MODULAR AIR HANDLING

Standard air handling units

VLT-AHU-ST

CONFIGURE THE AIR PATH AROUND THE PROJECT



26 section sizes

2,596-69,250 m^3/h / table reference at 2.5 m/s

01 / THE RANGE

Build the air path.

Modular air treatment for comfort and process ventilation in commercial and industrial buildings.

Choose the section size for the air volume and component face velocity. Develop filtration, recovery, thermal treatment and air movement into a serviceable project arrangement.



26 SIZES / 750-3,700 MM SECTION WIDTH

In-line, stacked and side-by-side air paths can be developed with the project team. Equipment illustrated in this catalogue is a configuration example; options are selected for the application.

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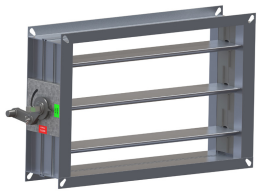
02 / COMPONENT GALLERY

The components behind the air path.

Original component images introduce the equipment types used to build a modular air handling configuration.



Dampers
Regulation and shut-off.



Panel filters
First-stage filtration.



Bag filters
Application-specific filtration.



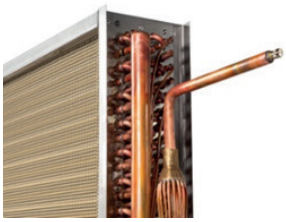
Compact filters
Selected final filtration stage.



Fan & motor
Air movement and drive.



Water coil
Heating or cooling selection.



Coil construction
Fins, tubes and connections.



Valve & actuator
Circuit regulation.



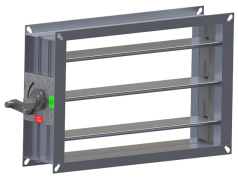
Control panel
Project-specific control scope.

Component images are illustrative examples. The supplied configuration, component make, filtration grade and duty follow the project-specific selection report.

03 / CASING & AIR QUALITY

Start at the air inlet.

Access, filtration and air regulation are coordinated with the selected component sequence.



01 / AIR DAMPERS

Regulate and isolate.

Linked blades control fresh, return or shut-off air. Manual or motorised operation follows the operating sequence; actuator access remains clear.

Selection software: check opening area, air velocity and pressure loss.



02 / FILTRATION

Select each filtration stage.

Panel, bag or compact stages protect the air path. Any higher-efficiency or application-specific stage needs its own grade, sealed seating and withdrawal route.

Selection software: allow for clean and loaded filter resistance.

03 / FRAME & DOUBLE-SKIN PANELS

Steel or aluminium frame options, insulated double-skin panels and gasketed access doors form the section enclosure. Specify surface finish, insulation build-up, access side and environmental exposure for the project.

Component images illustrate equipment types. No casing leakage, thermal, mechanical or filtration certification class is inferred. Request verified construction information for the selected unit.

04 / AIR MOVEMENT & ACOUSTICS

Select the complete duty.

Fan choice follows both the internal component resistance and the connected duct system.

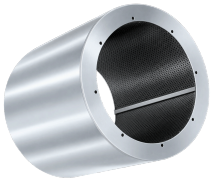


01 / FAN SECTION

Move air at the required pressure.

Plug, housed, direct-drive, belt-drive or EC configurations are project options. Confirm the selected fan curve, operating region, efficiency, sound and service access.

Selection software: enter design m^3/h and external static pressure together.



02 / ACOUSTIC TREATMENT

Control sound along the air path.

Select circular or splitter attenuators for the arrangement and acoustic target. Check pressure loss, insertion loss and regenerated sound. The photo shows a circular attenuator example.

Selection software: include attenuator resistance in the fan calculation.

03 / MOTOR & SPEED CONTROL

Match the motor, supply and control method to the fan duty and operating sequence. Separate fan/motor input from heater, pump, rotor and other auxiliary loads. Confirm isolation and protection for the actual assembly.

