General Catalogue

AIR COOLED CHILLER - HTA Series

ACHIEVE YOUR VISION

CHILLER
FAN COIL
ICE TERMAL STORAGE SYSTEM
CHU & AHU
BOILER

RAAF

Compact Screw Compressors

HANBELL RC2 series semi-hermetic screw compressor is developed especially for applications in air-conditioning and refrigeration. With high operating load design, each HANBELL compressor is of high efficiency and reliability in all operating conditions such as thermal storage, heat pump system & refrigeration.

RC2 Series Features

Advanced 5-to-6 patented Screw Rotor Profile designed to ensure high capacity and efficiency in all operating conditions.

Simple and robust design which provides high reliability and low vibration and noise level.

High efficiency motor. Premium grade low-loss core steel with special motor cooling slot and refrigerant guide vane which pilot the cold suction refrigerant gas through the motor provides the highest operating efficiency possible no matter how strict operating conditions are

Canopy for Reducing noise level

When low noise levels are required, it is possible to choose between two unit soundproofing configurations: the Low noise version and the higher-performance Super Low noise version. The latter, designed with panelling around not just the compressors, reduces any noise. Combined with reduced ventilation speed, the Super Low Noise version allows the lowest noise levels on the market to be achieved.

Dual Capacity Control

Flanged-on solenoid valve, easy on installation

Step or Continuous (Stepless) control mechanism

High ingress protection

Quick loading and unloading to target water temp.

Special supply voltage on request

Build-in Oil Separator

Three-stage oil separation

Low pressure drop and oil carry-over

Fine demister mesh in oil separation

High volume oil sump and inbuilt rust remover

Pressure relive valve available

TYPES OF PRODUCTS

This section of the catalogue refers to the evaporator series single pass. This series of heat exchangers can be used as evaporators in a compressor-driven refrigerating cycle, with a coolant (HCFC – HFC – HFO) that flows and evaporates inside the exchanger tubes and a secondary fluid water or others (anti-freezing fluids) that cools on the outside of the tubes and inside the shell. The drawing above shows an evaporator with the description of its main components.

COMPATIBLE FLUIDS

The heat exchangers are designed according to the pressure and temperature limits and with the materials described here below. The main data of the heat exchanger, according to Art. 4 of Annex 1 of the European Directive 2014/68/UE, are indicated on the unit's name plate.

MATERIALS

The choice of the materials used in the evaporators is the result of strict quality checks carried out in compliance with the PED norm (Dir. 2014/68/UE) and the European norms regulating the construction of pressure vessels. The standard components are: - carbon steel: head (medium-large sizes in cast iron), tube sheet, shell and refrigerant and water connections, - copper alloy C12200 – EN12452/SB359 with inner finned surface suitable for exchanger pipes, - asbestos free gaskets suitable for the use of HCFC, HFC, HFO refrigerants, - PVC plastic baffles, - bonded steel bolts fit for the temperatures generated during the use.

TEST, QUALITY AND IDPENTIFICATION

All tests comply with the procedures of our internal quality manual UNI EN ISO 9001 and specifically all the evaporators undergo the following: - Pneumatic pressure test refrigerant and water side (coefficient x 1,43), - Test with penetration liquids (PT) on the weldings according to the norms, - Separate pressure test for each single refrigerant circuit, - Hydrostatic test with the use of a helium leakage detector (accepted max. level of 3 g/year of R22). Once the tests are over and before shipping, the refrigerant circuits are dried and protected against humidity by means of moisture absorber bags.

Microchannel Condenser Coil

High Surface Area: The microchannel design maximizes surface area relative to volume, allowing for more efficient heat transfer compared to traditional tube-and-fin condensers.

Enhanced Cooling Performance: With a higher heat exchange rate, microchannel coils offer superior cooling performance even under demanding conditions.

Faster Response Time: The increased heat transfer efficiency results in quicker response times, improving the overall system performance.

Compact and Lightweight Design

Space-Saving: Microchannel coils are significantly more compact than traditional counterparts, making them ideal for applications where space is at a premium.

Reduced Weight: The use of aluminum and the efficient design contribute to a lighter coil, which is beneficial in automotive and aerospace applications where weight reduction is crucial.

Installation Flexibility: The compact design allows for easier integration into various systems, providing greater flexibility in design and installation.

Environmental and Cost Benefits

Lower Refrigerant Charge: Microchannel coils require less refrigerant to achieve the same cooling capacity, leading to cost savings and reduced environmental impact.

Energy Efficiency: The higher efficiency of these coils reduces the energy consumption of the system, contributing to lower operational costs and a smaller carbon footprint.

