



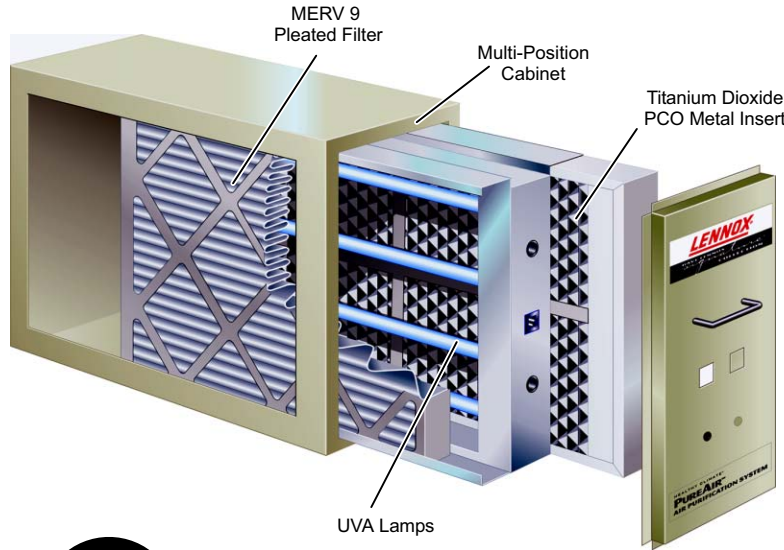
ENGINEERING DATA

INDOOR AIR QUALITY

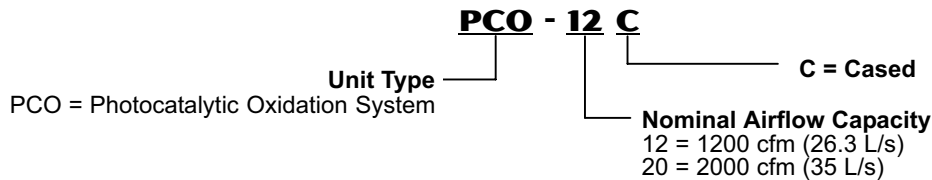
PCO

DAVE LENNOX SIGNATURE™ COLLECTION PureAir™ Air Purification System

Bulletin No. 210354 September 2004 Supersedes February 2002



MODEL NUMBER IDENTIFICATION



FEATURES

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APPROVALS

ETL Listed

WARRANTY

All covered components have a limited warranty for five years in residential applications, one year in non-residential applications. Lamps, pleated filters and PCO metal inserts are routine maintenance items and are not covered under the warranty. Refer to the Lennox Limited Warranty certificate included with the unit for additional details.

OPERATION

The UVA lights activate the catalyst on the PCO metal insert that captures and destroys chemicals as they flow through the system, turning them into carbon dioxide and water vapor. The system uses light, which reacts with a titanium dioxide-based chemical catalyst as air passes through it. The result is oxidation. Contaminants are destroyed rather than transferred. No toxic chemicals are used. Pollutants are adsorbed (accumulated gases, liquids, or solids on the surface of a solid or liquid) on the surface of the catalyst and oxidized to carbon dioxide (CO2) and water (H2O). Small amounts of moisture are catalytically split into hydroxyl radicals (OH-) that oxidize chemicals on the surface of the catalyst. Rather than just absorbing gaseous pollutants (as in carbon systems), PCO provides a reduction of absolute toxicity as the gaseous products from the complete photocatalytic oxidation of volatile organic compounds are carbon dioxide and water.

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NOTE - Due to Lennox' ongoing commitment to quality, Specifications, Ratings and Dimensions subject to change without notice and without incurring liability. Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury. Installation and service must be performed by a qualified installer and servicing agency.

## FEATURES

### APPLICATIONS

Combines multiple air purification technologies into a single, state-of-the-art, air purifier.

The PureAir system operates with a MERV 9 filter, UVA lights, and a PCO metal insert that contains a catalyst for elimination of odors and chemicals.