Section airflow references are not fan performance curves or guaranteed duty points. Motor rating, absorbed power and sound values require the unit-specific selection report.

05 / THERMAL TREATMENT

Control temperature and moisture.

Select the treatment process from the entering air, required leaving air and available building services.

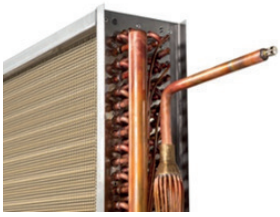


01 / HEATING

Water-side or electric heating.

Confirm available water temperatures, flow, pressure drop and freeze protection. Electric heating needs a selected duty, airflow proving, over-temperature protection and safe shutdown.

Selection software: verify duty and leaving-air conditions at the design airflow.

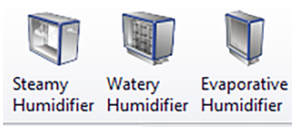


02 / COOLING

Water or DX cooling.

Define entering dry-bulb and humidity, leaving conditions and the fluid/refrigerant circuit. Coordinate the drain pan, condensate trap and droplet control.

Selection software: review sensible/total duty, face velocity and pressure losses.



PROGRAM MODULES

03 / HUMIDIFICATION

Add moisture when required.

Steam, spray, wetted-media or atomising processes require application-specific water quality, absorption distance, drainage, hygiene and service provision. The image shows actual program module options.

Selection software: confirm moisture output, absorption space and controls.

06 / HEAT RECOVERY

Choose the recovery principle.

Illustrative component views show plate, rotary and run-around arrangements; final duties follow selection.

01

Plate exchanger

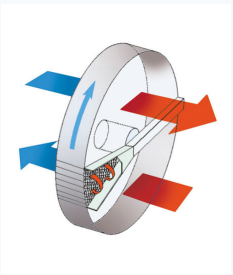


Separate passages exchange heat through fixed plates. Coordinate bypass and frost strategy.

Check both air-side pressure losses.

02

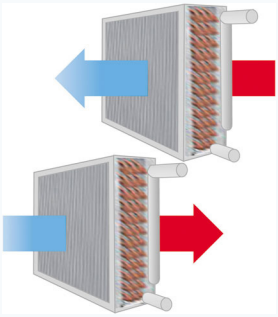
Rotary exchanger



A rotating matrix transfers energy. Check material, speed control and carry-over strategy.

Check pressure balance and rotor input.

03 / RUN-AROUND COILS



A closed liquid circuit connects separate air streams. Confirm the coil pair, pump duty, fluid and frost protection.

04 / HEAT PIPE

A sealed refrigerant circuit transfers heat between the air-side sections. Orientation, seasonal duty and the available temperature difference determine the useful operating range.

Confirm the arrangement-specific heat-pipe selection and dimensional drawing.

Use the AHU selection software to compare recovered duty, pressure losses, frost/bypass operation and auxiliary input at the actual design conditions. No fixed recovery efficiency is assumed.

07 / CONTROLS & ACCESSORIES

Coordinate sensing and operation.

Specify the operating sequence and the accessories actually included with the selected configuration.



CONTROL PANEL



PRESSURE SENSING



VALVE & ACTUATOR



INSPECTION WINDOW

Interface / accessory	What to specify
Temperature / humidity	Sensor position, range and control purpose
Differential pressure	Filter-loading or fan-proving function and setpoints
Inspection & service	Windows, lighting, switches and accessible isolation
Thermal safeguards	Frost, airflow proving and heater over-temperature logic
Building interface	Required BMS protocol, points and supplied capability

