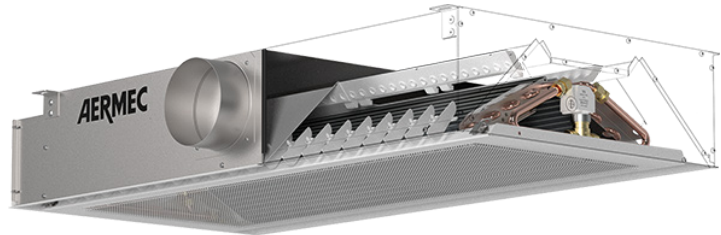


EHT

Active chilled beams

Primary air flow rate for single unit 17,0 ÷ 947,0 m³/h
Nominal width 600 mm

- Easy installation, thanks to the integrated valves.
- Extremely high induction ratios.
- High primary air flow rate at required low useful static pressure.
- Double water-side heat exchanger with low pressure drops.
- 4-pipe unit that can be installed in both 2-pipe and 4-pipe systems.



DESCRIPTION

The EHT series is the new generation of active chilled beams developed by Aermec in partnership with Aachen **University** (Germany). These terminals are particularly easy to install because their dimensions are compatible with modular 600 x 600 mm suspended ceilings and they are already fitted with hydronic control components (each terminal has two 2-way valves, one for the hot circuit and one for the cold circuit, and actuators).

The ease of installation is also linked to other factors, such as:

- possibility of front or side hydraulic connection,
- primary air connection on both sides,
- possibility of adjacent installations,
- reduced terminal height.

The innovative nozzle geometry was developed and optimised with the help of CFD analyses and verified with accurate aerodynamic tests in the Aermec and Aachen University laboratories.

The result of the research was a terminal with a high specific Watt per metre power, which reduces the number of terminals and thus lower costs and space requirements.

Aerodynamic optimisation results in low pressure drops leading to reduced ventilation consumption and noise.

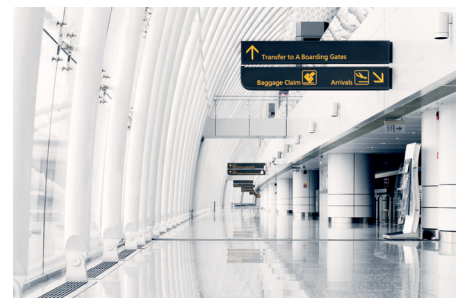
The use of two inclined heat exchangers maximises the exchange area and halves the hydraulic pressure drops, thereby providing maximum system efficiency.

Simple access to all components makes maintenance and cleaning quick and easy.

A system of this type is able to limit operating costs thanks to its high energy efficiency, which also safeguards the environment. This is one of Aermec's foremost goals, as it skilfully develops its products combining maximum practicality with the minimum environmental impact. Chilled Beams are terminals that work in cooling mode with medium temperature water, so that the chillers feeding them can work at maximum efficiency. Room humidity is controlled by Primary Air Handling Units, this way mould and bacterial growth is prevented from forming because there is no condensation in the rooms.

APPLICATION

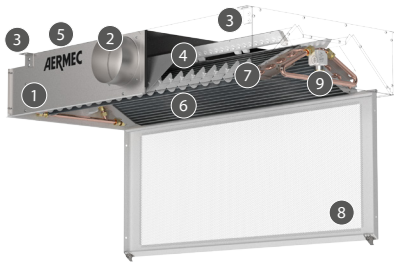
Chilled beams are suitable for ventilation, cooling and heating of rooms up to 4 m high. They can be installed in open space offices, airports, train stations and hospital wards and always ensure that the air is exchanged properly and evenly distributed by optimising the temperature throughout.



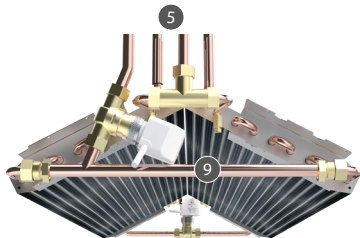
ADVANTAGES OF THE EHT ACTIVE CHILLED BEAMS RANGE

- Quiet operation, thanks to the innovative design of the nozzles and the lack of moving parts;
- Energy savings;
- Optimum environmental comfort because of the perfect air distribution;
- Excellent hygiene standards: the primary air is dehumidified during the initial treatment phase, so there is no condensate at all on the chilled beam, eliminating the root cause of mould proliferation caused by stagnating condensate;
- Optimum access to components: the components are accessed from below, just by opening the suction grille;
- Continuous service, thanks to the head positioning of two adjacent units;
- No maintenance: filtering is handled by the air treatment unit.

