

AIRFIT 2 600

Active Chilled Beams



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Introduction

The Barcol-Air chilled beam systems are designed to achieve a comfortable indoor climate with low energy consumption and a low ceiling void height. The systems provide cooling, heating, ventilation and humidity control with low noise and minimal maintenance.



Figure 1: AIRFIT Active Chilled Beam

System Technology

Barcol-Air active chilled beams integrate the primary air distribution function with the secondary air heat exchange using a proprietary air nozzle technology to induce secondary room air into the unit and through the heat exchanger before mixing with the primary air. The resulting mixture of primary air and induced secondary room air is then supplied to the room through the contoured diffusers which are designed to keep the air close to the ceiling using the Coanda effect.

Barcol-Air's AIRFIT 2 600 series active chilled beams units are designed with a nominal width of 600 mm to integrate with the ceiling grids of the more popular ceiling configurations. Standard unit lengths are nominally 1,200 mm to 3,000 mm in 300 mm increments but special lengths are also available to match with specific ceiling requirements.

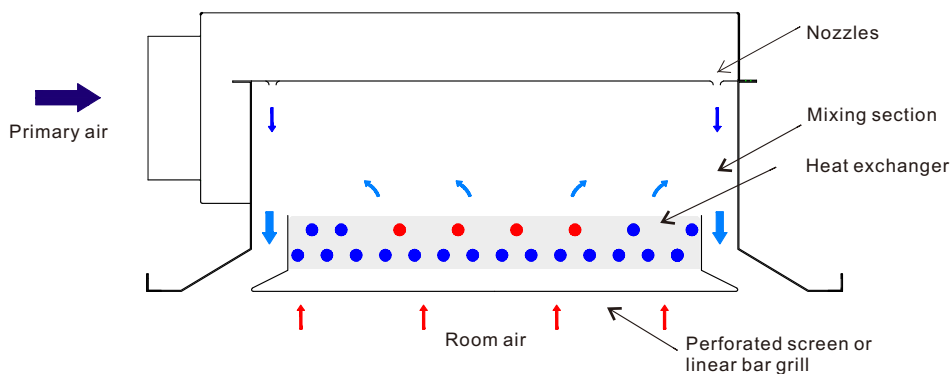


Figure 2: Operating Principle of the Active Chilled Beam

System Concept

The principle of the active chilled beam system is to use terminal chilled water heat exchangers in the ceiling to offset the room sensible cooling loads or to provide sensible heating. The ventilation and humidity control requirements are taken care of by using separate primary conditioned air supplied by a central air handling unit.

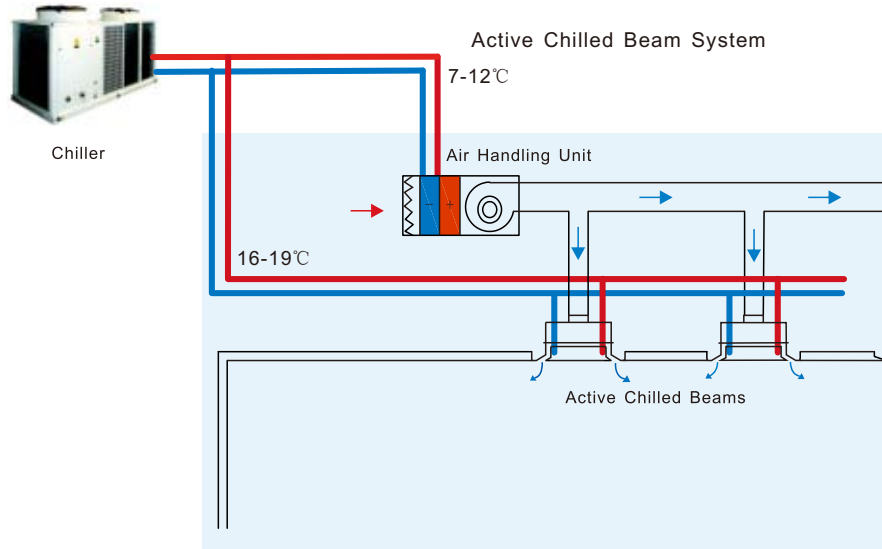


Figure 3: Active Chilled Beam System

Due to the relatively high supply chilled water temperatures, about 16 deg C, the heat exchangers operate dry, avoiding many of the maintenance and health concerns that are associated with other systems that use terminal heat exchangers such as fan coil units.

The system provides large energy savings because the amount of air to be circulated around the building can be reduced to close to that required for ventilation and humidity control only, resulting in large reductions in air handling unit fan power and energy consumption.

Further energy savings result from the use of high chilled water temperatures serving the heat exchangers. This can allow the water chiller to operate at higher water temperatures, improving chiller operating efficiency and energy consumption.

Air distribution

The specific shape of the supply slot diffusers creates two opposing discharge air flows from the active chilled beam along the suspended ceiling. The velocity of the supply air along the suspended ceiling creates the Coanda-effect whereby velocity differences in the cool air stream press the air stream against the suspended ceiling, thereby extending the air throw and preventing the cool air from dropping into the comfort zone prematurely. It is important, with such air patterns, that the suspended ceiling is flat and free of any obstacles, especially light fixtures situated close to the slots, because these can disturb the Coanda-effect.

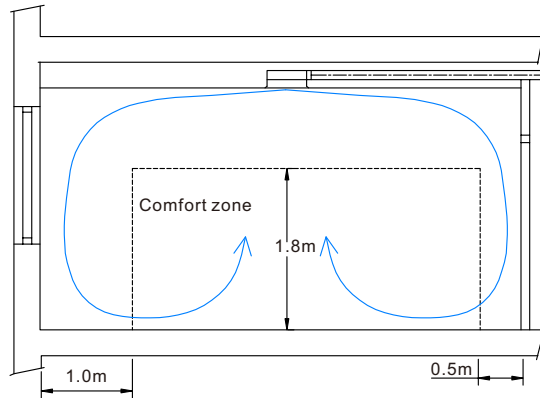


Figure 4: AIRFIT – Air Distribution

Facade-orientation

Orientation of the active chilled beam with regard to the facade has no influence on the operation. There are two common installation arrangements, perpendicular or parallel to the facade. The choice between perpendicular and parallel will be determined by:

- Aesthetics (fitting into the pattern of the suspended ceiling).
- Level of flexibility to create offices within the floor plan.
- Number of active chilled beams required.
- Available distance for the air throw. The air must have the opportunity to mix with the room air before impinging on a wall or an opposing air stream from another chilled beam.
- Disturbances in the suspended ceiling which might influence air pattern, like lighting fixtures.
- Disturbances in the facade or floor, like radiators or floor convectors that could influence the air pattern.

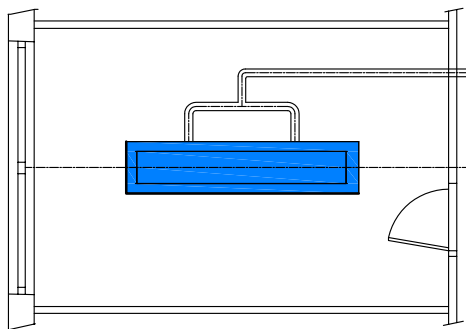


Figure 5: Perpendicular to Facade

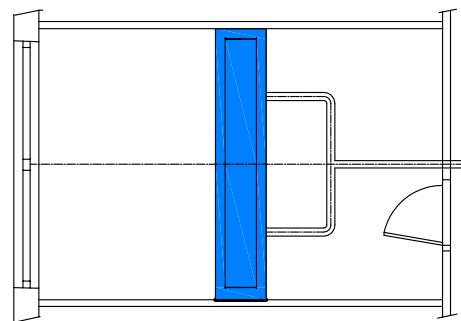


Figure 6: Parallel to Facade

Product Features

High capacity with multi choice nozzles

The AIRFIT 2 600 series active chilled beams have a choice of 8 nozzle configurations designed to provide high induction rates for the secondary room air and thereby high cooling and heating capacities. This makes them suitable for application in a building's perimeter zones requiring higher cooling capacities as well as internal zones. Nozzles are factory installed and can be blanked if one side discharge is required.



Figur 7: High Efficiency Air Nozzles

Low Height:

The AIRFIT 2 600 series has a maximum height of 242 mm allowing the use of reduced height ceiling voids to maximize ceiling heights. Alternatively the building slab to slab height can be reduced allowing more floors in a given building height.