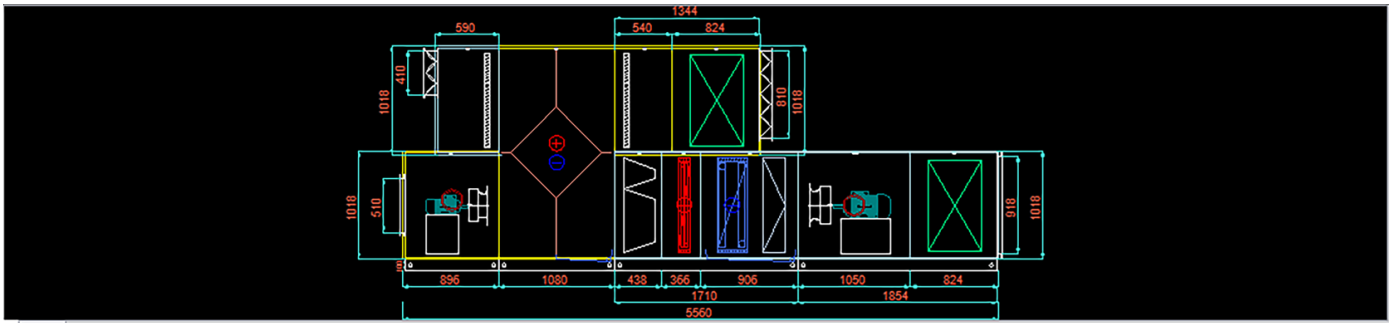
Selection software references: include controls and accessory options in the configuration and export their scope with the report. Images illustrate component types; actual supply requires confirmation.

08 / CONFIGURATION VIEWS

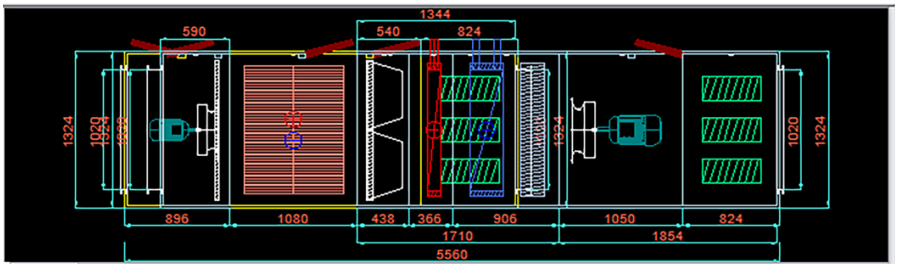
View the configured unit.

Selection software screen views show how the section arrangement can be reviewed from different directions.

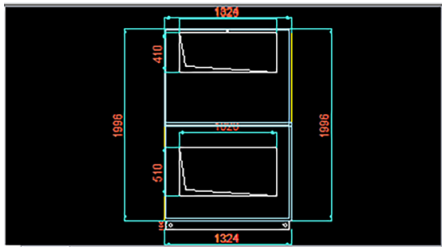
SIDE / SECTION VIEW



PLAN VIEW



END VIEW



Screen details are cropped from the illustrative image. Visible dimensions belong to the example project and are not VLT-AHU-ST manufacturing or selection data.

1 Review the arrangement

Coordinate module order, airflow direction and access side.

