

THE CRESCENT GROUP



CRESCENT

Power Solutions



Representatives for
UVGI in HVAC System (AEROPURE) | Heat Pumps (NESS)
Air Purifier & Ozonator (ORAIPL) | LED lights (AXIS)

Suppliers to



Corporate Building



Hotels

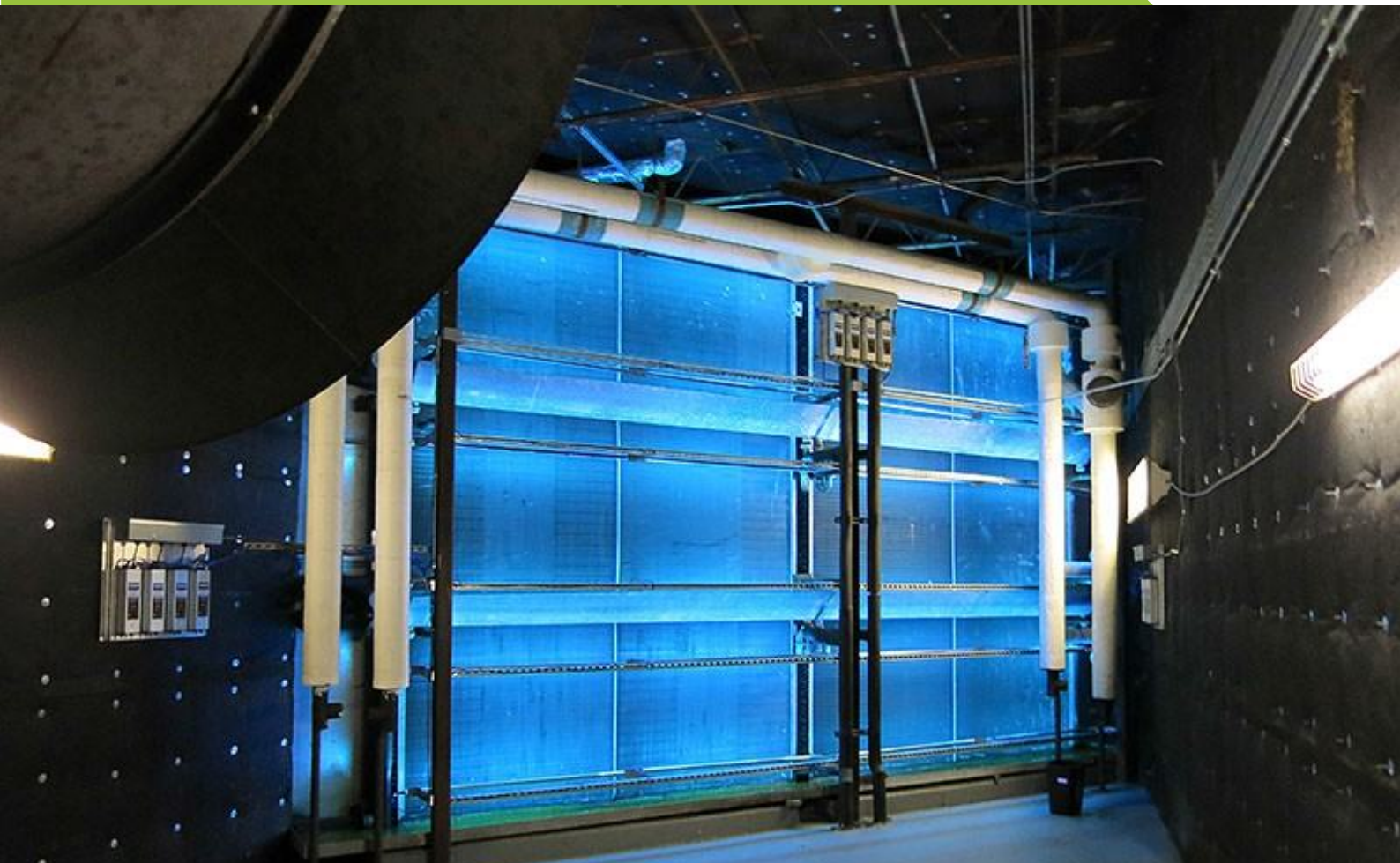


Pharma Industries



Airport

Using Ultra violet GERMICIDAL IRRADIATION UVGI in HVAC systems



What is a UVGI system?

