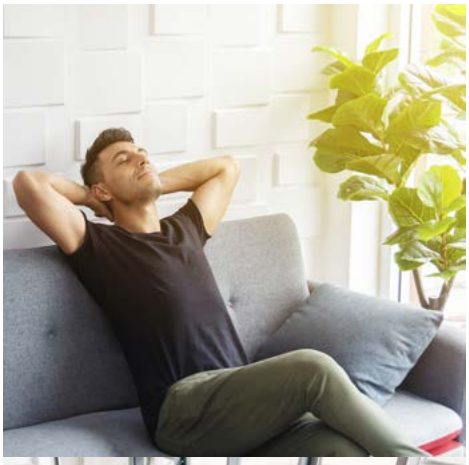
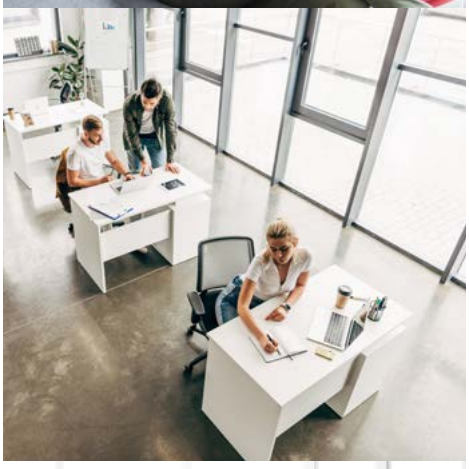
Electronic Air Cleaner and UV-C
A winning combination for indoor air quality

SAIA BURGESS CONTROLS

The value of clean air

Good indoor air quality, thermal comfort, daylight, good acoustics and amenities, all play a vital role in creating a positive atmosphere for occupants. A healthy and productive work environment is a key element of any green sustainable building.



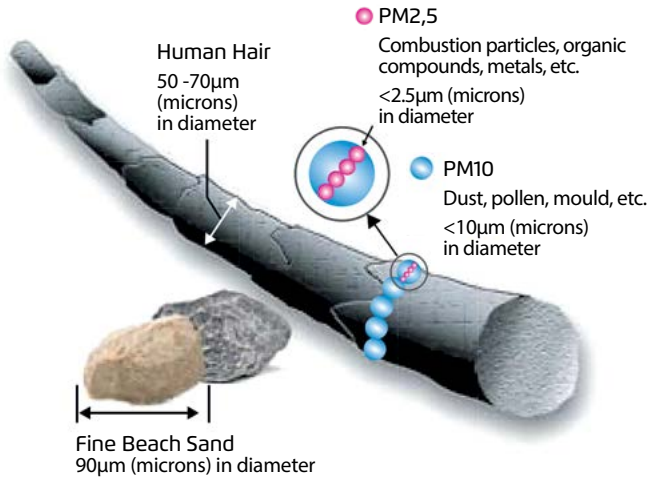


The long-term impact of clean air goes beyond enhancing occupant well-being, health and safety. Clean air keeps the air-conditioning system clean, prevents cooling coil fouling and maximizes cooling coil heat transfer efficiency and energy savings.

Basic air pollutant information

Particle pollution, also called particulate matter or PM, is a mixture of solids and liquid droplets floating in the air.

The smallest particles that can be seen with the naked eye are around 40–50 microns (1 micron is .001 millimeter).

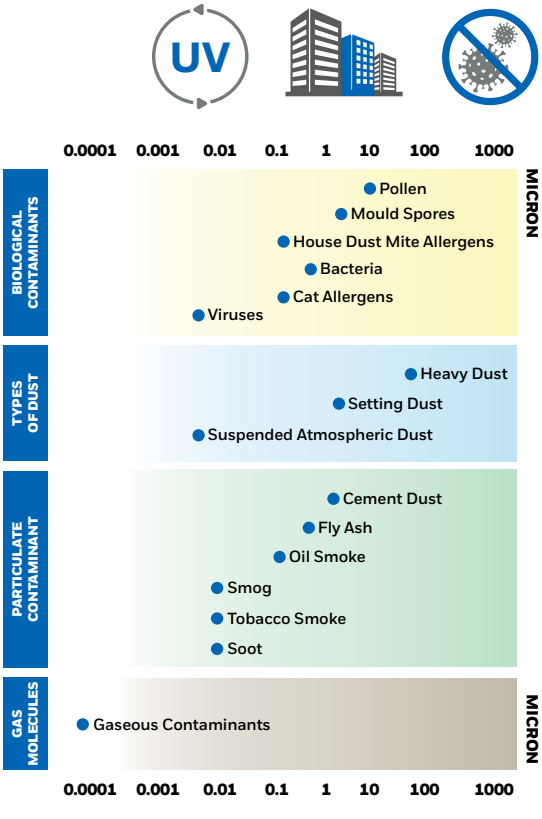


Particles less than or equal to 10 microns in diameter are so small that they can get into the lungs, potentially causing serious health problems.

