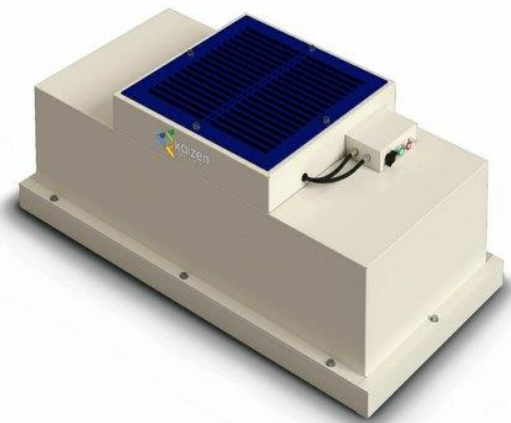


# Cleanroom Equipment

## BROCHURE



### KAIZEN AIRTECH SOLUTIONS

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## Introduction

We are Manufacturer, Supplier, Exporter of Clean Room Equipment, Laminar Air Flow, Fan Filtration Unit, Biosafety cabinet class II A2, Static pass Boxes, Dynamic pass Boxes, Positive Pressure Modules, Air Showers, Garment Storage Cabinets, Air Curtains, Laminar Flow Clean Benches and Vertical. Our setup is situated in Pune, Maharashtra, India and majorly we serve customers from Maharashtra, Gujarat, Tamil Nadu, and South India. Cleanroom equipment consists of movable items excluding parts of walls and panels. Kaizen's Clean room equipment maintains the air flow and keeps your workplace clean and hygienic. Kaizen manufactures an extensive type of cleanroom equipment including Air Shower, Pass Box, Laminar Flow Clean Benches (Horizontal and Vertical), Positive Pressure Module, etc.

### List of equipment:

- Biosafety cabinet class II A2
- Static pass box
- Dynamic pass box
- Positive pressure module
- Garment storage cabinet
- Air curtain
- Laminar Flow Clean Benches and Vertical
- Positive Pressure Module
- Air shower
- Diffusers
- Fan Filter Unit
- Air Handling Unit
- Lights
- HEPA Filter

### Features:

- Aesthetic and ergonomic design
- Immense layout choices

- Suitable for small and huge industries
- Suitable to all gown room sizes
- Modular, easy to install
- Modern and classy look

### 1. Biosafety Cabinet Class II A2:

Biosafety cabinets are ventilated enclosed cabinets used for laboratory work. Kaizen's Biosafety Cabinet Class II provides biological safety. The unit allows stable and self-compensating airflow, despite building voltage fluctuations & filter loading. It has a HEPA filter and antimicrobial coating on all its external and internal painted surfaces for improved safety.



#### Key Features

- High-efficiency motors
- Leak-proof airflow system
- Reduced chances of cross-contamination
- Dynamic Air Barrier
- More usable workspace
- A HEPA filter with 99.999% efficiency
- Airflow sensor alerts
- Divided auto cleavable work tray allows easy cleaning
- Low Noise and Ergonomic Design

### 2. Pass Box

Pass box transfers materials in and out of cleanrooms without putting many efforts. Kaizen offers Pass box with customized features, sizes, shapes, and features. Kaizen manufactures two types of pass boxes: Dynamic pass box and static pass box.

### Key features

- Mechanical and electronic interlocking for the doors
- Swing type Double skin doors with acrylic/glass view panels
- Door open indication with an optional UV lamp
- Stainless steel construction for easy cleaning
- Double skin industrial SS 304 base surface
- Chemical resistance with high durability
- Digital LCD controller



### Static Pass Box

Kaizen provides a self-contained unit. It can be installed at the entrance of the clean rooms. Static pass box reduces the number of particular pollutants entering in a clean room. A Static Pass box transfers the material into a room of the same level of cleanliness. It is made up of powder coated SS304 with electromagnetic interlocking and prevents any contamination. It contains UV light, fluorescent light, and buzzer indicator.

### Dynamic Pass Box

Dynamic boxes are used to transfer material from one place to another within hatch. It is designed with the statistical and dynamical balanced motor blower assembly. Kaizen's dynamic pass box assists in a material transfer under a controlled environment. The dynamic pass box eliminates the barriers between areas & sweeps away the particulate load.

