LENNOX®

AIR CLEANERS / FILTERS

Lennox PureAir™ *S*
Air Purification System

INSTALLATION INSTRUCTIONS FOR

MODELS PCO3S-14-16, PCO3S-16-16 AND PCO3S-20-16

THIS MANUAL MUST BE LEFT WITH THE OWNER FOR FUTURE REFERENCE

⚠ WARNING

Improper installation, adjustment, alteration, service or maintenance can cause property damage, personal injury or loss of life. Installation and service must be performed by a licensed professional HVAC installer or equivalent, service agency, or the gas supplier.

⚠ WARNING

Electric shock hazard.

Can cause injury or death.

Disconnect all electrical power supplies before servicing. Access panels must be in place during appliance operation.

Table of Contents

⚠ IMPORTANT

Do not connect low voltage wiring to the PureAir S until you confirm the S30 thermostat has thermostat / Smart Hub control software version 03.40.xxxx or higher software.

To update S30 thermostat follow the check for update procedures outlined in service and application note ACC-18-05.

Shipping and Packing List

Assembled *PureAir S* air purification system which includes:

- Cabinet (1)
- UVA Lampholder / PCO cartridge (secure to interior of cabinet) (1)
- UVA lamp in box (secure to interior of cabinet) (1)
- Healthy Climate® Carbon Clean 16® Filter (located in interior of cabinet) (1)
- UVA lamp socket with 4-pin male connector assembly attached to light ballast electrical connector (1)
- Lennox Communication Control interface.
- Literature bag includes power cord (120VAC)[1], installation instruction, UVA Lamp Socket brass finger nuts (2), UVA Lampholder / PCO cartridge wing nuts (2) and warranty.

[1]230VAC power cord available separately (part number 91X44).

Check equipment for shipping damage. If damage is found, immediately contact last carrier.

Models

Table 1. Unit Catalog Numbers

Model	Catalog Number
PCO3S-14-16	Y8905
PCO3S-16-16	Y8904
PCO3S-20-16	Y8903

Application

The **PureAir S** air purification system uses photocatalytic oxidation (PCO) technology to reduce levels of airborne volatile organic compounds, cooking odors, common household odors, airborne dust particles, mold spores and pollen. Each unit may be connected to either 120VAC or 230VAC power supply.

Lab tests confirm a 50% reduction in total volatile organic compounds (TVOC) within the first 24 hours of initial operation of the **PureAir S** air purification system. It may take up to 48 hours after initial system start-up to reduce the airborne chemicals that have built up in a home over a long period of time.

For peak performance, unit should be installed in homes with TVOC levels that are less than 1000 micro-gram / cubic meter. Home source removal and ventilation may be required to lower total volatile organic compounds to this level.

The Healthy Climate® Carbon Clean 16® Filter combines industry-leading MERV 16 filtration and carbon-coated fiber matrix.

For full feature benefits, the PureAir S must be used with an S30 Ultra Smart Thermostat and communicating indoor unit.

The iComfort S30 Ultra Smart Thermostat will require firmware version 3.4 or higher to take advantage of all of the PureAir S features.

New features included are:

- 4-wire connection to Lennox communicating indoor unit control
- Using sensors to:
  - > Automatically detect dirty air filter
  - > Display air filter life percentage
  - > Monitor UVA lamp operational state (On or Off).
  - > Display UVA lamp life percentage

⚠ IMPORTANT
Oil on metal ducts may cause odors.

Use a mild soap and water solution to remove oils from transitions and duct surfaces prior to installation.

⚠ IMPORTANT
Do not use any form of silicone sealant.

Use of silicone-based products will reduce the effectiveness of, or damage the titanium dioxide coatings on the PCO cartridge.

⚠ IMPORTANT
Route power cord away from traffic areas where the cord may become a safety hazard.

⚠ IMPORTANT
UVA lamp life is shortened when lamp is turned off and on. Power to unit must remain on at all times.

Do not interlock lamp operation with air handler blower operation.

⚠ CAUTION
Ultraviolet (UVA) radiation risk.

Prolonged exposure may cause skin or eye damage.

Avoid prolonged (weeks) exposure to skin or eyes.

⚠ WARNING
Risk of carbon monoxide poisoning.

Can cause injury or death.

Do not operate system unless access panel is in place and properly secured. Operation of this equipment without the access panel in place may cause exhaust fumes to be drawn into occupied spaces.

⚠ CAUTION
Sharp edges hazard.

Sharp edges can cause injuries.

Use protective gloves when grasping equipment edges.