Eco-Friendly: By reducing the amount of refrigerant and energy used, microchannel coils help meet stricter environmental regulations and sustainability goals.

Durability and Reliability

Corrosion Resistance: Constructed primarily from aluminum, these coils offer excellent resistance to corrosion, extending their lifespan even in harsh environments.

Pressure Tolerance: Designed to withstand high operating pressures, microchannel coils are suitable for both low and high-pressure systems, ensuring reliability across a wide range of applications.

Vibration Resistance: The robust construction of microchannel coils reduces the risk of damage from vibration, a common issue in mobile and industrial applications.

Maintenance and Serviceability

Low Maintenance: The all-aluminum construction with fewer mechanical joints reduces the potential for leaks and the need for frequent maintenance, resulting in lower long-term service costs.

Ease of Cleaning: The flat surface of microchannel coils allows for easier cleaning compared to traditional coils, which helps maintain efficiency and extends the coil's operational life.

Technical Specifications

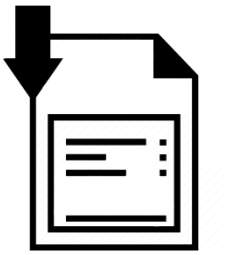
Material: High-grade aluminum with optional anti-corrosion coatings

Efficiency: Heat transfer efficiency exceeding 95%

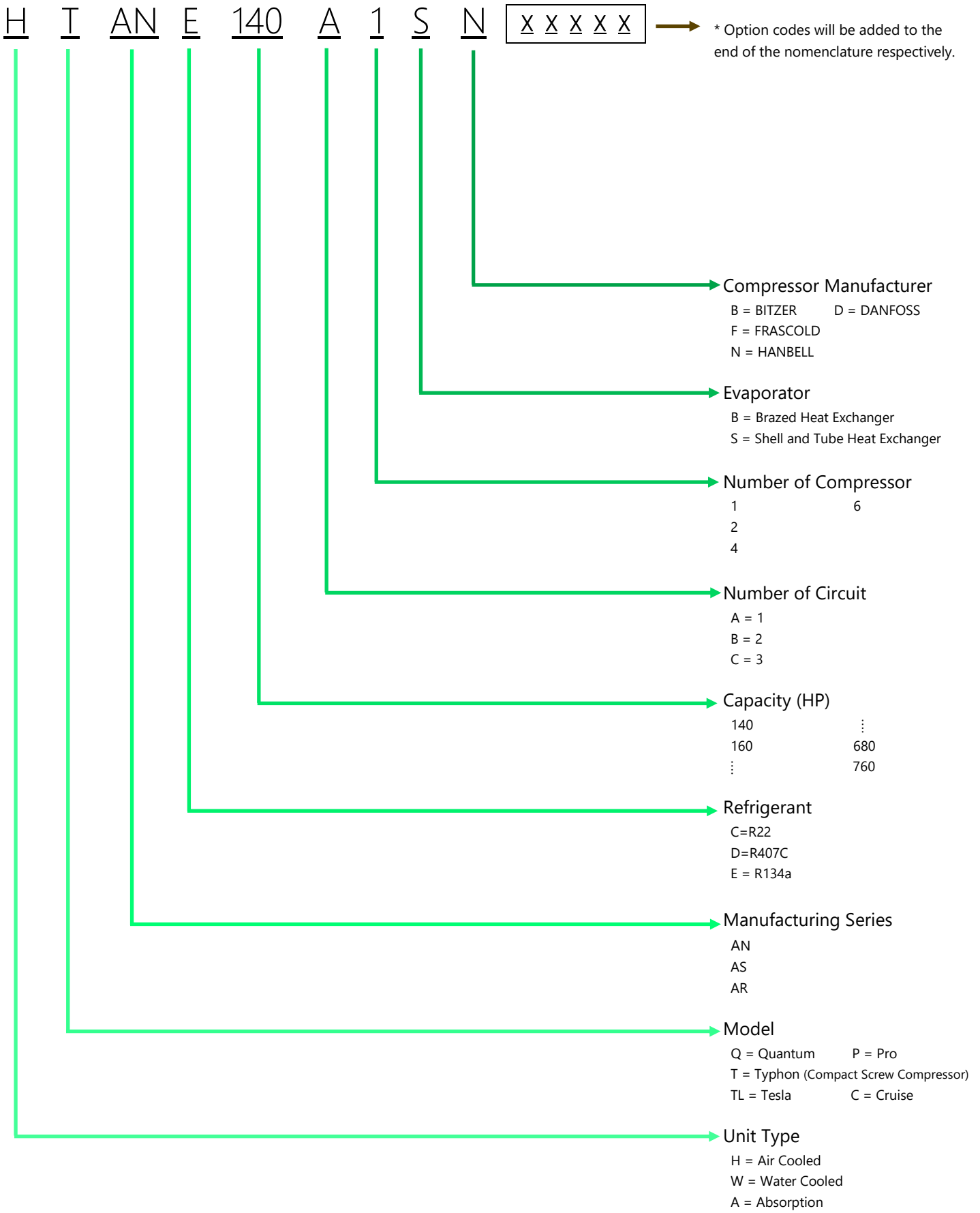
Test Pressure: up to 450 PSI

Refrigerant Compatibility: Compatible with a wide range of refrigerants, including R134a, R410A, and newer low-GWP refrigerants.

Customizability: Available in various sizes and configurations to meet specific application needs, with options for fin design, tube spacing and coating



Nomenclature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* Option codes will be added to the end of the nomenclature respectively.
Compressor Manufacturer
B = BITZER D = DANFOSS
F = FRASCOLD
N = HANBELL
Evaporator
B = Brazed Heat Exchanger
S = Shell and Tube Heat Exchanger
Number of Compressor
1 6
2
4
Number of Circuit
A = 1
B = 2
C = 3
Capacity (HP)
140 ⋮
160 680
⋮ 760
Refrigerant
C=R22
D=R407C
E = R134a
Manufacturing Series
AN
AS
AR
Model
Q = Quantum P = Pro
T = Typhon (Compact Screw Compressor)
TL = Tesla C = Cruise
Unit Type
H = Air Cooled
W = Water Cooled
A = Absorption

Options

- This table includes information of equipment that their installation enhances the unit's efficiency.

Item	Description	Product's Brand