The particles with the greatest capacity for reaching the deepest areas of our respiratory system are very small, approximately 0.01–1 micron in size.

https://www.epa.gov/pm-pollution/particulate-matter-pm-basics#:~:text=Some%20particles%20less%20than%2010,the%20greatest%20risk%20to%20health.

> Particle pollution - especially fine particles - contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems.
>
> United States Environmental Protection Agency



Health impact of particle pollution

People with heart or lung diseases, older adults and children are most likely to be affected by particle pollution exposure. However, even healthy people may feel temporary symptoms if they are exposed to high levels of particle pollution. Numerous scientific studies connect particle pollution exposure to a variety of health issues, including:

- Irritation of the eyes, nose and throat
- Coughing, chest tightness and shortness of breath
- Reduced lung function
- Irregular heartbeat
- Asthma attacks
- Heart attacks
- Premature death in people with heart or lung diseases

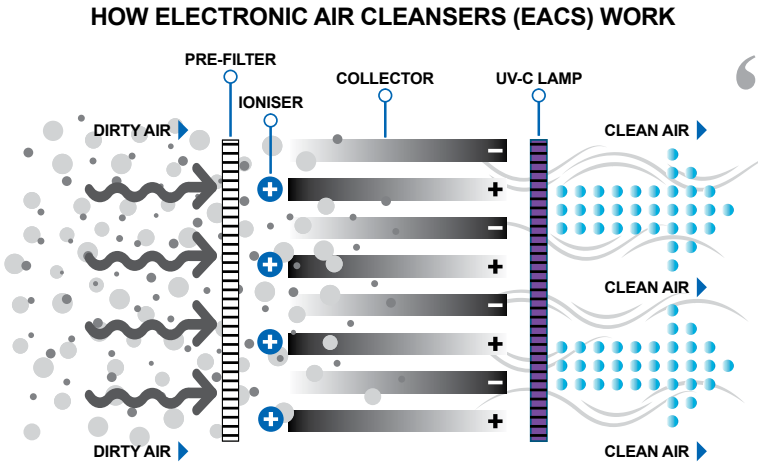
Science of Electrostatic Precipitation

An electrostatic precipitator, also called electrostatic air cleaner or electronic air cleaner (EAC) is a device that uses an electric charge to remove impurities, either solid particles or liquid droplets, from the air.

A Honeywell two-stage electronic air cleaner consists of two sections, a charging section and a collection section. A high voltage is applied to the ionizing wires to form a strong electric field between the wires.

Electrons present in contaminated air containing pollutants such as fine dust, smoke particles, pollens, mould spores and bacteria are pushed at high velocity (due to strong Coulomb Forces) from the negative charged electric field to the positive charged electric field. Along the way they collide with the contaminants, releasing more electrons.

The ionized particles are moved by the moving air into the strong electric field at the collectors and are trapped at the charged collector plates.



> The electronic air cleaner functions by applying energy only to the particulate matter being collected, without significantly impeding the flow of air.

Honeywell Electronic Air Cleaners

The key to lower your Ecological Footprint

An ecological footprint is a measure of human impact on Earth's ecosystems.

Honeywell EACs offer various benefits in commercial HVAC applications:

