

BA – WATER AIR HEATERS / COOLERS



Description

- Air heaters/coolers are designed for local heating/cooling of premises for general use.
- Work with fresh air, free of dust and aggressive mixtures.

Construction

- Air heaters/coolers are compact units build of the following elements:
- Axial fan – standard version – electric supply 220V/50Hz, protection class IP 65, class F insulation
- Explosion-proof version - 380V/50Hz, protection class IP55, according to ATEX Ex II2G EExd IIBT5 for three phase motors.
- Water coil section – water coil type “air-water” constructed of copper pipes with aluminium lamellas. On the supply connections are mounted plugs for deaeration and drain.
- Drop separator with drain tray – only for units working in cooling mode.
- Housing made of galvanized steel sheets with two-sided

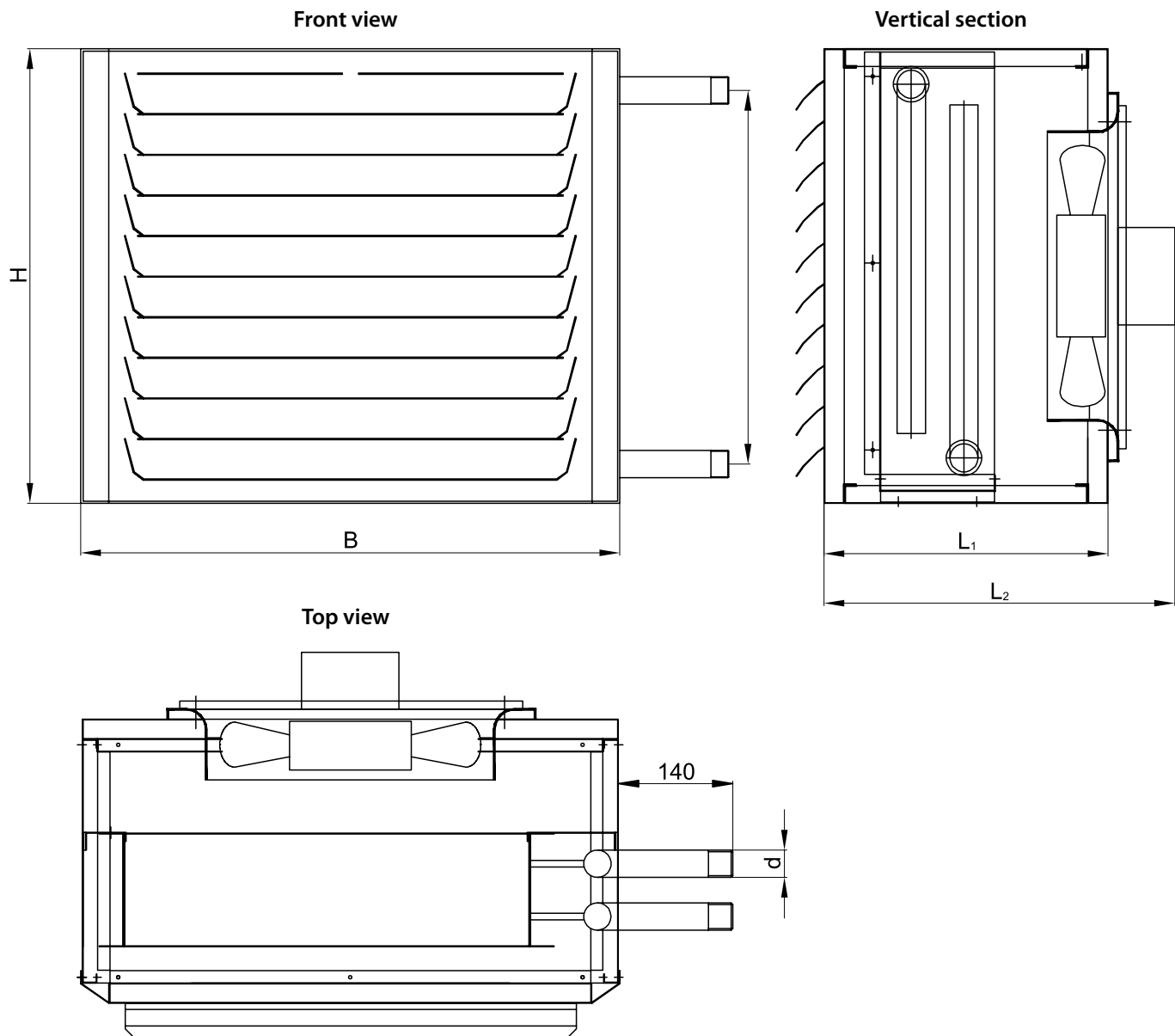
powder coating.