Parts Identification, Dimensions and Specifications

PARTS IDENTIFICATION

Figure 1.   Parts Identification

DIMENSIONS

Model No.	A		B		C		D		E	
	inches	mm	inches	mm	inches	mm	inches	mm	inches	mm
PCO3S-14-16	23-3/4	603	23	584	20-1/4	514	21-1/8	537	18-1/2	470
PCO3S-16-16	26-1/2	673	25-3/4	654	23	584	17-1/2	445	14-5/8	371
PCO3S-20-16	26-1/2	673	25-3/4	654	23	584	21-1/8	537	18-1/2	470
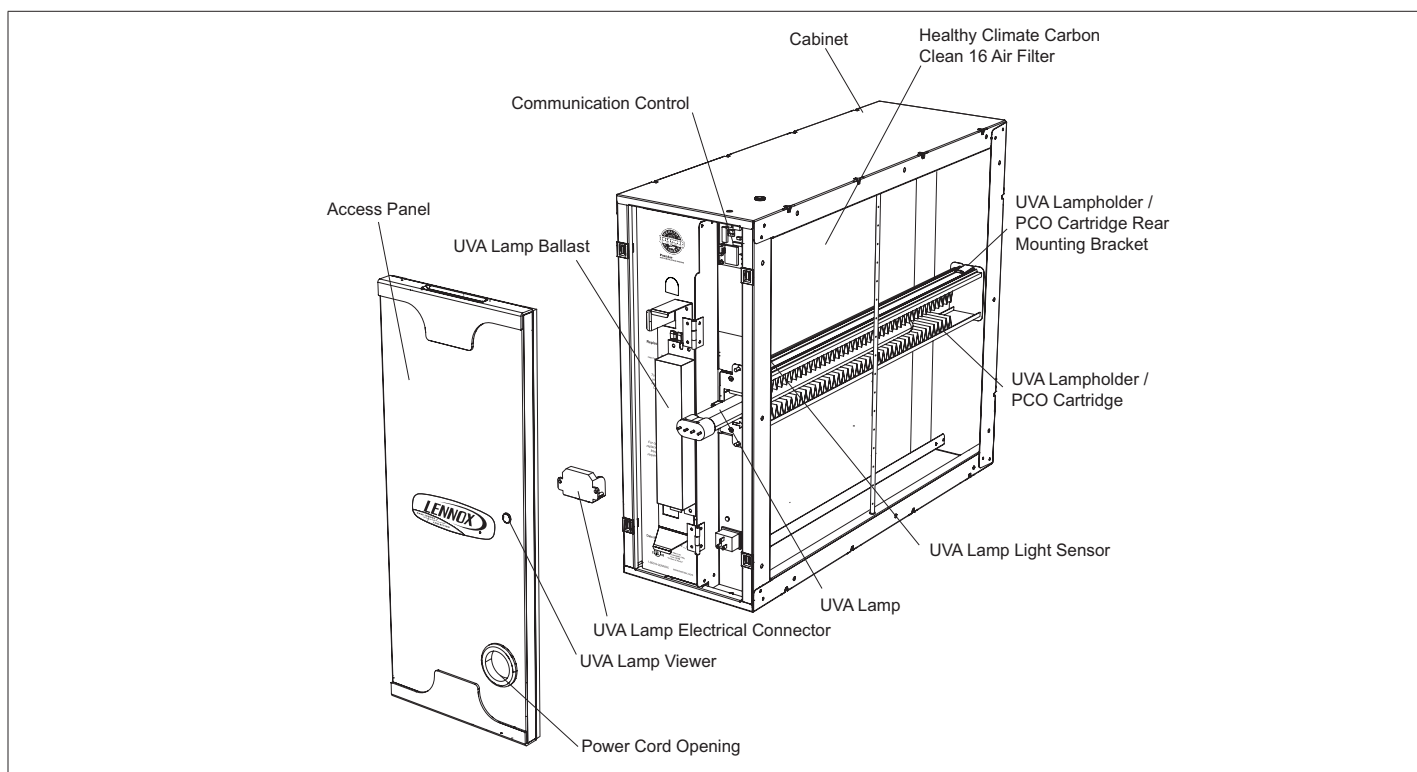
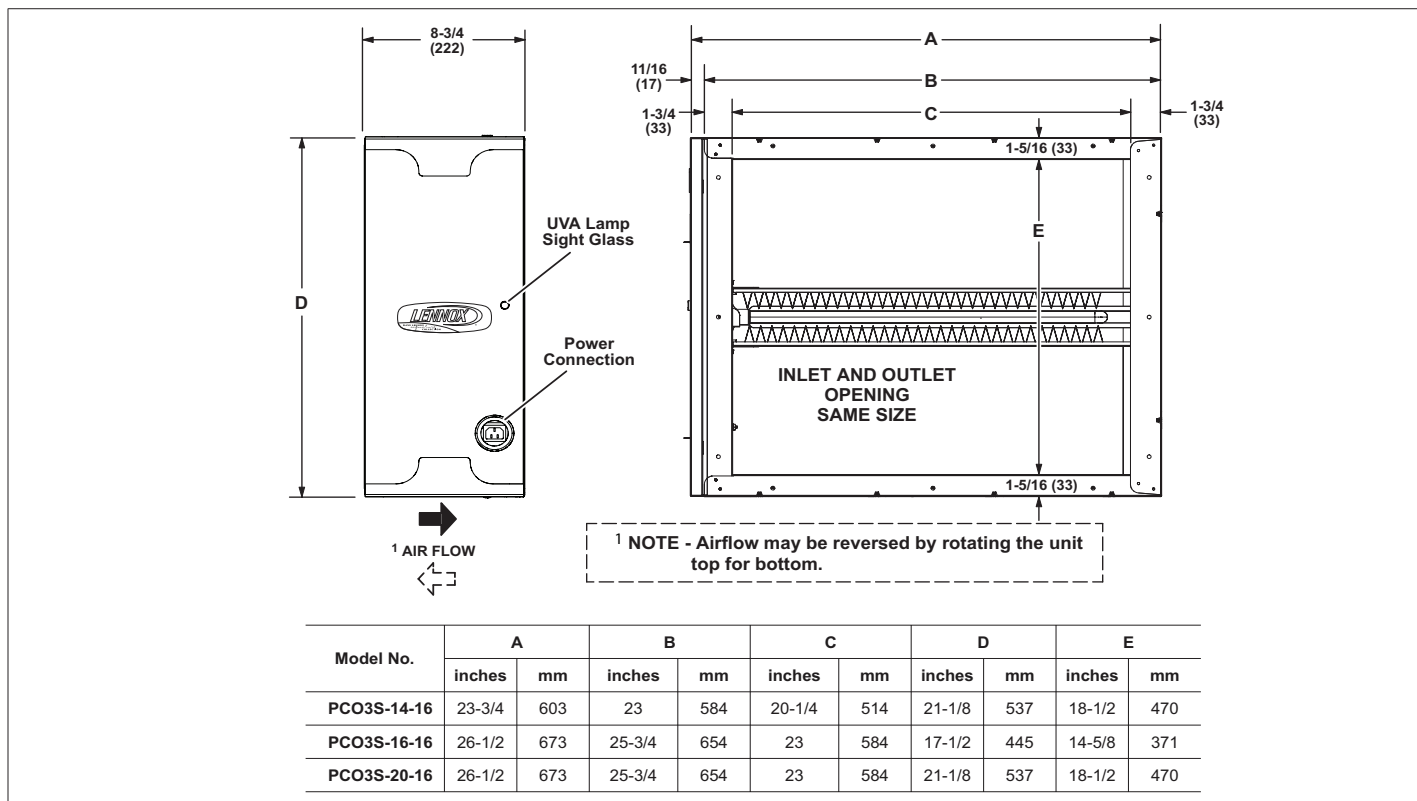**Figure 2.   Dimensions**

3

Table 2. Specifications

Model	Weight (lbs.)	Electrical	Power Consumption	Operating Environment	Pleated Filter Efficiency	Listings
PCO3S-14-16	24	120V, 50/60 Hz, 0.48 Amps -- Maximum or 230 V, 50/60 Hz, 0.24 Amps -- Maximum	120VAC and 230VAC - 58 Watts Nominal	0°F to 140°F outside of duct 10 to 60 percent relative humidity (Optimal performance at 50 percent relative humidity)	Minimum Efficiency Rating Value (MERV) 16	ETL safety listing report 3061144A. Conforms to UL STD 1598 Certified to CSA STD C22.2 no. 250.0.
PCO3S-16-16	27					
PCO3S-20-16	27					

Table 3. Approximate Air Flow Resistance (Cabinet and Filter)

Capacity (Tons)	Flow Rate (CFM)	Pressure Drop (in. w.g.)		
		PCO3S-14-16	PCO3S-16-16	PCO3S-20-16
Low / Variable	400	0.05	0.04	0.03
Low / Variable	600	0.07	0.07	0.06
2	800	0.11	0.11	0.08
2.5	1000	0.15	0.15	0.11
3	1200	0.20	0.20	0.15
3.5	1400	0.25	0.25	0.18
4	1600	*	0.31	0.22
4.5	1800	*	*	0.27
5	2000	*	*	0.31

*Not recommended. Excessive system pressure drop can damage HVAC system and reduce performance.

⚠ IMPORTANT
Do not wash UVA Lampholder / PCO cartridge. Soap and water will destroy the titanium dioxide catalyst that coats the cartridge surface.

⚠ IMPORTANT
Unpacking required.

Remove all protective packing material from the UVA lamp (taped to the cabinet) and the titanium dioxide PCO cartridge.

Packing material should be disposed of properly.

⚠ IMPORTANT
Possible odor emissions. Chemical reactions may cause temporary odors after initial start-up or after lamp replacement. Odor may also be present after paint, cleaning solutions or hobby materials have been used in the conditioned space.

Some occupants may experience irritation or discomfort during this period. If the irritation or discomfort lasts longer than 48 hours, the homeowner should be advised to contact a Lennox dealer.

⚠ IMPORTANT
The cabinet should be installed so that the UVA lamp will be in the horizontal position.

⚠ IMPORTANT
This system is NOT intended to be used for removal of active mold growth or continuous sources of high levels of chemicals in the air.

For existing mold growth, the mold must be properly removed PRIOR to installation of the PureAir *S* air purification system.

⚠ IMPORTANT
This appliance is intended for return air duct installation only.

Improper installation may damage PureAir *S* air purification system, HVAC system, or other equipment and may also void warranty.
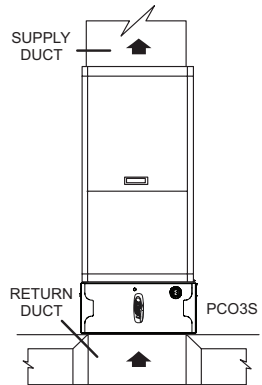
⚠ CAUTION
UVA Lamp contains mercury.

Ingestion of or contact with mercury or mercury vapor is hazardous to your health.

Take care when handling UVA lamp. If UVA lamp is broken, avoid contact with mercury.
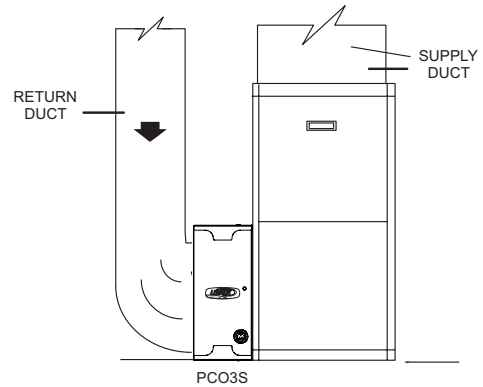
⚠ IMPORTANT
Healthy Climate® Carbon Clean 16® Filter cannot tolerate direct exposure to UVA light.