1. Soft Starter	▪ Reducing the mechanical stress and shocks caused by starts and stops to the compressor ▪ Controlling the consuming current of compressors and protecting them from the electrical overload ▪ Having the minimum amount of reactive power ▪ To perform a safe boot, three asynchronous phases are used ▪ Consistently controlling of the compressor voltage source in the operating stage ▪ The compressor is aligned with load behavior to accelerate the mechanical equipment's operation ▪ Increasing the life span	SIEMENS
2. Accumulator	▪ Preventing the liquid refrigerant to enter the compressor. ▪ Reevaporating of collected refrigerant in Accumulator to enhance the compressor's efficiency. ▪ Protecting the compressor from damage.	CASTEL
3. Economizer	▪ Increasing the efficiency by creating a sub-circuit. ▪ Improving the system performance. ▪ Energy saving. ▪ Utilizing brazed plate heat exchanger.	KELVION (Heat Exchanger)
4. Switch Cabinet	A. UPS buffered controller to prevent damage during operating. B. Cooling system specially for switch cabinet.	-
5. Fan	A. EUROVENT trademark. B. Sound reduction diffuser. (Executable only for EUROVENT fans)	-

- All models are supplied with S&P fan trademark.
- Option codes must be added to the end of the nomenclature and it is mandatory in the registration process.

Technical Data

Model No.				HTANE140A1SN	HTANE160A1SN	HTANE180B2SN
1	Cooling capacity		KW	239.8	273.3	322.2
			RT	68	78	92
	Total input power		KW	74	81.7	93.3
	Total rated current		A	135.7	146	161.7
	EER		-	3.24	3.34	3.46
2	Cooling capacity		KW	222.9	258.1	299.6
			RT	63	72	85
	Total input power		KW	80.6	89.4	102.3
	Total rated current		A	146	157	176.2
	EER		-	2.76	2.88	2.92
Evaporator		Type	-	Shell and tube		
		Brand	-	WTK		
		Water flow rate	gpm	181	208	245
			m^3/h	41.2	47.2	55.6
		Water pressure drop	kPa	37	25	28
		Max design pressure	Mpa	0.8		
Condenser		Type	-	V Shape		
		Heat exchanger	-	Micro-channel		
Fan		Type	-	Axial fan		
		Brand	-	S&P		
		Number	-	6		
		Speed	rpm	900		
		Diameter	mm	800		
		Air flow rate	m^3/h	22000		
		Discharge	Side/Top	Top		
Compressor		Type	-	Compact Screw		
		Brand	-	HANBELL		
		Model	-	RC2-410B	RC2-470B	RC2-550B
		Combination	Pieces	1		
		Capacity	hp	140	160	180
		Oil heater	-	●		
Refrigerant		Type	-	R134a		
Ambient temp. range			°C	21 ~ 46		
Command control system		Type	-	Carel PLC		
Sound pressure level			dB(A)	~ 92		
Power supply			Ø , V , Hz	3 , 400 , 50		
Dimension		WxHxD	mm	2100x2300x2100		
Net weight			kg	~		

1 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 35 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 40 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

- Evaporating SST : 3 °C
- Water side fouling factor : 0.000043 m^2 . °C / KW
- Measuring sound pressure level at 3m away and ±3dB tolerance.
- The characteristics of water flow rate and water pressure drop are given based on case "1".

