HEALTHCARE & CONTROLLED ENVIRONMENTS

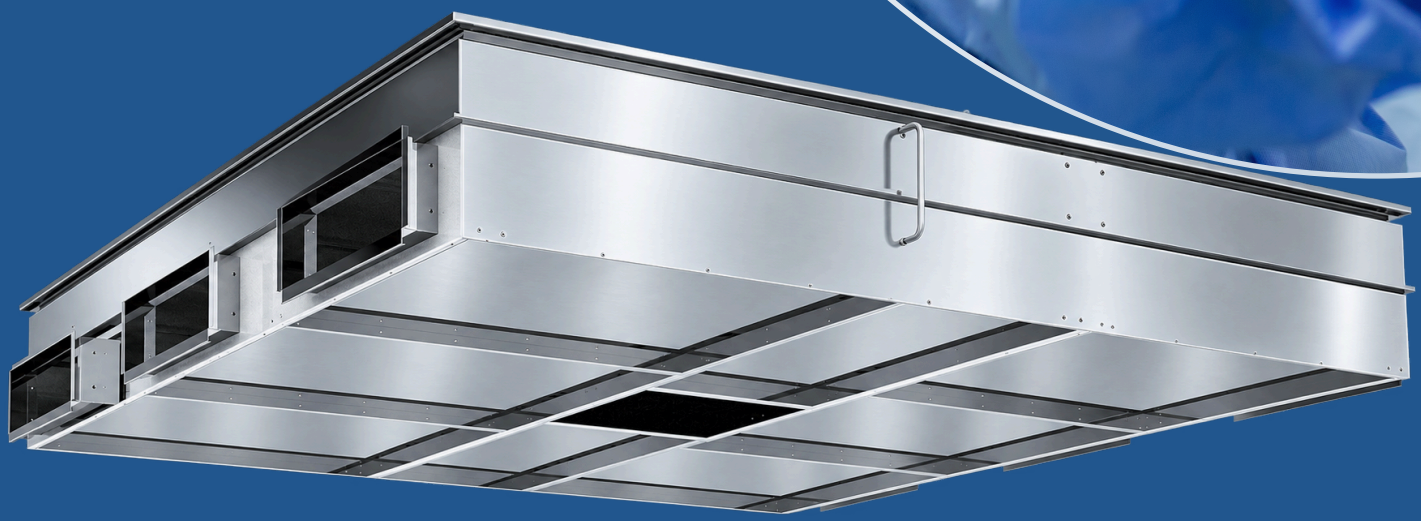
VLFU

Laminar Flow Unit

Airflow shaped
for critical spaces.

BROCHURE & TECHNICAL SELECTION GUIDE





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VENTILATION SYSTEMS

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01 / THE RANGE

One family. Two filter layouts.

Coordinate the ceiling footprint, filtration arrangement and service route around the room.



HORIZONTAL FILTERS

Filters distributed across the ceiling field.



VERTICAL FILTERS

Filters arranged at the side of the plenum.

The VLFU model designation

VLFU 1400x2400

Family prefix + nominal plan dimensions in millimetres. The filter layout is specified separately; it is not an additional model suffix.

