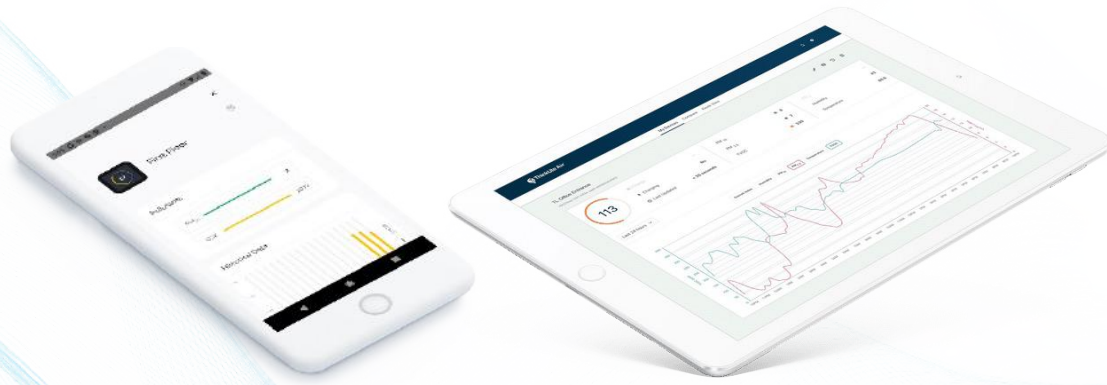
- 4 Demo Unit TL Flair
- 112 Downstairs Accounting TL Flair
- 102 RJV Office TL Flair
- 105 Upstairs Kitchen Area TL Flair