2 Confirm the envelope

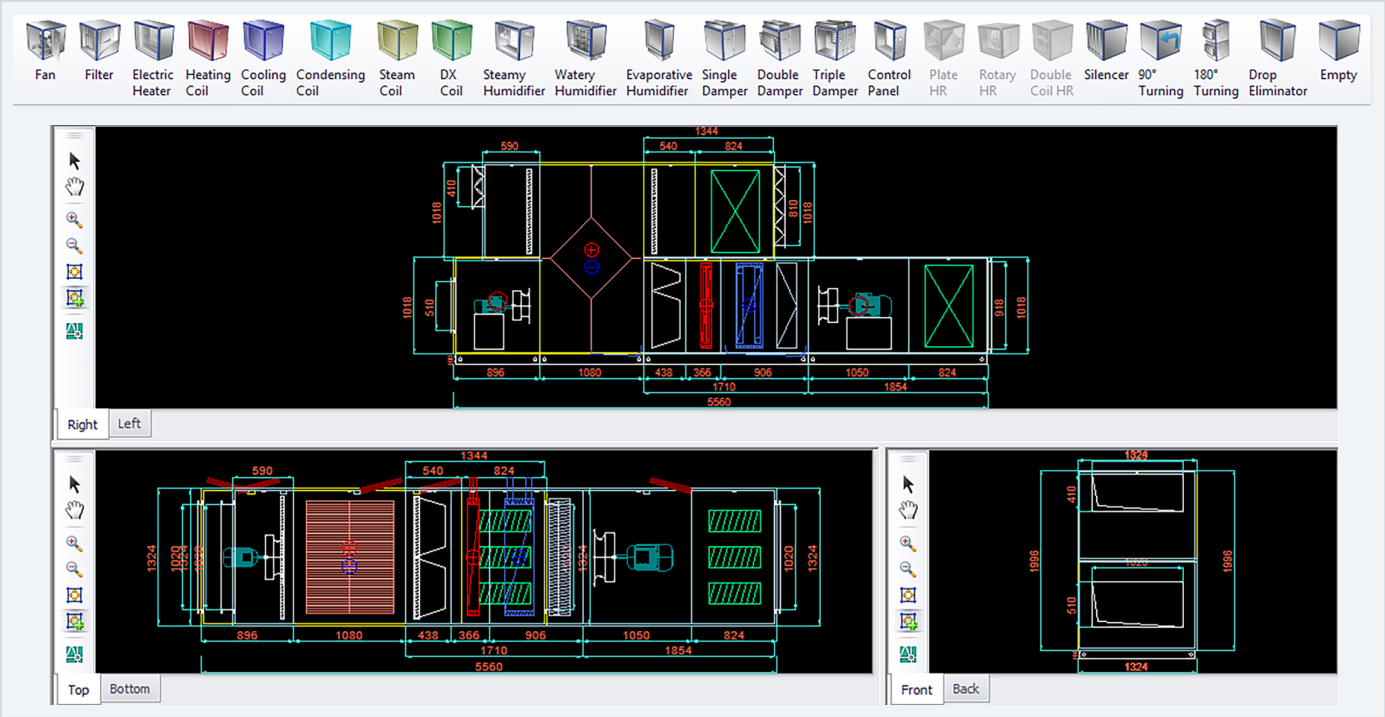
Export the actual selected unit drawing and service clearances.

In-line, stacked and side-by-side air paths are project layout choices. Use the selection program and the final dimensional drawing to define the actual supplied arrangement.

09 / AHU SELECTION SOFTWARE

From brief to selection report.

Use the AHU selection program to define the duty, configure modules and review the unit-specific result.



Selection software screen details for illustration. Example project values are illustrative; no VLT-AHU-ST software selection has been executed.

1 Define the duty

Enter airflow, external pressure, climate and required supply-air conditions.

2 Build the air path

Select section, components, recovery, access side and available installation space.

3 Review the result

Check fan curves, coil duties, pressure losses, dimensions, sound and control scope.

Request the project-specific report and coordinated dimensional drawing before release for manufacture.

10 / DIMENSIONAL PRINCIPLES

Section size is a starting point.

The following schedules give section dimensions in mm and recorded coil face area in m^2.

SINGLE SECTION / END VIEW



CONFIGURED UNIT / EXAMPLE



L / overall envelope by selection

H and W describe one section. A stacked unit needs its own overall height, base frame and interface dimensions. Do not derive a complete-unit envelope from the section table.

READ THE SCHEDULE CORRECTLY

W / H: one section external width and height.
Wi / Hi: clear internal opening width and height.
Coil face area: recorded selection area, distinct from the internal opening.
L, total height, service clearances, connections and mass: project-specific.

Selection program: confirm the complete configured envelope and export its dimensional drawing. These section dimensions do not define the final unit length or a stacked unit overall height.

11 / SECTION SCHEDULE 1/2

26 section sizes.

Airflow below is the existing table reference at a 2.5 m/s face-velocity column, in m^3/h.

