BOREAS

BRS-H HYGIENE
AIR HANDLING UNIT

Hygienic Comfort: Redefine the Air



BRS-H Air Handling Unit

General Information and Features

With the innovative BRS-H model that supports modern technologies, we, Boreas Technology, undersign projects that pave the way for correct solutions

Hygiene Air Handling Units are used in delicate sterile environments like operating rooms and clean rooms as well as food, pharmaceutical, and chemical industries.

Hygiene Air Handling Units developed by Boreas Technology operates without energy loss under critical climatic conditions. Adequate air volume calculated by the control system is provided with a series of efficient EC motor plug-fans. This way, the fans operate with the lowest possible energy consumption.

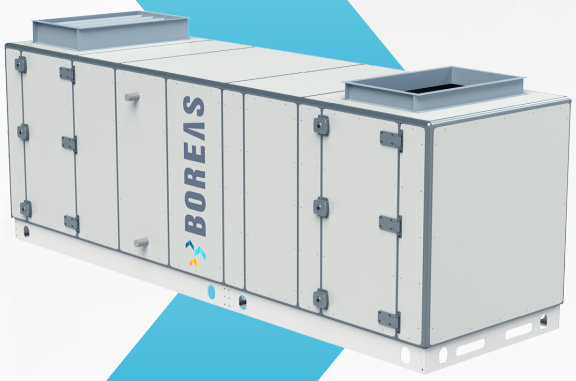


Wide Range of Capacity Offering

40 different models that can meet a wide range of demand between 2,000 m3/h and 100,000 m3/h, Boreas Air Handling Unit can easily and rapidly be sized in various dimensions thanks to its modular nature. It enables different types of heating, cooling, humidification, dehumidification, heat recovery and filtering applications through wide variety of components.

Double skin panels are used in the BRS units. The outer surfaces of the panels are manufactured from epoxy coated galvanized steel. The inner surfaces are manufactured from galvanized steel or stainless-steel sheets.

BRS-H Air Handling Unit



TECHNICAL SPECIFICATIONS ACCORDING TO EN 1886:2007	
Mechanical Strength (mm x m⁻¹)	D1
	4
Casing Air Leakage (l x s⁻¹ x m⁻2)	L1 (-400 Pa)
	0.15
	L1 (+700 Pa)
	0.22
Filter Bypass Leakage (%k)	F9
	0.5
Thermal Transmittance (w x m⁻2 x K⁻¹)	T2
	0.5 < U ≤ 1.0
Thermal Bridging	TB1
	0.75 < kb < 1.00

EUROVENT CERTIFIED PERFORMANCE AIR HANDLING UNITS www.eurovent-certification.com HYGIENIC

EUROVENT CERTIFIED PERFORMANCE AHU No. 15.06.010 Range BRS www.eurovent-certification.com

Hygenic Ready Design and Certification

Inner edges and corners are rounded to prevent accumulation of dirt and manufactured to meet easy assembly, maintenance, and cleaning requirements. Suitable for hygienic applications in places such as hospitals, laboratories, and clean rooms. Units are certified by Eurovent as Level 2 Eurovent Hygienic Certification according to standards DIN1946/4, EN 13053 &1993& 1822, EN ISO 846 &12944

Eurovent Certification

BOREAS Air Handling Unit is Eurovent Certified as Mechanical Strength Class D1, Casing Air Leakage Class L1, Thermal Transmittance Class T2, Thermal Bridging Class TB1, and Filter Bypass Leakage Class F9 according to the results of tests performed in accordance with EN 1886.

The 2024 Eurovent data indicates that Boreas branded hygienic air handling units are among the 9 companies certified in the World.

