

UHT
CASCADE SERIES
95°C



EFFI-CSUHT150-C



EFFI-CSUHT300-C



EFFI-CSUHT600-C

BEST CHOICE FOR ENERGY SAVING

DC INVERTER HIGH TEMPERATURE HEAT PUMP

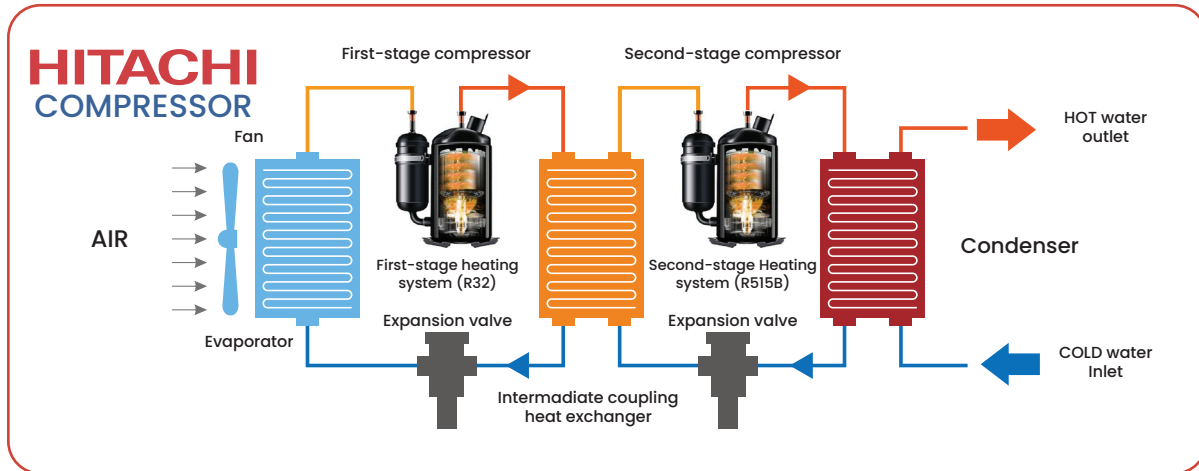
- ✓ Highest outlet water temperature up to 95°C (203°F)
- ✓ Wide working range: -35°C~43°C (-31°F~109°F)
- ✓ Two Independent compression stages (R32 and R515B)
- ✓ Advanced inverter delivers efficient reliability
- ✓ Modular design enables easy expansion
- ✓ Intelligent IoT cloud remote management with cellular DTU connectivity
- ✓ Weather - UV resistant powder coating



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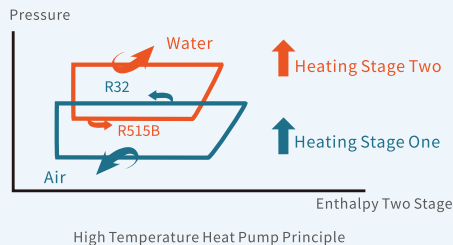
PRINCIPLE OF TWO STAGE EVI DC INVERTER ULTRA HIGH TEMPERATURE HEAT PUMP

The cascade technology adopts a two-stage refrigerant circulation system with intermediate coupling heat exchange mode, coupling the condensation of the first stage and the evaporation of the second stage to achieve energy exchange between the first and the second stages. Meanwhile, it reduces the compression ratio of the first stage system and the second stage system, lowers the condensation pressure of the first stage system, and enhances the evaporation pressure of the second stage system. The first stage system uses the R32 refrigerant EVI variable frequency system, and the second stage system uses the R515B fixed frequency system.



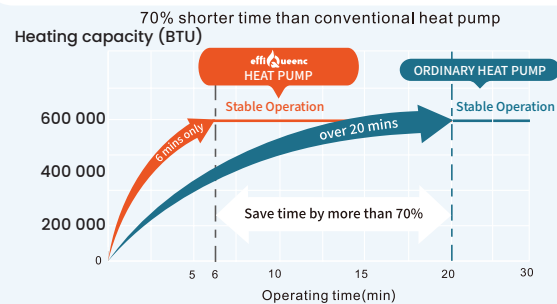
Super Heating Performance Technology In Cold Climate

Working principle: Two stage coupled system with R32 in Stage 1 and R515B in Stage 2 to reduce the operating compression ratio and thus improve the running efficiency under low ambient temperature.



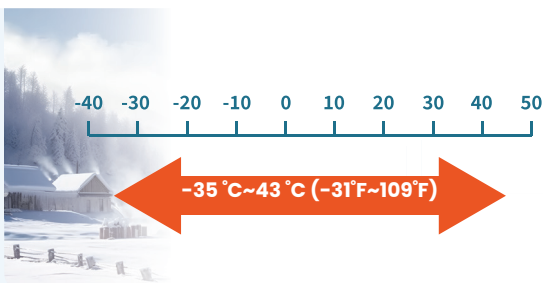
Rapidly Heating Status

Automatic adjustments on working frequency and expansion valve opening according to the change of ambient temperature and water supply temperature. Rapid and high efficient heating to reach the setting temperature.