- For ST (standard) version, the construction is self-supporting with outlet grille with immovable lamellas.
- Aluminum construction with build in side panels. Outlet grille is used to change the air stream direction.

Options

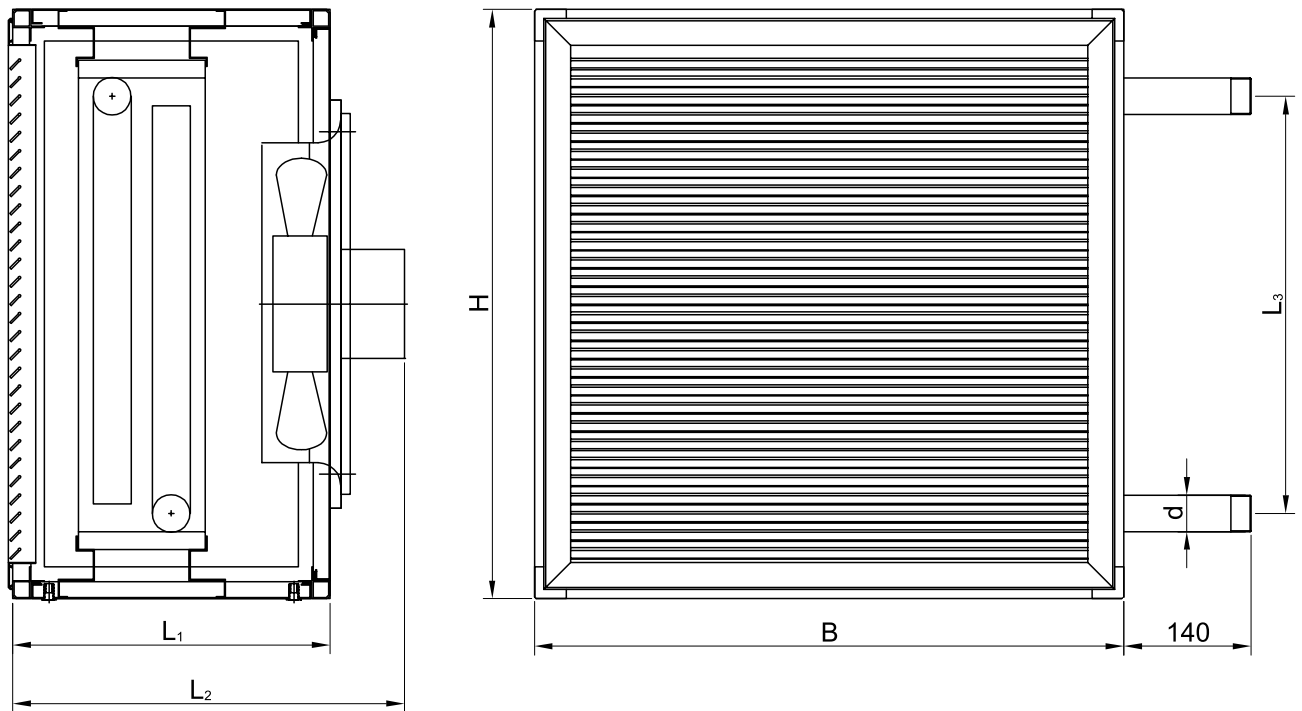
- Mixing box with multiple leaf damper;
- Freeze protection;
- Control panel.

