

Active Beam Range

Introduction

The Waterloo ABM Series Active Chilled Beams is a compact ceiling or surface mounted unit for heating and cooling. With the supply of primary air through nozzles, secondary room air is inducted through a heat exchanger. This is then supplied with cold or hot water, for chilling, or warming, and a multitude of nozzle configurations are available to meet any project requirements. The weight of the unit relative to its high capacity for heating and cooling is remarkable, and the shape of the unit gives a flat horizontal air supply pattern providing good throw characteristics. Through its clever modular design the ABM modules can be fitted together to maintain aesthetic consistency. The ABM is available in widths from 300 to 600mm to integrate into most ceiling systems.

Product Description

Module Sizes

ABM 300 1200 mm up to 3000 mm.

Application

Cooling and heating of spaces. Easy installation in many standard ceiling systems.

Finishes

Front Plate: PPM 9010 as standard, other colours available on request.

Plenum Box: Zintec

Heat Exchanger: Copper / Aluminium.

Features

- High heating and cooling capacity.
- Low weight
- Mixing supplied air with room air (induction).
- Heat exchanger easily accessible through an optional opening front plate.

Options

- Hinged Front Plate for Additional Access
- Thermally Lined Plenum Box
- Low Profile Plenum Chamber
- Choice of Duct Connection Sizes
- Luminaires, Sprinkler Apertures and P.A.
- Integration
- Wide range of Finishes
- Many Facia Styles (linear or perforated)
- Left or Right Hand Water Connections
- Vertical or Horizontal Water Connections
- Side or End Entry Plenum Chambers
- 1 or 2 Way Blow
- Variable Nozzle Option



Model shown above is the ABM 300 with optional spotlights fitted

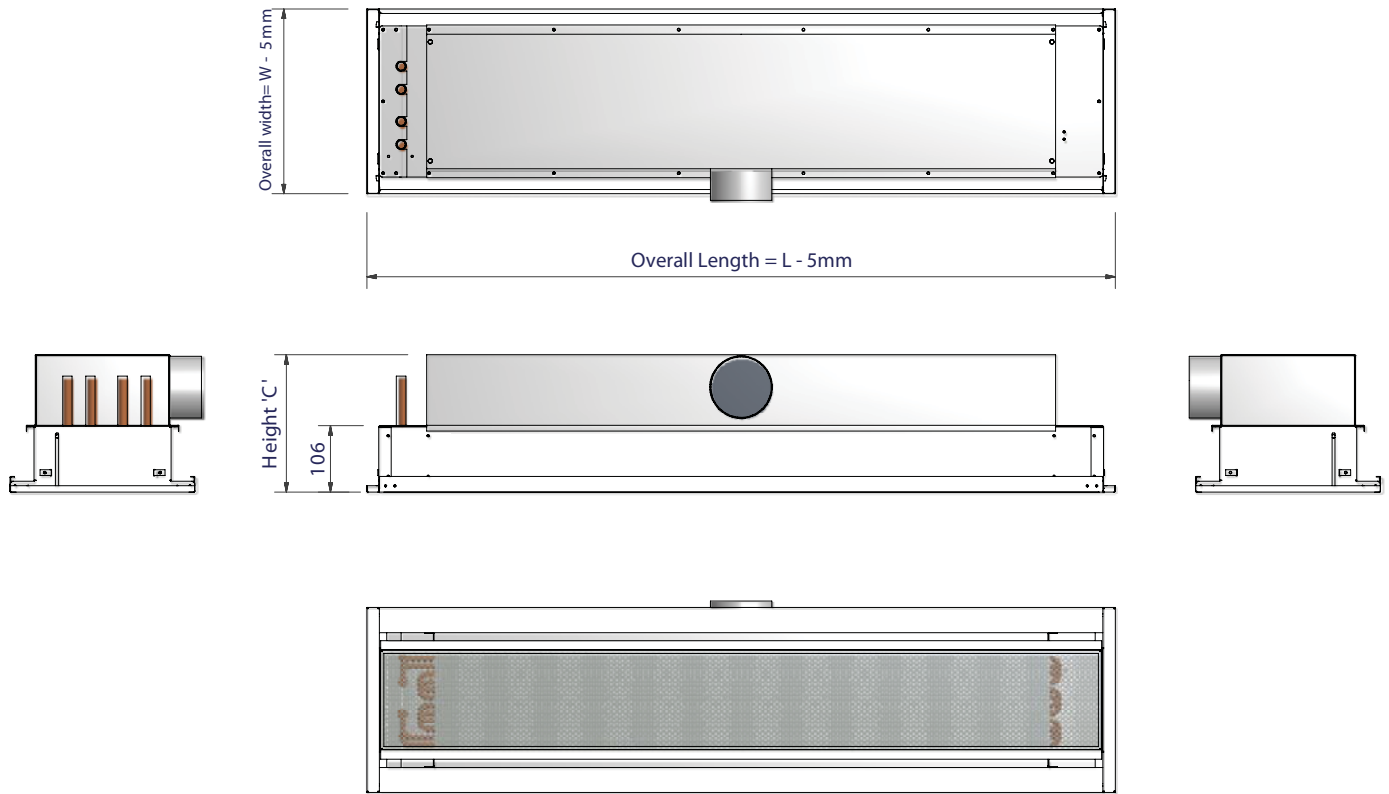
Order Example	
ABM 300-1720-1270-B-L/PPM9010	
Type	_____
Length of Unit	_____
Length of Heat Exchanger	_____
Nozzle Type	_____
Water Connection Left or Right Hand Side	_____
Finish	_____

Table 1 - Approximate ABM weights

UNIT LENGTH	1200 mm	1350 mm	1500 mm	1800 mm	2400 mm	2700 mm	3000 mm
ABM 300	14 kg	16 kg	18 kg	22 kg	30 kg	34 kg	38 kg
ABM 600	17 kg	20 kg	22 kg	27 kg	37 kg	42 kg	46 kg

Unit Dimensions

Figure 1 - Overall Dimensions (mm) without factory-mounted controls



Sizes

- W is the nominal Width 300.
- L is the nominal Length (1200 - 3000).
- C is the nominal Height 250 for 125 Ø and 230 for 100 Ø.

Table 2 - Overall Dimensions(mm) without factory-mounted controls

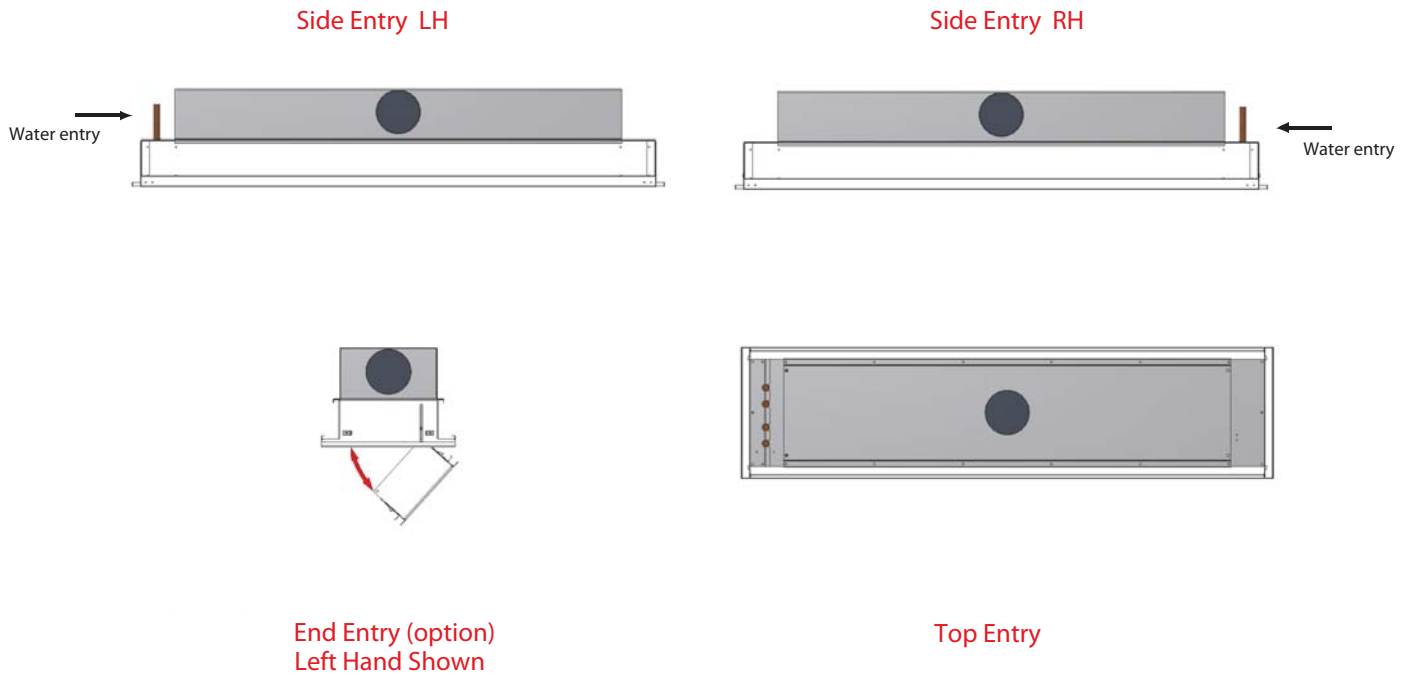
Dimensions L	1200	1500	1800	2400	3000	1500	1800	2400	3000	1800	2400	3000	2400	3000	3000
Coil length	980					1270				1570			2170		2770
Plenum length	1004					1294				1594			2194		2794
Overall width	300, 600														