Particles and bioaerosols are captured on the filter. The UVA lights activate the catalyst on the PCO metal insert that captures and destroys chemicals as they flow through the system turning them into carbon dioxide and water vapor.

Self-cleaning process does not reintroduce toxic, post-process residue into the air.

The toxicity of the treated air stream is reduced, allowing the photocatalytic reactor to operate as a self-cleaning filter relative to organic material on the catalyst surface.

Will remove a portion of volatile organic compounds (VOC's), bioaerosols (dander, pollen, molds, spores, etc.), bacteria, and fungi.

The use of ultra-violet (UVA) radiation combined with a titanium dioxide catalytic surface has shown overall reduction of VOC's in the air.

Low maintenance cost.

No toxic chemicals.

No ozone is produced.

The PureAir system works by:

Filtration - media filter stops particles from passing through the filter.

Photocatalytic Oxidation - small amounts of moisture are catalytically split into hydroxyl radicals (OH-) that oxidize chemicals on the surface of the catalyst.

Must be installed in the return air duct, allow 30 in. (762 mm) service access in front of the unit. 120V power receptacle must be available.

Unit must stay on continuously (lamps are always on) for destruction of contaminants adsorbed on the catalyst surface and for extended lamp life. It is recommended that the air handler be set to run continuously.

Multi-position unit can be installation in the return air side of all types of central units and easily adapts to up-flow, down-flow or horizontal unit applications. The unit can be installed in the vertical or horizontal position.

### COMPONENTS

#### PCO Metal Insert

Titanium dioxide coated PCO metal insert.

Insert is vacuum packaged.

PCO metal insert should be replaced every two years.

#### MERV 9 Pleated Filter

Disposable pleated MERV 9 filter (Minimum Efficiency Reporting Value based on ASHRAE 52.2).

Filter is packaged in vapor barrier material.

MERV (Minimum Efficiency Reporting Value) is a rating by ASHRAE that measures the removal of airborne contaminants.

The MERV rating of a filter describes the size of the holes in the filter that allow air to pass through. The higher the MERV rating, the smaller the holes in the filter providing enhanced filtration.

The dirtier the filter, the better the filtration, however, the filters need to be replaced annually to prevent excess pressure drop and for maximum efficiency.

Particles and bioaerosols are captured on the filter.

#### Lamps

17 watt florescent, low power consumption, UVA output.

4 bulbs in PCO-12C, 6 bulbs in PCO-20C.

Recommended replacement every two years.

#### CABINET

Pre-painted steel cabinet.

Front of unit is removable for service access.

Three-prong, detachable 6-foot (1.8 m) power cord for plug-in 120V electrical connection.

#### SAFETY FEATURES

Power cord must be completely removed from the front of the unit before the cover can be removed.

## MAINTENANCE SUPPLIES - MUST BE ORDERED EXTRA

#### Replacement MERV 9 Pleated Air Filter

Recommended annual replacement of the filter.

#### Replacement PCO Metal Insert

Recommended replacement of the insert every two years.

#### Replacement Lamp

Recommended replacement of the lamps every two years.

## SPECIFICATIONS

Model No.	PCO-12C	PCO-20C
<b>Acetone destruction rate</b> (rated destruction tested between 40 and 5 PPM of acetone)	1.6 mg/min.	3.0 mg/min.
<b>Number of lamps</b>	4	6
<b>Weight Gain of Filter</b> [at rated flow and end of filter life @ 0.30 in. wg (75Pa)]	68.2 g	28.8 g
<b>Shipping Weight - lbs. (kg)</b>	67 (30)	76 (34)
<b>Electrical Data</b>	120V - 1 phase - 60 hz	
<b>Power Consumption</b>	96 watts	144 watts

