

ASK[®]

BLUELINE

AIR HANDLING UNITS

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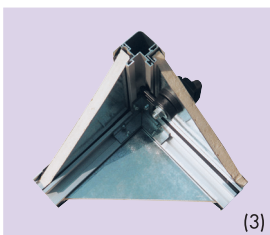
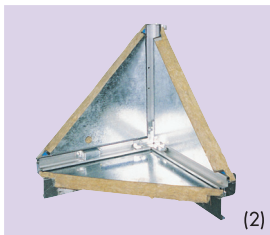
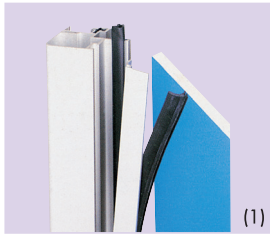
ISO 9001:2008 / ISO 14001:2004



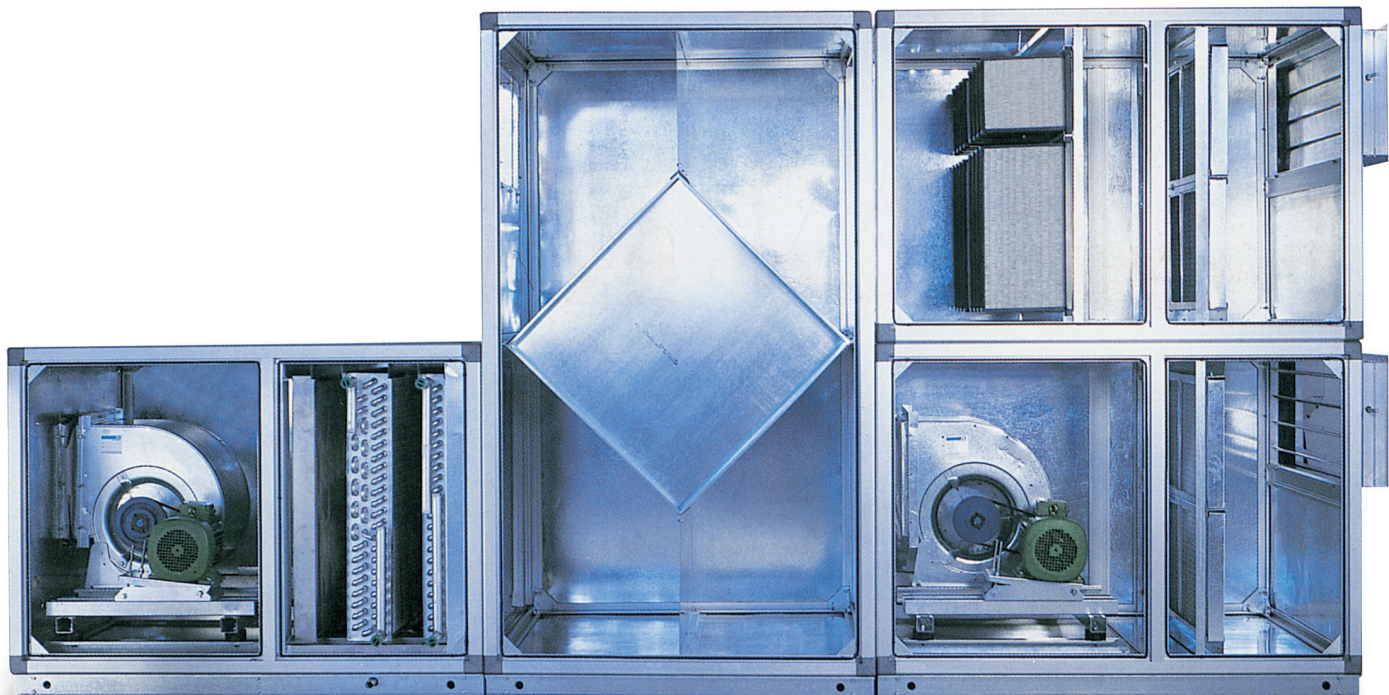
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HSK[®] BLUELINE