Air Entry Options

Handling the unit

WARNING! Wear protection gloves when handling the unit. When removing the unit from its pallet, do not handle it by pipes, spigots, valves or fresh air inlet. Take precaution to not damage the unit.

Figure 2 - Possible air intake positions



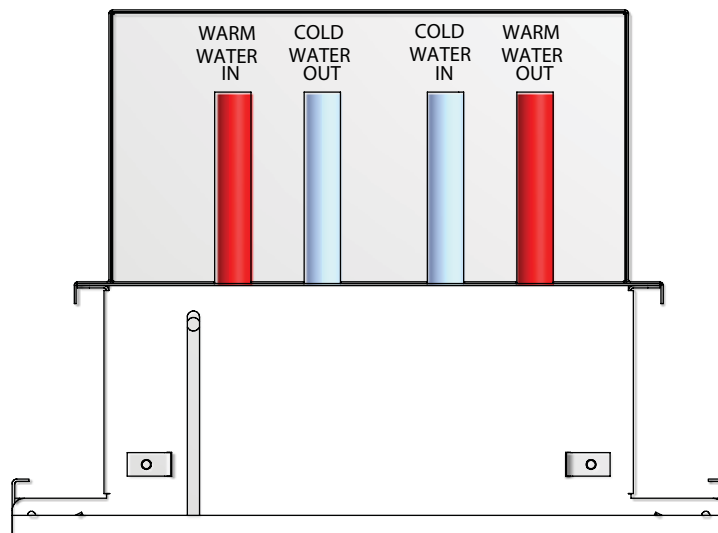
Water connection

Waterloo ABM300 series chilled beams are fitted with 15mm diameter copper water connections as standard.

These connections are always laid out in the same order as illustrated in the figure 3.

CAUTION! The use of untreated or improperly treated water in this equipment may result in scaling, slime, erosion or corrosion. The services of a qualified water treatment specialist should be engaged to determine what treatment, if any, is advisable. Waterloo will not accept any liability in regards of damage due to the use of untreated or improperly treated water.

Figure 3 Inlet and outlet water connections (Ø15mm)



Labelling

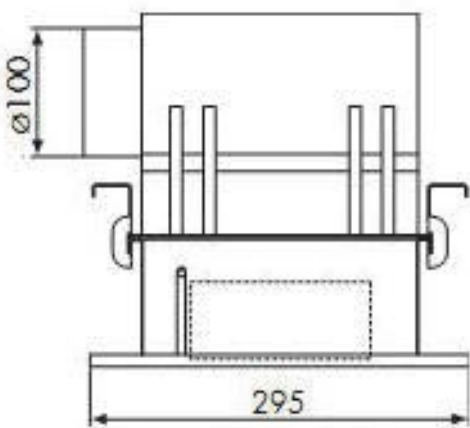
Unit identification

Units arrive on site with an unit model size, coil type, presence identification sticker with of an electric heater, unit handing pictograms, which clearly indicates important information such as the customer order number, job name, unit model, size, coil type, presence of electrical components, handling etc, (See Figure 4).

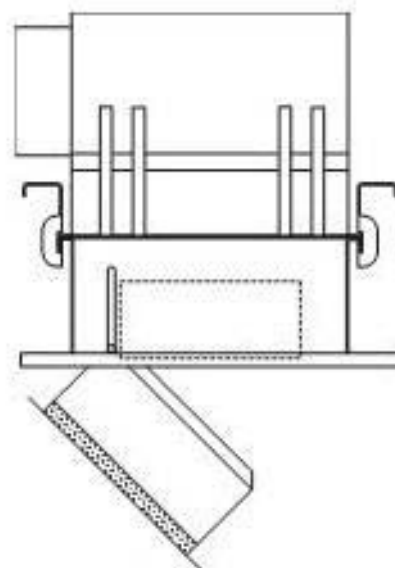
Figure 4 - Unit Identification Sticker



Hinged Front Plate



Shown with optional hanging brackets



Opening front plate

Options

1- Electric Heating

Quick Start Electric Heating is an option on our chilled beams. The minimum heating outputs available on our units are shown in the table 3.

Table 3 - Electric heater output

Unit	Electric power (w)	Heat output (w)
980	1019	750
1270	1321	1000
1570	1633	1200
2170	2257	1650
2770	2881	2150



2- Constant Air Volume Control Dampers Type KVR

Constant volume control dampers made of fire retardant plastics. The range covers an air flow range between 15 up to 700 m³/h within a pressure range from 50 up to 200 Pa. Intermediate air flow settings can be manufactured upon request (price +15%)

Application

- To obtain constant air volumes in ventilation and air conditioning systems within a pressure range between 50 and 200Pa
- For air supply or exhaust duct systems
- Maximum working temperature 60°C

Material

- Fire retardant plastics classified M1

Colour

- Black

Composition

- Body, valve and piston made out of fire retardant plastics M1
- Stainless steel calibrated spring
- Rubber air-tight sealing



Mounting

- To be inserted inside round ducts
- For horizontal or vertical mounting
- When horizontally mounted the marking "BAS" must be horizontal
- To be placed according to the marked airflow direction
- To be placed at a minimum distance of 3x the duct diameter from air supply plenums
- To be placed at a minimum distance of 1x the duct diameter from air exhaust plenums