Flexible Sizes

Units are available with lengths between 1200 mm and 3000 mm to match with most ceiling configurations. Unit lengths can also be tailored to match exact installation requirement.

Aesthetic Choices

The AIRFIT series can be supplied with perforated return air diffusers or linear slot diffusers to match the aesthetic requirements of the building. Exposed metal surfaces are powder painted. The standard finish colour is RAL 9010 with 20% gloss. Other RAL colours can be supplied to match project requirements. Units can also be supplied with perforated centre diffusers or alternatively diffusers with linear blades.



Figure 8: Perforated Diffuser



Figure 9: Linear Blade Diffuser

Simple mounting:

Units can be easily suspended from the concrete slab above using threaded rod or hanging wire support systems to match with metal panel, fiber board or plaster ceilings. Units can also be installed without false ceilings.

Low noise:

The efficiently shaped nozzles create maximum induction with low sound levels.

Low maintenance:

The AIRFIT 2 600 series active chilled beam has no filter, fan, drain pan or any other moving parts and maintenance is limited to cleaning the exposed metal surfaces and cleaning any dust from the heat exchanger every 2 to 5 years depending on the cleanliness of the supply air. The heat exchanger can be easily accessed by dropping down the centre perforated diffuser which is equipped with a safety hanging wires, and then removing any dust with a vacuum cleaner.

Controls:

The active chilled beam can be supplied with constant air volume controllers for the primary air, water control valves with room control sensors as well as balancing and isolation valves and condensation sensors.

Air Distribution Control (Optional)

To allow selection of the air discharge pattern AIRFIT 2 600 series units can be supplied with optional air discharge deflectors. These air deflectors can be independently adjusted to provide different air distribution patterns.

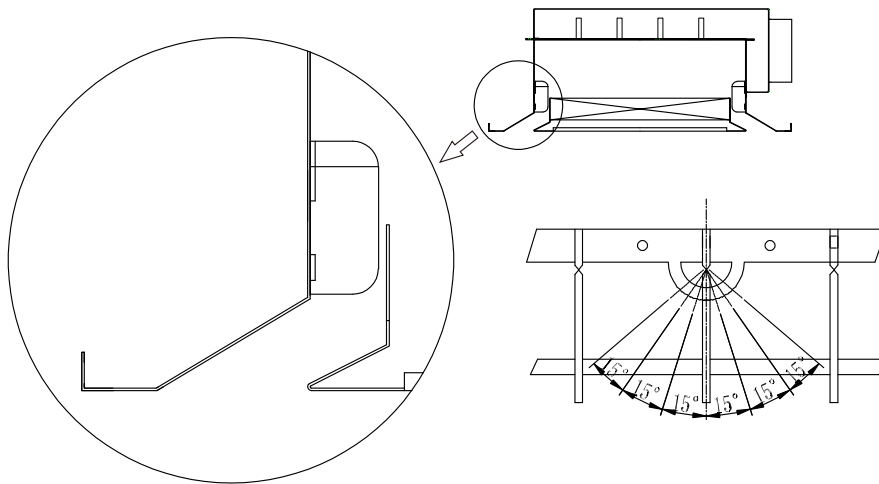
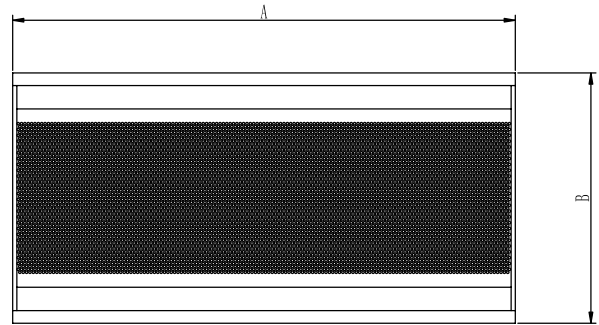
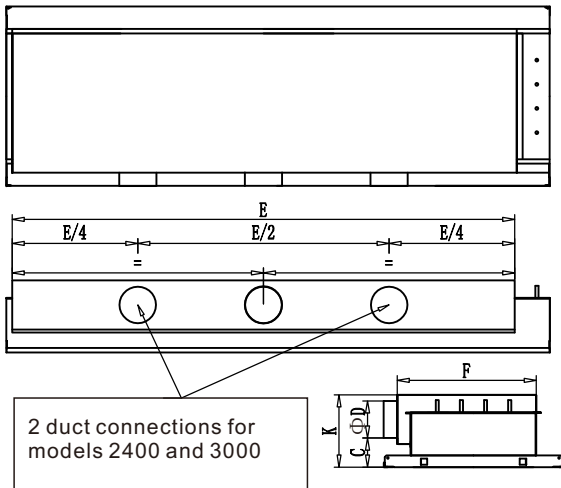


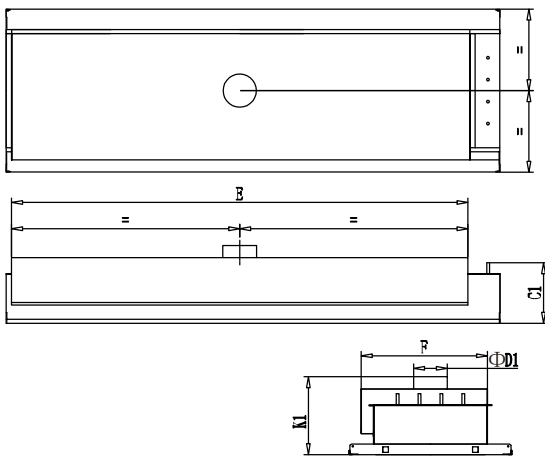
Figure 10 : Air Distribution Control

Dimension AIR-FIT 2 600

Duct connection on the side



Duct connection on top



Water Connection Diameters in mm

Unit Size	1200-1800	2400-3000
Chilled water	12	15
Hot water	12	12

Table1: Dimensional data AIR-FIT 2 600

Size	1200	1500	1800	2400	3000
A	1195	1495	1795	2395	2995
B	595	595	595	595	595
C	96	96	96	96	96
C1	221	221	221	221	221
D	1 x \varnothing 123	1 x \varnothing 123	1 x \varnothing 123	2 x \varnothing 123	2 x \varnothing 123
D1	1 x \varnothing 123	1 x \varnothing 123	1 x \varnothing 123	1 x \varnothing 158	1 x \varnothing 198
E	1064	1364	1664	2264	2864
F	460	460	460	460	460
K	242	242	242	242	242
K1	285	285	285	285	285
Weight (kg) ⁴	25	30	34	44	54

1. Dimensions in mm.
2. On request, Barcol-Air can provide air connectors on the short side of the plenum.
3. Intermediate lengths are available on request.