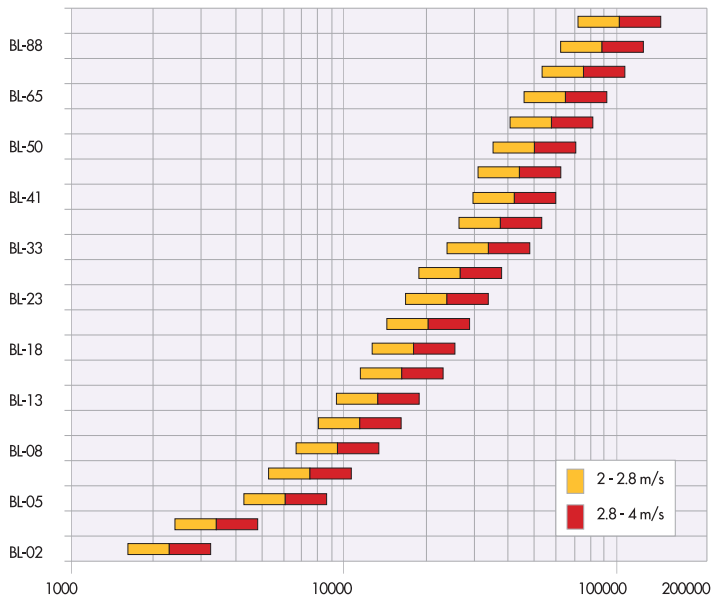
DESIGN FEATURES AND SUPERIORITIES



- HSK patented special sealing design with double gasket that prevent air leakages. (1)
- HSK patented Aluminium profile intersected system with no need for panel – aluminium profile connections.
- Robust frame with special aluminium profile.
- High quality double skinned construction with B2 fire resistance class polyurethane injected panels insulates heat and sound. (2)
- Outer skin is 0,5 mm sheet metal coated with aluzinc prepainted with epoxy and coated with plastic protective film.
- Inner skin is 0,5 mm galvanized sheet metal.
- 30 % glass fiber nylon - 6 plastic corner element.
- Corner flag sheets made of galvanized sheets for strength and rigidity.
- Easy service and maintenance access with special locks. (3)
- Advanced polypropylene material high speed droplet eliminator.
- Stainless steel drain pans for cooling coils as standard
- Radial fans with forward or backward curved fans, plugged type backward curved fans
- All types of air filter can be used according to the requirements.
- Belt tightening system enabling easy setting.
- Air dampers with hidden gear mechanism with complete aluminium (including flanges) and low resistance wing profile.



Quick Selection Chart



Capacity Chart

MODEL	2,5 (m/s) Air Flow Speed (m³/h)	2,8 (m/s) Air Flow Speed (m³/h)	3 (m/s) Air Flow Speed (m³/h)	3,5 (m/s) Air Flow Speed (m³/h)	4 (m/s) Air Flow Speed (m³/h)
BL-02	2.017	2.259	2.420	2.823	3.228
BL-03	2.970	3.326	3.564	4.158	4.752
BL-05	5.346	5.988	6.415	7.484	8.554
BL-07	6.610	7.403	7.832	9.253	10.575
BL-09	8.363	9.306	10.035	11.708	13.380
BL-11	10.019	11.221	12.023	14.026	16.030
BL-13	11.675	13.076	14.010	16.345	18.680
BL-16	14.213	15.918	17.055	19.898	22.740
BL-18	15.926	17.838	19.112	22.297	25.482
BL-20	17.942	20.095	21.531	25.119	28.708
BL-23	21.146	23.684	25.376	29.605	33.834
BL-26	23.522	26.345	28.227	32.931	37.636
BL-33	29.822	33.401	35.787	41.751	47.716
BL-37	33.359	37.363	40.031	46.703	53.375
BL-41	37.283	41.707	44.686	52.134	59.581
BL-45	39.139	43.836	46.967	54.795	62.623
BL-50	44.323	49.642	53.188	62.052	70.917
BL-57	51.235	57.383	61.482	71.729	81.976
BL-65	57.715	64.641	69.258	80.801	92.344
BL-75	67.543	75.648	81.052	94.560	108.069
BL-88	78.991	88.470	94.789	110.588	126.386
BL-100	91.298	102.254	109.557	127.817	146.076

Air Volume – Cooling or Heating Capacity Nomogram

$Q_t = Q_s - Q_l$ t... Total Heat
 $Q_s \sim 1,2 \times V \times dT/3600$ in kW s... Sensible Heat
 $Q_l \sim 2,95 \times V \times dx/3600$ in kW l... Latent Heat