**Eco Development** — 3 devices 4 members

- 39 Dan's House TL Flair
- 157 Eco Office TL Flair

**Edelen Doors** — 1 device 4 members

- 10 Edelon Doors 1 TL Flair



# Dashboard View

## Air Quality History 🕒 Last 12 hours ⌵

23 Marketing   caf3a9b7-80b2-4337-823...   Laser Room   25 fire shutter 2   25 David's office



Overall Index

Battery

PM 1-3

PM 3-5

PM 5-1

PM 1-2.5

PM 2.5-10

CO<sub>2</sub>

TVOC

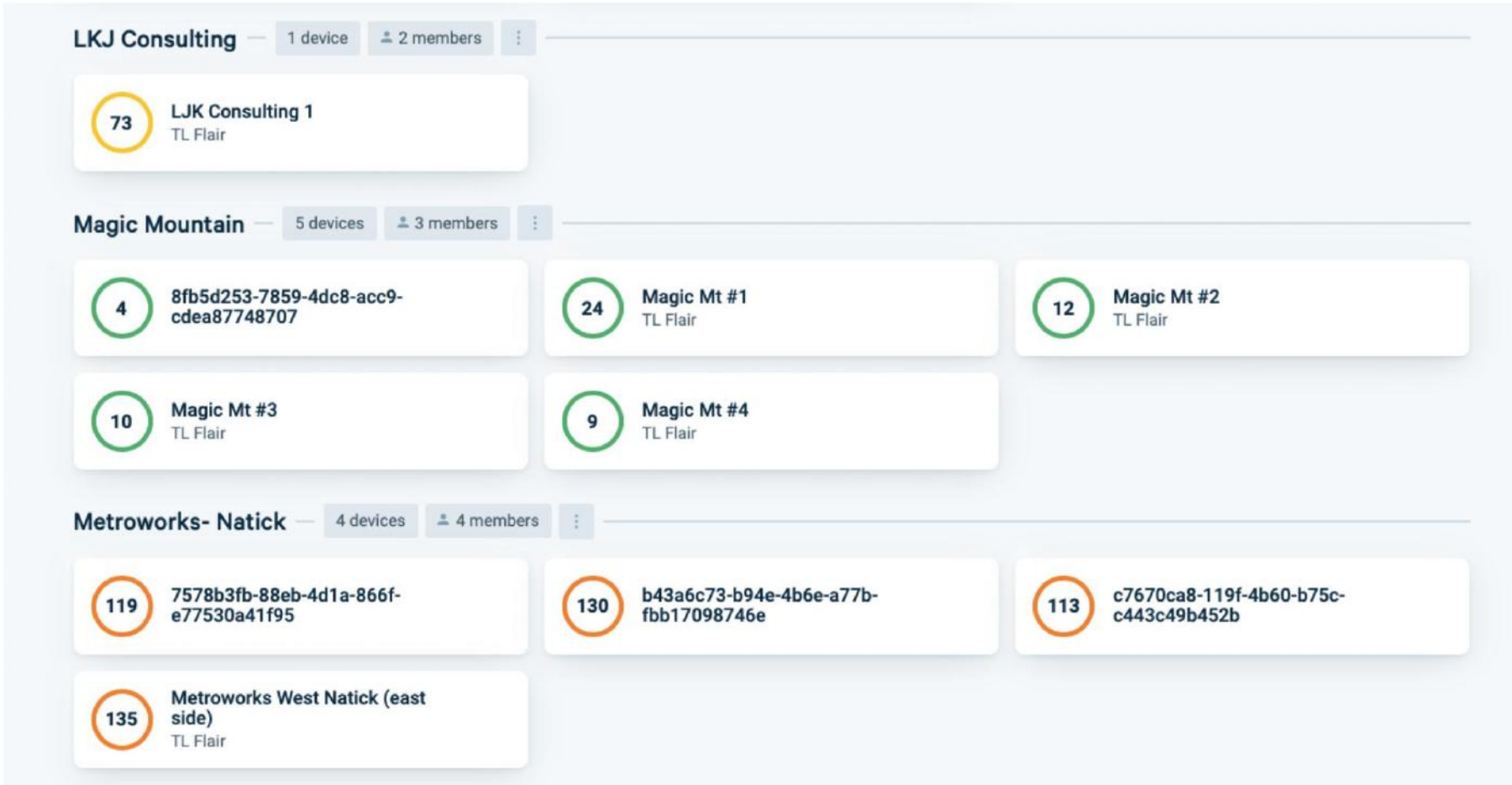
Temperature

Humidity

- Compare IAQ data across various devices on one plot for easy analysis
- Compare IAQ trends in different areas of a building, and even across various properties
- Conduct before and after analysis



# Dashboard View



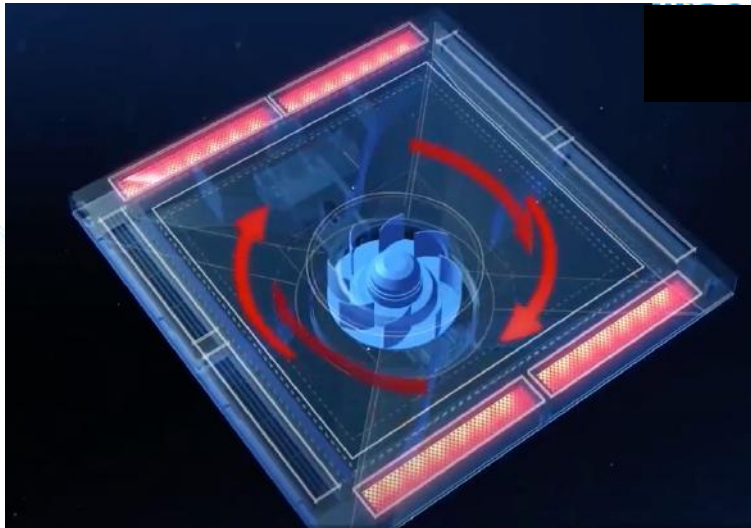
- User-friendly access to customers' air data, all in one Master Dashboard for strategic partners
- Set alerts and use real data to up-sell and support value added services