BA-ST – standard version with grille with immovable lamellas, designed only for heating, self-supporting construction.



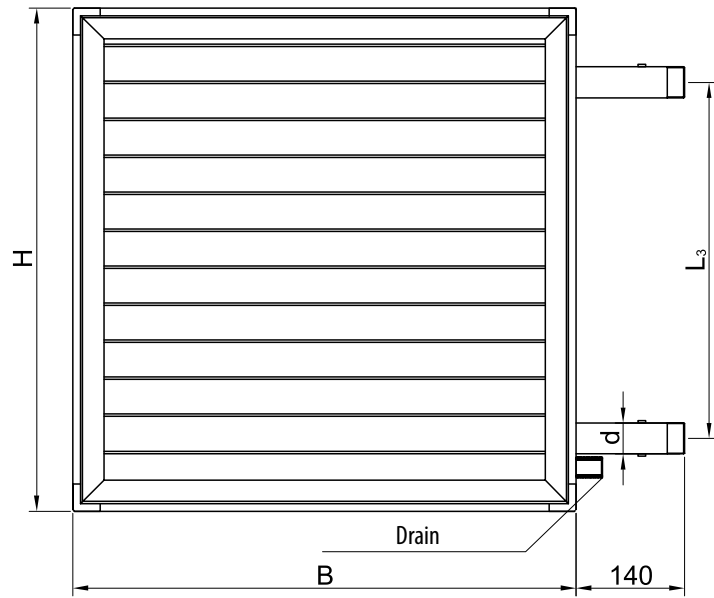
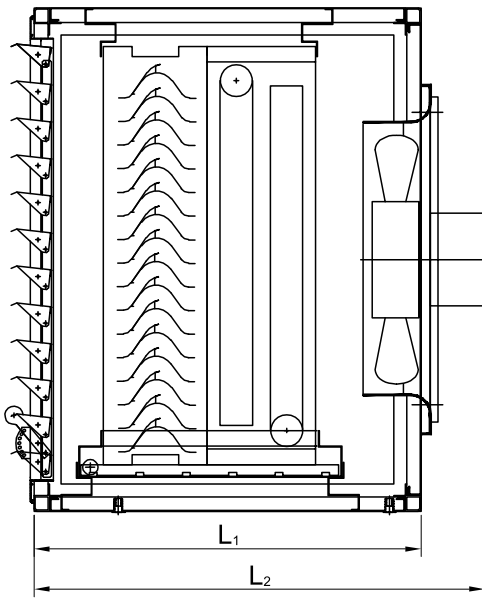
Model	V [m ³ /h]	Fan	COT	Electric power [W]	Dimensions [mm]						Weight [kg]
					B	H	L ₁	L ₂	L ₃	d	
BA-ST-9/900	900	HCFB/4-250	400/400-2R	60	560	480	350	474	368	3/4"	35
BA-ST-16/1600	1600	HCFB/4-315	500/500-2R	100	660	560	350	437	460	1"	45
BA-ST-24/2500	2500	HCFB/4-355	600/600-2R	200	780	660	350	460	552	1 1/4"	55
BA-ST-30/3600	3600	HCFB/4-400	600/600-2R	340	780	660	350	455	552	1 1/4"	60
BA-ST-42/4800	4800	2xHCFB/4-355	1000/500-2R	2x200	1180	560	350	460	452	1 1/4"	70
BA-ST-55/6000	6000	2xHCFB/4-400	1000/500-2R	2x340	1180	560	350	455	452	1 1/4"	75

BA-AL – Aluminium construction with panels and AL grille (CBP-X), designed only for heating