Sound Data

Chart 1

125 mm KVR Constant Volume Regenerated Noise

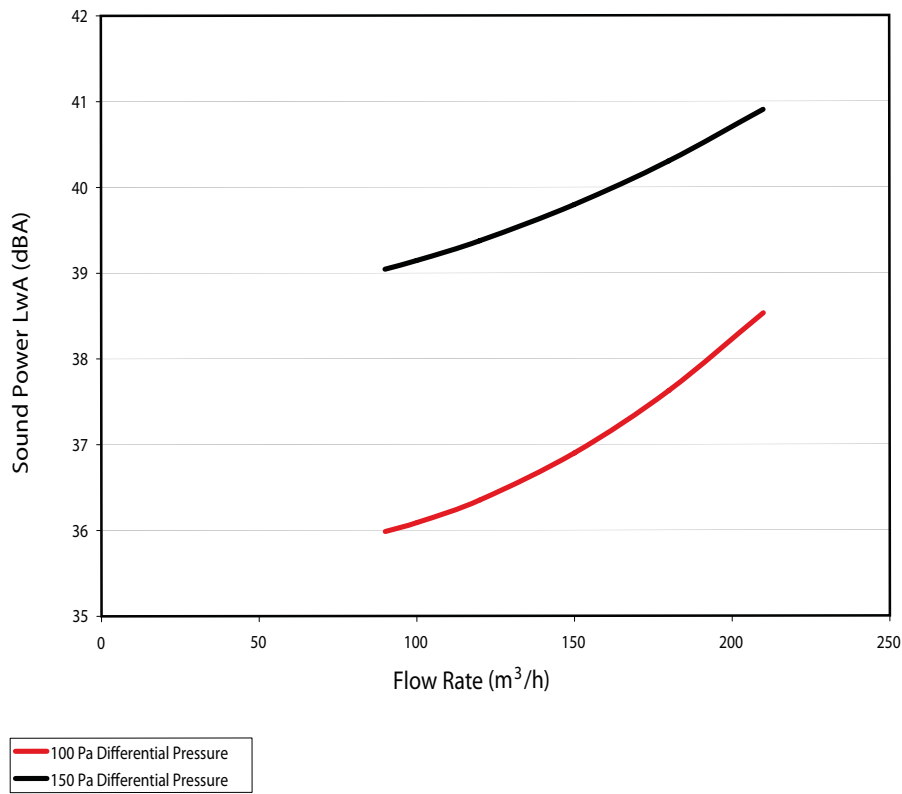
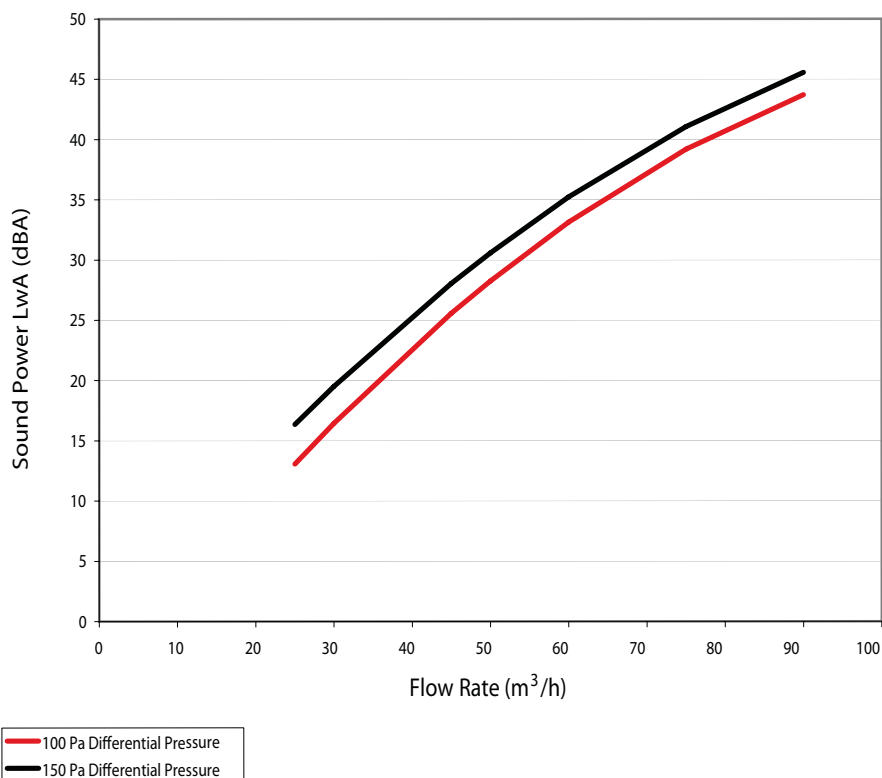


Chart 2

100 mm KVR Constant Volume Regenerated Noise



Options

3- Valves

Honeywell valves are available with our Active Beams. Select from 2 port 3 port dependant on your system. The Advised Valve for the indicated flow rate is given in the table 4 .

Table 4 - Valves

ABM Beam	Valve Flow cap. (l/sec)	Circuit Pr. drop(kPa)	Valve Pd (kPa)	VALVES	Valve type	DN size	Kvs value	Auth. %
ABM 300 980	0.025	0.9	1.14	V5833C1025	3-way mixing,bypass	15mm	1	55.9
ABM 300 980	0.033	1.4	1.38	V5833C1025	3-way mixing,bypass	15mm	1	49.7
ABM 300 980	0.042	2.1	2.24	V5833C1025	3-way mixing,bypass	15mm	1	51.6
ABM 300 1270	0.022	0.8	0.615	V5833C1025	3-way mixing,bypass	15mm	1	43.5
ABM 300 1270	0.031	1.3	1.22	V5833C1025	3-way mixing,bypass	15mm	1	48.4
ABM 300 1270	0.039	1.9	1.93	V5833C1025	3-way mixing,bypass	15mm	1	50.4
ABM 300 1570	0.019	0.6	0.508	V5833C1025	3-way mixing,bypass	15mm	1	45.8
ABM 300 1570	0.028	1.3	0.996	V5833C1025	3-way mixing,bypass	15mm	1	43.4
ABM 300 1570	0.036	2.1	1.65	V5833C1025	3-way mixing,bypass	15mm	1	43.9
ABM 300 2170	0.056	6.7	4.57	V5833C1025	3-way mixing,bypass	15mm	1	40.6
ABM 300 2170	0.069	9.8	15.7	V5823C2025	3-way mixing,bypass	15mm	0.63	61.5
ABM 300 2170	0.084	13.4	8.96	V5823C2025	3-way mixing,bypass	15mm	1	40.1
ABM 300 2770	0.050	6.8	8	V5823C2025	3-way mixing,bypass	15mm	0.63	54.1
ABM 300 2770	0.069	11.6	15.2	V5823C2025	3-way mixing,bypass	15mm	0.63	56.8
ABM 300 2770	0.089	17.7	25.3	V5823C2025	3-way mixing,bypass	15mm	0.63	58.9
ABM 300 980	0.025	0.9	1.14	V5832A1046	2-way	15mm	1	55.9
ABM 300 980	0.033	1.4	1.38	V5832A1046	2-way	15mm	1	49.7
ABM 300 980	0.042	2.1	2.24	V5832A1046	2-way	15mm	1	51.6
ABM 300 1270	0.022	0.8	0.615	V5832A1046	2-way	15mm	1	43.5
ABM 300 1270	0.031	1.3	1.22	V5832A1046	2-way	15mm	1	48.4
ABM 300 1270	0.039	1.9	1.93	V5832A1046	2-way	15mm	1	50.4
ABM 300 1570	0.019	0.6	0.508	V5832A1046	2-way	15mm	1	45.8
ABM 300 1570	0.028	1.3	0.996	V5832A1046	2-way	15mm	1	43.4
ABM 300 1570	0.036	2.1	1.65	V5832A1046	2-way	15mm	1	43.9
ABM 300 2170	0.056	6.7	4.57	V5832A1046	2-way	15mm	1	40.6
ABM 300 2170	0.069	9.8	15.7	V5822A1030	2-way	15mm	0.63	61.5
ABM 300 2170	0.084	13.4	8.96	V5832A1046	2-way	15mm	1	40.1
ABM 300 2770	0.050	6.8	8	V5822A1030	2-way	15mm	0.63	54.1
ABM 300 2770	0.069	11.6	15.2	V5822A1030	2-way	15mm	0.63	56.8
ABM 300 2770	0.089	17.7	25.3	V5822A1030	2-way	15mm	0.63	58.9

Selection Data

Chilled Beam Selection Parameters

Waterloo ABM units should be selected to meet the design specification for the project in question. Each unit should be individually selected, and will be supplied with an reference label to ensure that the installer locates it correctly, and it performs to the design characteristics.

All Beams supplied should match with a technical submittal issued prior to delivery, giving the design characteristics. Any discrepancies should be made known to Waterloo within 1 week of delivery.

Ensure the air flow level to the beam is correct to maintain the correct noise and duty level, and the water flow rate is correct to ensure the coil pressure and duty are also in line with design parameters.

The following five pages give selection examples for various room conditions, heating and cooling duties, water flow rates and air flow rates. Whilst these may not relate exactly to your requirements, it should give a good indication of required performance, and allow correct unit selection. If your requirements are not in direct accordance with the data provided, use the Waterloo Selection program to generate a complete technical submittal.



Optional Reduced Nozzle Pitch

Standard products are offered with a nozzle pitch of 20 mm. Where applications require flow rates where regenerated noise or pressure loss limitations exist, it is possible to compensate by increasing the nozzle area and hence flow rate to maintain nozzle velocity within design values. These design values are equivalent to those on which the standard configuration is based. Consequently the effect of using alternate nozzle areas represents a means of overrating the product by offsetting pressure loss and regenerated noise for little change in capacity. The available option is to reduce the nozzle pitch to 15 mm. The resultant data is provided by pages 26 to 35 of this manual. The selection process is identical to that for the standard pitch. The data is presented in an identical format.