In this guide

Airflow & working principle	03
Horizontal filter configuration	04
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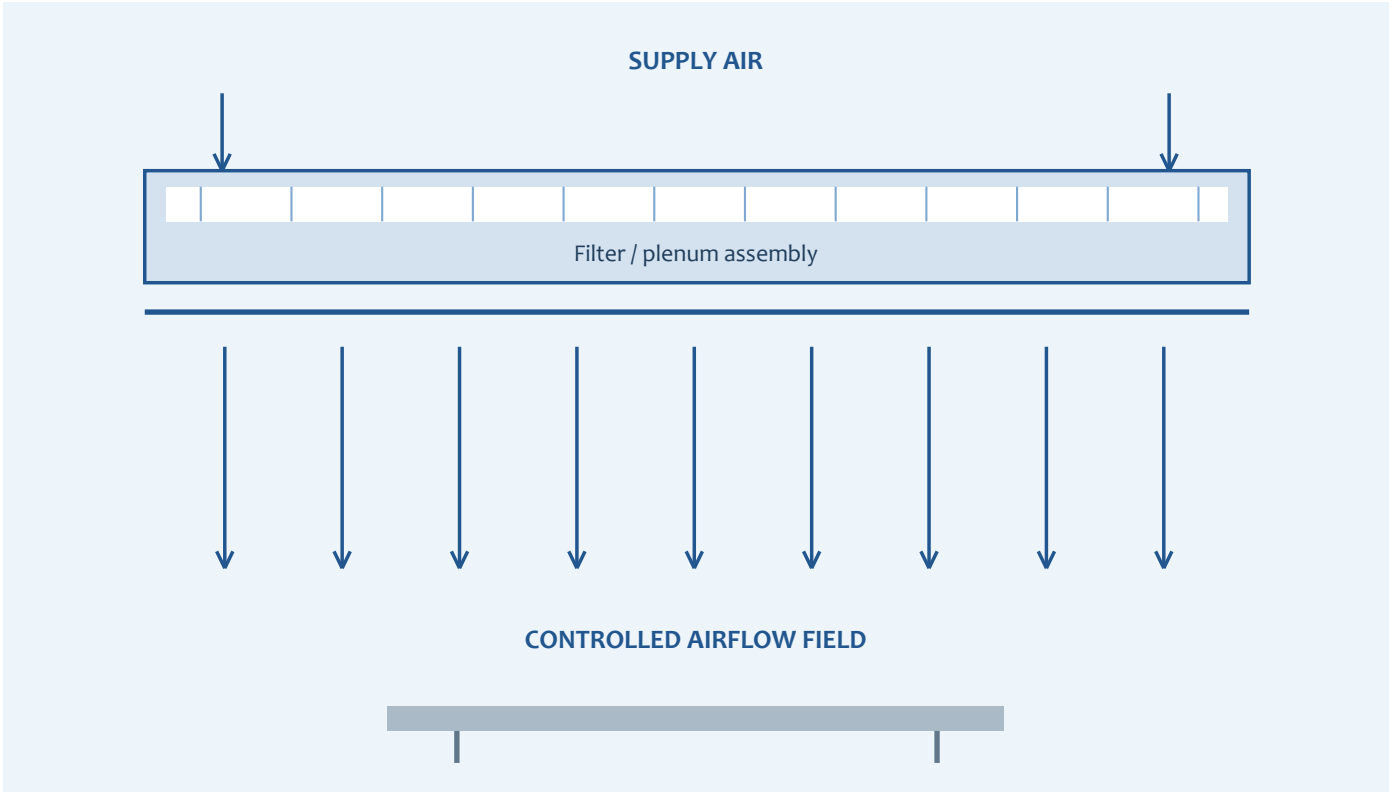
TECHNICAL REVIEW EDITION

Product illustrations and selection data are prepared for the listed configurations. Final VLFU construction, ratings and model availability require Voltvent technical confirmation.

02 / AIRFLOW CONCEPT

A defined downward air field.

Filter orientation and room airflow direction describe different parts of the system.



Concept diagram only. No room class, clinical outcome or installation clearance is implied.

01

Filter the supply

Select the HEPA grade, sealing interface and test documentation for the project.

02

Distribute the flow

Coordinate the laminiser with the protected area and the room arrangement.

03

Verify on site

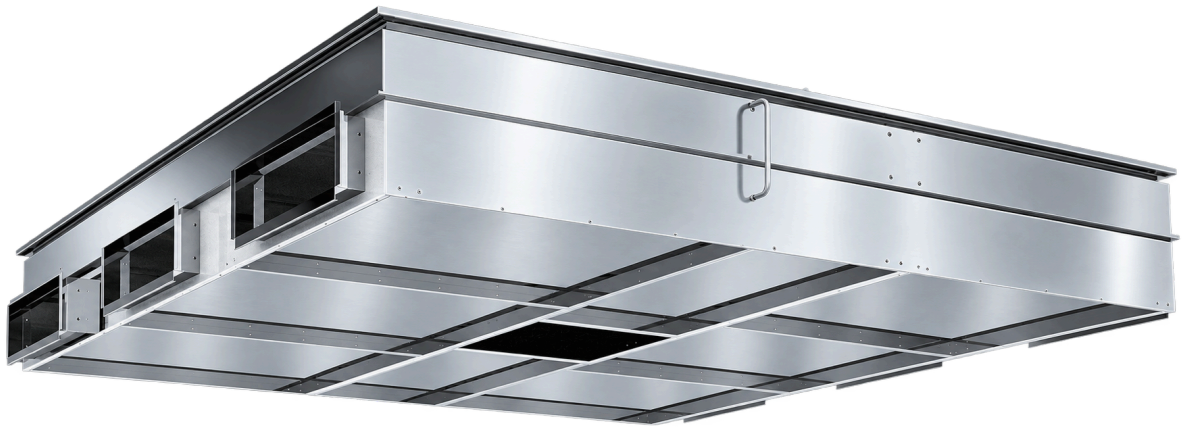
Confirm airflow, field uniformity, filter integrity and the specified room criteria.