# Understanding Safe Air

MERV RATING	HOW CLEAN IS YOUR AIR WITH THIS RATING?	WHAT IS BEING FILTERED?
MERV 1	20% of the reachable air is filtered to capture 3-10 microns ( $\mu\text{m}$ ) particles	<ul style="list-style-type: none"> <li>• Pollen</li> <li>• Dust mites</li> <li>• Sanding dust</li> <li>• Spray paint dust</li> <li>• Textile / Carpet fibers</li> </ul>
MERV 2	20% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	
MERV 3	20% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	
MERV 4	20% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	
MERV 5	20-35% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	<ul style="list-style-type: none"> <li>• Mold spores</li> <li>• Dust lint</li> <li>• Cement dust</li> <li>• Cooking dusts</li> </ul>
MERV 6	35-50% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	
MERV 7	50% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles	
MERV 8	70% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles, and less than 20% for 1-3 $\mu\text{m}$ particles	
MERV 9	85% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles, less than 50% for 1-3 $\mu\text{m}$ particles, less than 20% for .3-1 $\mu\text{m}$ particles	<ul style="list-style-type: none"> <li>• Lead dusts</li> <li>• Auto fumes</li> <li>• Bacteria</li> <li>• Pet dander</li> </ul>
MERV 10	More than 85% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles, 50-64% for 1-3 $\mu\text{m}$ particles, less than 20% for .3-1 $\mu\text{m}$ particles	
MERV 11	More than 85% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles, 65-79% for 1-3 $\mu\text{m}$ particles, less than 20% for .3-1 $\mu\text{m}$ particles	
MERV 12	More than 90% of the reachable air is filtered to capture 3-10 $\mu\text{m}$ particles, 80-90% for 1-3 $\mu\text{m}$ particles, less than 20% for .3-1 $\mu\text{m}$ particles	

MERV 13	More than 90% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, less than 75% for .3-1 $\mu\text{m}$ particles	<ul style="list-style-type: none"> <li>• Biological pathogens</li> <li>• Virus particles</li> </ul>
MERV 14	More than 90% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 75-84% for .3-1 $\mu\text{m}$ particles	
MERV 15	More than 90% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 85%-94% for .3-1 $\mu\text{m}$ particles	
MERV 16	More than 95% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, more than 90% for .3-1 $\mu\text{m}$ particles	
MERV 17	More than 99% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 99.97% for .3-1 $\mu\text{m}$ particles	
MERV 18	More than 99% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 99.997% for .3-1 $\mu\text{m}$ particles	
MERV 19	More than 99% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 99.9999% for .1-1 $\mu\text{m}$ particles	
MERV 20	More than 99% of the reachable air is filtered to capture 1-10 $\mu\text{m}$ particles, 100% for .1-1 $\mu\text{m}$ particles	

# ThinkLite PuriLux

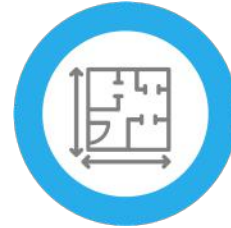


## Every Light Fixture is Now an Air Purifier



### CLEAN AIR WITH THE FLIP OF A SWITCH

- Every light fixture becomes its own silent and powerful air purifier
- With its medical grade centrifugal fan and internal sanitizing UVC chamber, 99.99% of bacteria & viral pathogens, including COVID-19 are eliminated.



### 400sq ft/12,000 CUBIC ft. TREATMENT COVERAGE

- Capable of purifying up to 12,000 cubic feet of air per hour (212 cfm), equivalent to 5 air exchanges per 400 sq ft.
- Makes it a perfect air purification tool for small to medium spaces