Model	W mm	H mm	Wi mm	Hi mm	Coil face m^2	Airflow @ 2.5 m/s m^3/h
VLT-AHU-ST 1010	750	750	670	670	0.29	2,596
VLT-AHU-ST 1015	1050	750	970	670	0.46	4,108
VLT-AHU-ST 1020	1350	750	1270	670	0.62	5,620
VLT-AHU-ST 1515	1050	1050	970	970	0.70	6,269
VLT-AHU-ST 1520	1350	1050	1270	970	0.95	8,591
VLT-AHU-ST 1525	1650	1050	1570	970	1.21	10,913
VLT-AHU-ST 2020	1350	1350	1270	1270	1.28	11,484
VLT-AHU-ST 2025	1650	1350	1570	1270	1.60	14,407
VLT-AHU-ST 2030	1950	1350	1870	1270	1.95	17,539
VLT-AHU-ST 2525	1650	1650	1570	1570	1.97	17,690
VLT-AHU-ST 2530	1950	1650	1870	1570	2.40	21,578
VLT-AHU-ST 2535	2250	1650	2170	1570	2.83	25,466
VLT-AHU-ST 3030	1950	1950	1870	1870	2.87	25,839

W/H are single-section external dimensions; Wi/Hi are the clear internal opening. Coil face area is retained from the existing range schedule. No complete-unit length, weight or duty pressure is implied.

11 / SECTION SCHEDULE 2/2

26 section sizes.

Airflow below is the existing table reference at a 2.5 m/s face-velocity column, in m^3/h.

Model	W mm	H mm	Wi mm	Hi mm	Coil face m^2	Airflow @ 2.5 m/s m^3/h
VLT-AHU-ST 2540	2500	1650	2420	1570	3.17	28,512
VLT-AHU-ST 3035	2250	1950	2170	1870	3.39	30,537
VLT-AHU-ST 3040	2500	1950	2420	1870	3.80	34,217
VLT-AHU-ST 3535	2250	2250	2170	2170	3.95	35,527
VLT-AHU-ST 3045	2800	1950	2720	1870	4.32	38,915
VLT-AHU-ST 3540	2500	2250	2420	2170	4.46	40,117
VLT-AHU-ST 3545	2800	2250	2720	2170	5.04	45,349
VLT-AHU-ST 4040	2500	2500	2420	2420	4.97	44,724
VLT-AHU-ST 3550	3100	2250	3020	2170	5.65	50,857
VLT-AHU-ST 4045	2800	2500	2720	2420	5.63	50,701
VLT-AHU-ST 4050	3100	2500	3020	2420	6.32	56,884
VLT-AHU-ST 4055	3400	2500	3320	2420	7.01	63,067
VLT-AHU-ST 4060	3700	2500	3620	2420	7.69	69,250

W/H are single-section external dimensions; Wi/Hi are the clear internal opening. Coil face area is retained from the existing range schedule. No complete-unit length, weight or duty pressure is implied.

12 / AIRFLOW MATRIX 1/2

Compare face-velocity references.

All airflow values are in m^3/h. Columns identify the original table face velocity in m/s.

VLT-AHU-ST size	3.5 m/s	3.25 m/s	3 m/s	2.75 m/s	2.5 m/s	2.25 m/s	2 m/s
1010	3,634	3,374	3,115	2,855	2,596	2,336	2,076
1015	5,751	—	4,929	4,518	4,108	3,697	3,286
1020	7,867	7,305	6,744	6,182	5,620	5,058	4,496
1515	8,777	8,150	7,523	6,896	6,269	5,642	5,016
1520	12,028	11,169	10,310	9,451	8,591	7,732	6,873
1525	15,279	14,187	13,096	12,005	10,913	9,822	8,731
2020	16,078	14,929	13,781	12,632	11,484	10,336	9,187
2025	20,170	18,729	17,289	15,848	14,407	12,966	11,526
2030	24,555	22,801	21,047	19,293	17,539	15,785	14,031
2525	24,767	22,998	21,228	19,459	17,690	15,921	14,152
2530	30,210	28,052	25,894	23,736	21,578	19,421	17,263
2535	35,653	33,106	30,560	28,013	25,466	22,920	20,373
3030	36,175	33,591	31,007	28,423	25,839	23,255	20,671

— = no value in the listed data; the 1015 / 3.25 m/s entry is intentionally blank.