A nominal filter grade alone does not establish the room cleanliness class. ISO 14644-1 addresses airborne particle concentration; the required assessment belongs to the complete room and project.

03 / HORIZONTAL FILTER LAYOUT

The filter field above the room.

A distributed filter arrangement with coordinated supply inlets and a central pendant interface.



Construction concept

1 Casing & plenum

The reference uses a stainless-steel casing and service connections.

2 HEPA filter seating

Gel-seal filter seating is the horizontal reference arrangement.

3 Laminiser frame

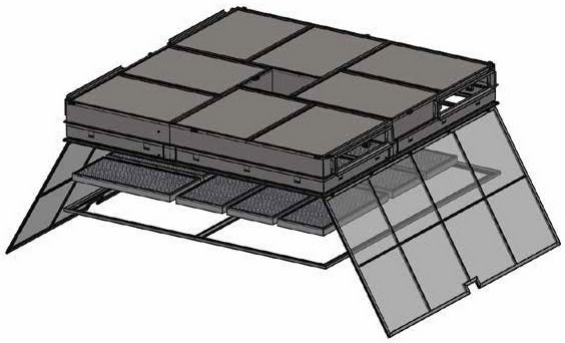
The frame connects the diffuser field to the casing boundary.

4 Pendant interface

Coordinate the light opening with the room equipment.

5 Laminiser

Confirm the final diffuser medium and its service arrangement.



Service access

The illustrated opening arrangement explains component access. Final hardware, filter supports and structural interfaces follow the confirmed VLFU design.

04 / HORIZONTAL SELECTION

Select the footprint and airflow.

Selection values at a face velocity of 0.23 m/s. Confirm the operating point for the complete system.

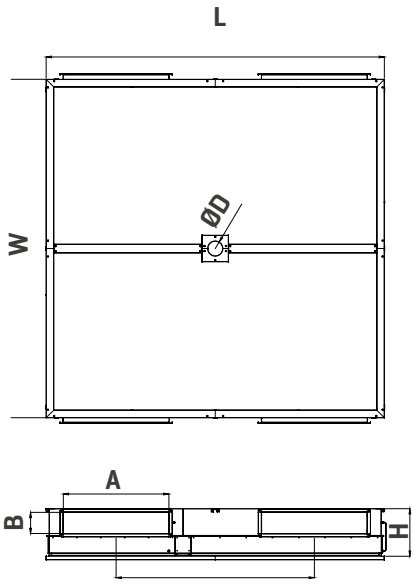
Model	W x L mm	H mm	Airflow m³/h	Initial Δp Pa
VLFU 1400x2400	1400 x 2400	450	2 600	90
VLFU 1600x2400	1600 x 2400	450	3 200	90
VLFU 1800x2400	1800 x 2400	450	3 600	90
VLFU 2400x2400	2400 x 2400	450	4 800	95
VLFU 2400x3000	2400 x 3000	450	6 000	95
VLFU 3000x3000	3000 x 3000	450	7 500	95
VLFU 3200x3200	3200 x 3200	450	8 500	95
VLFU 3800x3800*	3800 x 3800	450	12 000	97

* Provisional largest format: the capacity table lists L = 3600 mm, while its dimension table and model designation state 3800 mm. Confirm the footprint before selection.

05 / HORIZONTAL DIMENSIONS

Coordinate every interface.

W and L identify the nominal plan footprint. H is the casing depth; A, B and T follow the interface drawing.



Plan dimensions

Keep the unit footprint aligned with the room layout and the ceiling grid.

