SECTION 23 41 00

COMMERCIAL SPACE AIR PURIFICATION SYSTEMS

Display hidden notes to specifier. (Don't know how? [Click Here](https://www.arcat.com/sd/display_hidden_notes.shtml))

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\*\* NOTE TO SPECIFIER \*\* Fellowes, Inc.; Air purification systems.
This section is based on the products of Fellowes, Inc., which is located at:
1789 Norwood Ave.
Itasca, IL 60143
Toll Free Tel: 800-477-7940
Tel: 630-893-1600
Email: [request info (info@aeramaxpro.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Fellowes,+Inc.&coid=49465&rep=&fax=&message=RE:%20Spec%20Question%20(15861fel):%20%20&mf=)
Web: <http://www.aeramaxpro.com>
 [ [Click Here](https://www.arcat.com/arcatcos/cos49/arc49465.html) ] for additional information.
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see less

1. GENERAL
	1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Commercial space air purification systems.
		2. Filter Media
	1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 06 10 00 - Rough Carpentry.
		2. Section 26 05 00 - Common Work Results for Electrical.
	1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. International Electrotechnical Commission (IEC):
			1. IEC 60335-1:2002/A2:2006 - Household and similar electrical appliances - Safety - Part 1: General requirements.
			2. IEC 60335-2-65:2003/A1:2008 - Household and similar electrical appliances - Safety - Part 2-65: Particular requirements for air-cleaning appliances.
		2. European Standards (EN):
			1. EN1822-1 - High efficiency air filters (EPA, HEPA and ULPA) - Part 1: Classification, performance testing, marking.
		3. United States Environmental Protection Agency and U.S. Department of Energy
		4. Underwriters Laboratories (UL):
			1. UL 867 - UL Standard for Safety Electrostatic Air Cleaners
			2. UL 2998 - Environmental Claim Validation Procedure (ECVP) for Zero Ozone Emissions from Air Cleaners.
	1. DEFINITIONS
		1. ACH - Air Changes per Hour.
		2. RH - Relative humidity
		3. VOC - Volatile Organic Compounds
	2. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.
			5. Owner's Manual.

\*\* NOTE TO SPECIFIER \*\* Delete if not applicable to product type.

* + 1. Verification Samples: One representative unit of each type, size, and color shall be provided for review for a 30-day period.

\*\* NOTE TO SPECIFIER \*\* Remove if 30-day sample is not required. Sample is for air purification devices only

* + 1. Product Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	1. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
	2. PRE-INSTALLATION CONFERENCE
		1. Two weeks prior to materials scheduled to ship, convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	3. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	4. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	5. WARRANTY
		1. Manufacturer to provide at a minimum a 3-year limited parts warranty.
			1. Manufacturer to provide an additional 1-year limited parts warranty extension upon product registration by the installing contractor.
1. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Fellowes, Inc., which is located at: 1789 Norwood Ave.; Itasca, IL 60143; Toll Free Tel: 800-477-7940 ; Tel: 630-893-1600; Email: [request info (info@aeramaxpro.com)](https://admin.arcat.com/users.pl?action=UserEmail&company=Fellowes,+Inc.&coid=49465&rep=&fax=&message=RE:%20Spec%20Question%20(15861fel):%20%20&mf=); Web: <http://www.aeramaxpro.com>
		2. Basis of Design: Products as manufactured by Fellowes, Inc.

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Additional approved manufacturers:
			1. Approved Equal
		2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	1. COMMERCIAL SPACE AIR PURIFICATION SYSTEMS - NON-NETWORKED
		1. General Requirements:
			1. Performance Requirements:
				1. Standards Certification and Compliance:

IEC 60335-1.

IEC 60335-2.

UL 867.

UL 2998.

EN1822-1.

* + - * 1. Air Purification Certified Testing:

SARS-CoV-2: effective in eliminating aerosolized concentration of SARS-CoV-2 by 99.9999 percent through a single air pass test of the purifier.

Filtration of Influenza A (H1N1): 99.9 percent efficacy.

Filtration of Coronavirus (HCoV 229E Vero-E6): Antiviral Activity Rate greater than 99.99 percent after 60 minutes.

* + - * 1. Integral Sensors: Measures sound, motion, and air quality using pre-calibrated commercial grade maintenance-free internal integrated sensors that require no additional calibration.

Works when it needs to, and shifts to standby when possible, saving energy and extending filter lifespan.

Sensing Modes:

Auto Mode: Automatically adjusts between fan speeds to control air quality. Ideal for most shared spaces.

Quiet Mode: Quieter fan speeds when space is occupied and all fan speeds when space is unoccupied. Ideal where noise is a concern.

* + - * 1. Display (where applicable): Allowing occupants to see the difference as they feel the difference.

Two high grade laser particle counters monitor air quality as it enters and exits machine, enabling screen to show air quality data in two different display modes:

Room Status: Current air quality. Percent of particles being captured in real-time.

Displays in real-time PM2.5 levels entering unit and being removed in filtration process.