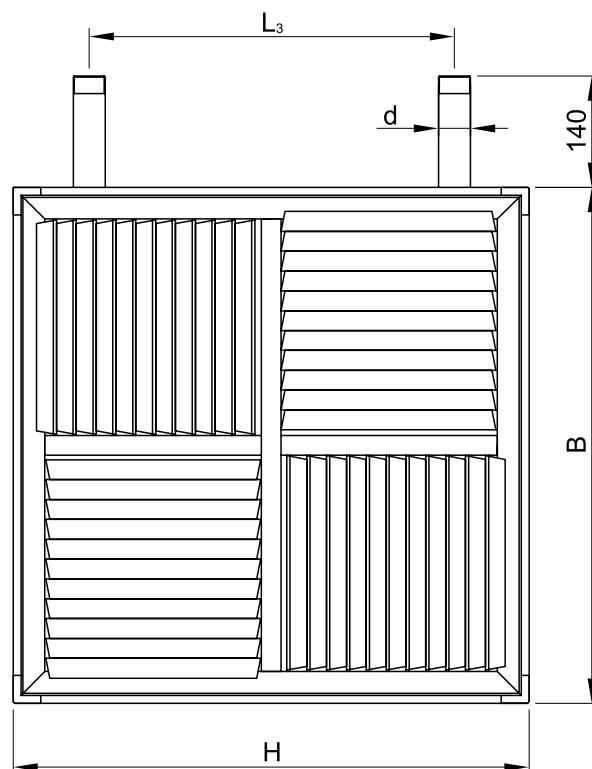
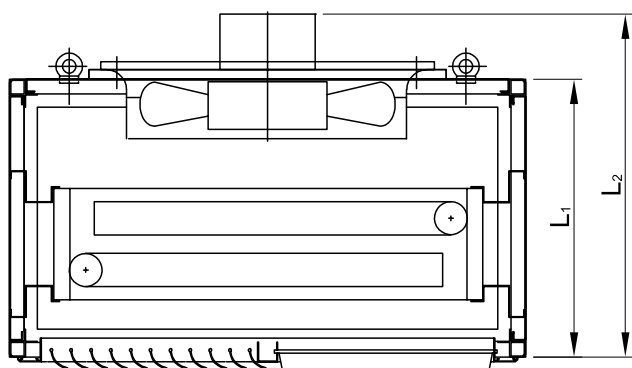
Model	V [m ³ /h]	Fan	COT	Electric power [W]	Dimensions [mm]						Weight [kg]
					B	H	L ₁	L ₂	L ₃	d	
BA-AL-9/900	900	HCFB/4-250	400/400-2R	60	540	540	350	474	368	¾"	29
BA-AL-16/1600	1600	HCFB/4-315	500/500-2R	100	650	650	350	437	460	1"	40
BA-AL-24/2500	2500	HCFB/4-355	600/600-2R	200	750	750	350	460	552	1 ¼"	43
BA-AL-30/3600	3600	HCFB/4-400	600/600-2R	340	750	750	350	455	552	1 ¼"	45
BA-AL-42/4800	4800	2xHCFB/4-355	1000/500-2R	2x200	1200	650	350	460	452	1 ¼"	68
BA-AL-55/6000	6000	2xHCFB/4-400	1000/500-2R	2x340	1200	650	350	455	452	1 ¼"	70

BA-AL-HC - AL construction with panels, grille with direction control in high (PBA-S), drop separator, drain tray and connector to lead the drain off. Designed for both heating (H) and cooling (C).