### UP TO 70% ENERGY SAVINGS THAN TRADITIONAL FIXTURES

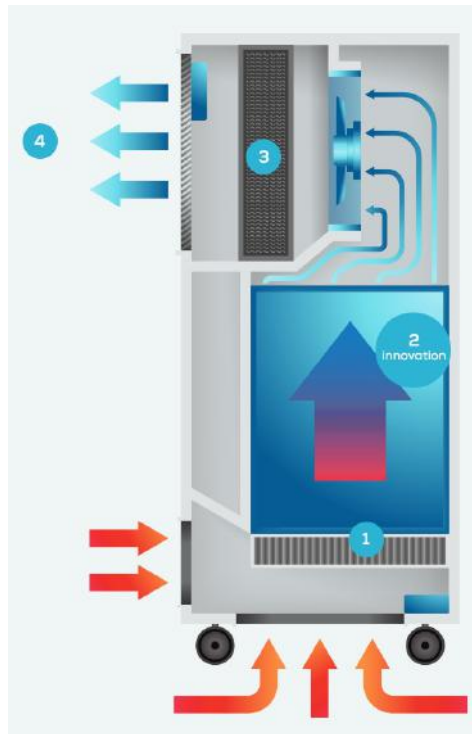
- Each 2x2 PuriLux produces up to 4,000 lumens, while consuming only 25W, including air purification
- Can be used to replace existing fixtures, or even as an add-on fixture to your space.



### INTEGRATED CHANGING CCT OPTION

- Integrated options to customize ambient colors depending on the application: 3000K / 4000K / 5000K
- Physical appearance is identical to industry standard of LED panel fixtures.

# ThinkLite ICON Air Heater

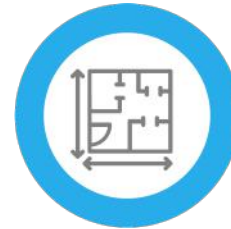


## For Larger, Open Areas



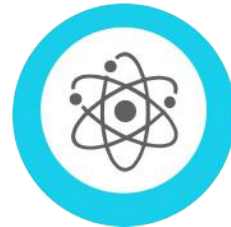
### MERV19 GRADE AIR

- The TL ICON Air Heater releases air with 99.9999% free of pathogens / particulates, making it one of the most effective devices on the market.
- MERV-19 grade air is the type of clean and safe air quality found in hospitals and operating rooms.



### CLEAN AIR UP TO 5,000 SQ FT

- 1 unit of the TL ICON Air Heater can purify the air large commercial spaces up to 5,000 square feet, or 140,000 cubic feet of air per hour.



### NO IONS / OZONE

- The ICON does NOT release any chemicals, ions, hydroxyls, or ozone into the air.
- Strictly pulls in polluted air and releases clean, safe, certified MERV19 grade air into your facility.

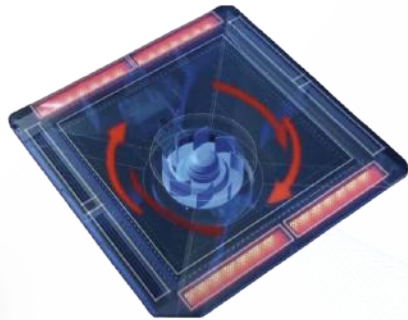


### PLUG & PLAY INSTALLATION PORTABILITY

- Plug and play into a wall socket.
- Has its own wheels, which makes for easy movement from room to room.

# The Future is Here

- **Integrated & Energy Efficient** – HVAC controls driven by PMs and VOCs measurement
- **Effective, Smart & Autonomous** - MERV 19 cleaning, 5 air exchanges an hour, automatically remediates
- **Advanced Analytics** – making us effective
- **AI** – learning, preventing, warning, **PROACTIVELY**



# Case Studies

# Success Story

# Morgan Stanley

**Facility:** Morgan Stanley, Global locations

**Application:** TL Flairs installed in open public areas, lobbies, meeting and conference rooms, which are identified as areas of high risk due to frequent congregation of people.

