

Gplus



چیلرهای اسکروال فول اینورتر ماژولار جی پلاس
Inverter Air-Cooled Scroll Chiller 2023

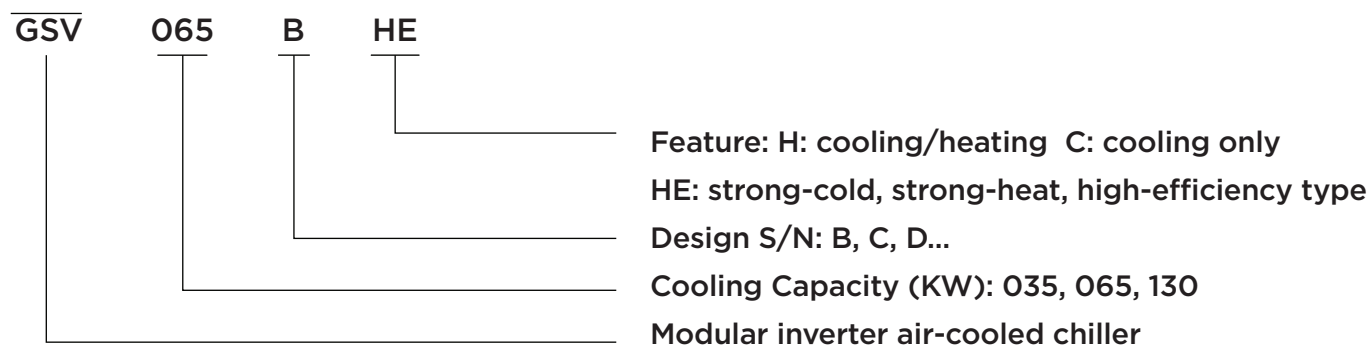


Features

- Gplus inverter scroll chiller (equipped with inverter compressor and condenser fan)
- High Efficiency (IPLV=4.6)
- Heat Pump
- Inverter Enhanced Vapor Injection Compressor Technology (EVI)
- Operation Range -25°C to +25°C Heating mode
- Operation Range -25°C to +55°C Cooling mode
- High Ambient (suitable for tropical regions)
- Available cooling capacities 10RT and 18.5RT
- Shell and Tube Heat Exchanger
- Electronic Expansion Valve
- Environmental Friendly Refrigerant - R410a
- Module 16 units to extend higher capacities
- Compact design and less occupied area
- CE Standard
- Blue Fin Condensers
- Goldiran Company Guarantee

Modular Inverter Air-cooled Scroll Chiller

Nomenclature





Excellence in All Aspects

Operate under all conditions

Operate at -25°C to $+55^{\circ}\text{C}$
Performance improved by 20% at extreme conditions

Full inverter energy saving

Dual grade-1 IPLV for cooling and heating
IPLV comprehensive energy saving rate up to 26%

Various application scenarios

Solutions to meet normal indoor use, special process and cooling only, low temperature and strong heat, etc.
Full application scenario alternative



Simple but Stunning

Concise structure

Full concealed design

Simplified system

Single compressor design
Optimized refrigerant pipeline

User-friendly experience

Full series compatibility of modular unit
Easy to use control panel (optional), one-key operation
Data control, convenient after sales service



Operate under all conditions

With years of experience in developing and designing process air conditioners, Gplus has successfully integrated EVI and full inverter technologies and made a breakthrough in the operation of modular units.

Operating temperature in cooling mode: -20 to +55°C

Operating temperature in heating mode: -25 to +25°C

Performance improved by 20% at extreme conditions



Dynamic control of condensation pressure

Efficient inverter fan and 15%-100% stepless capacity control to match changes in the system pressure in real time.