Model	V [m ³ /h]	Fan	COT	Nominal power [W]	Dimensions [mm]						Weight [kg]
					B	H	L ₁	L ₂	L ₃	d	
BA-AL-HC-9/900	900	HCFB/4-250	400/400-2R	60	540	540	500	624	368	¾"	34
BA-AL-HC-16/1600	1600	HCFB/4-315	500/500-2R	100	650	650	500	587	460	1"	47
BA-AL-HC-24/2500	2500	HCFB/4-355	600/600-2R	200	750	750	500	610	552	1 ¼"	54
BA-AL-HC-30/3600	3600	HCFB/4-400	600/600-2R	340	750	750	500	605	552	1 ¼"	56
BA-AL-HC-42/4800	4800	2xHCFB/4-355	1000/500-2R	2x200	1200	650	500	610	452	1 ¼"	83
BA-AL-HC-55/6000	6000	2xHCFB/4-400	1000/500-2R	2x340	1200	650	500	605	452	1 ¼"	85

BA-AL-V – ceiling installation – aluminium construction with panels, grille with air direction control (SSD), designed only for heating.



Model	V [m ³ /h]	Fan	COT	Nominal power [W]	Dimensions [mm]						Weight [kg]
					B	H	L ₁	L ₂	L ₃	d	
BA-AL-V-12/1600	1600	HCFB/2-250	400/400-2R	250	540	540	350	474	368	¾"	29
BA-AL-V-20/2500	2500	HCFB/2-315	500/500-2R	380	650	650	350	460	460	1"	40
BA-AL-V-30/3600	3600	HCFB/2-355	600/600-2R	460	750	750	350	460	552	1 ¼"	43

Technical characteristics

T_{airr} in [°C]	φ [%]	BA-9/900				BA-16/1600				BA-24/2500			
		Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]	Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]	Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]
Heating mode – $T_{1water} = 80^{\circ}C$; $T_{2water} = 60^{\circ}C$													
-10		13.5	34.2	8.26	0.16	21.4	29.5	1.0	0.25	33.0	29.0	1.8	0.39
		13.1	33.1	9.91	0.16	19.5	26.0	1.1	0.24	31.0	26.6	2.0	0.39
-5		12.6	36.3	7.31	0.15	20.0	31.8	0.9	0.23	30.8	31.3	1.5	0.36
		12.2	35.1	8.7	0.15	17.9	28.0	0.9	0.22	28.6	28.8	1.7	0.36
0		11.7	38.5	6.4	0.14	18.5	34.1	0.8	0.22	28.6	33.7	1.3	0.34
		11.4	37.3	7.6	0.14	16.2	29.9	0.8	0.20	26.3	31.0	1.5	0.33
5		10.9	40.6	5.6	0.12	17.0	36.4	0.7	0.20	26.3	36.1	1.2	0.31
		10.5	39.4	6.6	0.13	14.5	31.6	0.6	0.18	23.9	33.2	1.2	0.30
10		9.9	42.7	4.8	0.11	15.6	38.7	0.6	0.18	24.1	38.4	1.0	0.28
		9.6	41.4	5.6	0.12	12.5	33.0	0.5	0.15	21.4	35.2	1.0	0.27
15		9.1	44.8	4.1	0.10	14.1	40.1	0.5	0.16	21.8	40.8	0.8	0.26
		8.7	43.5	4.7	0.10	9.4	32.3	0.3	0.17	18.8	37.2	0.8	0.23
Cooling mode – $T_{1water} = 7^{\circ}C$; $T_{2water} = 12^{\circ}C$													
35	40	6.3	21.9	11.87	0.29	9.5	23.4	3.4	0.45	15.1	23.4	6.5	0.71
30	45	4.5	19.8	6.44	0.21	6.5	21.0	1.8	0.31	10.5	21.0	3.4	0.50
25	50	2.7	17.6	2.63	0.12	3.7	18.6	0.6	0.17	6.1	18.6	1.3	0.30
T_{airr} in [°C]	φ [%]	BA-30/3600				BA-42/4800				BA-55/6000			
		Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]	Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]	Q [kW]	T_{airr} out [°C]	ΔP_{water} [kPa]	V_{water} [l/s]
Heating mode – $T_{1water} = 80^{\circ}C$; $T_{2water} = 60^{\circ}C$													
-10		41.0	23.5	2.6	0.48	54.0	25.4	3.0	0.64	63.8	21.3	4.0	0.76
		38.6	21.6	2.9	0.48	51.2	23.6	3.4	0.64	60.5	19.7	4.6	0.76
-5		38.1	26.2	2.3	0.45	50.4	28.0	2.6	0.60	59.4	24.2	3.6	0.70
		35.7	24.2	2.5	0.45	47.5	26.1	3.0	0.60	56.0	22.5	4.0	0.70
0		35.3	29.0	2.0	0.42	46.7	30.6	2.3	0.55	55.0	27.1	3.1	0.65
		32.8	26.9	2.2	0.41	43.7	28.6	2.6	0.55	51.6	25.4	3.5	0.65
5		32.5	31.7	1.7	0.38	43.1	33.2	2.0	0.51	50.7	29.9	2.7	0.60
		29.9	29.5	1.8	0.37	39.9	31.2	2.2	0.50	47.2	28.2	3.0	0.60
10		29.7	34.4	1.4	0.35	39.4	35.8	1.7	0.47	46.4	32.8	2.3	0.55
		26.9	32.0	1.5	0.34	36.1	33.6	1.8	0.45	42.7	31.0	2.5	0.53
15		26.9	37.1	1.2	0.32	35.8	38.4	1.4	0.42	42.0	35.7	1.9	0.50
		23.9	34.5	1.2	0.30	32.2	36.0	1.5	0.40	38.2	33.8	2.0	0.48
Cooling mode – $T_{1water} = 7^{\circ}C$; $T_{2water} = 12^{\circ}C$													
35	40	18.5	25.0	9.4	0.88	24.2	24.4	11.4	1.18	29.0	25.7	15.1	1.39
30	45	12.8	22.3	4.9	0.61	17.4	21.8	6.0	0.82	20.3	22.7	7.9	0.96
25	50	7.4	19.5	1.8	0.35	10.2	19.1	2.3	0.48	11.8	19.8	3.0	0.56

