

World's **most advanced** fume hoods



AEOLUS



Fume Hood Selection Criteria

Selecting a Fume Hood

The following are the factors to be considered while selecting a Fume Hood

- Room Size: Length x Width x Height
- 3' & 4' width hoods are intended for 1 person, with relatively small apparatus
- 5' hoods are for 1 or 2 people or with large apparatus
- 6' hoods are generally for 2 or more people or with very large apparatus

Fume Hood Application

- A normal Auto-bypass Fume Hood can be used for general purpose applications like in teaching & non-AC research laboratories involving use of acids & organic solvents
- For handling Perchloric Acid and Hydrofluoric Acid, highly toxic & other unstable explosive materials and radio-isotope applications special design hoods are required
- Under-storages should be chosen as per the storage requirement (for apparatus or for corrosive acids or for flammable solvents)
- Godrej LCV and VAV Fume Hoods should be used for AC labs

Our Clientele

Education

- Institute of Life Sciences, Bhubaneshwar
- U.P. Rural Institute of Medical Sciences & Research, Saifai
- North Eastern Hill University
- College of Agriculture, Bengaluru
- PGIMER, Chandigarh
- Oxford College of Pharmacy & Science
- Indian Institute of Physics
- IIT Bombay, Gujarat, Roorkee, Madras, Kanpur, Indore, Guwahati
- Cargill
- Aligarh Muslim University
- University of Hyderabad
- Jawaharlal Nehru Centre for Advanced Scientific Research (JNCASR)
- Central Institute of Plastics Engineering & Technology (CIPET)
- Jalaun Medical College
- D.Y. Patil International Academy - Mumbai, Pune, Nagpur
- Institute of Nuclear Medicine & Allied Sciences (INMAR)
- National Inst. of Pharma. Education & Research (NIPER)
- Birla Inst. of Technology & Science (BITS, Pilani)

Others

- Hindustan Unilever Ltd.
- Mercedes Benz
- Honda R&D Centre
- Daimler
- Adani Power
- Kansai Nerolac Paints Ltd.
- Jindal Steel Power Limited
- Tata Motors
- Asian Paints
- L&T

Chemical

- National Chemical Laboratory
- HPCL
- BPCL
- IOCL
- IPCA
- MRPL

Research

- Indira Gandhi Centre for Atomic Research, Kalpakkam
- Soil Testing Laboratories, Orissa
- TICEL Biopark, Chennai
- CDRI, Lucknow
- Saha Institute of Nuclear Physics, Kolkata
- Central Forensic Science Laboratories
- IISER Kolkata, Bhopal, Pune
- ICRISAT
- BARC
- ISRO
- Central Pollution Control Board
- Central Salt & Marine Chemicals Research Institute
- Physical Research Laboratory
- National Institute for Research in Reproductive Health (NIRRH)

Pharma-Biotech

- Syngene International
- Shasun Pharmaceuticals Ltd.
- Kemin Industries
- Jubilant Organosys
- Bayer
- Lupin
- Bureau Veritas Group
- Concord Drugs
- Marico
- Bal Pharma
- Sandoz Pvt. Ltd.
- Ballarpur Industries
- Advinus
- Aurogene
- Micro Labs Limited
- Ranbaxy Laboratories Ltd.
- Johnson & Johnson
- Dr. Reddy's Lab