Quick Selection Chart

Modul	Filter Alignment	Quantity			Inner Dimension	Outer Dimension	Air Flow (m³/h)					
		1/1	1/2	1/4	HxW (mm)	HxW (mm)	V1 (<1.6 m/s)	V2 (<1.6-1.8 m/s)	V3 (<1.8-2.0 m/s)	V4 (<2.0-2.2 m/s)	V5 (<2.2-2.5 m/s)	V6 (<2.5-3.0 m/s)
6x6		1	0	3	612x612	842x712	2157	2427	2697	2966	3371	4045
6x9		1	1	0	612x918	842x1018	3236	3641	4045	4450	5056	6068
6x12		2	0	1	612x1224	842x1324	4315	4854	5393	5933	6742	8090
9x9		1	2	0	918x918	1148x1018	4854	5461	6068	6674	7585	9101
9x12		2	2	1	918x1224	1148x1324	6472	7281	8090	8899	10113	12135
9x15		2	3	0	918x1530	1148x1630	8090	9101	10113	11124	12641	15169
9x18		3	3	0	918x1836	1148x1936	9708	10922	12135	13349	15169	18203
12x12		4	0	0	1224x1224	1454x1324	8629	9708	10787	11866	13484	16180
12x15		4	2	0	1224x1530	1454x1630	10787	12135	13484	14832	16854	20225
12x18		6	0	0	1224x1836	1454x1936	12944	14562	16180	17798	20225	24270
12x21		6	2	0	1224x2142	1454x2242	15102	16989	18877	20765	23596	28316
12x24		8	0	1	1224x2448	1454x2548	17259	19416	21574	23731	26967	32361
15x15		4	4	0	1530x1530	1760x1630	13484	15169	16854	18540	21068	25282
15x18		6	3	1	1530x1836	1760x1936	16180	18203	20225	22248	25282	30338
15x21		6	5	0	1530x2142	1760x2242	18877	21237	23596	25956	29495	35394
15x24		8	4	1	1530x2448	1760x2548	21574	24270	26967	29664	33709	40451
15x27		8	6	0	1530x2754	1760x2854	24270	27304	30338	33372	37923	45507
15x30		10	5	0	1530x3060	1760x3160	26967	30338	33709	37080	42136	50563
18x18		9	0	0	1836x1836	2066x1936	19416	21843	24270	26697	30338	36406
18x21		9	3	0	1836x2142	2066x2242	22652	25484	28316	31147	35394	42473
18x24		12	0	0	1836x2448	2066x2548	25888	29125	32361	35597	40451	48541
18x27		12	3	0	1836x2754	2066x2854	29125	32765	36406	40046	45507	54609
18x30		15	0	0	1836x3060	2066x3160	32361	36406	40451	44496	50563	60676
18x33		15	3	0	1836x3366	2066x3466	35597	40046	44496	48945	55620	66744



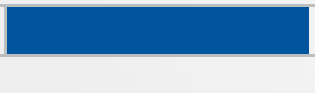
Quarter Filter

Half Filter

Full Filter

V1 (<1.6 m/s)	V2 (<1.6-1.8 m/s)	V3 (<1.8-2.0 m/s)	V4 (<2.0-2.2 m/s)	V5 (<2.2-2.5 m/s)	V6 (<2.5-3.0 m/s)
1.6	1.8	2	2.2	2.5	3
Velocity classification of Air Handling Units according to EN 13503 standard					

Quick Selection Chart

Modul	Filter Alignment	Quantity			Inner Dimension	Outer Dimension	Air Flow (m^3/h)					
		1/1	1/2	1/4	HxW (mm)	HxW (mm)	V1 (<1.6 m/s)	V2 (<1.6-1.8 m/s)	V3 (<1.8-2.0 m/s)	V4 (<2.0-2.2 m/s)	V5 (<2.2-2.5 m/s)	V6 (<2.5-3.0 m/s)
18x36		18	0	0	1836 x 3672	2066 x 3772	38833	43687	48541	53395	60676	72811
21x21		9	6	1	2142 x 2142	2372 x 2242	26428	29731	33035	36338	41293	49552
21x24		12	4	0	2142 x 2448	2372 x 2548	30203	33979	37754	41529	47193	56631
21x27		12	7	1	2142 x 2754	2372 x 2854	33979	38226	42473	46721	53092	63710
21x30		15	5	0	2142 x 3060	2372 x 3160	37754	42473	47193	51912	58991	70789
21x33		15	8	1	2142 x 3366	2372 x 3466	41529	46721	51912	57103	64890	77868
21x36		18	6	0	2142 x 3672	2372 x 3772	45305	50968	56631	62294	70789	84947
21x39		18	9	1	2142 x 3978	2372 x 4078	49080	55215	61350	67485	76688	92025
21x42		21	7	0	2142 x 4284	2372 x 4384	52856	59463	66070	72677	82587	99104
24x24		16	0	0	2448 x 2448	2678 x 2854	34518	38833	43147	47462	53934	64721
24x27		16	4	0	2448 x 2754	2678 x 2854	38833	43687	48541	53395	60676	72811
24x30		20	0	0	2448 x 3060	2678 x 3160	43147	48541	53934	59328	67418	80902
24x33		20	4	0	2448 x 3366	2678 x 3466	47462	53395	59328	65261	74160	88992
24x36		24	0	0	2448 x 3672	2678 x 3772	51777	58249	64721	71193	80902	97082
24x39		24	4	0	2448 x 3978	2678 x 4078	56092	63103	70115	77126	87643	105172
24x42		28	0	0	2448 x 4284	2678 x 4384	60406	67957	75508	83059	94385	113262