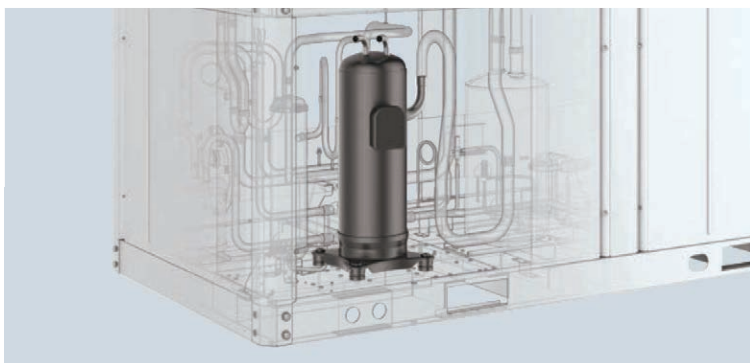
Inverter EVI technology

Inverter adjustment under partial load ensures efficient operation; EVI technology ensures strong cold and strong heat at extreme conditions.



Self-developed drive control program

German stepless sine-wave permanent magnet motor driving technology provides computing at 8000 times per second and double filtering to ensure that power disruption is removed at all frequencies.



Full inverter energy saving

V-FORCE modular units use full inverter design so that the partial load efficiency is greatly enhanced.

With intelligent control technology, multiple units are able to operate at the same time in a stable, efficient and balanced manner.

Reaching the national EEI level 1 in cooling and heating mode

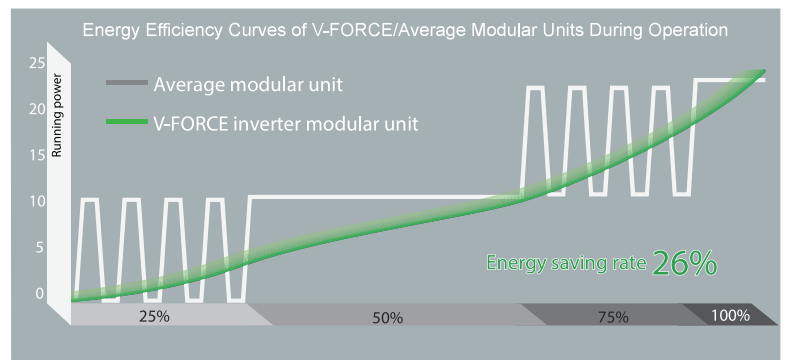
IPLV is above **4.55** in cooling mode
Exceeding the national EEI level 1 (4.0)

IPLV is above **3.10** in heating mode
Meeting the national EEI level 1 for heating of the new national standard



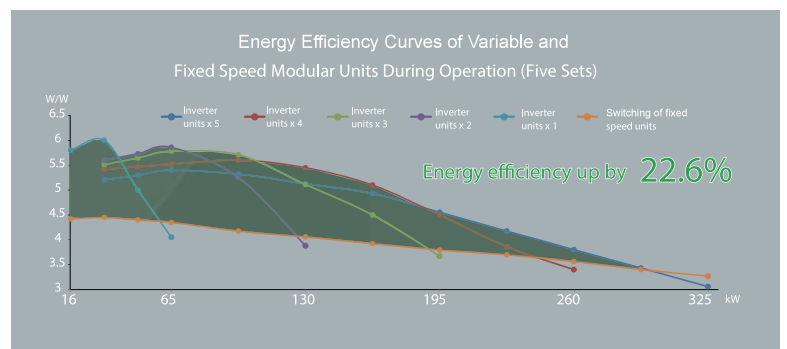
Inverter operation and accurate output

The unit is equipped with a large capacity inverter compressor that supports 15%-100% stepless regulation. The unit has a smooth performance curve. In addition, it performs well under partial load and the compressor does not start or stop frequently.



Balanced control to ensure energy efficiency

Partial load operation prioritized when multiple modules are combined, the frequency of each compressor is intelligently controlled, so that the system operates in an energy-efficient area in a balanced manner.





