

EHT

Active chilled beams

Primary air flow rate 10 - 557cfm
Nominal width 24 inches



- High induction ratios.
- Can be installed in a wide range of modular ceilings; compatible with modular false ceilings 24 x 24 in
- Can be installed in 4-pipe systems.
- Fully silent functioning.
- Maximum access to components and water connections, that can be reached from more than one position.



DESCRIPTION

EHT active chilled beams are hybrid induction terminals combining temperature control, cooling, heating and air distribution functions in one single device.

After being filtered, treated and dehumidified in a treatment unit, the primary air is pushed into the plenum and, by emerging from nozzles, it induces the ambient air to pass through the heat exchanger coils (fed by chilled or hot water) and to mix with the jet of primary air before being sent back into the room via the delivery outlets.

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 Aermech's foremost goals, as it skilfully develops its products combining maximum practicality with the minimum environmental impact.

These cooling terminals can be used in systems with two different levels of chilled water production. In the UTA dedicated to primary air treatment, low-temperature chilled water is usually used, whereas medium-temperature water is always needed to feed the chilled beam coils. The active chilled beams produce environmental comfort by moving about 1/3 of the amount of air compared with a similar all-air system, which translates into drastically reduced ventilation costs.

APPLICATION

Chilled beams are ideal for the ventilation, cooling and heating of rooms with a ceiling height up to 13ft. They can be installed in open-plan offices, hotel rooms, shops, airports and railway stations, hospital wards and large areas in general, always ensuring the correct flow of fresh air and distributing it evenly to optimise the temperature in every part of the room.

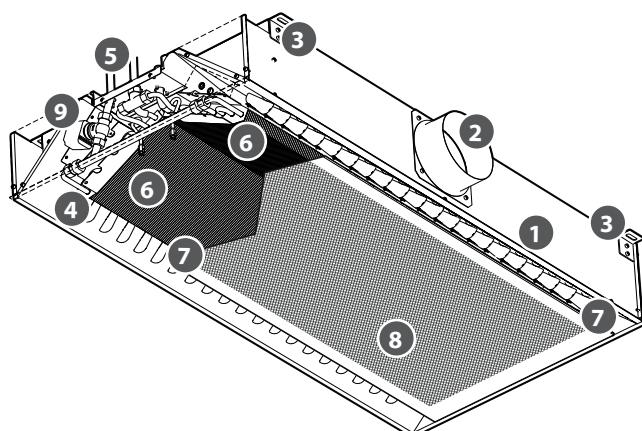
The use of these units offers:

- 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;
- maximum access to components: access to the components, including the regulator valves, is guaranteed from below, simply 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.



