Private: Halton Vita OR Zone D (VZD)

Overview

Halton VZD is a supply air unit for the Halton Vita OR Zone D solution.

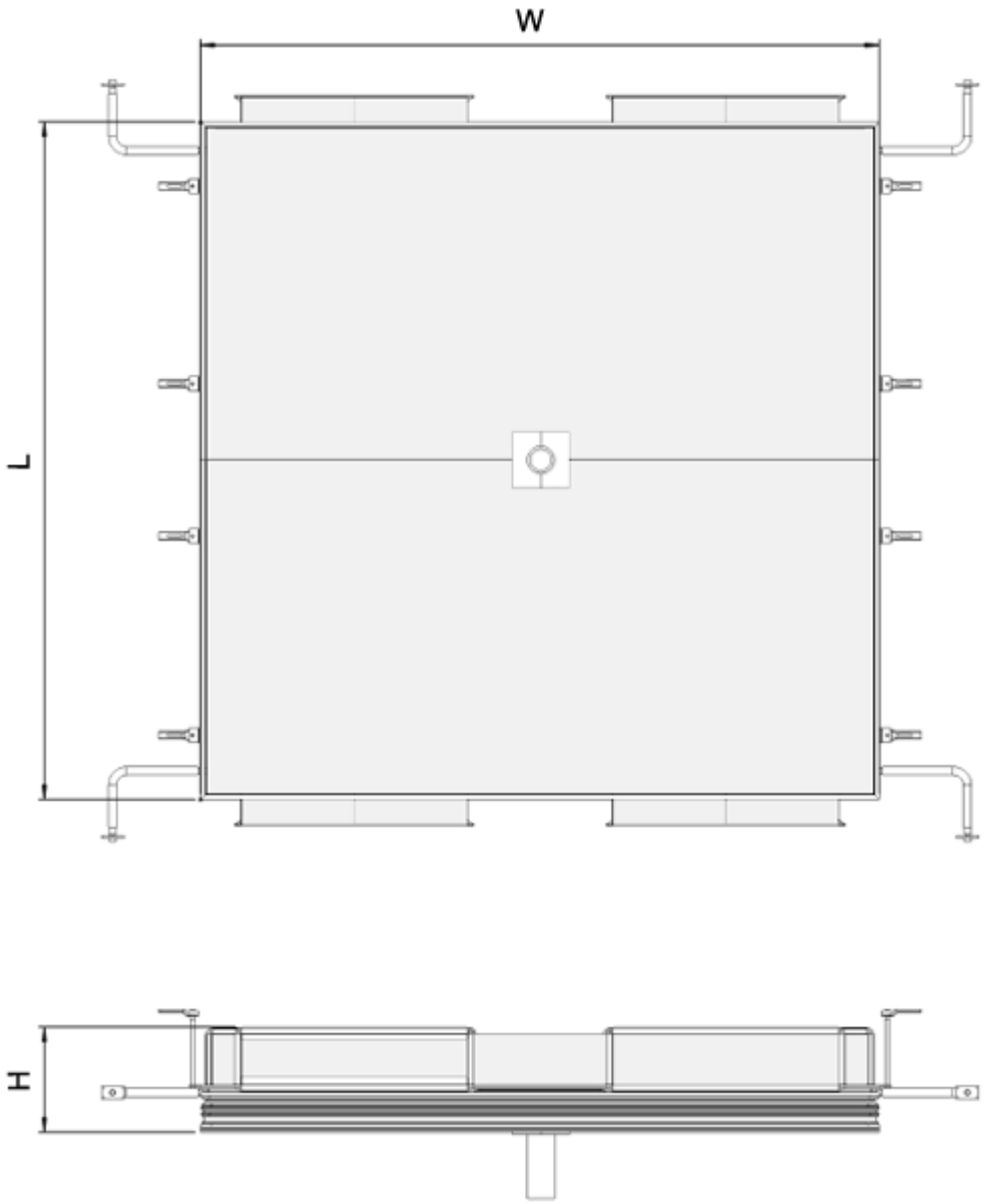
Product characteristics

- Five standard sizes.
- Laminar flow H14 filters with polyurethane foam gasket
- Filter sizing optimised to any ceiling size for maximal performance
- A cleanable, single-layer textile membrane to protect the HEPA filters and to spread the airflow evenly along the entire surface
- Active leakage control with a double-seal system
- Air-guiding skirt to prevent particle penetration to the protected zone; skirt height according to project specification
- Measurement nipple for plenum pressure measurement
- Integrated leadthrough for the operation table light

