

For Class Ib operating rooms



THE WALL

The air handling unit is the wall.

Family-owned since 1904.
Now in its fifth generation.

More space for your operating room.

Air treatment, air purification, heating, cooling and control - integrated into one wall.

No separate plant room.

THE WALL brings air handling directly to where it is needed. Its compact integration frees up space for the intended use of your building.

**One clear system concept:
Four modules form one unit. Heating
and cooling are supplied locally by the
outdoor heat pump.**



Your operating room. At a glance.

Sensors and controls work together. The 18.5-inch industrial PC brings status information and operation together at the front.

01

Monitor air quality

Particle, CO₂ and mixed-gas/VOC signals detect different types of air contamination. Airflow and outdoor air fraction follow demand.

02

Actively control positive pressure

Differential pressure is measured continuously. If it deviates, the controls automatically adjust the airflow balance.

03

Respond to occupancy

Operation, positive-pressure maintenance and standby are controlled according to demand, within the permitted hygienic operating limits.

04

Maintain the right temperature

The heat pump, heating/cooling coil and controls match output to the thermal demand of the room.

Hygiene throughout the system.

Filtration, materials and monitoring functions are designed to work together.

Filter stage 1

ISO ePM1 at least 50%
First fine-filter stage in the main module.

Filter stage 2

ISO ePM1 at least 80%
Further filtration before the final stage.

Final H13 filtration

Four HEPA filters in the supply air module.
H14 optional.

Integrated UV-C

Installed and wired in the air path and condensate area. Complements the specified hygiene and maintenance measures.

Stainless steel throughout

Grade 1.4301 inside and out, 180-grit visible surfaces and acoustic insulation. Fixed plinth with upturned flooring and a coved junction.

Smoke detection

In both side modules. System shutdown and closure of the designated dampers in accordance with the project-specific safety concept.

Simple installation. Less effort.

The unit, installation and building-side interfaces determine the total investment.

MANUFACTURER'S INVESTMENT ESTIMATE

**around 50%
or less**

of the investment cost of
comparable conventional
systems.

The actual price depends on the
project. Scope of supply, installation
services and comparison basis must be
stated in the quotation.

Four modules

Align, connect and bolt
together. Plug-in electrical
connections link the
modules.

Fewer interfaces

No connection to a central
building heating or
chilled-water supply.

Qualified local contractors

Installed by qualified HVAC
contractors, with no
requirement to use a specialist
installation company.

Clear connection layout

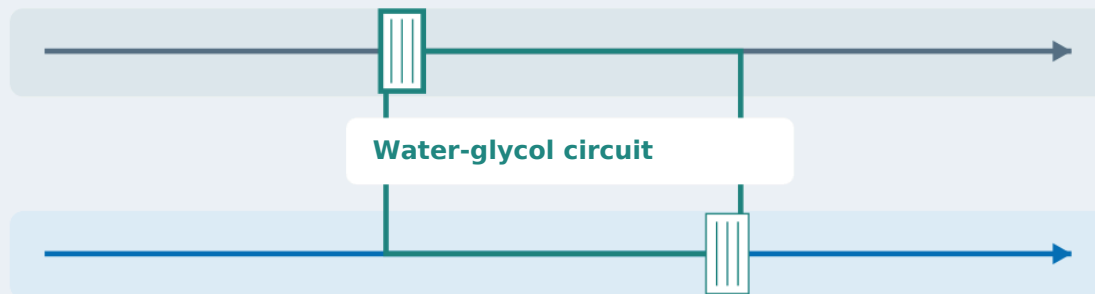
Connections from above.
Refrigerant work and
commissioning by
appropriately qualified
personnel.

Energy follows demand.

Performance for air hygiene, temperature and positive pressure - matched to the task at hand.

HEAT RECOVERY VIA A RUN-AROUND COIL SYSTEM

Exhaust air



Outdoor air

Put available energy to work again.

A closed liquid circuit transfers energy between exhaust air and incoming outdoor air. The air streams remain separate. Depending on temperature, heating or cooling energy is recovered.

Heat pump

Local heating and cooling from the Mitsubishi outdoor unit.

Demand-based control

Occupancy, air quality, temperature and pressure determine the required output.

EC fans

Controlled airflow instead of unnecessarily high fixed speeds - even as filter resistance changes.

Family-owned since 1904. Now led by the fifth generation.

122 years of experience brought together in the development and manufacture of THE WALL.

Precision manufactured in-house

Laser machining centre, CNC press brake and stainless-steel grinding machine.

Robotic laser welding replaces silicone seals at suitable housing seams.

Materials, manufacturing and service access form one coherent concept.