COMPONENTS

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

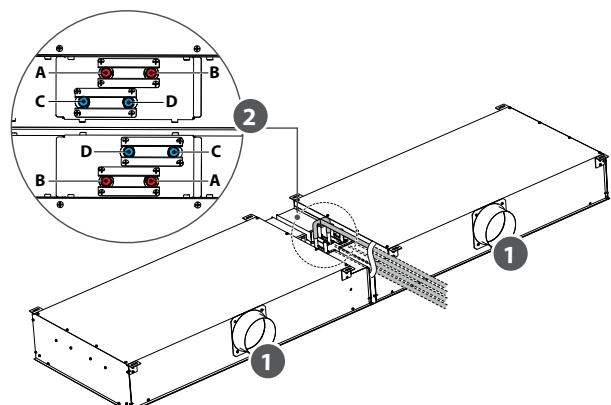


HYDRAULIC CONNECTIONS

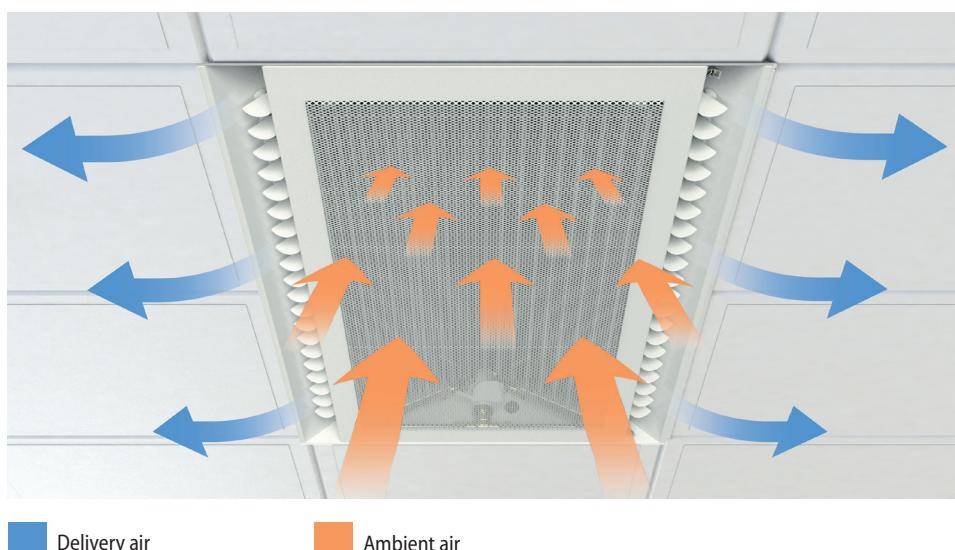
Illustrative drawing of the hydraulic connection between two EHT active chilled beams.

The image is an example only. It should not be considered a system model. The installation must be handled by qualified technicians.

1	Primary air inlet
2	Hydraulic connections

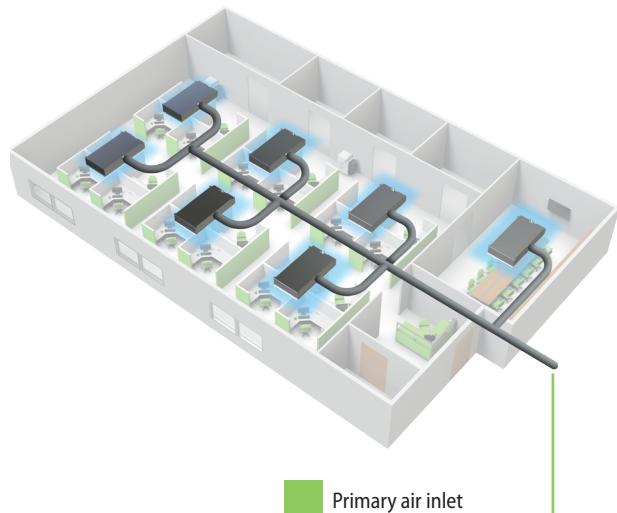


AIR FLOW



FUNCTION

The EHT chilled beams are designed with the aim of producing high output whilst guaranteeing the best possible level of comfort in the room. This goal is satisfied by taking advantage of the Coanda effect, that keeps the air flow up against the ceiling until it reaches residual speeds and temperatures that trigger critical situations such as currents of cold air.



CHOICE OF UNIT

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.

Description		
EHT		
Nominal width		
6	24 inches	
Nominal length		
09	35 inches	21 83 inches
12	47 inches	24 94 inches
15	59 inches	27 106 inches
18	71 inches	30 118 inches
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	

