



# PCO3

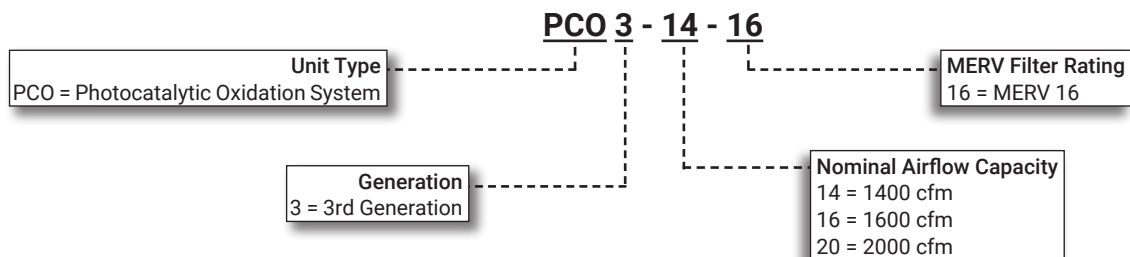
## Healthy Climate® PureAir™ Air Purification System - 60 Hz

### RESIDENTIAL PRODUCT SPECIFICATIONS

Bulletin No. 210730  
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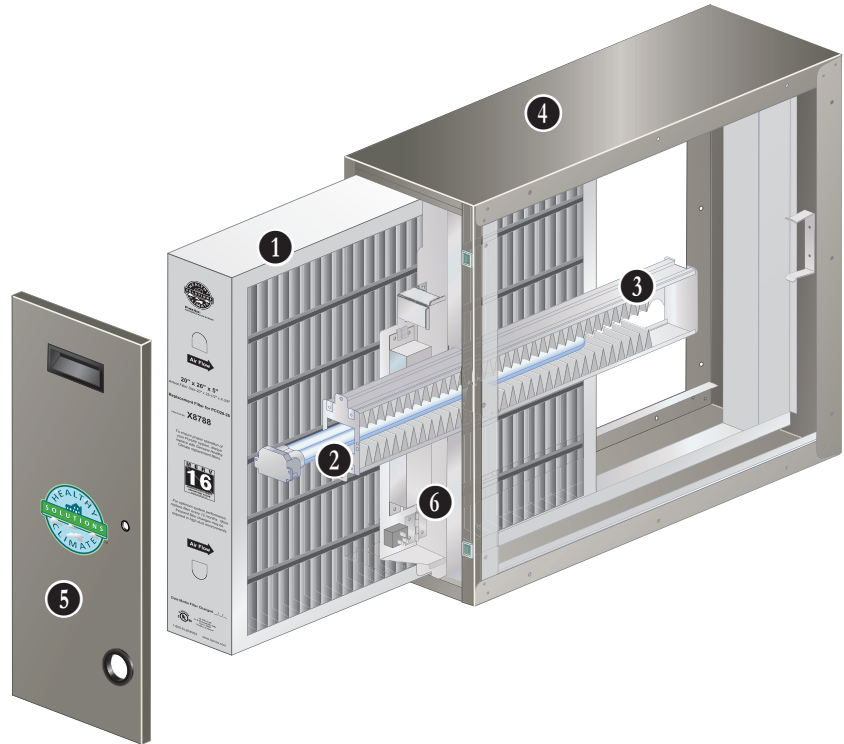


### MODEL NUMBER IDENTIFICATION



## FEATURES HIGHLIGHTS

1. MERV 16 Carbon Clean 16® Media Air Filter
2. UVA Lamp
3. PureAir™ Cartridge
4. Heavy Gauge Steel Cabinet
5. Front Panel Access
6. Control Box Assembly



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## APPROVALS AND WARRANTY

### APPROVALS

- ETL safety listing report 3061144A
- Conforms to UL STD 1598
- Certified to CSA STD C22.2 no. 250.0

### WARRANTY

- All covered components:
  - Limited five years warranty in residential applications
  - Limited one-year in non-residential applications

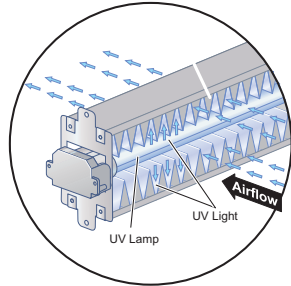
**NOTE** - The UVA Lamp / PureAir Cartridge, and pleated MERV 16 Carbon Clean 16® media filters are routine maintenance items and are not covered under the warranty.