MAIN COMPONENTS



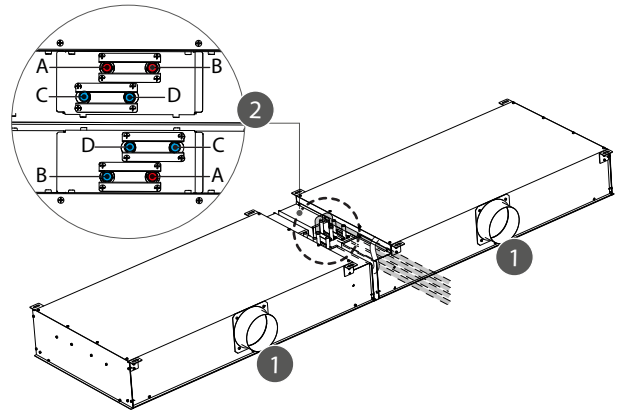
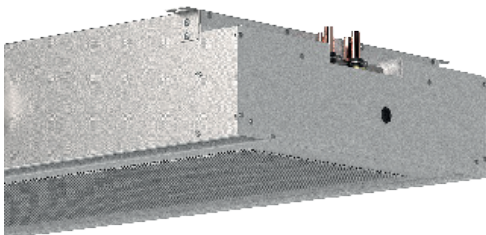
1. Plenum
2. Primary air inlet
3. Suspension brackets
4. Nozzles
5. Hydraulic connections
6. Coils
7. Deflectors
8. Grille
9. Control component



Hydraulic connections and control components on the hydronic side (two 2-way valves and actuators inside the terminal).

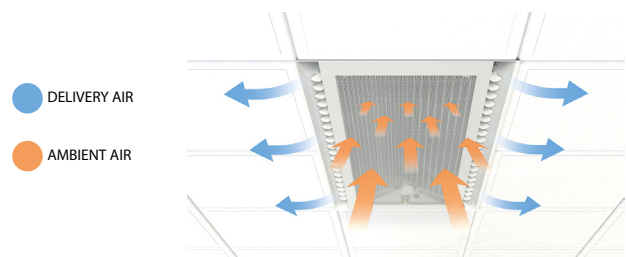
HYDRAULIC CONNECTIONS

Hydraulic connections can be done on the side or front.



- A. Outlet
 B. Inlet
 C. Outlet
 D. Inlet
1. Primary air inlet
 2. Hydraulic connections

AIR FLOW RATE



When the ambient air enters the exchange coils, it heats up or cools down depending on the operating season.

OPERATION

EHT chilled beams have been developed with the aim of obtaining high performance while still ensuring the highest degree of comfort in the occupied area.

This is achieved through the coanda effect and the inductive effect.

Coanda effect:

It keeps the air flow on the ceiling until it reaches residual speeds and temperatures that do not trigger critical situations, such as cold air currents.



Coanda effect.

Inductive effect:

Primary fresh air is filtered and treated by a dedicated plant and sent by the fans therein to the chilled beam plenums. The suitable overpressure that is maintained in the plenums pushes the primary air through the nozzles which, due to the particular geometry of their profile, inject it into the environment. The high speed of the air coming out of the noz-

zles forms low-pressure areas around them, which draw in ambient air and force it through the heat exchange coils.



CONFIGURATOR

By suitably combining the numerous options available, it is possible to configure each model in such a way as to meet the most specific system requirements.

Field	Description
1,2,3	EHT
4	Nominal width
6	600 mm
5,6	Nominal length
09	900 mm
12	1200 mm
15	1500 mm
18	1800 mm
21	2100 mm
24	2400 mm
27	2700 mm
30	3000 mm
7	Delivery range
0	XS air flow rate
1	S air flow rate
2	M air flow rate
3	L air flow rate
4	XL air flow rate

ACCESSORIES

MCR: Electronic control board to control the active chilled beams of the EHT family.

