

Air purification through Bipolar Ionization



A range from 100 m³/h up to 25,500 m³/h

Bipolar ionization can provide low-ozone air purification for new air handling systems or for retrofit into existing systems.



Johnson Controls deploys bipolar ionization technology to supplement a holistic clean air plan built on proper ventilation, filtration, disinfection, and isolation solutions.

Under specific installations conditions tests have shown that bipolar ionization can supplement clean air delivery into a space and contribute to an overall reduction in the risk of the spread of viral infections.

As with all emerging technologies*, Johnson Controls recommends that customers interested in bipolar ionization work together closely to appropriately plan and configure a system to meet the unique needs of each space and application. Johnson Controls believes that ventilation and filtration codes and best practice standards should be implemented regardless of whether bipolar ionization is selected for supplemental air treatment.

How does bipolar ionization work?

An ion is an atom or molecule with a net electric charge due to the loss or gain of one or more electrons.

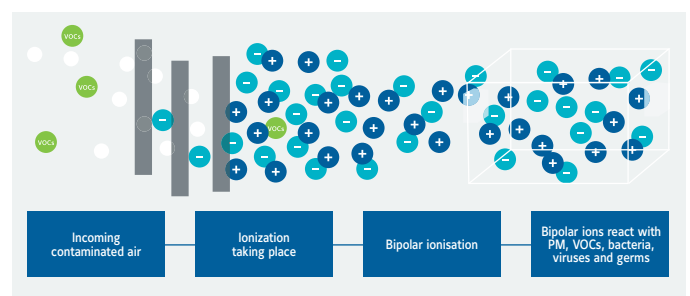
When outdoor air comes in through the unit, the air molecules are carried over the bipolar ionization tubes.**

An energy field converts these molecules into positively and negatively charged ions. These ions then travel into occupied spaces and seek out oppositely charged bad air particles – including dust, mold, odors, volatile organic compounds (VOCs), and more.

When the particles combine, it forces them to break down and drop out of the breathing space. This process reduces contaminant levels to improve health and wellness.

* https://www.ashrae.org/file-library/technical-resources/covid-19/ashrae-filtration_disinfection-c19-guidance.pdf

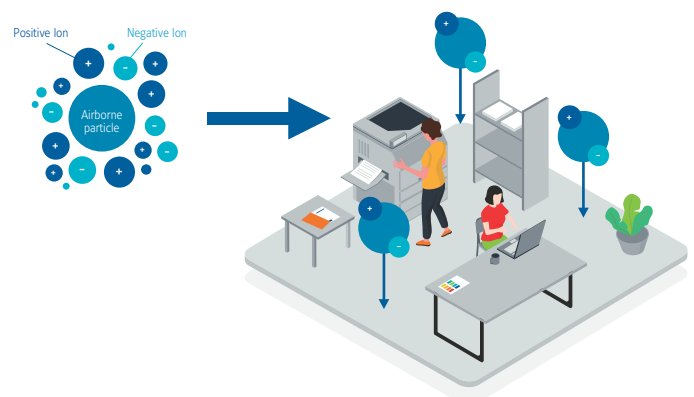
** All ionizer tubes can run for approximately 17,600 hours before they need to be replaced.



Process

Mechanism for reducing airborne particles

- Ions surround the airborne particle.
- Particles become heavier.
- They drop out of the breathing space.



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Technical features

BPI models		FC-400	M-880 C	M-880 F	M-882 C	M-882 F	500 EC	500 FC	508 FC	
Airflow range	m ³ /h	100 - 2380	500 - 1700	1700 - 4250	1000 - 3400	3400 - 8500	5000 - 13600	8400 - 17000	17000 - 25500	
Installation type		Terminal Unit	Duct	Duct	Duct	Duct	AHU / Duct	AHU / Duct	AHU / Duct	
Quantity tubes		1	1	1	2	2	5	5	8	
Absorbed power	W	7.68	6	6	6	6	50	50	50	
Dimensions	Height	mm	218.5	305	661	305	661	553	705	705
	Length	mm	89	216	216	216	216	229	229	229
	Depth	mm	40.6	223	223	223	223	210	210	210
Plenum	Height	mm	90	-	-	-	-	350	350	350
	Length	mm	220	-	-	-	-	600	760	760
	Depth	mm	41	-	-	-	-	350	350	350
Duct hole	mm	-	152 x 140	152 x 140	152 x 140	152 x 140	500 x 230	660 x 230	660 x 230	

Contact with JCI to help size solution appropriately based on individual site conditions.

Available models



FC-400 model has one tube and is the solution for installing inside a fan coil with flow rates from 100 m³/h to 2,380 m³/h.



These have one (**M880**) and two tubes (**M882**) for situating inside an air duct for units with 500 m³/h to 8,500 m³/h airflow rates. Installation can be rendered simple by drilling a hole in the duct for the tubes.



500 EC/FC model is a solution for larger airflows. It features five tubes and fitted directly into the duct of air handling units or rooftop units with airflows from 5,000 m³/h to 17,000 m³/h.



508FC model features eight tubes and accommodates high airflow rates – 17,000 m³/h to 25,500 m³/h. It can be installed in the same way as the 500 EC/FC.