**NOTE** - Refer to Lennox Equipment Limited Warranty certificate included with unit for specific details.

## FEATURES

### OPERATION

- Return air first passes through the MERV 16 Carbon Clean 16® media filter
- The filter removes more than 95% of the particles and bioaerosols (dander, pollen, bacteria, molds, spores, etc.) as they flow through the PCO3
- The filtered air then passes through the UVA Lamp / PureAir Cartridge
- The UVA lamp activates the catalyst on the cartridge that captures and destroys odors and chemical vapors as they flow through the system
- The adsorbed pollutants (accumulated gases, liquids, or solids) on the surface of the catalyst are oxidized to carbon dioxide and water
- Rather than just absorbing gaseous pollutants (as in carbon systems), the PCO3 provides a reduction of absolute toxicity
- Contaminants are destroyed rather than transferred
- The PureAir Cartridge is self-cleaning with respect to the organic material adsorbed on the catalyst surface
- No toxic chemicals are used in the PCO3



### APPLICATIONS

- The PureAir™ Air Purification System combines multiple air purification technologies into a single, state-of-the-art, air purifier
- The system's primary function is to improve the indoor air quality by:
  - **Filtration** - The MERV 16 Carbon Clean 16® media filter captures more than 95% of particles 0.3 microns and larger and more than 90% of particles 0.01 microns and larger
  - **Photocatalytic Oxidation** - The UVA lamp activates the photocatalyst on the PureAir Cartridge that captures and destroys odors and chemical vapors as they flow through the PCO3
- The system reduces the toxicity of the treated air stream
- The PCO3 is a multi-position unit that can be installed in the return air side of all types of HVAC whole-house systems
- The unit easily adapts to upflow, downflow or horizontal unit applications
- No ozone is produced by the PCO3; in fact, ozone is reduced by the PCO3
- Only requires annual maintenance

### INSTALLATION CONSIDERATIONS

- The PCO3 must be installed in the return air duct upstream of the supply air blower
- Allow a 30 in. service clearance in front of the access door
- The control box, pleated filter and the PureAir UVA Lamp Cartridge must be removable

- The PCO3 should be installed in a horizontal position with the access panel facing to the front or rear
- The PCO3 must be connected to either a 120V or 230V power receptacle
- If 230V power supply is used, an optional 230V power cord must be ordered separately
- See Optional Accessories table
- Unit must be powered continuously (the lamp is 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, except during periods of high humidity (more than 50%)
- If used in conjunction with an optional UV germicidal light, the following guidelines must be followed:
  - When a germicidal light is used with the PCO3 in direct line of sight, maintain a minimum distance of 6 ft. from the PCO3
  - If duct system has a 90° bend or turn in the duct between the PCO3 and germicidal light, a minimum distance of 3 ft. from the PCO3 should be maintained

**NOTE** - Refer to the Installation Instructions for additional information.

### COMPONENTS

- 1 **MERV 16 Carbon Clean 16® Media Air Filter (1)**
  - Disposable pleated MERV 16 filter (Minimum Efficiency Reporting Value based on ASHRAE 52.2)
  - 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
  - More frequent filter changes may be required in situations with high dust or dirt loads
  - Particles and bioaerosols are captured on the filter
  - Recommended annual replacement

#### UVA Lamp / PureAir Cartridge

- 2 **UVA Lamp (1)**
  - 55 watt florescent, low power consumption, UVA output
  - Recommended annual replacement
  - Lamp is packaged separately for field installation
  - Thumbscrews on lampholder allow quick and easy access for servicing
- 3 **PureAir™ Cartridge**
  - Titanium dioxide coated
  - Cartridge is packaged separately
  - Recommended annual replacement