Performance Data AIRFIT 2 600

AIRFIT 2 600-1200						Cooling Troom minus T entering water temperature = 10 deg C												Heating T entering water temperature minus T room = 35 deg C												
Model	Nozzle	Primary Airflow L/s	Plenum Pressure Pa	Sound Pressure Level dBA	Sound Pressure Level NC	Air Cooling Capacity ΔT=10°C W	Cooling Water Flow 1				Cooling Water Flow 2				Cooling Water Flow 3				Heating Water Flow 1				Heating Water Flow 2				Heating Water Flow 3			
							Water flow l/s	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow l/s	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow l/s	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C
1200	A0	6	36	< 15	< 15	73	0.04	3.5	376	2.2	0.06	7.9	431	1.7	0.08	14.0	458	1.4	0.02	1.5	665	7.9	0.03	3.5	842	6.7	0.04	6.1	926	5.5
		8	64	< 15	< 15	97	0.04	3.5	466	2.8	0.06	7.9	534	2.1	0.08	14.0	567	1.7	0.02	1.5	884	10.6	0.03	3.5	1119	8.9	0.04	6.1	1231	7.3
		10	100	< 15	< 15	121	0.04	3.5	535	3.2	0.06	7.9	614	2.4	0.08	14.0	652	1.9	0.02	1.5	1057	12.6	0.03	3.5	1338	10.7	0.04	6.1	1472	8.8
		12	144	18	< 15	146	0.04	3.5	592	3.5	0.06	7.9	679	2.7	0.08	14.0	721	2.2	0.02	1.5	1201	14.3	0.03	3.5	1520	12.1	0.04	6.1	1672	10.0
		14	196	22	17	170	0.04	3.5	640	3.8	0.06	7.9	734	2.9	0.08	14.0	779	2.3	0.02	1.5	1323	15.8	0.03	3.5	1675	13.3	0.04	6.1	1842	11.0
1200	A1	8	42	< 15	< 15	97	0.04	3.5	405	2.4	0.06	7.9	464	1.8	0.08	14.0	494	1.5	0.02	1.5	825	9.9	0.03	3.5	1044	8.3	0.04	6.1	1149	6.9
		10	66	< 15	< 15	121	0.04	3.5	494	2.9	0.06	7.9	566	2.3	0.08	14.0	601	1.8	0.02	1.5	995	11.9	0.03	3.5	1260	10.0	0.04	6.1	1386	8.3
		12	95	16	< 15	146	0.04	3.5	566	3.4	0.06	7.9	649	2.6	0.08	14.0	690	2.1	0.02	1.5	1136	13.6	0.03	3.5	1439	11.5	0.04	6.1	1582	9.4
		14	129	20	< 15	170	0.04	3.5	627	3.7	0.06	7.9	719	2.9	0.08	14.0	764	2.3	0.02	1.5	1257	15.0	0.03	3.5	1591	12.7	0.04	6.1	1750	10.4
		16	169	23	18	194	0.04	3.5	680	4.1	0.06	7.9	780	3.1	0.08	14.0	829	2.5	0.02	1.5	1362	16.3	0.03	3.5	1724	13.7	0.04	6.1	1896	11.3
1200	B1	12	47	< 15	< 15	146	0.04	3.5	442	2.6	0.06	7.9	506	2.0	0.08	14.0	538	1.6	0.02	1.5	910	10.9	0.03	3.5	1152	9.2	0.04	6.1	1267	7.6
		15	73	17	< 15	182	0.04	3.5	524	3.1	0.06	7.9	601	2.4	0.08	14.0	639	1.9	0.02	1.5	1053	12.6	0.03	3.5	1333	10.6	0.04	6.1	1466	8.8
		18	105	23	18	218	0.04	3.5	592	3.5	0.06	7.9	678	2.7	0.08	14.0	721	2.2	0.02	1.5	1174	14.0	0.03	3.5	1486	11.8	0.04	6.1	1635	9.8
		21	143	27	22	255	0.04	3.5	649	3.9	0.06	7.9	744	3.0	0.08	14.0	790	2.4	0.02	1.5	1279	15.3	0.03	3.5	1619	12.9	0.04	6.1	1781	10.6
		24	186	31	26	291	0.04	3.5	698	4.2	0.06	7.9	800	3.2	0.08	14.0	850	2.5	0.02	1.5	1372	16.4	0.03	3.5	1736	13.8	0.04	6.1	1910	11.4
1200	C1	18	57	19	< 15	218	0.04	3.5	512	3.1	0.06	7.9	587	2.3	0.08	14.0	624	1.9	0.02	1.5	955	11.4	0.03	3.5	1208	9.6	0.04	6.1	1329	7.9
		22	85	25	20	267	0.04	3.5	579	3.5	0.06	7.9	664	2.6	0.08	14.0	705	2.1	0.02	1.5	1081	12.9	0.03	3.5	1368	10.9	0.04	6.1	1505	9.0
		26	119	30	25	315	0.04	3.5	634	3.8	0.06	7.9	727	2.9	0.08	14.0	773	2.3	0.02	1.5	1189	14.2	0.03	3.5	1506	12.0	0.04	6.1	1656	9.9
		30	158	33	28	364	0.04	3.5	682	4.1	0.06	7.9	782	3.1	0.08	14.0	830	2.5	0.02	1.5	1284	15.3	0.03	3.5	1626	12.9	0.04	6.1	1789	10.7
		34	203	36	31	412	0.04	3.5	723	4.3	0.06	7.9	829	3.3	0.08	14.0	881	2.6	0.02	1.5	1369	16.3	0.03	3.5	1733	13.8	0.04	6.1	1906	11.4
1200	E1	24	58	25	20	291	0.04	3.5	559	3.3	0.06	7.9	641	2.6	0.08	14.0	681	2.0	0.02	1.5	1072	12.8	0.03	3.5	1357	10.8	0.04	6.1	1492	8.9
		28	79	29	24	340	0.04	3.5	610	3.6	0.06	7.9	699	2.8	0.08	14.0	743	2.2	0.02	1.5	1172	14.0	0.03	3.5	1483	11.8	0.04	6.1	1632	9.7
		32	103	33	28	388	0.04	3.5	654	3.9	0.06	7.9	750	3.0	0.08	14.0	797	2.4	0.02	1.5	1259	15.0	0.03	3.5	1594	12.7	0.04	6.1	1753	10.5
		36	130	36	31	437	0.04	3.5	693	4.1	0.06	7.9	795	3.2	0.08	14.0	844	2.5	0.02	1.5	1336	16.0	0.03	3.5	1692	13.5	0.04	6.1	1861	11.1
		40	160	38	33	485	0.04	3.5	728	4.3	0.06	7.9	835	3.3	0.08	14.0	887	2.6	0.02	1.5	1406	16.8	0.03	3.5	1780	14.2	0.04	6.1	1958	11.7
1200	F1	28	50	27	22	340	0.04	3.5	564	3.4	0.06	7.9	646	2.6	0.08	14.0	687	2.0	0.02	1.5	1083	12.9	0.03	3.5	1371	10.9	0.04	6.1	1508	9.0
		33	70	32	27	400	0.04	3.5	614	3.7	0.06	7.9	704	2.8	0.08	14.0	748	2.2	0.02	1.5	1185	14.1	0.03	3.5	1500	11.9	0.04	6.1	1650	9.8
		38	93	35	30	461	0.04	3.5	658	3.9	0.06	7.9	754	3.0	0.08	14.0	801	2.4	0.02	1.5	1272	15.2	0.03	3.5	1610	12.8	0.04	6.1	1771	10.6
		43	119	39	34	522	0.04	3.5	696	4.2	0.06	7.9	798	3.2	0.08	14.0	848	2.5	0.02	1.5	1348	16.1	0.03	3.5	1706	13.6	0.04	6.1	1876	11.2
		48	148	42	37	582	0.04	3.5	730	4.4	0.06	7.9	837	3.3	0.08	14.0	889	2.7	0.02	1.5	1415	16.9	0.03	3.5	1791	14.3	0.04	6.1	1971	11.8
1200	G1	32	52	30	25	388	0.04	3.5	568	3.4	0.06	7.9	651	2.6	0.08	14.0	691	2.1	0.02	1.5	1114	13.3	0.03	3.5	1411	11.2	0.04	6.1	1552	9.3
		38	73	35	30	461	0.04	3.5	623	3.7	0.06	7.9	714	2.8	0.08	14.0	759	2.3	0.02	1.5	1195	14.3	0.03	3.5	1512	12.0	0.04	6.1	1664	9.9
		44	97	39	34	534	0.04	3.5	670	4.0	0.06	7.9	768	3.1	0.08	14.0	816	2.4	0.02	1.5	1265	15.1	0.03	3.5	1602	12.8	0.04	6.1	1762	10.5
		50	126	43	38	607	0.04	3.5	711	4.2	0.06	7.9	815	3.2	0.08	14.0	866	2.6	0.02	1.5	1328	15.9	0.03	3.5	1681	13.4	0.04	6.1	1850	11.0
		56	158	46	41	679	0.04	3.5	747	4.5	0.06	7.9	856	3.4	0.08	14.0	910	2.7	0.02	1.5	1385	16.5	0.03	3.5	1753	14.0	0.04	6.1	1929	11.5
1200	H1	44	47	36	31	534	0.04	3.5	638	3.8	0.06	7.9	731	2.9	0.08	14.0	777	2.3	0.02	1.5	1160	13.9	0.03	3.5	1468	11.7	0.04	6.1	1615	9.6
		52	66	42	37	631	0.04	3.5	673	4.0	0.06	7.9	772	3.1	0.08	14.0	820	2.4	0.02	1.5	1232	14.7	0.03	3.5	1559	12.4	0.04	6.1	1715	10.2
		60	88	46	41	728	0.04	3.5	703	4.2	0.06	7.9	806	3.2	0.08	14.0	857	2.6	0.02	1.5	1293	15.4	0.03	3.5	1637	13.0	0.04	6.1	1801	10.8
		68	113	48	43	825	0.04	3.5	730	4.4	0.06	7.9	837	3.3	0.08	14.0	889	2.7	0.02	1.5	1348	16.1	0.03	3.5	1706	13.6	0.04	6.1	1877	11.2
		76	142	51	46	922	0.04	3.5	753	4.5	0.06	7.9	864	3.4	0.08	14.0	918	2.7	0.02	1.5	1397	16.7	0.03	3.5	1768	14.1	0.04	6.1	1945	11.6

Performance table notes

- 1) Air cooling capacities are based on Troom minus T primary air = 10 deg C. For other conditions multiply the table air cooling capacity by the required (Troom minus Tprimary air) divided by 10.
Alternatively the air cooling capacity can be calculated from the formula: Air cooling capacity W = 1.213 x Airflow (l/s) x (Troom minus T primary air)
- 2) Water cooling capacities are based on Troom minus T entering water temperature = 10 deg C. For other conditions multiply the table water cooling capacity by the required (Troom minus T entering water) divided by 10.
- 3) Water heating capacities are based on 4 pipe chilled beams with T room minus T entering water temperature = 35 deg C. For other conditions multiply the table water heating capacity by the required (Troom minus T entering water) divided by 35.
- 4) Performance ratings are subject to tolerances of plus/minus 5%.

