

MCI™ compared to PCO Only

On March 13, 2017, an ion output test was performed by GreenTech Environmental, to compare ionization produced by straight PCO by itself when compared with PCO enhanced by the addition of the patented DBI (dielectric barrier ionizer) component. The PCO cell used, identified here as SynAIRgPure16K (probe) and MCI12K (stand alone), was a quad-metallic coated honeycomb non-ozone producing 9" UV lamp.

SynAIRgPure™ Probe results (airflow at 550lfm)/48cfm):

UNIT	Negative Ions	Positive Ions	TOTAL Ions	DIFFERENCE
16K (PCO Only)	25,000	1,000	26,000	Baseline
24K (PCO, 1 DBI)	170,000	170,000	340,000	13x
40K (PCO, 2 DBI)	190,000	155,000	345,000	13x

MCI12K Stand Alone results (needlepoint disconnected):

UNIT	Negative Ions	Positive Ions	TOTAL Ions	DIFFERENCE
PCO Only	0	2,000	2,000	Baseline
PCO, 1 DBI	100,000	130,000	230,000	115x
DBI Only	100,000	145,000	245,000	122x

RESULTS: The ionization production is significantly enhanced with the introduction of the DBI (dielectric barrier ionizer) cell. The MCI™ (multi-cluster ionization) trademark is the combining of multiple components to produce a synergistic technology that is more efficacious than any individual component.



NOTE: Ions are reported in positive and negative ions per cubic centimeter (cm³). The internationally patented DBI cell creates a bi-polar technology but what is different about the MCI™ trademark is the production of the clustered ion which is more powerful and efficacious, longer-lasting ionization process.

GREENTECH ENVIRONMENTAL

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Hi Doug,

I was able to conduct the tests for ion output for the SynAIRgPure and the MCI112K units as you requested.

First, the SynAIRgPure was tested in our "wind tunnel" test fixture. Airflow was 550 lfm and the meter was set at 3 feet from the probe during all tests. Here are the results in ions per cubic meter (cm³):

Configuration	Negative Ion	Positive Ion
16K (PCO only)	25,000	1,000
24K (PCO, 1 DBI)	170,000	170,000
40K (PCO, 2 DBI)	190,000	155,000

These results clearly show the DBI cells increase the level of ions dramatically. While the use of one or two DBI cells appears to have little impact on the total count for ions, you have to keep in mind that the meter is reading the level of ions counted per cubic meter, based on the amount of ions striking the meters receptor. The ion count by the meter does not reflect the total volume of ions being created. So while the count may appear to be the same or relatively close, the total volume of ions being produced should be close to double when 2 DBI cells are being powered.

Second, I tested an MCI12K which included a DBI cell. The test was conducted with the units fan on high and the meter was 3 feet from the grill of the unit. Here are the results:

Configuration	Negative Ion	Positive Ion
PCO (no DBI)	0	0
PCO (with DBI)	100,000	0
NO PCO, NO DBI	100,000	0

As you can clearly see from these results the ion count was totally obtained from the negative ion brushes. So I did further testing with the MCI12K after disconnecting the ion brushes to better isolate the PCO and DBI cells. Here are those results:

Configuration	Negative Ion	Positive Ion
PCO & DBI	100,000	130,000
PCO Only	0	2,000
DBI Only	100,000	145,000

Let me know if you have any questions.

Warm regards,
Gary Endres, Product Manager
GreenTech Environmental