## The Value:

1. Being able to be informed with unusually high levels of airborne viral loads in these areas can prevent the risk of its spread in the building with more frequent and demand-based disinfection on site.
2. After making significant investments on air quality improvements, it is important to consciously measure the difference in air quality and report the progress to stakeholders. The TL Flair provides the opportunity for management to justify past investments and to prioritize future investments.
3. Catching and alerting air safety risks early to key executives has demonstrated a significant decrease in reducing announcements of various outbreaks, quarantining and holding back employees from coming into the office.
4. Ensuring the VOCs and CO2 levels are kept low in these areas will further enhance air safety and crowding respectively.
5. Network Security challenge: Working closely with the Morgan Stanley IT team to ensure all devices are 802.1X-TLS encrypted; local server deployment with full access to the ThinkLite dashboard on their local network in addition to a local Desigo CC integration

**Contact:** Jeanine Brady, Procurement Head, Morgan Stanley ReImagine Project



# Success Story



**CCBC**  
The Community College  
of Baltimore County

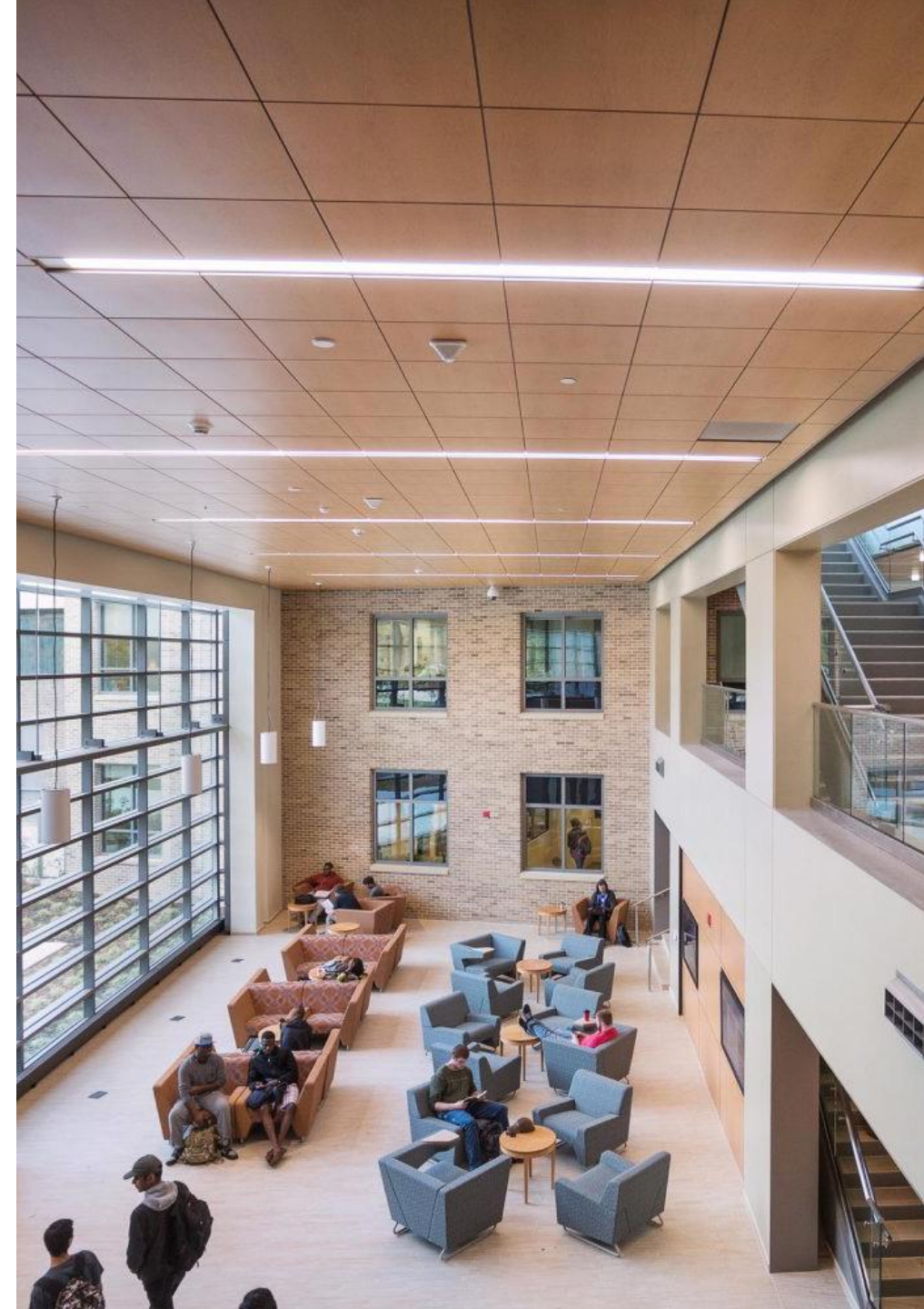
**Facility:** Community College of Baltimore, MD