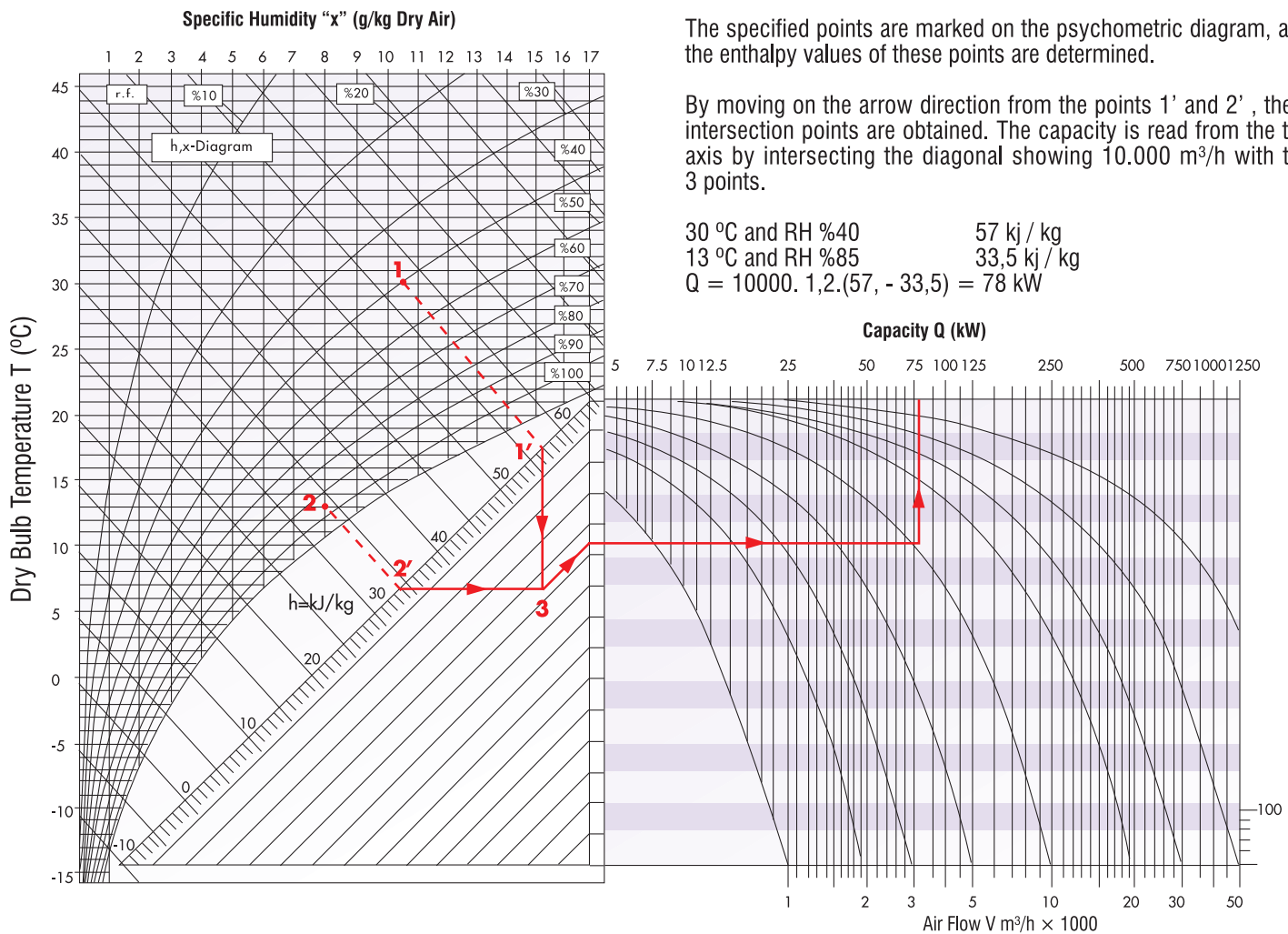
Diagram U se

Example: Finding the necessary cooling capacity to cool the exterior air with a dry bulb temperature of 30 °C and a relative humidity of 40% to the conditions of 13 °C and 85% with an AHU with a flow of 10.000 m³/h.

The specified points are marked on the psychrometric diagram, and the enthalpy values of these points are determined.