Performance Data AIRFIT 2 600

AIRFIT 2 600-1800							Cooling Troom minus T entering water temperature = 10 deg C												Heating T entering water temperature minus T room = 35 deg C											
Model	Nozzle	Primary Airflow L/s	Plenum Pressure Pa	Sound Pressure Level dBA	Sound Pressure Level NC	Air Cooling Capacity ΔT=10C W	Cooling Water Flow 1				Cooling Water Flow 2				Cooling Water Flow 3				Heating Water Flow 1				Heating Water Flow 2				Heating Water Flow 3			
							Water flow	WaterΔP	Water Cooling Capacity	ΔT Water	Water flow	WaterΔP	Water Cooling Capacity	ΔT Water	Water flow	WaterΔP	Water Cooling Capacity	ΔT Water	Water flow	WaterΔP	Water Heating Capacity	ΔT Water	Water flow	WaterΔP	Water Heating Capacity	ΔT Water	Water flow	WaterΔP	Water Heating Capacity	ΔT Water
1800	A0	10	40	< 15	< 15	121	0.04	4.8	573	3.4	0.06	10.8	657	2.6	0.08	19.3	698	2.1	0.03	4.4	1049	8.3	0.04	7.8	1327	7.9	0.05	12.1	1460	7.0
		13	68	< 15	< 15	158	0.04	4.8	692	4.1	0.06	10.8	793	3.2	0.08	19.3	843	2.5	0.03	4.4	1394	11.1	0.04	7.8	1764	10.5	0.05	12.1	1941	9.3
		16	103	20	< 15	194	0.04	4.8	786	4.7	0.06	10.8	901	3.6	0.08	19.3	957	2.9	0.03	4.4	1667	13.3	0.04	7.8	2110	12.6	0.05	12.1	2321	11.1
		19	145	26	21	230	0.04	4.8	864	5.2	0.06	10.8	990	3.9	0.08	19.3	1052	3.1	0.03	4.4	1893	15.1	0.04	7.8	2397	14.3	0.05	12.1	2636	12.6
		22	195	29	24	267	0.04	4.8	930	5.6	0.06	10.8	1066	4.2	0.08	19.3	1133	3.4	0.03	4.4	2086	16.6	0.04	7.8	2641	15.8	0.05	12.1	2905	13.9
1800	A1	13	45	15	< 15	158	0.04	4.8	607	3.6	0.06	10.8	696	2.8	0.08	19.3	740	2.2	0.03	4.4	1301	10.4	0.04	7.8	1647	9.8	0.05	12.1	1812	8.7
		16	68	18	< 15	194	0.04	4.8	727	4.3	0.06	10.8	834	3.3	0.08	19.3	886	2.6	0.03	4.4	1570	12.5	0.04	7.8	1987	11.9	0.05	12.1	2186	10.4
		19	96	23	18	230	0.04	4.8	827	4.9	0.06	10.8	948	3.8	0.08	19.3	1007	3.0	0.03	4.4	1792	14.3	0.04	7.8	2268	13.5	0.05	12.1	2495	11.9
		22	129	27	22	267	0.04	4.8	912	5.4	0.06	10.8	1045	4.2	0.08	19.3	1110	3.3	0.03	4.4	1982	15.8	0.04	7.8	2509	15.0	0.05	12.1	2759	13.2
		25	166	31	26	303	0.04	4.8	985	5.9	0.06	10.8	1130	4.5	0.08	19.3	1201	3.6	0.03	4.4	2147	17.1	0.04	7.8	2718	16.2	0.05	12.1	2990	14.3
1800	B1	20	52	21	16	243	0.04	4.8	732	4.4	0.06	10.8	839	3.3	0.08	19.3	891	2.7	0.03	4.4	1490	11.9	0.04	7.8	1886	11.3	0.05	12.1	2075	9.9
		24	75	26	21	291	0.04	4.8	810	4.8	0.06	10.8	929	3.7	0.08	19.3	987	2.9	0.03	4.4	1687	13.4	0.04	7.8	2136	12.8	0.05	12.1	2350	11.2
		32	102	30	25	340	0.04	4.8	878	5.2	0.06	10.8	1006	4.0	0.08	19.3	1069	3.2	0.03	4.4	1857	14.8	0.04	7.8	2350	14.0	0.05	12.1	2585	12.3
		38	133	34	29	388	0.04	4.8	937	5.6	0.06	10.8	1074	4.3	0.08	19.3	1142	3.4	0.03	4.4	2005	16.0	0.04	7.8	2538	15.2	0.05	12.1	2792	13.3
		36	168	37	32	437	0.04	4.8	990	5.9	0.06	10.8	1135	4.5	0.08	19.3	1206	3.6	0.03	4.4	2137	17.0	0.04	7.8	2705	16.2	0.05	12.1	2976	14.2
1800	C1	28	55	28	23	340	0.04	4.8	804	4.8	0.06	10.8	921	3.7	0.08	19.3	979	2.9	0.03	4.4	1665	13.3	0.04	7.8	2108	12.6	0.05	12.1	2318	11.1
		33	77	32	27	400	0.04	4.8	873	5.2	0.06	10.8	1001	4.0	0.08	19.3	1064	3.2	0.03	4.4	1820	14.5	0.04	7.8	2304	13.8	0.05	12.1	2535	12.1
		38	102	36	31	461	0.04	4.8	934	5.6	0.06	10.8	1071	4.3	0.08	19.3	1138	3.4	0.03	4.4	1956	15.6	0.04	7.8	2476	14.8	0.05	12.1	2723	13.0
		43	131	39	34	522	0.04	4.8	988	5.9	0.06	10.8	1132	4.5	0.08	19.3	1203	3.6	0.03	4.4	2076	16.5	0.04	7.8	2628	15.7	0.05	12.1	2891	13.8
		48	163	41	36	582	0.04	4.8	1036	6.2	0.06	10.8	1188	4.7	0.08	19.3	1262	3.8	0.03	4.4	2184	17.4	0.04	7.8	2764	16.5	0.05	12.1	3041	14.5
1800	E1	38	58	34	29	461	0.04	4.8	816	4.9	0.06	10.8	935	3.7	0.08	19.3	994	3.0	0.03	4.4	1690	13.5	0.04	7.8	2140	12.8	0.05	12.1	2354	11.2
		44	78	38	33	534	0.04	4.8	886	5.3	0.06	10.8	1016	4.0	0.08	19.3	1080	3.2	0.03	4.4	1848	14.7	0.04	7.8	2339	14.0	0.05	12.1	2573	12.3
		50	101	40	35	607	0.04	4.8	948	5.7	0.06	10.8	1087	4.3	0.08	19.3	1155	3.4	0.03	4.4	1986	15.8	0.04	7.8	2513	15.0	0.05	12.1	2785	13.2
		56	126	44	39	679	0.04	4.8	1003	6.0	0.06	10.8	1150	4.6	0.08	19.3	1222	3.6	0.03	4.4	2107	16.8	0.04	7.8	2668	15.9	0.05	12.1	2934	14.0
		62	155	47	42	752	0.04	4.8	1052	6.3	0.06	10.8	1206	4.8	0.08	19.3	1281	3.8	0.03	4.4	2217	17.6	0.04	7.8	2806	16.8	0.05	12.1	3087	14.7
1800	F1	44	50	36	31	534	0.04	4.8	819	4.9	0.06	10.8	939	3.7	0.08	19.3	998	3.0	0.03	4.4	1708	13.6	0.04	7.8	2162	12.9	0.05	12.1	2379	11.4
		52	69	40	35	631	0.04	4.8	894	5.3	0.06	10.8	1025	4.1	0.08	19.3	1089	3.3	0.03	4.4	1868	14.9	0.04	7.8	2365	14.1	0.05	12.1	2601	12.4
		60	93	44	39	728	0.04	4.8	959	5.7	0.06	10.8	1099	4.4	0.08	19.3	1168	3.5	0.03	4.4	2005	16.0	0.04	7.8	2538	15.2	0.05	12.1	2792	13.3
		68	119	47	42	825	0.04	4.8	1015	6.1	0.06	10.8	1163	4.6	0.08	19.3	1236	3.7	0.03	4.4	2125	16.9	0.04	7.8	2690	16.1	0.05	12.1	2959	14.1
		76	148	50	45	922	0.04	4.8	1065	6.4	0.06	10.8	1221	4.9	0.08	19.3	1297	3.9	0.03	4.4	2232	17.8	0.04	7.8	2825	16.9	0.05	12.1	3107	14.8
1800	G1	54	59	40	35	655	0.04	4.8	858	5.1	0.06	10.8	984	3.9	0.08	19.3	1045	3.1	0.03	4.4	1757	14.0	0.04	7.8	2224	13.3	0.05	12.1	2447	11.7
		62	77	44	39	752	0.04	4.8	923	5.5	0.06	10.8	1058	4.2	0.08	19.3	1124	3.4	0.03	4.4	1894	15.0	0.04	7.8	2385	14.2	0.05	12.1	2623	12.5
		70	98	47	42	849	0.04	4.8	979	5.8	0.06	10.8	1123	4.5	0.08	19.3	1193	3.6	0.03	4.4	1995	15.9	0.04	7.8	2526	15.1	0.05	12.1	2778	13.3
		78	122	49	44	946	0.04	4.8	1030	6.1	0.06	10.8	1181	4.7	0.08	19.3	1255	3.7	0.03	4.4	2095	16.7	0.04	7.8	2651	15.8	0.05	12.1	2917	13.9
		86	149	51	46	1043	0.04	4.8	1075	6.4	0.06	10.8	1233	4.9	0.08	19.3	1310	3.9	0.03	4.4	2184	17.4	0.04	7.8	2765	16.5	0.05	12.1	3041	14.5
1800	H1	72	51	46	41	873	0.04	4.8	940	5.6	0.06	10.8	1078	4.3	0.08	19.3	1145	3.4	0.03	4.4	1829	14.6	0.04	7.8	2316	13.8	0.05	12.1	2547	12.2
		84	69	48	43	1019	0.04	4.8	988	5.9	0.06	10.8	1132	4.5	0.08	19.3	1203	3.6	0.03	4.4	1942	15.5	0.04	7.8	2458	14.7	0.05	12.1	2704	12.9
		96	90	51	46	1164	0.04	4.8	1029	6.1	0.06	10.8	1179	4.7	0.08	19.3	1253	3.7	0.03	4.4	2040	16.2	0.04	7.8	2582	15.4	0.05	12.1	2840	13.6
		108	114	53	48	1310	0.04	4.8	1065	6.4	0.06	10.8	1221	4.9	0.08	19.3	1297	3.9	0.03	4.4	2126	16.9	0.04	7.8	2691	16.1	0.05	12.1	2960	14.1
		120	141	56	51	1456	0.04	4.8	1097	6.6	0.06	10.8	1258	5.0	0.08	19.3	1337	4.0	0.03	4.4	2203	17.5	0.04	7.8	2788	16.6	0.05	12.1	3067	14.7