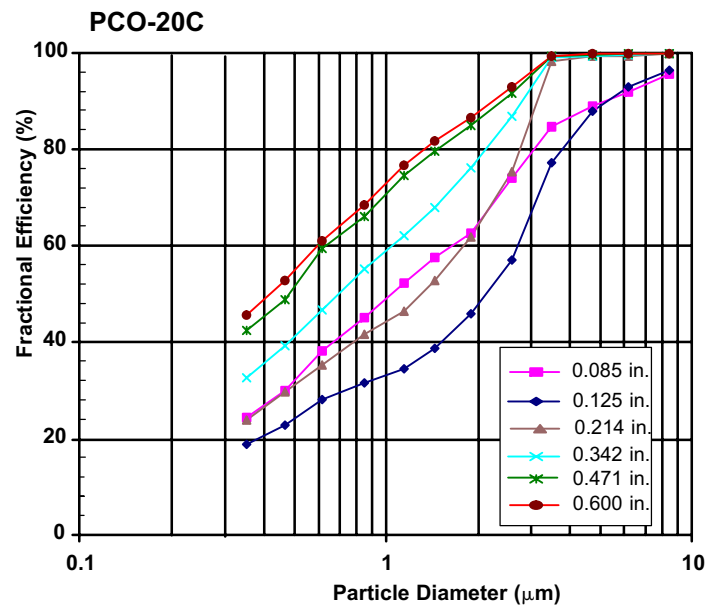
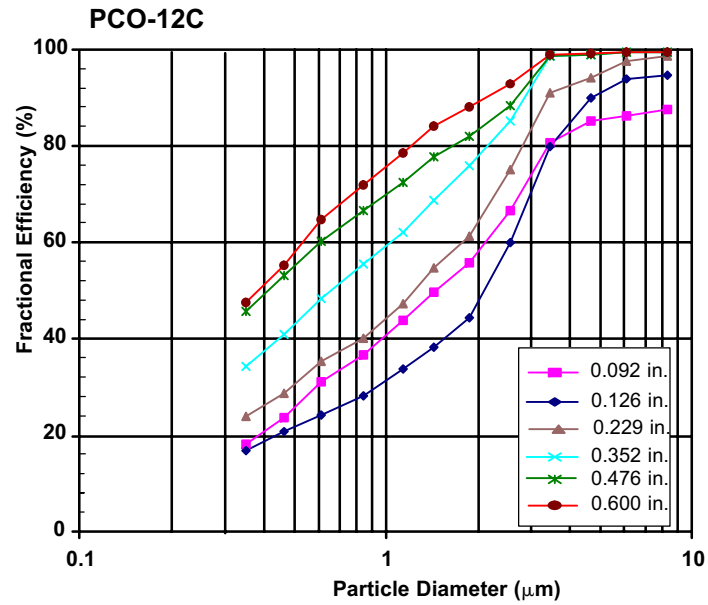
## MAINTENANCE SUPPLIES - MUST BE ORDERED EXTRA

<b>MERV 9 Pleated Filter</b>	Catalog Number	<b>75X74</b>	<b>75X67</b>
	Size - H x D x W - in. (mm)	16-5/8 x 26 x 4 (422 x 660 x 102)	21 x 26 x 4 (533 x 660 x 102)
<b>UVA Lamps</b>	Catalog Number	<b>10M35</b>	<b>10M35</b>
	Number of lamps required	4	6
<b>PCO Metal Insert</b>	Catalog Number	<b>75X73</b>	<b>75X66</b>
	Size - H x D x W - in. (mm)	16-5/8 x 26 x 2 (422 x 660 x 51)	21 x 26 x 2 (533 x 660 x 51)