Filter is protected by PCO cartridge shield.
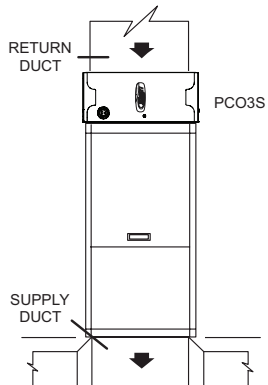
Installation Examples
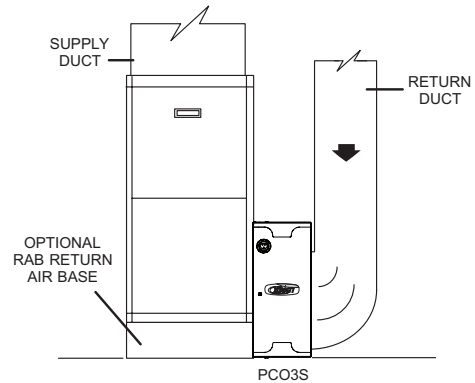
UPFLOW FURNACE/AIR HANDLER
(Bottom Return Air)

SUPPLY DUCT

RETURN DUCT

PCO3S

DOWNFLOW FURNACE/AIR HANDLER

RETURN DUCT

PCO3S

SUPPLY DUCT

HORIZONTAL FURNACE/AIR HANDLER

SUPPLY DUCT

DUCT TRANSIITON
(Field Furnished)

RETURN DUCT

FURNACE OR AIR HANDLER

PCO3S

NOTE: Lennox badge can be rotated 180 degrees for this application.

UPFLOW FURNACE
(Side Return Air − up to 4 ton)

RETURN DUCT

SUPPLY DUCT

PCO3S

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

SUPPLY DUCT

RETURN DUCT

OPTIONAL RAB RETURN AIR BASE

PCO3S
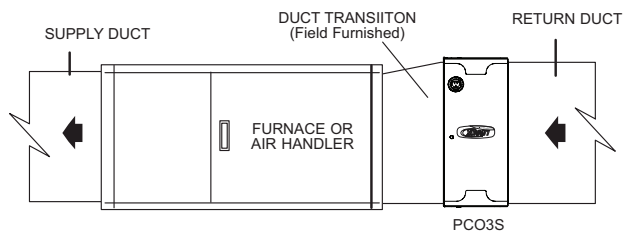
NOTE: Lennox badge can be rotated 180 degrees for this application.

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

OVERCUT TOP EDGE BY 1 in.
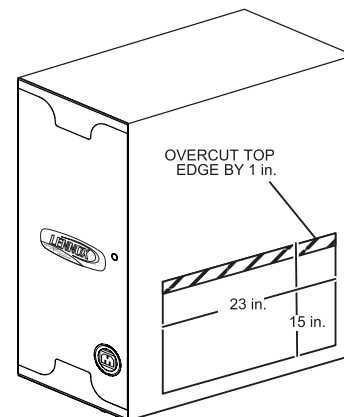
23 in.

15 in.

Figure 3.   Installation Examples

Installation

UNIQUE FIELD-SUPPLIED INSTALLATION ITEMS

The following items are recommended to have on-hand for installation of the unit.

- Cotton gloves and cloth (to remove finger prints from UVA lamp)
- Aluminum foil tape or water-based mastic (NOT silicone) to be applied as a sealant.

SELECTING LOCATION

The unit must be installed in the return air duct upstream of the supply blower. Allow a 30" (76cm) service clearance in front of the access panel as shown in figure 4. The air filter and UVA Lampholder / PCO cartridge must be removable.
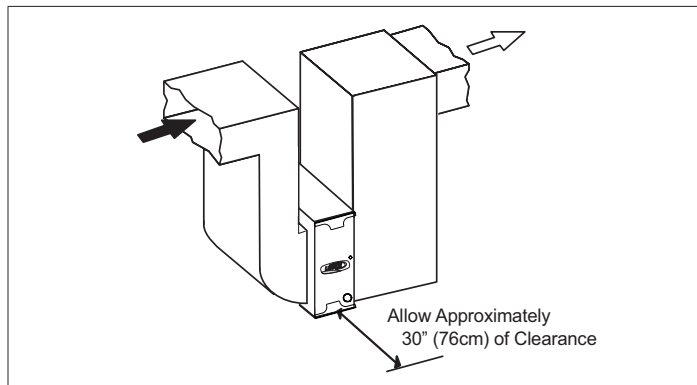

Allow Approximately 30" (76cm) of Clearance

Figure 4. Service Clearance

INSTALLING CABINET

The cabinet may either be installed on a level installation deck or platform adjacent to the air handler or it may be suspended from the rafters using metal strapping. If straps are used, take care when attaching straps to the cabinet. Ensure fasteners do not interfere with internal components of the cabinet. The air filter and UVA Lampholder / PCO cartridge must be able to slide freely into the cabinet.

1. Locate and remove the UVA Lampholder / PCO cartridge from the cabinet.

NOTE: Oil on metal surfaces may cause odors. Use mild soap and water solution to wash all new duct and transition surfaces.

2. Use the air flow directional label on the inside of the UVA Lampholder / PCO cartridge to orient the unit.

3. Properly position the cabinet next to the return air opening of the air handling unit. Use sheet metal screws 1" (25mm) maximum length, rivets or other appropriate fasteners to secure cabinet to the return air side of the air handling unit.

4. Use field-provided sheet metal screws 1" (25mm) maximum length to fasten the return air duct to the other side of the cabinet. Attachment holes are provided in housing.

5. Use field-provided aluminum foil tape or water-based mastic to seal all joints between the cabinet, air handler and duct.

6. In high humidity applications, wrap cabinet with field-provided 2" (50mm) foil-faced insulation (foil on the outside) to prevent condensation.

INSTALLING UVA LAMP

Use cotton gloves or a cotton cloth to protect the lamp and your hands during unpacking and installation.

1. Remove cabinet access panel.

2. The UVA Lampholder / PCO cartridge is shipped in a protective packaging. Packaging must be removed prior to installation. Take care to prevent damage while removing from packaging.

3. Locate the UVA lamp box, which is taped to the inside of cabinet and carefully remove. Set UVA lamp box aside while preparing cabinet for UVA lamp installation.

4. Remove (slide out) Healthy Climate® Carbon Clean 16® Filter from cabinet.

5. Disconnect the lampholder cable assembly from the UVA lamp ballast connector.

6. Carefully remove lamp from UVA lamp box and secure the UVA lamp electrical connector to the UVA lamp by sliding the UVA lamp pins into the slot. Proper connection will make a snapping sound.

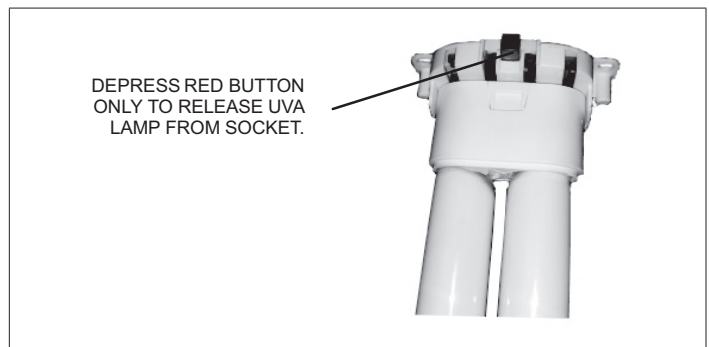DEPRESS RED BUTTON ONLY TO RELEASE UVA LAMP FROM SOCKET.