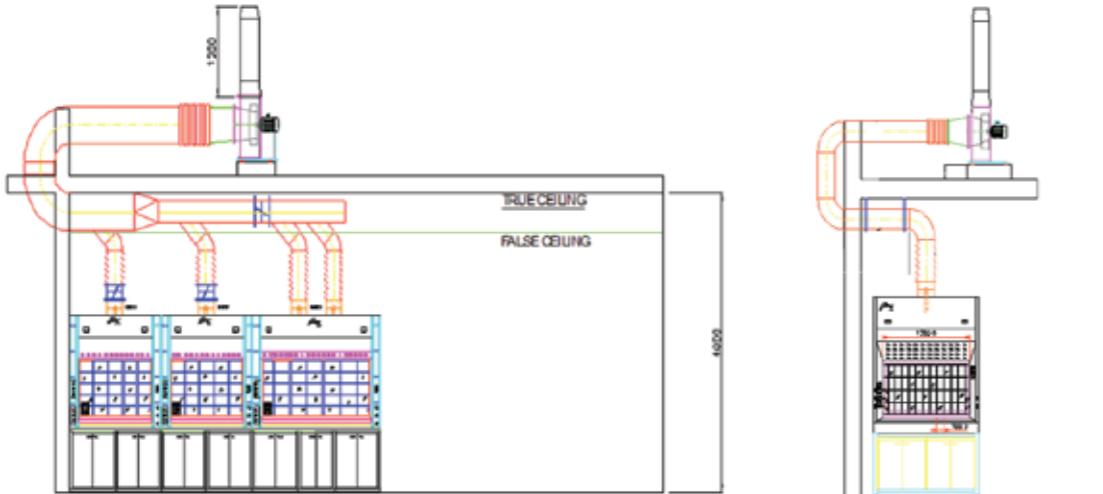
Granted in 2015

Clustered Fume Hoods

Single Fume Hood Vs. Clustering (Diagram)

When multiple fume hoods are present in the lab, they can be clustered together to be connected to a common exhaust system.

These entire fume hoods can be operated simultaneously. Such clustering reduces the investment in designing and building of the exhaust made of ducts & blowers.



Exhaust Systems installed on Site

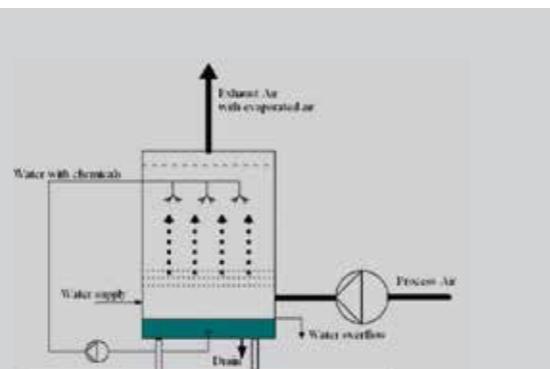
BLOWERS

We offer high quality blowers, which when connected to the fume hoods via ducting complete the exhaust system in making the fume hood functional. There is a choice of high-quality reputed indigenous blowers made from PP+FRP casing and FRP-vinyl ester Impellers and imported fully PP Moulded blowers.



SCRUBBERS

Scrubbers are installed as a part of the exhaust system to scrub the incoming gases exhausted from fume hood. The cleaner scrubbed gas is released to the environment. Based on the application, the scrubber type can be a wet or a dry one.



AEOLUS

CERTIFIED BY THE BEST

Godrej Aeolus Fume Hoods have been type-tested and certified to EN 14175 and ASHRAE-110 standards. They have very high containment characteristics comparable to those of the world's leading manufacturers, which ensure that the end-users have a high degree of protection. Aeolus is designed with great attention to detail. Adding to its aesthetically appealing design, it is truly a contemporary safety device which is a must for all critical application areas.



Dr. Ali Bicen, PhD, an expert in fluid mechanics related topics, is the managing director of Invent UK. He is a member of BS 7258 fume cupboard committee (LBI/1/1) and the UK expert delegate in the fume cupboard EN 14175 European Norm committee (TC332/WG4). He developed new test methodologies and procedures, which led to the publication of BS7258, Part 4 in 1994. Since then he has been a co-opted member of BSI LBI/1/1 fume cupboard committee. Having BS 7258, Part 4 in place, he then pursued with Dr. Bernhard Mohr (the convener of TC332/WG4) to start the committee and draft the new European Norm, EN 14175, on fume cupboards.

Aeolus is simply the unbeatable choice in Fume Hoods while considering the following parameters



SAFETY



ERGONOMICS



ENERGY
CONSERVATION

Materials/Utility Options

1. Liner Options

- Industrial Laminate • Stainless Steel

2. Electricals

- 6/16A Power Points • 20A Power Points • 32A Power Points

3. Worktop

- Jet Black Granite • Compressed Laminate • Epoxy Resin
- Ceramic • Stainless Steel

4. Storages

- Apparatus Storage • Acid Storage for Corrosives
- Solvent Storages for Flammables

5. Lights

- Led Lights • Weather-proof Lights

SAFETY

Safety of the end-users is achieved through superlative fume containment with the help of its intelligently designed 3-stage Assisted Airflow System or **3AAS**. This system is based upon very meticulous detailing of each individual part of the sash and it helps in effective exhaust of low, medium and high-density fumes, ensuring thorough protection of the personnel operating it at all times.