Selection software: verify the intended airflow and component face velocities together with the actual fan and thermal selection. This matrix is not a pressure curve.

12 / AIRFLOW MATRIX 2/2

Compare face-velocity references.

All airflow values are in m^3/h. Columns identify the original table face velocity in m/s.

VLT-AHU-ST size	3.5 m/s	3.25 m/s	3 m/s	2.75 m/s	2.5 m/s	2.25 m/s	2 m/s
2540	39,917	37,066	34,214	31,363	28,512	25,661	22,810
3035	42,752	39,698	36,644	33,591	30,537	27,483	24,430
3040	47,904	44,482	41,061	37,639	34,217	30,795	27,374
3535	49,737	46,185	42,632	39,079	35,527	31,974	28,421
3045	54,481	50,590	46,698	42,807	38,915	35,024	31,132
3540	56,165	52,152	48,140	44,128	40,117	36,105	32,093
3545	63,489	58,954	54,419	49,884	45,349	40,814	36,279
4040	62,613	58,141	53,668	49,196	44,724	40,251	35,779
3550	71,200	66,114	61,029	55,943	50,857	45,771	40,686
4045	70,981	65,911	60,841	55,771	50,701	45,631	40,560
4050	79,637	73,949	—	62,572	56,884	51,195	45,507
4055	88,293	81,987	75,860	69,373	63,067	56,760	50,453
4060	96,948	90,024	83,100	76,175	69,250	62,325	55,400

— = no value in the listed data; the 4050 / 3.0 m/s entry is intentionally blank. The recorded 4055 / 3.0 m/s value of 75,860 is retained and requires confirmation.

Selection software: verify the intended airflow and component face velocities together with the actual fan and thermal selection. This matrix is not a pressure curve.

13 / INSTALLATION & MAINTENANCE

Make every section accessible.

Coordinate delivery, support, ducts, building services and the maintenance route before equipment placement.



Coordination view using the approved product visual. The final support, lifting and access arrangements follow the unit-specific project drawing.

1 Delivery & support

Confirm splits, lifting points, mass, base frame and the structural support/isolation design.

2 Service envelope

Maintain access to doors, filters, coils, fans, dampers and control components.

3 Building connections

Coordinate duct interfaces, coil circuits, drainage and electrical isolation.

Selection program: export the configured drawing, then resolve support details and service clearances in the project installation documents.

14 / PROJECT SELECTION REPORT

Turn the configuration into a record.

Request a dated, unit-specific output from the AHU selection software for the exact offered equipment.

Report content	Required project information
Air-side duty	Supply/extract m^3/h, external static pressure, internal losses and filter loading
Fan & electrical	Actual fan curve and duty, fan/motor input, speed range, supply and auxiliary loads
Thermal treatment	Entering/leaving air conditions, heating/cooling duty, fluid circuit and pressure drops
Recovery & sound	Selected recovery performance, frost/bypass strategy and acoustic data
Dimensional drawing	Overall L/W/H, section splits, connections, service access and mass
Controls & accessories	Operating sequence, included sensors/actuators, protection and BMS scope

CURRENT RANGE DATA

The section and airflow tables provide a documented starting point. Final fan pressure curves, thermal capacities, electrical details and complete-unit drawings remain tied to the selected project configuration.

Review issue. Catalogue preparation does not establish product certification or engineering validation of a configured unit.

VOLTVENT®
VENTILATION SYSTEMS

VLT-AHU-ST

Standard air handling units



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EN / V2