## FEATURES

### 4 Control Box Assembly

- Contains electrical power receptacle, electronic ballast with internal surge protector for UVA lamp
- Control box is hinged to allow easy access to the ballast and UVA Lamp / PureAir Cartridge for servicing

### CABINET

### 5 Pre-painted steel cabinet

- Multi-position
- PCO3-14-16 cabinet is sized for most Lennox air handler applications
- PCO3-16-16 and PCO3-20-16 cabinets are sized for most Lennox gas furnace applications
- See dimension drawing

### 6 Front panel is removable for service access

- Air flow direction may be reversed by rotating the unit top for bottom
- View port on front panel for verifying UVA lamp operation
- Three-prong, detachable 6-foot power cord for plug-in to 120V electrical connection
- Optional power cord for 230V operation is available and must be ordered separately

## SAFETY FEATURES

- Power cord must be completely removed from the front of the unit before the cover can be removed for servicing

## MAINTENANCE SUPPLIES - ORDER SEPARATELY

### Annual Maintenance Kit

- A maintenance kit is available for the PCO3-14-16, PCO3-16-16 and PCO3-20-16
- Each kit consists of:
  - Carbon Clean 16® (MERV 16) Media Air Filter (1)
  - Replacement UVA Lamp (1)
  - Replacement PureAir™ Cartridge(1)

### MERV 16 Carbon Clean 16® Media Air Filter

- Recommended annual replacement of the filter

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

### Power Cord For 230 Volt Operation

- Six foot power cord with NEMA 620P male plug on one end and IEC 320 receptacle on other end
- Allows 230 volt operation without any additional modifications

## SPECIFICATIONS

	Model No.	PCO3-14-16	PCO3-16-16	PCO3-20-16
Nominal airflow capacity - cfm		1400	1600	2000
Pressure drop (new unit) - in. w.g.		0.25	0.31	0.31
Pressure drop (end of recommended life) - in. w.g.		0.42	0.42	0.42
Ethanol destruction rate - mg/min. (single pass rated flow destruction rate @ 500 µg/m <sup>3</sup> ethanol)		2.5	3.0	4.0
Operating Environment		0°F to 140°F outside of duct 10 to 60 percent relative humidity (Optimal performance at 50 percent relative humidity)		
Number of Lamps		1	1	1
Filter size - H x D x W - in.	Nominal	20 x 21 x 5	16 x 26 x 5	20 x 26 x 5
	Actual	20 x 20-5/8 x 4-3/8	16-3/8 x 25-1/2 x 4-3/8	20 x 25-1/2 x 4-3/8
Filter life		Up to 12 months	Up to 12 months	Up to 12 months
Shipping Weight - lbs.		27	25	27
Electrical Data		120V or <sup>1</sup> 230V - 1 phase - 60 hz (less than 1 amp)		
Power Consumption	120 Volt	58	58	58
	<sup>1</sup> 230 Volt	58	58	58

## MAINTENANCE SUPPLIES - ORDER SEPARATELY

		Y6616	Y6612	Y6608
<b>Annual Maintenance Kit</b> (includes 1 of each per kit)	Catalog Number (1-pack)	<b>Y6616</b>	<b>Y6612</b>	<b>Y6608</b>
	Catalog Number (4-pack)	<b>Y6618</b>	<b>Y6614</b>	<b>Y6610</b>
MERV 16 Carbon Clean 16® Pleated Filter	Size - H x D x W - in.	20 x 21 x 5	16 x 26 x 5	20 x 26 x 5
UVA Lamp	Number of lamps	1	1	1
PureAir™ Cartridge	Size - H x D x W - in.	1-7/8 x 20 x 1	1-7/8 x 20 x 1	1-7/8 x 20 x 1
MERV 16 Carbon Clean 16® Pleated Filter	Catalog Number	<b>Y6606</b>	<b>Y6605</b>	<b>Y6604</b>
PureAir Cartridge	Catalog Number	<b>Y6621</b>	<b>Y6607</b>	<b>Y6607</b>

## OPTIONAL ACCESSORIES - ORDER SEPARATELY

	91X44	91X44	91X44
Power Cord for 230V Operation	<b>91X44</b>	<b>91X44</b>	<b>91X44</b>

<sup>1</sup> Optional 230V power cord is required and must be ordered separately.