**Application:** TL Flairs installed in the open public areas such as the cafeterias, gyms, break rooms and lobby areas that are identified as areas of high risk due to frequent congregation of people.

## The Value:

1. Being able to understand overall health and safety of students and staff based on viral load levels in the air in these public spaces.
2. After making significant investments on air quality improvements on campus, it is important to actually measure the difference in air quality, and report the progress to stakeholders. The TL Flair provides the opportunity for management to justify past investments and to prioritize future investments.

**Contact:** Tim Burton, Facilities Director





# Success Story



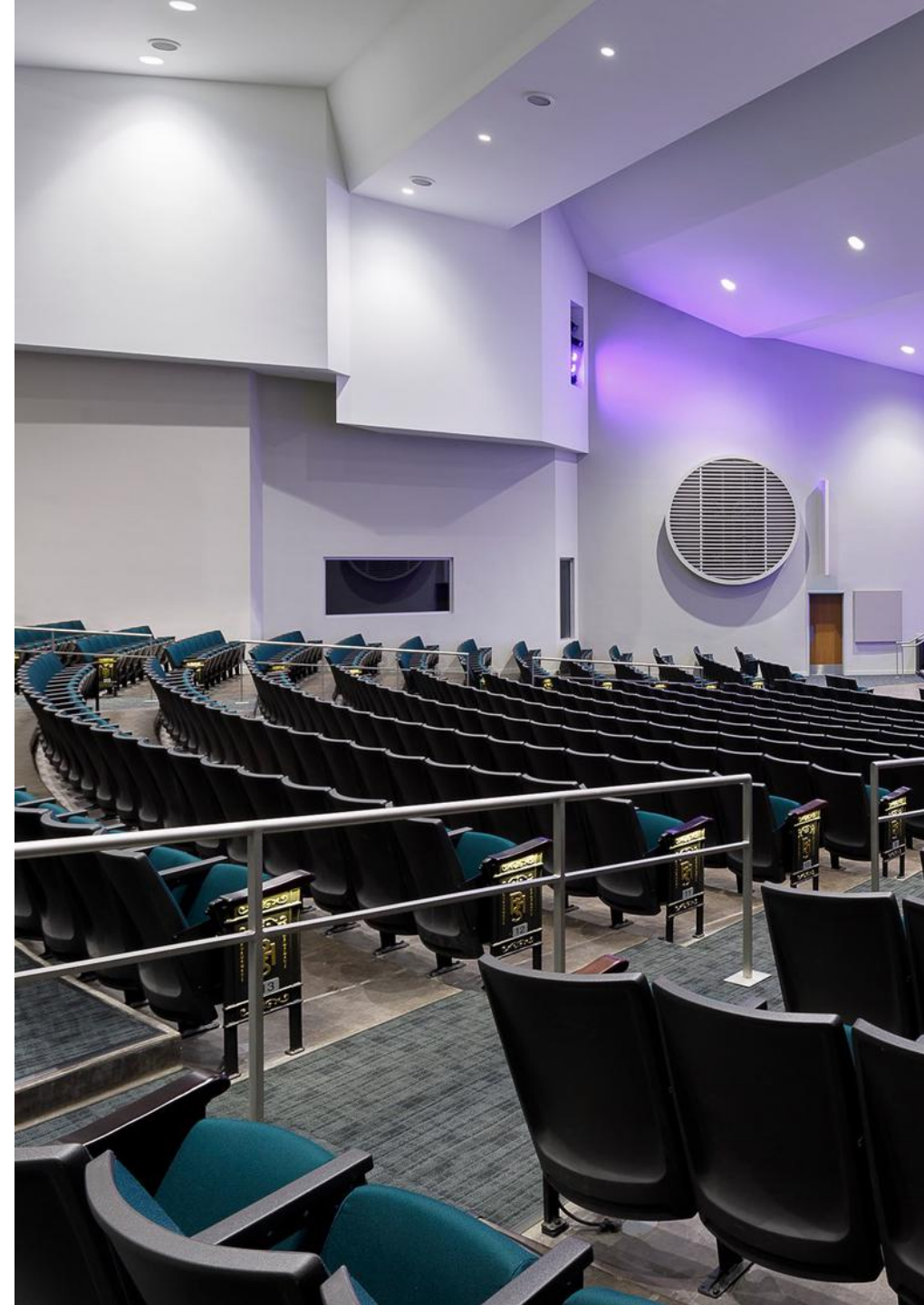
**Facility:** Chowan University, NC

**Application:** TL Flairs installed in the auditoriums and large classrooms across campus.

## The Value:

1. Being able to understand overall health and safety of students and staff based on viral load levels in the air in these public spaces where large groups of students tend to congregate.
2. Students spend maximum time in the classrooms and extended exposure to airborne viral particles in the air is to be prevented at all costs.
3. Catching air safety risks early has demonstrated a significant decrease in reducing announcements of various outbreaks, quarantining students and faculty members, and holding virtual classes,

**Contact:** Danny Davis, Vice President



# Success Story



**Facility:** Parkrose School District, OR

**Application:** TL Flairs installed in the classrooms. Students spend all day in the classrooms, including lunch breaks. It is extremely important to understand air safety in these areas.

## The Value:

1. The presence of high levels of VOCs in the classrooms due to frequent surface disinfection worsened the air quality and exposed the students to higher risk of air borne transmission of viruses.
2. AQI and VOC metrics are used as reliable indicators to ensure VOCs are at a low level before a new group of students are allowed to enter a classroom.
3. Being able to understand the presence of viral loads in the air in the classrooms for overall health and safety of a group.