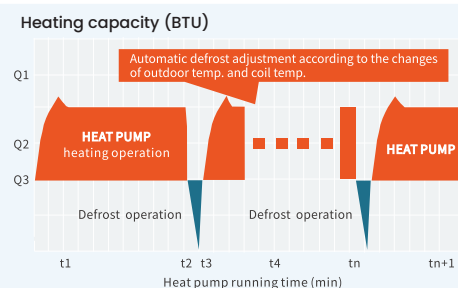
Safe Operation Technology in All Working Conditions

Wide working ambient temperature range : $-35^{\circ}\text{C} \sim 43^{\circ}\text{C}$ ($-31^{\circ}\text{F} \sim 109^{\circ}\text{F}$). Safe and reliable operation for all seasons



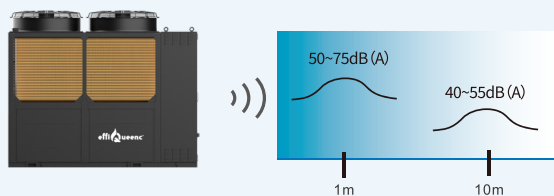
Intelligent Defrosting Technology

Automatic adjustment on defrost mode according to the changes of outdoor temperature and coil temperature to reduce the defrosting time and thus extend the heating time.



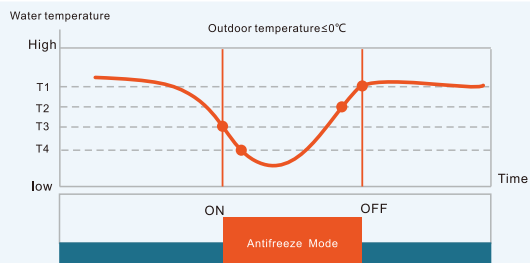
Low Noise Operation

DC inverter high temperature heat pump with 5-fold noise reduction design, the noise level during unit operation is greatly improved.



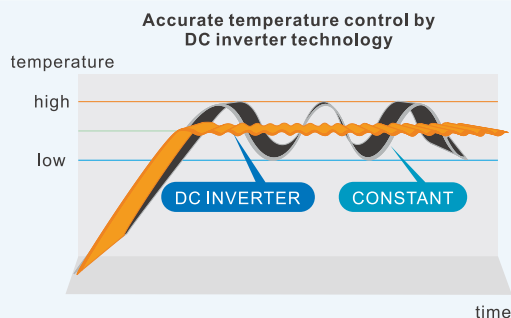
Automatic Antifreeze Protection in Standby Mode

Multi-level antifreeze protection function with automatic antifreeze process according to the change of outdoor temperature and water temperature to ensure the safe operation of the heat pump.



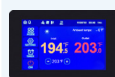
Precise Control, Constant Water Temperature

DC inverter technology to achieve accurate control of water temperature.



Centralized Multi-Unit Control

Heat pumps can be installed in a multi-unit configuration (up to a maximum of 8 units) and controlled via a centralized wired controller. One unit operates as the master, while the others function as slave units. In commercial central heating applications, this setup enables simple, efficient, and optimized capacity management based on demand.



EFFI UHT – ULTRA HIGH TEMPERATURE AIR-TO-WATER HEAT PUMPS

Engineering Performance Summary (AHRI Reference Conditions)

MODEL		EFFI-CSUHT150-C		EFFI-CSUHT300-C		EFFI-CSUHT600-C	
Parameter		Metric	Imperial	Metric	Imperial	Metric	Imperial
Heating capacity	8°C OA / 75°C LWT	44.3 kW	152 000 BTU/h	93.2 kW	318 000 BTU/h	163.8 kW	559 000 BTU/h
COP	47°F OA / 167°F LWT	1.85		1.94		1.81	
Heating capacity	-8°C OA / 75°C LWT	35.7 kW	122 000 BTU/h	74.1 kW	253 000 BTU/h	137.3 kW	459 000 BTU/h
COP	17°F OA / 167°F LWT	1.54		1.68		1.56	
Heating capacity	-20°C OA / 75°C LWT	31.8 kW	109 000 BTU/h	63.8 kW	218 000 BTU/h	108.4 kW	370 000 BTU/h
COP	-4°F OA / 167°F LWT	1.37		1.41		1.37	
Operating ambient temperature range		-35°C to +43°C (-31°F to +109°F)					
Maximum leaving water temperature Ambient air -25°C to 43°C (-13°F~109°F)		95°C (203°F)					
Maximum leaving water temperature Ambient air -35°C to -25°C (-31°F~-13°F)		85°C (185°F)					
Electrical power supply		575~600V / 3Ph / 50~60Hz					
Total load (A)		25.6 A		49.6 A		80.8 A	
Minimum Circuit Ampacity (MCA)		32 A		62 A		101 A	
Maximum Overcurrent Protection (MOP)		40 A		78 A		126 A	
Nominal water flow		143 L / min	37.9 GPM	299 L / min	78.9 GPM	597 L / min	157.6 GPM
Pressure drop		55 kPa	18.40 ft H ₂ O	70 kPa	23.42 ft H ₂ O	85 kPa	28.44 ft H ₂ O
Unit dimensions (L / W / H)		2220 × 875 × 1895 mm		2536 × 1103 × 2055 mm		2850 × 1200 × 2440 mm	
Unit weight - kg (lb)		780 kg	1719 lb	1242 kg	2738 lb	1938 kg	4272 lb