ABM 300 1200mm Unit Selection Data

980mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level Lw A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT			
						$\Delta T=8$	$\Delta T=10$			Pressure Loss	$\Delta T=8,5$	$\Delta T=9,5$	$\Delta T=11$	Pressure Loss	$\Delta T=20$	$\Delta T=30$
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 20																
5.6	20	64	0.7	0.8	21	54	68	90	0.025	0.9	201	217	266	2.6	517	775
								120	0.033	1.4	229	248	303	3.9	588	882
								150	0.042	2.1	252	272	333	5.7	644	966
6.9	25	107	1.2	1.3	22	66	86	90	0.025	0.9	263	284	346	2.6	572	858
								120	0.033	1.4	301	325	398	3.9	653	979
								150	0.042	2.1	332	359	438	5.7	716	1074
8.3	30	152	1.6	1.9	25	80	103	90	0.025	0.9	302	328	400	2.6	624	937
								120	0.033	1.4	349	376	460	3.9	714	1070
								150	0.042	2.1	384	415	506	5.7	784	1176
Nozzle B - 20																
9.7	35	63	1.3	1.5	20	93	120	90	0.025	0.9	187	202	246	2.6	589	884
								120	0.033	1.4	214	231	283	3.9	672	1008
								150	0.042	2.1	236	255	311	5.7	738	1107
11.1	40	80	1.5	1.8	21	107	137	90	0.025	0.9	237	256	312	2.6	656	985
								120	0.033	1.4	272	294	360	3.9	751	1126
								150	0.042	2.1	301	325	397	5.7	826	1239
13.9	50	130	2.0	2.3	24	133	171	90	0.025	0.9	316	341	416	2.6	718	1077
								120	0.033	1.4	364	393	480	3.9	823	1235
								150	0.042	2.1	402	435	533	5.7	907	1361
Nozzle C - 20																
13.9	50	76	1.5	1.7	24	133	171	90	0.025	0.9	230	249	304	2.6	676	1015
								120	0.033	1.4	265	286	350	3.9	774	1162
								150	0.042	2.1	293	316	387	5.7	852	1279
16.7	60	112	1.8	2.1	28	160	205	90	0.025	0.9	288	311	380	2.6	721	1082
								120	0.033	1.4	332	359	438	3.9	827	1241
								150	0.042	2.1	368	398	486	5.7	912	1368
19.4	70	160	2.1	2.4	32	186	240	90	0.025	0.9	353	382	467	2.6	763	1145
								120	0.033	1.4	409	442	539	3.9	877	1316
								150	0.042	2.1	453	489	598	5.7	968	1452
22.2	80	204	2.4	2.7	36	213	274	90	0.025	0.9	415	448	548	2.6	803	1204
								120	0.033	1.4	481	519	634	3.9	924	1386
								150	0.042	2.1	533	576	704	5.7	1021	1531

ABM 300 1500mm Unit Selection Data

1270mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level L _w A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity			Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT		
						ΔT=8	ΔT=10				Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 20																
6.9	25	61	0.6	0.7	18	69	86	80	0.022	0.8	163	177	216	2.1	537	806
								110	0.031	1.3	191	206	252	3.6	625	937
								140	0.039	1.9	213	230	280	5.1	693	1039
8.3	30	86	1.0	1.1	19	82	103	80	0.022	0.8	249	269	327	2.1	604	907
								110	0.031	1.3	291	314	385	3.6	705	1057
								140	0.039	1.9	325	352	430	5.1	783	1175
9.7	35	119	1.3	1.5	20	96	120	80	0.022	0.8	321	346	423	2.1	666	999
								110	0.031	1.3	377	407	498	3.6	779	1169
								140	0.039	1.9	422	456	558	5.1	868	1302
Nozzle B - 20																
11.1	40	53	1.1	1.3	19	110	137	80	0.022	0.8	177	192	235	2.1	591	887
								110	0.031	1.3	209	226	276	3.6	689	1034
								140	0.039	1.9	232	251	307	5.1	766	1149
13.9	50	81	1.5	1.7	20	137	171	80	0.022	0.8	258	287	332	2.1	673	1009
								110	0.031	1.3	291	320	370	3.6	787	1181
								140	0.039	1.9	314	349	402	5.1	877	1315
16.7	60	122	1.8	2.1	24	164	205	80	0.022	0.8	310	335	410	2.1	745	1118
								110	0.031	1.3	368	397	485	3.6	876	1313
								140	0.039	1.9	412	445	544	5.1	978	1467
Nozzle C - 20																
19.4	70	76	1.6	1.9	27	192	240	80	0.022	0.8	247	266	325	2.1	707	1061
								110	0.031	1.3	291	314	384	3.6	829	1244
								140	0.039	1.9	326	351	430	5.1	925	1387
22.2	80	103	1.8	2.1	31	219	274	80	0.022	0.8	304	329	402	2.1	759	1138
								110	0.031	1.3	361	390	476	3.6	892	1338
								140	0.039	1.9	405	437	534	5.1	996	1494
25.0	90	131	2.0	2.4	33	246	308	80	0.022	0.8	363	391	479	2.1	806	1210
								110	0.031	1.3	430	465	568	3.6	950	1425
								140	0.039	1.9	484	523	639	5.1	1063	1595
27.8	100	162	2.3	2.6	36	274	342	80	0.022	0.8	419	453	553	2.1	851	1276
								110	0.031	1.3	499	539	658	3.6	1004	1507
								140	0.039	1.9	562	607	742	5.1	1126	1689

ABM 300 1800mm Unit Selection Data

1570mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level Lw A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water in ΔT			Heating at Various Room to mean Water in ΔT			
						ΔT=8	ΔT=10			Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20	ΔT=30
l/s	m3/h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 20																
8.3	30	53	0.6	0.7	18	82	103	70	0.019	0.6	161	174	212	1.9	563	845
								100	0.028	1.3	194	210	256	3.9	674	1012
								130	0.036	2.1	220	237	289	6.4	759	1139
9.7	35	77	0.9	1.0	20	96	120	70	0.019	0.6	276	299	365	1.9	620	930
								100	0.028	1.3	335	361	442	3.9	745	1118
								130	0.036	2.1	379	410	502	6.4	841	1261
11.1	40	102	1.1	1.3	20	110	137	70	0.019	0.6	341	369	451	1.9	673	1009
								100	0.028	1.3	415	449	548	3.9	811	1216
								130	0.036	2.1	471	509	623	6.4	917	1375
Nozzle B - 20																
13.9	50	53	1.1	1.3	21	137	171	70	0.019	0.6	211	228	279	1.9	626	939
								100	0.028	1.3	242	277	307	3.9	753	1129
								130	0.036	2.1	291	314	384	6.4	849	1274
16.7	60	77	1.4	1.7	25	164	205	70	0.019	0.6	288	317	375	1.9	693	1039
								100	0.028	1.3	346	374	456	3.9	836	1254
								130	0.036	2.1	394	425	520	6.4	946	1419
19.4	70	102	1.7	2.0	28	192	240	70	0.019	0.6	330	357	436	1.9	753	1130
								100	0.028	1.3	403	435	532	3.9	912	1368
								130	0.036	2.1	460	497	607	6.4	1035	1552
Nozzle C - 20																
22.2	80	67	1.5	1.7	31	219	274	70	0.019	0.6	237	256	313	1.9	705	1057
								100	0.028	1.3	288	311	381	3.9	851	1277
								130	0.036	2.1	329	354	433	6.4	964	1446
25.0	90	86	1.7	1.9	34	246	308	70	0.019	0.6	291	314	385	1.9	748	1123
								100	0.028	1.3	355	384	469	3.9	906	1359
								130	0.036	2.1	405	438	536	6.4	1028	1542
30.6	110	131	2.0	2.3	39	301	376	70	0.019	0.6	367	418	482	1.9	827	1240
								100	0.028	1.3	447	483	590	3.9	1006	1509
								130	0.036	2.1	503	544	667	6.4	1145	1717
36.1	130	184	2.4	2.8	43	356	445	70	0.019	0.6	419	453	565	1.9	896	1344
								100	0.028	1.3	528	570	697	3.9	1095	1642
								130	0.036	2.1	607	656	801	6.4	1250	1875