Ultra Violet Germicidal Irradiation is :

- The use of Ultra Violet energy at 254 nm to kill microbes
- A state of the art proven application
- Low cost and easy to use
- Becoming a standard for HVAC systems



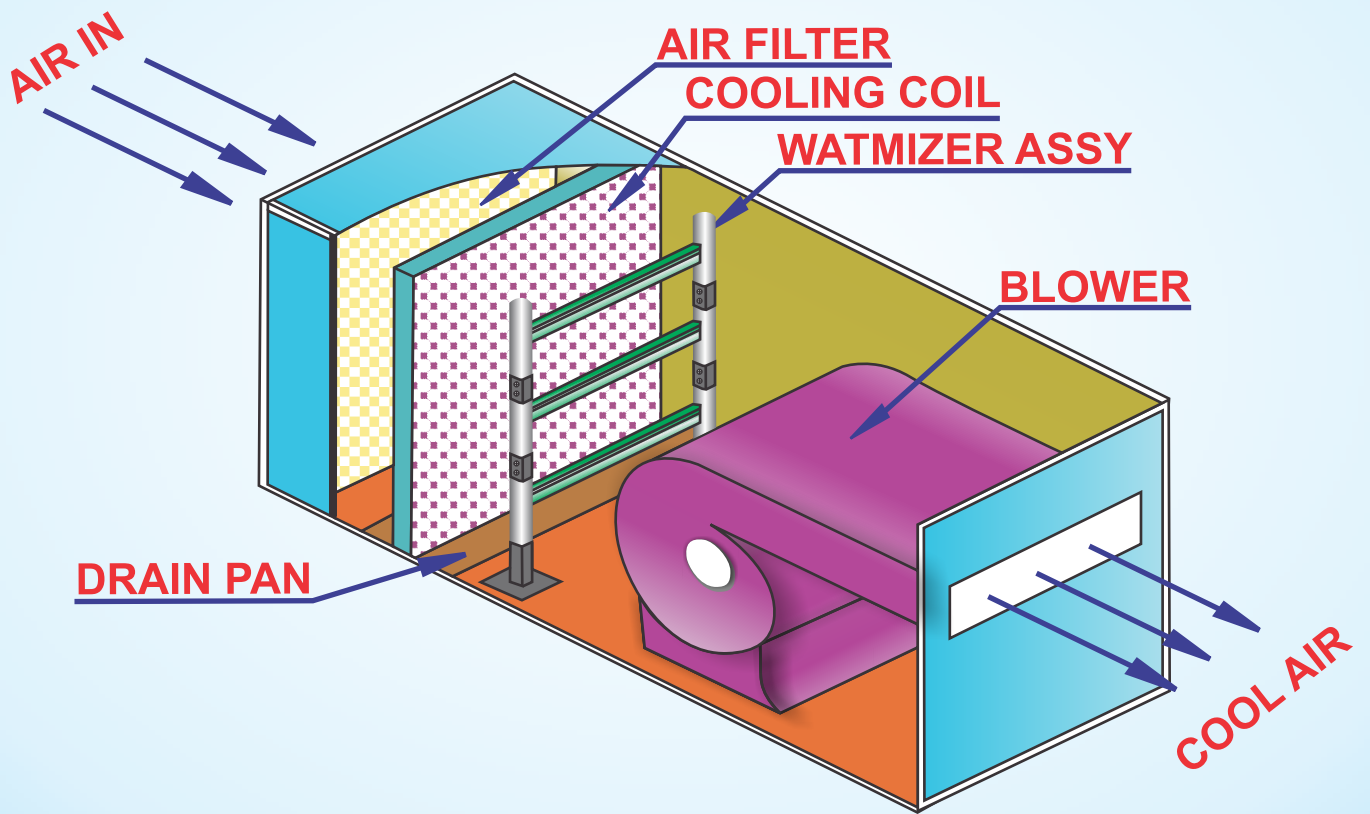
How UV-C destroys microbes

- Viruses, bacteria, molds, spores, fungus, etc. can grow rampantly inside the damp and dark HVAC systems and get distributed all over the buildings through the air conditioning systems, thus making your Indoor Environment infectious, unhealthy and unsafe to breathe
- UVC rays are highly effective in killing germs without use of any harsh methods like chemical cleaning or steam injections. UVC rays are completely safe, environment-friendly and most efficient method for removing mold and bacteria from coils and drain pan surfaces

