

DCECO W

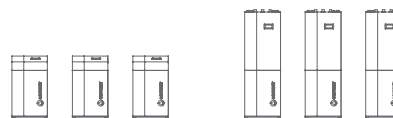


MODELS:

DCECO W 1-9

DCECO W 3-12

Cascade



POWER RANGES

1-9 kW / 3-12 kW

(3.4 - 30.7 MBH / 10.2 - 40.9 MBH)

- Inverter technology
- Domestic hot water production
- Heating and pool production
- Integrated active cooling production
- Integrated passive (free) cooling production
- Integrated photovoltaic hybridisation
- Integrated cascade management up to 3 units
- HTR technology for DHW production up to 158°F and simultaneous production of several services
- Natural refrigerant used in DCECO PRO models allowing DHW production temperature up to 167°F
- Single-phase (230V) or three-phase (400V) power supply



DHW



Heating



Cooling



Pool



DCECO W 1-9 / TECHNICAL DATA

- Modulating thermal power control within a wide range (12,5-100%) and modulating flow rate control of both brine and production circuits (20-100%).
- Inverter technology and scroll compressor.
- Compact design including brine and production circulation pumps, brine and production expansion vessels (8l and 12l respectively), brine and production safety valves and DHW three-way valve.
- High Temperature Recovery system (HTR) for DHW production up to 158 °F without electrical support and simultaneous production of DHW and heating/cooling.
- Integrated management of up to 4 different emission temperatures, 2 buffer tanks (heating and cooling), 1 DHW tank, 1 pool and hourly control of DHW recirculation.
- Integrated management of aerothermal collection modulating units, in case of air source or hybrid configurations.
- Integrated management of external On/Off or modulating auxiliary systems, such as electrical heaters, On/Off boilers or modulating boilers.
- Integrated management of cascade systems up to 3 units.
- Integrated management of simultaneous cooling/heating systems according to scheme.
- Integrated free cooling in models 2 and 4.
- Integrated active cooling in models 3 and 4.
- Single-phase and Three-phase versions available.
- Integrated photovoltaic hybridisation.
- Integrated energy meters to measure the electrical consumption, the heating/cooling thermal power, the COP and the monthly and annual SPF.

Model DCECO W 1-9		UNITS	B4/C4
APPLICATION	Place of installation	-	Indoors
	Type of brine system ¹	-	Ground source / Air source / Hybrid source
	DHW, Heating and Pool	-	✓
	High Temperature Recovery (HTR) system option	-	✓ by default
	Integrated Active cooling	-	✓
	Integrated Passive cooling	-	✓
PERFORMANCE	Modulation range of the compressor	%	12.5 to 100
	Heating power output ² , B0W35 (B32W95°F)	MBH	4.4 to 37.5
	COP ² , B0W35 (B32W95°F)	-	4.5
	Active cooling power output ² , B35W7 (B95W44.6°F)	MBH	4.8 to 37.5 (0.40 to 3.1 tons)
	EER ² , B35W7 (B95W44.6°F)	-	5.2
	Max. DHW temperature without / with support ⁵	°F	145 / 158
	Noise power emission level ⁶	db	33 to 44
	Energy label / η_s / SCOP W35 average climate control	-	A+++ / 190% / 4.84
	Energy label / η_s / SCOP W55 average climate control	-	A+++ / 138% / 3.54
OPERATION LIMITS	Distribution / Set heating outlet temperature range	°F	50 to 140 / 68 to 140
	Distribution / Set cooling outlet temperature range	°F	41 to 95 / 44.6 to 77
	Brine inlet temperature range in heating applications	°F	-13 to 95
	Brine inlet temperature range in cooling applications	°F	50 to 140
	Minimum / Maximum refrigerant circuit pressure	psi	29 / 653
	Production / Pre-load circuit pressure	psi	7.3 to 43.5 / 21.8
	Brine / Pre-load circuit pressure	psi	7.3 to 43.5 / 10.2
	Volume / Max. DHW storage tank pressure (DCECOC)	gpm / psi	43.6 / 116
WORKING FLUIDS	R410A Refrigerant load without HTR / with HTR	lbs	2.2
	Compressor oil type / load	lbs	POE / 1.6
	1/N/PE 230 V / 50-60 Hz ⁸	-	✓
CONTROL ELECTRICAL DATA	Maximum recommended external protection ⁹	-	C16
	Transformer primary circuit fuse	A	0.5
	Transformer secondary circuit fuse	A	2.5
	1/N/PE 230 V / 50-60 Hz ⁸	-	✓
ELECTRICAL DATA: SINGLE-PHASE	Maximum recommended external protection ⁹	-	C25A
	Maximum consumption ² , B0W35 (B32W95°F)	kW / A	2.7 / 11.8
	Maximum consumption ² , B0W55 (B32W131°F)	kW / A	3.8 / 16.5
	Minimum / Maximum starting current ⁷	A	2.8 / 5.8
	Correction of cosine ϕ	-	0.96 / 1
	3/N/PE 400 V / 50-60Hz ⁸	-	✓
ELECTRICAL DATA: THREE-PHASE	Maximum recommended external protection ⁹	-	C10A
	Maximum consumption ² , B0W35 (B32W95°F)	kW / A	2.7 / 4.0
	Maximum consumption ² , B0W55 (B32W131°F)	kW / A	3.8 / 5.5
	Minimum / Maximum starting current ⁷	A	0.9 / 1.9
	Correction of cosine ϕ	-	0.96 / 1
	3/N/PE 400 V / 50-60Hz ⁸	-	✓
DIMENSIONS/WEIGHT	Height x width x depth	ft	DCECO B: 3.5x2x2.3 · DCECO C: 6.1x2x2.4
	Empty weight (without assembly)	lbs	B 423 · C 558

1. Air source/Hybrid source by replacing/combining the ground source circuit by/with one or more DEECO AU. Consult the DCECO AU manual for more detailed information.