Horizontal Fixture Panel & H-frame with Movable Storage



The Horizontal Fixture Panel provides flexibility for end-users to have conveniently located electrical services just beneath the worktop. It also provides space for electrical power points in addition to those available at the sidewalls

There are also removable storages provided with castors while the superstructure is mounted on an H-Frame to enable removal of under-storages

• Horizontal Fixture Panel

• Castor-Based Storage with H-Frame

Fume Hood Variants

Aeolus Fume Hoods are available in 3 broad variants based on the platform height, platform width and airflow pattern as shown below

Variants By Construction



Bench Top
Fume Hood



Low Bench
Fume Hood



Walk-In
Fume Hood

Variants By Width

4' width 5' width 6' width 7' width 8' width

Variants By Airflow

Constant Air Volume

- Auto Bypass (ABP)
- Low Constant Volume (LCV)

Variable Air Volume (VAV)

ERGONOMICS

Detailed user studies and their behavior and interaction with the fume hoods inside the laboratory have enabled our designers and ergonomists to take user comfort into close account while designing Aeolus. This has been achieved by a combination of utility and indigenously developed technology, which makes working on Aeolus very comfortable in all respects.



ENERGY CONSERVATION

A typical fume hood in an air-conditioned laboratory consumes energy that is equivalent to three times of that consumed in a home. The Energy Conservation capabilities of Aeolus will reduce this operational cost of the fume hoods, which not only results in direct saving but also adds to the green quotient of your laboratory facility.

SAFETY

that sets the standards.

Aeolus ranks amongst the safest fume hoods in the world on all the following counts