MCR-HP: The MCR-HP accessory is a humidity probe that can ensure the correct operation of chilled beams.

MZCSA: Air probe for controlling modulating or pressure independent valves.

■ *Accessories available for all versions.*

GENERAL TECHNICAL DATA

Size	Cooling performances							Heating performances					
	Q _p M ³ /h	Δp _a Pa	Δθ _c K	Q _{wN,c} L/h	Δp _{w,c} KPa	Δθ _{w,c} K	P W	P _{w,c} W	Δθ _h K	Q _{wN,h} L/h	Δp _{w,h} KPa	Δθ _{w,h} K	P=P _{w,h} W
EHT 6090	17	50	9	141	1,2	2	383	325	30	69	0,9	4,1	328
EHT 6090	24	100	9	155	1,4	2,2	478	396	30	69	0,9	4,7	372
EHT 6090	29	150	9	155	1,4	2,4	535	436	31	69	0,9	5	398
EHT 6091	34	50	9	141	1,2	2,4	511	395	31	69	0,9	5,2	406
EHT 6091	47	100	9	151	1,4	2,7	630	470	31	69	0,9	5,6	455
EHT 6091	58	150	9	155	1,4	2,9	724	526	31	69	0,9	6,1	492
EHT 6092	67	50	9	141	1,2	2,7	673	445	30	69	0,9	4,9	380
EHT 6092	95	100	9	155	1,4	3	865	541	31	69	0,9	5,4	430
EHT 6092	116	150	8	155	1,4	3,3	989	594	31	69	0,9	5,8	463
EHT 6093	84	50	9	151	1,4	2,7	755	469	31	69	0,9	5,3	417
EHT 6093	118	100	8	141	1,2	3,3	945	543	31	69	0,9	6,1	473
EHT 6093	145	150	8	155	1,4	3,4	1111	617	31	69	0,9	6,5	510
EHT 6094	135	50	9	151	1,4	2,8	950	490	31	69	0,9	5,8	463
EHT 6094	190	100	8	151	1,4	3,3	1223	576	31	69	0,9	6,5	524
EHT 6094	232	150	8	151	1,4	3,6	1426	635	32	69	0,9	7	565
EHT 6120	24	50	9	137	1,6	2,6	500	418	31	73	1,1	5,7	482
EHT 6120	34	100	9	144	1,8	3	616	500	31	73	1,1	6,6	549
EHT 6120	42	150	8	144	1,8	3,3	697	554	32	73	1,1	7	593
EHT 6121	49	50	8	130	1,4	3,3	668	501	32	73	1,1	7,3	605
EHT 6121	68	100	8	144	1,8	3,6	833	601	32	73	1,1	8,4	686
EHT 6121	83	150	8	141	1,7	4	938	655	32	73	1,1	8,8	738
EHT 6122	97	50	8	137	1,6	3,6	902	571	31	73	1,1	6,9	566
EHT 6122	137	100	8	141	1,7	4,1	1144	677	32	73	1,1	7,6	642
EHT 6122	167	150	8	141	1,7	4,5	1306	737	32	73	1,1	8,1	691
EHT 6123	121	50	8	144	1,8	3,6	1011	599	32	73	1,1	7,4	622
EHT 6123	171	100	8	144	1,8	4,2	1285	702	32	73	1,1	8,5	710
EHT 6123	208	150	8	144	1,8	4,6	1472	763	33	73	1,1	9,1	764
EHT 6124	194	50	8	126	1,4	4,1	1256	595	32	73	1,1	8,1	691
EHT 6124	273	100	8	141	1,7	4,4	1652	722	33	73	1,1	9,4	790
EHT 6124	334	150	8	141	1,7	4,8	1926	788	33	73	1,1	10,2	854
EHT 6124	32	50	8	144	2,3	3,1	625	516	31	80	1,4	6,9	646