Advantages of using UVGI system

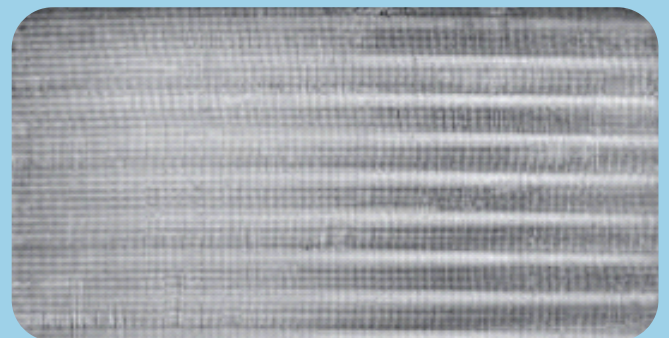
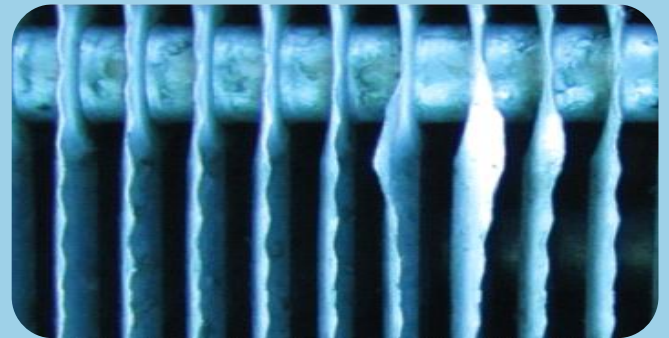
- Eliminates growth of MOLD & MILDEW on cooling coil resulting in:
 - Improved heat transfer between chilled water in coils and air
 - Improved air flow through coils
 - Eliminates depositions of dust on coils
- Reduces the amount of energy consumed in a building by 10% -15%
- Improves Indoor Air Quality (IAQ) upwards of 70%
- Prevents periodic cleaning of coils, thereby significantly reducing maintenance costs
- Extends the life of the equipment
- Low initial set up cost
- Compatible with new and existing HVAC systems

A TYPICAL Air handling unit (AHU)



Coils before Aeropure UV

Coils After Aeropure UV



WATMIZER ASSEMBLY



Components of a Watmizer System

A Watmizer consists of :



UV-C Lamps



Electronic Ballast



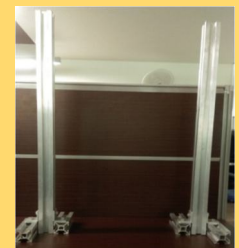
Control Panel



Aluminum Reflector



Run Hour Meter



SS Extruded Assembly

Other Products

Duct Zapper Air Disinfection and for Stench Removal

- Mounted in Ducts and Hoods for Air Disinfection and Stench removal.
- Eliminates bad odors (VOC) of Kitchen Exhaust, Toilet Exhaust, Sewage Treatment plant (STP) etc..
- UV Lamps used can produce UV-C & Ozone
- Ozone oxidizes Volatile Organic Compounds (VOC)
- Application in Hotels & Hospitality, Industrial Canteens, Public Toilets etc..



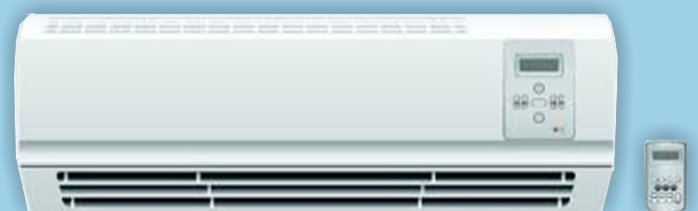
Watmizer-Mini A device use for Fan Cooling Unit (FCU).

- Mounted in Fan Cooling Unit near the Fan or Coil
- Reduces the maintenance of Cooling Coil
- Improved Indoor Air Quality
- Application in Hotels & Hospitality Industry



Aero Pro A wall mounted unit for Air Disinfection

- Wall Mounted Unit
- Improved Indoor Air Quality
- Application in any Small Rooms such as Doctor's Clinic, Laboratory, Patient Rooms etc.



