

INNORACK® 3.0 MOUSE

HEPA Challenge Test Procedure

v11/20

To ensure that the Innovive blower system meets HEPA standards. This test validates proper HEPA frame construction and HEPA media quality plus the seal integrity in the Innorack® supply and exhaust blower assemblies.

EQUIPMENT

- HEPA challenge test module(s) (contact Innovive customer service for a price quote)
- An aerosol generator capable of delivering a minimum challenge concentration of 10µg/L of air
- A diffuser to control the concentration of aerosol being delivered to the system
- A calibrated particle-detecting photometer having a nominal sampling flow rate of 28.3L/min (1cfm)
- A long flexible hose to connect to the units being tested
- HEPA test duct connector
- Bungee cord



WARNING!

**POWER SUPPLY MUST ALWAYS BE OFF WHEN
CONNECTING AND DISCONNECTING TO BLOWERS.**

PROCEDURE

Each blower must be removed from the rack before performing the test.

Each blower must be removed from the rack to perform the HEPA integrity test.

1. Disconnect all cables and cords to the blowers.
2. Remove the supply and exhaust blowers from the rack by tilting the blower back towards the center of the rack. Tilt the blower so that it is completely off of the retaining pins, and then slide the blower slightly forward and up off the rack.
3. Remove the power supply from the rack.
4. Place both blowers and the power supply on a bench. Rotate the blowers onto their sides to expose the power connector on the bottom of each blower.

EXHAUST BLOWER TEST

1. Reconnect the power cord to the power supply and attach the HEPA challenge test module to the bottom of the exhaust blower. Plug the power supply cable into the front of the HEPA challenge test module. See picture below:



2. Attach both flexible hoses to the Inline Centrifugal Duct Fan as shown below:



NOTE: Use the variable transformer to control the flow output of the aerosol-mixing fan to ≤ 10 CFM.

3. Attach flexible hose to HEPA test duct connector as shown below:



4. Using the bungee cord, strap the adapter over the hole on the bottom of the exhaust blower. Position the adapter with the flange against the sidewall of the exhaust blower as shown below:



5. Turn the power supply on. The fan in the blower should start spinning immediately.

6. Poke a small hole in the flexible tube and insert the probe of the photometer into the opening. See below:



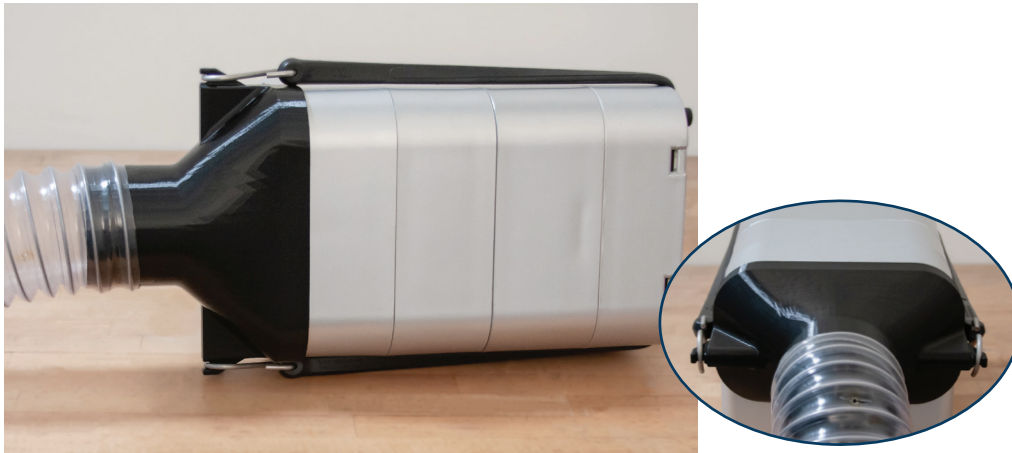
7. Turn on the aerosol generator and adjust the diffuser so that the photometer reads between 10 and 100 $\mu\text{g}/\text{L}$ concentration upstream of the HEPA filter.
8. Record the challenge concentration used and adjust the photometer to read the upstream concentration as 100%.
9. Place the photometer probe inside the exhaust port of the exhaust blower as shown below:



10. Concentration should be $\leq .03\%$.
11. Turn off the aerosol generator and the power supply. Remove the flexible hose and the HEPA challenge test module from the exhaust blower.

SUPPLY BLOWER TEST

1. Using the bungee cord, strap the supply HEPA test duct connector over the hole on the top of the supply blower. Position the connector with the flange against the side wall of the supply blower as shown below:



2. Attach the HEPA challenge test module to the bottom of the supply blower. Ensure that the power supply cable is still connected to the HEPA challenge test module.
3. Turn the power supply on to start the fan in the supply blower.
4. Insert the photometer into the hole in the flexible tubing and turn on the aerosol generator. Ensure that the photometer reads at least 10 $\mu\text{g}/\text{L}$ concentration. See below:



5. Record the challenge concentration used and adjust the photometer to read the upstream concentration as 100%.

6. Place the photometer probe into the rack interface of the supply blower as shown below:



7. Concentration should be $\leq .03\%$.