Quarter Filter

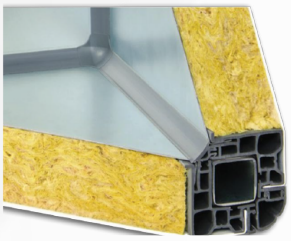
Half Filter

Full Filter

V1 (m/s)	V2 (m/s)	V3 (m/s)	V4 (<m/s)	V5 (m/s)	V6 (m/s)
1.6	1.8	2	2.2	2.5	3
Velocity classification of Air Handling Units according to EN 13503 standard					

Unit Components

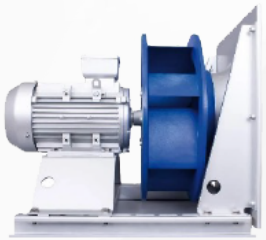
Body Structure



The frame structure is composed of box profiles that are made of electrostatic powder painted galvanized steel material, thus achieving a lighter, thermal bridge free design, and superior mechanical properties.

The panel structure composed of frames that were manufactured from PVC profiles provide a thermal bridge free unit. Grade 304 stainless steel sheets and walls, joints and fastenings are used as standard components.

Plug Fan



- High Pressure
- High Air Flow
- Comfort and Hygiene Applications
- High Efficiency
- Frequency Inverter

EC Fan



- High Pressure
- High Air Flow
- Comfort and Hygiene Applications
- High Efficiency
- Automatic RPM Control

Coils



Drain pans are manufactured from standard 1,2mm stainless steel sheet. Double inclined design of the pan helps water accumulate on the corner. Standard coil fins are coated with epoxy / hydrophilic and stainless steel sheet frames and collectors which are made of copper material.

Power and Control Panel



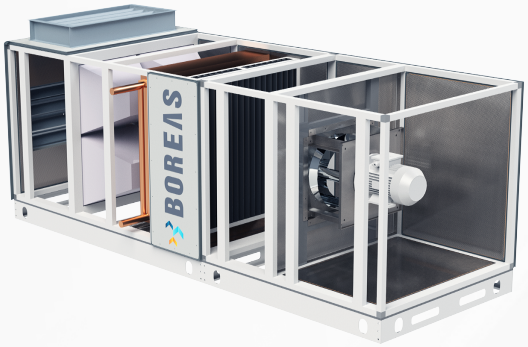
The power and control panel are housed within the same casing at the Boreas Air Handling Unit. All methods and applications in the design and manufacturing of the panel are done in accordance with CE instructions. Parts necessary to feed and distribute main power to the air handling unit are located in the 'Power' section. Control card and ports that can easily be integrated with current BMS system via open protocols like KNX, Lon, Bacnet, Modbus, etc. are located in the "Control" section.

Unit Components

Filter

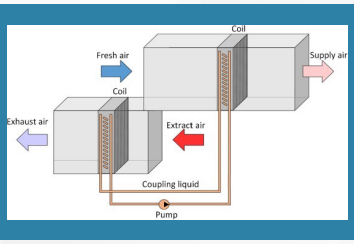


The Module is sized as 102 mm based on the standard filter dimension according to EN 779. Filter by-pass leakage class is F9. This way: the interior pressure loss is decreased. Sizing is done via standard steps.