Benefits of Aeropure UV Systems

For Power Savings:

The installation of UVGI devices lead to electrical energy savings to the tune of 10 to 15% by improving heat transfer efficiency of AHU cooling coil, which in turn results in reduction of chilled water requirement from the chiller.

For Air Quality:

It has been proved beyond doubt worldwide, that UVGI is an extremely effective way to improve and maintain indoor air quality, the united states General services Administration included in cooling coils of air handling units for all federal coil cleanliness and improve air quality.

AHU Maintenance savings:

AHU coil cleaning is a major problem in HVAC maintenance. It is very difficult to do coil cleaning manually. By UV-C energy it reduces manual coil cleaning problems. It also reduces need of chemical solvents, pressure wash for cooling coils. So the cost is savings on HVAC Maintenance.

Green buliding benefits:

UV-C contributes in energy saving, reduces water consumption and wast water cost and chemical use in AHU.

UV-C help to extends HEPA's Life

- By installing UV-C in the AHU, the Air pass through HEPA filter will have less number of micro organisms, as compare to normal AHU
- This helps in reduced amount of loading on HEPA filter per Air pass
- Hence extends HEPA'S Life

Who needs UVGI ?

- Air-conditioned Offices and Residential Buildings
- Hotels: Rooms, Restaurants, Sewage Treatment Plants and kitchen Exhausts
- Hospitals: patient Rooms, Operation Theaters, Laboratories
- Manufacturing facilities for Food and Pharmaceutical Products
- Cold Storage and Refrigerated Spaces for storing of fruits, flowers and vegetables etc.
- Industrial Kitchens, Auditoriums, Airports, Cinema Halls and Shopping Malls

HEAT PUMPS

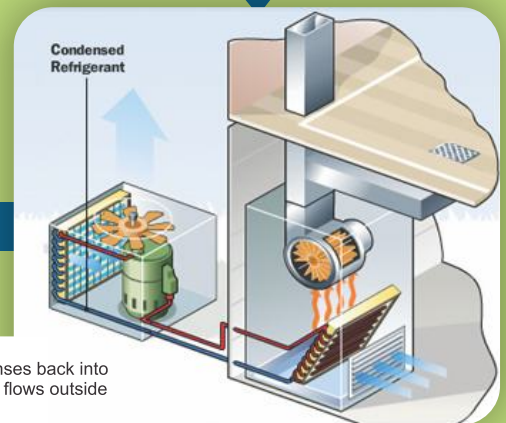
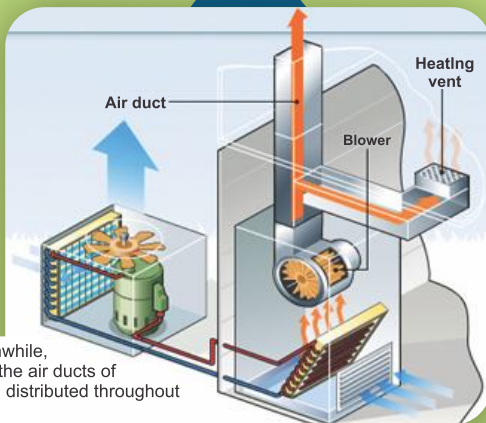
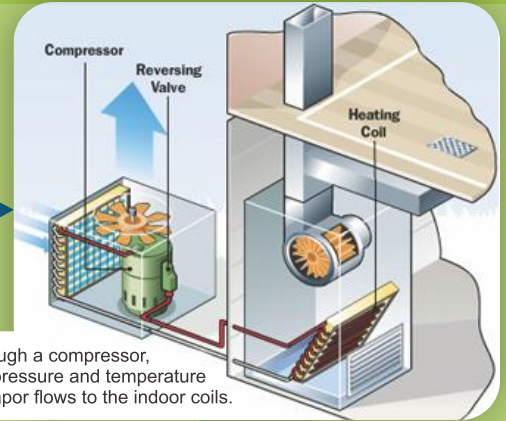
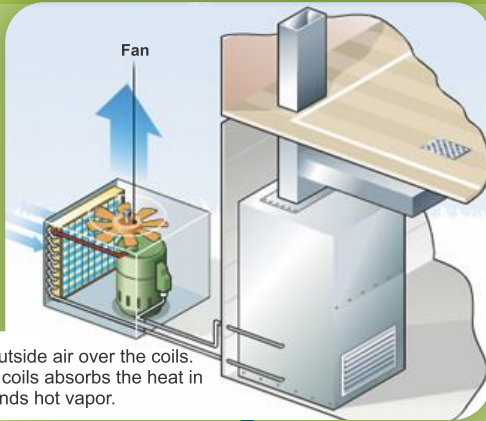