## AIR RESISTANCE

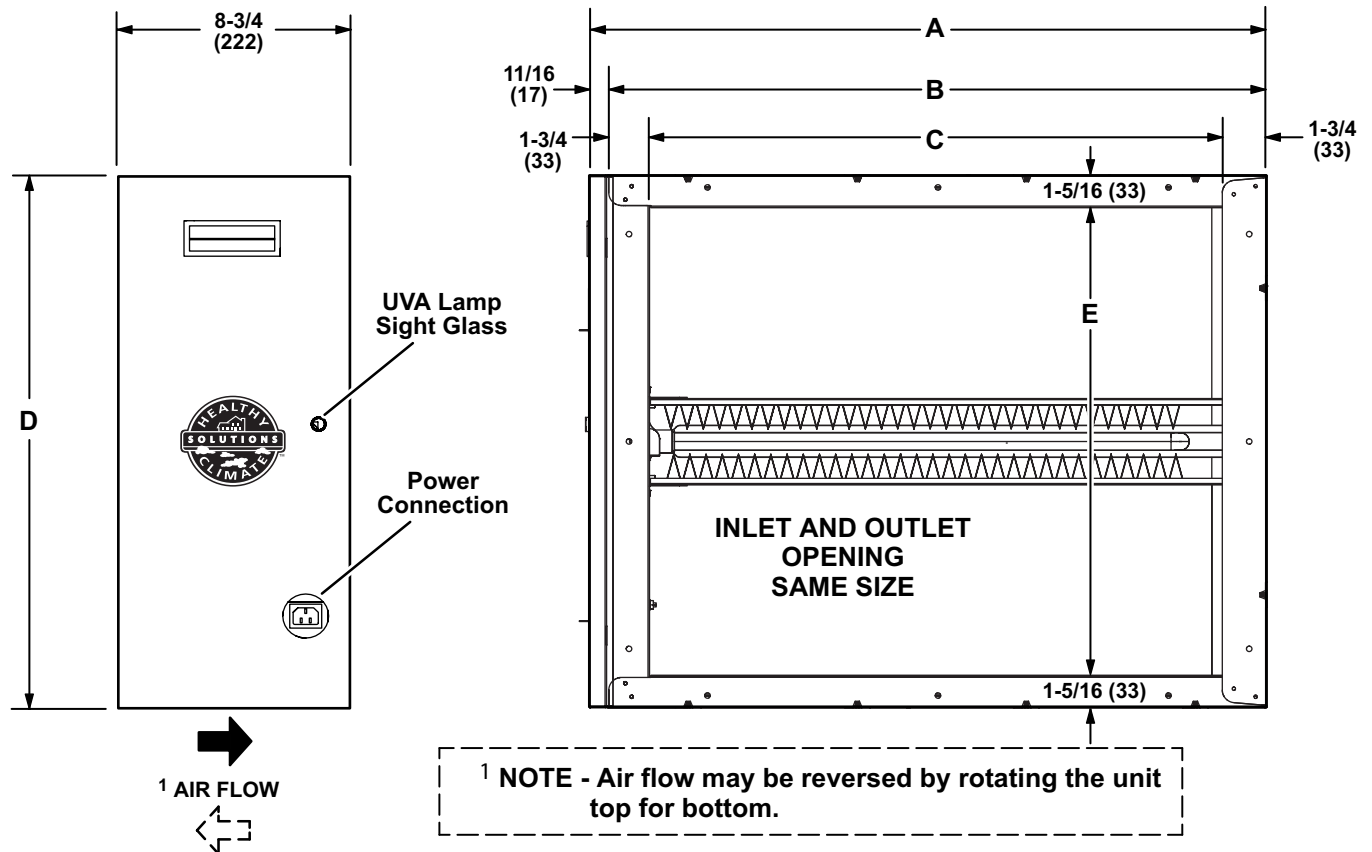
Air Volume cfm	PCO3-14-16 in. w.g.	PCO3-16-16 in. w.g.	PCO3-20-16 in. w.g.
400	0.05	0.04	0.03
600	0.07	0.07	0.06
800	0.11	0.11	0.08
1000	0.15	0.15	0.11
1200	0.20	0.20	0.15
1400	0.25	0.25	0.18
1600	---	0.31	0.22
1800	---	---	0.27
2000	---	---	0.31

