# FAQ DOCUMENT

# RFCRFF-E-ARSM

## Reverse Flow Fan Filter Units for Isolation Rooms

**Is there a specific air changes per hour are we looking for with these units?** Recommended air changes per hour is: 12 (per ASHRAE 170). The reverse flow units will create negative pressure, but are not providing fresh air, cooling, or heating.

**In driving the room to a negative pressure, what % negative would satisfy the area?** To maintain a negative pressure differential, the room must be .01 w.c. between the occupied room and the adjacent space.

**What product is best in a retrofit space?** A mobile unit is allowed to be used and the air recirculated in the space, provided that a HEPA filter is used in conjunction with the exhaust air. If exhausting to the exterior, ASHRAE 170 recommends that you exhaust through the roof. The ceiling unit can be used in the same manner (to recirculate air into the room) as the mobile unit to free up floor space.

**If airborne particles, from someone coughing, fall toward the floor, why would you use a ceiling unit?** The ceiling units are supposed to be installed directly above the patient bed. This will ensure an optimal path of particulates between the patient and the HEPA filter.

**When using the mobile unit, where and how far from the patient is proper placement?** Attempt to locate the mobile unit as close to the head of the bed as possible. This will ensure an optimal path of particulates between the patient and the HEPA filter.

**If the air that a person exhausts and the heat from their body rise, why would you use a rolling floor unit?** The negative pressure is enough to overcome body plume buoyancy. A mobile floor unit would be used if they can't install a ceiling unit.

**What happens with the exhaust air from these units? How would you exhaust if the window was inoperable and they did not want to penetrate the side of the building?** The exhaust air from these units would need to be exhausted though the roof of the building. If the room is being retrofitted to accommodate an AII (Airborne Infection Isolation) environment, you may be allowed to recirculate the air into the space.

**If you penetrate into the hallway, where does the air go? Especially if there are multiple units?** They would need to find a way to vent the hallway to the outside or pressure could build up in the hallway if there were many isolation rooms on a floor.

**Could this be exhausted into the ventilation shaft for the exhaust fans used for the bathrooms?** Per ASHRAE 170, the air must be exhausted through the roof. When exhausting outdoors, this air is not allowed to be combined with air from a non-AII environment.

**Think of a convention center. What would I do if I have a make shift room with no ceiling?** The mobile unit would be best fit for this application, positioned at the head of the bed.

**Can this be tied into a fan coil, thru the return?** Even though air may be recirculated in the space, if there is no means of exhausting, it is not recommended to recirculate this thru the fan coil or any other piece of equipment.

**Where to place a supply air outlet?** A non-aspirating diffuser is best positioned near the foot of the bed.

**What functions do the controls on the face perform?** Start/stop, setpoint adjustment (motor RPM), and calibration adjustment. There is also a digital display for RPM. If the unit includes an optional airflow sensor, then the numeric display will provide CFM.

**The performance documentation, on a 24"x48" unit, shows 1,074 CFM @ 100% setpoint. Can you explain the setpoint and what the meaning of this is?** In this case, the setpoint is the performance at maximum motor speed RPM (100%). Testing was performed at 0-static pressure at the inlet (IE: freestanding in a room).

**Does the unit have % indicator of the filter load?** There is a 'Continuous Filter Monitoring' option, which will add a pressure transducer that can either be fed back through the MODBUS control board or send a 0-5V signal to a DDS. If equipped with an airflow sensor, the motor RPM can be monitored from the BMS and used as a filter load indicator.

**I have a square duct. Can it connect?** A round duct connection is standard, mounted on top (for ceiling unit), but side/end inlets and other shaped duct connections are all options.

**Do we need to let you know if unit will be un-ducted (for installation into a perforated safety cage)?** A duct kit is standard, but if ordered without a duct kit, it will still come with the safety cage.

**You show a higher CFM rating on the 208-277v model. Is this because the motor RPM is higher?** That is correct. The standard HEPA filter is only rated to 900 CFM. The extra capacity is an indication of its ability to handle filter loading, ducting, and other pressure losses. When designing a system, the best energy efficiency and sound levels are achieved at around a 40-50% setpoint.

**Your data is based on a standard HEPA filter. Have you been able to test this unit using the ULPA filter?** We have not had the opportunity for ULPA filter testing yet. Based on the similarity of the pressure drop curves, we anticipate similar performance from an ULPA filter.

**You said you list your filter at 0-static pressure. Can you explain this a little?** 0-static pressure is the inlet pressure during testing; in this case, it means the unit was free-standing in a room. Pressure differentials from ducting, room pressurization, and other factors will result in different values.

**Do you have estimated weight for each ceiling unit?**

- 24”x24” - unducted ceiling unit - 40 lbs
- 24”x24” - ducted ceiling unit - 50 lbs
- 24”x24” - filter only - 9 lbs
- 48”x24” - unducted ceiling unit - 56 lbs
- 48”x24” - ducted ceiling unit - 66 lbs
- 48”x24” - filter only - 18 lbs

**Can multiple units be controlled by one wall control?** Yes, they can be daisy-chained together with CAT5 or CAT6 cable and controlled from a wall controller. They can also be integrated into a BMS, just like our standard fan coil units.

**Do you happen to have any seismic rating for these?** We have not yet performed seismic testing for these products.

**Are these units available with LED lights?** We have not had a request to do this, but it can be done. Due to engineering time, it could add several weeks to the lead time, making it ineligible for a rush request.