Heat Recovery

Run Around Coil Exchanger





A run-around heat exchanger consists of two separate heat exchangers connected by a circulating loop containing a heat transfer fluid. As the fluid circulates between the two exchangers, it absorbs heat from one stream and releases it to the other. This allows for effective heat exchange between two different air streams or fluids without direct contact, enabling energy recovery and temperature control.

Plate Type Heat Exchanger



A plate type heat exchanger transfers heat between two air streams using thin, corrugated plates. The air streams flow in alternating channels, allowing efficient heat exchange without mixing. This design maximizes surface area and thermal efficiency.

Rotary Heat Exchanger



A rotating wheel with a large surface area is used to transfer heat between two air streams connected to each other. As the wheel rotates, it absorbs heat from the warm air stream and releases it to the cool air stream, enabling efficient heat exchange without mixing and allowing for energy recovery.

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Hygienic Comfort: Redefine the Air

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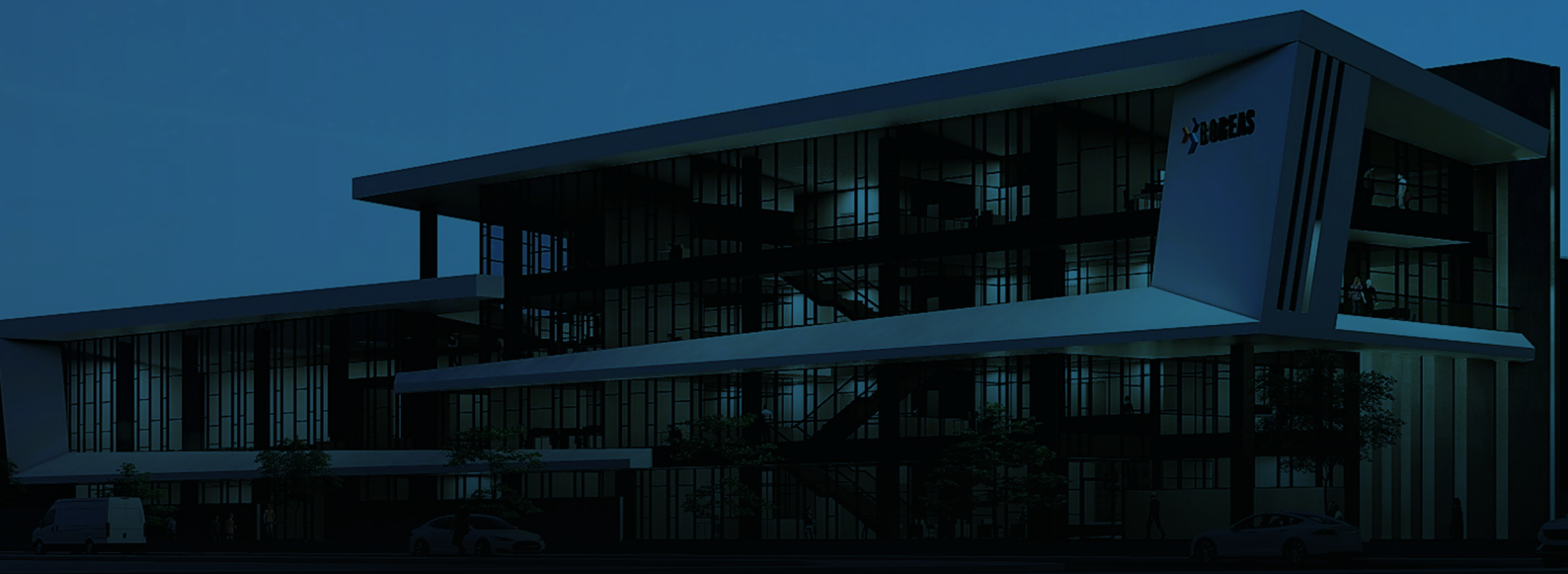
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