TECHNICAL DATA

			Cooling performances						Heating performances					
Size	q _p	Δp _a	Δθ _c	q _{wN,c}	Δp _{w,c}	Δθ _{w,c}	P	P _{w,c}	Δθ _h	q _{wN,h}	Δp _{w,h}	Δθ _{w,h}	P=P _{w,h}	
	CFM	in/H ₂ O	°F	gpm	in/H ₂ O	°F	BTU/h	BTU/h	°F	gpm	in/H ₂ O	°F	BTU/h	
EHT 6090	10	.20	48	.62	4.8	35.6	1307	1109	86	.30	3.6	39.3	1119	
EHT 6090	14	.40	48	.68	5.6	35.9	1631	1351	86	.30	3.6	40.4	1269	
EHT 6090	17	.60	48	.68	5.6	36.3	1825	1488	87.8	.30	3.6	41	1358	
EHT 6091	20	.20	48	.62	4.8	36.3	1744	1348	87.8	.30	3.6	41.3	1385	
EHT 6091	28	.40	48	.66	5.6	36.8	2150	1604	87.8	.30	3.6	42	1553	
EHT 6091	34	.60	48	.68	5.6	37.2	2470	1795	87.8	.30	3.6	42.9	1679	
EHT 6092	39	.20	48	.62	4.8	36.8	2296	1518	86	.30	3.6	40.8	1297	
EHT 6092	56	.40	48	.68	5.6	37.4	2952	1846	87.8	.30	3.6	41.7	1467	
EHT 6092	68	.60	46	.68	5.6	37.9	3375	2027	87.8	.30	3.6	42.4	1580	
EHT 6093	49	.20	48	.66	5.6	36.8	2576	1600	87.8	.30	3.6	41.5	1423	
EHT 6093	69	.40	46	.62	4.8	37.9	3224	1853	87.8	.30	3.6	42.9	1614	
EHT 6093	85	.60	46	.68	5.6	38.1	3791	2105	87.8	.30	3.6	43.7	1740	
EHT 6094	79	.20	48	.66	5.6	37	3242	1672	87.8	.30	3.6	42.4	1580	
EHT 6094	112	.40	46	.66	5.6	37.9	4173	1965	87.8	.30	3.6	43.7	1788	
EHT 6094	137	.60	46	.66	5.6	38.4	4866	2167	89.6	.30	3.6	44.6	1928	
EHT 6120	14	.20	48	.60	6.4	36.6	1706	1426	87.8	.32	4.4	42.2	1645	
EHT 6120	20	.40	48	.63	7.2	37.4	2102	1706	87.8	.32	4.4	43.8	1873	
EHT 6120	25	.60	46	.63	7.2	37.9	2378	1890	89.6	.32	4.4	44.6	2023	
EHT 6121	29	.20	46	.57	5.6	37.9	2279	1709	89.6	.32	4.4	45.1	2064	
EHT 6121	40	.40	46	.63	7.2	38.4	2842	2051	89.6	.32	4.4	47.1	2341	
EHT 6121	49	.60	46	.62	6.8	39.2	938	2235	89.6	.32	4.4	47.8	2518	
EHT 6122	57	.20	46	.60	6.4	38.4	902	1948	87.83	.32	4.4	44.4	1931	
EHT 6122	80	.40	46	.62	6.8	39.3	1144	2310	89.6	.32	4.4	45.6	2191	
EHT 6122	98	.60	46	.62	6.8	40.1	1306	2515	89.6	.32	4.4	46.5	2358	
EHT 6123	71	.20	46	.63	7.2	38.4	1011	2044	89.6	.32	4.4	45.3	2122	
EHT 6123	100	.40	46	.63	7.2	39.5	1285	2395	89.6	.32	4.4	47.3	2423	
EHT 6123	122	.60	46	.63	7.2	40.2	1472	2603	91.4	.32	4.4	48.3	2607	
EHT 6124	114	.20	46	.55	5.6	39.3	1256	2030	89.6	.32	4.4	46.5	2358	
EHT 6124	161	.40	46	.62	6.8	39.9	1652	2464	91.4	.32	4.4	48.9	2696	
EHT 6124	197	.60	46	.62	6.8	40.6	1926	2689	91.4	.32	4.1	50.3	2914	
EHT 6150	19	.20	46	.63	9.2	337.5	2133	1761	87.8	.35	45.6	44.4	2204	
EHT 6150	45	.40	46	.63	9.2	38.4	2600	2078	89.6	.35	45.6	46.2	2508	
EHT 6150	26	.60	46	.62	8.8	39.2	2863	2235	89.6	.35	45.6	47.1	2685	
EHT 6151	37	.20	46	.63	9.2	38.6	2832	2098	89.6	.35	45.6	47.6	2743	
EHT 6151	52	.40	46	.63	9.2	39.7	3494	2460	91.4	.35	45.6	50.1	3139	
EHT 6151	64	.60	46	.63	9.2	40.4	3951	2685	91.4	.35	45.6	51	3385	
EHT 6152	75	.20	46	.60	8.4	39.7	3811	2334	89.6	.35	45.6	46.7	2576	
EHT 6152	105	.40	46	.63	8.2	40.6	4828	2757	91.4	.35	45.6	49.1	2938	
EHT 6152	128	.60	45	.62	8.8	41.5	5507	2972	91.4	.35	45.6	50.3	3177	
EHT 6153	93	.20	46	.63	9.2	39.7	4282	2447	89.6	.35	45.6	48	2835	
EHT 6153	131	.40	46	.63	9.2	41.7	5425	2832	91.4	.35	45.6	50.3	3245	
EHT 6153	160	.60	45	.63	9.2	41.7	6241	3139	91.4	.35	45.6	51.6	3504	
EHT 6154	149	.20	46	.62	8.8	40.1	5480	2528	91.4	.35	45.6	50.3	3180	
EHT 6154	210	.40	45	.62	8.8	41.3	7067	2917	93.2	.35	45.6	52.3	3624	
EHT 6154	257	.60	45	.63	9.2	42	8244	3173	93.2	.35	45.6	54.8	3951	