Performance table notes

- 1) Air cooling capacities are based on Troom minus T primary air = 10 deg C. For other conditions multiply the table air cooling capacity by the required (Troom minus Tprimary air) divided by 10. Alternatively the air cooling capacity can be calculated from the formula: Air cooling capacity W = 1.213 x Airflow (l/s) x (Troom minus T primary air)
- 2) Water cooling capacities are based on Troom minus T entering water temperature = 10 deg C. For other conditions multiply the table water cooling capacity by the required (Troom minus T entering water) divided by 10.
- 3) Water heating capacities are based on 4 pipe chilled beams with T room minus T entering water temperature = 35 deg C. For other conditions multiply the table water heating capacity by the required (Troom minus T entering water) divided by 35.
- 4) Performance ratings are subject to tolerances of plus/minus 5%.

Performance Data AIRFIT 2 600

AIRFI 2 600-2400							Cooling Troom minus T entering water temperature = 10 deg C												Heating T entering water temperature minus T room = 35 deg C											
Model	Nozzle	Primary Airflow L/s	Plenum Pressure Pa	Sound Pressure Level dBA	Sound Pressure Level NC	Air Cooling Capacity ΔT=10C W	Cooling Water Flow 1				Cooling Water Flow 2				Cooling Water Flow 3				Heating Water Flow 1				Heating Water Flow 2				Heating Water Flow 3			
							Water flow l/s	Water ΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	Water ΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	Water ΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow l/s	Water ΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow l/s	Water ΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow l/s	Water ΔP Kpa	Water Heating Capacity W	ΔT Water deg C
2400	A0	14	43	< 15	< 15	170	0.06	3.4	826	3.3	0.09	7.7	938	2.5	0.12	13.8	978	1.9	0.04	5.3	1432	8.6	0.05	9.4	1813	8.7	0.06	14.7	1994	7.9
		18	70	16	< 15	218	0.06	3.4	986	3.9	0.09	7.7	1121	3.0	0.12	13.8	1169	2.3	0.04	5.3	1904	11.4	0.05	9.4	2410	11.5	0.06	14.7	2651	10.6
		22	105	21	16	267	0.06	3.4	1115	4.4	0.09	7.7	1267	3.4	0.12	13.8	1321	2.6	0.04	5.3	2277	13.6	0.05	9.4	2882	13.8	0.06	14.7	3171	12.6
		26	147	25	20	315	0.06	3.4	1222	4.9	0.09	7.7	1388	3.7	0.12	13.8	1448	2.9	0.04	5.3	2586	15.4	0.05	9.4	3273	15.6	0.06	14.7	3601	14.3
		30	196	29	24	364	0.06	3.4	1314	5.2	0.09	7.7	1492	4.0	0.12	13.8	1556	3.1	0.04	5.3	2850	17.0	0.05	9.4	3607	17.2	0.06	14.7	3968	15.8
2400	A1	19	51	< 15	< 15	230	0.06	3.4	914	3.6	0.09	7.7	1038	2.8	0.12	13.8	1083	2.2	0.04	5.3	1777	10.6	0.05	9.4	2249	10.7	0.06	14.7	2474	9.8
		23	75	20	< 15	279	0.06	3.4	1070	4.3	0.09	7.7	1215	3.2	0.12	13.8	1268	2.5	0.04	5.3	2144	12.8	0.05	9.4	2714	13.0	0.06	14.7	2985	11.9
		27	104	25	20	328	0.06	3.4	1201	4.8	0.09	7.7	1364	3.6	0.12	13.8	1423	2.8	0.04	5.3	2448	14.6	0.05	9.4	3098	14.8	0.06	14.7	3408	13.6
		31	137	28	23	376	0.06	3.4	1314	5.2	0.09	7.7	1492	4.0	0.12	13.8	1557	3.1	0.04	5.3	2707	16.2	0.05	9.4	3426	16.4	0.06	14.7	3769	15.0
		35	174	32	27	425	0.06	3.4	1413	5.6	0.09	7.7	1605	4.3	0.12	13.8	1674	3.3	0.04	5.3	2933	17.5	0.05	9.4	3712	17.7	0.06	14.7	4084	16.3
2400	B1	28	55	22	17	340	0.06	3.4	1012	4.0	0.09	7.7	1149	3.0	0.12	13.8	1199	2.4	0.04	5.3	2035	12.2	0.05	9.4	2577	12.3	0.06	14.7	2834	11.3
		33	76	26	21	400	0.06	3.4	1129	4.5	0.09	7.7	1282	3.4	0.12	13.8	1338	2.7	0.04	5.3	2305	13.8	0.05	9.4	2917	13.9	0.06	14.7	3209	12.8
		38	101	30	25	461	0.06	3.4	1229	4.9	0.09	7.7	1396	3.7	0.12	13.8	1456	2.9	0.04	5.3	2536	15.1	0.05	9.4	3210	15.3	0.06	14.7	3531	14.1
		43	129	33	28	522	0.06	3.4	1316	5.2	0.09	7.7	1495	4.0	0.12	13.8	1559	3.1	0.04	5.3	2739	16.4	0.05	9.4	3467	16.6	0.06	14.7	3813	15.2
		48	161	36	31	582	0.06	3.4	1393	5.5	0.09	7.7	1582	4.2	0.12	13.8	1650	3.3	0.04	5.3	2919	17.4	0.05	9.4	3695	17.6	0.06	14.7	4064	16.2