THE AEOLUS RANGE

Model Variants

Aeolus M

Aeolus C

Aeolus X



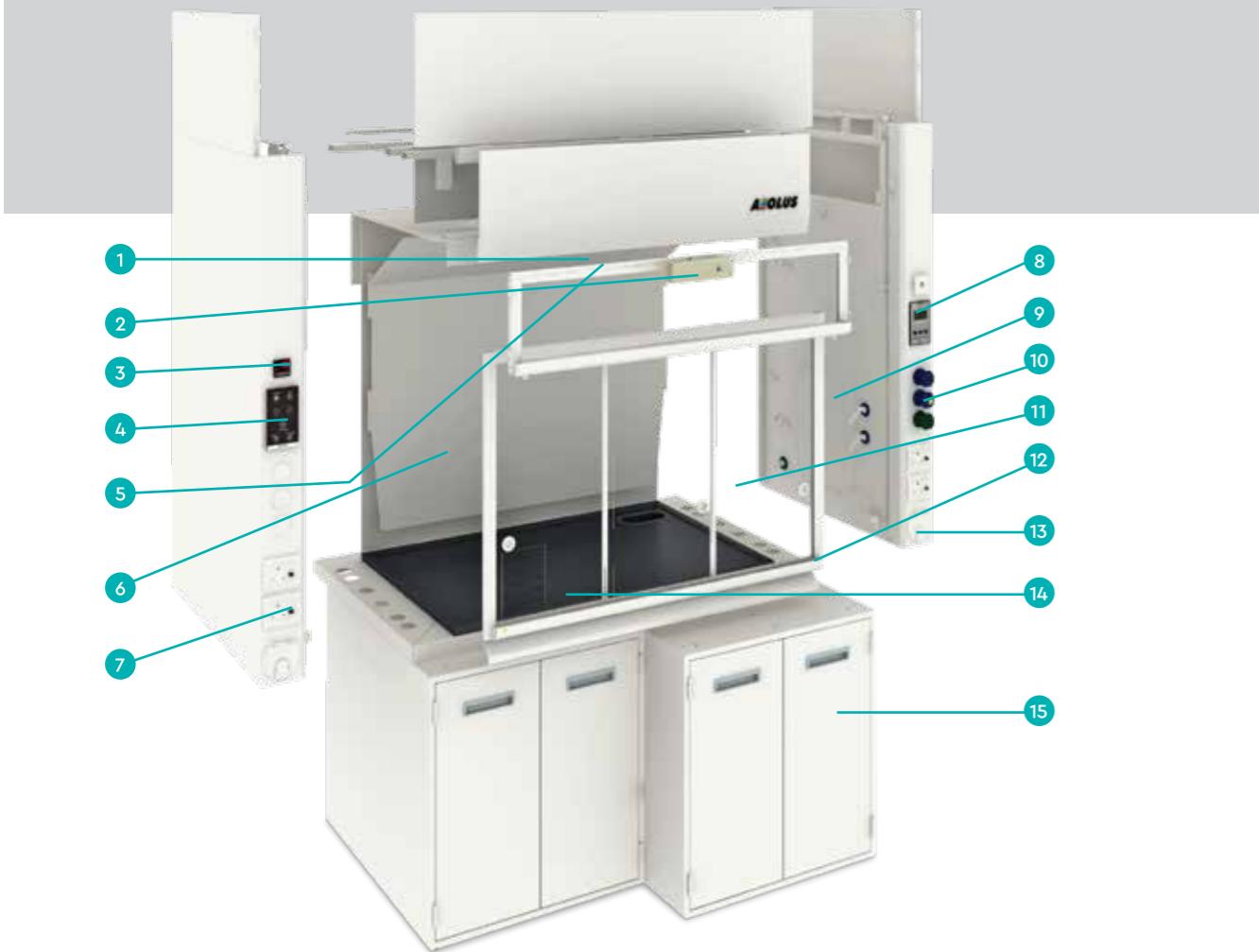
FEATURE / VARIANTS

Autosash	✓	✓	✗
Fire Extinguisher	✓	✗	✗
Air flow Monitor	✓	Optional Accessory	Optional Accessory
Temperature Indicator	✓	✗	✗
Hard Tubing	✓	✗	✗
LED Lights	✓	✓	✓
Electric Hatch	✓	✓	✓
Under-storages	Corrosives + Flammables	Equipment + Corrosives	Equipment + Equipment
Scaffolding	✓	✓	✓
Service Valves	✓	✓	✓
Electrical Power Points	✓	✓	✓

AEOLUS

Parts of Fume Hood

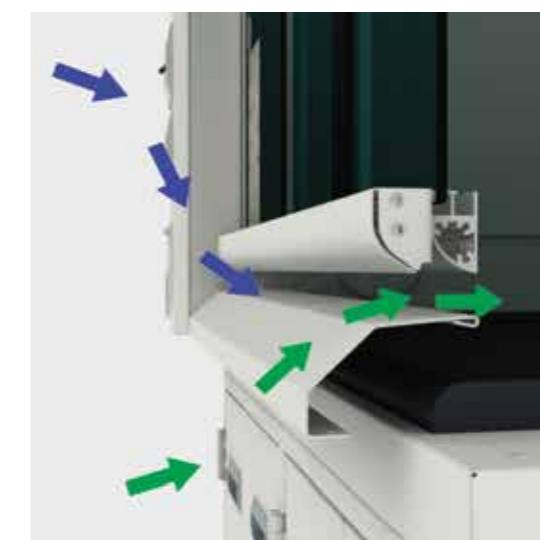
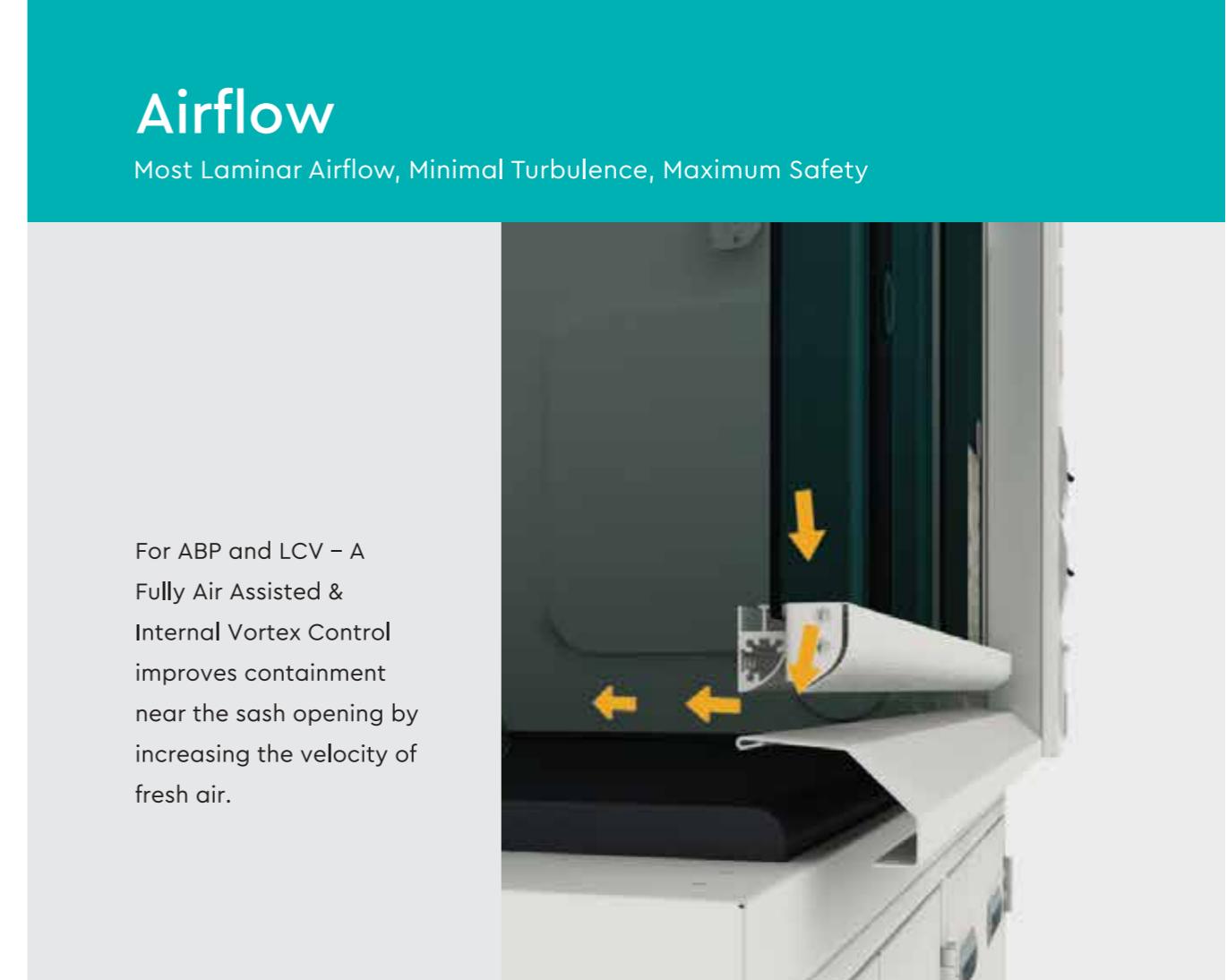
1. Led Lights
2. User Presence Sensor for Autosash (Optional Accessory)
3. Digital Temperature Indicator (Optional Accessory)
4. Touch-enabled Control Panel for Master Fume Hoods
5. Fire Extinguisher (Optional Accessory)
6. Liner: Phenol-based Compressed Laminate. Options: Trespa/SS 304 Application-based
7. Electrical Power Points
8. Digital Air Flow Monitor (Optional Accessory)
9. Removable Access Panel for Maintenance. Options: Glass Windows for Demo Hoods
10. Multiple Utility Service Valves
11. Toughened Glass Sash to Support ABP and LCV Configurations
12. Obstacle Sensor (Optional Accessory)
13. Electric Wire Hatch
14. Application-specific Worktops
15. Under-storage Cabinets for Apparatus, Corrosives & Flammable Liquids