Various application scenarios

Comfort

Silent and environmentally friendly
Extremely comfortable

The noise can be lowered by 6-10 dB(A) in silent mode
The noise can be as low as 50 dB(A) in partial load



Process

Four season operation
Stable operation

Operate stably in cooling mode at the ambient temperature of -20 to +55°C
Precise control of water outlet temperature



Strong heat

Low temperature and strong heat
EVI and enhanced efficiency

Heat at even -25°C
(water outlet temperature at 40°C)
The water outlet temperature can reach 55°C
(when the ambient temperature is above 0°C)



Simple but Stunning

Concise structure

- Vulnerable parts fully concealed to facilitate installation.
- Four-way air suction and 45% more windward area to ensure more efficient heat exchange and reliable structure.

Simplified system

- Creative single compressor design featuring inverter and EVI technologies.
- Optimized refrigerant pipeline to reduce welding costs.



Technical Specification

Model			GSV035BHE	GSV065BHE	GSV130BHE
Nominal cooling	Cooling capacity	kW	33.5	65	130
	Power consumption	kW	12	21.2	41.8
	COP	W/W	2.79	3.06	3.11
	IPLV	W/W	4.6	4.55	4.55
Nominal heating 1	Heating capacity	kW	24	48	96
	Power consumption	kW	10.2	20.5	41.5
	COP	W/W	2.35	2.34	2.34
	IPLV	W/W	3.2	3.1	3.1
Nominal heating 2	Heating capacity	kW	34	75	150
	Power consumption	kW	10.5	23.4	45
	COP	W/W	3.24	3.2	3.33
Power supply	-	380 V 3N-50Hz			
Water flow	m ³ /h	5.75	11.2	22.4	
Water resistance	kPa	30	45	45	
Water inlet and outlet pipe connection type	-	DN40 external thread connection	DN65 flange connection	DN65 flange connection	
Operating mode	-	Automatic operation controlled by microcomputers			
Compressor	Type	-	Scroll type DC inverter EVI		
	Qty	Set	1	1	2
Fan	Type	-	DC inverter low- noise axial fan		
	Air flow	m ³ /h	13000	26000	47000
	Qty	Set	1	2	2
Refrigerant	Type	-	R410A		
External Dimension(Length*Width*Height)	mm	1170X846X1694	2000X950X2020	2250X1150X2260	
Weight	Net weight	kg	285	600	960
	Operating weight		300	660	1060
Noise	dB(A)	50-61	50-67	50-67	
Maximum total power	kW	20	31.5	63	
Maximum operating current	A	30.5	50	100	

Notes:

- The nominal cooling capacity and nominal cooling consumption power are tested at the rated water flow, water outlet temperature of 7°C, and outdoor dry-bulb temperature of 35°C.
The nominal heating capacity 1 is tested at the rated water flow, water outlet temperature of 41°C, and outdoor dry-bulb temperature of -12°C and wet-bulb temperature of -14°C.
The nominal heating capacity 2 is tested at the rated water flow, water outlet temperature of 45°C, and outdoor dry-bulb temperature of 7°C and wet-bulb temperature of 6°C.
- About 6% loss caused by system pipelines, water pumps, valves, and dirt after unit installation shall be considered for the cooling (heating) capacity in actual applications.
- Parameters listed in the above tables are for a single module. Up to 16 modules can be used together.
- The control accessory box needs to be purchased separately, which contains the wired controller, wired controller communication cable, user manual, temperature sensor, etc. The box content may change. Please refer to the actual factory configurations.

Operating Range

Ambient temperature range in cooling mode	°C	-20-55
Ambient temperature range in heating mode	°C	-25-55
Cooling return water temperature	°C	10-25
Cooling water outlet temperature	°C	5-20
Heating return water temperature	°C	25-50
Heating water outlet temperature	°C	30-55