## MINIMUM FILTER EFFICIENCY

MERV Rating	<sup>1</sup> Filter Efficiency (percentage)		
	E1 (0.3 to 1.0 microns)	E2 (1.0 to 3.0 microns)	E3 (3.0 to 10.0 microns)
MERV 16	95%	99%	99%

<sup>1</sup> Values are based on lab tests conducted with conditions included in ASHRAE Standard 52.2.

## DIMENSIONS



Model No.	A		B		C		D		E	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
PCO3-14-16	23-3/4	603	23	584	20-1/4	514	21-1/8	537	18-1/2	470
PCO3-16-16	26-1/2	673	25-3/4	654	23	584	17-1/2	445	14-5/8	371
PCO3-20-16	26-1/2	673	25-3/4	654	23	584	21-1/8	537	18-1/2	470

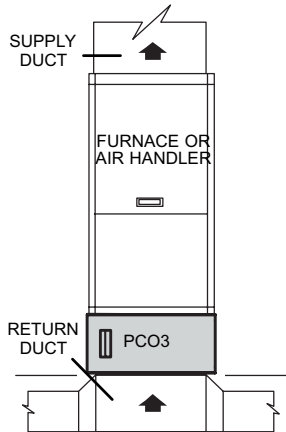
## CABINET MATCH-UPS - PCO3 WITH FURNACE / AIR HANDLER

ALSO SEE ILLUSTRATIONS ON NEXT PAGE FOR ADDITIONAL DETAILS

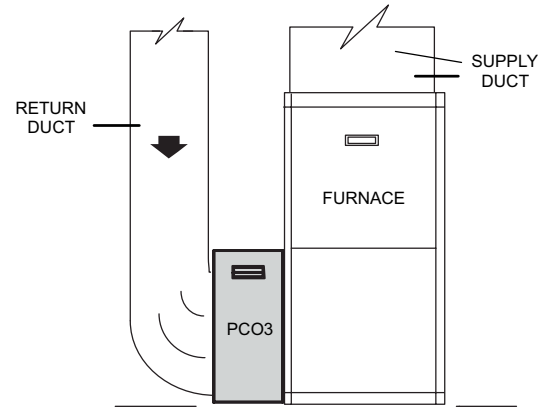
Furnaces	Filter Cabinet			Comment
	PCO3-14-16	PCO3-16-16	PCO3-20-16	
"A" Width Furnace with Side Return Air		•		No duct transition required.
"A" Width Furnace with Bottom Return Air		•		28-1/2" x 3" side seal strip or duct transition needed.
"B" Width Furnace with Side Return Air		•		No duct transition required.
"B" Width Furnace with Bottom Return Air		•		No duct transition required.
"C" Width Furnace with Side Return Air (up to 4 ton)		•	•	No duct transition required, for high system static application use PCO3-20-16.
"C" Width Furnace with Side Return Air (5 ton)			•	<b>Option 1</b> - No duct transition required, use Return Air Base (98M58). <b>Option 2</b> - Overcut top edge of side return opening by 1 in. to make opening 15 in. x 23 in. (H x W).
"C" Width Furnace with Bottom Return Air			•	No duct transition required.
"D" Width Furnace with Side Return Air			•	<b>Option 1</b> - No duct transition required, use Return Air Base (98M59). <b>Option 2</b> - Overcut top edge of side return opening by 1 in. to make opening 15 in. x 23 in. (H x W).
"D" Width Furnace with Bottom Return Air			•	26-1/2" x 3 1/2" side seal strip or duct transition needed.
Air Handlers	PCO3-14-16	PCO3-16-16	PCO3-20-16	Comment
Air Handler (W x D) - 18-1/2 x 22 in. CBA25UH(V)-018-024-030	•			22 x 2 in. side seal strip or duct transition needed.
Air Handler (W x D) - 21-1/2 x 22 in. CBA25UH(V)-036-042-048-060	•			No duct transition required.
Air Handler (W x D) - 21-1/4 x 20-5/8" CBA27UHE-018 CBA27UHE-024 CBA38MV-018/024	•			No duct transition required.
Air Handler (W x D) - 21-1/4 x 22-5/8" CBA27UHE-030 CBA27UHE-036 CBA38MV-030-036	•			No duct transition required.
Air Handler (W x D) - 21-1/4 x 24-5/8" CBA27UHE-042 CBA27UHE-048 CBA27UHE-060 CBA38MV-042-048-060			•	21" x 3" side seal strip or duct transition needed.

