

## Excel in clean air solution

### Commercial

- Air Quality Solution
- Kitchen Exhaust System

### Industrial

- Oil Mist Eliminator
- Air Handling Unit
- Smoke & Odor Reduction System

### Hospital & Healthcare

- Hygienic Air System
- Isolation Room System
- Operation Room System

บริษัท โฟลคอน จำกัด  
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## About the Company

We, at FLOWCON, are well experienced and have our expertise in “Indoor Air Quality” Solution (IAQ) for industrial and building facilities. We provide consultation in system design and installation with value added in energy saving approach. We also are the authorized distributor of varieties of well known products such as electronic air cleaners, oil mist filtration equipments, customized air handling units etc. in order to support our valued clients with the best and efficient solutions. Our company was established on January 1st, 2005 and has been growing strongly ever since.

Our staff team has more than 20 years’ experience in this field. We have the highest confidence in delivery of highly efficient services to our valued customers. FLOWCON provides the highest standard of quality together with highest commercial honesty and integrity in every aspect of the “Indoor Air Quality” (IAQ) services to our customers.

## Our products and services

|                  |                                              |
|------------------|----------------------------------------------|
| TRION            | : Air Purification Systems                   |
| ENVIRCO          | : Innovators in clean air technology         |
| Ultravation      | : Advanced technology for indoor air quality |
| GREYSTONE        | : Air sensors                                |
| AFPRO            | : Air Filters                                |
| KRUEGER          | : Excellence in Air Distribution             |
| SMOKE SOLUTION   | : Our passion is pure air                    |
| JOHNSON CONTROLS | : DDC Controls, Dampers                      |
| HUBER & RANNER   | : Air Handling Unit                          |
| SMARTEMP         | : Premium Air Diffusion                      |

- Consultation in Quality Management of the Indoor Air Quality and temperature control management in buildings. We are highly concerned with healthcare and quality of life from our high technology driven products with long term experience and expertise in these fields.

- Designing of the systems to meet all the purposes and requirements towards energy saving and IAQ concepts.

- Services we persistently focus on, are the after-sales services to meet the highest standards of engineering. Maintenance is our most important services to each and every customer covering extensively almost all the existing IAQ and healthcare products in the Thailand market.

## PRODUCT RANGE

FLOWCON Company Limited provides and distributes imported products relating to "Indoor Air Quality" Systems such as an Air Cleaner, Filters, UV Lamp Disinfection and Air Handling Units etc. Our products are advancedly exhibited together with innovative design and are strongly reinforced by consultancy for "Indoor Air Quality" IAQ systems in buildings and various industrial complexes. After-sales services and technical supports by our highly experienced professional engineering teams focus on our unique FLOWCON's premium services with full guarantee for our valued customers' satisfaction.

**TRION**  
Indoor Air Quality



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Air Cleaner for Commercial & Industrial, Oil mist eliminator Smoke removal, Kitchen exhaust, HVAC

**Ultravation**



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Ultraviolet Disinfection for HVAC System, Coil irradiation, Airstream disinfection

**ENVIRCO**  
Innovators in clean air technology



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Hospi-Gard Air Cleaner for Hospital, Clean Room, Clinics Nursing Center, Correctional Facilities Addiction Recovery Centers

**AFPRO**  
FILTERS



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Air filtration for HVAC system of commercial, Industrial

**KRUEGER**  
Excellence in Air Distribution



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Diffuser, Grilles Displacement, Terminal Unit, Critical Room

**SMARTEMP**  
IN COMFORT



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Premium Air Diffusion

**Smoke Solution**



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Smoke solution: Our passion is pure air

**HUBER & RANNER**  
ERWARTEN SIE MEHR.



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Air Handling Unit

**Johnson Controls**



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DDC Controls, Damper

**GREYSTONE**  
ENERGY SYSTEMS INC



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HVAC Sensor for HVAC VLT HVAC Drive BIO-OXYGEN for HVAC

**FLOWCON**

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Services with the team of the technicians and the experts under engineering standard

**Site References**

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From experience 13 years ago

Trion designed the world's first air cleaner for the U.S. Navy nuclear submarine U.S.S Nautilus in 1947. Since then, Trion has continued to provide advanced specialized air cleaning systems for a wide range of applications in the commercial and industrial markets.

Building owners, facility managers and architects are the HVAC industry turn to Trion for air cleaning technology. They know that cleaner are manufactured for long-term performance and customized for each every commercial and industrial application. Our goal is to provide an air cleaner that delivers low air resistance, high efficiency, cost-effective operation and most important-clean air.

## Application Guide

|                   |                                                                                                                                                           |                                                                                                                  |                                        |                                                          |                                                          |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|----------------------------------------|----------------------------------------------------------|----------------------------------------------------------|
| <b>Commercial</b> | <b>Dry Particulate Application</b><br>Airborne Dust,<br>Environmental,<br>Tobacco Smoke Pollen,<br>Mold Spore,<br>Bacteria,<br>General Indoor Air Quality | <b>EQUIPMENT</b><br>330 – 640<br>200 – 800<br>1,000 – 20,000<br>1,400 – 20,000<br>2,000 – 72,000<br>800 – 50,000 | CFM<br>CFM<br>CFM<br>CFM<br>CFM<br>CFM | MEDUIM<br>MEDUIM<br>MEDUIM<br>MEDUIM<br>MEDUIM<br>MEDUIM | CAC1000<br>S60/S120<br>TGM<br>HE-Plus<br>EFB<br>T-Series |
|                   | <b>Wet Particulate Application</b><br>Oil Mist/Smoke (Kitchen Exhaust)                                                                                    | <b>EQUIPMENT</b><br>800 – 50,000<br>2,000 – 30,000                                                               | CFM<br>CFM                             | HEAVY<br>HEAVY                                           | T – Series<br>Grease Viper                               |
| <b>Industrial</b> | <b>Dry Particulate Application</b><br>Process Dust<br>Powders<br>Grinding Fume<br>Welding Fume<br>Smoke                                                   | <b>EQUIPMENT</b><br>585<br>800 – 50,000<br>2,000 – 30,000                                                        | CFM<br>CFM<br>CFM                      | HEAVY<br>HEAVY<br>HEAVY                                  | Mini M.E<br>T-Series<br>Model 75                         |
|                   | <b>Wet Particulate Application</b><br>Oil Mist/Smoke<br>Coolants<br>Oily Welding Fume                                                                     | <b>EQUIPMENT</b><br>585<br>800 – 50,000<br>2,000 – 30,000                                                        | CFM<br>CFM<br>CFM                      | HEAVY<br>HEAVY<br>HEAVY                                  | Mini M.E<br>T-Series<br>Model 75                         |

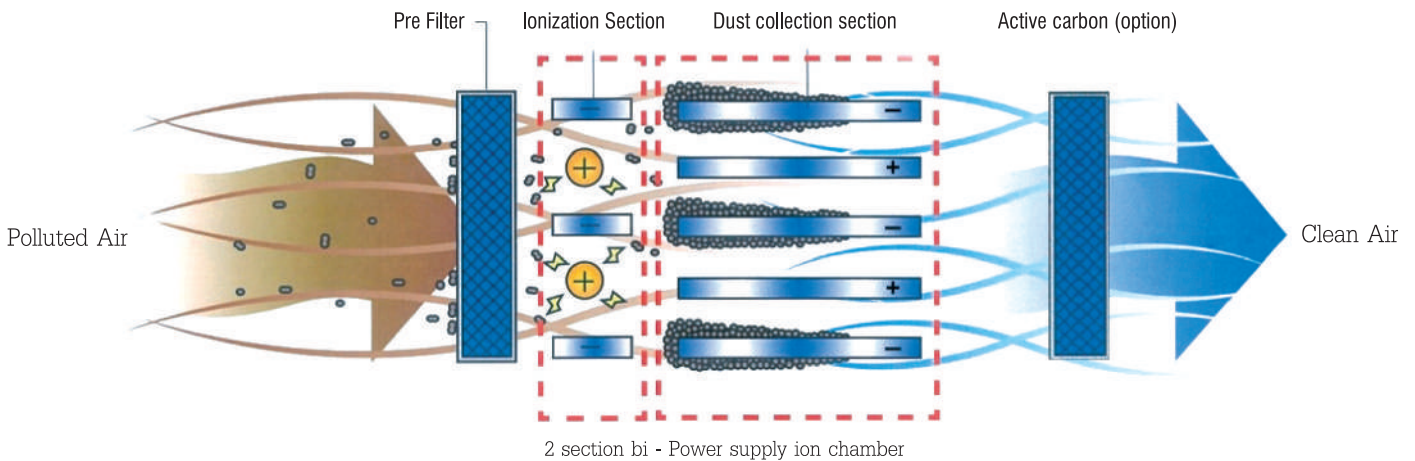


Trion's T-Series is ideal for removal of smoke, fumes and oil/coolant smoke and mist. The T-Series has the ability to clean contaminated indoor air and recirculate it back to the work area, reducing energy cost by not having to exhaust conditioned air to the outside. Any of the T-Series can be installed free hanging or ducted for source capture.

## How it works

Trion's T-Series utilizes the principle of Electrostatic Precipitation. Air is drawn by the motor/blower through a washable metal mesh pre-filter which traps large dust particles. The remaining particles, some as 0.01 microns, pass into a strong electronic field (Ionizing section) where the particulate receives an electrical charge. The charged particles then pass into a collector palate section made up of a series of equally spaced parallel plates. Each alternate plate is charged with the same polarity as the particles, while the interleaving plates are grounded, which attract and collect.