### 3. Positive Pressure Module

Kaizen's Positive pressure module gives you the access of the clean and fresh air within a small enclosure. The device supplies fresh air from an adjacent area to the room via HEPA filter. Kaizen's Positive Pressure Module comprises a metal box that contains fresh air quality in the clean room.

#### Key Features

- Flexible Design
- Uniform Air Flow Velocity
- Waterproof filter media
- Maintain positive pressure in the room
- Ranging from 6 to 2700 m<sup>3</sup>/h
- Supplied with a label indicating relevant performance



### 4. Garment Storage Cabinet

Garment storage cabinet is one of our best products. It provides high safety for both the products and users. These cabinets are made up of stainless steel or pre-coated GI sheet metal and consist of HEPA filter. The filter supplies pure air and swipes out unwanted and dangerous particles.

#### Configurations

Kaizen Garment Storage Cabinets are available in the following configuration:

- Garment storage & adjustable shelves
- Only adjustable shelves
- Garment Storage only
- The auto control releases the transfer items only after a full clean down



#### Key Features

- Disposable pre-filter
- Reliable locker switch
- Magnehelic Pressure gauge

- Energy efficient
- Powder coated inhibits microbial growth
- UV light with Hour meter
- 5/15 Amp Switch Socket for external equipment

## 5. Air Curtain

Kaizen's Air curtain creates an invisible air barrier over the doorway. This air barrier separates two different environments. It helps to reduce energy losses, maintains hygiene, and adequate environment. Kaizen's Air Curtain is specially designed for a commercial establishment to maintain a dust free, hygienic indoor temperature.

### Key Features

- Maintenance Free
- Energy Efficient
- Superior airflow uniformity
- Low sound level
- Double shaft motor
- Simplified interior installation
- Double body designed for less vibration



## 6. Air shower

Air Showers are the specialized anti-chamber which personnel and material must pass before entering the controlled environment. This self-contained chamber installed at entrances to cleanrooms and other controlled environments. They minimize particulate matter entering or exiting the clean space. Kaizen Airtech solution provides standard and customizes size air showers for demanding applications in the microelectronics, semiconductors, pharmaceutical, spray painting, lab animal research and food



markets. We offer modern features a field-programmable microprocessor control that offers the maximum application flexibility of any unit on the market. In Cleanroom Applications, transportation is the greatest source of particulate contamination. Air showers are installed between change areas and the clean room. The air shower enhances clean room operating protocol by serving as a reminder to all operators that they are entering a controlled environment.

#### **Key Benefits:**

- Emergency stop buttons
- Adjustable Air Nozzles
- Microprocessor based controller
- High-velocity shower jets

#### **Features:**

The programmable logic controller controls the sequence of operation.

- SS air nozzles provide High-velocity air jets in excess of 20 m/s ensure efficient scrubbing action to remove particulate matter.
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- Microprocessor controller supervises all functions.
- Mini-pleated HEPA filtration achieves > 99.999% typical efficiency at 0.3 micron particles.
- A disposable pre-filter with 85% arresting extends the life of the main filter.
- button is mounted on both sides of the shower.
- Energy efficient LED lighting and Indicator lights mounted on both sides of the air shower exterior regulate traffic flow in and out of the clean room
- Permanently lubricated direct drive centrifugal blowers are used in conjunction with stainless steel air nozzles.
- All visible surface is covered with high pressure white laminated plastic.

#### **7. Diffusers**

Kaizen Airtech provides high-quality diffuser with integrated HEPA filters are designed to provide air distribution and air filtration in one terminal unit. Diffusers are available for

ceiling and wall mounting. Modular construction with different, interchangeable front panel options will provide different appearance and performance characteristic. Air Diffuser as Terminal filtration for high cleanliness environments, such as electronics, pharmaceutical industries, and hospitals.