EHT 6150	45	100	8	144	2,3	3,6	762	609	32	80	1,4	7,9	735
EHT 6150	54	150	8	141	2,2	4	839	655	32	80	1,4	8,4	787
EHT 6151	63	50	8	144	2,3	3,7	830	615	32	80	1,4	8,7	804
EHT 6151	89	100	8	144	2,3	4,3	1024	721	33	80	1,4	10,1	920
EHT 6151	109	150	8	144	2,3	4,7	1158	787	33	80	1,4	10,6	992
EHT 6152	127	50	8	137	2,1	4,3	1117	684	32	80	1,4	8,2	755
EHT 6152	178	100	8	144	2,3	4,8	1415	808	33	80	1,4	9,5	861
EHT 6152	218	150	7	141	2,2	5,3	1614	871	33	80	1,4	10,2	931
EHT 6153	158	50	8	144	2,3	4,3	1255	717	32	80	1,4	8,9	831
EHT 6153	223	100	8	144	2,3	5	1590	830	33	80	1,4	10,2	951
EHT 6153	272	150	7	144	2,3	5,4	1829	902	33	80	1,4	10,9	1027
EHT 6154	254	50	8	141	2,2	4,5	1606	741	33	80	1,4	10,2	932
EHT 6154	357	100	7	141	2,2	5,2	2071	855	34	80	1,4	11,3	1062
EHT 6154	436	150	7	144	2,3	5,6	2416	930	34	80	1,4	12,7	1158
EHT 6180	39	50	8	141	2,7	3,6	725	592	32	84	1,6	8,3	811
EHT 6180	55	100	8	141	2,7	4,2	880	693	33	84	1,6	9,5	927
EHT 6180	67	150	8	141	2,7	4,6	982	754	33	84	1,6	10,5	1005
EHT 6181	78	50	8	141	2,7	4,3	972	706	33	84	1,6	10,5	1020
EHT 6181	110	100	8	141	2,7	5	1192	817	34	84	1,6	12,1	1171
EHT 6181	135	150	7	141	2,7	5,4	1352	892	35	84	1,6	13,3	1275
EHT 6182	157	50	8	137	2,6	4,9	1320	785	33	84	1,6	9,9	957
EHT 6182	220	100	7	141	2,7	5,6	1653	903	34	84	1,6	11,3	1094
EHT 6182	269	150	7	141	2,7	6	1899	982	34	84	1,6	12,2	1185
EHT 6183	195	50	8	141	2,7	5	1475	811	34	84	1,6	11,1	1061
EHT 6183	275	100	7	141	2,7	5,7	1874	937	34	84	1,6	12,8	1219
EHT 6183	336	150	7	141	2,7	6,2	2149	1004	35	84	1,6	13,7	1319
EHT 6184	313	50	7	141	2,7	5,2	1905	838	34	84	1,6	12,2	1185
EHT 6184	441	100	7	141	2,7	5,9	2468	965	35	84	1,6	14,1	1366
EHT 6184	538	150	7	141	2,7	6,4	2866	1033	36	84	1,6	15,2	1482
EHT 6210	47	50	9	231	8,7	2,9	939	779	33	87	1,8	9,9	994
EHT 6210	66	100	8	231	8,7	3,4	1142	917	34	87	1,8	11,4	1138
EHT 6210	80	150	8	234	9	3,7	1278	1005	34	87	1,8	12,1	1226
EHT 6211	93	50	8	231	8,7	3,5	1247	930	34	87	1,8	12,6	1252
EHT 6211	131	100	8	227	8,4	4,1	1533	1087	35	87	1,8	14,5	1443
EHT 6211	160	150	8	234	9	4,4	1744	1199	36	87	1,8	15,9	1573
EHT 6212	186	50	8	234	9	3,9	1688	1054	34	87	1,8	11,9	1171
EHT 6212	262	100	8	227	8,4	4,6	2112	1219	35	87	1,8	13,6	1347