Unit Selection Parameters Correction

Cooling Capacity Table

GSV035BHE

Water outlet temperature °C	Ambient Temperature																							
	55	52	48	44	40	35	30	25	15	5	0	-5	-10	-15	-20									
5	0.21	0.48	0.36	0.77	1.04	0.89	0.88	0.92	1.03	0.88	1.02	0.75	1.08	0.72	1.08	0.82	1.09	0.66	1.09	0.66	1.15	0.67		
7	0.21	0.5	0.38	0.78	1.05	0.91	0.88	0.93	1.08	0.88	1.08	0.76	1.11	0.72	1.11	0.67	1.11	0.67	1.13	0.68	1.2	0.96		
9	0.23	0.52	0.41	0.78	1.05	0.94	0.89	0.94	1.14	0.89	1.13	0.76	1.14	0.72	1.14	0.73	1.14	0.68	1.18	0.7	1.24	0.72		
12	0.25	0.54	0.46	0.8	1.05	0.96	0.89	0.95	1.22	0.89	1.2	0.77	1.19	0.73	1.19	0.73	1.19	0.74	1.24	0.73	1.31	0.76		
15	0.28	0.57	0.54	0.82	1.05	0.99	0.92	0.96	1.3	0.9	1.28	0.78	1.23	0.73	1.23	0.74	1.23	0.75	1.24	0.72	1.31	0.76		
20	0.33	0.59	0.68	0.85	1.05	0.99	1	0.99	1.46	0.91	1.44	0.79	1.32	0.74	1.32	0.75	1.32	0.76	1.37	0.76	1.44	0.82	1.51	0.88

GSV065/130BHE

Water outlet temperature °C	Ambient Temperature																							
	55	52	48	44	40	35	30	25	15	5	0	-5	-10	-15	-20									
5	0.19	0.51	0.36	0.77	1.04	0.89	0.87	0.92	1.03	0.88	1.02	0.75	1.08	0.72	1.08	0.7	1.09	0.68	1.02	0.66	1.09	0.66	1.15	0.67
7	0.2	0.51	0.38	0.78	1.05	0.91	0.88	0.93	1.08	0.88	1.08	0.76	1.11	0.72	1.11	0.7	1.11	0.68	1.06	0.67	1.13	0.68	1.2	0.69
9	0.21	0.52	0.41	0.78	1.05	0.94	0.89	0.94	1.14	0.89	1.13	0.76	1.14	0.72	1.14	0.71	1.14	0.69	1.11	0.68	1.18	0.7	1.24	0.72
12	0.24	0.53	0.46	0.8	1.05	0.96	0.89	0.95	1.22	0.89	1.2	0.77	1.19	0.73	1.19	0.71	1.19	0.69	1.17	0.7	1.24	0.73	1.31	0.76
15	0.28	0.54	0.54	0.82	1.05	0.99	0.92	0.96	1.3	0.9	1.28	0.78	1.23	0.73	1.23	0.72	1.23	0.7	1.24	0.72	1.31	0.76	1.38	0.8
20	0.35	0.57	0.68	0.85	1.05	0.99	1	0.99	1.46	0.91	1.44	0.79	1.32	0.74	1.32	0.73	1.32	0.72	1.37	0.75	1.44	0.82	1.51	0.88

Heating Capacity Table

GSV035BHE

Water outlet temperature °C	Ambient Temperature																											
	-26	-20	-15	-10	-5	0	7	10	15	20	25	30	35	48	55													
30	0.47	0.77	0.83	0.87	0.86	0.9	0.86	1	0.81	1.05	0.86	1.18	0.83	1.19	0.86	1.18	0.75	1.17	0.83	1.26	0.61	1.36	0.62	1.44	0.56	1.5	0.58	
35	0.47	0.86	0.86	0.7	0.92	0.79	0.94	0.88	0.96	0.97	0.89	1.01	0.86	1.15	0.86	1.19	0.87	1.18	0.75	1.17	0.64	1.26	0.61	1.35	0.62	1.44	0.53	1.5
40	0.46	0.97	0.58	0.92	0.69	1.03	0.79	1.05	0.89	0.97	0.96	0.99	0.91	1.14	0.95	1.19	0.99	1.15	0.87	1.1	0.75	1.19	0.72	1.27	0.73	1.28	0.64	1.34
45		0.57	1.1	0.67	1.13	0.77	1.15	0.88	1.17	0.95	1.06	1	1.13	1.06	1.19	1.11	0.9	1.16	0.9	1.14	0.69	1.22	0.67	1.31	0.68	1.32	0.59	1.38
50		0.56	1.27	0.64	1.29	0.76	1.28	0.87	1.25	0.93	1.16	0.95	1.1	1.12	1.16	1.19	1.23	1.13	1.02	1.07	0.8	1.16	0.78	1.24	0.79	1.24	0.77	1.3
55										0.92	1.15	0.94	1.05	1.12	1.2	1.19	1.34	1.11	1.13	1.04	0.92	1.12	0.89	1.04	0.9	1.06	0.69	1.09