Note: The data in white refer to water. Data in blue refer to 30% solution ethylene glycol.

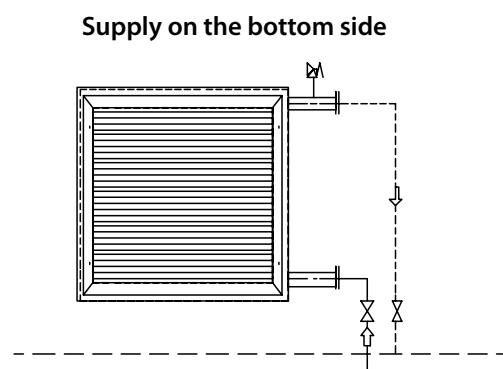
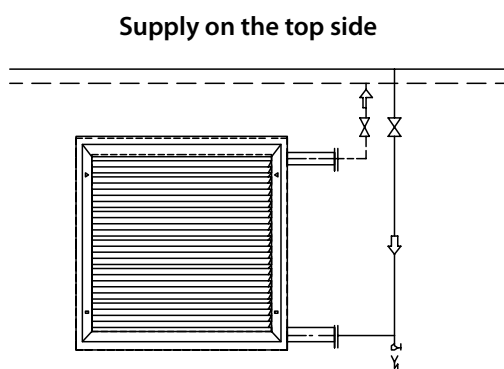
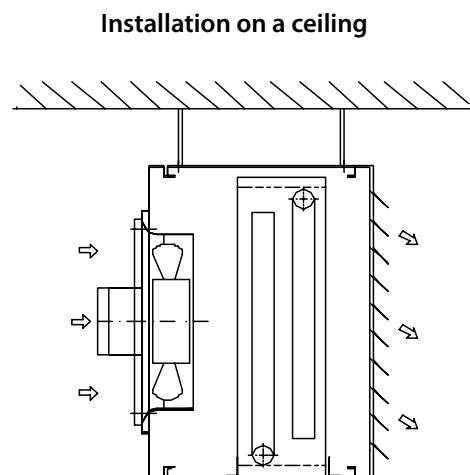
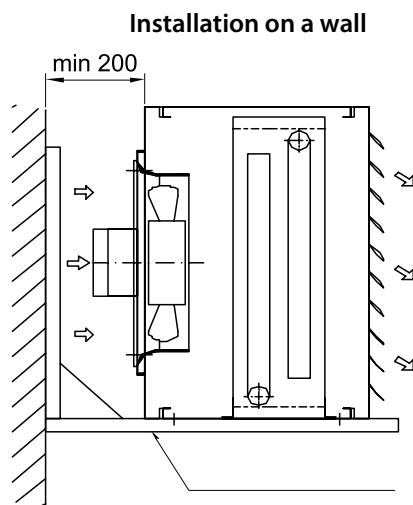
Technical characteristics