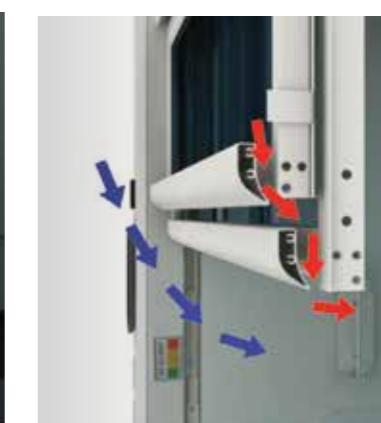
Airflow

Most Laminar Airflow, Minimal Turbulence, Maximum Safety

For ABP and LCV – A Fully Air Assisted & Internal Vortex Control improves containment near the sash opening by increasing the velocity of fresh air.



Aerodynamic Sash Terminator and Handle. A gentle airlift by 6-degrees in the Aerofoil improves the containment considerably.



For LCV – Outer Elephant Tusk deflector at face level has ensured containment by increasing the airflow into the hood.



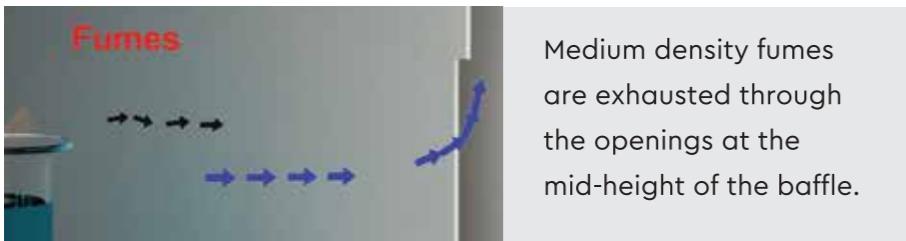
The gradual slope of the inner deflector vane assists the incoming fresh air to control the internal turbulence.