**CABINET MATCH-UPS - PCO3 WITH FURNACE / AIR HANDLER**

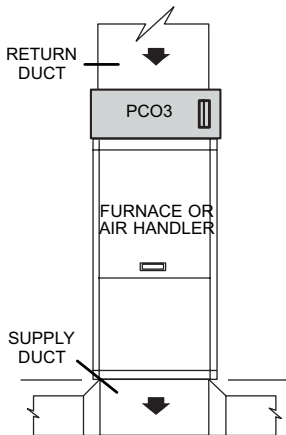
**UPFLOW FURNACE/AIR HANDLER  
(Bottom Return Air)**



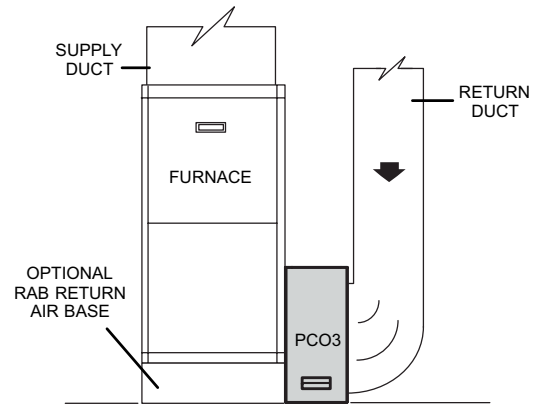
**UPFLOW FURNACE  
(Side Return Air - up to 4 ton)**



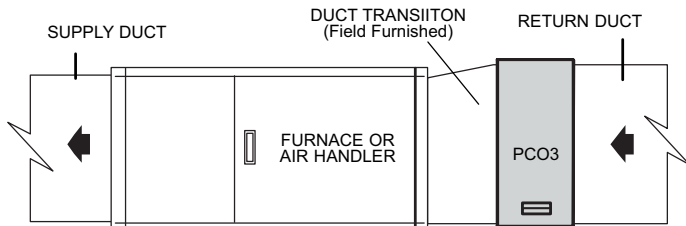
**DOWNFLOW FURNACE/AIR HANDLER**



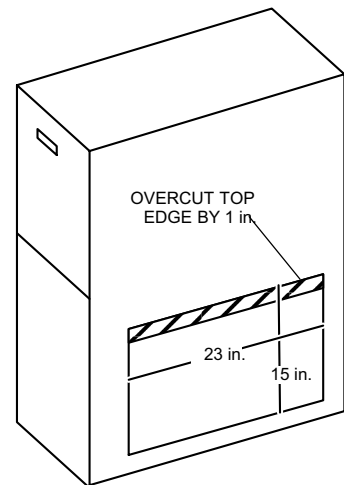
**UPFLOW FURNACE  
(Option 1 - Side Return Air - 5 ton)  
(With Optional RAB Return Air Base)**



**HORIZONTAL FURNACE/AIR HANDLER**



**UPFLOW FURNACE  
(Option 2 - Side Return Air - 5 ton)  
(Modified Return Air Opening)**



## REVISIONS

Sections	Description of Change
Specifications	Added Operating Range.



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