

Best clinical practice for Vertical Laminar Flow Hood

Laminar Airflow Hoods, also referred to as Laminar Flow Hoods are designated enclosed physical spaces that act as barriers to protect material, the laboratory worker, and laboratory environment from different sources of contamination and/or exposure to hazardous materials within the hood.

The use of a HEPA Filter is critical as it enables air to move through or flow through the unit.

Different Classes of Laminar Airflow Hoods

Three different classes of **vertical laminar flow hoods** have been designated to meet specific requirements for varying industries. The three classes are Class I, Class II, and Class III.

Class I Laminar Flow Hoods

Hoods in this class provide ample protection to personal and the outside environment but do not offer a high level of protection to the materials or cultures within the hood.

Class II Laminar Flow Hoods

Class II laminar flow hoods provide a sterile environment and are intended for applications involving BSL-1, 2, and 3 materials. This includes protection from certain fumes, gases, and hazardous materials.

Class III Laminar Flow Hoods

The highest level class of laminar flow hoods is class III. This class is designed to offer the most protection possible. These units are required for applications involving BSL-4 materials and other dangerous human pathogens as they provide protection from potentially infectious substances

Cross-contamination is a serious risk in laboratories and it's imperative that regular cleaning takes place to avoid it. As a laminar airflow hood is specifically designed to be a sterile environment, understanding how to keep it clean is of particular importance.

Whether you have a vertical or horizontal laminar flow hood, you must ensure it is cleaned regularly so the environment is not compromised.

Cleaning should be undertaken using the following process and it should be noted that the filter is not to be cleaned. Instead, it should be replaced in the timeframe outlined by the manufacturer.

In this simple guide, we will look at the best cleaning practice for laminar flow hood hygiene.

Equipment Required

Collect the required equipment before stepping into the cleanroom environment.

PPE

Personal protective equipment (PPE) must be worn. This includes gloves, eye protection, hair net, and a face mask. If the lab works with noxious fumes, a respirator should also be worn. Ensure you wear a lab gown as well as full-coverage shoes with shoe covers.

Ethanol

Use 70% ethanol as the disinfectant unless otherwise specified by the hood manufacturer. Soap and water should not be used.

Cleanroom-Grade Wipes

Cleanroom-grade wipes should also be used and disposed of immediately afterward. Never re-use wipes as this can increase the risk of contamination.

Biohazard Waste Bag

Ensure a biohazard waste bag is within easy reach to dispose of any contaminated materials such as cleaning wipes and gloves.

Prepare Your PPE

Put on your PPE (disposable cleanroom apparel) in the following order:

- Shoe covers
- Gloves
- Lab gown
- Face mask
- Eye protection, if not part of your face mask
- Hairnet

How to Clean a Laminar Airflow Hood

Never spray disinfectant directly onto the HEPA filter or touch the filter.

Assess the hood for any spills or contamination. If found, spray the wipe with disinfectant and mop up.

For the cleaning, take a wipe and fold it into halves or quarters. There are slight differences in the cleaning process depending on whether you have a vertical or horizontal hood.

Cleaning a Vertical Laminar Flow Hood

Begin by taking the wipe and spraying disinfectant onto the wipe. Using the wipe, clean the interior back of the hood using sweeping back and forth motions. Do not clean in a circular motion as this can risk contamination.

Continue by using a clean side of the wipe or using a new wipe and clean the side walls followed by the work surface of the hood.

When wiping the work surface, start at the back and sweep in right-to-left movements, working forward. Each sweep should overlap the last by around 50%.

Cleaning a Horizontal Laminar Flow Hood

Start by spraying a clean wipe and wiping the ceiling of the flow hood, taking care to disinfect and wipe hard-to-reach sections.

Take a fresh side of the wipe or a new one. Continue with the sidewalls and then the work surface using right-to-left, back, and forth movements that overlap by 50%.

After Cleaning

Some laminar airflow hoods may have UV-C Germicidal Lamps for sterilization. Always follow the manufacturer's guidelines for use and ensure there is no contact with the hood during any UV sterilization.

When cleaning is complete, dispose of wipes, gloves, and gown in the biohazard waste. Always remember to wash your hands afterward.

Keep Your Laminar Airflow Hood Clean

Maintaining a clean, sterile laminar airflow hood is essential for the avoidance of cross-contamination. By following a strict cleaning process and abiding by the manufacturer's recommendations, you can keep your air flow hood sterile.

The information supplied in this article is for guidance only. Not all cleanrooms will use the same procedures. Follow your specific cleanroom or company procedural manual before this guide. If you want to learn about vertical laminar flow hoods, [click here](#).