2400	C1	37	52	27	22	449	0.06	3.4	1083	4.3	0.09	7.7	1231	3.3	0.12	13.8	1283	2.6	0.04	5.3	2274	13.6	0.05	9.4	2879	13.8	0.06	14.7	3167	12.6
		44	73	32	27	534	0.06	3.4	1210	4.8	0.09	7.7	1375	3.6	0.12	13.8	1434	2.9	0.04	5.3	2486	14.8	0.05	9.4	3147	15.0	0.06	14.7	3462	13.8
		51	99	35	30	619	0.06	3.4	1317	5.2	0.09	7.7	1496	4.0	0.12	13.8	1560	3.1	0.04	5.3	2671	16.0	0.05	9.4	3382	16.2	0.06	14.7	3720	14.8
		58	127	39	34	704	0.06	3.4	1409	5.6	0.09	7.7	1601	4.2	0.12	13.8	1670	3.3	0.04	5.3	2835	16.9	0.05	9.4	3589	17.1	0.06	14.7	3948	15.7
		65	160	42	37	788	0.06	3.4	1490	5.9	0.09	7.7	1693	4.5	0.12	13.8	1766	3.5	0.04	5.3	2983	17.8	0.05	9.4	3776	18.0	0.06	14.7	4153	16.5
2400	E1	48	50	31	26	592	0.06	3.4	1100	4.4	0.09	7.7	1249	3.3	0.12	13.8	1303	2.6	0.04	5.3	2309	13.8	0.05	9.4	2922	14.0	0.06	14.7	3215	12.8
		58	72	36	31	704	0.06	3.4	1229	4.9	0.09	7.7	1396	3.7	0.12	13.8	1456	2.9	0.04	5.3	2524	15.1	0.05	9.4	3195	15.3	0.06	14.7	3515	14.0
		68	99	40	35	825	0.06	3.4	1337	5.3	0.09	7.7	1519	4.0	0.12	13.8	1584	3.2	0.04	5.3	2712	16.2	0.05	9.4	3433	16.4	0.06	14.7	3776	15.0
		78	131	44	39	946	0.06	3.4	1430	5.7	0.09	7.7	1625	4.3	0.12	13.8	1695	3.4	0.04	5.3	2878	17.2	0.05	9.4	3644	17.4	0.06	14.7	4008	16.0
		88	166	47	42	1067	0.06	3.4	1513	6.0	0.09	7.7	1718	4.6	0.12	13.8	1792	3.6	0.04	5.3	3028	18.1	0.05	9.4	3833	18.3	0.06	14.7	4216	16.8
2400	F1	60	50	35	30	728	0.06	3.4	1157	4.6	0.09	7.7	1314	3.5	0.12	13.8	1371	2.7	0.04	5.3	2333	13.9	0.05	9.4	2954	14.1	0.06	14.7	3249	12.9
		72	72	40	35	873	0.06	3.4	1272	5.1	0.09	7.7	1445	3.8	0.12	13.8	1508	3.0	0.04	5.3	2552	15.2	0.05	9.4	3230	15.4	0.06	14.7	3553	14.1
		84	97	44	39	1019	0.06	3.4	1370	5.5	0.09	7.7	1557	4.1	0.12	13.8	1624	3.2	0.04	5.3	2739	16.4	0.05	9.4	3487	16.6	0.06	14.7	3814	15.2
		96	127	47	42	1164	0.06	3.4	1455	5.8	0.09	7.7	1653	4.4	0.12	13.8	1724	3.4	0.04	5.3	2903	17.3	0.05	9.4	3674	17.6	0.06	14.7	4042	16.1
		108	161	51	46	1310	0.06	3.4	1530	6.1	0.09	7.7	1738	4.6	0.12	13.8	1813	3.6	0.04	5.3	3048	18.2	0.05	9.4	3858	18.4	0.06	14.7	4244	16.9
2400	G1	70	53	39	34	849	0.06	3.4	1178	4.7	0.09	7.7	1339	3.6	0.12	13.8	1396	2.8	0.04	5.3	2400	14.3	0.05	9.4	3038	14.5	0.06	14.7	3342	13.3
		82	73	43	38	995	0.06	3.4	1283	5.1	0.09	7.7	1457	3.9	0.12	13.8	1520	3.0	0.04	5.3	2573	15.4	0.05	9.4	3257	15.6	0.06	14.7	3583	14.3
		94	95	46	41	1140	0.06	3.4	1373	5.5	0.09	7.7	1559	4.1	0.12	13.8	1627	3.2	0.04	5.3	2725	16.3	0.05	9.4	3450	16.5	0.06	14.7	3795	15.1
		106	121	49	44	1286	0.06	3.4	1452	5.8	0.09	7.7	1650	4.4	0.12	13.8	1721	3.4	0.04	5.3	2861	17.1	0.05	9.4	3622	17.3	0.06	14.7	3984	15.9
		118	150	52	47	1431	0.06	3.4	1523	6.1	0.09	7.7	1730	4.6	0.12	13.8	1804	3.6	0.04	5.3	2983	17.8	0.05	9.4	3776	18.0	0.06	14.7	4154	16.5
2400	H1	90	43	42	37	1092	0.06	3.4	1290	5.1	0.09	7.7	1465	3.9	0.12	13.8	1528	3.0	0.04	5.3	2499	14.9	0.05	9.4	3163	15.1	0.06	14.7	3479	13.8
		110	64	47	42	1334	0.06	3.4	1377	5.5	0.09	7.7	1565	4.2	0.12	13.8	1632	3.2	0.04	5.3	2653	15.8	0.05	9.4	3358	16.0	0.06	14.7	3693	14.7
		130	90	51	46	1577	0.06	3.4	1450	5.8	0.09	7.7	1647	4.4	0.12	13.8	1718	3.4	0.04	5.3	2786	16.6	0.05	9.4	3526	16.8	0.06	14.7	3879	15.4
		150	119	55	50	1820	0.06	3.4	1512	6.0	0.09	7.7	1718	4.6	0.12	13.8	1792	3.6	0.04	5.3	2904	17.3	0.05	9.4	3675	17.6	0.06	14.7	4043	16.1
		170	153	60	55	2062	0.06	3.4	1567	6.2	0.09	7.7	1780	4.7	0.12	13.8	1856	3.7	0.04	5.3	3009	18.0	0.05	9.4	3808	18.2	0.06	14.7	4189	16.7

Performance table notes

- 1) Air cooling capacities are based on Troom minus T primary air = 10 deg C. For other conditions multiply the table air cooling capacity by the required (Troom minus Tprimary air) divided by 10. Alternatively the air cooling capacity can be calculated from the formula: Air cooling capacity W = 1.213 x Airflow (l