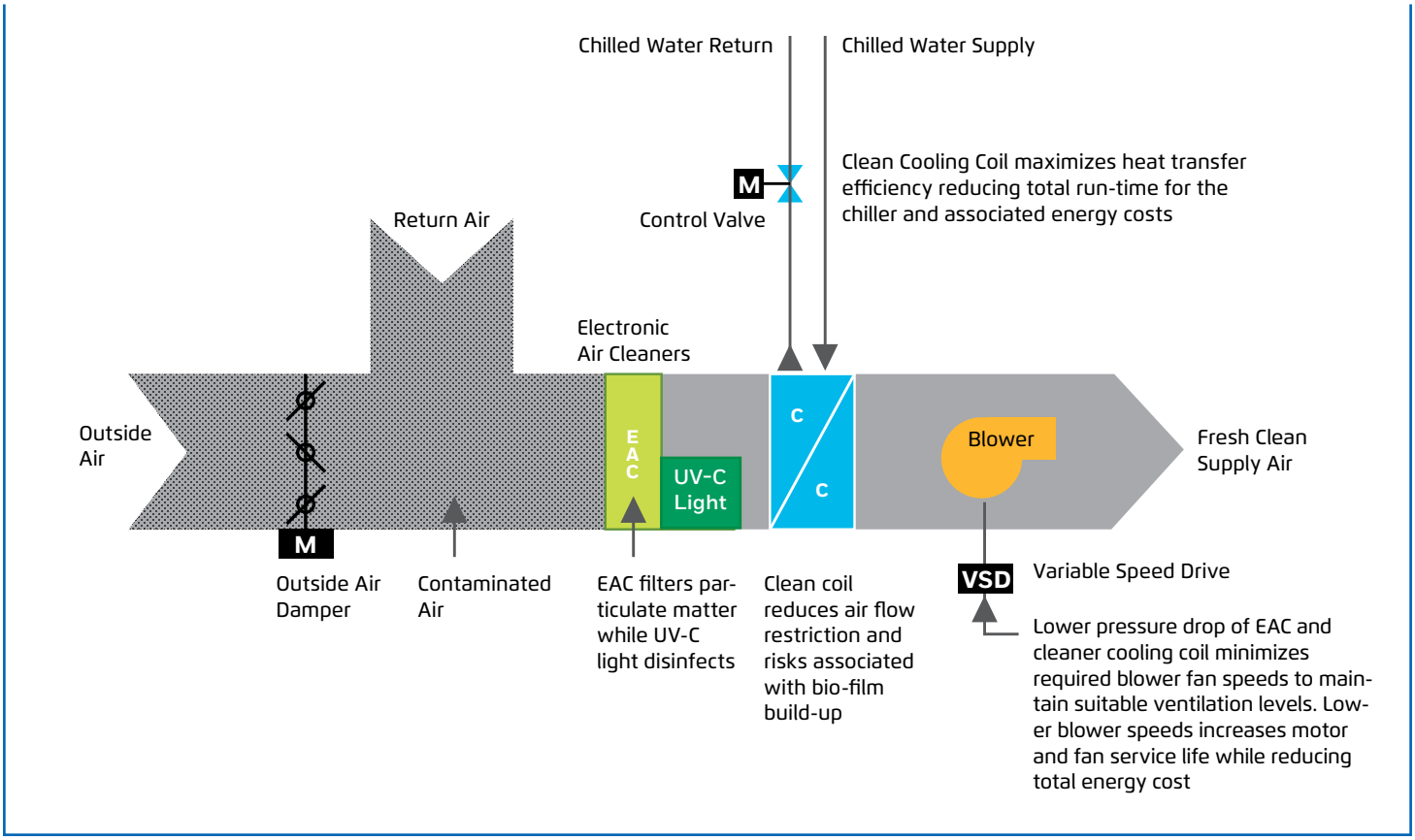
- Reduced pressure drop across the EACs compared with conventional media-type air filters.
- No decrease in airflow due to increasing restriction as particulates are captured unlike media-type filters.
- Up to 5% reduction in fan power energy consumption and cost.