Model No.				HTANE210A1SN	HTANE250B2SN	HTANE280B2SN
1	Cooling capacity		KW	361.7	440	479.6
			RT	103	125	136
	Total input power		KW	106.6	126.4	140
	Total rated current		A	181.1	218	259.4
	EER		-	3.39	3.48	3.42
2	Cooling capacity		KW	336.2	409.2	445.8
			RT	96	116	127
	Total input power		KW	116.7	138.8	153.2
	Total rated current		A	197.9	238.8	280
	EER		-	2.88	2.94	2.91
Evaporator		Type	-	Shell and tube		
		Brand	-	WTK		
		Water flow rate	gpm	275	333	363
			m^3/h	62.5	75.6	82.4
		Water pressure drop	kPa	22	25	18
		Max design pressure	Mpa	0.8		
Condenser		Type	-	V Shape		
		Heat exchanger	-	Micro-channel		
Fan		Type	-	Axial fan		
		Brand	-	S&P		
		Number	-	8		
		Speed	rpm	900		
		Diameter	mm	800		
		Air flow rate	m^3/h	22000		
		Discharge	Side/Top	Top		
Compressor		Type	-	Compact Screw		
		Brand	-	HANBELL		
		Model	-	RC2-620B	RC2-370B	RC2-410B
		Combination	Pieces	1	2	
		Capacity	hp	210	250	280
		Oil heater	-	●		
Refrigerant		Type	-	R134a		
Ambient temp. range			°C	21 ~ 46		
Command control system		Type	-	Carel PLC		
Sound pressure level			dB(A)	~ 92	~ 93	~ 94
Power supply			Ø , V , Hz	3 , 400 , 50		
Dimension		WxHxD	mm	2100x2300x4200		
Net weight			kg	~		

1 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 35 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 40 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

- Evaporating SST : 3 °C
- Water side fouling factor : 0.000043 m^2 . °C / KW
- Measuring sound pressure level at 3m away and ±3dB tolerance.
- The characteristics of water flow rate and water pressure drop are given based on case "1".

Model No.				HTANE320B2SN	HTANE360B2SN	HTANE420B2SN
1	Cooling capacity		KW	546.6	644.4	723.4
			RT	155	183	206
	Total input power		KW	163.4	186.6	205.2
	Total rated current		A	288	323.4	350.2
	EER		-	3.34	3.45	3.52
2	Cooling capacity		KW	508.2	599.2	672.4
			RT	144	170	191
	Total input power		KW	178.8	204.6	225.4
	Total rated current		A	314	352.4	384
	EER		-	2.84	2.93	2.98
Evaporator		Type	-	Shell and tube		
		Brand	-	WTK		
		Water flow rate	gpm	412	486	548
			m^3/h	93.7	110.5	124.4
		Water pressure drop	kPa	22	16	21
		Max design pressure	Mpa	0.8		
Condenser		Type	-	V Shape		
		Heat exchanger	-	Micro-channel		
Fan		Type	-	Axial fan		
		Brand	-	S&P		
		Number	-	12		
		Speed	rpm	900		
		Diameter	mm	800		
		Air flow rate	m^3/h	22000		
		Discharge	Side/Top	Top		
Compressor		Type	-	Compact Screw		
		Brand	-	HANBELL		
		Model	-	RC2-470B	RC2-550B	RC2-620B
		Combination	Pieces	2		
		Capacity	hp	320	360	420
		Oil heater	-	●		
Refrigerant		Type	-	R134a		
Ambient temp. range			℃	21 ~ 46		
Command control system		Type	-	Carel PLC		
Sound pressure level			dB(A)	~ 94	~ 95	~ 96
Power supply			Ø , V , Hz	3 , 400 , 50		
Dimension		WxHxD	mm	2100x2300x4200	2100x2300x6300	2100x2300x8400
Net weight			kg	~	~	~

1 : Chilled water inlet / outlet : 12 ℃ / 7 ℃
Outdoor ambient temp. : 35 ℃ DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

2 : Chilled water inlet / outlet : 12 ℃ / 7 ℃
Outdoor ambient temp. : 40 ℃ DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

- Evaporating SST : 3 ℃
- Water side fouling factor : 0.000043 m^2 . ℃ / KW
- Measuring sound pressure level at 3m away and ±3dB tolerance.
- The characteristics of water flow rate and water pressure drop are given based on case "1".