Performance Data AIRFIT 2 600

AIRFIT 2 600-3000						Cooling Troom minus T entering water temperature = 10 deg C												Heating T entering water temperature minus T room = 35 deg C												
Model	Nozzle	Primary Airflow L/s	Plenum Pressure Pa	Sound Pressure Level dBA	Sound Pressure Level NC	Air Cooling Capacity ΔT=10C W	Cooling Water Flow 1				Cooling Water Flow 2				Cooling Water Flow 3				Heating Water Flow 1				Heating Water Flow 2				Heating Water Flow 3			
							Water flow	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow	WaterΔP Kpa	Water Cooling Capacity W	ΔT Water deg C	Water flow	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C	Water flow	WaterΔP Kpa	Water Heating Capacity W	ΔT Water deg C
3000	A0	17	39	16	< 15	206	0.06	4.2	927	3.7	0.09	9.4	1072	2.8	0.12	16.7	1163	2.3	0.04	6.2	1816	10.8	0.05	11.0	2299	11.0	0.06	17.2	2528	10.1
		22	65	18	< 15	267	0.06	4.2	1119	4.5	0.09	9.4	1294	3.4	0.12	16.7	1403	2.8	0.04	6.2	2414	14.4	0.05	11.0	3055	14.6	0.06	17.2	3361	13.4
		27	98	24	19	328	0.06	4.2	1271	5.1	0.09	9.4	1470	3.9	0.12	16.7	1594	3.2	0.04	6.2	2887	17.2	0.05	11.0	3654	17.5	0.06	17.2	4020	16.0
		32	138	29	24	388	0.06	4.2	1397	5.6	0.09	9.4	1616	4.3	0.12	16.7	1753	3.5	0.04	6.2	3279	19.6	0.05	11.0	4150	19.8	0.06	17.2	4565	18.2
		37	185	33	28	449	0.06	4.2	1505	6.0	0.09	9.4	1741	4.6	0.12	16.7	1888	3.8	0.04	6.2	3613	21.6	0.05	11.0	4573	21.8	0.06	17.2	5031	20.0
3000	A1	24	51	18	< 15	291	0.06	4.2	1058	4.2	0.09	9.4	1224	3.2	0.12	16.7	1327	2.6	0.04	6.2	2253	13.5	0.05	11.0	2852	13.6	0.06	17.2	3137	12.5
		29	75	24	19	352	0.06	4.2	1238	4.9	0.09	9.4	1431	3.8	0.12	16.7	1552	3.1	0.04	6.2	2718	16.2	0.05	11.0	3441	16.4	0.06	17.2	3785	15.1
		34	102	28	23	412	0.06	4.2	1389	5.5	0.09	9.4	1606	4.3	0.12	16.7	1742	3.5	0.04	6.2	3103	18.5	0.05	11.0	3928	18.8	0.06	17.2	4321	17.2
		39	135	32	27	473	0.06	4.2	1519	6.0	0.09	9.4	1757	4.7	0.12	16.7	1905	3.8	0.04	6.2	3432	20.5	0.05	11.0	4344	20.8	0.06	17.2	4779	19.0
		44	172	35	30	534	0.06	4.2	1633	6.5	0.09	9.4	1889	5.0	0.12	16.7	2049	4.1	0.04	6.2	3718	22.2	0.05	11.0	4707	22.5	0.06	17.2	5177	20.6
3000	B1	34	50	25	20	412	0.06	4.2	1225	4.9	0.09	9.4	1417	3.8	0.12	16.7	1537	3.1	0.04	6.2	2581	15.4	0.05	11.0	3267	15.6	0.06	17.2	3593	14.3
		41	73	30	25	497	0.06	4.2	1342	5.3	0.09	9.4	1552	4.1	0.12	16.7	1683	3.4	0.04	6.2	2922	17.4	0.05	11.0	3699	17.7	0.06	17.2	4069	16.2
		48	100	34	29	582	0.06	4.2	1444	5.7	0.09	9.4	1670	4.4	0.12	16.7	1811	3.6	0.04	6.2	3215	19.2	0.05	11.0	4070	19.4	0.06	17.2	4477	17.8
		55	131	37	32	667	0.06	4.2	1534	6.1	0.09	9.4	1774	4.7	0.12	16.7	1923	3.8	0.04	6.2	3472	20.7	0.05	11.0	4395	21.0	0.06	17.2	4835	19.2
		62	167	41	36	752	0.06	4.2	1614	6.4	0.09	9.4	1867	5.0	0.12	16.7	2025	4.0	0.04	6.2	3701	22.1	0.05	11.0	4685	22.4	0.06	17.2	5153	20.5
3000	C1	50	59	33	28	607	0.06	4.2	1273	5.1	0.09	9.4	1472	3.9	0.12	16.7	1597	3.2	0.04	6.2	2883	17.2	0.05	11.0	3650	17.4	0.06	17.2	4015	16.0
		58	79	36	31	704	0.06	4.2	1411	5.6	0.09	9.4	1632	4.3	0.12	16.7	1770	3.5	0.04	6.2	3152	18.8	0.05	11.0	3990	19.1	0.06	17.2	4389	17.5
		66	103	40	35	801	0.06	4.2	1528	6.1	0.09	9.4	1768	4.7	0.12	16.7	1917	3.8	0.04	6.2	3387	20.2	0.05	11.0	4287	20.5	0.06	17.2	4716	18.8
		74	129	43	38	898	0.06	4.2	1630	6.5	0.09	9.4	1885	5.0	0.12	16.7	2044	4.1	0.04	6.2	3595	21.5	0.05	11.0	4551	21.7	0.06	17.2	5006	19.9
		82	159	47	42	995	0.06	4.2	1720	6.8	0.09	9.4	1990	5.3	0.12	16.7	2157	4.3	0.04	6.2	3782	22.6	0.05	11.0	4787	22.9	0.06	17.2	5266	21.0
3000	E1	62	52	35	30	752	0.06	4.2	1292	5.1	0.09	9.4	1495	4.0	0.12	16.7	1621	3.2	0.04	6.2	2927	17.5	0.05	11.0	3705	17.7	0.06	17.2	4076	16.2
		74	73	41	36	898	0.06	4.2	1432	5.7	0.09	9.4	1657	4.4	0.12	16.7	1796	3.6	0.04	6.2	3200	19.1	0.05	11.0	4051	19.3	0.06	17.2	4456	17.7
		86	99	45	40	1043	0.06	4.2	1551	6.2	0.09	9.4	1794	4.8	0.12	16.7	1946	3.9	0.04	6.2	3438	20.5	0.05	11.0	4352	20.8	0.06	17.2	4788	19.1
		98	129	49	44	1189	0.06	4.2	1655	6.6	0.09	9.4	1914	5.1	0.12	16.7	2075	4.1	0.04	6.2	3649	21.8	0.05	11.0	4620	22.1	0.06	17.2	5081	20.2
		110	162	52	47	1334	0.06	4.2	1746	7.0	0.09	9.4	2020	5.4	0.12	16.7	2190	4.4	0.04	6.2	3839	22.9	0.05	11.0	4860	23.2	0.06	17.2	5346	21.3
3000	F1	75	48	39	34	910	0.06	4.2	1333	5.3	0.09	9.4	1542	4.1	0.12	16.7	1672	3.3	0.04	6.2	2958	17.7	0.05	11.0	3745	17.9	0.06	17.2	4119	16.4
		90	70	45	40	1092	0.06	4.2	1468	5.8	0.09	9.4	1696	4.5	0.12	16.7	1841	3.7	0.04	6.2	3235	19.3	0.05	11.0	4085	19.6	0.06	17.2	4505	17.9
		105	95	49	44	1274	0.06	4.2	1582	6.3	0.09	9.4	1829	4.9	0.12	16.7	1984	3.9	0.04	6.2	3473	20.7	0.05	11.0	4396	21.0	0.06	17.2	4835	19.2
		120	124	52	47	1456	0.06	4.2	1680	6.7	0.09	9.4	1943	5.2	0.12	16.7	2107	4.2	0.04	6.2	3680	22.0	0.05	11.0	4658	22.3	0.06	17.2	5124	20.4
		135	157	55	50	1638	0.06	4.2	1767	7.0	0.09	9.4	2044	5.4	0.12	16.7	2216	4.4	0.04	6.2	3865	23.1	0.05	11.0	4892	23.4	0.06	17.2	5381	21.4
3000	G1	86	50	41	36	1043	0.06	4.2	1345	5.4	0.09	9.4	1555	4.1	0.12	16.7	1687	3.4	0.04	6.2	3043	18.2	0.05	11.0	3852	18.4	0.06	17.2	4237	16.9
		104	72	47	42	1262	0.06	4.2	1490	5.9	0.09	9.4	1724	4.6	0.12	16.7	1869	3.7	0.04	6.2	3263	19.5	0.05	11.0	4130	19.7	0.06	17.2	4543	18.1
		122	100	51	46	1480	0.06	4.2	1613	6.4	0.09	9.4	1866	5.0	0.12	16.7	2023	4.0	0.04	6.2	3455	20.6	0.05	11.0	4374	20.9	0.06	17.2	4811	19.2
		140	131	54	49	1698	0.06	4.2	1718	6.8	0.09	9.4	1988	5.3	0.12	16.7	2155	4.3	0.04	6.2	3627	21.7	0.05	11.0	4592	21.9	0.06	17.2	5051	20.1
		158	167	58	53	1917	0.06	4.2	1811	7.2	0.09	9.4	2095	5.6	0.12	16.7	2271	4.5	0.04	6.2	3782	22.6	0.05	11.0	4788	22.9	0.06	17.2	5267	21.0
3000	H1	120	48	49	44	1456	0.06	4.2	1524	6.1	0.09	9.4	1763	4.7	0.12	16.7	1912	3.8	0.04	6.2	3168	18.9	0.05	11.0	4010	19.2	0.06	17.2	4411	17.6
		145	69	53	48	1759	0.06	4.2	1620	6.4	0.09	9.4	1874	5.0	0.12	16.7	2032	4.0	0.04	6.2	3363	20.1	0.05	11.0	4257	20.3	0.06	17.2	4683	18.6
		170	95	56	51	2062	0.06	4.2	1700	6.8	0.09	9.4	1967	5.2	0.12	16.7	2132	4.2	0.04	6.2	3532	21.1	0.05	11.0	4471	21.4	0.06	17.2	4918	19.6
		195	125	58	53	2365	0.06	4.2	1770	7.0	0.09	9.4	2047	5.4	0.12	16.7	2220	4.4	0.04	6.2	3681	22.0	0.05	11.0	4660	22.3	0.06	17.2	5126	20.4
		220	160	63	58	2669	0.06	4.2	1831	7.3	0.09	9.4	2118	5.6	0.12	16.7	2296	4.6	0.04	6.2	3815	22.8	0.05	11.0	4829	23.1	0.06	17.2	5311	21.1