Figure 5. Releasing UVA Lamp from Socket

7. Slide the UVA lamp into UVA Lampholder / PCO cartridge. Verify that the UVA lamp is secure to the one metal UVA lamp clamp located mid-way on the UVA lamp reflector.
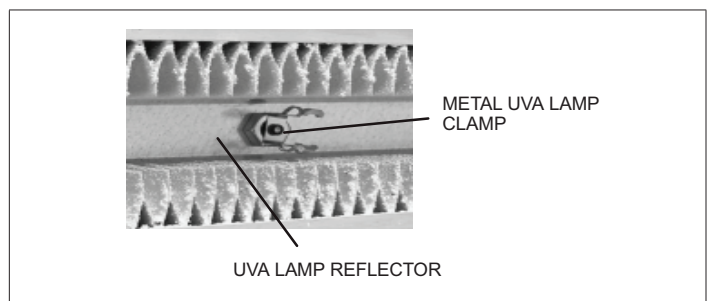

METAL UVA LAMP CLAMP

UVA LAMP REFLECTOR

Figure 6. UVA Lamp Metal Clamp

8. Rotate the hinged control panel assembly out.

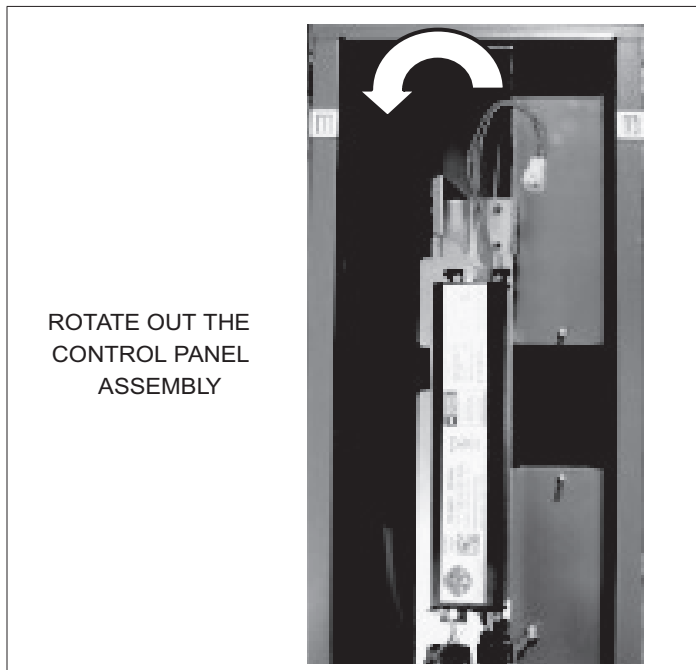
ROTATE OUT THE
CONTROL PANEL
ASSEMBLY

Figure 7. Rotate Out Control Panel Assembly

9. Thread the UVA Lampholder / PCO cartridge two posts through the UVA lamp connector's two holes.

10. Fasten the lamp socket to the UVA Lampholder / PCO cartridge using the two-brass finger nuts located in the literature bag.
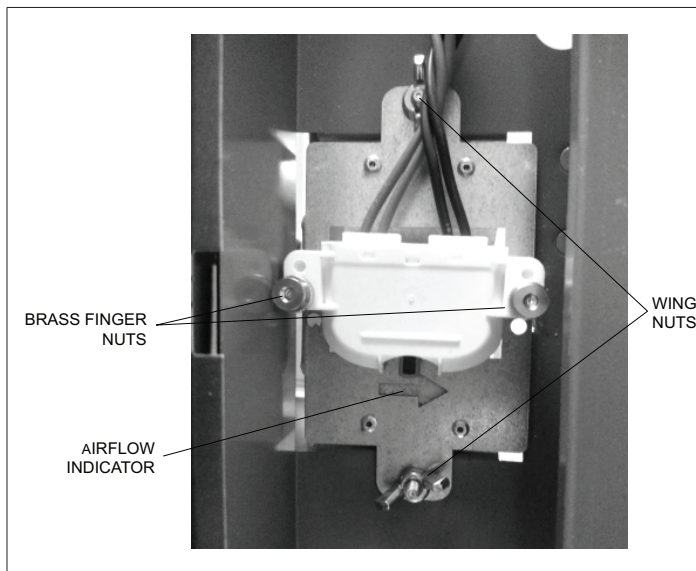

BRASS FINGER
NUTS

WING
NUTS

AIRFLOW
INDICATOR

Figure 8. Brass Finger and Wing Nuts

INSTALLING UVA LAMPHOLDER

Use the following procedure to install the UVA Lampholder / PCO cartridge.

1. While aligning, slide the UVA Lampholder / PCO cartridge into case rails and align with rear mounting bracket.

2. Secure the UVA Lampholder / PCO cartridge to the two frame screw posts using the provided wing nuts (2).

NOTE: There is an arrow on the front of the component indicating the correct way to install it.

3. Connect UVA lamp 4-pin male connector to ballast female 4-pin connector.

BALLAST FOUR PIN
FEMALE CONNECTOR

LAMPHOLDER
ASSEMBLY
(Y6622)
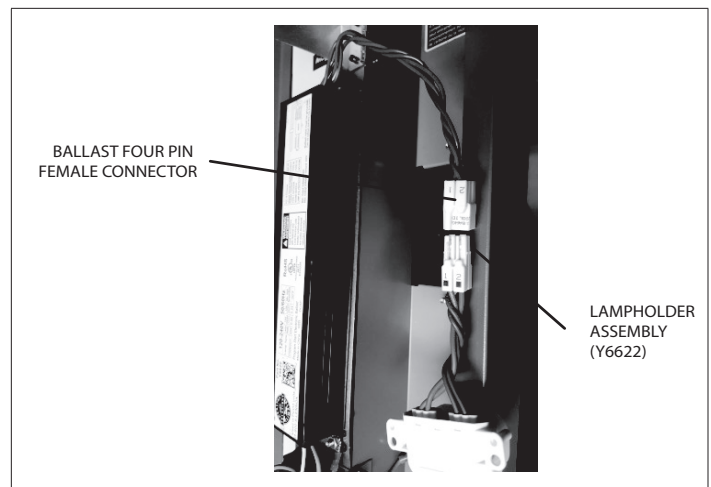
Figure 9. Ballast 4-Pin Female Connector

4. Rotate hinged control panel assembly back into the cabinet. Make sure no wiring is being pinched.

INSTALLING AIR FILTER

Use the following procedure to install the air filter.

1. Slide the Healthy Climate® Carbon Clean 16® Filter into the rails on the air inlet side of the cabinet. Verify proper airflow direction.

2. Securely fasten the access panel.

3. Plug one end of the provided power cord into the receptacle on the cabinet and the other end into a power receptacle.

4. Look through the view port in the access panel to check that the UVA lamp is illuminated.

NOTE: On initial start-up, the UVA lamp may not reach full illumination for several minutes.

Wiring

TERMINALS AND WIRING RECOMMENDATIONS

Communicating systems requires four thermostat wires between the **PureAir S** and the Lennox Communicating Indoor Control. When a thermostat cable with more than four wires is used, the extra wires must be properly connected to avoid electrical noise. The wires must not be left disconnected. See "Figure 10. Communicating and Low Voltage Connections".

IMPORTANT

Use 1-pair, 18AWG unshielded thermostat cable (field-provided) for power terminals (R and C). We highly recommend using 18 - 22AWG shielded thermostat cable for communications terminals (I+ and I-) which will help eliminate any noise interference.

Table 1. Terminal Designations and Wiring Recommendations

Terminal Designation	Description	Recommended Thermostat Wiring
R	24VAC input	18AWG unshielded
C	24VAC return	
I+	RS-BUS I+	18 - 22AWG shielded
I-	RS-BUS I-	

- Use wire nuts to bundle the unused wires at each end of the cable. A single wire should then be connected to the indoor unit end of the wire bundle and attached to the "C" terminals.

- Keep all communication wiring as far away from the house electrical wiring and large electrical appliances as possible. Recommended minimal distance is 15 feet (5 meters).
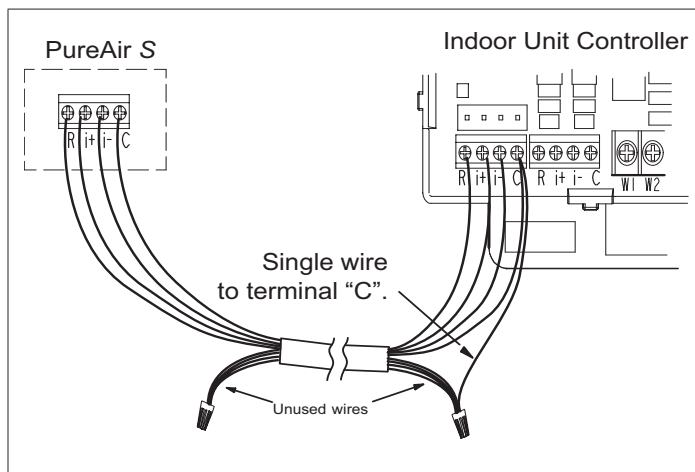

Figure 10. Communicating and Low Voltage Connections

⚠ IMPORTANT

Do not connect low voltage wiring to the PureAir S until you confirm the S30 thermostat has thermostat / Smart Hub control software version 03.40.xxxx or higher software.