ABM 300 2400mm Unit Selection Data

2170mm Heat Exchanger																
AIRSIDE DATA							WATERSIDE DATA									
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level L _w A (Sound power - 8dB)	Air Cooling capacity Room to AirΔT		Water Quantity		Cooling at Various Room to mean Water in ΔT				Heating at Various Room to mean Water in ΔT		
						ΔT=8	ΔT=10			Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20	ΔT=30
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts				kPa	Watts	
Nozzle A - 20																
13.9	50	75	1.2	1.3	21	137	171	200	0.06	6.7	377	409	483	20.0	967	1450
								250	0.070	9.8	428	469	551	30.0	1125	1688
								300	0.084	13.4	465	508	601	41.8	1247	1871
16.7	60	109	1.6	1.9	22	164	205	200	0.06	6.7	426	463	543	20.0	1087	1631
								250	0.070	9.8	487	530	621	30.0	1269	1904
								300	0.084	13.4	529	575	673	41.8	1409	2114
19.4	70	135	1.9	2.1	24	192	240	200	0.06	6.7	485	530	626	20.0	1199	1798
								250	0.070	9.8	558	606	713	30.0	1402	2103
								300	0.084	13.4	604	656	771	41.8	1562	2344
Nozzle B - 20																
22.2	80	86	1.3	1.5	24	219	274	200	0.06	6.7	505	551	675	20.0	1064	1596
								250	0.070	9.8	596	650	796	30.0	1240	1860
								300	0.084	13.4	667	728	892	41.8	1379	2068
25.0	90	106	1.5	1.8	27	246	308	200	0.06	6.7	631	689	789	20.0	1142	1713
								250	0.070	9.8	744	813	931	30.0	1320	1980
								300	0.084	13.4	833	910	1043	41.8	1477	2216
27.8	100	131	1.8	2.0	29	274	342	200	0.06	6.7	675	737	844	20.0	1211	1817
								250	0.070	9.8	797	870	996	30.0	1417	2125
								300	0.084	13.4	892	974	1115	41.8	1579	2368
Nozzle C - 20																
33.3	120	80	1.7	2.0	30	329	411	200	0.06	6.7	395	428	514	20.0	1176	1764
								250	0.070	9.8	466	505	616	30.0	1356	2034
								300	0.084	13.4	526	567	693	41.8	1518	2277
38.9	140	113	1.9	2.2	35	383	479	200	0.06	6.7	497	526	643	20.0	1273	1909
								250	0.070	9.8	585	620	759	30.0	1492	2238
								300	0.084	13.4	656	695	850	41.8	1665	2498
44.4	160	146	2.1	2.4	37	438	547	200	0.06	6.7	592	629	690	20.0	1366	2049
								250	0.070	9.8	699	742	814	30.0	1606	2408
								300	0.084	13.4	782	831	912	41.8	1793	2689
50.0	180	187	2.3	2.7	41	483	616	200	0.06	6.7	709	794	917	20.0	1451	2176
								250	0.070	9.8	837	937	1082	30.0	1710	2565
								300	0.084	13.4	941	1054	1217	41.8	1913	2870

ABM 300 3000mm Unit Selection Data

2770mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level L _w A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity			Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT		
						ΔT=8	ΔT=10				Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 20																
16.7	60	73	1.0	1.1	19	164	205	180	0.050	6.8	455	497	584	19.1	1020	1530
								250	0.069	11.6	531	580	683	33.9	1188	1781
								320	0.089	17.7	585	638	751	53.3	1317	1975
19.4	70	104	1.3	1.5	21	192	240	180	0.050	6.8	530	576	677	19.1	1148	1721
								250	0.069	11.6	621	674	792	33.9	1340	2009
								320	0.089	17.7	683	742	871	53.3	1488	2232
22.2	80	134	1.6	1.8	24	219	274	180	0.050	6.8	604	656	774	19.1	1265	1898
								250	0.069	11.6	707	768	905	33.9	1480	2220
								320	0.089	17.7	778	845	996	53.3	1649	2474
Nozzle B - 20																
25.0	90	64	1.1	1.3	22	246	308	180	0.050	6.8	555	617	707	19.1	1123	1684
								250	0.069	11.6	649	721	823	33.9	1309	1964
								320	0.089	17.7	726	807	922	53.3	1455	2183
30.6	110	91	1.5	1.7	27	301	376	180	0.050	6.8	633	706	806	19.1	1279	1918
								250	0.069	11.6	741	826	943	33.9	1495	2243
								320	0.089	17.7	815	909	1037	53.3	1666	2499
36.1	130	131	1.8	2.1	33	356	445	180	0.050	6.8	696	776	886	19.1	1416	2123
								250	0.069	11.6	779	869	992	33.9	1664	2497
								320	0.089	17.7	841	938	1071	53.3	1858	2787
Nozzle C - 20																
41.7	150	74	1.7	2.0	33	411	513	180	0.050	6.8	670	718	799	19.1	1343	2015
								250	0.069	11.6	737	790	879	33.9	1575	2363
								320	0.089	17.7	796	853	949	53.3	1758	2636
47.2	170	94	2.0	2.3	36	465	582	180	0.050	6.8	751	804	895	19.1	1442	2163
								250	0.069	11.6	827	862	849	33.9	1695	2542
								320	0.089	17.7	885	915	984	53.3	1892	2839
52.8	190	119	2.2	2.5	39	520	650	180	0.050	6.8	833	892	993	19.1	1531	2297
								250	0.069	11.6	933	999	1112	33.9	1805	2708
								320	0.089	17.7	1023	1088	1201	53.3	2020	3030
58.3	210	146	2.4	2.7	41	575	719	180	0.050	6.8	908	972	1082	19.1	1617	2425
								250	0.069	11.6	992	1049	1169	33.9	1908	2861
								320	0.089	17.7	1051	1111	1239	53.3	2139	3209

980mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room
	l/s	m3/h		Pa	250	500	1k	2k	4k		
Product: ABM 300 Heat Exchanger Length: 980mm	5.6	20	64	22.0	23.0	22.0	18.0	19.0	21.0	28.9	20.9
Nozzle configuration: A20 Finish: RAL 9010	6.9	25	107	22.0	24.0	25.0	22.0	20.0	21.0	30.5	22.5
Plenum: Standard Lined	8.4	30	152	23.0	26.0	28.0	25.0	21.0	21.0	32.5	24.5
Product: ABM 300 Heat Exchanger Length: 980mm	9.8	35	63	20.0	20.0	21.0	18.0	19.0	21.0	27.7	19.7
Nozzle configuration: B20 Finish: RAL 9010	11.0	40	80	21.0	22.0	24.0	21.0	20.0	21.0	29.5	21.5
Plenum: Standard Lined	13.8	50	130	22.0	25.0	27.0	25.0	21.0	21.0	31.9	23.9
Product: ABM 300 Heat Exchanger Length: 980mm	13.9	50	76	22.0	28.0	27.0	21.0	20.0	21.0	32.2	24.2
Nozzle configuration: C20 Finish: RAL 9010	16.7	60	112	25.0	32.0	31.0	25.0	20.0	21.0	35.7	27.7
Plenum: Standard Lined	19.4	70	160	28.0	36.0	37.0	31.0	23.0	21.0	40.5	32.5
	22.2	80	204	29.0	39.0	40.0	35.0	26.0	22.0	43.5	35.5

1270mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room
	l/s	m ³ /h		250	500	1k	2k	4k	8k		
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: A20 Finish: RAL 9010 Plenum: Standard Lined	6.9	25	61	15.0	18.0	17.0	17.0	19.0	21.0	26.0	18.0
	8.3	30	86	15.0	20.0	18.0	19.0	20.0	21.0	27.0	19.0
	9.8	35	119	17.0	22.0	21.0	21.0	20.0	21.0	28.4	20.4
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	11.1	40	53	16.0	19.0	19.0	17.0	20.0	21.0	26.8	18.8
	13.9	50	81	18.0	23.0	21.0	19.0	20.0	21.0	28.4	20.4
	16.7	60	122	22.0	28.0	26.0	23.0	21.0	21.0	32.1	24.1
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	76	24.0	32.0	28.0	21.0	20.0	21.0	34.5	26.5
	22.3	80	103	27.0	36.0	33.0	27.0	21.0	21.0	38.6	30.6
	25.0	90	131	29.0	38.0	37.0	31.0	22.0	21.0	41.4	33.4
	27.8	100	162	31.0	41.0	40.0	34.0	25.0	21.0	44.3	36.3