Size	Cooling performances							Heating performances						
	Q _p M ³ /h	Δp _a Pa	Δθ _r K	Q _{wN,c} L/h	Δp _{w,c} KPa	Δθ _{w,c} K	P W	P _{w,c} W	Δθ _h K	Q _{wN,h} L/h	Δp _{w,h} KPa	Δθ _{w,h} K	P=P _{w,h} W	
EHT 6212	320	150	8	231	8,7	5	2418	1328	35	87	1,8	14,6	1460	
EHT 6213	233	50	8	234	9	4	1889	1095	34	87	1,8	12,8	1295	
EHT 6213	327	100	8	231	8,7	4,7	2378	1264	35	87	1,8	14,7	1491	
EHT 6213	400	150	7	234	9	5,1	2741	1378	36	87	1,8	16,4	1631	
EHT 6214	373	50	8	231	8,7	4,2	2400	1129	35	87	1,8	14,6	1461	
EHT 6214	524	100	8	223	8,2	5	3072	1287	36	87	1,8	17	1690	
EHT 6214	640	150	7	231	8,7	5,3	3600	1419	37	87	1,8	18,3	1839	
EHT 6240	54	50	8	231	10,1	3,2	1046	862	34	91	2,1	11,4	1176	
EHT 6240	76	100	8	227	9,8	3,8	1265	1006	35	91	2,1	13,1	1350	
EHT 6240	93	150	8	234	10,4	4,1	1428	1111	35	91	2,1	13,9	1461	
EHT 6241	108	50	8	234	10,4	3,8	1407	1039	35	91	2,1	14,5	1493	
EHT 6241	152	100	8	231	10,1	4,5	1719	1201	36	91	2,1	16,7	1726	
EHT 6241	186	150	8	231	10,1	4,9	1944	1310	37	91	2,1	18,3	1887	
EHT 6242	216	50	8	223	9,5	4,4	1886	1150	35	91	2,1	13	1382	
EHT 6242	304	100	8	231	10,1	5	2381	1345	36	91	2,1	15,6	1608	
EHT 6242	371	150	7	234	10,4	5,4	2728	1464	36	91	2,1	16,8	1746	
EHT 6243	270	50	8	195	7,2	5	2042	1122	35	91	2,1	14,7	1544	
EHT 6243	379	100	7	234	10,4	5,1	2685	1394	36	91	2,1	16,9	1782	
EHT 6243	463	150	7	231	10,1	5,6	3076	1498	37	91	2,1	18,8	1955	
EHT 6244	432	50	8	205	8	5	2657	1185	36	91	2,1	16,8	1746	
EHT 6244	608	100	7	234	10,4	5,3	3510	1438	38	91	2,1	19,5	2029	
EHT 6244	742	150	7	231	10,1	5,8	4071	1543	39	91	2,1	21	2211	
EHT 6270	61	50	8	231	11,5	3,5	1147	939	35	91	2,3	13,1	1368	
EHT 6270	86	100	8	231	11,5	4,1	1392	1099	36	91	2,3	15	1576	
EHT 6270	106	150	8	231	11,5	4,5	1566	1205	36	91	2,3	16,7	1729	
EHT 6271	123	50	8	231	11,5	4,2	1545	1126	36	91	2,3	16,6	1751	
EHT 6271	173	100	8	227	11,1	4,9	1889	1300	38	91	2,3	19,2	2031	
EHT 6271	211	150	7	231	11,5	5,3	2134	1415	39	91	2,3	21,1	2224	
EHT 6272	246	50	8	231	11,5	4,7	2100	1262	36	91	2,3	15,6	1633	
EHT 6272	346	100	7	227	11,1	5,5	2617	1438	37	91	2,3	18	1889	
EHT 6272	422	150	7	220	10,4	6	2979	1541	38	91	2,3	19,3	2054	
EHT 6273	307	50	8	227	11,1	4,9	2338	1292	37	91	2,3	17,7	1829	
EHT 6273	432	100	7	231	11,5	5,6	2962	1490	38	91	2,3	20,3	2123	
EHT 6273	527	150	7	231	11,5	6	3414	1618	39	91	2,3	21,7	2308	
EHT 6274	492	50	7	223	10,8	5,1	3009	1333	38	91	2,3	19,3	2056	
EHT 6274	692	100	7	227	11,1	5,8	3893	1535	40	91	2,3	23,4	2428	
EHT 6274	845	150	7	231	11,5	6,2	4545	1666	41	91	2,3	25,2	2654	
EHT 6300	69	50	8	231	12,9	3,8	1255	1020	35	95	2,6	14,4	1567	
EHT 6300	97	100	8	227	12,5	4,5	1508	1177	36	95	2,6	16,5	1808	
EHT 6300	118	150	8	223	12,1	4,9	1681	1279	37	95	2,6	18,3	1978	
EHT 6301	138	50	8	223	12,1	4,6	1672	1202	37	95	2,6	18,3	2009	
EHT 6301	194	100	7	227	12,5	5,3	2048	1387	39	95	2,6	21,1	2335	
EHT 6301	237	150	7	227	12,5	5,7	2317	1509	40	95	2,6	23,2	2562	
EHT 6302	276	50	7	227	12,5	5,1	2287	1347	37	95	2,6	17,2	1871	
EHT 6302	388	100	7	231	12,9	5,8	2873	1551	38	95	2,6	19,8	2169	
EHT 6302	473	150	7	227	12,5	6,3	3271	1659	39	98	2,7	21,3	2362	
EHT 6303	344	50	7	231	12,9	5,2	2567	1395	38	95	2,6	19,4	2099	
EHT 6303	484	100	7	227	12,5	6	3234	1585	39	95	2,6	22,4	2443	
EHT 6303	591	150	7	231	12,9	6,4	3733	1719	40	98	2,7	23,8	2660	
EHT 6304	551	50	7	231	12,9	5,4	3314	1437	39	98	2,7	21,3	2363	
EHT 6304	775	100	7	227	12,5	6,2	4272	1631	41	95	2,6	25,8	2801	
EHT 6304	947	150	7	231	12,9	6,6	4995	1768	42	95	2,6	27,7	3067	