## Principle of cleaning Air



## Kitchen Exhaust System/Oil Mist Collector

| Oil Mist :                                                                                                                   | Smoke :                                                                                | Kitchen Exhaust :                                 | HVAC :                                                                                                               |
|------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Machine Shops<br>Cold Heading<br>Screw Machines<br>Foundry<br>Presses<br>Machining Centers<br>Heat Treating<br>Tenter Frames | Welding<br>Presses/Forging<br>Curing<br>Rubber<br>Manufacturing<br>Plastic<br>Treating | Grease<br>Smoke<br>Odors<br>Wood-fired<br>Cookers | Clean Rooms<br>Return Air<br>Outside/Makeup Air<br>Lounges<br>Bars<br>Smoking Rooms<br>Casinos<br>Indoor Gun Rangers |



# **GREASE VIPER** By TRION

The Grease viper series is designed to treat grease, smoke, and odor emission from exhaust ducts on commercial cooking application, as well as oil mist and smoke from industrial processes. The Grease viper can be configured with multiple stages of filtration for both particulate and odor control, and is typically furnished as a complete pollution control unit with automatic water-wash components for electrostatic precipitator filters, odor control section, exhaust fan, system rails, pre-piped fire suppression nozzles, and necessary controls.

## **Feature/Benefits**

- Design in accordance with NFPA 96-2011 criteria.
- ETL Agency Listing per UL-867 and UL-710.
- Electrostatic cell with Spiked Ionizers and Ceramic Insulators.
- Solid State Power Supplies.
- Remote Status Panel with LED Indicators.
- Green Emission Solution to Grease Exhaust.
- Allow for Discharge at Street Level and Into Public Space Outdoor.
- Electrostatic Precipitator : Low, Constant Pressure Drop; Permanent, Cleanable Filter; Up to 95% DOP Collection Efficiency at 0.3 Microns.
- Spiked Ionizers: Eliminates Ionizing Wire Replacement; Reduces Maintenance and Replacement Cost.
- Self-Glazing, Ceramic Insulators; Out of Airstream; Impervious to Liquids; Provide Operational Longevity and Power Supply Life; Easy to Clean.



Proudly Designed, Engineered,  
From United State of America



UL Standard  
UL 867 Standard for Electrostatic Air Cleaners  
UL 710 Standard for Exhaust Hoods for Commercial Cooking Equipment.  
Intertek File #3185932





## About the Technology

### Cleaning the Air

When you need one system for cleaning kitchen grease, smoke, oil mist, and contaminants, TRION has a kitchen exhaust solution just for you in the grease Viper. Atmospheric contaminants may be either liquids or solids in forms of oil, water, grease, smoke, fumes, or dusts including gaseous and vaporous odors. The Grease Viper readily adapts to the various air collection methods utilized to recover contaminants for collection. Periodically, depending on the type and concentration of contamination in the air, the contaminants are washed from the plates by the integrally constructed water wash system. Three major functional components comprise the air cleaner.

- 1) Ionizing-collecting cells to ionize and collect airborne particulate matter.
- 2) Power supply (ies) to provide high voltage direct current to the ionizing-collecting cells.
- 3) Control operated wash system to automatically wash away the collected contaminant.

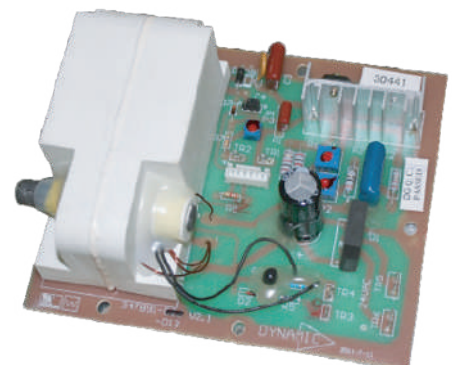


### Electrostatic Precipitator Cells

The stainless steel spiked ionizer blades are stronger and more reliable than ionizing wires used in less durable designs. The aluminum construction of the ionizing-collecting cells allow for longer life and ease of maintenance. The lightweight and rustproof ESP section(s) can be easily removed from the cabinet as required. The self-glazing ceramic insulators are protected from the contaminants airstream, delivering increased life of the system by limiting contaminants build up, which can cause electrical shorts and damage power supplies over time. High voltage electrical connections between cells are automatically made through spring-loaded plunger connection, solving the issue of having to replace exposed spring contact designs that are easily damaged or lost during maintenance.

### Power Packed with Efficiency

The power supply (ies) convert the 24 volt input, 60 Hz, single phase AC supply to the high voltage DC required to power the ionizing-collecting cells. Potential of 11.5 KVDC is required for the ionizer section and 5.7 KVDC for the collector section of the cells.



# T-Series Models

## Example model



Standard :



## T-Series Models

### Engineered Solution For Clean Air

The TRION® T-Series is an ideal for the removal of smoke, fumes, and oil/coolant smoke and mist. The T-Series has the ability to clean contaminated indoor air and recirculate it back to the work area, reducing energy costs by not having to exhaust conditioned air to the outside. Models T1300, T2600 and T5200 can be installed either inducted or ducted for source capture. Models T1001 and T2002 are designed for inducted capture.

### Benefits

- Self Glazing Ceramic Insulators: Out of Airstream; Impervious to Liquids; Provide Operational Longevity and Power Supply Life; Easy to Clean.
- Extra Depth Collector Cell with More Dirt Holding Capacity.
- Spiked Ionizer: No Ionizing Wires to Replace, Reducing Maintenance and Replacement Cost.
- High Efficiency: Up to 95% on Single Pass and 99% on Double Pass Option.
- Permanent Ionizer/Collector Elements: No Filter Replacement Cost; Just Wash, Dry and Reinstall.
- Low Pressure Drop: Lower Energy Cost to Operate Compared to Media and Cartridge Units.
- Hinged Filter Access: No Tools Required for Quick and Easy Service.

### Features

- Solid State Power Supply
- Spiked Ionizing Blades
- Extra Depth Collector Cells
- Totally Enclosed Fan Cooled Motor
- Electrical Component Box Mounted Out of Air Stream
- Optional Multi-Purpose Plenum







## MINI M.E. Mini Mist Eliminator

### Description

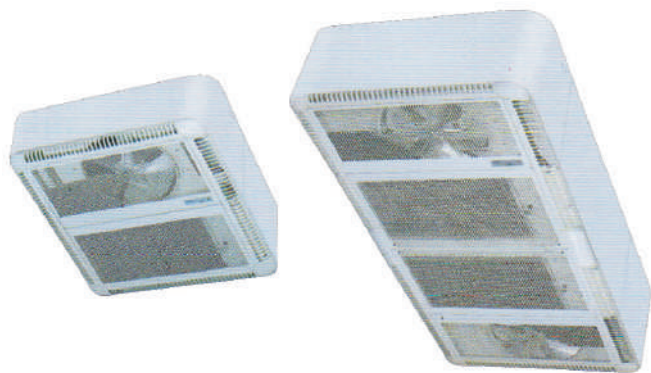
Trion's Electronic Mini Mist Eliminator (Mini M.E.) is designed to collect oil/coolant mist and smoke at the source. The Mini M.E. helps you to comply with OSHA standards, improves employee safety and working conditions, protects equipment, plant fixtures and work in progress and reduces plant maintenance costs. The Mini M.E. can be mounted directly on the machine tool for source capture of contaminants such as water-soluble, synthetic and petroleum-based coolants and smoke.

### Applications The Mini M.E. is ideal for:

- Screw machines
- Surface and centerless grinders
- CNC machining centers
- Turning lathes
- Parts cleaning systems
- Various other applications

### Feature/Benefits

- High efficiency up to 95% efficient on 0.3 micron particles.
- Clean and recirculate indoor air.
- Ceiling, platform or machine mounting eliminates the need for elaborate duct work and saves floor space.
- Can be wired directly to the machine tool control operates only when the machine tool does.
- Compact cabinet design.
- 6-foot cord and plug fits standard 120VAC outlet.



■ Series 60

■ Series 120

## Series 60/120 Smoke Eliminator

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The Series 60 and Series 120 models feature a Coanda effect airflow pattern-dirty air intake in the center and side discharges return clean air in four directions.

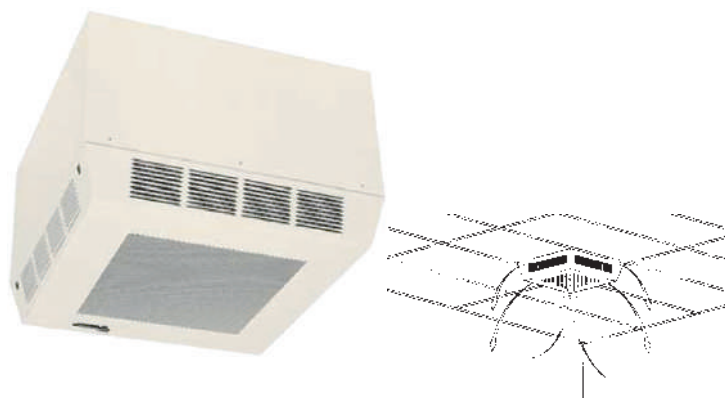
- Removes up to 95% of tobacco smoke, dust, pollen, lint, bacteria and mold spores.
- Low Profile Design-provides appealing unit with no elaborate ductwork or installation.
- Recirculates Clean Indoor Air-no expense to reheat or cool air, as required with exhaust fans.