**Saves Energy
& Energy Coasts
upto 70-75%**

ABOUT THE PRODUCT

- A Thermal Device which transfers heat energy from a Heat Source to a Heat Sink
- It simply transfers heat energy rather than converting it by burning fuel and hence is more efficient and greener than conventional heating solutions like gas burning furnace
- A Heat Pump can reverse the direction of heat transfer, allowing the same system to be used for heating as well as cooling

HOW DOES IT WORK?

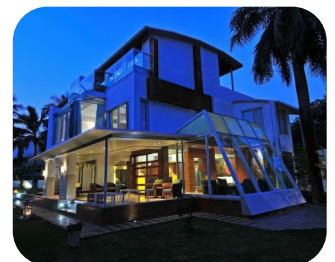


WHO CAN USE A HEAT PUMP?

Essentially any situation where conditioning of air or water at a specific temperature is required for long durations.

Most Possible users:

- Hotels
- Hospitals
- Pharma and Chemical Industries
- Residential bungalows and Towers
- Swimming Pools
- Dairies
- Automobile companies



H E A T P U M P S

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Ozone Generator



Special Features

- Air cooled ozone generator
- Pressure operation with oxygen
- Ozone production setting by means of 4-step-switch
- Incl. built-in oxygen concentrator
- High-quality materials for virtually unlimited life span
- Low energy consumption
- Plug & play system

Perfected, modern technology

- Ozone generator modules of stainless steel 316Ti consisting of individually fused electrodes
- Resin embedded high-voltage transformers with thermal switch

Ozone Generator

Model INDOZ 100/150-DAF



Useful Concept

- Modular system with comprehensive monitoring of functions and operations according to DIN 19627
- HMI with LCD text display for easy reading of each operating system
- Highest possible operation safety due to the use of serial components of leading manufacturers
- Construction and materials designed for highest availability and long life span
- Easy access to critical components
- Safe pressure operation
- Ease of operation
- Low space requirement

Perfected, modern technology

- Ozone generator modules of stainless steel 316Ti consisting of individually fused electrodes
- Resin embedded high-voltage transformers with thermal switch

Automatic ozone production control

- Various ozone production control by variation of frequency and voltage
- HMI with LCD text display for monitoring and control of operating equipments

DETOX-X2 Indoor Air Purifier



DETOX-X2 consists of Multi-stages of Air Purification with Pre-Filter, Electrostatic Filter, HEPA Filters (99.7%), Activated Carbon Filter, TiO_2 Photo catalytic Oxidation, Germicidal UVC Lamp (Sanitizer), Ozone Generator & Air Ionizer.

DETOX-X2 Indoor Air Purifier

What it offers

- Pre-filter for separating dust, pollen allergens (Effectively filter fine particles up to 3 μ in size)
- ESF for capturing smoke as well as dust practical & small pollen allergens
- "HEPA" Filter utilizing high performance (Dust collection rate up to 99.97%)
- Activated Carbon Filter which neutralize chemicals & gases.
- ADOX Oxidation, UVC sterilization & Ozone technology, get near total rid of odor
- Air Ionizer - Negative Ion Circulation enhanced the overall result
- Large air flow volume rapidly circulate purified air indoor
- 1 years warranty

Air Purification Multi-stage process

Pre-filter

Pre Filters manufactured as in box or flange types. It has an efficiency of 70 to 85% for 15 to 3 micron particles. Pre Filter sizes are customizable according to specifications.

Feature:

- Solid construction
- Long service life
- Easy to handle
- Efficient filters giving consistent results
- Low pressure drop

Electrostatic Filter

- Electrostatic Air Filter will electronically clean your facilities by eliminating airborne dirt, dust, smoke, pollen and germs in your working surroundings. It is surely beneficial both to you and your employees since you will take pleasure in breathing a cleaner, fresher and dirt-free atmosphere, a comfortable working place that may result into productive and assertive employees
- It is being proved that thousands of people who have airborne allergies and asthma have experienced instant relief as the installation of Air Purifiers takes place

HEPA Air Filter

Generally considered the most effective type of Air Filter. It removes 99.97% particles (0.3 μ in size) that pass through the filter, stopping them to mix into the air again.