Options

- Integrated general lighting
- Custom sizes available upon request

Dimensions



Nominal size	W / mm	L / mm	H / mm	Duct connections
2400×1800	2385	1759	450	2 pcs 700×240 mm
2400×2400	2385	2385	450	2 pcs 800×240 mm
2800×2800	2877	2877	450	4 pcs 700×240 mm
3200×3200	3181	3181	450	4 pcs 850×240 mm
3500×3500	3485	3485	450	4 pcs 1000×240 mm

Material

Part	Material
Casing	Anodised aluminum
Frame structures	Anodised aluminum profile
Laminar fabric	Synthetic Acotex- material
Coupling sleeves	Anodised aluminum
Filter brackets	Stainless/galvanised steel
Fixing brackets	Galvanised steel

Accessories

Air guiding skirt

Air-guiding skirt to prevent particle penetration to the protected zone.

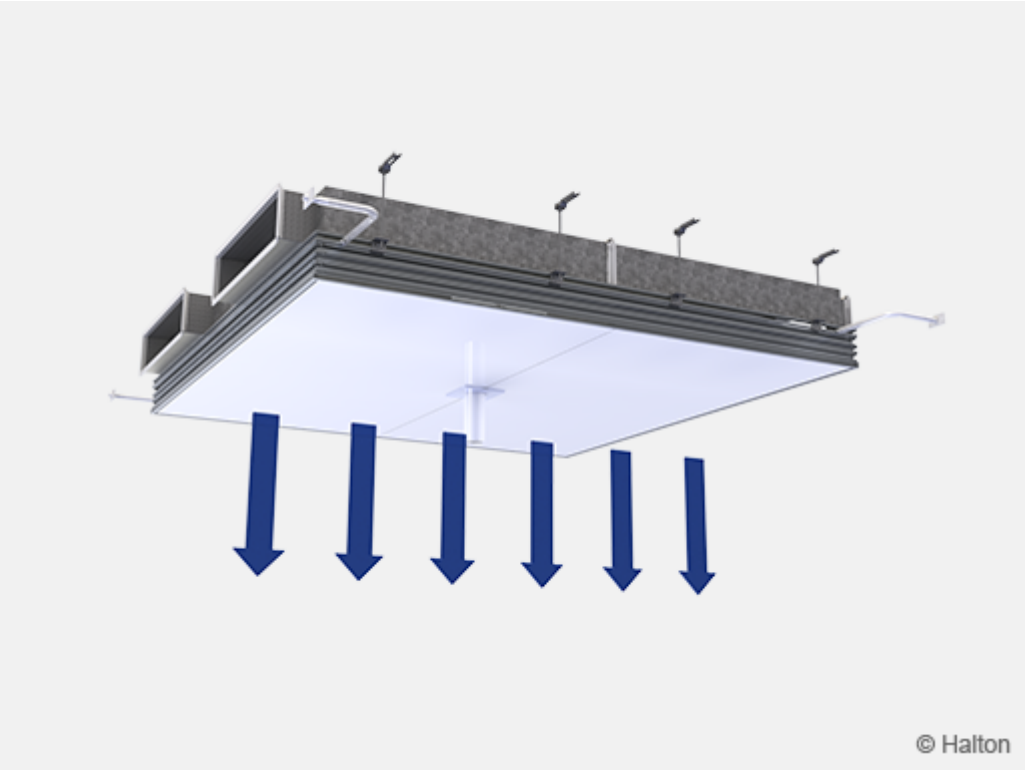
Skirt height can be supplied according to project specification. Recommended minimum height for skirt is 400 mm. For other sizes, please contact sales.