Pendant interface

Specify the pendant / light opening from the actual equipment arrangement.

Duct & support route

Confirm inlet positions, supporting structure and access before manufacture.

Dimensional drawing; scalable but not a construction issue drawing.

Nominal W x L / mm	A / mm	B / mm	T / mm
1400x2400	600	200	-
1600x2400	600	200	1192
1800x2400	600	200	1192
2400x2400	600	200	1192
2400x3000	900	200	1446
3000x3000	900	200	1778
3200x3200	1000	200	1878
3800x3800	1200	200	2180

All casing depths H = 450 mm in the listed schedule. The 3800 format remains provisional.

06 / VERTICAL FILTER LAYOUT

A different route into the plenum.

Side-mounted filters change the supply and service arrangement while maintaining downward delivery through the field.



FILTER ORIENTATION

Vertical filter panels at the plenum sides.

A layout to coordinate

- **Side filter access**

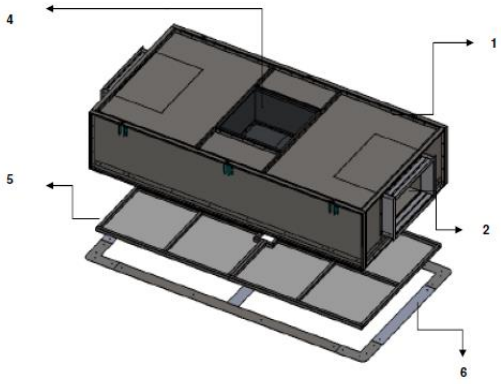
  Reserve the service route and confirm the panel withdrawal direction before closing the ceiling.

- **Filter arrangement**

  The series range uses two or four filters, depending on the footprint. Select filter grade and seating detail explicitly.

- **Light & pendant coordination**

  Integrated lighting and central equipment interfaces are project selections; confirm power, protection and maintenance requirements.



1 Casing
2 HEPA filters
3 Lighting
4 Pendant
5 Laminiser
6 Frame

Exploded configuration; final assembly to be confirmed.

07 / VERTICAL SELECTION

Match the field to the project.

Plan dimensions are normalized to W x L; H is the casing depth. Face velocity: 0.23 m/s.

Model	W x L mm	H mm	Airflow m³/h	Initial Δp Pa
VLFU 2400x1200	2400 x 1200	450	2 400	120
VLFU 2400x1400	2400 x 1400	450	2 800	150
VLFU 2400x1600	2400 x 1600	450	3 200	110
VLFU 2400x1800	2400 x 1800	450	3 600	130
VLFU 2400x2000	2400 x 2000	450	4 000	120
VLFU 2400x2200	2400 x 2200	450	4 400	130
VLFU 2400x2400	2400 x 2400	450	4 800	150
VLFU 3000x2400	3000 x 2400	450	6 000	120
VLFU 3000x2800	3000 x 2800	450	7 000	160
VLFU 3000x3000	3000 x 3000	450	7 500	170

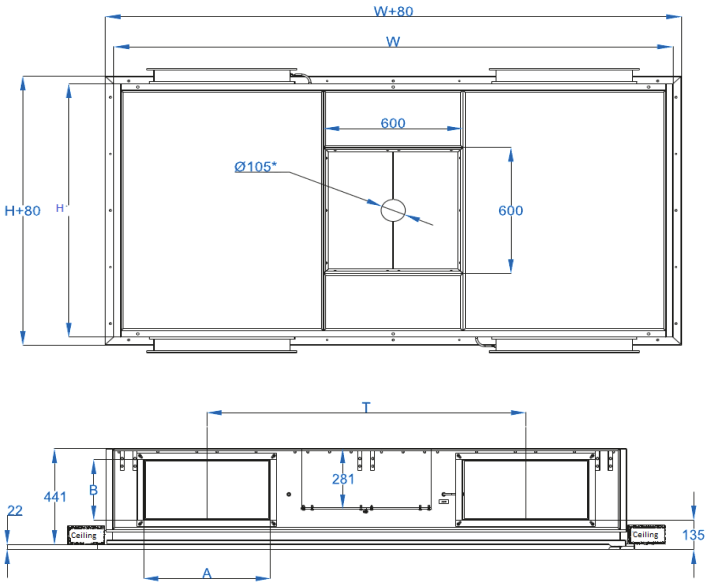
Selection schedule. Airflow and pressure are not certified Voltvent ratings. A footprint may occur in both filter layouts; the filter orientation is an essential order attribute.