To update S30 thermostat follow the check for update procedures outlined in service and application note ACC-18-05.

COMMUNICATION WIRING ROUTING

Communication wiring to the indoor unit is routed through the opening in the top of the cabinet as illustrated below.
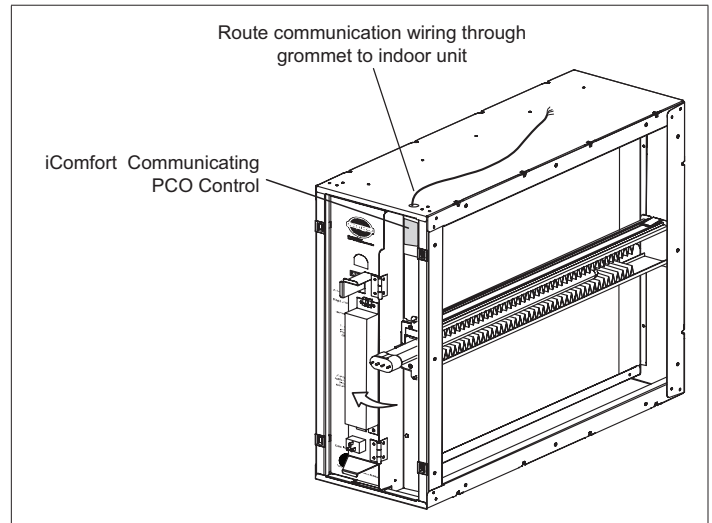
Figure 11. Routing of Communication Wiring

PureAir S INTERNAL FACTORY WIRING

The should be wired in accordance with national and local codes.

LEGEND	
KEY	COMPONENT
DS1	UVA LAMP / LAMPHOLDER
P15	PLUG
R15	RECEPTACLE
L31	BALLAST
J12	JACK
FB1	FERRITE BEAD
A17	MAIN SENSOR BOARD
A18	UVA SENSOR BOARD
W19	INTERCONNECT WIRE
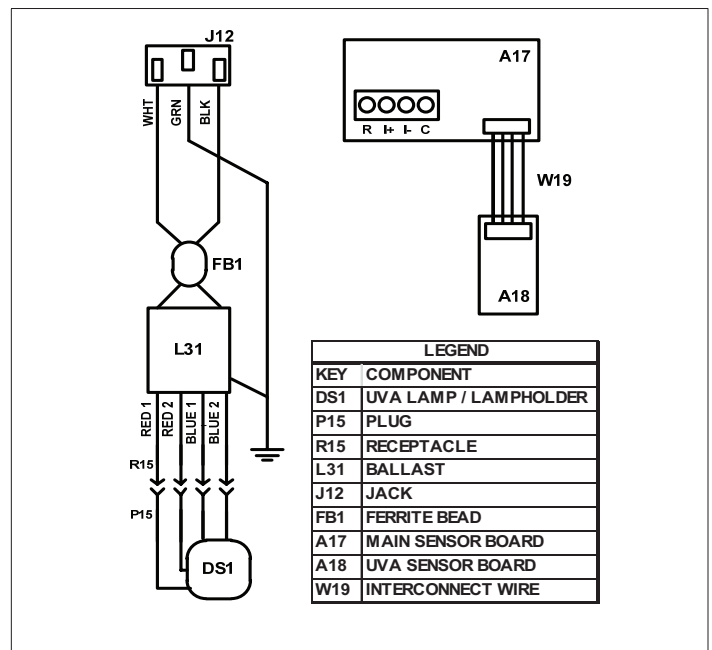
Figure 12. PCO Wiring Schematic

Communicating Control Functions

Filter Control Board

Change Filter button

PCO unit size selection jumper

Change Lamp button

High side pressure tap

Low side pressure tap

iComfort wiring connections

UV Lamp Sensor Control Board

Lamp sensor control board ribbon connection

Pushing and Holding the Change Filter button or the Change Lamp button for 5 seconds will reset the control
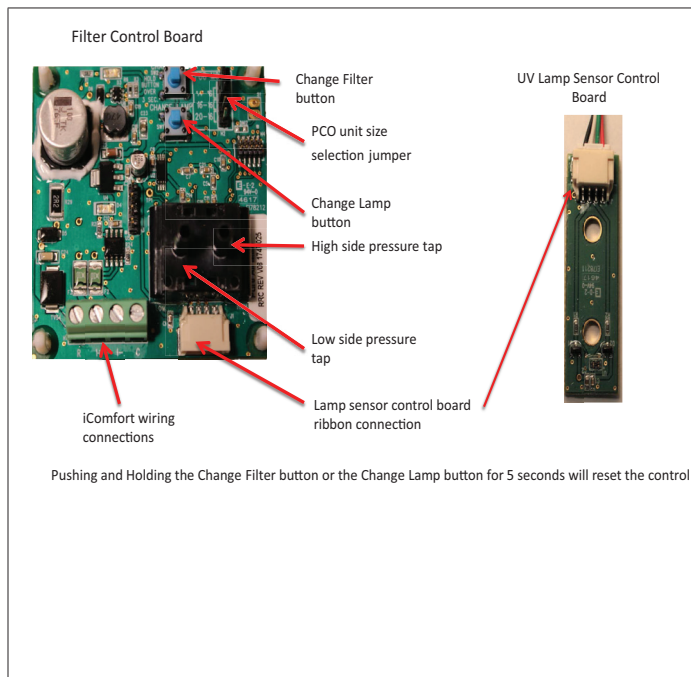
Figure 13. PureAir *S* Communicating Control

PCO Model (H2) Jumpers

A series of jumpers is used to select which size pure air the control is installed.

Jumper selections are:

- Position 1 (pins 1 and 2 shorted): 14-16 (nominal airflow = 1400cfm)
- Position 2 (pins 2 and 3 shorted): 16-16 (nominal airflow = 1600cfm)
- Position 3 (pins 3 and 4 shorted): 20-16 (nominal airflow = 2000cfm)

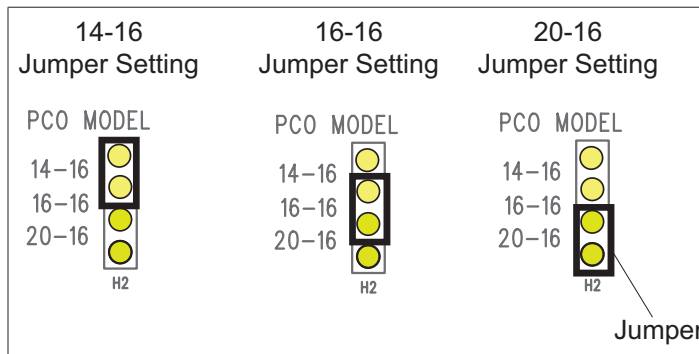***NOTE:*** *The correct size selection should already be set from the factory.*

Figure 14. Model Jumper Selection

Change Lamp Reset (SW1)

After bulb replacement, press and hold for three seconds SW1 - Change Lamp button. This resets the system.

A LED will start to flash after three seconds to indicate the reset was successful.

Change Filter Reset (SW2)

After air filter replacement, press and hold for three seconds SW2 - Change Filter. This resets the system.

A LED will start to flash after three seconds to indicate the reset was successful.

Control Manual Reset

When pressing both the SW1 and SW2 switches at the same time for ten seconds will reset the control to factory default.

Control can also be reset by using the S30 thermostat. Go to **menu** > **settings** > **advanced settings** > **view dealer control center** > **equipment** > **reset** > **reset HVAC equipment**.

Lennox S30 Thermostat Setup

System Setup (Commissioning)

During the initial or rerunning the commissioning of the system using the iComfort S30 Ultra Smart thermostat, the system will auto-detect the presence of the **PureAir *S*** unit.

Follow the instructions provided with the thermostat for the system commissioning process. If the PureAir *S* component is successfully detected, it will appear on the found equipment screen.