**Contact:** Ralph Medina, Risk & Facilities Director



# Success Story



**Facility:** Perkins School for the Blind, MA

**Application:** TL Flairs installed in the classrooms and public areas such as aisleways, lobbies and cafeterias.

**The Value:**

1. Real time levels of CO2 is used as an indicator to inform and alert the superintendents when there are unusual crowds or clusters of people concentrated in a small area. This is used to ensure better traffic policy and timings of schedules to avoid this.
2. Despite lower levels of CO2 with successful protocols implemented to prevent crowds, the presence of viral load particulates in the air is able to detect sick children and prompt for early testing.
3. Students with developing infectious illnesses, included bacterial infections, flu virus and even COVID-19; all were able to be detected early due to real time air data indicators, leading to the prevention of their spread across campus.

**Contact:** Doug Fitzgerald, Facilities Director



# Success Story

Yale University



**Facility:** Yale University, CT

**Application:** TL Flairs installed in the restrooms, locker rooms and gyms specifically.

**The Value:**

1. One of the most common sources of airborne pathogens is from toilet flush points. Many times, the infected air from restrooms is taken into the ducts and recirculated across the entire building.
2. Being able to be informed with unusually high levels of airborne viral loads in these areas can prevent the risk of its spread in the building with more frequent and demand based disinfection on site.
3. Ensuring the VOCs and CO2 levels are kept low in these areas will further enhance air safety and crowding respectively.

**Contact:** Steve Murdzia, Hazardous Materials Officer



# Success Story



## THE POTOMAC SCHOOL

**Facility:** The Potomac Schools, VA

**Application:** TL Flairs installed in the school buses, break rooms, cafeteria and staff meeting rooms.

**The Value:**

1. Being able to detect and be informed with unusually high levels of viral loads in air in these areas, starting from the school buses can prevent the risk of its risk to other students and staff members.
2. Elder adults are at higher health risk with COVID-19, and ensuring the air is safe during faculty meetings and PTA gatherings is of paramount importance.