By moving on the arrow direction from the points 1' and 2', the 3 intersection points are obtained. The capacity is read from the top axis by intersecting the diagonal showing 10.000 m³/h with the 3 points.

30 °C and RH %40 57 kJ / kg
 13 °C and RH %85 33,5 kJ / kg
 $Q = 10000 \cdot 1,2 \cdot (57 - 33,5) = 78 \text{ kW}$



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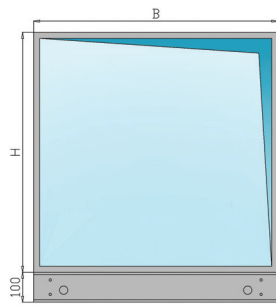
SECTIONS DIMENSIONS AND WEIGHTS

MODEL	DIMENSIONS (L)																												
	B	H	AS	VA	PF	IB	EI	SB	IS	D1	D2	D3	TF1	TF2	YN	S1	S2	S3	PR	RR	PN	LDF	ACF1	ACF2	ACF3	HF	BN	PAF	BH
BL-02	800	600	800	600	800	300	300	700	900	500	500	900	1300	1300	1500	1100	1300	1500	800	700	940	900	900	1300	1750	1300	1300	900	300
BL-03	900	700	900	700	800	300	300	700	900	500	500	900	1300	1300	1500	1100	1300	1500	900	700	940	900	900	1300	1750	1300	1300	900	300
BL-05	1100	900	1100	900	900	300	300	700	900	700	700	1100	1300	1300	1500	1100	1300	1500	1100	700	940	900	900	1300	1750	1300	1300	900	300
BL-07	1300	900	1100	900	900	300	300	700	900	700	700	1100	1300	1300	1500	1100	1300	1500	1300	700	940	900	900	1300	1750	1300	1300	900	300
BL-09	1300	1100	1100	900	900	300	300	700	900	700	700	1300	1300	1300	1500	1100	1300	1500	1300	700	940	900	900	1300	1750	1300	1300	900	300
BL-11	1500	1100	1300	1100	900	300	300	700	900	700	700	1300	1300	1300	1500	1100	1300	1500	1300	700	940	900	900	1300	1750	1300	1300	900	300
BL-13	1700	1100	1300	1100	900	300	300	700	900	700	700	1300	1300	1300	1500	1100	1300	1500	1300	700	940	900	900	1300	1750	1300	1300	900	300
BL-16	1700	1300	1300	1100	1100	300	300	700	900	900	900	1500	1300	1300	1500	1100	1300	1500	1750	700	940	900	900	1300	1750	1300	1300	900	300
BL-18	1900	1300	1300	1100	1100	300	300	700	900	900	900	1500	1300	1300	1500	1100	1300	1500	1750	700	940	900	900	1300	1750	1300	1300	900	300
BL-20	2100	1300	1300	1100	1100	300	300	700	900	900	900	1500	1300	1300	1500	1100	1300	1500	1750	700	940	900	900	1300	1750	1300	1300	900	300
BL-23	2100	1500	1500	1300	1300	300	300	700	900	900	900	1750	1300	1300	1500	1100	1300	1500	1950	700	940	900	900	1300	1750	1300	1300	900	300
BL-26	2300	1500	1750	1750	1550	300	300	700	900	900	900	1750	1300	1300	1500	1100	1300	1500	1950	700	940	900	900	1300	1750	1300	1300	900	300
BL-33	2500	1700	1750	1750	1750	300	300	700	900	1100	1100	1950	1300	1300	1500	1100	1300	1500	2150	700	940	900	900	1300	1750	1300	1300	900	300
BL-37	2500	1900	1750	1750	1750	300	300	700	900	1100	1100	2150	1300	1300	1500	1100	1300	1500	2550	700	940	900	900	1300	1750	1300	1300	900	300
BL-41	2500	2100	1750	1740	1750	300	300	700	900	1300	1300	2350	1300	1300	1500	1100	1300	1500	2550	700	940	900	900	1300	1750	1300	1300	900	300
BL-45	2610	2140	1740	1740	1740	340	340	740	940	1410	1410	2410	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-50	2910	2140	1740	1740	1740	340	340	740	940	1410	1410	2410	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-57	3310	2140	1940	1940	1940	340	340	740	940	1410	1410	2410	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-65	3710	2140	2140	2140	2140	340	340	740	940	1410	1410	2410	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-75	3910	2340	2140	2140	2140	340	340	740	940	1410	1410	2610	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-88	4510	2340	2210	2210	2210	340	340	740	940	1410	1410	2610	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300
BL-100	5180	2340	2210	2210	2210	340	340	740	940	1410	1410	2610	1340	1410	1540	1140	1340	1540	2540	740	940	940	940	1340	1790	1340	1340	940	300