GSV065/130BHE

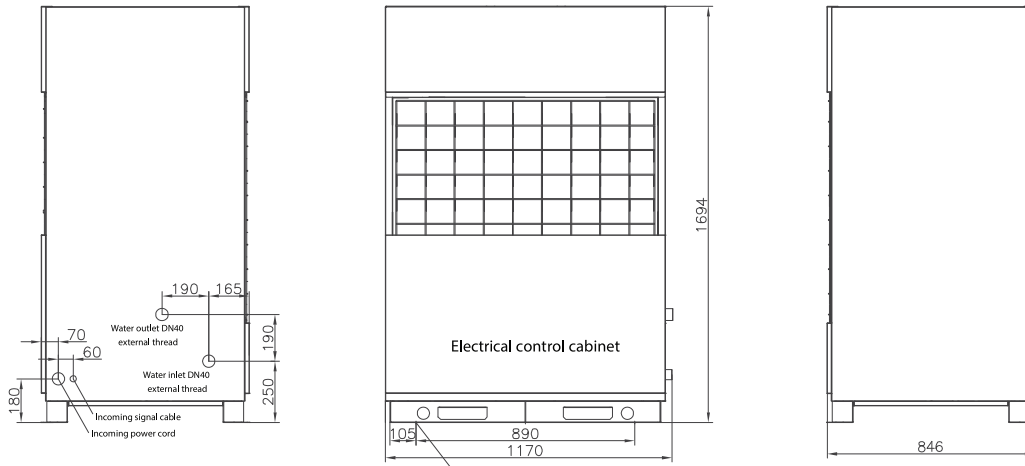
Water outlet temperature °C	Ambient Temperature																											
	-26	-20	-15	-10	-5	0	7	10	15	20	25	30	35	48	55													
30	0.42	0.68	0.52	0.71	0.6	0.72	0.67	0.74	0.79	0.76	0.9	0.78	1.01	0.79	1.08	0.79	0.78	0.79	0.71	0.87	0.49	0.94	0.47	1.01	0.48	1.07	0.44	1.09
35	0.41	0.76	0.51	0.79	0.6	0.78	0.66	0.8	0.79	0.84	0.9	0.86	1.01	0.85	1.08	0.88	1.09	0.85	1.1	0.75	0.88	0.54	0.95	0.52	1.02	0.53	1.08	0.45
40	0.41	0.83	0.51	0.86	0.6	0.85	0.66	0.89	0.79	0.91	0.88	0.94	1.01	0.92	1.07	0.94	1.09	0.93	1.08	0.81	0.91	0.59	0.97	0.57	1.04	0.58	1.05	0.5
45		0.49	0.61	0.71	0.6	0.72	0.61	0.71	0.75	0.78	0.81	0.87	0.91	0.92	0.97	0.94	1.01	0.91	0.91	0.86	0.81	0.65	0.98	0.62	1.05	0.63	1.05	0.55
50		0.47	0.68	0.77	0.6	0.72	0.61	0.71	0.75	0.78	0.81	0.87	0.91	0.92	0.97	0.94	1.01	0.91	0.86	0.81	0.65	0.98	0.62	1.05	0.63	1.05	0.55	
55										0.87	1.12	0.87	1.09	0.98	1.14	1.07	1.17	1.09	1.08	0.91	0.9	0.7	0.97	0.68	1.04	0.69	1.04	0.59

Remarks:
 1. The correction coefficient of heating performance is based on the heating of nominal heating 2.
 2. In the table, (1) applies to GSV065BHE, and (2) applies to GSV130BHE.