			Cooling performances						Heating performances					
Size	q _p	Δp _a	Δθ _c	q _{wN,c}	Δp _{w,c}	Δθ _{w,c}	P	P _{w,c}	Δθ _h	q _{wN,h}	Δp _{w,h}	Δθ _{w,h}	P=P _{w,h}	
	CFM	in/H ₂ O	°F	gpm	in/H ₂ O	in/H ₂ O	BTU/h	BTU/h	°F	gpm	in/H ₂ O	°F	BTU/h	
EHT 6180	23	.20	46	.62	10.8	38.4	2474	2020	89.6	.37	6.4	46.9	2767	
EHT 6180	32	.40	46	.62	10.8	39.5	3003	2365	91.4	.37	6.4	49.1	3163	
EHT 6180	39	.60	46	.62	10.8	40.2	3351	2573	91.4	.37	6.4	50.9	3429	
EHT 6181	45	.20	46	.62	10.8	39.7	3317	2573	91.4	.37	6.4	50.9	3480	
EHT 6181	65	.40	46	.62	10.8	41.7	4067	2788	93.2	.37	6.4	53.7	3996	
EHT 6181	79	.60	45	.62	10.8	41.7	4613	3044	95	.37	6.4	55.9	4350	
EHT 6182	92	.20	46	.60	10.4	40.8	4504	2679	91.4	.37	6.4	49.8	3265	
EHT 6182	129	.40	45	.62	10.8	42.	5640	3081	93.2	.37	6.4	52.3	3733	
EHT 6182	158	.60	45	.62	10.8	42.8	6480	3351	93.2	.37	6.4	53.9	4043	
EHT 6183	115	.20	46	.62	10.8	41	5033	2767	93.2	.37	6.4	51.9	3620	
EHT 6183	126	.40	45	.62	10.8	42.2	6394	3197	93.2	.37	6.4	55	4159	
EHT 6183	198	.60	45	.62	10.8	43.1	7333	1004	95	.37	6.4	56.6	4501	
EHT 6184	184	.20	45	.62	10.8	41.3	6500	2859	93.2	.37	6.4	53.9	4043	
EHT 6184	260	.40	45	.62	10.8	42.6	8421	3293	95	.37	6.4	57.3	4661	
EHT 6184	352	.60	45	.62	10.8	43.5	9779	1033	96.8	.37	6.4	59.3	5057	
EHT 6210	28	.20	48	1.02	13.6	37.2	3204	2658	91.4	.38	7.2	49.8	3392	
EHT 6210	39	.40	46	1.02	34.9	38.1	3897	3129	93.2	.38	7.2	52.5	3883	
EHT 6210	47	.60	46	1.03	36.1	38.6	4361	3249	93.2	.38	7.2	53.7	4183	
EHT 6211	55	.20	46	1.02	34.9	38.3	4255	3173	93.2	.38	7.2	54.6	4272	
EHT 6211	77	.40	46	1	33.7	39.3	5231	3709	95	.38	7.2	58.1	4924	
EHT 6211	94	.60	46	1.03	36.1	39	5951	4091	96.8	.38	7.2	60.6	5367	
EHT 6212	109	.20	46	1.03	36.1	39	5760	3596	93.2	.38	7.2	53.8	3996	
EHT 6212	154	.40	46	1	33.7	40.2	5760	4159	95	.38	7.2	56.4	4596	
EHT 6212	188	.60	46	1.02	34.9	41	8251	4531	95	.38	7.2	58.2	4982	
EHT 6213	137	.20	46	1.03	36.1	39.2	6446	3736	93.2	.38	7.2	55	4419	
EHT 6213	192	.40	46	1.02	34.9	40.4	8114	4313	95	.38	7.2	58.4	5088	
EHT 6213	235	.60	45	1.03	36.1	41.1	9353	4702	96.8	.38	7.2	61.5	5565	
EHT 6214	220	.20	46	1.02	34.9	39.5	8189	3852	95	.38	7.2	58.2	4985	
EHT 6214	308	.40	46	223	32.9	50	10482	4391	96.8	.38	7.2	62.6	5767	
EHT 6214	377	.60	45	1.02	34.9	41.5	12284	5088	98.6	.38	7.2	64.9	6275	
EHT 6240	32	.20	46	1.02	40.5	37.7	2569	2941	93.2	.40	8.4	52.5	4013	
EHT 6240	45	.40	68	1	39.3	38.8	4316	3433	95	.40	8.4	55.5	4606	
EHT 6240	55	.60	68	1.03	41.7	39.3	4873	3791	95	.40	8.4	57.2	4985	
EHT 6241	64	.20	46	1.03	41.7	38.8	4800	3545	95	.40	8.4	58.1	5094	
EHT 6241	89	.40	46	1.02	40.5	40.1	5865	4098	96.8	.40	8.4	62	5889	
EHT 6241	109	.60	46	1.02	40.5	40.8	6633	4470	98.6	.40	8.4	64.9	6439	
EHT 6242	127	.20	46	.98	32.5	39.9	6435	3924	95	.40	8.4	55.4	4716	
EHT 6242	179	.40	46	1.02	40.5	41	8124	4589	96.8	.40	8.4	60	5487	
EHT 6242	218	.60	45	1.03	41.7	41.7	9308	4995	96.8	.40	8.4	62.2	5958	
EHT 6243	159	.20	46	195	28.9	41	6768	3828	95	.40	8.4	58.4	5268	
EHT 6243	223	.40	45	1.03	41.7	41.1	9161	4757	96.8	.40	8.4	62.4	6080	
EHT 6243	273	.60	45	1.02	40.5	42	10496	5111	98.6	.40	8.4	65.8	6671	
EHT 6244	254	.20	46	.90	32.1	41	9066	4043	96.8	.40	8.4	62.2	5958	
EHT 6244	358	.40	45	1.03	41.7	41.5	11977	4907	100.4	.40	8.4	67.1	6923	
EHT 6244	437	.60	45	1.02	40.5	42.4	13891	5265	102.2	.40	8.4	69.8	7544	