1570mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room
	l/s	m ³ /h		250	500	1k	2k	4k	8k		
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: A20 Finish: RAL 9010 Plenum: Standard Lined	8.3	30	49	14.0	18.0	17.0	17.0	19.0	21.0	26.0	18.0
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	9.7	35	67	16.0	23.0	20.0	18.0	19.0	21.0	27.8	19.8
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	11.2	40	87	17.0	23.0	21.0	19.0	19.0	21.0	28.2	20.2
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	14.0	50	53	19.0	24.0	24.0	19.0	19.0	21.0	29.4	21.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	77	22.0	29.0	28.0	22.0	20.0	21.0	32.9	24.9
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	102	24.0	32.0	31.0	26.0	20.0	21.0	35.7	27.7
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	22.2	80	67	27.0	36.0	33.0	28.0	21.0	21.0	38.7	30.7
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	25.0	90	86	29.0	39.0	37.0	30.0	22.0	21.0	41.8	33.8
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	30.6	110	131	33.0	43.0	43.0	37.0	25.0	21.0	46.8	38.8
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	36.1	130	184	36.0	47.0	47.0	43.0	32.0	22.0	51.0	43.0

2170mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room
	l/s	m ³ /h		Pa	250	500	1k	2k	4k		
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: A20 Finish: RAL 9010 Plenum: Standard Lined	13.9	50	75	21.0	23.0	23.0	20.0	19.0	21.0	29.2	21.2
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	109	17.0	24.0	25.0	22.0	20.0	21.0	30.0	22.0
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	135	18.0	27.0	28.0	24.0	21.0	21.0	32.3	24.3
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	22.2	80	113	21.0	28.0	27.0	23.0	20.0	21.0	32.3	24.3
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	25.1	90	146	22.0	31.0	30.0	27.0	21.0	21.0	35.0	27.0
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	27.8	100	187	24.0	33.0	33.0	29.0	22.0	21.0	37.3	29.3
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	33.3	120	80	27.0	34.0	33.0	28.0	21.0	21.0	37.7	29.7
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	38.9	140	113	29.0	39.0	38.0	34.0	24.0	21.0	42.5	34.5
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	44.4	160	146	32.0	41.0	42.0	37.0	25.0	21.0	45.5	37.5
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	50.1	180	187	34.0	44.0	45.0	41.0	30.0	24.0	48.6	40.6

2770mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room		
	l/s	m3/h		250	500	1k	2k	4k	8k			LWA	dBA
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: A20 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	73	15.0	19.0	17.0	20.0	20.0	21.0	20.0	21.0	26.9	18.9
	19.5	70	104	18.0	22.0	21.0	22.0	22.0	21.0	22.0	21.0	29.0	21.0
	22.2	80	134	18.0	26.0	24.0	25.0	24.0	22.0	24.0	22.0	31.6	23.6
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: B20 Finish: RAL 9010 Plenum: Standard Lined	25.0	90	64	23.0	26.0	23.0	18.0	20.0	21.0	20.0	21.0	30.4	22.4
	30.6	110	91	25.0	32.0	30.0	24.0	21.0	21.0	24.0	21.0	35.3	27.3
	36.2	130	131	29.0	37.0	36.0	32.0	25.0	22.0	25.0	22.0	40.7	32.7
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C20 Finish: RAL 9010 Plenum: Standard Lined	41.8	150	74	30.0	38.0	36.0	26.0	20.0	21.0	20.0	21.0	40.8	32.8
	47.2	170	94	32.0	41.0	40.0	31.0	21.0	21.0	31.0	21.0	44.1	36.1
	52.9	190	119	34.0	43.0	44.0	37.0	25.0	21.0	37.0	21.0	47.2	39.2
58.3	210	146	36.0	45.0	46.0	40.0	27.0	22.0	40.0	27.0	49.3	41.3	

ABM 300 1200mm Unit Selection Data

980mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level L _w A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT			
						ΔT=8	ΔT=10			Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20	ΔT=30
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 15																
5.6	20	36	0.3	0.3	20	54	68	90	0.025	0.9	167	180	220	2.6	523	783
								120	0.033	1.4	190	206	251	3.9	594	891
								150	0.042	2.1	208	225	275	5.7	649	972
6.9	25	57	0.6	0.7	21	66	86	90	0.025	0.9	230	249	302	2.6	581	871
								120	0.033	1.4	262	283	346	3.9	662	992
								150	0.042	2.1	289	313	381	5.7	724	1087
8.3	30	83	0.9	1.1	23	80	103	90	0.025	0.9	293	319	389	2.6	631	948
								120	0.033	1.4	338	366	446	3.9	721	1080
								150	0.042	2.1	372	402	491	5.7	971	1186
Nozzle B - 15																
9.7	35	34	0.9	1.1	19	93	120	90	0.025	0.9	190	205	250	2.6	597	895
								120	0.033	1.4	217	234	287	3.9	680	1019
								150	0.042	2.1	239	258	315	5.7	745	1117
11.1	40	45	1.1	1.3	20	107	137	90	0.025	0.9	241	260	317	2.6	665	998
								120	0.033	1.4	276	298	365	3.9	759	1139
								150	0.042	2.1	305	330	402	5.7	835	1251
13.9	50	72	1.4	1.7	22	133	171	90	0.025	0.9	322	348	424	2.6	730	1094
								120	0.033	1.4	370	400	488	3.9	835	1252
								150	0.042	2.1	408	441	540	5.7	918	1377
Nozzle C - 15																
13.9	50	41	1.1	1.3	21	133	171	90	0.025	0.9	234	253	309	2.6	685	1029
								120	0.033	1.4	269	290	355	3.9	783	1175
								150	0.042	2.1	297	320	392	5.7	861	1292
16.7	60	60	1.3	1.6	25	160	205	90	0.025	0.9	293	317	387	2.6	731	1098
								120	0.033	1.4	337	365	444	3.9	838	1257
								150	0.042	2.1	372	404	493	5.7	922	1383
19.4	70	84	1.6	1.8	28	186	240	90	0.025	0.9	360	390	476	2.6	776	1164
								120	0.033	1.4	416	449	547	3.9	890	1334
								150	0.042	2.1	460	496	606	5.7	980	1470
22.2	80	111	1.8	2.1	32	213	274	90	0.025	0.9	424	457	559	2.6	817	1225
								120	0.033	1.4	490	529	644	3.9	938	1406
								150	0.042	2.1	542	586	715	5.7	1035	1551

ABM 300 1500mm Unit Selection Data

1270mm Heat Exchanger																	
AIRSIDE DATA								WATERSIDE DATA									
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level Lw A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT				
						$\Delta T=8$	$\Delta T=10$			Pressure Loss	$\Delta T=8,5$	$\Delta T=9,5$	$\Delta T=11$	Pressure Loss	$\Delta T=20$	$\Delta T=30$	
l/s	m3/h	Pa	m		dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 15																	
6.9	25	34	0.2	0.3	17	69	86	80	0.022	0.8	161	176	214	2.1	544	816	
								110	0.031	1.3	188	204	249	3.6	632	947	
								140	0.039	1.9	209	227	276	5.1	700	1049	
8.3	30	49	0.5	0.6	18	82	103	80	0.022	0.8	228	246	300	2.1	613	920	
								110	0.031	1.3	266	287	352	3.6	714	1070	
								140	0.039	1.9	297	321	392	5.1	792	1188	
9.7	35	67	0.7	0.9	19	96	120	80	0.022	0.8	295	319	389	2.1	677	1016	
								110	0.031	1.3	346	374	457	3.6	790	1186	
								140	0.039	1.9	386	418	511	5.1	879	1319	
Nozzle B - 15																	
11.1	40	29	0.8	0.9	19	110	137	80	0.022	0.8	180	195	240	2.1	600	900	
								110	0.031	1.3	212	229	280	3.6	698	1047	
								140	0.039	1.9	235	254	311	5.1	775	1162	
13.9	50	46	1.0	1.2	19	137	171	80	0.022	0.8	263	292	339	2.1	384	1025	
								110	0.031	1.3	296	325	377	3.6	798	1197	
								140	0.039	1.9	319	354	409	5.1	888	1331	
16.7	60	67	1.3	1.5	21	164	205	80	0.022	0.8	317	342	418	2.1	759	1138	
								110	0.031	1.3	375	404	493	3.6	890	1334	
								140	0.039	1.9	419	452	552	5.1	992	1487	
Nozzle C - 15																	
19.4	70	43	1.2	1.4	22	192	240	80	0.022	0.8	252	272	332	2.1	721	1080	
								110	0.031	1.3	296	321	391	3.6	843	1263	
								140	0.039	1.9	331	357	437	5.1	939	1406	
22.2	80	57	1.4	1.6	26	219	274	80	0.022	0.8	311	337	411	2.1	774	1159	
								110	0.031	1.3	368	398	485	3.6	907	1359	
								140	0.039	1.9	412	445	543	5.1	1011	1515	
25.0	90	72	1.5	1.8	29	246	308	80	0.022	0.8	372	401	490	2.1	823	1234	
								110	0.031	1.3	439	475	579	3.6	967	1449	
								140	0.039	1.9	493	533	650	5.1	1080	1619	
27.8	100	90	1.7	2.0	32	274	342	80	0.022	0.8	429	464	566	2.1	870	1303	
								110	0.031	1.3	509	550	672	3.6	1023	1534	
								140	0.039	1.9	572	618	755	5.1	1145	1717	