T _{airr in} [°C]	φ [%]	BA-AL-V-12/1600				BA-AL-V-20/2500				BA-AL-V-30/3600			
		Q [kW]	T _{airr out} [°C]	ΔP _{water} [kPa]	V _{water} [l/s]	Q [kW]	T _{airr out} [°C]	ΔP _{water} [kPa]	V _{water} [l/s]	Q [kW]	T _{airr out} [°C]	ΔP _{water} [kPa]	V _{water} [l/s]
Heating mode – T_{1water} = 80°C; T_{2water} = 60°C													
5		14.9	32.5	3.6	0.17	22.1	31.0	1.0	0.26	32.6	31.6	1.6	0.38
		14.2	31.1	4.2	0.17	19.5	28.0	1.0	0.24	29.9	29.4	1.8	0.37
10		13.7	35.2	3.1	0.16	20.1	33.7	0.8	0.24	29.8	34.3	1.4	0.35
		12.9	32.7	3.5	0.16	17.3	30.4	0.8	0.21	26.8	32.0	1.5	0.34
15		12.4	37.9	2.6	0.14	18.2	36.4	0.7	0.21	26.9	37.0	1.2	0.32
		11.7	36.4	2.9	0.14	14.9	32.6	0.6	0.18	23.9	34.5	1.2	0.31

Note: The data in white refer to water. Data in blue refer to 30% solution ethylene glycol.

Installation

- Mounted on a wall with brackets or on a ceiling with assembly kit, attached to build in the housing nuts.
- Water supply have to be according scheme. It is recommended to join to pipeline with flexible connectors. Counter-flow rule have to be observed.
- For better performance of the device, on the air stream way there must be no barriers.