			Cooling performances						Heating performances					
Size	q_p	Δp_a	$\Delta\theta_c$	$q_{wN,c}$	$\Delta p_{w,c}$	$\Delta\theta_{w,c}$	P	$P_{w,c}$	$\Delta\theta_h$	$q_{wN,h}$	$\Delta p_{w,h}$	$\Delta\theta_{w,h}$	$P=P_{w,h}$	
CFM	in/H ₂ O		°F	gpm	in/H ₂ O	°F	BTU/h	BTU/h	°F	gpm	in/H ₂ O	°F	BTU/h	
EHT 6270	36	.20	46	1.02	46.2	38.3	1399	3204	95	91	2.3	55.5	4668	
EHT 6270	51	.40	46	1.02	46.2	39.3	4750	3750	96.8	91	2.3	59	5378	
EHT 6270	62	.60	46	1.02	46.2	40.1	5343	4112	96.8	91	2.3	62	5900	
EHT 6271	72	.20	46	1.02	46.2	39.5	5272	3842	96.8	91	2.3	61.8	5975	
EHT 6271	102	.40	46	1.0	44.6	40.8	6446	4436	100.4	91	2.3	66.5	6930	
EHT 6271	124	.60	44	1.02	46.2	41.5	7282	4828	102.2	91	2.3	69.9	7589	
EHT 6272	145	.20	46	1.02	46.2	40.4	7165	4306	96.8	91	2.3	60	5572	
EHT 6272	204	.40	44	1.0	44.6	41.9	8930	4907	98.6	91	2.3	64.4	6446	
EHT 6272	248	.60	44	0.97	41.8	42.8	10165	5258	100.4	91	2.3	66.7	7009	
EHT 6273	181	.20	46	1.0	44.6	40.8	7978	4408	98.6	91	2.3	63.8	6241	
EHT 6273	254	.40	44	1.02	46.2	42.0	10107	5084	100.4	91	2.3	68.5	7244	
EHT 6273	310	.60	44	1.02	46.2	42.8	11649	5521	102.2	91	2.3	71	7875	
EHT 6274	290	.20	44	.98	43.4	41.1	10267	4548	100.4	91	2.3	66.7	7015	
EHT 6274	407	.40	44	1.0	44.6	42.4	13283	5238	100.4	91	2.3	74.1	8285	
EHT 6274	497	.60	47	1.02	46.2	43.1	15508	5685	105.8	91	2.3	77.3	9056	
EHT 6300	41	.20	46	1.02	51.8	38.8	4282	3480	95	95	2.6	57.9	5347	
EHT 6300	57	.40	46	1.0	50.2	40.1	5146	4016	96.8	95	2.6	61.7	6169	
EHT 6300	69	.60	46	.98	48.6	40.8	5736	4364	98.6	95	2.6	64.9	6749	
EHT 6301	81	.20	46	.98	48.6	40.2	5705	4101	98.6	95	2.6	64.9	6855	
EHT 6301	114	.40	44	1.0	50.2	41.5	6988	4333	102.2	95	2.6	69.9	7967	
EHT 6301	139	.60	44	1.0	50.2	42.2	7906	5149	104	95	2.6	73.7	6287	
EHT 6302	162	.20	44	1.0	50.2	41.1	7804	4596	98.6	95	2.6	62.9	6384	
EHT 6302	228	.40	44	1.02	51.8	42.4	9803	5292	100.4	95	2.6	67.6	7401	
EHT 6302	278	.60	44	1.0	50.2	43.3	11161	5661	102.2	98	2.7	70.3	8059	
EHT 6303	202	.20	44	1.02	51.8	41.3	8759	4760	100.4	95	2.6	66.9	7162	
EHT 6303	285	.40	44	1.0	50.2	42.8	11035	5408	102.2	95	2.6	72.3	8336	
EHT 6303	348	.60	44	1.02	51.8	43.5	12738	5865	104	98	2.7	74.8	9076	
EHT 6304	324	.20	44	1.02	51.8	41.7	11308	4903	102.2	98	2.7	70.3	8059	
EHT 6304	456	.40	44	1.0	50.2	43.1	14577	5565	105.1	95	2.6	78.4	9557	
EHT 6304	557	.60	44	1.02	51.8	43.8	17044	6033	107.6	95	2.6	81.8	10465	