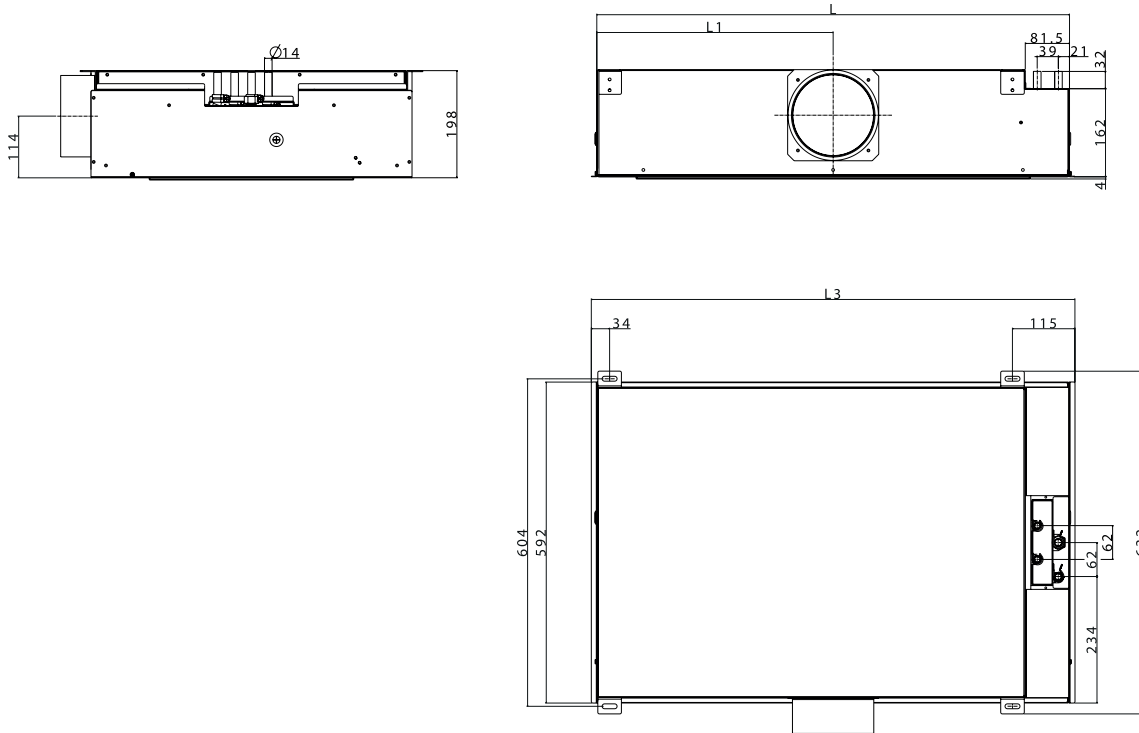
Key

Reference values in cooling				Reference values in heating			
θ _r	Reference room air temperature 26 °C			θ _r	Reference room air temperature 22 °C		
θ _w	Average temperature of the water			θ _w	Average temperature of the water		
θ _{w1}	Water inlet temperature 16 °C			θ _{w1}	Water inlet temperature 50 °C		
θ _{w2}	Water Outlet Temperature			θ _{w2}	Water Outlet Temperature		
θ _p	Primary air temperature 16 °C			θ _p	Primary air temperature 22 °C		
Δθ _c	Difference between the reference room air temperature and the average temperature of the water entering the coil Δθ = θ _r - θ _{w1}			Δθ _h	Difference between the reference room air temperature and the average temperature of the water entering the coil Δθ = θ _r - θ _{w1}		