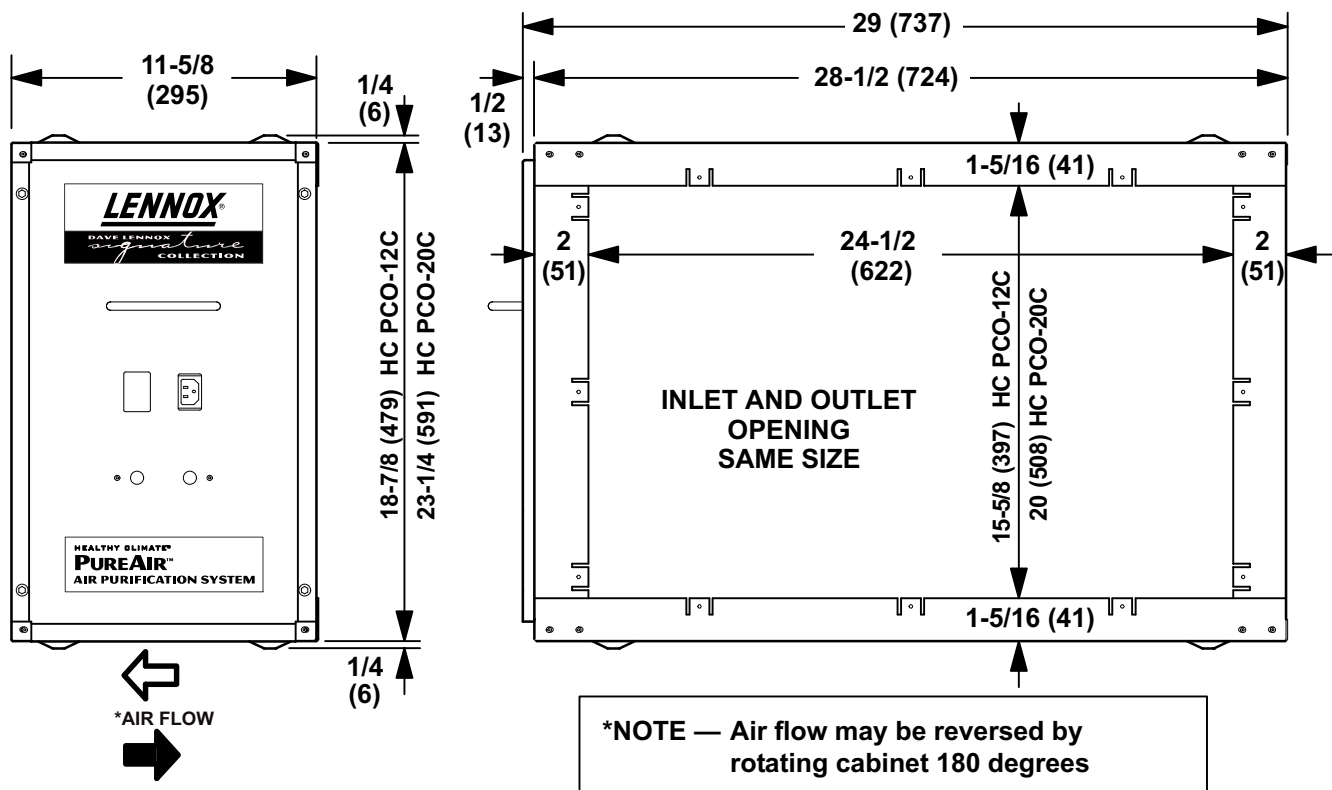
## AIR RESISTANCE

Air Volume		PCO-12C		PCO-20C	
cfm	L/s	in. w.g.	Pa	in. w.g.	Pa
800	375	0.08	20	0.07	15
1000	470	0.12	30	0.09	20
1200	565	0.16	40	0.12	30
1400	660	0.21	50	0.15	45
1600	755	Not Recommended		0.18	45
1800	850	Not Recommended		0.21	50
2000	945	Not Recommended		0.24	60

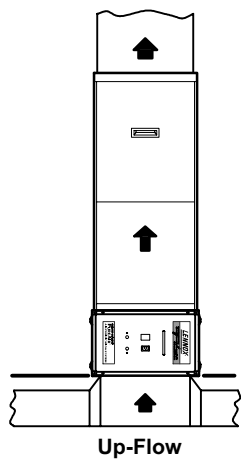
## FILTER EFFICIENCY



## DIMENSIONS - INCHES (MM)



## APPLICATIONS



NOTE — At sharp turns, turning vanes are recommended, installed before the PCO unit.