Fume Containment

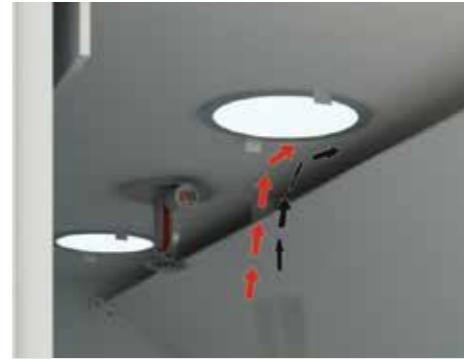
The Design allows efficient exhaust of Light, Medium and Dense Fumes for maximum user safety



High density fumes are swept effectively across the worktop and guided by the opening at the bottom of the baffle.



Medium density fumes are exhausted through the openings at the mid-height of the baffle.



Low density fumes are exhausted via the opening at the top of the baffle over the top liner.

Automatic Fire Extinguisher

This safety feature helps in curbing the spread of the fire outside the fume hood chamber thereby protecting personnel and property from any damage. This feature is incorporated in certain models of the hood.

In case of a fire inside the hood, when the temperature near the fire extinguisher sensor reaches around 68 degrees, ABC powder from a 5 Kg canister located at the ceiling of the hood chamber is released to douse such an accidental fire.