Symbols referring to Standard UNI EN ISO 15116:2008(E)

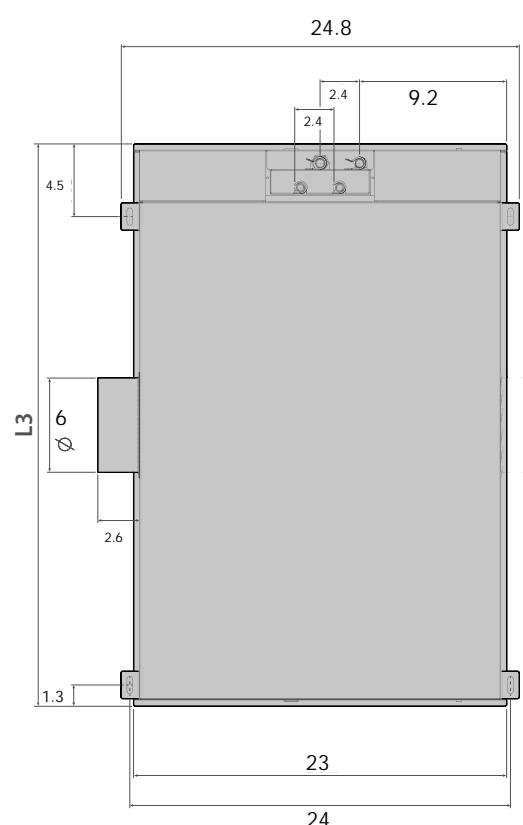
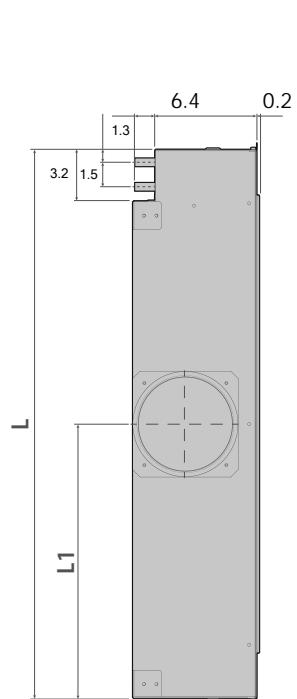
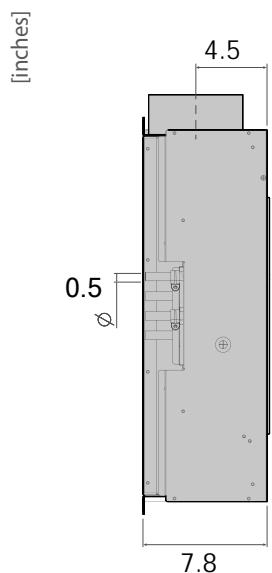
Reference values in cooling	Reference values in heating
θ_r Reference room air temperature 79°F	Reference room air temperature 72°F
θ_w Average temperature of the water in cooling mode	Average temperature of the water in heating mode
θ_{w1} Water inlet temperature 61°F	Water inlet temperature 122°F
θ_{w2} Water outlet temperature	Water outlet temperature
θ_p Primary air temperature 61°F	Primary air temperature 72°F