UHT CASCADÉ SERIES REFRIGERANT R32+R515B – CAPACITY

HEATING CAPACITY (kW)															
WATER OUTLET	EFFI-CSUHT150-C					EFFI-CSUHT300-C					EFFI-CSUHT600-C				
	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
55°C (131 °F)	25,7	31,9	36,8	41,1	48,4	53,1	67,8	77,2	85,9	103,0	93,0	124,2	133,4	155,7	174,0
65°C (149 °F)	27,6	32,2	38,6	42,8	48,4	55,5	69,8	80,7	88,8	103,0	94,6	128,1	137,3	160,8	179,7
75°C (167 °F)	29,6	35,7	40,7	44,3	46,3	59,2	74,1	84,1	93,2	106,2	97,2	134,6	142,6	163,8	182,0
85°C (185 °F)	33,4	38,5	39,5	44,7	47,6	65,8	79,0	88,9	98,3	102,8	104,3	139,1	147,0	155,1	176,0
95°C (203 °F)	33,6	37,6	38,3	42,4	46,7	63,4	76,8	85,8	91,6	91,0	106,7	129,2	136,7	143,3	145,0

HEATING CAPACITY (MBTU/h)															
WATER OUTLET	EFFI-CSUHT150-C					EFFI-CSUHT300-C					EFFI-CSUHT600-C				
	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
55°C (131 °F)	87,7	108,9	125,7	140,4	165,3	181,3	231,3	263,6	293,1	351,6	317,4	423,9	455,2	531,3	593,7
65°C (149 °F)	94,2	110,0	131,8	146,2	165,2	189,5	238,3	275,4	303,0	351,3	322,7	436,8	468,3	548,8	613,0
75°C (167 °F)	101,1	122,0	139,0	151,3	158,1	202,0	252,8	286,9	318,1	362,5	331,6	459,4	486,6	559,0	621,0
85°C (185 °F)	114,0	131,5	134,9	152,4	162,5	224,6	269,5	303,4	335,4	350,8	355,8	474,7	501,5	529,4	600,6
95°C (203 °F)	114,6	128,5	130,8	144,8	159,5	216,4	262,1	292,8	312,4	310,3	364,2	441,0	466,4	489,1	494,6

COP (-)															
WATER OUTLET	EFFI-CSUHT150-C					EFFI-CSUHT300-C					EFFI-CSUHT600-C				
	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
55°C (131 °F)	1,44	1,79	2,00	2,25	2,97	1,56	1,97	2,12	2,32	2,86	1,53	1,86	1,95	2,22	2,80
65°C (149 °F)	1,36	1,60	1,82	2,06	2,70	1,46	1,79	1,95	2,13	2,59	1,41	1,69	1,76	2,05	2,58
75°C (167 °F)	1,26	1,54	1,71	1,85	2,50	1,37	1,68	1,80	1,94	2,33	1,33	1,56	1,64	1,81	2,27
85°C (185 °F)	1,19	1,46	1,60	1,83	2,23	1,25	1,51	1,61	1,71	2,01	1,23	1,44	1,50	1,56	2,05
95°C (203 °F)	1,12	1,34	1,50	1,60	2,01	1,12	1,31	1,41	1,51	1,67	1,12	1,33	1,42	1,52	1,78

INPUT POWER (kW)															
WATER OUTLET	EFFI-CSUHT150-C					EFFI-CSUHT300-C					EFFI-CSUHT600-C				
	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)	-25°C (-13°F)	-8°C (17°F)	0°C (32°F)	+8°C (47°F)	+30°C (86°F)
55°C (131 °F)	17,9	17,9	18,5	18,3	16,3	34,0	34,5	36,4	37,0	36,1	60,8	66,8	68,5	70,1	62,1
65°C (149 °F)	20,3	20,1	21,2	20,8	17,9	38,1	39,0	41,4	41,6	39,8	66,9	75,6	78,1	78,5	69,6
75°C (167 °F)	23,5	23,2	23,9	23,9	18,6	43,2	44,1	46,7	48,0	45,7	73,3	86,1	86,9	90,5	80,4
85°C (185 °F)	28,0	26,4	24,7	24,4	21,4	52,7	52,2	55,3	57,5	51,1	84,9	96,7	98,3	99,5	85,7
95°C (203 °F)	29,9	28,1	25,6	26,5	23,3	56,6	58,7	60,7	60,6	54,4	95,6	97,3	96,2	94,3	81,6

In accordance with our continuous product improvement policy, effiQueenc reserves the right to modify specifications and design without prior notice.



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