## CAC 1000 Electronic and Media Air Cleaners

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The CAC has the capacity to help remove up to 95% of tobacco smoke, dust, pollen, lint, bacteria and mold spores from recirculated indoor air. It features “center suction” air intake and 4-side return air discharge, 3 speed, and optional charcoal after-filter.

It is designed to be ceiling mounted and concealed so that less than 4” of the unit extends into the room, dropping into one-half of a standard 2”x4” ceiling panel.



■ CAC 1000

## HE Plus 1400/2000 Electronic In-Duct Air Cleaners

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The high-performance HE plus 1400/2000 electronic air cleaner represent Trion’s Dedication to quality air cleaning.

Our residential electronic air cleaners are recognized by dealers as having the strongest cabinets, most reliable power supplies, and the sturdiest cells in the industry, this means less maintenance on your part and more satisfaction for your customer.



■ HE Plus 1400

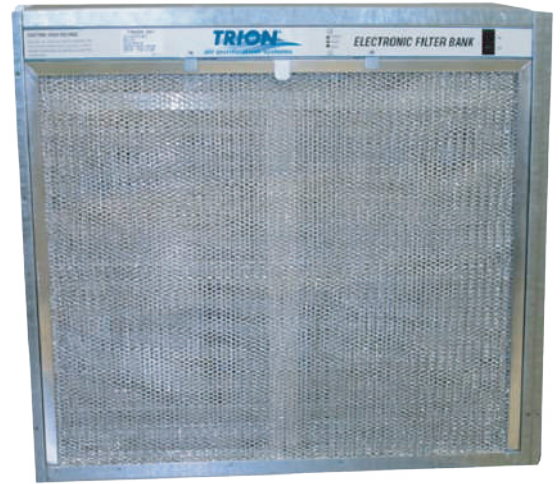
■ HE Plus 2000



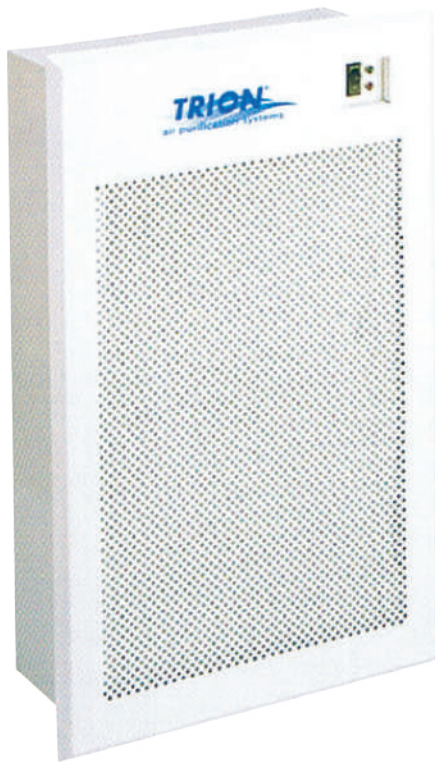
## Electronic Filter Bank Handling Your Deposits of Airborne Particles

The Electronic Filter Bank (EFB) is a commercial electronic air cleaner that mounted to packaged and custom air handling system. The EFB Captures airborne particles 0.01 micron and larger from the air circulated through it.

- Capacity from 2,000 CFM (3,400m<sup>3</sup>/hr.)
- Multiple units can interconnect to meet system air flow requirements.
- Solid-state, self-regulating power supply which maintains peak efficiency as cell loading occurs.
- Indicator lights signal proper operation.



■ EFB



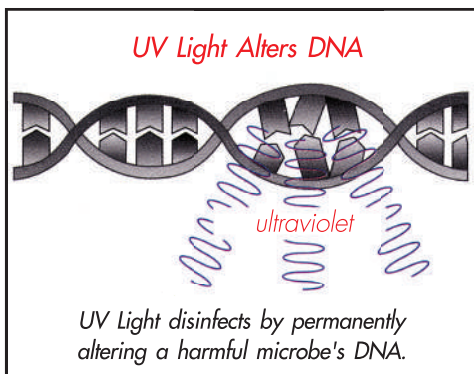
■ TGM

## TGM Grill Mount Whole-House Electronic Air Cleaner

Trion's TGM improves the quality of recirculated air in homes and building where induct air cleaning systems are not feasible. It is suited for either vertical or horizontal installation in wall, cell tray, a high frequency "pulse" power supply, and an exclusive step-down power selection system.

- Available in 1,000 and 2,000 CFM-offers dealers a variety of optional application system.
- New spring Release cell Retainers-allows for easy cell removal in minimal space.

We are specialists in indoor air quality improvement technology. Starting with advanced systems for the application of ultraviolet light to reduce airborne pathogens, mold and other allergens we have expanded in to residential whole-house indoor air quality system, as well as equipment designed optimize air quality and HVAC efficiency in commercial and institutional/public environments. Our air cleaning system advance the state of the air in efficient particulate removal. Our photocatalytic process, that combines UV and photo-chemical nanotechnology to destroy odors from VOCs (volatile organic compounds)and other sources, is nothing short of revolutionary! And we continue to define the state-of-the-art in UV equipment designed for surface irradiation and airstream disinfection. Simply put, our goal is to apply the best that today's technology has to offer, to designing and manufacturing highly innovative products that create the healthiest indoor environments possible hence our name: Ultravation!



## What is UV?

UV is invisible light with a frequency just below the visible spectrum. The germicidal Wavelength or the frequency in the ultraviolet spectrum that best inactivates microorganisms, mold spores and viral contaminants is centered on 254 nm (nanometers). This frequency is located in the UV-C segment of the UV spectrum (see diagram).

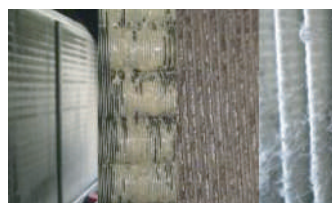
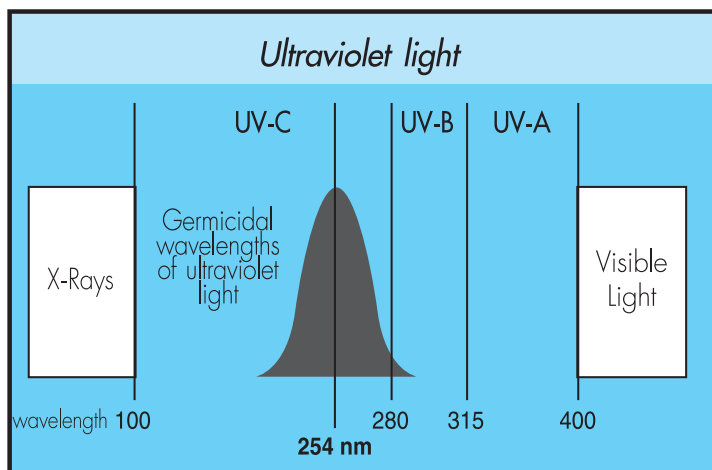
## How does it work?

As a microbe passes through UV-C, the light penetrates to the organism's nucleus disrupting the molecular bonds of its DNA.

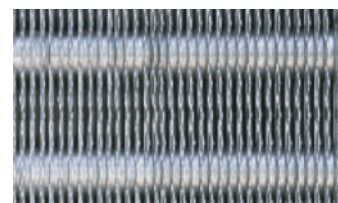
This disruption or breakage renders the microbe unable to reproduce. Without the ability to reproduce, the organism dies moments later leaving no offspring. Some airborne pathogens are more resilient to the effects of UV energy than others.

For instance, viruses are easier to destroy than bacteria, with mold spores requiring the largest UV dose for effective reduction. Airborne pathogens are not visible to the naked eye and many are so small they slip right through standard air filtering devices. Adding ultraviolet air disinfection to the filtration equation prevents colonization of even the smallest microorganisms.

**Reduce HVAC energy consumption reduce system wear and tear, prevent mold contamination on coils and downstream filtration while optimizing indoor air quality.**



Bio-growth and mold coated coils accumulate debris and pass spores downstream to colonize on filters, dustwork and areas throughout the building.



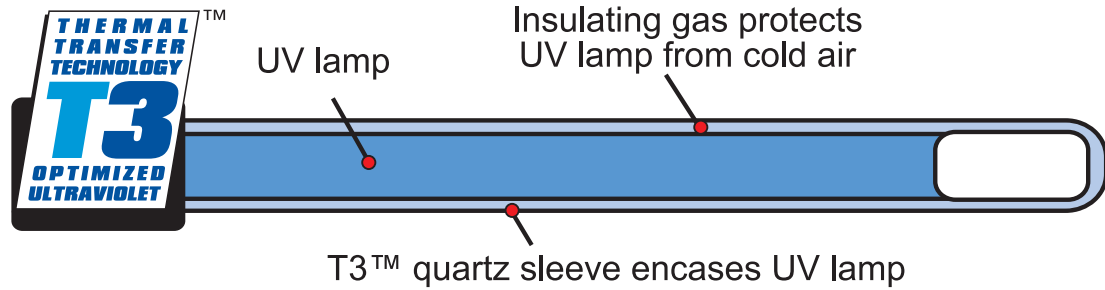
UVMatrix UVC keep bio-growth coils. increasing efficiency, HVAC energy use and maintenance coat while improving indoor air quality.



# Ultraviolet air treatment is the safe, easy and reliable way to create healthier air for your home

**Ultraviolet's T3™** remote UV lamp system gives you up 50% more germ killing UV intensity!

Ultraviolet's T3™ is a patented\*\*lamp system that maximizes performance, safety and economy! T3™ thermal optimizing for operation in the cold air enhances UV intensity. T3™ has a unique interlock that safely turns off UV before lamp removal. The result is that you'll enjoy a well engineered system that delivers extraordinary effectiveness-with energy cost of an everyday light bulb!