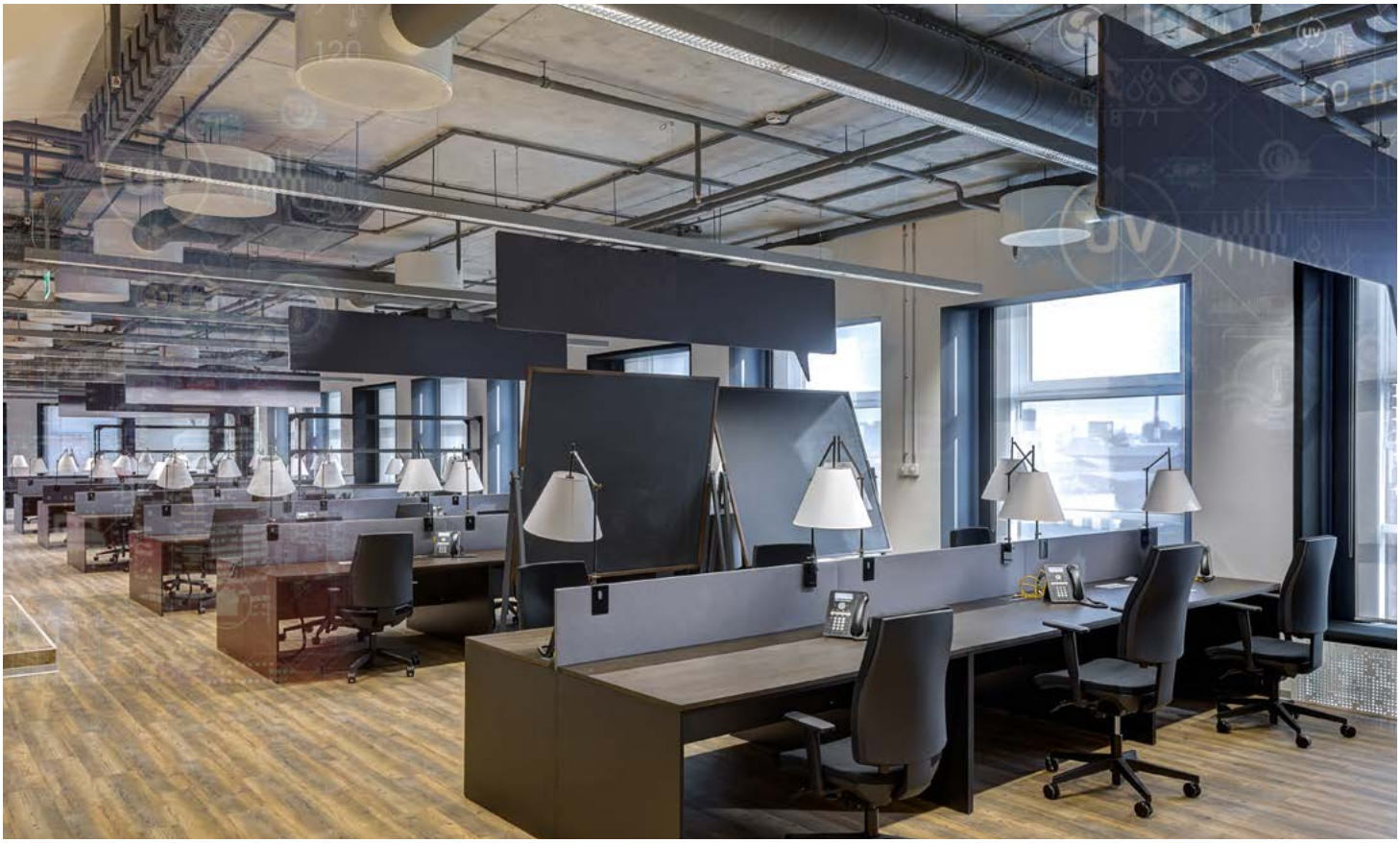
Unlike conventional media filters that are disposed of at the end of their service life, Honeywell's electronic cells and pre-filters are washable and reusable. Typical life span of Honeywell EACs is 15 years. Disposable media air filters clog up landfills or if they are incinerated in land scarce countries like Singapore, greenhouse gases are released into the environment, exacerbating global warming.

Honeywell EACs have been independently tested and verified by LMS Technologies Inc, a reputable third-party testing laboratory in the United States.

Integration of Honeywell EACs into Air-Conditioning Systems

How Electronic Air Cleaners Improve the efficiency of AHU's





EAC / EAC+UV

DUCT MOUNTED COMMERCIAL ELECTRONIC AIR CLEANER

FEATURES AND BENEFITS

CAPACITY

- Low air flow restriction with fine particulate capture efficiency
- Interconnectable units to form array of air cleaners based on total air flow requirements
- Connectable to Building Management Systems
- Removes most airborne particles as small as ‹2.5µm (microns)
- Precisely controlled ionization voltage to maintain both high filtration efficiency and ultra-low levels of ozone generation
- Maintains peak efficiency during a wide range of cell dirt-loading conditions
- Test button checks system operation
- Heavy duty commercial cells and pre-filters are removable for cleaning
- Optional UV-C, BMS monitor, and cleaning indicator