**Key Benefits:**

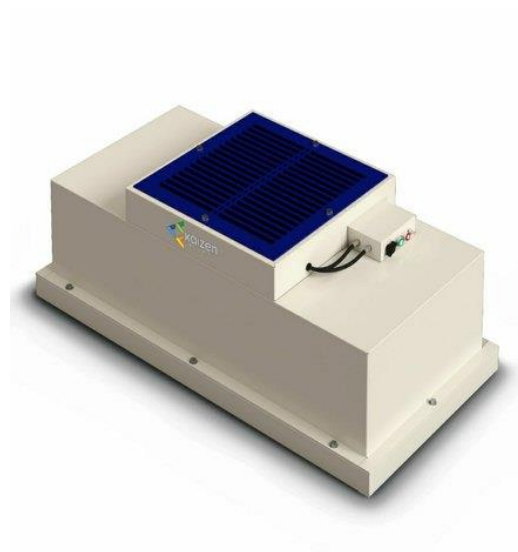
- Flexibility Design
- Uniform Air Flow distribution



**8. Fan Filter Unit:**

Fan Filter Units direct a vertical laminar flow of filtered air downward through the enclosed cleanroom area.

Each includes an 1100 CFM impeller blower (rated at 90 FPM with filter load) mounted in an MS housing with a plenum design that ensures ample air velocity across the entire face of the filter. A HEPA (high efficiency particulate air) filter installed inside the housing is rated 99.99% efficient at 0.3um particles. The filtration medium consists of micro porous polyurethane mini-pleats held in place by strong, rigid plastic separators that keep the medium from nesting. This design channels airflow with optimal efficiency to reduce resistance. The filter is sealed into the sturdy powder-coated steel frame with a fire-retardant, non-outgassing adhesive. Power to the Fan Filter Units is controlled by a master ON/OFF switch located on the cleanroom control





panel. All 120VAC units and 220VAC, 60Hz units are UL listed. CE-marked models are available for 220VAC, 50Hz operations.

### 9. Laminar Air Flow:

Kaizen Airtech Horizontal Laminar Airflow in latest laminar flow technology and innovation to provide proven protection for your samples and processes. The new generation Horizontal Laminar Flow Clean Benches offers a wide range of options for our customers; with glass side wall, sizes from 2 to 6 feet, Behind the many options that the customer can select, the full range of the new Kaizen Airtech laminar flow clean benches is powered by the latest generation ultra-high efficiency motor. It now also offers ISO Class 3 (Class 100 air quality) work zone with a 10x efficiency of its HEPA filters. With more choices for the customers, Kaizen Airtech laminar flow clean benches still offer the same level of product protection for your samples and processes where operator protection is not required.

#### Key Benefits:

- Class 100 Air quality maintains.
- Energy Efficient
- Superior airflow uniformity
- Ergonomic design

#### Features:

- Microprocessor Controller displays all safety information on one screen with a touchpad.
- Stainless steel work surface ensures optimal clean less, chemical resistance and containment of accidental liquid spills.
- Ergonomic design encourages proper posture reducing fatigue.
- Washable, reusable pre-filter which trap dust and large particle.
- 10x filtration efficiency of HEPA filter creates Class 100 air quality work zone instead of industry-standard ISO Class 5.
- The removable protective screen located in front of the HEPA filter and easily removed for service and cleaning.
- Each clean bench is individually factory tested for safety and performance in accordance with international standards.



- All components are cleanroom compatible.
- Kaizen Airtech Laminar Flow Clean Benches have been tested for cross-contamination and product protection using microbiological test method.
- Built-in recessed illuminator provides diffused lighting without interfering with the laminar flow.
- Face velocity is adjustable from less than 90 FPM (0.45 m/s) to higher than 130 FPM (0.66 m/s)
- Pressure drop from 0.35 to 0.795 inches W.G at 90 FPM (0.45 m/s)

### 10. Butterfly dampers:

We are offering MS Air Damper to our clients. Kaizen Airtech provides volume control damper design vertical or horizontal wall mounted. The smooth “butterfly” action of two pivoting blades provides continuous adjustment. Kaizen Airtech damper is conveniently adjusted from the room side of the diffuser. The damper is constructed with MS powder coated or GL powder coated. Usually, the damper is open. When the fire occurs, the fuse plug promptly closes automatically. Manually open the damper to reset the system. Damper open rate is small when the temperature is lower, when the temperature rises, the requirement of heat radiation is high, and the damper will open large. The damper will open 100% when the temperature reaches to fully open temperature.



#### Key Benefits:

- Flexibility Design
- Uniform Air Flow Velocity
- Automatic or manual operated.