## UVMatrix™ EZ



- UV Matrix EZ Series 12"
- UV Matrix EZ Series 17"
- UV Matrix EZ Series 22"
- UV Matrix EZ Series 33"

## UVMatrix™ AS



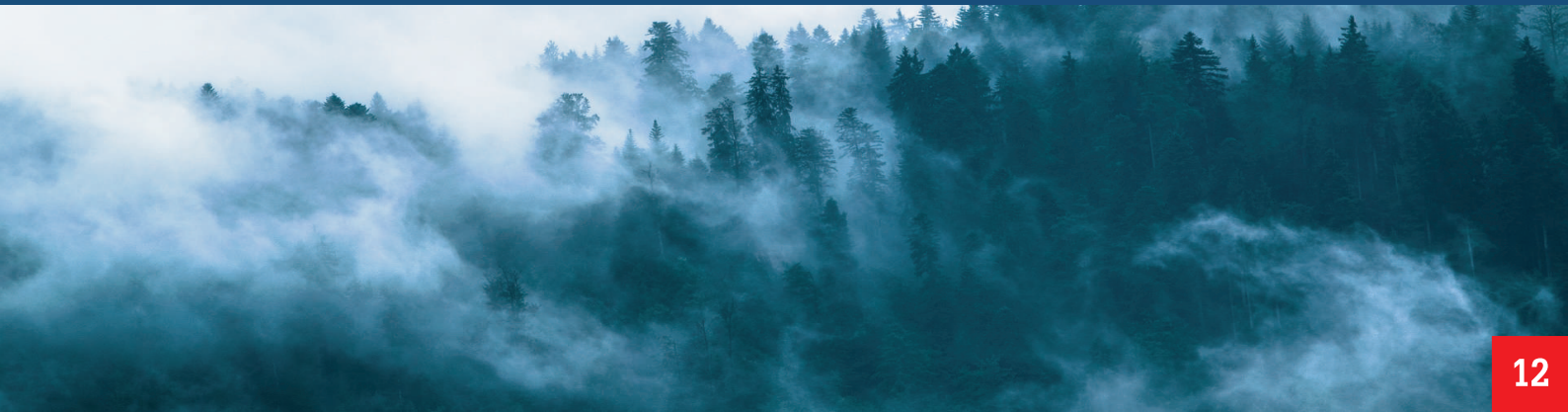
- UMX1202T Two 12" T3™ remotely installed UV lamps
- UMX1902T Two 17" T3™ remotely installed UV lamps

Members:



All Ultraviolet products are designed and built in the USA

EPA establishment number: 074725-VT-001



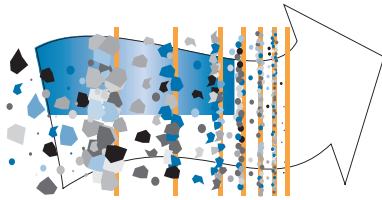
## Photronic™ Intensive care for indoor air

Photronic™ puts multiple technologies to work to create the healthiest indoor air possible. It treats the air in more ways than any other air cleaning system, and addresses the three most critical indoor air pollution issues: allergens/respiratory irritants, bacteria/viruses, and odors. Photronic™ captures allergens and other harmful air contamination including mold. Its UV-C light kills bacteria and even the smallest viruses, which can be 40 times smaller than bacteria, and unstoppable by any filter. These viruses are so small that more than 350,000 of them could fit on the period at the end of this sentence. Then Photronic uses its UV power Refresh™ odor reduction system to break up the complex molecules that cause hundreds of VOC\* odors-odors from anything organic, from paint fumes to animal odor, and leaves them as harmless, odorless components. This amazing three stage process is continual as the air in the room is re-circulated through the Photronic™ system.

\*VOCs are Volatile Organic Compounds.

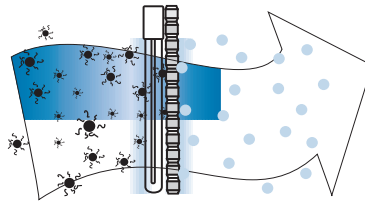
### The Photronic™ process

#### 1. Removes allergens, dust and other airborne debris



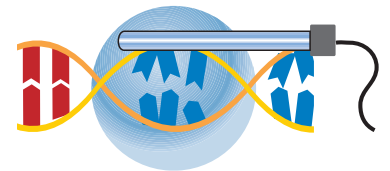
Ultravation® premium filtration, available in true HEPA or MERV 11 Progressive media. (see filtration choices)

#### 2. Decomposes odors, breaking them into harmless components



Odors and VOCs are reduced utilizing the Refresh™ exclusive, formulation self-regenerating UV-powered photo catalytic process. The process is similar to the way that an automotive catalytic converter breaks down engine exhaust.

#### 3. Sterilizes airborne pathogens



The DNA of bacteria, viruses, and microscopic mold is destroyed by Ultravation UV-C air treatment.

### Healthier air for:

- Classrooms
- Restaurants
- Pet Centers
- Locker rooms
- Lounges
- Day care Centers
- Libraries
- Waiting room
- Restrooms
- Renovation areas
- Play rooms
- Offices
- Veterinarian's offices
- Retail Stores
- Bus stations
- Doctor's offices
- Conference rooms
- Exercise rooms
- Paint rooms
- Workrooms

### Ultravation® Photronic™ Multistage™ Room Air Cleaning Systems

**SA-950M:** High capacity, larger room Portable, floor standard system, MERV 11 Progressive Media™ filtration, UltraMAX™ UV-C germicidal air treatment and Refresh™ photocatalytic odor reduction.

**SA-550H:** High capacity, larger rooms Portable, floor standing system, True HEPA filtration with MERV 11 pre-filter, UltraMAX™ UV-C germicidal air treatment and Refresh™ Photocatalytic odor reduction.

**CW-950M:** Ceiling or wall Mount High capacity, for larger sized rooms-MERV 11 Progressive Media™ filtration, UltraMAX™ UV-C germicidal air treatment and Refresh™ photo catalytic odor reduction.

**CW-550H:** Ceiling or Wall Mount Standard size, smaller and medium sized rooms-True HEPA filtration with MERV 11 pre-filter, UltraMAX™ UV-C germicidal air treatment and Refresh™ photocatalytic odor reduction.

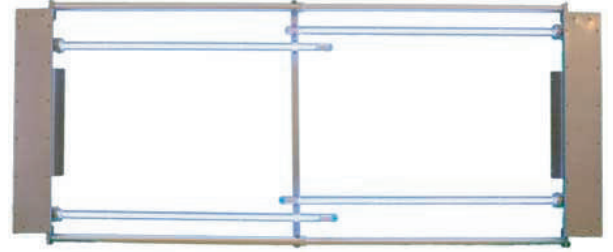


# UVMatrix SI

## UVMatrix™ SI Coil Irradiation Equipment for Commercial HVAC System Specification Sheet

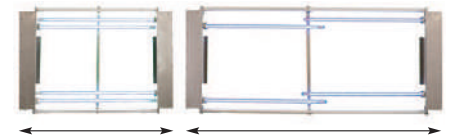
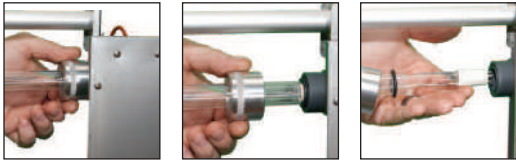
### Benefits of Coil Irradiation

- Bio-growth prevention
- Allergy relief
- Efficiency optimization
- Airstream disinfection (residual)
- Elimination of coil cleaning as result of bio-contamination



### UV Eliminates mold on AC

Mold can be a serious problem for allergy sufferers and a drain on HVAC efficiency. Ultravation UV Matrix™ SI system for commercial and industrial HVAC, deliver the highest level of performance and safety in UV air disinfection. Their design reflects Ultravation's in-depth knowledge of ultraviolet light how it is optimized for HVAC coil disinfection.



### UVMatrix SI-Unprecedented installation flexibility

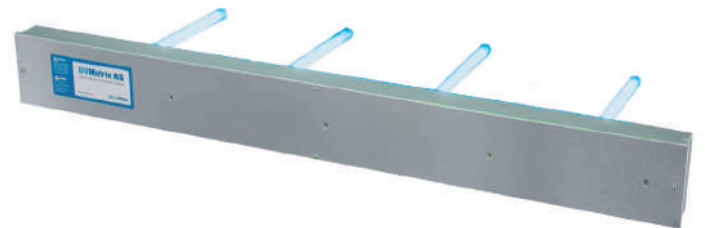
The SI-Series is a complete, flexible, modular and easy-to-install design with no extra frames or hardware to buy. They feature an innovative horizontal expansion ability (patent pending) that makes them easily adjust to variations in HVAC physical installation Characteristics with no compromise in UV irradiation. In fact, the SI-Series design is such that maximizes airstream disinfection exposure time, as the lamps are suspended in the air with 360° UV dispersion.