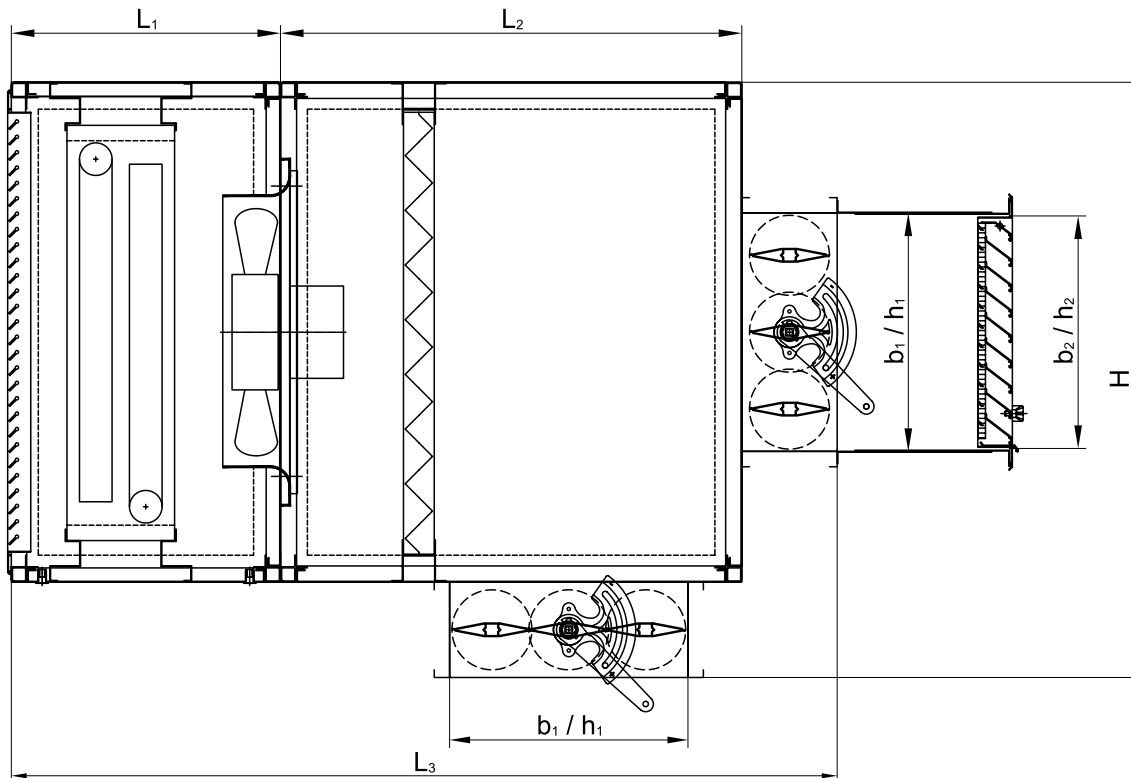


Management

Advisable on/off control of fans with thermostat. The change of heat transfer fluid temperature leads to discomfort in the working area.

Mixing box

To the air heating/cooling units could be installed mixing box, designed to work entirely with fresh air, in recuperation (with air from the premise) or mixing the both streams in a particular ratio.



Model	V [m ³ /h]	Fan	Dimensions [mm]						Weight [kg]
			L ₁	L ₂	L ₃	H	b ₁ / h ₁	b ₂ / h ₂	
BA-AL-9/900	900	HCFB/4-315	350	600	1075	665	210/300	200/445	44
BA-AL-16/1600	1600	HCFB/4-355	350	600	1075	775	310/400	300/565	59
BA-AL-24/2500	2500	HCFB/4-400	350	600	1075	875	310/500	300/665	66
BA-AL-30/3600	3600	HCFB/4-450	350	600	1075	875	310/600	300/665	70
BA-AL-42/4800	4800	2xHCFB/4-400	350	600	1075	775	310/800	300/1115	100
BA-AL-55/6000	6000	2xHCFB/4-450	350	600	1075	775	310/1000	300/1115	104
BA-AL-HC-9/900	900	HCFB/4-315	500	600	1225	665	210/300	200/445	49
BA-AL-HC-16/1600	1600	HCFB/4-355	500	600	1225	775	310/400	300/565	66
BA-AL-HC-24/2500	2500	HCFB/4-400	500	600	1225	875	310/500	300/665	77
BA-AL-HC-30/3600	3600	HCFB/4-450	500	600	1225	875	310/600	300/665	81
BA-AL-HC-42/4800	4800	2xHCFB/4-400	500	600	1225	775	310/800	300/1115	115
BA-AL-HC-55/6000	6000	2xHCFB/4-450	500	600	1225	775	310/1000	300/1115	119

Order designation

BA - AL-HC - 9 - 900

Air flow [m³/h]

Heating capacity [kW]

ST – Self-supporting construction (heating only)

AL – Aluminium housing (heating only)

AL-HC – aluminium housing (heating/cooling)

AL-V – aluminium housing, ceiling installation

Water air heating/cooling units