Mitsubishi Electric as technology partner

An international manufacturer with local contacts in many regions worldwide.

Service contacts and spare-parts procurement through the manufacturer's regional networks.

Specific parts availability and support are coordinated regionally.

Service from a distance

Integrated remote-service module for online diagnostics and retrieval of fault information.

Software updates can be installed remotely or automatically through Rentschler Air service.

Requirement: secure, authorised network access to the internet.

What can your operating-room wall do?

A compact system deserves a plan tailored to your room.



**Your operating room.
Your space.
Your concept.**

Room geometry, use and the hygiene concept determine the right design - with clearly defined connections and a project-specific quotation.

Request a project consultation

info@rentschler-air.de

Four modules. One coordinated system.

An overview of the structure, components and connection areas.



1 Main module

ISO ePM1 $\geq 50\%$ and $\geq 80\%$. Controls, heating/cooling coil, droplet separator and condensate tray. UV-C installed and wired in the condensate area and air path.

2 Supply air module

Four final H13 filters, H14 optional. Sits on module 1; connects from below via three spigots. Filtered supply air is delivered directly into the room.

3 Extract/exhaust air module

EC fan with integrated commutation electronics. Airflow monitoring at 5 measurements per second. Smoke detection with shutdown/damper function.

4 Outdoor/recirculation air module

EC fan, controlled outdoor/recirculation air fractions and 5 measurements per second. CO₂, VOC/mixed-gas and particle monitoring, plus smoke detection.

Product visualisation, not to scale. Side modules with stepped contours, top connections and removable upper panels.

Measure. Assess. Adjust precisely.

Room conditions, operating mode and hygiene requirements define the permitted operating range.

Temperature

Thermal demand

Particles

Particle contamination

CO2

Occupancy /
outdoor air demand

VOC / mixed gas

Gaseous contamination

Active positive-pressure control

Differential pressure relative to the adjacent area is measured continuously. Deviations trigger automatic adjustments to outdoor/exhaust air ratios and airflow rates.

When a door opens, differential pressure may temporarily drop. The controls help restore the specified positive pressure.

Occupancy-based operating stages

Occupancy detected: designated operating mode.

**Example after 1 hour without occupancy:
Positive-pressure maintenance.**

Example after 3 hours without occupancy: standby.

Times are adjustable examples. Minimum airflows, positive pressure, flushing times and operating approvals remain mandatory; occupancy alone does not replace hygienic clearance for surgery. VOC sensors do not provide a complete substance analysis; integrated particle monitoring does not replace project-specific verification.

Compact design. Clear connections.

Overall dimensions and interfaces of the current configuration.

326 x 255 x 57 cm

Width x height x depth
Rounded overall dimensions, including the 100 mm plinth and projecting front.

Direct drywall connection
Fix C-profiles or angle brackets to the sides of the 30 mm double-wall housing.

20 mm screws are approved for the side surfaces in the current product configuration. The dimensional drawing and service clearances govern installation.

Connections from above

Outdoor and exhaust air
Ducts to the outside: circular DN 315 or appropriately sized rectangular ducts.

Refrigerant
Connection to the Mitsubishi outdoor unit; 25 m line set included.

Condensate and power
An integrated pump delivers condensate to the upper building-side drain. Main power connection at the top.

Coved junction at the fixed plinth



Upturned flooring

100 mm plinth for upturned flooring. Service panels above remain removable.

Radius (e.g. R 30), flooring and corner details are coordinated with the flooring contractor and hygiene planner.

Schematic illustration, not to scale.

From concept to approved operation.

The final design is based on intended use, room geometry and hygiene requirements.

01

Plan

Designed for Class Ib operating rooms. Coordinate use, room geometry, airflows, pressure concept, connections and service clearances for each project.

02

Install

Align, connect and bolt together the plinth and modules. Connect module plugs and top interfaces. Work is carried out by qualified contractors.

03

Test and hand over

Check airtightness, functions, airflows and controls. Hygiene testing and acceptance must relate to the actual system and room.

Hygienic assessment is part of the project.

Rentschler Air can carry out a recovery test as part of hygienic testing under DIN 1946-4 and the applicable test procedures. Room-class suitability depends on design, installation, testing and operation. Further applications include cleanrooms, laboratories and cleanroom production, subject to project requirements.

Basis: product documents dated 21 October 2026 and manufacturer additions dated 22 October 2026. The cost comparison is a manufacturer statement; scope and comparison basis require project-specific assessment. Product visualisations are illustrative. Technical changes and project-specific design reserved.

Manufacturer information: Mitsubishi Electric / international air-conditioning network and spare-parts webshop. Standard referenced: DIN 1946-4.