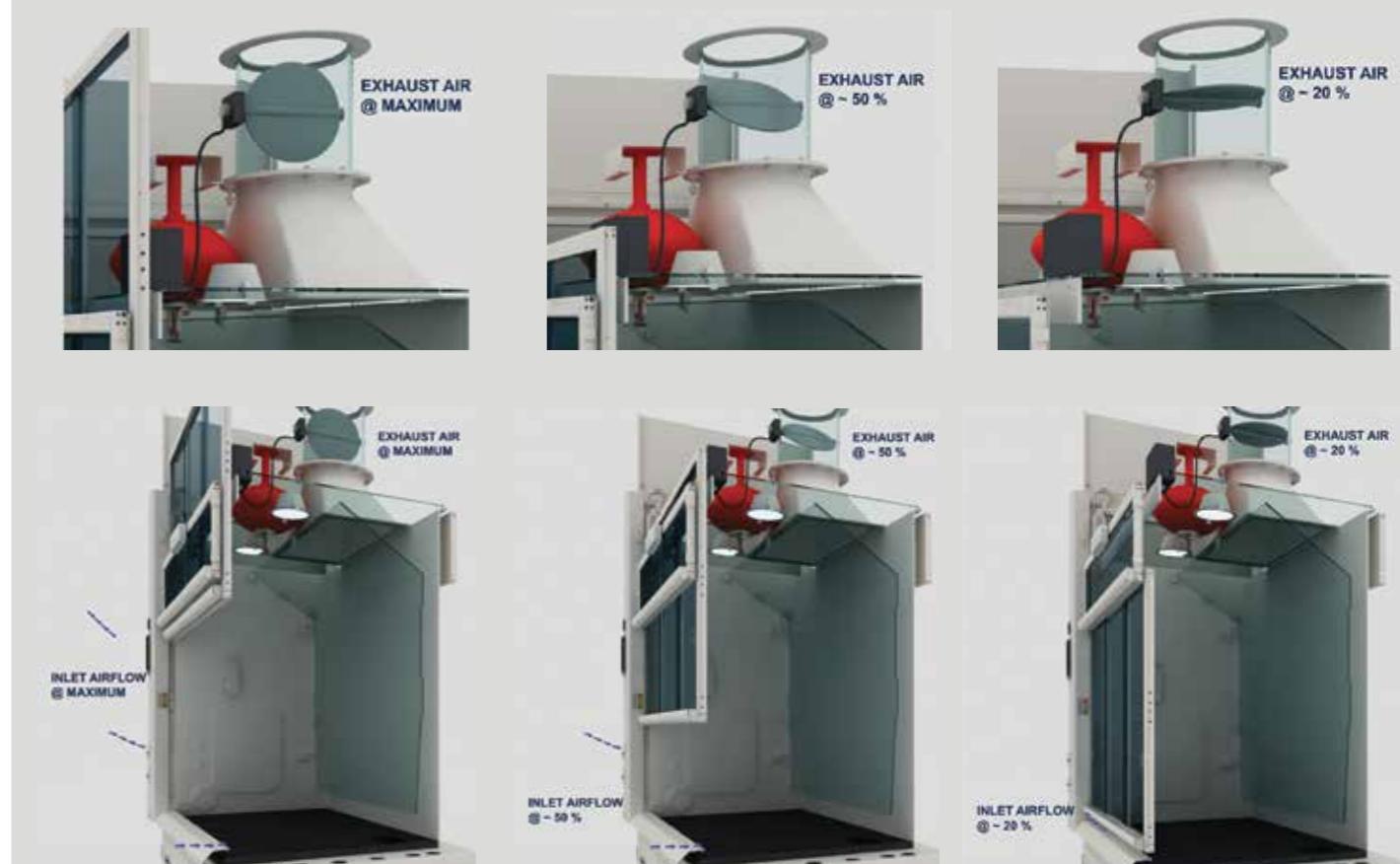
Auto Sash with Variable Air Volume

High Level of Energy Saving

Variable Air Volume (VAV) Exhaust mechanism senses the position of the sash and accordingly rotates an electronically controlled exhaust damper to have a control on the Volume of exhaust of fresh conditioned air from the lab.

Autosash closes the sash automatically in the user's absence in front of the hood thereby controlling the damper rotation.

VAV system coupled with auto sash gives best results in energy saving.



Energy Saving

Aeolus with Auto Sash & VAV gives an operational cost reduction of about 72%.

72% COST
REDUCTION

DESIGNED FOR HIGHEST ENERGY EFFICIENCY.
Aeolus... World's Most Advanced Fume Hoods.

ENERGY CONSERVATION

LED Lights

Eco-friendly

LED Lights offer manifold advantages:

1. Energy Efficient (around 80% energy saving).
2. Eco-Friendly as there is no use of Mercury.
3. Long Life.



LCV

LOW CONSTANT VOLUME EXHAUST

Medium Level of Energy Saving

For air-conditioned laboratories, the Low Constant Volume (LCV) Exhaust hoods reduce the exhaust volume of air-conditioned cold fresh air. This reduces the load on the HVAC system in maintaining lab room temperature.

In the LCV configuration, the glass sash is open only 1/3rd of its horizontal width at any point of time thereby reducing the entry area for fresh air into the hood and contributing to energy conservation.



SAFETY

Autosash and Obstacle Sensor

The Autosash feature ensures that the sash is open up to a safe sash height in the user's presence, thereby protecting the user's face from exposure at all times. When the user moves away from the hood, the sash closes automatically thereby ensuring fume containment.

The Obstacle Sensor senses obstacles in the vertical movement path of the sash and protects the sash and anything within the sensor path from getting damaged due to auto-closure.



Electric Control Panel

The Electrical Control Panel houses the necessary wiring, relays and protection circuits to ensure that the fume hood and exhaust items are not affected due to fluctuations in current, voltage and phase



Service Controls outside the Hood

No direct fume contact with electrical power points and service valve knobs

(Point 9.3 EN 14175 -2)



The Electrical and Gas Utility Service Controls are located on the vertical sidewalls of the fume hood. Thus, these are not exposed to the fumes that are generated inside the hood chamber.

Such a provision prevents hazards and also adds to the convenience of the users in accessing these controls.



Air Flow Monitor

Digital Face Velocity readings, Audio-Visual Alarms to warn users when velocity drops or shoots beyond threshold

Point 8 of EN 14175-2

The Digital Air Flow Monitor provides a digital reading of the face velocity at the face of the fume hood. It can be configured to set the upper and lower thresholds as per the standards. Any deviations beyond these levels give an audio-visual alarm for the user to take notice and initiate corrective action.

The benefit is that the users are made aware in case the face velocity drops below the desired levels, thus possibly preventing them from exposure to accidental fume escapes, etc.



Removable Service Access Panel

Ease of Utility Services Maintenance

The removable service doors inside the hood chamber provides easy access to the services for maintenance.

Access to controls for the Utility Services have been provided on the front of the fume hood on the vertical walls and in some configurations also below the worktop on the horizontal fixture panel, thus adding to ease of the users to use them.

Integrated Parameter Controls

Thermocouple and Digital Temperature Indicator is another optional accessory that can be provided to the customers who constantly measure the temperature of the liquids during the experiments.

The Thermocouple, located inside the fume hood, is provided with wire management for clutter-free use and arrangement.



DESIGNED WITH USER NEED AND CONVENIENCE IN MIND.

Aeolus... World's Most Advanced Fume Hoods.

ERGONOMICS

Operational Modes

Easy Sash Maneuvering

Automatic Mode: Sash operation is automatic based on user presence.

Manual Mode: Sash Operation is done by touch-panel buttons. Blower and Light buttons too are incorporated in touch panel, adding to user convenience.