Lighting

The Halton VZD laminar ceiling can be equipped with integrated indirect lighting ring.

The lighting ring is fitted around the air supply area and generates about 2000 lux illuminance in the middle at the height of 1 m (when ceiling installed at 3 m).

Function



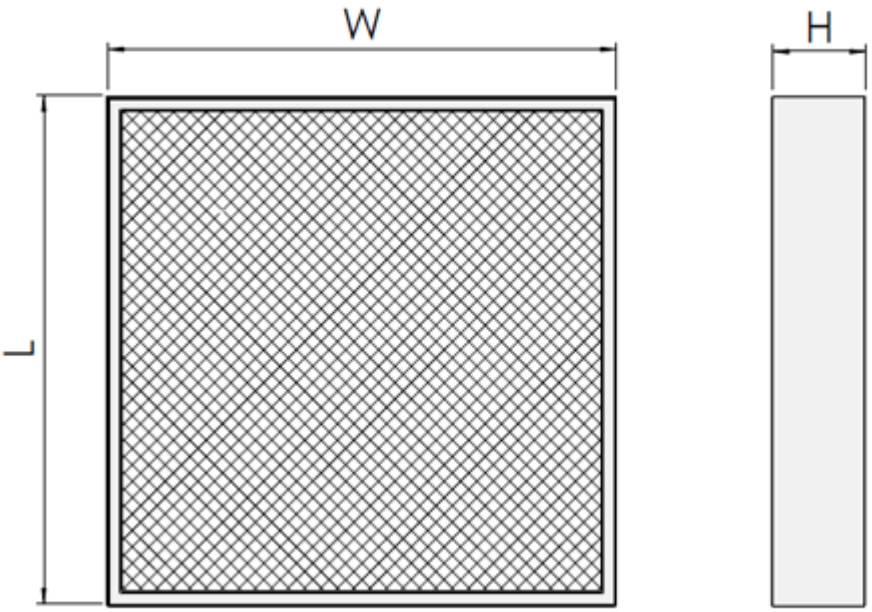
Air is filtered inside the supply air unit by HEPA filters and supplied into the space through a single-layer, high- density fabric. The fabric distributes the airflow evenly along the entire surface and a vertical, low-turbulent stream of air creates an ultra-clean zone around the operating table.

A safety glass skirt surrounding the supply air unit directs the airflow efficiently onto the surgical field and prevents the particles outside the protected zone from penetrating into the ultra-clean airflow.

We recommend to use VSC as exhaust air units to complete operation room ventilation solution.

Filters

The low pressure drop of the standard H14 filter saves energy. For more details, see the Performance data section in the Halton HIT Design tool.



Nominal size of Zone D	No. and size of (LxW) of H14 filters	H / mm
2400×1800	2 pcs 915×915, 2 pcs 915×762 and 2 pcs 610×457	78
2400×2400	4 pcs 915×915 and 4 pcs 915×457	78
2800×2800	8 pcs 610×610, 12 pcs 610×457 and 4pcs 457×457	78
3200×3200	24 pcs 610×610	78
3500×3500	2 pcs 915×762 and 22 pcs 762×762	78

Material

Part	Material
Filter media	Folded fibreglass paper
Frame	Aluminum
Gasket	Polyurethane foam

Installation

The Halton VZD supply air unit is installed onto the operating room ceiling prior to the installation of the false ceiling. Halton is responsible for the installation of the supply air unit.

Adjustment

The airflow rate for each supply duct connection of the Halton VZD supply air unit has to be balanced so that an equal amount of air is supplied via each connection. As a result, the airflow is distributed evenly throughout the whole surface of the unit and no additional airflow adjustment is needed.

Servicing

All metal surfaces of the ventilation equipment can be cleaned with normal desinfectants used in hospitals.

The laminar fabric needs to be cleaned whenever the air supply is contaminated with blood. Either chemical or steam can be applied. For dried blood stains, steam cleaning is recommended.