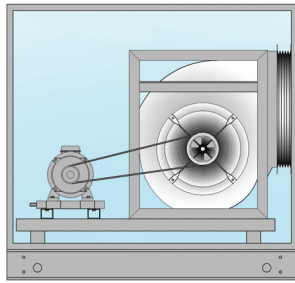
MODEL	WEIGHTS (kg)																					
	BL02	BL03	BL05	BL07	BL09	BL11	BL13	BL16	BL18	BL20	BL23	BL26	BL33	BL37	BL41	BL45	BL50	BL57	BL65	BL75	BL88	BL100
AS	84	105	150	165	184	250	260	285	381	389	430	495	554	600	677	800	850	1050	1170	1277	1200	1250
VA	84	105	150	165	184	250	260	285	381	389	430	495	554	600	677	800	850	1050	1170	1277	1200	1250
PF	102	135	213	221	245	332	340	449	454	462	563	662	963	1057	1076	1004	1027	1250	1600	1283	1394	1406
IB	34	39	51	57	66	74	82	91	99	108	120	129	164	178	190	229	239	268	295	331	377	429
EI	30	35	47	50	53	60	64	70	77	82	92	99	112	138	140	157	199	213	213	252	274	392
SB	82	99	139	164	196	223	254	293	325	358	404	441	551	611	665	756	804	913	1019	1167	1348	1521
IS	88	108	154	183	221	253	288	334	372	410	465	509	636	708	773	868	931	1060	1184	1360	1573	1782
D1	47	55	80	93	101	110	120	148	162	176	186	197	252	266	306	346	382	414	455	504	562	595
D2	50	58	83	96	105	113	125	151	167	179	189	200	256	270	309	349	387	419	457	509	565	600
D3	57	67	92	109	127	141	153	176	195	213	237	252	309	341	371	403	446	492	549	621	706	774
TF1	84	97	109	128	135	147	159	169	186	198	209	214	249	253	281	316	345	384	420	430	475	500
TF2	89	102	114	133	140	152	164	174	191	203	214	219	254	258	286	320	350	390	425	433	480	505
YN	197	216	260	289	310	348	378	400	457	485	515	544	625	656	687	724	804	900	976	1073	1200	1348
S1	104	117	151	157	180	212	240	262	282	306	334	345	408	437	466	487	510	570	610	738	839	913
S2	116	130	170	183	200	238	269	294	315	344	375	388	459	492	525	548	600	678	706	826	945	1035
S3	128	143	189	209	220	264	298	326	348	382	416	431	510	547	584	609	690	786	802	914	1051	1157
PR	115	140	190	233	255	280	302	404	508	550	650	658	798	920	970	1038	1088	1230	1300	1495	1620	1720
RR	105	130	190	213	193	260	330	380	422	465	525	573	716	795	864	985	1045	1186	1324	1517	1752	1977
PN	104	114	130	140	150	195	205	218	237	280	298	307	337	354	371	395	462	584	610	653	743	817
LDF	79	94	105	129	135	147	162	175	189	206	222	230	267	285	310	344	378	421	465	470	520	552
ACF1	87	106	123	152	169	180	200	226	274	287	300	314	391	438	445	479	548	590	670	777	878	960
ACF2	111	140	163	213	240	251	281	327	406	430	448	468	605	693	700	735	855	909	1050	1248	1427	1585
ACF3	143	188	219	300	342	354	400	476	600	640	665	694	923	1067	1077	1112	1310	1380	1613	1947	2240	2513
HF	89	108	119	149	152	164	183	196	204	231	249	265	295	288	349	384	425	470	523	508	564	598
BN	113	120	137	148	155	172	182	190	209	213	223	228	260	268	300	326	347	407	415	422	453	461
PAF	76	87	100	114	122	133	144	155	176	183	192	201	230	243	254	288	316	351	382	411	453	472

1. Heating section (IB) weights have been prepared for 1 row of coil.
2. Cooling section (SB) weights have been prepared for 4 rows of coil.