ABM 300 1800mm Unit Selection Data

1570mm Heat Exchanger																	
AIRSIDE DATA									WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level Lw A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT				
						$\Delta T=8$	$\Delta T=10$			Pressure Loss	$\Delta T=8,5$	$\Delta T=9,5$	$\Delta T=11$	Pressure Loss	$\Delta T=20$	$\Delta T=30$	
l/s	m3/h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts			
Nozzle A - 15																	
8.3	30	29	0.2	0.3	16	82	103	70	0.019	0.6	163	176	215	1.9	572	858	
								100	0.028	1.3	196	212	259	3.9	683	1025	
								130	0.036	2.1	222	239	292	6.4	768	1152	
9.7	35	41	0.4	0.5	18	96	120	70	0.019	0.6	216	233	285	1.9	629	943	
								100	0.028	1.3	260	281	344	3.9	754	1131	
								130	0.036	2.1	295	318	390	6.4	850	1274	
11.1	40	54	0.6	0.7	20	110	137	70	0.019	0.6	276	298	365	1.9	682	1022	
								100	0.028	1.3	335	362	442	3.9	820	1229	
								130	0.036	2.1	380	410	502	6.4	926	1388	
Nozzle B - 15																	
13.9	50	30	1.0	1.1	18	137	171	70	0.019	0.6	216	234	285	1.9	640	959	
								100	0.028	1.3	247	283	313	3.9	767	1149	
								130	0.036	2.1	296	320	390	6.4	863	1294	
16.7	60	43	1.0	1.2	22	164	205	70	0.019	0.6	295	325	383	1.9	707	1059	
								100	0.028	1.3	353	382	464	3.9	850	1274	
								130	0.036	2.1	401	433	528	6.4	960	1439	
19.4	70	58	1.2	1.4	24	192	240	70	0.019	0.6	339	367	447	1.9	767	1150	
								100	0.028	1.3	412	445	543	3.9	926	1388	
								130	0.036	2.1	469	509	618	6.4	1049	1572	
Nozzle C - 15																	
22.2	80	37	1.3	1.5	27	219	274	70	0.019	0.6	243	263	321	1.9	721	1081	
								100	0.028	1.3	294	318	389	3.9	867	1302	
								130	0.036	2.1	335	361	441	6.4	981	1470	
25.0	90	47	1.5	1.7	30	246	308	70	0.019	0.6	298	322	394	1.9	764	1147	
								100	0.028	1.3	362	392	478	3.9	922	1383	
								130	0.036	2.1	412	444	545	6.4	1044	1566	
30.6	110	72	1.8	2.1	35	301	376	70	0.019	0.6	378	430	495	1.9	848	1270	
								100	0.028	1.3	458	495	603	3.9	1027	1539	
								130	0.036	2.1	514	559	680	6.4	1166	1747	
36.1	130	101	2.1	2.4	39	356	445	70	0.019	0.6	433	468	582	1.9	920	1379	
								100	0.028	1.3	542	585	615	3.9	1119	1677	
								130	0.036	2.1	621	671	818	6.4	1274	1910	

ABM 300 2400mm Unit Selection Data

2170mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level Lw A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT			Heating at Various Room to mean Water ΔT			
						$\Delta T=8$	$\Delta T=10$			Pressure Loss	$\Delta T=8,5$	$\Delta T=9,5$	$\Delta T=11$	Pressure Loss	$\Delta T=20$	$\Delta T=30$
l/s	m ³ /h	Pa	m	dB(A)	Watts		l/h	l/s	kPa	Watts			kPa	Watts		
Nozzle A - 15																
13.9	50	46	0.6	0.7	17	137	171	200	0.056	6.7	383	415	489	20.0	979	1467
								250	0.070	9.8	434	475	557	30.0	1137	1705
								300	0.084	13.4	471	514	607	41.8	1259	1888
16.7	60	63	0.9	1.1	21	164	205	200	0.056	6.7	432	469	549	20.0	1099	1648
								250	0.070	9.8	493	536	627	30.0	1281	1921
								300	0.084	13.4	535	581	679	41.8	1421	2131
19.4	70	83	1.3	1.5	22	192	240	200	0.056	6.7	497	540	636	20.0	1211	1815
								250	0.070	9.8	568	616	723	30.0	1414	2119
								300	0.084	13.4	614	666	781	41.8	1574	2361
Nozzle B - 15																
22.2	80	49	0.9	1.1	21	219	274	200	0.056	6.7	513	559	684	20.0	1077	1615
								250	0.070	9.8	604	658	805	30.0	1253	1879
								300	0.084	13.4	675	736	901	41.8	1392	2087
25.0	90	61	1.1	1.3	24	246	308	200	0.056	6.7	641	700	802	20.0	1158	1735
								250	0.070	9.8	754	824	942	30.0	1336	2002
								300	0.084	13.4	843	921	1055	41.8	1490	2238
27.8	100	75	1.2	1.4	26	274	342	200	0.056	6.7	687	750	859	20.0	1229	1841
								250	0.070	9.8	809	883	1011	30.0	1435	2149
								300	0.084	13.4	904	987	1130	41.8	1597	2392
Nozzle C - 15																
33.3	120	45	1.3	1.5	25	329	411	200	0.056	6.7	403	436	522	20.0	1192	1786
								250	0.070	9.8	474	513	624	30.0	1373	2056
								300	0.084	13.4	534	575	701	41.8	1534	2299
38.9	140	62	1.5	1.8	30	383	479	200	0.056	6.7	507	536	653	20.0	1293	1937
								250	0.070	9.8	595	630	769	30.0	1512	2266
								300	0.084	13.4	666	705	860	41.8	1686	2526
44.4	160	81	1.7	2.0	33	438	547	200	0.056	6.7	604	641	702	20.0	1390	2081
								250	0.070	9.8	711	754	826	30.0	1630	2440
								300	0.084	13.4	796	843	924	41.8	1817	2721
50.0	180	103	2.0	2.3	36	483	616	200	0.056	6.7	725	811	936	20.0	1476	2213
								250	0.070	9.8	853	954	1101	30.0	1735	2602
								300	0.084	13.4	957	1071	1236	41.8	1938	2907