Model No.				HTANE480B2SN	HTANE560B2SN	HTANE640B2SN
1	Cooling capacity		KW	830	989.6	1158
			RT	236	281	329
	Total input power		KW	239.6	286.4	326.4
	Total rated current		A	416.4	507.2	571.4
	EER		-	3.46	3.45	3.55
2	Cooling capacity		KW	771.8	920	1076.4
			RT	219	262	306
	Total input power		KW	262.8	314	358.4
	Total rated current		A	456	552	622.4
	EER		-	2.94	2.93	3.00
Evaporator		Type	-	Shell and tube		
		Brand	-	WTK		
		Water flow rate	gpm	627	748	876
			m^3/h	142.5	169.9	199.1
		Water pressure drop	kPa	45	34	87
		Max design pressure	Mpa	0.8		
Condenser		Type	-	V Shape		
		Heat exchanger	-	Micro-channel		
Fan		Type	-	Axial fan		
		Brand	-	S&P		
		Number	-	16	20	
		Speed	rpm	900		
		Diameter	mm	800		
		Air flow rate	m^3/h	22000		
		Discharge	Side/Top	Top		
Compressor		Type	-	Compact Screw		
		Brand	-	HANBELL		
		Model	-	RC2-710B	RC2-830B	RC2-930B
		Combination	Pieces	2		
		Capacity	hp	480	560	640
		Oil heater	-	●		
Refrigerant		Type	-	R134a		
Ambient temp. range			°C	21 ~ 46		
Command control system		Type	-	Carel PLC		
Sound pressure level			dB(A)	~ 96	~ 96	~ 97
Power supply			Ø , V , Hz	3 , 400 , 50		
Dimension		WxHxD	mm	2100x2300x8400	2100x2300x10500	
Net weight			kg	~	~	

1 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 35 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 40 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

- Evaporating SST : 3 °C
- Water side fouling factor : 0.000043 m^2 . °C / KW
- Measuring sound pressure level at 3m away and ±3dB tolerance.
- The characteristics of water flow rate and water pressure drop are given based on case "1".

Model No.				HTANE680B2SN	HTANE760B2SN
1	Cooling capacity		KW	1325.6	1460
			RT	377	415
	Total input power		KW	379.6	409.4
	Total rated current		A	674.2	718.4
	EER		-	3.49	3.56
2	Cooling capacity		KW	1232.2	1357
			RT	350	386
	Total input power		KW	416.8	450
	Total rated current		A	729.6	780.6
	EER		-	2.95	3.01
Evaporator		Type	-	Shell and tube	
		Brand	-	WTK	
		Water flow rate	gpm	1001	1103
			m^3/h	227.4	250.6
		Water pressure drop	kPa	74	34
		Max design pressure	Mpa	0.8	
Condenser		Type	-	V Shape	
		Heat exchanger	-	Micro-channel	
Fan		Type	-	Axial fan	
		Brand	-	S&P	
		Number	-	24	
		Speed	rpm	900	
		Diameter	mm	800	
		Air flow rate	m^3/h	22000	
		Discharge	Side/Top	Top	
Compressor		Type	-	Compact Screw	
		Brand	-	HANBELL	
		Model	-	RC2-1020B	RC2-1130B
		Combination	Pieces	2	
		Capacity	hp	680	760
		Oil heater	-	●	
Refrigerant		Type	-	R134a	
Ambient temp. range			°C	21 ~ 46	
Command control system		Type	-	Carel PLC	
Sound pressure level			dB(A)	~ 98	~ 99
Power supply			Ø , V , Hz	3 , 400 , 50	
Dimension		WxHxD	mm	2100x2300x12600	
Net weight			kg	~	

1 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 35 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

2 : Chilled water inlet / outlet : 12 °C / 7 °C
Outdoor ambient temp. : 40 °C DB
Sea level : 4000 ft
Fan input power included
Pump input power not included

- Evaporating SST : 3 °C
- Water side fouling factor : 0.000043 m^2 . °C / KW
- Measuring sound pressure level at 3m away and ±3dB tolerance.
- The characteristics of water flow rate and water pressure drop are given based on case "1".

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