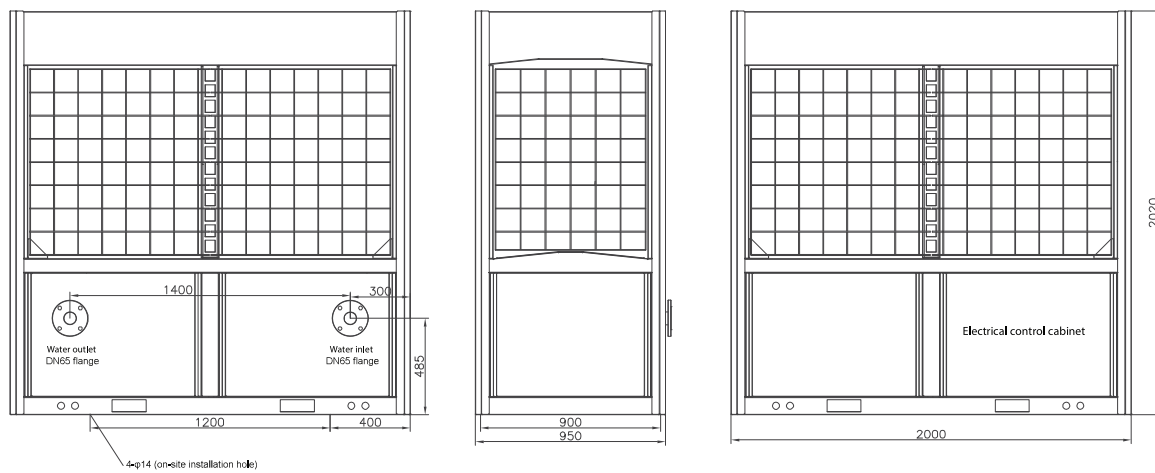


Unit Dimensions

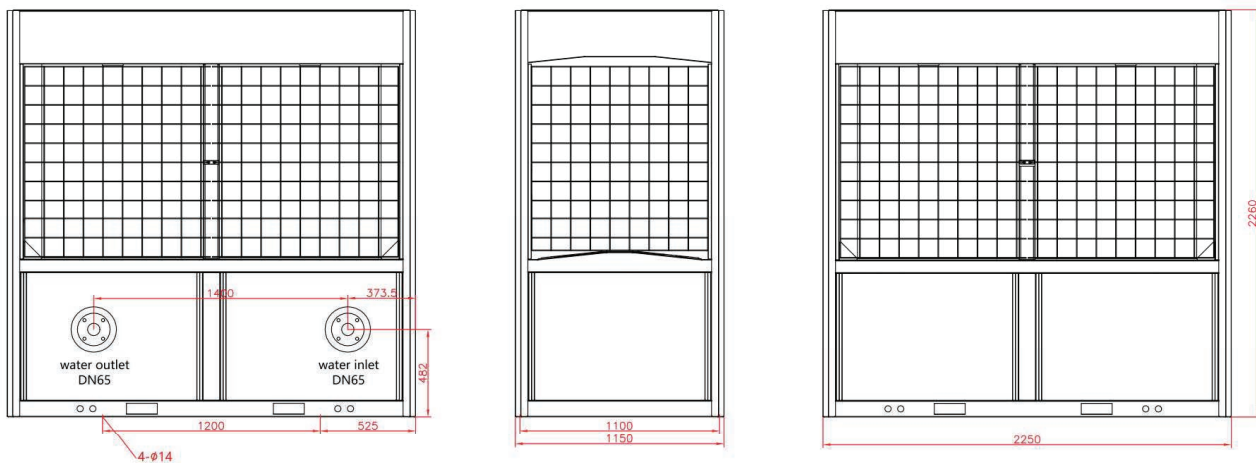
GSV035BHE



GSV065BHE



GSV130BHE



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