NOTE: *During commissioning the blower will turn on and run at three different CFM settings for the PCO filter calibration to take place. This may be well in advanced before the display is fully up and running. This is a normal process. The blower may run as long as 90 seconds at each CFM setting to complete the filter calibration .*
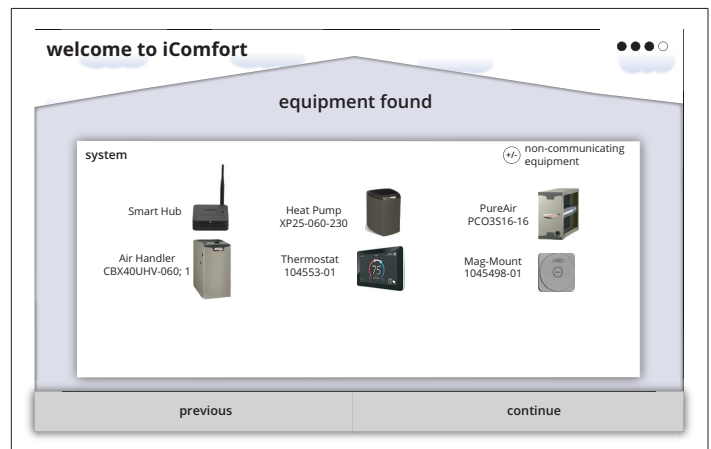

Figure 15. Equipment Found

Reminders

Default setting is sensor-based. Additional options are calendar time, run-time or disabled. On the reminder screen, select **PureAir *S*** maintenance to change the option.
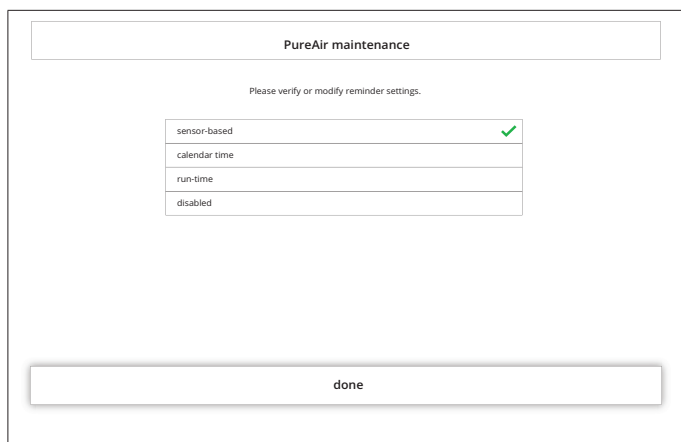
Figure 16. PureAir *S* Maintenance Setting

Once the **PureAir S** accessory has been installed and system powered up, go to the thermostat. From the thermostat to go to **menu** > **settings** > **advanced settings** > **view dealer control center** > **equipment** and select **reset**. From the reset list, select **re-configure system**. This will tell the system to reboot and search for new equipment attached to the system.

Follow the commissioning screens to the equipment found screen, verify that the *PureAir S* accessory has been detected and added to the system (see "Figure 15. Equipment Found" on page 9).

NOTE: *The Lennox S30 thermostat must have firmware version 3.4 or later for compatibility with Lennox Pure Air S Air Purification System.*

Dealer Control Center

The Dealer Control Center menu provides access for the installer or service technician to perform various functions. Advance equipment configurations, notifications, tests, diagnostics, installation reports and general information about the system. Go to **menu** > **settings** > **advanced settings** > **view dealer control center**.
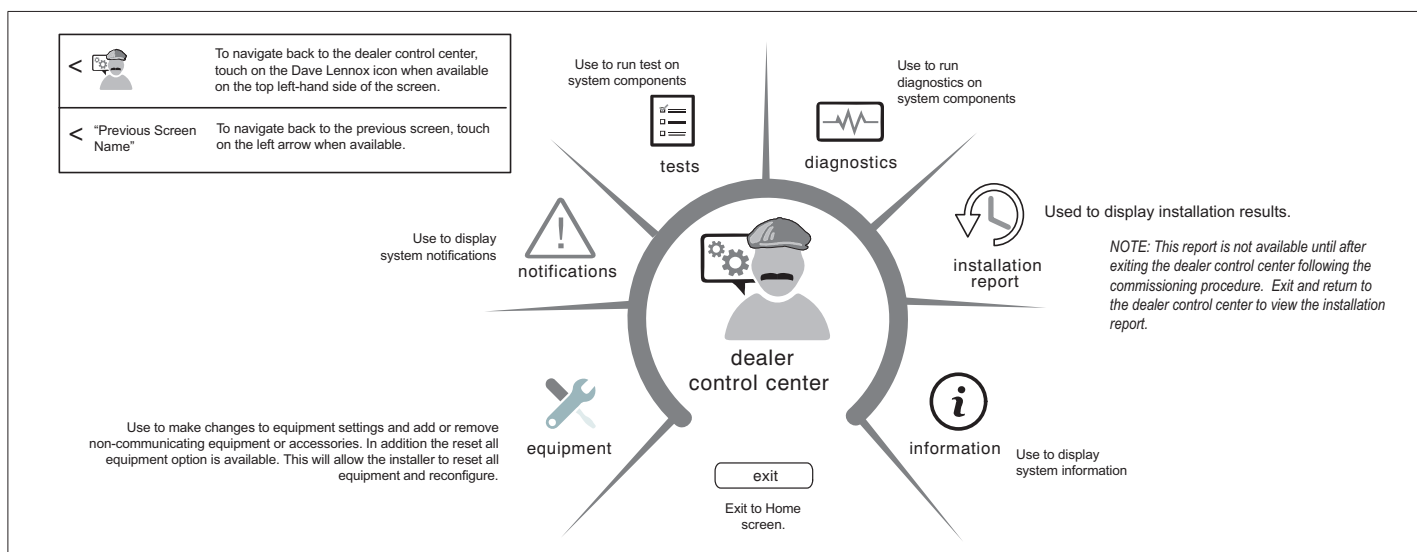

Figure 17. Dealer Control Center

10

PureAir S Equipment Parameters

The following is a complete list of all possible parameters listed under **System**. Parameters actually available are dependent on the Lennox communicating equipment type detected and non-communicating equipment added.

From the Dealer Control Center Screen, go to **equipment** > **PureAir**. There you will find the applicable parameter settings for PureAir *S*.

Table 2. *PureAir S* Parameters

Parameter	Description
Equipment	PureAir Filter
Dirty Filter and UV Life Detection	Default: ON. Options are either ON or OFF. Alarms 503 and 504 will not be displayed when this parameter is set to OFF. The diagnostics screen on the thermostat will continue to show values for both filter life and UV lamp life regardless of the value of this parameter. • This parameter turns on and off the filter life and UV lamp life reporting. When set to off, the control will continue to calculate the remaining filter life through continuous sampling, but will not use filter tests to determine filter life. The control will: • Perform a UV lamp calibration upon indication of a lamp change regardless of the value of this parameter. • Will calculate UV lamp life remaining regardless of the value of this parameter.
Max Air Filtered between Tests	Default is 100%, Range is 50% to 100% Changes can be made in increments of 10%. This parameter modifies the amount of air that is allowed to pass through the filter after a valid % life determination before a filter test is initiated. This parameter is expressed as a percentage of the cubic feet of air that would pass through the filter if the fan operated at continuous fan CFM for 30 days.
UV lamp operation detection	Default: ON. Options are either ON or OFF.
Filter Life	Provides percentage of remaining filter life. This is for display purposes only and cannot be changed.
Last replacement date for filter	Date last filter reset was accomplished. This is for display purposes only and cannot be changed
Purifier life	Provides percentage of remaining purifier life. This is for display purposes only and cannot be changed **NOTE:** *Purifier life is referring to the* UVA Lamp / PCO cartridge insert.
Last replacement date for purifier insert	Date last purifier insert reset was accomplished. This is for display purposes only and cannot be changed

• reset **PureAir S** will reset all **PureAir S** parameters back to factory defaults.
• reset purifier insert will reset (recalibration) it to 100%. This is usually accomplished after the UVA Lamp / PCO cartridge insert has been replaced.
• reset filter will reset (recalibration) it to 100%. This is usually accomplished after the air filter has been replaced.