Legend

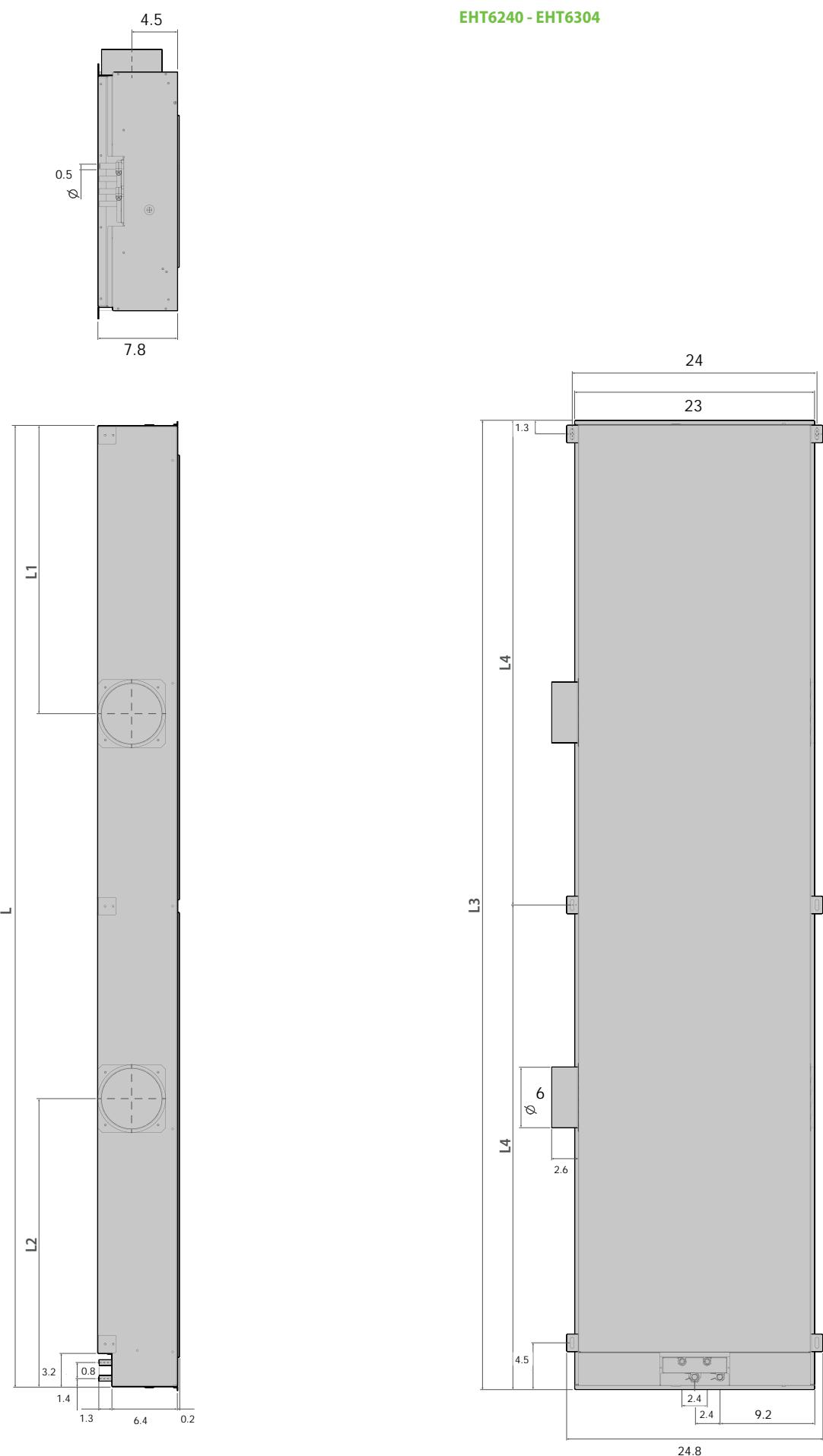
Reference values in cooling	Reference values in heating
$\Delta\theta_c$ Difference between the reference room air temperature and the average temperature of the water entering the coil $\Delta\theta = \theta_r - \theta_{w1}$	$\Delta\theta_h$ Difference between the reference room air temperature and the average temperature of the water entering the coil $\Delta\theta = \theta_r - \theta_{w1}$
q_p Primary air flow rate	q_p Primary air flow rate
Δp_a Air side pressure drop	Δp_a Air side pressure drop
$q_{wN,c}$ Nominal water flow rate	$q_{wN,h}$ Nominal water flow rate
$\Delta p_{w,c}$ Water side pressure drop	$\Delta p_{w,h}$ Water side pressure drop
$\Delta\theta_{w,c}$ Water side temperature difference	$\Delta\theta_{w,h}$ Water side temperature difference
P Total cooling capacity	P Total heating capacity
$P_{w,c}$ Water side cooling capacity	$P_{w,h}$ Water side heating capacity