Specify the system resistance and filter service criterion separately. Initial pressure loss is not the total external static pressure available from an air handling unit.

08 / VERTICAL INTERFACES

Filter sizes. Duct connections.

Coordinate the filter set with the inlet geometry and maintenance space.



Drawing notation

The original drawing uses W and H in plan and L for the depth. This VLFU guide presents plan W x L and uses H for the 450 mm casing depth.

Service space

Final access dimensions are defined around the installed filter panel and the selected removal route.

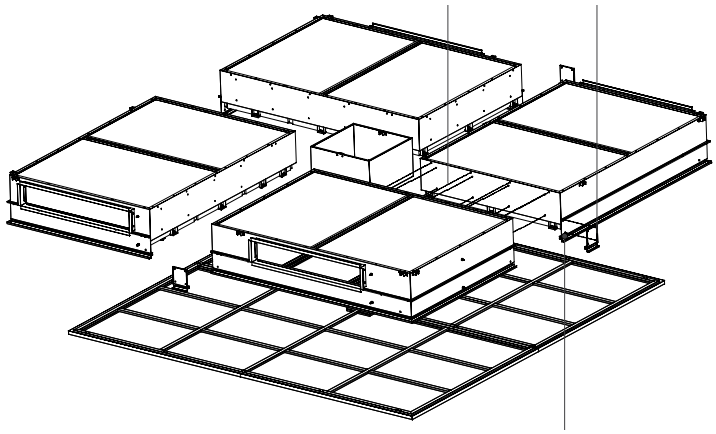
Nominal W x L / mm	Filters qty	Filter face mm	Inlet A x B mm
2400x1200	2	610x305	586 x 281
2400x1400	2	610x305	586 x 281
2400x1600	4	610x305	586 x 281
2400x1800	4	610x305	586 x 281
2400x2000	4	610x305	586 x 281
2400x2200	4	610x305	586 x 281
2400x2400	4	610x305	586 x 281
3000x2400	4	610x305	586 x 281
3000x2800	4	610x457	586 x 281
3000x3000	4	610x457	586 x 281

Filter thickness, casing detail, lighting and access opening are to be confirmed for the final VLFU configuration. Dimensions shown above are indicative dimensions.

09 / INSTALLATION COORDINATION

Connect the unit to the building.

Treat the ceiling field, structural support, ductwork and room finish as separate coordinated interfaces.



A coordinated assembly

1 **Structure**

Confirm the load path, support locations and project-specific fixing design.

2 **Air connection**

Connect the selected supply route without imposing duct loads on the casing.

3 **Room finish**

Coordinate the ceiling frame and the continuous room boundary.

04

Filter service

Provide a safe removal route and protect filter faces during handling.

05

Sealing interfaces

Confirm all module, filter-seat and ceiling interfaces in the final assembly.

06

Commissioning

Complete the agreed airflow, integrity and room-performance checks after installation.

Exploded installation illustration, not to scale. Fixing sizes, structural loads and construction clearances require project-specific confirmation.

10 / PROJECT SPECIFICATION

Define your VLFU configuration.

Use the model footprint together with the filter layout and the required operating conditions.

Order parameter	Project entry	Selection note
Model designation	VLFU [W]x[L]	e.g. VLFU 1400x2400
Filter layout	Horizontal / vertical	Identify the layout explicitly
Design airflow	_____ m³/h	State the required system duty
Pressure requirement	_____ Pa	Include the selected filtration
Construction	Material / finish / seals	Reference basis: stainless steel
Filtration	Grade / seat / certificate	Reference basis: H14; confirm scope
Interfaces	Ducts / pendant / lighting	Provide the coordinated equipment plan
Maintenance	Access side / removal route	Include the service envelope
Verification	Agreed test & handover plan	Define before manufacture

WHAT REMAINS TO BE CONFIRMED

The VLFU prefix and Laminar Flow Unit description are defined for this review. Numerical schedules and product illustrations require Voltvent technical approval. Confirm the 3800-format length and the chosen filter layout before releasing an order.



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