Q _p	Primary air flow rate			Q _p	Primary air flow rate		
Δp _a	Pressure drop - air side			Δp _a	Pressure drop - air side		
Q _{wN,c}	Nominal water flow rate			Q _{wN,h}	Nominal water flow rate		
Δp _{w,c}	Water side pressure drop			Δp _{w,h}	Water side pressure drop		
Δθ _{w,c}	Water side temperature difference			Δθ _{w,h}	Water side temperature difference		
P	Total cooling capacity			P	Total heating capacity		

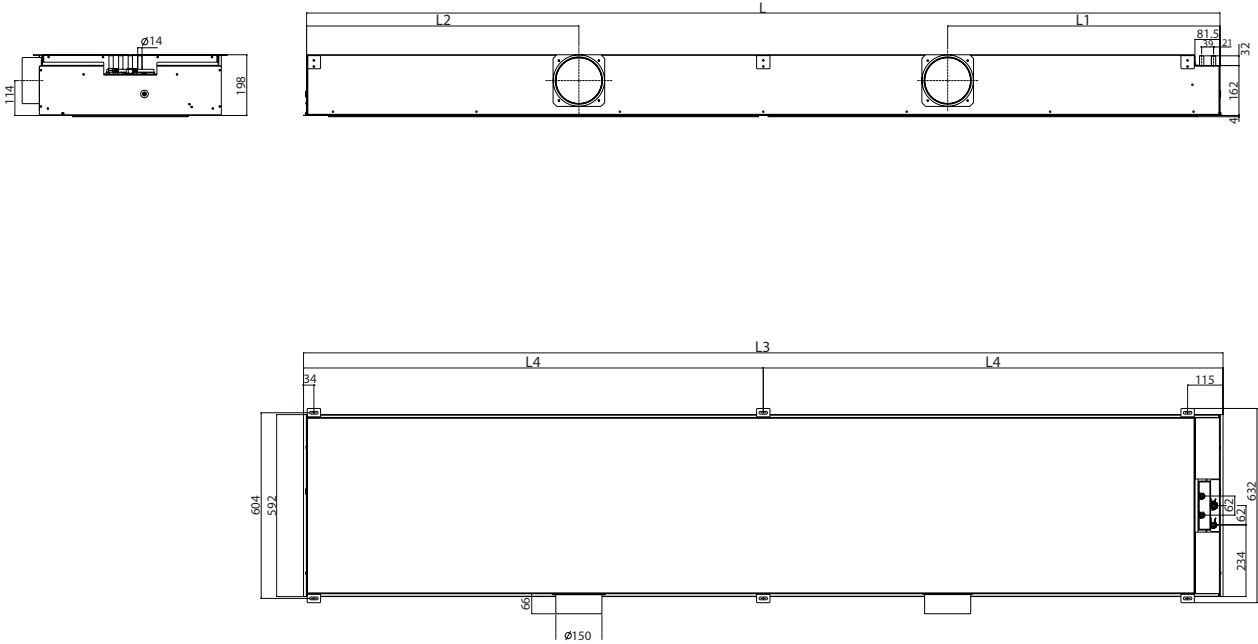
	Reference values in cooling		Reference values in heating
P_{wc}	Water side cooling capacity	P_{wh}	Water side heating capacity