Performance table notes

- 1) Air cooling capacities are based on Troom minus T primary air = 10 deg C. For other conditions multiply the table air cooling capacity by the required (Troom minus Tprimary air) divided by 10. Alternatively the air cooling capacity can be calculated from the formula: Air cooling capacity W = 1.213 x Airflow (l/s) x (Troom minus T primary air)
- 2) Water cooling capacities are based on Troom minus T entering water temperature = 10 deg C. For other conditions multiply the table water cooling capacity by the required (Troom minus T entering water) divided by 10.
- 3) Water heating capacities are based on 4 pipe chilled beams with T room minus T entering water temperature = 35 deg C. For other conditions multiply the table water heating capacity by the required (Troom minus T entering water) divided by 35.
- 4) Performance ratings are subject to tolerances of plus/minus 5%.

Selection example

Specified data:

Office (LxWxH)	7.2 x 5.4 x 2.7 m
Occupants:	4
Minimum Ventilation	4 x 10 l/s = 40 l/s
Preferred size of chilled beams	1800 x 600 mm (2 units)
Summer room design condition (Troom)	24 deg C with 50% RH (Room dew point 14 deg C)
Chilled Water temperature (Tw,in)	16 deg C (Room Dew Point 14 deg C + 2 deg C)
Summer supply air temperature (T1)	12 deg C
Summer sensible cooling requirement	2400 W or 1200 W per unit
Winter room design condition (Troom)	20 deg C with 50% RH (Room dew point 9 deg C)
Heating water temperature (Tw,in)	45 deg C
Winter supply air temperature (T1)	20 deg C
Winter heating requirement	2700 W or 1350 W per unit

Calculation:

The temperature differences required to make the cooling selection are:

$$\Delta TAC = T_{room} - T_1 = 24 - 12 = 12 \text{ deg C}$$

$$\Delta TWC = T_{room} - T_{w,in} = 24 - 16 = 8 \text{ deg C}$$

The temperature differences required to make the heating selection are:

$$\Delta TAH = T_1 - T_{room} = 20 - 20 = 0 \text{ deg C}$$

$$\Delta TWH = T_{w,in} - T_{room} = 45 - 20 = 25 \text{ deg C}$$

Selection:

Model: Width:	600mm
Length:	1800mm
Performance table:	Page 9
Primary airflow:	28 l/s per unit
Nozzle:	B1
Static air pressure in plenum:	102 Pa

Cooling Performance

Available cooling from primary air:	$1.213 \times 28 \times 12 = 407 \text{ W per unit}$
Required cooling from chilled water:	$1200 - 407 = 793 \text{ W per unit}$
From page 9 select water cooling capacity	1000 W per unit at $\Delta TWC = 10 \text{ deg C}$
So water cooling capacity for $\Delta TWC = 8 \text{ deg C}$	$1000 \times 8 \text{ deg C} / 10 \text{ deg C} = 800 \text{ W per unit}$
with water flow	0.06 l/s
water pressure drop:	10.8 K pa
water temperature difference	$800 \text{ W} / (4.187 \times 0.06 \text{ l/s} \times 1000) = 3.18 \text{ deg C}$
So total cooling capacity:	$407\text{W} + 800\text{W} = 1207\text{W per unit} \times 2 \text{ units} = 2414 \text{ W}$

This satisfies the total sensible cooling requirement of 2400 W for the room

Heating Performance

Available heating from primary air:	$1.213 \times 28 \times 0 = 0 \text{ W per unit}$
Required heating from heating water:	$1350 - 0 = 1350 \text{ W per unit}$
From page 9 select water heating capacity	1890 W per unit at $\Delta TWH = 35 \text{ deg C}$ with 0.03 l/s water flow
So water heating capacity for $\Delta TWH = 25 \text{ deg C}$	$1890 \times 25 \text{ deg C} / 35 \text{ deg C} = 1350 \text{ W per unit}$
with water flow	0.03 l/s
water pressure drop:	4.4 K pa
water temperature difference	$1350 \text{ W} / (4.187 \times 0.03 \text{ l/s} \times 1000) = 10.7 \text{ deg C}$
So total heating capacity:	$0\text{W} + 1350\text{W} = 1350 \text{ W} \times 2 \text{ unit} = 2700 \text{ W per unit}$

This satisfies the total sensible heating requirement of 2700 W

For non standard applications and/or selections, please contact our technical staff.

Guide Specifications

Barcol-Air AIRFIT 2 600 series active chilled beams shall be used to compensate for the external and internal heat loads of the building and shall maintain the thermal comfort in the room within the specified comfort and noise criteria.

Functional description

- Primary air will be supplied by the fresh air handling unit to the chilled beam air plenum box. The primary air shall then pass through the induction nozzles into the mixing section to mix with the induced room air before being distributed into the room by two slot diffusers.
- Induction nozzles shall induce air from the room through the inlet air diffuser and then through the fin and tube cooling/heating heat exchanger before mixing with the primary air and being supplied to the room. The induction nozzles shall be factory installed to provide the required unit capacity with the specified primary airflow, air inlet pressure and noise level.
- Heat exchangers shall be 2-pipe type for cooling only or cooling/heating changeover systems or 4 pipe type for systems with separate cooling and heating circuits.
- The units shall incorporate two linear slot air supply diffusers and shall be designed so that the supply air is discharged horizontally across the ceiling using the Coanda effect to increase the air throw of the units and to ensure the air mixing with the room air above the occupied zone. The inlet air diffuser for the room air shall be perforated or provided with linear bar air inlet grille and shall be easily removable for cleaning the heat exchanger and shall be provided with a safety hanging wires.

Construction of the chilled beam:

- The primary air plenum box shall be manufactured from galvanized sheet steel and shall have one or more circular air spigot connectors to ensure the inlet air velocity does not exceed 2 m/s. The plenum should be internally insulated to prevent condensation if the primary supply air temperature is less than the surrounding air dew point temperature.
- The nozzle plate and chilled beam body shall be manufactured from galvanized steel with a minimum thickness of 0.8mm.
- The heat exchangers shall be made from seamless copper tubes with aluminum fins and shall have 12 or 15 mm diameter water connections depending on unit's size and connections. The heat exchangers shall be suitable to operate at 15 bar working pressure and shall be factory pressure tested at 20 bar pressure.
- The supply air diffuser and room air inlet diffuser shall be manufactured from galvanized steel with a minimum thickness of 1.0 mm and shall be finished with polyester powder paint to RAL9010 with 20% gloss or with an alternative finish to be specified.

Dimensions

Width: The chilled beam shall be 595 mm wide.

Length: The units shall be 1200, 1500, 1800, 2400 and 3000 mm long or any intermediate length by special order.

Height: The height of the chilled beam (including distribution plenum) shall not be more than 242mm.

Installation

The chilled beam shall have 7 mm diameter mounting holes for suspension by 6mm diameter threaded rod or suspension wires.