# UVMatrix™ AS

## Airstream Disinfection Equipment for Commercial HVAC System Specification Sheet

### Benefits of Coil Irradiation

- Improvement of indoor air quality by reducing of airborne pathogens
- Allergy relief
- Odor reduction (when due to bio-contamination)

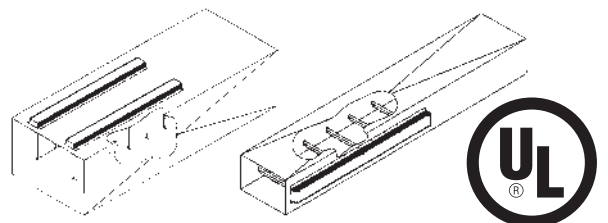


### UV can substantially reduce the spread of airborne illness

Indoor air that is continuously re-circulated through 254 nm UV light will often show a dramatic reduction in the count of bacteria and other microorganisms. Standard systems are size to reduce a target organism by 90%. Ultravation UVMatrix™ AS systems for commercial and industrial HVAC, are designed specifically for airstream disinfection, with design emphasis on achieving a balance between intensity and exposure time. Their design reflects Ultravation's in-depth knowledge of ultraviolet light and how it is optimized for airstream applications.

### UVMatrix AS-Easy to configure for any HVAC installation

UVMatrix AS systems have lamp arrays engineered to optimize disinfection capability, and can be installed in single or multiple unit configurations.



As Innovators in clean air technology for more than 45 year, Envirco Corporation manufactures a complete line of clean air systems for the microelectronics, medical device, semiconductor, disk drive, laboratory and pharmaceutical markets, and many other industries requiring ultra-clean environments for critical technologies.

Known for product innovation and high quality, Envirco designed and manufactured the first commercial cleanroom, the first laminar flow surgical suite, the first personnel safety exhaust hood, and the first low profile fan filter unit (FFU). Continuing as the leader in product technology, it's the combination of innovation products with superior service and support that make Envirco the total clean air solution.



### HOSPI-GARD®

The HOSPI-GARD® products are self-contained high Efficiency Particulate Air (HEPA) filtration system. The portable HOSPI-GARD® IsoClean can be used to create a negative pressure isolation room, as recirculating air cleaning unit, or as a split system. The IsoClean CM is a ceiling mounted unit that is an economical way to create negative pressure isolation rooms.



### Hospital & Infection Control:

Infection control continues to be a growing concern of hospitals and other medical and healthcare facilities. Envirco's line of hospital and Infection Control products protection for patients and personnel.

The Hospi-Gard line offers both recirculation and negative pressure options, while the Enviramedic product provides clean air solutions for hospital operating room. Our line of Pharmaceutical products are designed especially for sterility testing, I.V.admixtures, syringe filling and other comparable applications.

### Envirco Products Application:

#### Hospital Application

- Negative Pressure Rooms
- Intensive Care Units
- Hospital Reconstruction
- Bronchoscopy Rooms
- Aerosol Pentamidine Treatment
- Emergency Rooms
- Waiting Rooms
- Sputum Induction
- Renal Dialysis Rooms

#### Other Application

- Clinics Nursing Centers
- Correctional Facilities
- Homeless Shelters
- Physician offices
- Nursing Centers
- Addiction Recovery Centers







## HOSPI-GARD® IsoClean® and IsoClean® UV



### 3-Speed Adjustable Airflow:

With speeds ranging from 550 to 800 CFM (935 to 1360 m<sup>3</sup>/hr)

### Simple Maintenance:

Both HEPA filter and prefilter are easily accessible for replacement by authorized personal.

### Filter:

Aluminum framed HEPE type, with a minimum efficiency of 99.99% @0.3 micron, aerosol challenged (zero probed). Airflow sensor indicates when the filter need changing.

### Room Air Changes Per Hour:

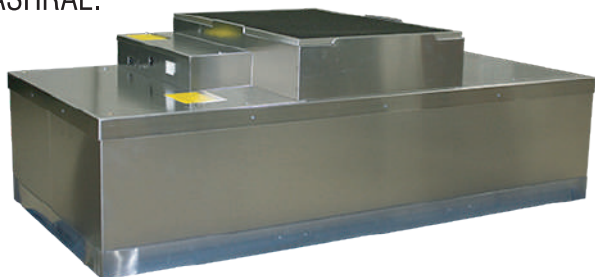
Provides up to 27 room air changes per hour (ACH) in a typical 18×12×8 ft

### Quiet Operation:

52 dBA on low, 56 dBA on medium and 60 dBA on high speed measured 30 in. (762 mm) from face of the unit.

### Pre filter:

Disposable non-woven polyester media with frame-30% ASHRAE.



The Hospi-Gard® IsoClean® is and The Hospi-Gard® IsoClean® UV are the portable, self-contained high efficiency particulate air (HEPA) filtration system designed to easily and economically create a negative pressure isolation room that will meet OSHA and CDC TB guidelines. The IsoClean UV model contains an ultraviolet lamp that helps maximize air Purification.



## MAC 10 IQ

### The first FFU with a Built-in Brain

The MAC 10 IQ is the world's first smart fan filter unit. With its microcomputer-controlled DC motor, the MAC 10 IQ dynamically adjusts itself to maintain the set airflow, compensating for changes in static pressure, filter loading or other local condition. Competitively priced, the MAC 10 IQ offers low sound, low energy consumption, and a low profile with high performance and built-in intelligent control.

The product catalogue lists technical specification of the vast majority of AFPRO Filter standard products. In addition, it contains a wealth of information on the company itself, the background of its products and, last but not least, their application. Should you wish to pose any queries, once you have read the catalogue, then we would be pleased to answer them for you.

### Prominent and international

AFPRO Filters has been manufacturing air filters for over 30 years. In the meantime, it has taken a highly prominent position in the air filtration market, AFPRO Filters products are globally available through our own branches and subsidiaries in the Netherlands, Belgium, France, Germany and China.

### The principles of air filtration

There are four ways of capturing particles. The filter class, the particle size and the filter construction jointly determine the magnitude of the effects.

Air filter may apply:

- The sieve effect
- The inertial mass effect
- The interception effect
- The diffusion effect



### EN779:2012 and EN1822:2009

The EN779:2012 standard is used for the classification of coarse and fine filters. This is based on the efficiency of the filters. EN779:2012 allocates coarse filters to the classes G1 to G4 and fine filters to the classes M5 to F9.

The EN1822:2009 standard classifies HEPA and ULPA filters. In this case, MPPS efficiency is leading. The table contains detailed information on the European filter classifications. AFPRO Filters supplies test certificates with all HEPA and ULPA filters. You can therefore rest assured that the filter supplied is of suitable quality. However, we do recommend subsequent validation of the filters following to ensure that they were not damaged during transport or fitting.

### Eurovent certification

AFPRO Filters complies with the stringent requirements application for Eurovent certification. Eurovent is the European association of air conditioning suppliers, which has developed a certification programme in cooperation with various air filter manufacturers. Eurovent's aim in introducing certification is to promote fair competition in the filter sector. We are pleased to inform you of the benefits that this significant quality mark offers you.

### The Eurovent certificate is your guarantee

- That your air filters have been tested by independent laboratories.
- That the filters correspond to the design specification.
- That the filters you purchase comply with the energy consumption levels stated.



|                                                                                                                                                      |                |    |   |   |   |   |   |
|------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|----|---|---|---|---|---|
| <b>AFPRO Filters</b>                                                                                                                                 |                |    |   |   |   |   |   |
| Compact Filters                                                                                                                                      |                |    |   |   |   |   |   |
| CSBS-AxL                                                                                                                                             |                |    |   |   |   |   |   |
| <a href="http://www.eurovent-certification.com">www.eurovent-certification.com</a>                                                                   |                |    |   |   |   |   |   |
| <b>AIR FILTERS</b>                                                                                                                                   |                |    |   |   |   |   |   |
| <b>OTHER LANGUAGE</b>                                                                                                                                |                |    |   |   |   |   |   |
| <b>OTHER LANGUAGE</b>                                                                                                                                |                |    |   |   |   |   |   |
| Nominal airflow:                                                                                                                                     | 3400 m³/h      |    |   |   |   |   |   |
| Initial efficiency 0.4 µm:                                                                                                                           | 77 %           |    |   |   |   |   |   |
| Minimum efficiency 0.4 µm:                                                                                                                           | 76 %           |    |   |   |   |   |   |
| Annual Energy Consumption:                                                                                                                           | 1216 kWh/annum |    |   |   |   |   |   |
| <table border="1"> <tr><td>A+</td></tr> <tr><td>A</td></tr> <tr><td>B</td></tr> <tr><td>C</td></tr> <tr><td>D</td></tr> <tr><td>E</td></tr> </table> |                | A+ | A | B | C | D | E |
| A+                                                                                                                                                   |                |    |   |   |   |   |   |
| A                                                                                                                                                    |                |    |   |   |   |   |   |
| B                                                                                                                                                    |                |    |   |   |   |   |   |
| C                                                                                                                                                    |                |    |   |   |   |   |   |
| D                                                                                                                                                    |                |    |   |   |   |   |   |
| E                                                                                                                                                    |                |    |   |   |   |   |   |
|                                                                                                                                                      |                |    |   |   |   |   |   |
| THRESHOLD REFERENCE SCALE YEAR: 2015                                                                                                                 |                |    |   |   |   |   |   |



# AFPRO THE AIR FILTER PROFESSIONALS



## Synthetic Filter Media

AFPRO offers an extensive range of synthetic, fibre glass free filter media. Efficiencies range from G2 to F9 as per EN779:2012. The filters are flame retardant as per class F1 of DIN 53438. The construction of the filter medium is progressive and the filters are available in rolls or in pads.