### 11. Return air risers:

Kaizen Airtech produces the new products based on your drawings or designs to meet your actual needs. All the dimensions and colours are up to your choice. We will keep you noted of each steps during the production process. We offer Air Handling Unit system comprises a large insulated metal box that contains cooling, heating, humidity and air quality control element, fan blower with motor. In Clean room Application air quality is

most important factor to maintain required Class, AHU is the greatest source of particulate removing it installed between unfiltered air and filtered air.

Kaizen Airtech provide return air riser for HVAC System, Centralize air condition, Modular OT and Clean Room purpose. It construct in SS 304, MS powder coated and GI powder coated. Riser available in varying size and shape.

**Key Benefits:**

- Flexibility Design
- Uniform Air Flow Velocity



**12. Positive pressure module**

Kaizen Airtech provides positive pressure module comprise a metal box that contains fresh air quality in the clean room. Fresh air from an adjacent area is supplied to the room after HEPA filtration. This air builds a positive pressure in the room when compared to the adjacent area. As the pressure module produced in various size and capacity. All module airflow ranging from 6 to 2700 m<sup>3</sup>/h. This pressure gradient prevents ingress of particles through door leaks or when the door is opened. All pressure modules are supplied with a label indicating the relevant performance.

**Key Benefits:**

- Flexible Design
- Uniform Air Flow Velocity
- Waterproof filter media
- Maintain positive pressure in a room



**Features:**

- The full body of pass box is constructed of SS 304 or MS powder coated which is maximum chemical resistance.
- Powder Coat inhibits microbial growth on external surface prevents contamination and improves safety
- All components are cleanroom compatible.
- Statically and dynamically balanced motor blower assembly.

- Kaizen Airtech Laminar Flow Clean Benches have been tested for cross-contamination and product protection using microbiological test method.
- Filtration: primary filter 10 microns with efficiency 90% washable HDPE Media in FRP PU coated Frame for GI model mounting after mixing chamber. 80% air recirculated and 20% fresh air. Mini plate HEPA filter encased in aluminium frame Final =0.3 microns with an efficiency of 99.997% (antimicrobial treated media)
- Strict Quality Control in every step and make sure 100% high quality before the packing and shipment.
- We will provide all the documents based on your needs after shipment.

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#### Key Benefits:

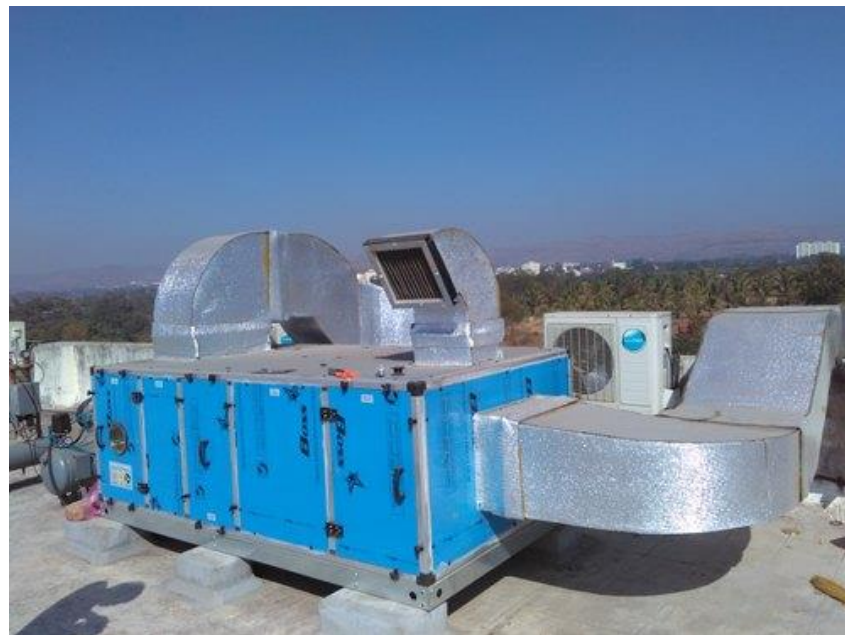
- Flexibility Design
- Humidity Control
- Adjustable Air Flow Velocity
- Temperature Control
- Low Vibration

#### Features:

- Frame Structure: Aluminium alloy structure, high strength, light weight, Anti corrosion. The unit adopts the full aluminium alloy anti cold bridge frame structure. Every angle of the frame is connected the aluminium alloy structure component with the excellent strength, light weight, anti-corrosion capability.
- The heat exchanger is made of high-quality air-conditioning 1/2 inch copper heat exchange tube hydrophilic aluminium foil corrugated sheet via mechanical expansion, ensuring close cooperation between copper pipes and

fins, bringing small wind resistance and good heat transfer performance, and providing a reliable guarantee for efficient operation of the unit.