Unlike characteristic Ionizer, it captures a high volume of migrant dust and other particles, including many of the ionized particles so it will not stay up to the ground.

Activated Carbon Air Filter

Specially design to capture and neutralize chemicals, gases, odors and cigarette smoke that a HEPA Filter cannot capture.

Germicidal UVC Light

UVC (ultraviolet) Light is scientifically proven as a destroyer of large variety of microbial contaminates, such as viruses, germs, bacteria and fungi (including mold) which escaped from filters.

Ultraviolet Light has been used for years by the medical field (including hospitals) to Sterilization rooms and equipment, in order to prevent the spread of illness and disease.

Recommended by Centers of Disease Control for its capability to destroy biological pollutants.

ADOX (TiO₂) Oxidation & Ozone Generator

TiO₂ PHOTO CATALYTIC is an oxidation process at ambient temperature involving a catalyst activated by UV radiation. The process leads to the mineralization of the organic pollutants or the organic components of the biological cells, i.e. mainly with their transformation into inert compounds such as water and carbon dioxide. This active principle presents a broad spectrum of action on the air pollutants.

If not needed or wanted ozone can be completely disabled while still allowing the Ionizer and Filters to run at full power

Air Ionizer

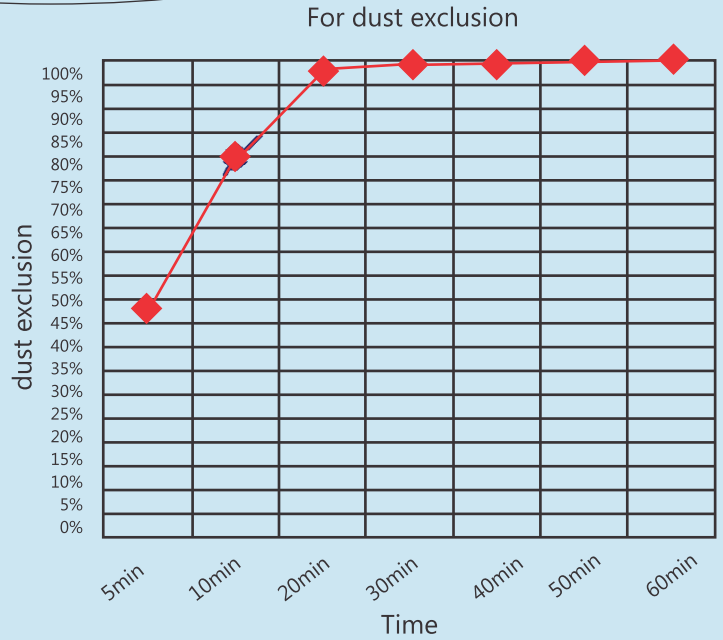
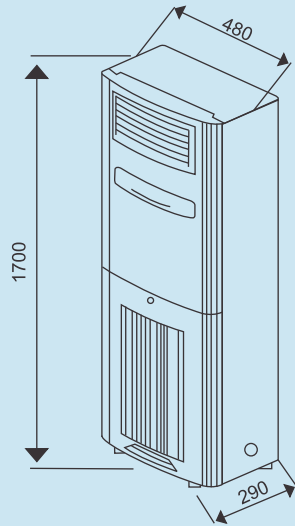
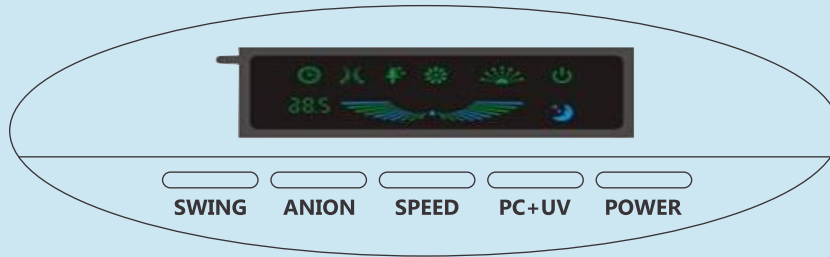
Effectively makes the air free from any particles like allergens (mold and dustmites), fine dust, bacteria, viruses, chemical fumes and other ultra-fine particles that cannot be captured by filters.

Enhance the effectiveness of HEPA and Trigger Carbon Filter System causing particles draw together magnetically and form larger particles so the filter can capture it easily.