Sectional view of F58

Pull out view of F58

TECHNICAL INFORMATION

ORDER NUMBER	F58G1016E	F58G1016EUV	F58H1006
APPROVAL	CE	CE	CE/UL
INPUT POWER	230V	230V	Mit F58G
BMS OUTPUT/ CLEANING INDICATOR LED	✓	✓	–
UV-C-LAMP KIT	–	✓	–
MAXIMUM AIR FLOW RATING PER MODULE[1]	3400 m³/h	3400 m³/h	1000 CFM (1,700 m³/hr)
MAXIMUM AIR FLOW RATING PER MODULE TO ACHIEVE MERV 14[2]	2890 m³/h	2890 m³/h	850 CFM (1,445 m³/hr)

Illustration of a interconnected F58G and F58 housing

F58H

F58G

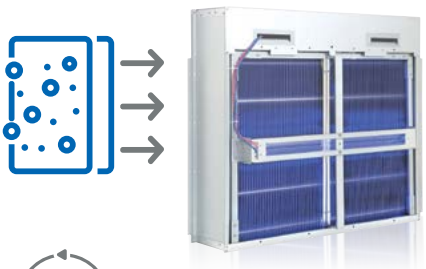
Notes: [1]If requiring UV-C disinfection do not use F58H1006, combine F58G variants with UV-C option in multiples for desired air flow rate. When F58G is equipped with BMS and wash light it will also support F58H.

[2]MERV 13 rating based on 85% of maximum rated flow using test dust sample of 100 grams.

EAC+UV

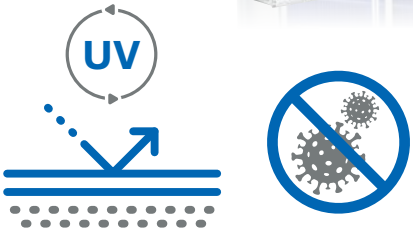
✓ EAC traps particles and UV-C neutralizes pathogens for superior indoor air quality

✓ The unit provides superior air quality for both the incoming outside air and return air to provide occupant confidence in their building experience



UV PERFORMANCE

55W UV lamp, intensity 2000 uw/cm²
(based on 300 mm distance) - 3000 uw/cm²
(calculation estimated based on 76 mm distance)



99.9%* (bacterial removal efficiency, 30 m³ cabinet, 1hour) 95% (one time pass efficiency)

*According to China CHEARI testing result

HUVF58C1000 / HUVF58C2000

Indoor Air Quality

You are likely to spend 90% of your time indoors and studies have shown that indoor air is often more polluted than outdoor air. All that air is likely to be impacting your physical and mental health. For one of the most simple and effective ways to improve indoor air quality, Honeywell has an Ultraviolet treatment system to zap live airborne particles. Mould thrives in moist, cool conditions, such as an AHU's cooling coil. Bacteria can thrive in a variety of conditions and like mould, can be easily spread throughout your indoor environment by the heating and cooling system.

Honeywell UV systems applies UV technology to zap and kill airborne contaminants. This UV system can also work with the Honeywell Electronic Air Cleaner to provide cleaner air for better work environment.

EFFECTIVE AND AFFORDABLE

This can be used in various applications like...

COMMERCIAL BUILDINGS

HOSPITALS

NURSING HOMES

RESTAURANTS

FEATURES AND BENEFITS

HUVF58C1000/HUVF58C2000

UV Sterilization System for Cleaner Air

- System is designed to install on upstream of cooling coil
- Available in 2 different sizes which fits F58H (1700 m3/h) and F58G (3400 m3/h)
- Effective life of lamp is 12000 hours
- Factory assembled out of box, plug and play type
- GI framework and support
- Designed to withstand air velocity of 2.54m/s
- Cumulative average designed UV intensity is 4647 uW/cm^2
- Custom designed to fit with Honeywell Electronic air cleaner F58G/H

PRODUCT CODE	HUVF58C1000	HUVF58C2000
Lamp length (mm)	500	500 (2 Lampen)
Wavelength (nm)	253,7	253,7
Wattage (W)	23	46
Effective life (Hrs)	12000	12000
Power Factor	0,9	0,9
Current (mA)	425	425
Product length (mm)	350	665
Product height (mm)	612	612
Net weight (kg)	4,5	6,5
Gross weight (kg)	7,0	9,0

Contact us for more information
www.saia-pcd.com

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SAIA BURGESS CONTROLS