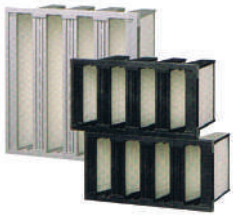
## Panel Filters

AFPRO panel filters are pleated filters which are characterized by their superior filtration properties. The synthetic filter medium is progressively constructed which makes for a high particle interception level. This technology guarantees lower air resistance, which also entails reduced energy consumption.



## Bag Filters

AFPRO has an extremely wide range of bag filters. Each filter employs state of the art technology including ultrasonic sealed pockets, baffle ends internal wedges. The bag filters (multilayer synthetic medium) are characterized by aerodynamic inlets and a long service life. You can choose from six efficiencies, ranging from G4 till F9 (EN779:2012) A full non-standard manufacturing service is available to meet the requirements of virtually any installation. All bags are flame retardant to DIN 53438, F1.



## Rigid Bag Filters

AFPRO manufactures right with the same front dimensions as the bag filters and in grades separation as follows: 45%, 65%, 85%, 95%, 98% and 95% D.O.P., 99, 95% D.O.P. M5-F9. In accordance with EN779:2012 and H10 + H12 in accordance with EN1822. Contrary to the bag filters, the rigid bag filters have a smaller built-in depth and can easily fitted into existing filter installations. Their stable construction allows incoming air flow from two sides.



## HEPA and ULPA Filters

AFPRO supplies a wide range of both high energy particulate air (HEPA) and ultra-low penetration air (ULPA) filters. Each filter is carefully designed, manufactured and tested. The glass fibre filter package is mechanically pleated to create a substantial effective filter area. The pleats are separated by thermoplastic spacers. The filter package is then installed in a frame, sealed and subjected to a leak tightness test. The frames are manufactured using various materials, such as MDF, stainless steel, aluminum and galvanized steel.



## Activated Carbon

Activated carbon has a porous structure. Therefore it can adsorb numerous kinds of substances and contaminants. The carbon undergoes a controlled process of activation to achieve this. Activated carbon is made from natural carbonaceous material like wood, coal, coconut shell or peal. It is offered in a granular, pellet or powder form. Activated carbon is used to purify air and gasses, as well as liquids.



## Mounting Frames

For conversions and for new installation, AFPRO can supply universal leak-tight bag filter frames, from which the bag filter can be removed through the front. The frames are available in galvanized and a fully stainless steel version with stainless steel spring clips. The side removable frames are available loose as well as complete with housing. All mounting frames are provided with a seamless gasket.

# FILTER CLASSIFICATIONS

How can one establish, as the end-user, whether a filter will provide the envisaged air quality? Air filters are classified according to these standards: EN779:2012(EU) and the new ISO 16890 (Global) for course and fine filters. The USA uses the ASHRAE 52.2 standard. The new ISO 16890 standard now replaces both the EN779:2012 and ASHRAE 52.2 with one global standard, and there is the EN1822:2009 for HEPA and ULPA filters. Filters that are tested for compliance with these standards naturally meet stringent requirements. During such tests, the filters are exposed to circumstances which indicate precisely how they will perform in practice.

As the customer, it is a comforting thought to know that all the products AFPRO Filters supplies are compliant with these classifications. The filters are tested in both our own and independent laboratories. Furthermore, AFPRO Filters complies with the stringent requirements of the Eurovent certification programme. This guarantee that the actual filter performance is in line with the specification presented. Further details of the Eurovent certification programme.

## EN779:2012, ISO 16890 and EN1822:2009

The EN779:2012 and ISO 16890 standard are used for the classification of course and fine filters. EN779:2012 allocates course filters to the classes G1 to G4, and fine filters to the classes M5 to F9. This is based on the average of the filters.

The EN1822:2009 standard classifies HEPA and ULPA filters. In this case, MPPS efficiency is leading. The table contains detailed information on the European filter classifications. AFPRO Filters supplies test certificates with all HEPA and ULPA filters. You can therefore rest assured that the filter supplied is of suitable quality. However, we do recommend subsequent validation of the filters following installation, to ensure that they were not damaged during transport or fitting. The new ISO 16890 standard has been introduced end 2016. More information about the ISO 16890 standard can be found at [www.afprofilters.com](http://www.afprofilters.com)

## Comparison Summary filter testing classification

| Filter Test Standard                                                 | Prefilters                                               |          |          |          | Fine filters                                         |            |            |         |         |
|----------------------------------------------------------------------|----------------------------------------------------------|----------|----------|----------|------------------------------------------------------|------------|------------|---------|---------|
| EN 779 2002                                                          | G1                                                       | G2       | G3       | G4       | M5                                                   | M6         | F7         | F8      | F9      |
| Test Aerosol-DEHS                                                    | Average gravimetric dust trapping efficiency(%)to 250 Pa |          |          |          | Average efficiency particulate (0.4 µm) to 450 Pa(%) |            |            |         |         |
| Classification based on average Am / Em                              | <65%                                                     | 65-80%   | 80-90%   | >90%     | 40-60%                                               | 60-80%     | 80-90%     | 90-95%  | >95%    |
| Initial Efficiency vs. particle size                                 |                                                          |          |          |          | Efficiency(%)                                        |            |            |         |         |
| 0.1 µm                                                               | -                                                        | -        | -        | -        | 0 - 10                                               | 5 - 15     | 25 - 35    | 35 - 45 | 45 - 60 |
| 0.3 µm                                                               | -                                                        | -        | -        | 0 - 5    | 5 - 15                                               | 10 - 25    | 45 - 60    | 65 - 75 | 75 - 85 |
| 0.5 µm                                                               | -                                                        | -        | 0 - 5    | 5 - 15   | 15 - 30                                              | 20 - 40    | 60 - 75    | 80 - 90 | 90 - 95 |
| 1.0 µm                                                               | -                                                        | 0 - 5    | 5 - 15   | 15 - 35  | 30 - 50                                              | 50 - 65    | 85 - 95    | 95 - 98 | >99     |
| 3.0 µm                                                               | 0 - 5                                                    | 5 - 15   | 15 - 35  | 30 - 55  | 70 - 90                                              | 85 - 95    | >98        | >99     | >99     |
| 5.0 µm                                                               | 5 - 15                                                   | 15 - 35  | 35 - 70  | 60 - 90  | 90 - 99                                              | 95 - 99    | >99        | >99     | >99     |
| 10.0 µm                                                              | 40 - 50                                                  | 50 - 70  | 70 - 85  | 85 - 98  | >98                                                  | >99        | >99        | >99     | >99     |
| Eurovent 4/5                                                         | EU1                                                      | EU2      | EU3      | EU4      | EU5                                                  | EU6        | EU7        | EU8     | EU9     |
| AS1324.1-2001                                                        |                                                          |          |          |          |                                                      |            |            |         |         |
| ASHRAE 52.1                                                          |                                                          |          |          |          |                                                      |            |            |         |         |
| Test Aerosol - Multiple air flow                                     | Average gravimetric dust trapping efficiency(%)to 250 Pa |          |          |          | Average efficiency particulate (0.4 µm) to 450 Pa(%) |            |            |         |         |
| Classification based on average Am / Em                              | <65%                                                     | 65-80%   | 80-90%   | >90%     | 40-60%                                               | 60-80%     | 80-90%     | 90-95%  | >95%    |
| ASHRAE 52.2                                                          | The particle size varies with E1:0.3-1.0 µm -            |          |          |          | E2: 1.0-3.0 µm - E3: 3.0-10µm                        |            |            |         |         |
| Test Aerosol - KCl                                                   |                                                          |          |          |          |                                                      |            |            |         |         |
| Classification based on MERV<br>(Minimum Efficiency Reporting Value) | MERV 1-3                                                 | MERV 4-5 | MERV 6-7 | MERV 8-9 | MERV 9-10                                            | MERV 11-12 | MERV 13-14 | MERV 15 | MERV 16 |
| EN 1822                                                              |                                                          |          |          |          |                                                      |            |            |         |         |
| Initial Efficiency based on MPPS<br>(Most Penetrating Particle Size) | -                                                        | -        | -        | -        | -                                                    | -          | -          | -       | -       |
| US.Federal Standard 209                                              |                                                          |          |          |          |                                                      |            |            |         |         |
| 0.3µm DOP                                                            | -                                                        | -        | -        | 0 - 5    | 5 - 15                                               | 10 - 25    | 45 - 60    | 65 - 75 | 75 - 85 |





## MPPS

MPPS stands for most penetrating particle size. This refers to the dimensions of those particles that are the most difficult to trap. It generally lies in the region of 0.1 to 0.2 microns (um). The MPPS has to be established before subjecting a filter to tests. The overall efficiency and the local efficiency are then determined, depending on the filter class.

## ISO 16890

The new ISO 1689 standard has been introduced end 2016. More information about the ISO 16890 standard can be found at [www.afrofilters.com](http://www.afrofilters.com)

| HEPA Filters  |      |       |        |         | ULPA Filters |           |            |
|---------------|------|-------|--------|---------|--------------|-----------|------------|
| E10           | E11  | E12   | H13    | H14     | U15          | U16       | U17        |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
| Efficiency(%) |      |       |        |         |              |           |            |
| >85           | >95  | >99.5 | >99.95 | >99.995 | >99.9999     | >99.99999 | >99.999999 |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
| EU10          | EU11 | EU12  | EU13   | EU14    | EU15         | EU16      | EU17       |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
|               |      |       |        |         |              |           |            |
| >85           | >95  | >99.5 | >99.99 | >99.999 | >99.9999     | >99.99999 | >99.999999 |
|               |      |       |        |         |              |           |            |
| >85           | >95  | >99.5 | >99.99 | >99.999 | >99.9999     | >99.99999 | >99.999999 |

# Excellence in Air Distribution



## Strong Foundation

Since 1948, Krueger has been a market-leading manufacturer of air distribution solutions, delivering quality, innovative products and providing first-class customer service to the HVAC industry.



