# The University of Dezii Translational Vision Research Group

Page 1 of 3

#### TITLE: HEPA Filter Leak Testing For DTVR Rooms

SOP Number:	D-FAC-PRO-001	Revision Number:	0
		Effective Date:	08 Aug 2015
Author:		Date:	
Reviewer:		_ Date:	
QA Approval:		_ Date:	

#### A. OBJECTIVE

To outline the steps necessary to test the HEPA Module for leaks in rooms that are part of the Dezii Translational Vision Research Group (DTVR).

#### B. APPLICABILITY

This procedure shall be performed by an Environmental Systems Testing Technician on an as-designated basis per specified survey. The EST Tech will coordinate with the Director of DTVR prior to beginning each survey.

## C. REFERENCES

D-GLO-PRO-004 Dress Code and Clean Room Gowning for DTVR D-DEZ-PRO-025 Setup and Cleaning of the Clean Room

#### D. CHEMICALS AND REAGENTS

70% Alcohol

## E. EQUIPMENT

TEC Services Inc. Photometer PH-3, ATI Aerosol Generator TDA-5B, wipes, sample tubing, photometer probe

#### F. PROCEDURE

#### Section I: Set-Up

- 1. Assemble prior paperwork and update the reports for HEPA-protected facilities in the DTVR.
- 2. Pre-gown with Clean Room suit or scrubs, gloves, lab coat, head cover, face mask or beard cover, safety glasses and shoe covers according to SOP D-GLO-PRO-004.
- 3. While in the staging area, "surface decontaminate" all equipment including the transport cases prior to entering the facility. This is accomplished with sanitizing wipes and 70% alcohol provided by the facility guidelines set by the DTVR operations (see SOP D-DEZ-PRO-025).
- 4. Move cabinet containing the aerosol generator to the first location close to the ceiling ports in the appropriate room. Pull the power cord from the aerosol generator and plug into the nearest receptacle. Move the photometer as close as possible to the appropriate HEPA filter to be tested. Open lid to the photometer. Remove the power cord from the back of the upper case and pull at least 15 feet of power cord and plug into nearest receptacle.
- 5. Connect the probe to the photometer down-stream port.

# The University of Iowa Dezii Translational Vision Research Group

Page 2 of 3

## TITLE: HEPA Filter Leak Testing For DTVR Rooms

SOP Number: D-FAC-PRO-001

Revision Number:	0

Effective Date: 08 Aug 2015

## Section II: Calibration Process

- 1. Warm-up
  - 1.1. Connect the photometer power cord into the photometer and plug into the power reel connection.
  - 1.2. Rotate valve lever to **CLEAR** position, then press **METER** RANGE button to 100.
  - 1.3. Press **POWER SWITCH** to on position. Allow at least (5) minutes for warm-up time.
- 2. Calibration Settings
  - 2.1. With the VALVE in the CLEAR position, press METER RANGE to 10 and turn the 0 DIAL fully clockwise.
  - 2.2. **PRESS** and **HOLD** the **DOP or PAO** button. Then rotate the **100 DIAL** to obtain **100** on the meter (10%).
  - 2.3. Set **METER RANGE** to .1 and rotate the **0 DIAL** to obtain **0** on the meter.
- 3. Alarm
  - 3.1. With VALVE at CLEAR position, press ALARM SWITCH which activates the alarm circuitry and press the METER RANGE to 0.1.
  - 3.2. Rotate the **100 DIAL** to obtain the desired **ALARM SETTING (0.01)**.
- 4. Testing Set-Up
  - 4.1. Connect the probe to the photometer down-stream port.
- 5. Use the three step platform ladder, remove the rubber stopper from the up-stream hose that coincides with the HEPA filter to be tested. Attach the black Teflon sample tube from the aerosol generator in the bottom of the case to the previously designated up-stream hose. Use masking tape to ensure the seal between the two hoses and prevent leakage. Upon verification of the HEPA filter integrity, flip the switch to turn the aerosol generator off, remove the masking tape and detach the two hoses. Replace the rubber stopper and move to the next up-stream hose to resume testing.

## Section III: Startup & Testing

- 1. Complete calibration process.
  - 1.1. Start aerosol generator located at the right side of the bottom case. Open cap and flip switch.
  - 1.2. While observing the photometer scale, turn the silver sample lever to the upstream setting.
- 2. The scale must read 80 to 100% upstream concentration to move to next step.

# The University of Iowa Dezii Translational Vision Research Group

Page 3 of 3

# TITLE: HEPA Filter Leak Testing For DTVR Rooms

SOP Number: D-FAC-PRO-001	Revision Number:	0
	Effective Date:	08 Aug 2015

- 2.1. If the reading is less than 80%, the test must stop and the delivery system must be checked. First make sure there is a full tank of mineral oil. Than go to the mezzanine level at the point of the system being tested and make certain all the connections are sound. Make any repairs necessary and re-test the upstream concentration.
- 3. Start the aerosol generator and turn the lever back to the upstream setting.
  - 3.1. If the reading is proper turn the lever back to the CLEAR setting for 10 seconds then counter clock-wise to the down-stream setting and allow the process to continue for at least one minute and make sure the readings do not bounce or exceed the 0.01% concentration level for passing.
  - 3.2. Pass the probe back and forth along the HEPA filter surface making sure the probe does not touch the filter surface. Be sure to pass the entire surface to ensure the integrity of the whole HEPA filter.
  - 3.3. If this location passes and the next location is close enough for the equipment to move without being unplugged, shut off the generator and disconnect the aerosol hose. Replace hose barbs with plugs and move to the next location.
- 4. Repeat the testing process until all locations are completed.
  - 4.1. If leakage is found at a location, contact the DTVR Director, QA Officer and facility area maintenance to determine if the HEPA filter should be repaired or replaced. When that is accomplished, repeat the process and verify that the HEPA filter passes.

# G. History

Effective Date	Revision	Change
08 Aug 2015	0	Original document