Disinfects viruses and bacteria trapped in the filtration bank of the would reproduce in the typical filter.

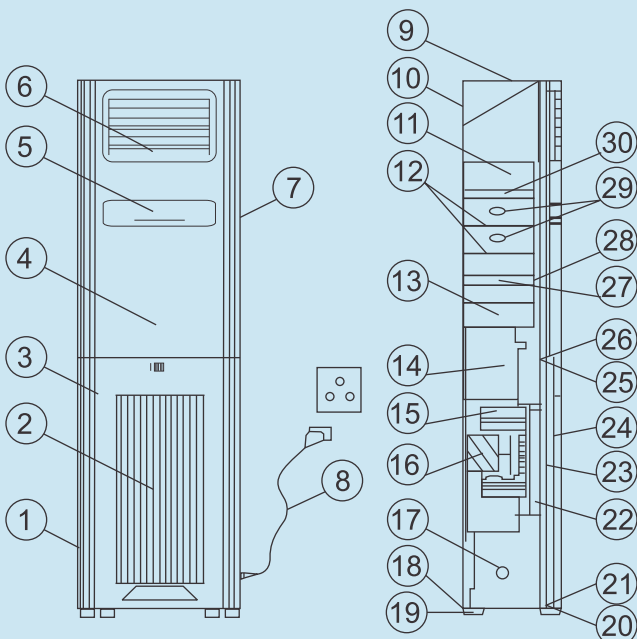
With the presence of ions, it has capability to remove airborne particles away from the Air Purifier, in areas of the room where the filter has small effect. Negative Ion Circulation is enhanced as a result of the fan.

Industrial air purifier - model - DETOX-X2



Model	Power (W)	Noise (DB) Max.			Air Flow (M ³ /hr)			Dust Exclusion	Dis-infection	Anion Conc.
		High Speed	Medium Speed	Low Speed	High Speed	Medium Speed	Low Speed			
DETOX-X2	150	51	49	44	650	540	460	Upto 99%	Upto 99%	2 x 10 ⁶

Dimensions	Area Catered
550 x 350 x 1760mm	60 M ² or 640 Sq. ft.



1. Left side plate	2. Pre filter
3. Lower panel	4. Upper panel
5. Display panel	6. Air outlet
7. Right plate	8. Electrical wire
9. Top plant	10. Back plate
11. Negative ion generator	12. TiO ₂ Photo catalytic filter
13. Ozone generator	14. Air passage
15. Centrifugal fan blade	16. Motor
17. Socket	18. Angle
19. Rear stable channel steel	20. Front stable channel steel
21. Mother board	22. Electrostatic precipitator
23. Filter screen	24. Position switch
25. Dust & odour sensor	26. Air quality sensor
27. HEPA filter	28. Circuit board
29. UV lamp	30. Activated carbon filter