## Environmentally Friendly Solutions

Krueger has vastly expanded its product offering to include environmentally friendly products such as chilled beams, displacement ventilation, and under floor products, all of which extend opportunities to earn LEED Points.



## Leader in Hospital Operating Room Air Distribution

Our custom engineered steriflo system which has been tested during actual surgery. It's just one of many reasons why you can specify Krueger products with confidence.



## Industry Involvement

Working closely with organizations such as ASHRAE, AHRI, and the U.S.Green Building Council, Krueger has been instrumental in driving the improvement and generation of many industry standard that are in place today.



## Engineering Training

Throughout the year, Krueger hosts training sessions at their institute of technology. These meetings focus on educating engineers, architects, and contractors on how to select, specify, and properly apply air distribution products.



## Strength in Manufacturing

With strategically located manufacturing facilities throughout North America, demanding construction schedules are met by utilizing over 1,000,000 sq.ft. Of manufacturing capacity!

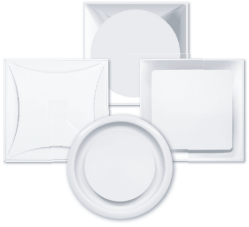


## Continually improving to be your preferred provider of air distribution solutions

From retrofit office to state of the art hospitals, from populated schools to expansive stadiums, you can rely on Krueger to deliver exceptional air distribution solution and world-class customer service every time.







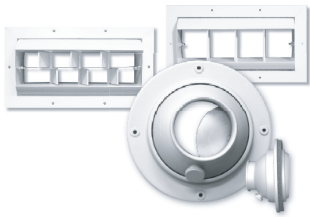
## Diffusers

Improve Indoor air distribution with Krueger's wide selection of ceiling diffusers. Fit for both commercial and Industrial applications choose from our selection of architectural and plaque face, louvered, round, perforated face, modular core, linear slot, and plenum slot diffusers. For spaces that require long throws, we also offer a large selection of air nozzles.



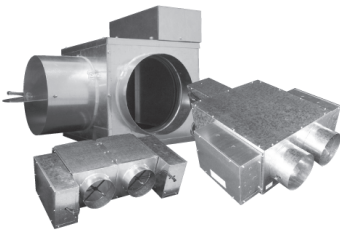
## VAV Diffusers

Krueger provides a great selection of supply and return grilles and registers for both commercial and industrial applications. Products in this group include linear bar, security, industrial, duct mounted, transfer, and stainless steel grilles.



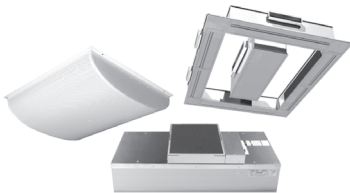
## Jet Nozzle

Find all the necessary accessories needed for Krueger grilles, registers and diffusers including plaster frames, duct extractors, dampers, straightening grids, adapters and more.



## VAV Box Unit

To complement Krueger air distribution products, we offer several different types of terminal units including single duct, dual duct, fan powered as well as retrofit. with careful consideration of the application and product selected, they can help you meet stringent sound requirements, improve ventilation, and help provide opportunities to achieve LEED points.



## Critical Room

For critical environments with stringent air distribution requirements, such as hospitals and laboratories, Krueger has a wide offering of products that range from drop face radial flow diffusers, to laminar panels, fan filter units, and operating room air distribution system.



## Displacement

While specified for school applications due to their quiet performance qualities, Krueger by Halton displacement ventilation products are also a great fit for other commercial or industrial application to increase indoor air quality, as they work to lift contaminants up out of the occupant space. From rectangular to rounded, we offer a product that will meet your application's requirement.



## Under floor

To allow more flexibility in changing environments and provide occupants greater control of their thermal comfort, find your air distribution solution with Krueger's selection of under floor terminal Units and floor mounted grilles and diffusers.



## **SMARTEMP HSC-AD** **Adjustable Helical Swirl Diffuser**

Adjustment from horizontal to The SMARTEMP HSC-AD offers manual, thermal or electric discharge direction vertical, suitable for cooling and heating in high spaces.



## **SMARTEMP ASC-AD** **Annular Swirl Diffuser**

The SMARTEMP ASC-AD has been designed for large halls. Discharge direction is adjustable (manual or electrically motorized) from a horizontally projecting swirl disc to a downward projecting swirl cone. Characterised by highly inductive swirling discharge, the ASC-AD ensures enhanced draught-free comfort in both cooling and heating application.



## **SMARTEMP CNW-AD** **Circular Nozzle**

The SMARTEMP CNW-AD provides side-blow discharge with extremely long throw and exceptionally quiet operation from walls or bulkheads.



## **SMARTEMP ISF-AD** **Inclined Floor Swirl Diffuser**

The SMARTEMP ISF-AD is a high induction, low air velocity floor swirl diffuser for optimizing occupant thermal comfort in “task-ambient” underfloor air distribution applications.



## **SMARTEMP ASF-AD** **Auditorium Floor Swirl Diffuser**

Applications in which air is supplied from the SMARTEMP ASF-AD is suited to auditorium displacement draught-free air supply inductive swirl discharge is inclined towards the rear to ensure under seats. The highly in the ankle regions of seated occupants.



## **SMARTEMP PMW-AD** **Perforated Multistream Wall Diffuser**

The SMARTEMP PMW-AD is a side-wall diffuser with a patent pending design that provides high levels of draught-free thermal comfort. It is well suited to such spaces as hotel rooms, apartments, restaurants and commercial offices.



## **SMARTEMP LMC-AD** **Linear Multistream Ceiling Diffuser**

The SMARTEMP LMC-AD is a multi-stream linear slot diffuser with adjustable discharge direction, from horizontal to vertical, that is available with 1-way or 2-way discharge patterns.



# Smoke Solution

## Who we are

Smoke Solution, part of the Danish Longhi Group and with global shareholders, has been the market leader in design and production of smoking cabins and lounges since our establishment in Denmark in October 2001. Today, Smoke Solution is one of the largest providers of smoking cabins, smoking rooms and other air purifying equipment worldwide.

## It's all in the design

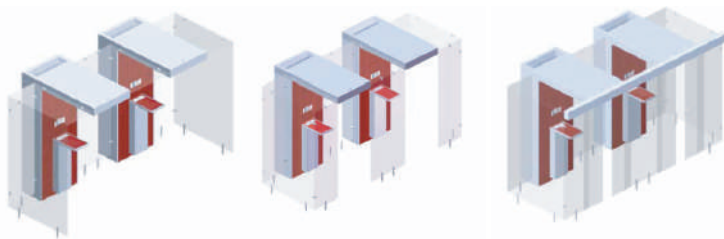
Our full focus from day one has been on a balanced combination of superior quality, reliable functionality and innovative Danish design and the result is probably the best smoking cabins and lounges available today. As a matter of fact, our cabins not only absorb cigarette smoke. Our highly effective filtering systems ensure that the air released is cleaner than the normal air we breathe every day.

## Engineering, design, craftsmanship and functionality

Smoke Solution was originally founded on an idea of improving the entire concept of smoking rooms in public spaces. Bad design and especially poor ventilation were the norm of the day in the beginning of the century and founder Martin Longhi decided to do something about it. He teamed up with renowned Danish architect Jesper Wolff and this collaboration resulted in a highly modular system of smoke cabins and lounge accessories with focus on four major points:

- Superior Technical Quality and Craftsmanship.
- Reliable Engineering and Functionality.
- Innovative Danish Design High Flexibility.

## Cabin Types



■ Open series

■ Semi Open Series

■ Door series



# HUBER & RANNER

ERWARTEN SIE MEHR.

Huber & Ranner are leading designers and manufacturer of air handling systems. For more than 40 years, we have produced a range of air handling units specifically developed to meet customer's needs for uptime, energy efficiency and operational performance.

We guarantee perfect climate, even under extreme conditions. Rooftop units are particularly exposed to the weather conditions. Extreme fluctuations in temperature and moisture stress the material to a considerable extent. Huber & Ranner offer the AHU you need.

## Quality

Our customers are the ones who define what quality is. Quality can be broken down into fitness for purpose and reliability of our products, technical support, delivery services as well as other services which we provide with regard to our customer's issues. The demands and requirements in this respect are subject to constant change. So it is not enough to merely meet minimum standards. Whilst simultaneously providing for further enhancements of existing products, we are aiming at continuous quality improvements.

## Durability

Our products are built for continuous use, which reflects our quality philosophy. The solid construction of our plants and devices is a good reason to choose a product made by Huber & Ranner.





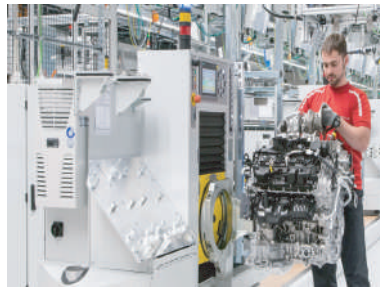
## Uncomplicated to maintain

The ventilating systems and climatic master devices of the Huber & Runner GmbH do not only convince by their performance and productivity but are also very easy to handle. And in addition the maintenance process is very uncomplicated because those elements that have to be maintained regularly are simply accessible.



## Flexible

Each of our products is adapted to your individual requirements and needs. Due to an ingenious concept of variants and custom-made product we are able to meet your requirements exactly. Enclosure of columns? Shifting the charging doors because of structural conditions? These cases are daily business for Huber & Runner.