Notifications (Alert Codes)

The thermostat's notification screens provide information on active notifications and previously cleared notifications. When selecting either a cleared or active notification a brief description and alert code will be displayed. Notifications are categorized by system, indoor unit (air handler or furnace), outdoor unit (air conditioner or heat pump), zoning control (if installed) and thermostat.
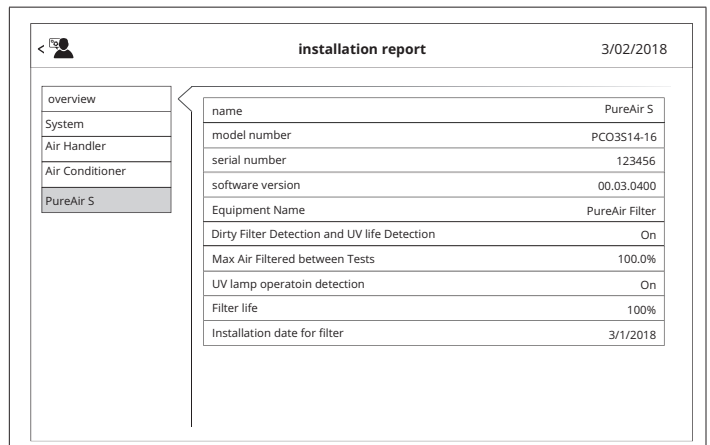
Tests and Diagnostics Function

There are no installer tests or diagnostic features available for the **PureAir S** accessory.

Installation Report

PureAir S accessory information includes equipment name, model number, serial number and firmware version.

In addition, when selecting **PureAir S**, filter life, last replacement date for filter and purifier life and last replacement date for purifier information is available.

<	installation report	3/02/2018

overview		
System	name	PureAir S
Air Handler	model number	PCO3S14-16
Air Conditioner	serial number	123456
PureAir S	software version	00.03.0400
	Equipment Name	PureAir Filter
	Dirty Filter Detection and UV life Detection	On
	Max Air Filtered between Tests	100.0%
	UV lamp operatoin detection	On
	Filter life	100%
	Installation date for filter	3/1/2018

Figure 18. Installation Report

Alert Codes

Soft Disable

Soft disabling is when the thermostat finds an unknown control on the system communication bus. The thermostat sends the unknown control a message to go into soft disable mode until the component is properly configured or removed.

The thermostat will not show any code for a soft disabled control. When soft disabling occurs only the control that has been disabled will display the blinking LED status. Refer to the device's installation and setup guide for further guidance.

Confirm proper wiring between all devices such as thermostat, **PureAir S** and Smart Hub.

Cycle power to the **PureAir S**.

1. Go to the **menu** > **settings** > **advanced settings** > **view dealer control center.** Touch **proceed** to continue.
2. Select **equipment**.
3. Touch **reset**.

Alert Code Types

To expand a specification notification to access a more detail description of the alert code, press the down arrow to expand the description.

Critical alerts are displayed on Home (user) screen, in the Homeowner alert button, and in the Installer alert button. Critical means that a service call is needed to get the system running.

Minor and **Moderate** alerts are found only in the Installer alert button.

What does minor and moderate mean?

- **Minor** is information only, helps Lennox interpret test results, understand complicated behavior.
- **Moderate** means that the system will likely recover on its own, no action necessary.
- **Communication System**: When communication controls are operating in a communication system, all jumper and link setting on controls are ignored. Jumpers and link setting are treated as defaults and would only be active if the system was converted to a non-communicating system.

Table 4. PureAir S Alert Codes and Troubleshooting

Initial notification of critical alerts will pop up on the home screen and will be listed under notification menu. Minor and moderate alerts are found only under the notification menu.

Alert Code	Priority Condition	Actual Displayed Alert Text	Component or System Operational State and Troubleshooting Tip	How to clear alert code
105	Moderate	Communication Problem	A system component has lost communication with the system. System component (device) is unable to communicate. This may indicate the existence of other active alert codes. **TIPS**: • In most cases errors are related to electrical noise. Verify that high voltage power is separated from the low voltage communication wires. • Check for incorrectly wired or loose connections between system components (devices). • Check for a high voltage source of noise close to the system.	Automatically clears when the system detects the issue no longer exists.
120	Moderate	Unresponsive DEVICE2.	There is a delay in the system component responding to the system. **TIPS**: • Typically this alert code does not cause any operational issues and will clear on its own. • Usually caused by a delay in the outdoor unit responding to the thermostat. • Check all wiring connections.	Automatically clears after an unresponsive system component (device) responds to any inquiry.

124	Critical	Active Subnet Controller Missing	The thermostat has lost communication with a system component for more than three minutes.
			
			This alert code stops all associated system operations and waits for a heartbeat message from the system component that is not communicating.
			
			TIPS:
			• Check the wiring connections.
			  > Ohm wires.
			  > Cycle power.
			  > Check voltage at component.
				Automatically clears after communication is re-established with applicable system component (device).

Table 4. PureAir *S* Alert Codes and Troubleshooting

Initial notification of critical alerts will pop up on the home screen and will be listed under notification menu. Minor and moderate alerts are found only under the notification menu.

Alert Code	Priority Condition	Actual Displayed Alert Text	Component or System Operational State and Troubleshooting Tip	How to clear alert code
125	Critical	Control Hardware Problem	There is a hardware problem with a system component control. **TIPS**: • PCO3 jumper selector is missing. • Replace the PCO3S control if the problem prevents operation and is persistent.	Automatically clears five minutes after the issue no longer exists.
131	Critical	Corrupted Control Parameters	System component control parameters are corrupted. **TIPS**: • Go to **menu** > **advance settings** > **view dealer control center** > **equipment** and press **reset all equipment**. This will allow the system to auto-detect the PCO3S control. • Replace the PCO3S control.	Will automatically clear when system component (device) passes memory self-test or system component control is replaced.
132	Critical	Failed Flash CRC Check	PCO3S control software is corrupted. **TIPS**: • Recycle power. • If failure re-occurs, replace the system component control.	Manual system power reset is required to recover from this alert code.
500	Minor *(Escalated to Critical after alarm persists for 15 minutes)*	Diff Press Sensor Fault	Pressure sensor reports a fault for more than five minutes, or does not respond for more five 5 minutes. Device will not perform any pressure reading calculations until fault is recovered. Remaining filter life display will indicate "-" while fault exists. **TIPS**: • Verify connection of pressure sensor lines to PCO3S control. • Replace pressure sensor.	Automatically clears 30 seconds after fault is recovered.
501	Minor *(Escalated to Critical after alarm persists for 15 minutes)*	UVA Sensor Fault	UVA sensor reports a fault for more than five minutes or UV sensor does not respond for more than five minutes. Device will not perform any UV lamp life remaining calculations until fault has recovered. Life remaining display shall indicate "-" while fault exists. **TIPS**: • Verify that the wiring connections between the UV sensor control and main PCO3S control are good. • Replace UVA sensor control.	Automatically clears 30 seconds after fault is recovered.
502	Critical	UVA Lamp Off	The light is determined to be off when the last three last light intensities measurements are below the set threshold. **TIPS**: • Verify UVA light is installed correctly. • Replace UVA light.	Light is determined on after single set of five samples are above the set threshold.
504	Critical	Filter Life at 0%	Filter life at 0%. **TIPS**: Replace air filer and reset. Go to menu > **settings** > advanced settings > **view dealer control center** > **equipment** > **PureAir S** and select **reset filter** at bottom of the screen. When filter has been indicated at 0% with new filter installed or has gone to 0% to quickly check then check the following: • Make sure the unit size jumper is set correctly for the size PCO unit • Make sure the filter is installed in the correct airflow direction.	Replace air filter and reset to 100%.
505	Moderate	PureAir Model Selection Changed	Model selection jumper has changed positions while system was running. **TIPS**: Repositioned jumper back to original jumper position and cycle power to the PCO3S and S30 system.	Correct issue and cycle power to system.
506	Critical	UVA Lamp Life at 0%	UV Lamp Life at 0%. **TIPS**: Replace UVA lamp and reset. Go to menu > **settings** > advanced settings > **view dealer control center** > **equipment** > **PureAir S** and select **reset purifier** at bottom of the screen.	Replace UVA lamp and reset to 100%.

Table 4. PureAir *S* Alert Codes and Troubleshooting

Initial notification of critical alerts will pop up on the home screen and will be listed under notification menu. Minor and moderate alerts are found only under the notification menu.

Alert Code	Priority Condition	Actual Displayed Alert Text	Component or System Operational State and Troubleshooting Tip	How to clear alert code
507	Critical	Filter Calibration Failure	Filter calibration determined failed due to all test cfm static pressures reading <= 7 Pa Send alarm immediately. No filter tests or life calculation occur while this alarm is active.	Clear alarm upon initiation of another filter calibration.