- Temperature Control: The heat exchanger is made of high-quality air-conditioning 1/2 inch copper heat exchange tube hydrophilic aluminium foil corrugated sheet via mechanical expansion, ensuring close cooperation between copper pipes and fins, bringing small wind resistance and good heat transfer performance, and providing a reliable guarantee for efficient operation of the unit.
- Filtration: primary filter 10 micron and secondary filter 5 micron with efficiency 90% washable HDPE Media in FRP PU coated Frame for GI model mounting after mixing chamber. 80% air recalculated and 20% fresh air. Mini plate HEPA filter incised in aluminium frame Final = 0.3 micron with an efficiency of 99.997% (anti –microbial treated media)
- Strict Quality Control in the every step and make sure 100% high quality before the packing and shipment.



## 14. Lights:

Modular cleanroom posts are pre-wired with 210 V duplex outlet and switches and mounted in a steel electrical box. Fluorescent gasket light fixtures are 610×1220 mm 4 tube, 120 V, fewer tubes with energy saving or electronic ballasts. This system is made up of pre-wired connections for light switches, 115v outlets and whips for lights and fan powered Heaps. Electrical run terminates with a “pig-tail” at the location designated by the customer and can carry up to 6 circuits to be installed in distribution electrical panels. Final installation of the panel(s) and power to the building is to be installed by a licensed electrician. Outlets are convenience type duplex, three wires, and ground. Single and 3-way switches are standard.



### Fluorescent and LED Lights:

- Full range of fixtures, including sealed energy-efficient, no-maintenance LED panels, makes it easy to configure the optimal lighting for your application
- Select 2' x 4' (610 mm x 1219 mm) ceiling module for placement in the ceiling grid, or Teardrop Lights for installation below the grid
- Flow-Through units are ideal with dense FFU ceiling coverage
- LED light strips and panels produce less heat to reduce cooling costs
- Dimmable LED light panels to allow brightness adjustments.

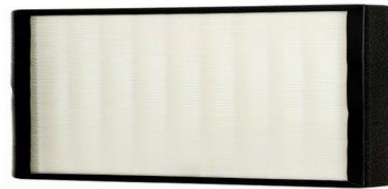
### Structural Design and Roof Decking:

Unless otherwise specified, roof decking, I-beams and support post will be designed for 20-25 lbs. per square foot loads (live load walk-able). Loads of up to 60+lbs and greater are also available. Rooms can have clear spans of 45+' and can also be designed as an interregal part of a mezzanine. Steel roof deck is at least 22 gauge corrugated steel, fire rating is non-combustible, sound deadening with closure gaskets (STC 32). Support posts and I-beams will vary in size based on span and load bearing requirements. Seismic bracing and stamped drawings are available when required.

## 15. HEPA Filter

Kaizen Airtech provides high efficiency and semi-absolute filters miniplate technology. Have a very small depth and can be installed in exhaust grille. As filters are produced in various size with air flow ranging from 66 to 2700 m<sup>3</sup>/h. All the fillers have 69 mm deep anodized extruded aluminium frame, with steel white epoxy painted the protective grid on both the upstream and downstream sides. The filtering medium is made of microfiber glass, waterproof resistance. The miniplate have continuous thermoplastic spacers, and polyurethane sealant it is provided with a one-piece continuous half round gasket. Thanks to the low pressure drop of the filters, and the energy consumption level of the fan is very low. All filters are supplied with a label indicating the relevant performance.

- Flexibility Design
- Uniform Air Flow Velocity
- Water Proof Media



### Key Benefits:

- Disposable pre-filter
- Reliable locker switch.
- Magnehelic Pressure gauge
- Energy efficient