DIMENSIONS AND WEIGHTS

EHT6090 ÷ EHT6214



EHT6240 ÷ EHT6304



		EHT 6090	EHT 6091	EHT 6092	EHT 6093	EHT 6094	EHT 6120	EHT 6121	EHT 6122	EHT 6123	EHT 6124
Dimensions and weights											
Width	mm	592	592	592	592	592	592	592	592	592	592
Nominal length	mm	900	900	900	900	900	1200	1200	1200	1200	1200
L	mm	872	872	872	872	872	1172	1172	1172	1172	1172
L1	mm	436	436	436	436	436	586	586	586	586	586
L2	mm	-	-	-	-	-	-	-	-	-	-
L3	mm	892	892	892	892	892	1192	1192	1192	1192	1192
L4	mm	-	-	-	-	-	-	-	-	-	-
Net weight	kg	26,00	26,00	26,00	26,00	26,00	35,00	35,00	35,00	35,00	35,00
Gross weight	kg	31	31	31	31	31	41	41	41	41	41
		EHT 6150	EHT 6151	EHT 6152	EHT 6153	EHT 6154	EHT 6180	EHT 6181	EHT 6182	EHT 6183	EHT 6184
Dimensions and weights											
Width	mm	592	592	592	592	592	592	592	592	592	592
Nominal length	mm	1500	1500	1500	1500	1500	1800	1800	1800	1800	1800
L	mm	1472	1472	1472	1472	1472	1772	1772	1772	1772	1772
L1	mm	736	736	736	736	736	886	886	886	886	886
L2	mm	-	-	-	-	-	-	-	-	-	-
L3	mm	1492	1492	1492	1492	1492	1792	1792	1792	1792	1792
L4	mm	-	-	-	-	-	-	-	-	-	-
Net weight	kg	43,00	43,00	43,00	43,00	43,00	52,00	52,00	52,00	52,00	52,00
Gross weight	kg	52	52	52	52	52	62	62	62	62	62
		EHT 6210	EHT 6211	EHT 6212	EHT 6213	EHT 6214	EHT 6240	EHT 6241	EHT 6242	EHT 6243	EHT 6244
Dimensions and weights											
Width	mm	592	592	592	592	592	592	592	592	592	592
Nominal length	mm	2100	2100	2100	2100	2100	2400	2400	2400	2400	2400
L	mm	2072	2072	2072	2072	2072	2372	2372	2372	2372	2372
L1	mm	1036	1036	1036	1036	1036	711	711	711	711	711
L2	mm	-	-	-	-	-	711	711	711	711	711
L3	mm	2092	2092	2092	2092	2092	2392	2392	2392	2392	2392
L4	mm	-	-	-	-	-	1196	1196	1196	1196	1196
Net weight	kg	61,00	61,00	61,00	61,00	61,00	69,00	69,00	69,00	69,00	69,00
Gross weight	kg	72	72	72	72	72	83	83	83	83	83
		EHT 6270	EHT 6271	EHT 6272	EHT 6273	EHT 6274	EHT 6300	EHT 6301	EHT 6302	EHT 6303	EHT 6304
Dimensions and weights											
Width	mm	592	592	592	592	592	592	592	592	592	592
Nominal length	mm	2700	2700	2700	2700	2700	3000	3000	3000	3000	3000
L	mm	2672	2672	2672	2672	2672	2972	2972	2972	2972	2972
L1	mm	881	881	881	881	881	886	886	886	886	886
L2	mm	881	881	881	881	881	886	886	886	886	886
L3	mm	2692	2692	2692	2692	2692	2992	2992	2992	2992	2992
L4	mm	1346	1346	1346	1346	1346	1496	1496	1496	1496	1496
Net weight	kg	78,00	78,00	78,00	78,00	78,00	87,00	87,00	87,00	87,00	87,00
Gross weight	kg	93	93	93	93	93	103	103	103	103	103

Aermec reserves the right to make any modifications deemed necessary.
All data is subject to change without notice. Aermec does not assume responsibility or liability for errors or omissions.

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