**Contact:** Perry Swope, Head Superintendent



# Success Story



## WAGNER COLLEGE

**Facility:** Wagner College, NY

**Application:** TL Flairs installed in each unique floor plan of classrooms, meetings rooms, cafeterias, gyms, lobby areas, aisleways and faculty meeting rooms.

### The Value:

1. Integrating the Flair monitor with the BMS system to control ventilation and air exchange more energy efficiently and safely.
2. Sharing alerts to faculty members to avoid areas where unsafe air is detected is an effective and successful way of making them feel safe and dramatically reducing their risks of exposure in the public areas.
3. Elder adults are at higher health risk with COVID-19, and ensuring air is safe during faculty meetings and PTA gatherings is of paramount importance.

**Contact:** Daniel Switzer, Facilities Director



# Success Story



**Facility:** Stifel Financial, 787 7<sup>th</sup> Avenue New York, NY

**Application:** TL Flairs installed in the open office areas and conference rooms

## The Value:

1. Real time levels of CO<sub>2</sub> is used as an indicator to inform and alert the Human Resources and Team Leaders when there are too many people congregated in a meeting room.
2. Despite lower levels of CO<sub>2</sub> with successful protocols implemented to prevent crowds, the presence of viral load particulates in the air is able to detect sick employees and prompt for early testing.
3. Integrating the Flair monitor with the BMS system to control ventilation and air exchange more energy efficiently and safely in an automated fashion.

**Contact:** Katy Ostrander, Operations Executive



# Success Story



**Facility:** Edge Funds Building, a JP Morgan & Chase property, managed by CBRE located on 25 Water Street New York, NY

**Application:** TL Flairs installed in the main lobby, elevator lobbies, public aisleways and cafeterias

## The Value:

1. Being able to understand the presence of viral loads in the air in the public areas of the building for overall health and safety.
2. Staff with developing infectious illnesses, included bacterial infections, flu virus and even COVID-19; all were able to be detected early due to real time air data indicators, leading to the prevention of their spread across the team.
3. The presence of high levels of VOCs in the public areas due to frequent surface disinfection worsened the air quality and exposed the employees and visitors to higher risk of air borne transmission of viruses.
4. AQI and VOC metrics are used as reliable indicators to ensure VOCs are at a low level before new groups of people enter into a public space.

**Contact:** Sal Ayub, Chief Engineer, CBRE





# Success Story



**Facility:** FHL Bank, Reston VA

**Application:** TL Flairs installed in tall public areas, restrooms, aisleways and meeting rooms

**The Value:**

1. Sharing alerts with employee members to avoid areas where unsafe air is detected is an effective and successful way of making them feel safe and dramatically reducing their risks of exposure in the public areas.
2. Elder adults are at higher health risk with COVID-19, and ensuring air is safe during company wide meetings is of paramount importance
3. One of the most common sources of airborne pathogens is from toilet flush points. Many times, the infected air from restrooms is taken into the ducts and recirculated across the entire building.

**Contact:** Steve Murdzia, Hazardous Materials Officer



# Success Story



**Facility:** Cooley LLP, Global Law, London UK

**Application:** TL Flairs installed in all meeting rooms, reception area and break rooms.

## The Value:

1. Transparency to all staff members on the real time air safety in the offices. Based on comfort level and understanding on how many people are in the office, key employees are empowered to make their own decisions on coming into the office.
2. Staff members spend maximum time in the meeting room and are prone to extended exposure to airborne viral particles in the air. Having live screens to share the air safety will allow them significantly decrease the risk and spread of any airborne diseases in the offices.
3. Real time levels of CO2 is used as an indicator to inform and alert Human Resources when there are unusual crowds or clusters of people concentrated in a small area. This is used to ensure better traffic policy and timings of schedules to avoid this.

**Contact:** James Pack, Health & Environment Consultant for Cooley LLP





Thank you