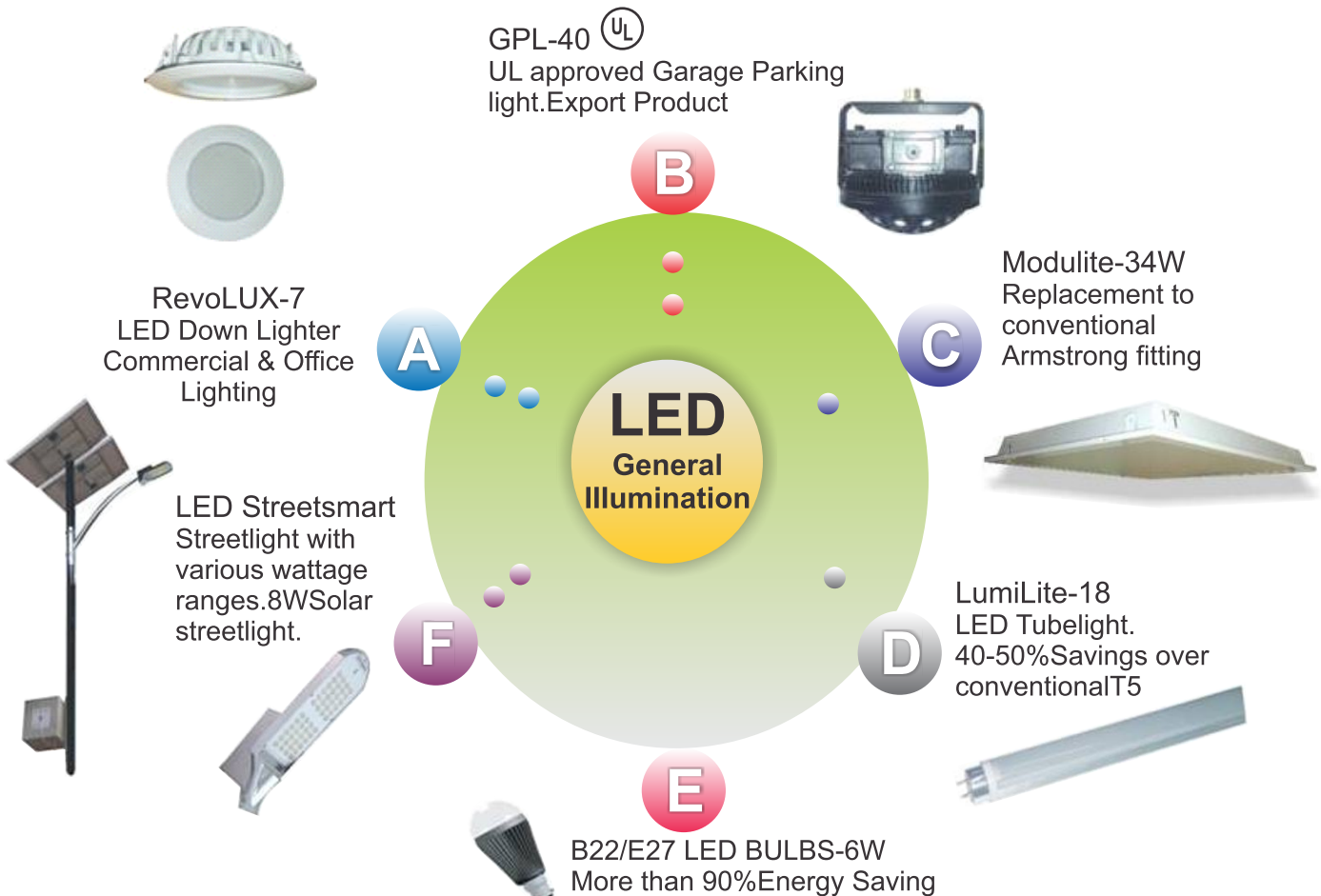
Solid State LED Lighting

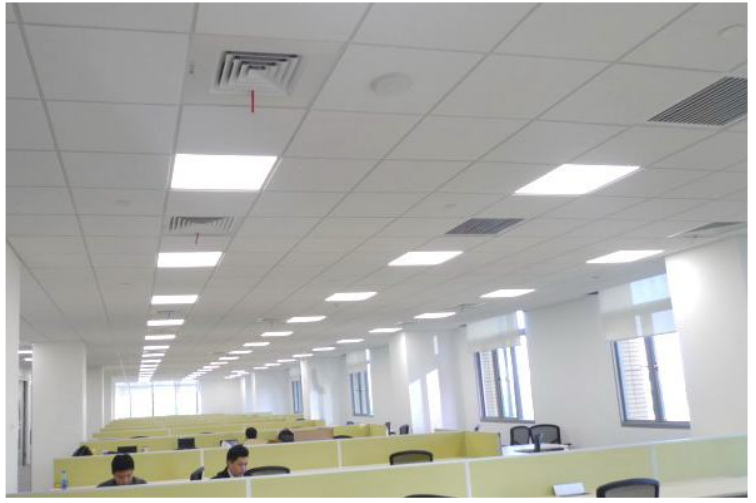
LED's are composed of thin layers of semi conducting material that emit light when a voltage is applied across the LED layer forming a light emitting chip. With their unique features of long life and energy saving they find application in various lighting products.

Special Features

- Energy saving, Very low on power consumption
- Longer Life up to 50,000 hrs
- Low maintenance cost.
- LED's being solid state components are vibration and shock proof
- Low heat dissipation reduces AC costs
- Low voltage operated. Can be dimmed, instant on-off and programmed
- Easy to control, so can be adapted to various energy saving programs like motion detector, occupancy sensor etc.
- Best suited in Solar applications
- Zero emission of IR and UV , RoHS compliant

INTEGRAL-LED Products







CRESCENT

Power Solutions

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