# AHU Double Skin

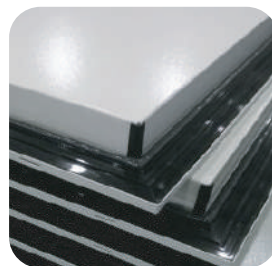


Germany Quality



## Application

- Air Handling Unit
- Hygienic Air Handling Unit
- Pre-Cooled Air Unit
- Humidity Control Unit
- Dedicated Outdoor Air System Unit
- Energy Saving Unit

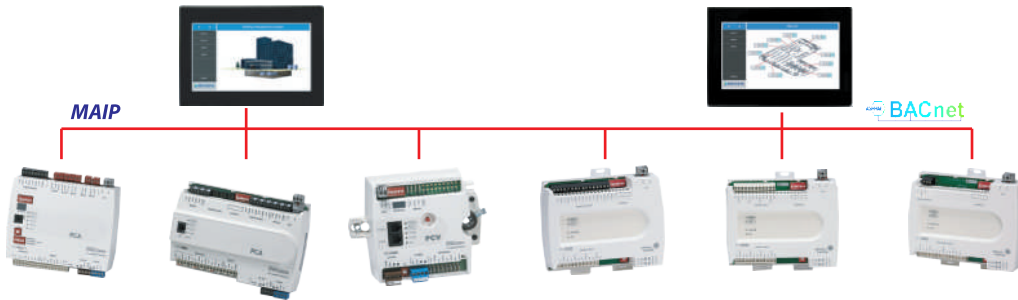






## Damper

- Backdraft Damper
- Fire Curtain/Damper
- FireSmoke Damper
- Smoke Damper
- Louver Damper
- Volume Damper



## DDC CONTROLLER

- Touch Advanced Display
- HVAC Controls
- HVCT Equipment
- Ventilation
- Air Exhaust



## SENSORS for HVAC

- Air Quality Monitor
- Carbon Dioxide Detector
- Carbon Monoxide Detector
- Nitrogen Dioxide Detector
- Differential pressure transducers





## FLOWCON Service

### Engineered to Make the Best Solutions in Air Cleaner for You

Upgrading? Expanding? Building new? Whatever your project goals are, adding new processes Air Cleaner is a crucial part of the undertaking. That's why FLOWCON has refined a robust process of engineering and design to ensure success from start to finish. For decades, our engineering team has been confronting the unique needs of customers just like you. We've built a culture of innovation that encourages creative thinking and fast moving process to bring to you Air Cleaner advancements that economically and precisely support your successes.

#### Expert Design and Rigorous Planning Design

It starts with a full survey and technical analysis of your facilities. From thereon, we tailor a complete solution from an array of Electronic Air Cleaner technologies. To help reduce your costs, FLOWCON engineers are professionally trained to provide our valued customers for innovative design and consultancy of air cleaner components products such as Air Quality Solution, Oil mist eliminator, Smoke removal, Kitchen exhaust, HVAC, AHU and Hygienic Air System, Hospital & Healthcare, etc. Wherever possible, our products are designed to be flexible and adaptable to varying situations for our valued customers' needs.

#### Operation, Maintenance and Repair Services

Our extensive operational maintenance and repair services cover from preventative maintenance and operations to Electronic Air Cleaner repair, air conditioning service needs, reducing unplanned downtime, increasing asset life and reliability, and to through ensuring productive environments. Through planned Electronic Air Cleaner maintenance and predictive & diagnostic services, we can help reduce risk, future costs and avoid unnecessary operational breakdowns. In the event of emergency, our Electronic Air Cleaner repair service experts can provide swift and timely response to safely revive your critical facilities' functions.



With the team of the technicians and experts under our highest engineering standards. FLOWCON is concerned with the effective aftersales services. As an expert company, we are frequently selected as favorable alternatives for high standard maintenance with reasonable price services by customers who use the other market reputable name products.

#### You can trust FLOWCON Service

With testimonials for service contracts from owners of

- Novotel Bangkok Sukhumvit 20 Hotel
- ICONSIAM
- BONCHON
- SUBWAY
- Projects in Suvarnabhumi Airport
- Etc.

**So trust us to take best care of the engineering services for the operations you value the most.**





# Site References

## Condominium :

- The Sukhothai Residence
- The Light House Satorn-Chareonnakorn
- Royal Maneeya Executive Residences
- Vantage Condo
- The Base Sukhumvit 77
- Villa Asok
- Condo Lette Ratchada 36
- The Crest Phaholyothin 11
- Centric Scene
- Arize Sukhumvit 26
- Vertiq Condo
- Magnolia Condo
- Noble Ploenchit Condo

## Hotel :

- Starwood
- Dusit
- Banyan Tree Hotel Samui
- The Campus Grand Hyatt Erawan Hotel
- Shibuya 19 Smart Hotel & Luxury Fashion wholesale
- Siam @ Siam Design Hotel & Spa
- Siam @ Siam Hotel Pattaya
- Hillton Hotel
- Grand Hyatt Erawan Bangkok
- W Hotel Bangkok
- Anantara Vacation Club
- Park Hyatt Bangkok Hotel (Central Embassy)
- Amara Bangkok Hotel
- Indigo Hotel
- The Nai Harn Phuket
- BKK Marriott Queen'S Park
- Rosewood Public Hotel (Phuket)
- Novotel BKK Sukhumvit 20
- Rosewood BKK Hotel
- mahasamutr Huahin – Best Western Hotel

## Shopping Mall :

- Tesco Lotus
- Central Group
- Siam Piwat Group
- Jungcelon Phuket
- Ekamai Gateway
- Sahathai Surat thani
- IKEA Phuket
- Ari Hills
- Landmark Mahachai
- Icon Siam

## Hospital :

- RAJTHANEE Hospital
- Bangkok Hospital, Hatyai, Chiangmai, Bangkok
- Siriraj Hospital
- King Chulalongkorn Memorial Hospital
- Saint Mary's Hospital
- Ramathibodi Hospital
- Police General Hospital
- Bhumirajanakarindra Kidney Institute Hospital
- Mayo Hospital
- Rajavithi Hospital
- Hua Chiew Hospital
- Vibharam Hospital
- Sakon Nakhon Hospital
- Chiangmai Neurological Hospital
- Bangyai Hospital
- Klaeng Hospital (Rayong)
- Taksin Hospital

## University :

- Bangkok University
- Thammasat University
- Sripatum University

## Industrial :

- Protective Technology Co.,Ltd.
- Mizuki Electronics (Thailand) Co.,Ltd.
- PTT Exploration and Production Public Co.,Ltd.
- Precision Plastic Co.,Ltd.
- Thai oil Public Co.,Ltd
- Fukij Marketing Co.,Ltd.
- Femtobit Co.,Ltd.
- DENSO (Thailand) Co.,Ltd.
- Thai Honda Manufacturing Co.,Ltd.
- Thai Mitchi Corporation
- Cargill Hatchery Korat
- Chevron
- Spansion (Thailand)
- Ichikoh Industries (Thailand)
- Thai Kansai Paint
- SM Pharma
- Belton Rojana Industrial
- Mitsubishi Diecasting
- PTT
- CPLI, CPVIP, CP Ram LK4
- Seagat Korat (New Drive, Model Shop)
- ISUZU
- Nestle Suratthani
- Nationa1 Science and Technology Development Agency
- AIS Contact Center Korat
- Fabrinet
- 3M Innovation
- Genesis Data Center

## Restaurant :

- CP Food world (Chula Hospital, Siriraj Hospital)
- Black Canyon (Siriraj Hospital, The Mall Ngamwongwan)
- MK Restaurant (Siriraj Hospital)
- S&P Restaurant
- Foodland Restaurant (Pinklao, Patpong)
- Yayoi the Coast Bangna (The Coast BKK)
- Oishi Teppanyaki MBK
- Pepper Lunch Central World
- Wabi Sabi (Central World)
- Saboten (Don Mueang Airport)
- S&P Restaurant (Project in Suvarnabhumi Airport)
- Burger King
- Bonchon
- Lee Café
- China Town
- Fuji
- KFC
- Laduree @ Siam Paragon
- Mo & Moshi @ Siam Center
- After You
- Chester Grill Lotus Ngamwongwan
- Peppina pizza @ The Maharaj
- HonAji Ramen
- JAMIE'S ITALIAN SIAM DISCOVERY
- SUBWAY PHUKET AIRPORT
- SEE FAH Since 1936 Rama Hospital

## Project in Suvarnabhumi Airport :

- Airport of Thailand Public Company Limited
- Thai Airways International
- King Power Suvarnabhumi
- Burger King
- Maisen
- Grand Yowarat
- Magic Food
- Food Stop
- Light Bar
- VIP Lounge
- Light West
- Lee Café
- TATE Café by Pink Café
- China Town
- Starbucks Coffee
- Kin Ramen
- Chang Foot Massage & Spa
- Sushi Den
- DEAN&DELUCA

## Office:

- Chubb (Thailand) Co.,Ltd. At Suvarnabhumi International Airport
- Tilleke & Gibbins International Ltd
- Ogilvy & Mather Advertising (Thailand) Co.,Ltd
- French Embassy
- Sathorn Square
- Kasikorn Bank Public Company Limited
- Alliance Francaise
- UOB Bank

## Playhouse:

- Muangthai Rachadalai Theatre
- (Siam Square One) KBank Siam Pic -Gancsha

Dealer