Electric Wire Hatch

Reduces Clumsiness and Wire Damages

The instrument/equipment wires from the inside of the fume hood can be connected to the electrical power points on the front fascia through this hatch without causing any damage to the wires.

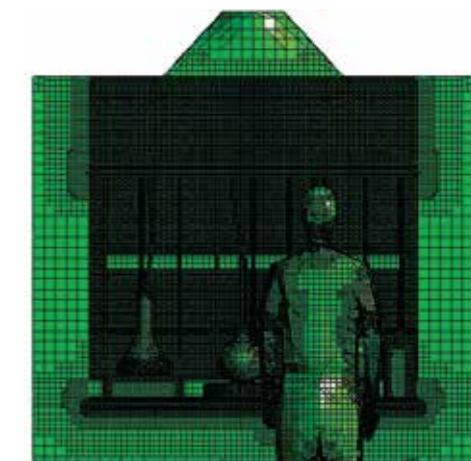
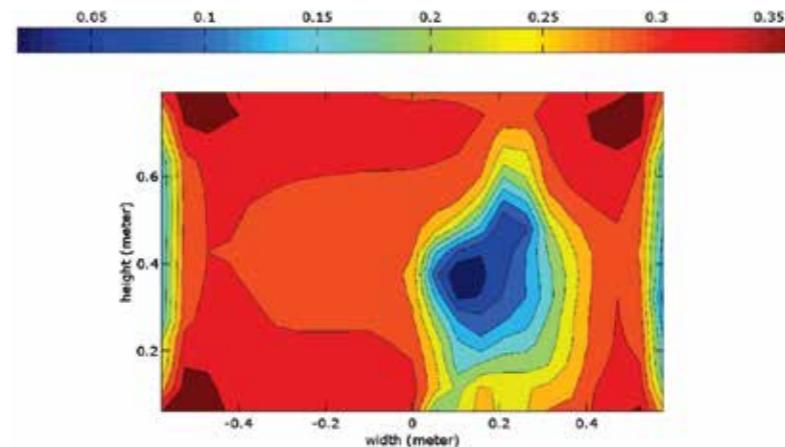


SAFETY

Real Life Airflow Simulation

Advanced CFD Analysis for maximum safety

Aeolus is designed based on outcomes of Advanced COMPUTATIONAL FLUID DYNAMICS (CFD) analysis that simulates actual working conditions helping to analyze their effects on airflow patterns and subsequent fume containment. This has allowed the efficiency and robustness parameters to be exceedingly good. Aeolus is safe to operate at face velocities of 0.3 m/s or 60 fpm



Compliance to Standards

Assurance of World-Class Quality

EN 14175

Aeolus is 3rd party tested for DIN EN 14175 (parts 1-3) (European) standard (all tests)

The performance results for the above EN tests is as per UK Class 1 category (meant for Research Laboratories as detailed in the standards document)



Aeolus is 3rd party tested for all tests of ASHRAE 110 (American)

Compliance to Standards

Aeolus is 3rd party tested for ASHRAE 110 (American) standard that has the following tests:

- Velocity Tests
- Flow Visualization Tests
- Containment Tests

Aeolus is 3rd party tested for DIN EN 14175 (parts 1-3) (European) standard that has the following tests:

- Velocity Tests
- Containment Tests
- Inner Measurement Plane Test
- Outer Measurement Plane Test
- Robustness of Containment Test
- Air Exchange Efficiency Test
- Sash Suspension Test
- Sash Displacement Test
- Protection against splashes
- Sash Stop and Alarm Test
- Illuminance Test

The performance results for the above EN tests is as per UK Class 1 category meant for Research Laboratories as detailed in the standards document

Testing



AEOLUS

DESIGNED TO PROVIDE
THE BEST MEASURES FOR USER SAFETY.

Aeolus... World's Most Advanced Fume Hoods.



AVAILABLE IN OVER 600 LOCATIONS ACROSS INDIA

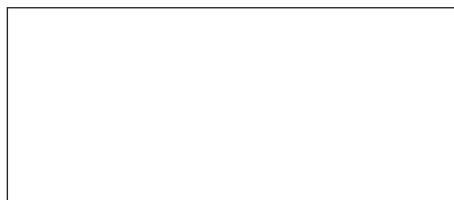
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National

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Godrej & Boyce Mfg. Co. Ltd.

Godrej Interio, Pirojshanagar, Vikhroli (W), Mumbai – 400 079.
Toll Free Number: 1800-267-1122. Fax: +91-22-6796 1503
Email: interioblab@godrej.com
Website: www.godrejinterio.com

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