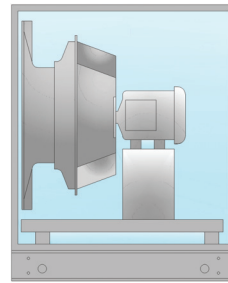
HSK is entitled to make changes on the technical specifications of the products due to continuous product development studies.



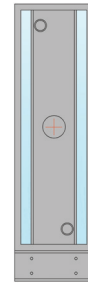
Air Flow Intersection



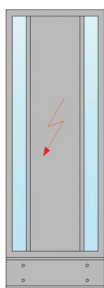
ASVA
Radial Fan Section



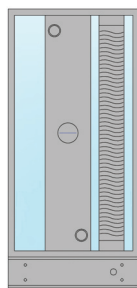
PF
Plug Fan Section



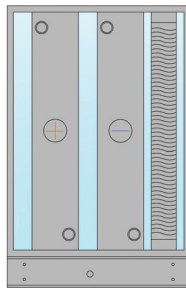
IB
Heating Coil Section



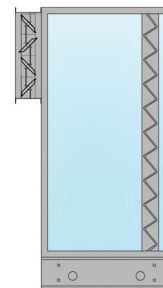
EI
Electric Heater Section



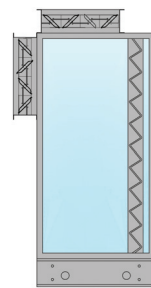
SB
Cooling Coil Section



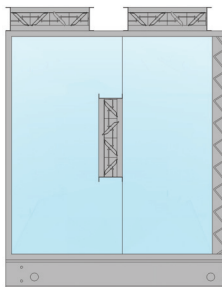
IS
Heating & Cooling Section



D1
Single Damper
Section



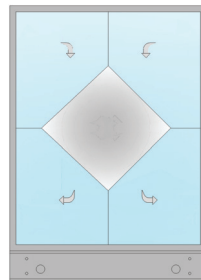
D2
Double Damper
Section



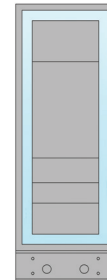
D3
Mixing Section



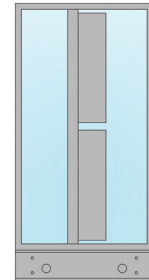
S1 / S2
Silencer Section S1 : 25 dB (A) Loss
S2 : 30 dB (A) Loss



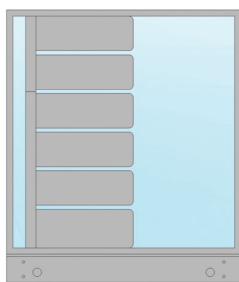
PR
Plate Type Heat
Recovery Section



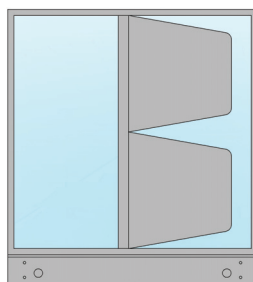
RR
Rotary Type Heat
Recovery Section



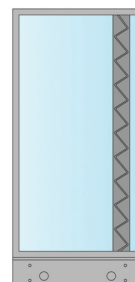
LDF
Low Depth Surface
Expanded Filter



AKF 1 / AKF 2 / AKF 3
Active Carbon Filter Section



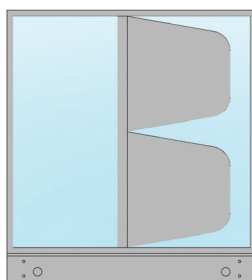
HF
Hepa Filter Section



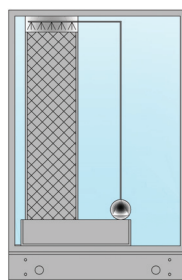
PAF
Panel Filter Section



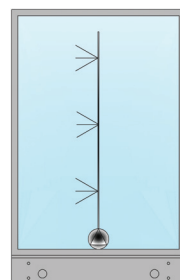
BH
Empty Section



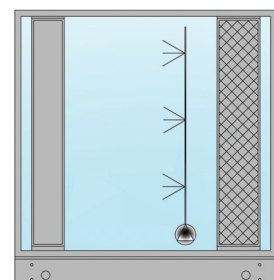
TF 1 / TF 2
Bag Filter Section



PN
Evaporative Humidifier Section



BN
Steam Humidifier Section



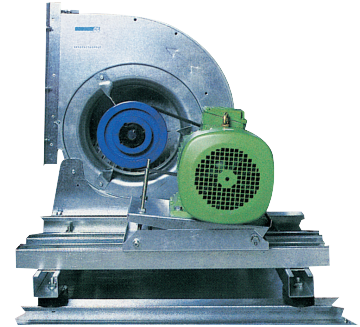
YN
Atomizing Humidifier Section

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Air Handling Units Components