Operation

1. Check to ensure that access panel is securely in place.
2. Lamp should remain illuminated continuously except during service and maintenance.
3. For optimal odor control, air handler blower should remain on CONTINUOUSLY (thermostat fan setting in ON position, rather than AUTO).

NOTE: *If air handler does not provide a continuous low blower speed option, an additional blower relay should be installed. Use Lennox part number 45H03. Contact the Lennox Application Department at 1-800-453-6669 for wiring information.*

NOTE: *Continuous fan operation may result in higher humidity. If humidity levels are uncomfortably high, fan setting should be switched to AUTO during cooling operation.*

Filter, UVA Lampholder / PCO Cartridge and UVA Lamp Replacement

⚠ IMPORTANT

Hg -- UVA Lamp contain mercury.

Manage in accord with disposal laws.

Refer to www.lamprecycle.org or call 1-800-9LENNOX.

The Healthy Climate® Carbon Clean 16® Filter, UVA Lampholder / PCO cartridge and UVA lamp require annual replacement. More frequent filter replacement may be required in applications with heavier dust or dirt loads or if you notice a reduction in odor-removal efficiency. An annual maintenance kit is available.

Annual Maintenance Kits

The annual maintenance kits include the following:
- Healthy Climate® Carbon Clean 16® Filter (1)
- PCO cartridge (1)
- UVA lamp (1)

Order using the following kit catalog numbers:

Table 5. Maintenance Kits

Part Description	Catalog Numbers		
	PCO3S-14-16	PCO3S-16-16	PCO3S-20-16
Annual Maintenance Kit	Y6616	Y6612	Y6608

Replacement Parts

Replacement parts are available through Lennox, see "Figure 1. Parts Identification" on page 3 for parts arrangement. Part description and catalog numbers are as follows:

Table 6. Repair Parts

Part Description	Catalog Numbers		
	PCO3S-14-16	PCO3S-16-16	PCO3S-20-16
HC Carbon Clean 16 Filter	Y6606	Y6605	Y6604
UVA Lamp	X8794		
PCO cartridge insert (Purifier)	Y6621	Y6607	
Lampholder Assembly	Y6622		
Power Cord (120VAC)	49M48		
Power Cord (230VAC)	91X44		
Electrical Socket	75X77		
Ballast	Y6620		
Probe Repair Kit	16X01	16X02	16X01
Sensor Repair Kit	16X03		

Removing and Installing UVA Lamp, Lampholder and Air Filter

⚠ IMPORTANT

If the system has been operated for a period of time without the UVA lamp being illuminated, an odor may occur when lamp is illuminated. This odor is considered typical and should dissipate within 12 hours of full operation. If the odor does not subside after 48 hours of operation, instruct the homeowner to unplug the unit and contact a Lennox dealer.

⚠ CAUTION

Personal Burn Hazard.

UVA lamp is very hot when illuminated.

Allow lamp to cool for 10 minutes before removing lamp from socket.

Injury may result from contact with hot UVA lamp.

1. Remove power cord from 120VAC or 230VAC receptacle.
2. Remove power cord from unit.
3. Remove access panel.
4. Remove Healthy Climate® Carbon Clean 16® Filter.
5. Rotate out the hinged control panel.
6. Disconnect UVA lamp electrical connector from ballast.
7. Remove both fasteners securing the UVA Lampholder / PCO cartridge from the chassis.
8. Slide out the UVA Lampholder / PCO cartridge from the chassis.

9. Remove both brass finger nuts that secure the UVA lamp elector connector to the UVA Lampholder / PCO cartridge.
10. Slide out UVA lamp from UVA Lampholder / PCO cartridge insert.
11. Push the red button on UVA lamp electrical connector and gently slide off connector from UVA lamp (do not dispose of UVA lamp electrical connector).
12. Properly dispose of UVA lamp and air filter.
13. Reinstall in reverse order starting.

Proper Clean-Up of Broken UVA Lamp

If UVA lamp is broken, it must be disposed of properly.

- Wear protective gloves, eye wear and mask.
- Sweep broken glass and debris into a plastic bag and seal before disposal in accordance with instructions provided by local waste management office.
- Do not use a vacuum cleaner. Do not incinerate.
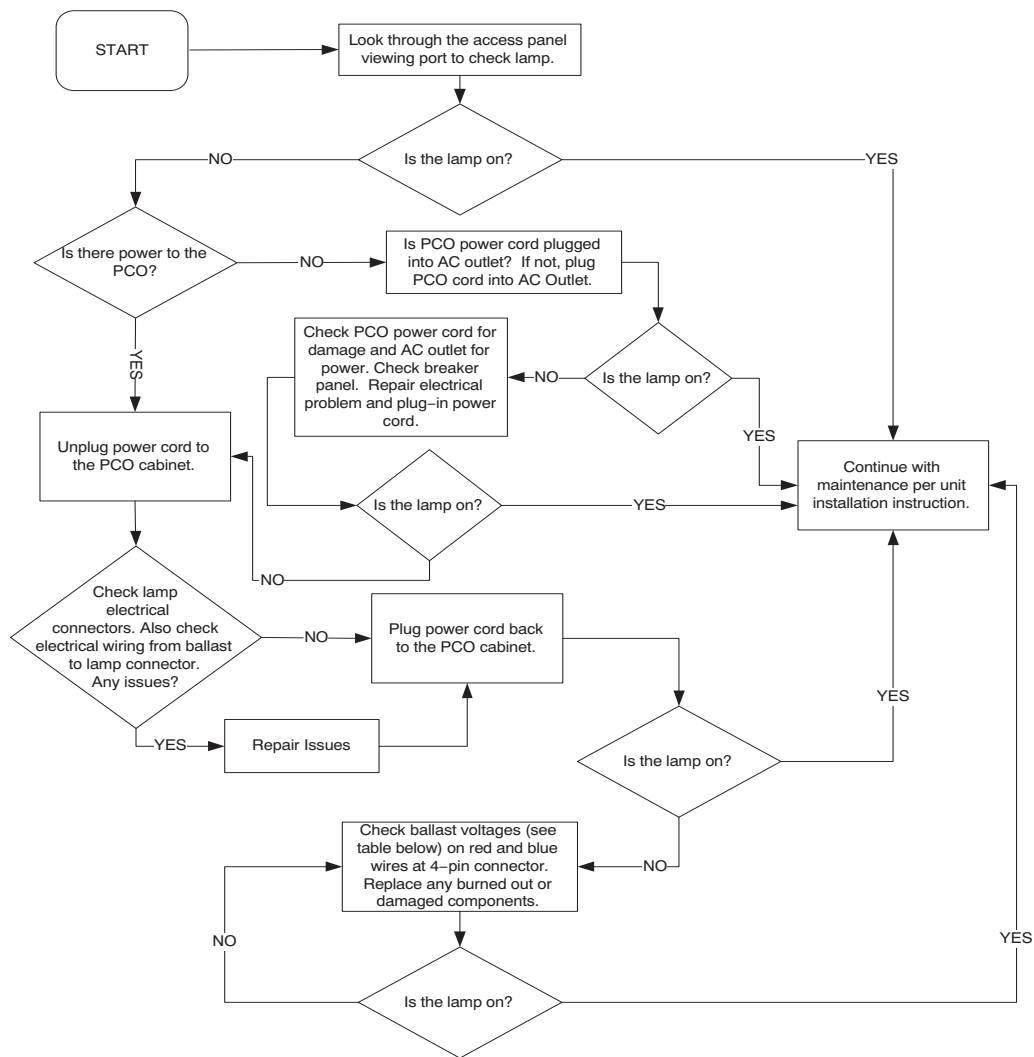
Troubleshooting Flow Chart

	INPUT/OUTPUT	WIRE/TERM COLOR	NORMAL READING (VAC)	SERVICE ACTION (See "Figure 12. PCO Wiring Schematic" on page 8.)
BALLAST	**OUTPUT**	**RED**	**≥60**	**Replace ballast if less than 60VAC.**
		RED	**≥60**	
		BLUE	**≥200**	**Replace ballast if less than 200VAC.**
		BLUE	**≥200**	

Figure 19. Troubleshooting Flowchart