Showcase VOC, odor levels, and filter change reminders.

* + - 1. Filter Media:
				1. Performance Requirements:

Pre-Filter: Captures large particles and contaminants. Protects lifespan of other filters.

Active Carbon Filter: Adsorbs odors and VOCs from air.

H13 True HEPA Filter:

Effectively removes at least 99.95 percent of particles as small as 0.1 microns, including allergens, such as pollen, dust, pet dander, and smoke.

H13 True HEPA filter captures up to 99.9 percent of particles as small as 0.1 microns, including allergens such as pollen, dust, pet dander and smoke. Tested to EN1822:2019 Standards.

Optional Bipolar Ionizer: Feature is turned off as standard and can be turned on if required. Improves the capture efficiency of the particulate filter.

* 1. COMMERCIAL SPACE AIR PURIFICATION SYSTEMS - NETWORKED
		1. General Requirements:
			1. IoT Connectivity: LTE.
			2. Sensor Technology - Air purifier units are equipped with technology that proactively monitors surroundings, contaminant levels and occupancy to respond to changes. This allows units to work hard when they need to, and shift into a lower fan speed, when possible, to conserve energy and reduce operating expenses.
				1. Reset Air Class B IAQ Sensors:

PM2.5:

Accuracy: Less than or equal to 100 micro grams per sq m. Plus or minus 15 micrograms per cu m.

Accuracy: Greater than 100 micro grams per cu m. Plus or minus 15 percent.

PM10:

Accuracy: Less than or equal to 100 micro grams per sq m. Plus or minus 15 micrograms per cu m.

Accuracy: Greater than 100 micro grams per cu m. Plus or minus 15 percent.

CO2: Plus or minus 30 ppm plus 3 percent.

VOC/TVOC: Plus or minus 30 ppm.

Temperature: 0.2 degrees C.

Relative Humidity: 1.80 percent

* + - * 1. Monitoring and Comfort Sensors: Pressure, light, occupancy, and sound.
			1. Virus Testing: H1N1, Rhinovirus
			2. Filter Type: 3-in-1 360 degree; Pre-Filter, Carbon, H13 True HEPA.
				1. Filter Rating: H13 True HEPA.
				2. Filter Efficiency: 99.95 percent at 0.1 microns.
				3. Estimated Filter Life: 12 months.
		1. IAQ Monitoring Dashboard Software: Complete Air Quality Data, Available Anywhere, On Any Device. Dashboard should make it easy to monitor and maintain buildings' healthy air quality. The cloud-based dashboard integrates data from our air purifiers, UV-C sterilization machines and indoor air quality sensors to provide complete visibility of the space's air quality. Dashboard allows decision makers to take control by scheduling maintenance needs, tracking air quality over time, and seeing how energy usage is correlated.
			1. Performance Requirements:
				1. Intuitive User Interface:

Reset Air Index Building IAQ Health Summary.

Identify areas needing attention.

Structured navigation at building, floor, area, and individual device.

Historical trends over the last 24 hours, week, and month.

* + - * 1. Real-time Data, Analysis, and Control:

Air quality indicator metric.

Sensor data summary.

Historical trends over the last 24-hours, week and month.

Device details/status.

Individual unit controls.

Timers and scheduling functionality.

* + - * 1. Maintenance and Notifications:

Individual device status.

Remaining filter and UVC bulb life.

Information and data export.

Filter and UVC bulb reordering.

* + - 1. Dashboard Features:
				1. Sensor Sharing between units assigned to an area.
				2. Remote unit controls.
				3. Current Reset Air Index at the building, area, or device level.
				4. Device status and filter change notification.
				5. Multi-level Viewpoint Account Management.

\*\* NOTE TO SPECIFIER \*\* The remaining features are available as an optional upgrade. Delete if not required.

* + - * 1. Timers and scheduling for any unit in your system.
				2. Enhanced unit controls.
				3. Data export capabilities.
				4. Current and historical charts and data to analyze trends, identify IAQ concerns.
				5. Unit maintenance notifications and advanced troubleshooting.
				6. Real-time filter life measurement and replacement history.
				7. Community dashboard.
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.

\*\* NOTE TO SPECIFIER \*\* Include if manufacturer provides field quality control with onsite personnel for instruction or supervision of product installation, application, erection, or construction. Delete if not required.

* + 1. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	1. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer's recommendations during standard maintenance period.
		2. Touch-up, repair or replace damaged products before Substantial Completion.
	2. MAINTENANCE
		1. Filter Maintenance
			1. Units shall be capable of toolless filter change for ease of maintenance.
		2. Filter Change Notification:
			1. Non-Networked Units - Units at minimum shall have an LED or LCD Display notification indicating a filter change is required.
			2. Networked Units - Units at a minimum shall have user customizable notifications for filter status and filter change requirements via cloud-based online dashboard.
		3. UV Light Maintenance (where equipped)
			1. Units shall be capable of toolless UV light change for ease of maintenance.

END OF SECTION