Fans

Radial Fans can be used in forward or backward inclined bladed structure, in a structure which does not create sparks with accessories. Radial fans which have been produced of completely galvanized sheets, and the static and dynamic balances of which have been set with double suction. They are produced equipped with optional spring isolators and frequency inverter.



Electric Motors

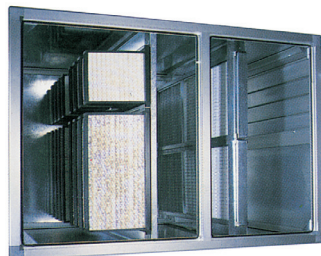
The 380 V motors with 50 Hz, with 3 phases, of the insulation class F, the protection class IP 54 and with 2, 4 and 8 poles are selected an average of 20% higher than the shaft power of the fan. They can be selected optionally from double speed, IP 55 protection class structure which does not create sparks in different voltages

Drive Elements

Cast iron pulleys with V belts are used as standard. A tightening system is used which provides for an easy movement in order to set the tightness of the belt and to make sure the line of the belts are correct.

Filters

Synthetic fiber filters are used as standard. It is also possible to use optional filters such as metallic filters, bag filters, or carbon filters upon request.



Cooling and Heating Coils

Coil are produced as copper tubes with aluminium fins or steel tubes with steel fins, and mounted onto carriers with slides. Cooler - coil condensation pans are produced inclined and are made of stainless sheets as standard, whereas droplet eliminators are produced of polypropylene materials.



Electrical Heaters

Standard electrical heaters are produced of stainless steel pipes and with steel fins. Safety thermistor is a standard.

Flexible Connections

The connection of the central body and the fan is provided with highly resistant, vibration damping, flexible connectors as standard.

Accessories

Etange ceiling illumination armatures and lamps, cables, etange key and observation glass and similar accessories are used optionally.

Heat Recovery

Heat recovery equipment with aluminium plates, heat wheels, Freon coils or watered coil type can be used.



Moisturizers

It is possible to select several humidifiers of different types,

- **Adiabatic Vaporization Pad Type:** Stainless steel drainage pan, cellulose based vaporization pad, pump, float, suction filter are standard.
- **Electronic Steam Type :** Steam cylinder, immersed electrodes, stainless steam distributor and electronic control module are standard.
- **Electronic Ultrasonic Type :** Ultrasonic, vibration plates, deionization equipment electronic control module are standard.
- **Atomizing Water Spray Type :** Nozzles and PVC – based distribution pipes, water level adjuster, water pump, suction filter aluminium droplet eliminator and air straightened are standard.



Silencers

Silencers are basically made of galvanized sheets, glass fibers and glass veil. Fire protection class based on DIN 4102 is A2.



Air Damper

The aluminium frame is made with low aluminium resistant wings and hidden plastic gear mechanism. The gears have been designed hidden so that they are not affected from the dust and dirt of the exterior environment. The wings and side profiles have been equipped with sealing gaskets.



Air Distributor

The air distributors which are made of perforated sheets as standard for diffusing the air.

TÜV LABORATORY TEST RESULTS ACCORDING TO DIN EN 1886

	BPG-20 22 mm Panel	BPG-25 27 mm Panel
Body Strength	2A	2A
Body Air Leakage – 400 Pa	B	B
Body Air Leakage + 700 Pa	A	A
Filter Air Leakage	F7	F7
Thermal Insulations	T4	T4
Thermal – Bridging	TB4	TB4

Acoustic Insulation	Sound (dB)						
	125	250	500	1000	2000	4000	8000
BPG-20	14,0	12,3	14,0	14,0	14,3	21,6	29,0
BPG-25	12,2	14,6	14,9	16,5	14,3	27,8	37,9



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Factory / Export / Technical Service

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