ABM 300 3000mm Unit Selection Data

2770mm Heat Exchanger																
AIRSIDE DATA								WATERSIDE DATA								
Supply Air Quantity Primary		Static Pressure Loss	Cooling Throw	Heating Throw	Sound Level L _w A (Sound power - 8dB)	Air Cooling capacity Room to Air ΔT		Water Quantity		Cooling at Various Room to mean Water ΔT				Heating at Various Room to mean Water ΔT		
						ΔT=8	ΔT=10			Pressure Loss	ΔT=8,5	ΔT=9,5	ΔT=11	Pressure Loss	ΔT=20	ΔT=30
l/s	m ³ /h	Pa	m	dB(A)	Watts	l/h	l/s	kPa	Watts	kPa	Watts	kPa	Watts			
Nozzle A - 15																
16.7	60	43	0.5	0.6	17	164	205	180	0.050	6.8	464	506	593	19.1	1040	1560
								250	0.069	11.6	540	589	692	33.9	1208	1811
								320	0.089	17.7	594	647	760	53.3	1337	2005
19.4	70	58	0.7	0.8	19	192	240	180	0.050	6.8	541	587	688	19.1	1168	1751
								250	0.069	11.6	632	685	803	33.9	1360	2039
								320	0.089	17.7	694	753	882	53.3	1508	2262
22.2	80	76	1.0	1.1	21	219	274	180	0.050	6.8	619	671	789	19.1	1285	1928
								250	0.069	11.6	722	783	920	33.9	1500	2250
								320	0.089	17.7	793	860	1011	53.3	1669	2504
Nozzle B - 15																
25.0	90	33	0.8	0.9	19	246	308	180	0.050	6.8	567	629	719	19.1	1140	1709
								250	0.069	11.6	661	733	835	33.9	1326	1989
								320	0.089	17.7	738	819	934	53.3	1472	2208
30.6	110	51	1.0	1.2	24	301	376	180	0.050	6.8	637	720	818	19.1	1300	1949
								250	0.069	11.6	755	840	957	33.9	1516	2274
								320	0.089	17.7	829	923	1051	53.3	1687	2530
36.1	130	72	1.3	1.5	28	356	445	180	0.050	6.8	713	793	901	19.1	1442	2160
								250	0.069	11.6	796	886	1005	33.9	1690	2534
								320	0.089	17.7	858	955	1088	53.3	1884	2824
Nozzle C - 15																
41.7	150	41	1.3	1.5	28	411	513	180	0.050	6.8	684	732	813	19.1	1364	2046
								250	0.069	11.6	751	804	893	33.9	1596	2394
								320	0.089	17.7	810	867	963	53.3	1779	2667
47.2	170	52	1.4	1.7	32	465	582	180	0.050	6.8	768	821	912	19.1	1467	2201
								250	0.069	11.6	844	879	866	33.9	1720	2580
								320	0.089	17.7	902	932	1000	53.3	1917	2877
52.8	190	66	1.6	1.9	35	520	650	180	0.050	6.8	854	913	1014	19.1	1558	2340
								250	0.069	11.6	954	1020	1133	33.9	1832	2751
								320	0.089	17.7	1045	1109	1222	53.3	2047	3073
58.3	210	80	1.8	2.1	38	575	719	180	0.050	6.8	932	996	1106	19.1	1651	2475
								250	0.069	11.6	1024	1073	1193	33.9	1942	2911
								320	0.089	17.7	1083	1135	1263	53.3	2173	3259

980mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room	
	l/s	m3/h		Pa	250	500	1k	2k	4k			8k
Product: ABM 300 Heat Exchanger Length: 980mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	5.6	20	36	18.0	19.0	19.0	20.0	21.0	21.0	22.0	27.8	19.8
	6.9	25	57	18.0	20.0	21.0	21.0	22.0	22.0	22.0	28.6	20.6
	8.4	30	83	22.0	23.0	24.0	23.0	22.0	22.0	22.0	30.5	22.5
Product: ABM 300 Heat Exchanger Length: 980mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	9.8	35	34	17.0	20.0	18.0	18.0	20.0	20.0	22.0	27.3	19.3
	11.0	40	45	20.0	22.0	21.0	18.0	20.0	20.0	22.0	28.5	20.5
	13.8	50	72	21.0	25.0	24.0	21.0	20.0	20.0	22.0	30.3	22.3
Product: ABM 300 Heat Exchanger Length: 980mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	13.9	50	41	21.0	25.0	20.0	18.0	20.0	20.0	22.0	29.4	21.4
	16.7	60	60	24.0	30.0	27.0	21.0	20.0	20.0	22.0	33.3	25.3
	19.4	70	84	26.0	33.0	30.0	23.0	21.0	23.0	23.0	35.9	27.9
	22.2	80	111	29.0	36.0	35.0	28.0	22.0	24.0	24.0	39.5	31.5

1270mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room	
	l/s	m3/h		Pa	250	500	1k	2k	4k			8k
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	6.9	25	34	14.0	16.0	16.0	16.0	19.0	21.0	21.0	25.4	17.4
	8.3	30	49	15.0	17.0	17.0	17.0	20.0	21.0	21.0	26.1	18.1
	9.8	35	67	16.0	19.0	18.0	18.0	20.0	21.0	21.0	26.7	18.7
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	11.1	40	29	15.0	17.0	19.0	19.0	20.0	21.0	21.0	26.7	18.7
	13.9	50	46	16.0	19.0	20.0	20.0	20.0	21.0	21.0	27.4	19.4
	16.7	60	67	18.0	21.0	23.0	22.0	21.0	21.0	21.0	29.0	21.0
Product: ABM 300 Heat Exchanger Length: 1270mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	43	20.0	24.0	23.0	22.0	20.0	21.0	21.0	29.7	21.7
	22.3	80	57	23.0	30.0	28.0	24.0	21.0	21.0	21.0	33.7	25.7
	25.0	90	72	26.0	33.0	32.0	26.0	22.0	22.0	22.0	36.7	28.7
	27.8	100	90	28.0	37.0	35.0	28.0	24.0	23.0	23.0	40.0	32.0

1570mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)							Broadband	-8db for room
	l/s	m3/h		Pa	250	500	1k	2k	4k	8k		
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	8.3	30	29	13.0	15.0	15.0	15.0	18.0	20.0	20.0	24.4	16.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	9.7	35	41	14.0	16.0	16.0	16.0	20.0	21.0	21.0	25.7	17.7
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	11.2	40	54	18.0	21.0	20.0	19.0	20.0	21.0	21.0	27.7	19.7
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	14.0	50	30	15.0	19.0	17.0	17.0	20.0	21.0	21.0	26.4	18.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	43	18.0	25.0	23.0	21.0	20.0	21.0	21.0	29.7	21.7
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	58	21.0	28.0	27.0	23.0	21.0	22.0	22.0	32.4	24.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	22.2	80	37	23.0	32.0	30.0	26.0	21.0	22.0	22.0	35.4	27.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	25.0	90	47	26.0	36.0	32.0	28.0	21.0	22.0	22.0	38.4	30.4
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	30.6	110	72	29.0	41.0	26.0	31.0	22.0	22.0	22.0	41.9	33.9
Product: ABM 300 Heat Exchanger Length: 1570mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	36.1	130	101	32.0	45.0	40.0	35.0	24.0	23.0	23.0	46.7	38.7

2170mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room	
	l/s	m ³ /h		Pa	250	500	1k	2k	4k			8k
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	13.9	50	46	13.0	17.0	16.0	17.0	18.0	21.0	21.0	25.4	17.4
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	63	17.0	23.0	22.0	20.0	20.0	21.0	21.0	28.7	20.7
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	19.4	70	83	19.0	26.0	24.0	21.0	21.0	21.0	21.0	30.4	22.4
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	22.2	80	49	18.0	23.0	21.0	21.0	20.0	21.0	21.0	28.7	20.7
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	25.1	90	61	20.0	28.0	26.0	24.0	20.0	21.0	21.0	32.1	24.1
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	27.8	100	75	22.0	30.0	29.0	25.0	21.0	21.0	21.0	34.0	26.0
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	33.3	120	45	23.0	29.0	27.0	24.0	20.0	21.0	21.0	32.9	24.9
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	38.9	140	62	26.0	35.0	32.0	26.0	21.0	21.0	21.0	37.6	29.6
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	44.4	160	81	29.0	38.0	35.0	28.0	22.0	22.0	22.0	40.5	32.5
Product: ABM 300 Heat Exchanger Length: 2170mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	50.1	180	103	32.0	42.0	38.0	30.0	24.0	24.0	24.0	44.0	36.0

2770mm Coil Unit Sound Data

Unit	Air Volume		Plenum pressure	Frequency (Hz)						Broadband	- 8db for room
	l/s	m ³ /h		Pa	250	500	1k	2k	4k		
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: A15 Finish: RAL 9010 Plenum: Standard Lined	16.7	60	43	13.0	17.0	17.0	16.0	18.0	21.0	25.4	17.4
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	19.5	70	58	15.0	19.0	18.0	17.0	20.0	21.0	26.5	18.5
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	22.2	80	76	18.0	23.0	21.0	20.0	20.0	21.0	28.5	20.5
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: B15 Finish: RAL 9010 Plenum: Standard Lined	25.0	90	33	18.0	21.0	19.0	18.0	19.0	21.0	27.3	19.3
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	30.6	110	51	22.0	27.0	25.0	23.0	20.0	21.0	31.5	23.5
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	36.2	130	72	26.0	32.0	30.0	27.0	22.0	21.0	35.8	27.8
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	41.8	150	41	27.0	33.0	31.0	24.0	20.0	21.0	36.3	28.3
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	47.2	170	52	29.0	37.0	35.0	28.0	21.0	21.0	39.9	31.9
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	52.9	190	66	31.0	40.0	38.0	31.0	23.0	22.0	42.8	34.8
Product: ABM 300 Heat Exchanger Length: 2770mm Nozzle configuration: C15 Finish: RAL 9010 Plenum: Standard Lined	58.3	210	80	33.0	43.0	41.0	35.0	25.0	23.0	45.8	37.8