Chemical cleaning:

- Soak the blood stain with a solution of 20 % hydrogen peroxide until dissolved
- Remove the adipose rests with a propanol solution of 70 % propanol

Use soft and sterile brushes or cloths which do not emit any tissue rests or fibres.

Steam cleaning:

- Vaporise the stain at a distance of 20 cm to resolve the marks
- Vacuum the condensation water
- Repeat this until the stain is removed
- Finally, vacuum until the tissue is dry

Filter change instructions are available in a separate document.

Order code

VZD/S-W-L-H; SH-MA-FL-ZT

S = Model
1 = One velocity zone
2 = Two velocity zones

W = Width, mm
2400, 2800, 3200, 3500

L = Length, mm
1800, 2400, 2800, 3200, 3500

H = Height, mm
450

Other options and accessories

SH = Skirt height, mm
400
N = No skirt

MA = Skirt material
A Safety glass
N No material

FL = Field lighting
Y Yes
N No

ZT = Tailored product
N No
Y Yes

Code example

VZD/1-2400-2400-450, SH=400, MA=A, FL=Y, ZT=N

Specification

Low turbulent airflow ceiling producing a vertical, low turbulent stream of pure air, for the installation between the solid and the false ceiling.

Comprising:

- Air-tight pressure chamber attached to filter-frame above the HEPA-filters, made of anodised aluminium, AlMg1, 1mm, including duct flanges to air connections.
- Load-bearing and torsion-stiffened outflow frame designed as an integral stable attachment point for air guiding skirt (and/or optional cabin lighting).
- HEPA-filter-frame section made of extruded anodised aluminium profile. The HEPA-filters are to be attached horizontally to the frame.
- Maximized filter area through optimized frame and filter selection. Minimum filter area 87% (83% size 2400*1800 mm) of the nominal ceiling area.
- Large surface laminar fabric with stable, flow-optimised frame having narrow ridges (max. ridge width 5mm) to maximize air supply area and minimise induction made of extruded anodised aluminium profile, fastened screw less to the filter-frame section.
    - Laminar fabric with uniform supply air velocity over the whole supply surface area
- Perfectly hygienic lead through of the OT-lamp through the disperser with minimised blind surfaces.
- Active leakage control with double-seal system filter assembly enabling depressurization

through connection to exhaust chamber ensuring active, no-leak filter seals and filter-frame.
- Air guiding skirt designed to prevent the intrusion of contaminated, non-filtered air from the area outside the operating field. Air-guiding skirt, suspended from ceiling-level is fastened to the frame or the lower edge of a cabin lighting ring. Skirt comprising of laminated safety glass 6.0mm, all around fitted into clear anodised aluminium profiles.
- Laminar airflow ceiling includes all around L -shaped profile made of powder-coated white (RAL 9010) aluminium to enable tight connection with false-ceiling.

Example specification:

Operating room ventilation system comprising of air supply and extract modules:

9 pcs Low turbulent airflow ceiling with 400 mm high air skirt,
VZD/1-2400×2400-450

36 pcs Corner exhaust unit with low level air grille (400*400 mm)
and high-level air grille (400*200 mm), VSC/B-315-3600

(We recommend to use VSC as exhaust air units to complete operation room ventilation solution.)
Technical Data

Dimensions:	2385 x 2385 x 450 mm (nominal size 2400*2400)
Pressure drop, clean filter:	< 100 Pa
Total air volume:	1.7 m3/s
Air outlet speed:	0.30 m/s
Filter seal:	Double seal system
OT-lamp stem passage:	1 pc, centred
Air distributor:	ACO-Tex, one layer fabric

Quantity of filters: Size 2400*2400 ceiling:
4 pcs. H14 – 915*915*78 mm
4 pcs. H14 – 915*457*78 mm
Exhaust units with integrated low/high level exhaust

Comprising:

- Rectangular shape duct module with integrated stainless steel exhaust grilles
- Size of the air grilles: lower 400*400 mm, upper 400*200 mm
- Circle 315 mm duct connection from top
- Modules are made of two pieces which are fixed together on site
- Exact length of the module will be checked with designer prior to production