WEIGHT AND DIMENSIONS

EHT6090 - EHT6214



[mm]



EHT6240 - EHT6304

Size	L	L1	L2	L3	L4	L4
	in	in	in	in	in	
EHT 6090	34	17	-	35	-	-
EHT 6120	46	23	-	47	-	-
EHT 6150	58	29	-	59	-	-
EHT 6180	70	35	-	71	-	-
EHT 6210	82	41	-	82	-	-
EHT 6240	93	28	28	94	47	47
EHT 6270	93	35	35	106	53	53
EHT 6300	117	35	35	118	59	59

Size	Width	Nominal length	Total length	Net weight	Gross weight
	in	in	in	lb	lb
EHT 6090	23	35	33	57	68
EHT 6091	23	35	33	57	68
EHT 6092	23	35	33	57	68
EHT 6093	23	35	33	57	68
EHT 6094	23	35	33	57	68
EHT 6120	23	47	47	77	90
EHT 6121	23	47	47	77	90
EHT 6122	23	47	47	77	90
EHT 6123	23	47	47	77	90
EHT 6124	23	47	47	77	90
EHT 6150	23	59	59	95	115
EHT 6151	23	59	59	95	115
EHT 6152	23	59	59	95	115
EHT 6153	23	59	59	95	115
EHT 6154	23	59	59	95	115
EHT 6180	23	71	71	115	137
EHT 6181	23	71	71	115	137
EHT 6182	23	71	71	115	137
EHT 6183	23	71	71	115	137
EHT 6184	23	71	71	115	137
EHT 6210	23	83	82	134	159
EHT 6211	23	83	82	134	159
EHT 6212	23	83	82	134	159
EHT 6213	23	83	82	134	159
EHT 6214	23	83	82	134	159
EHT 6240	23	94	94	152	83
EHT 6241	23	90	94	152	83
EHT 6242	23	94	94	152	83
EHT 6243	23	94	94	152	83
EHT 6244	23	94	94	152	83
EHT 6270	23	106	106	172	183
EHT 6271	23	106	106	172	183
EHT 6272	23	106	106	172	183
EHT 6273	23	106	106	172	183
EHT 6274	23	106	106	172	183
EHT 6300	23	118	118	192	227
EHT 6301	23	118	118	192	227
EHT 6302	23	118	118	192	227
EHT 6303	23	118	118	192	227
EHT 6304	23	118	118	192	227

Aermec reserves the right to make all modification deemed necessary for improving the product at any time with any modification of technical data.

Aermec S.p.A.
Via Roma, 996 - 37040 Bevilacqua (VR) - Italia
Tel. 044263111 - Telefax 044293577
www.aermec.com