2. In compliance with EN 14511, this includes the consumption of the circulation pumps and the compressor driver.

3. Considering brine and production flow rates in compliance with EN 14511.

4. Considering a heat slope from 68°F to 122°F in absence of consumption.

5. Considering support provided by the emergency electrical heater or the HTR system. Maximum DHW temperature with the HTR system can be limited by the compressor discharge temperature. In compliance with EN 12102.

6. Starting current depends on the working conditions of the hydraulic circuits.

7. The admissible voltage range for proper operation of the heat pump is $\pm 10\%$.

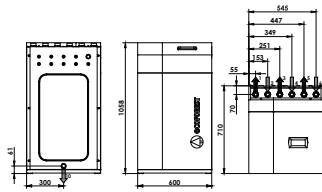
8. Maximum consumption can vary significantly according to working conditions, or if the compressor's operation range is restricted. Consult the technical service manual for more detailed information.

9. Certification in process.

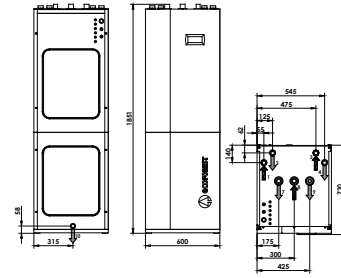
10. i.e. B0W35 refers to the temperature of the brine entering the evaporator and temperature of the water leaving the condenser.

Dimensions and hydraulic connections

DCECO W B

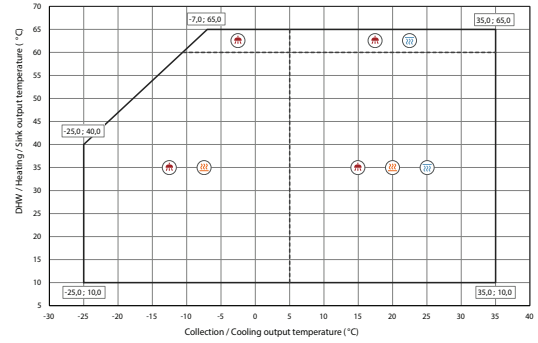


DCECO W C

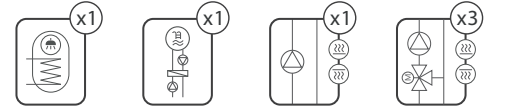


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|--------------------------------------|-------------------------------------|
| 1. Heating/Cooling Outlet - 1 1/4" M | 6. DHW System Inlet - 1 1/4" M |
| 2. Heating/Cooling Inlet - 1 1/4" M | 7. CW Inlet - 1" F |
| 3. Brine Outlet - 1 1/4" M | 8. DHW Outlet - 1" F |
| 4. Brine Inlet 1/4" M | 9. DHW Recirculation Inlet - 3/4" F |
| 5. DHW system Outlet - 1 1/4" M | 10. Drain - 16 mm |

Operational chart



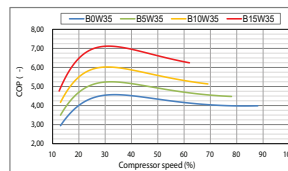
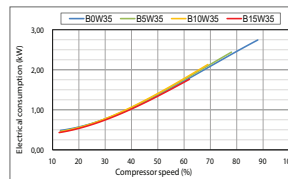
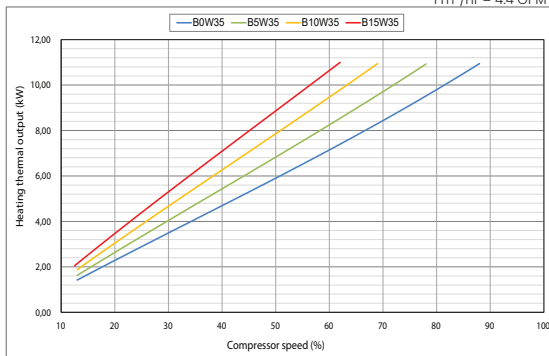
Installation management



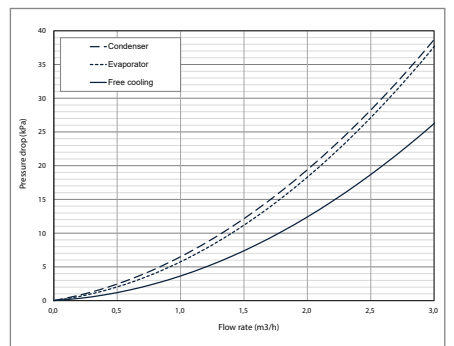
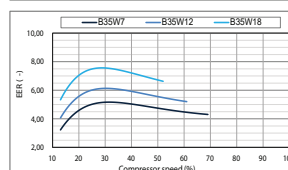
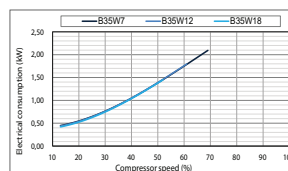
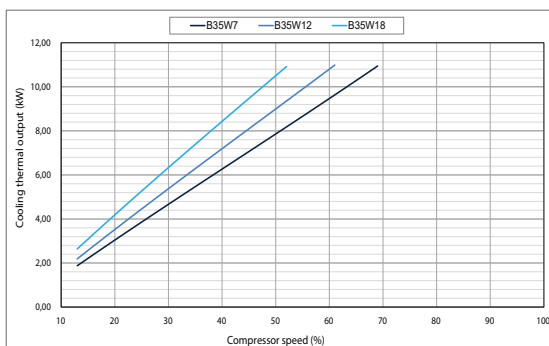
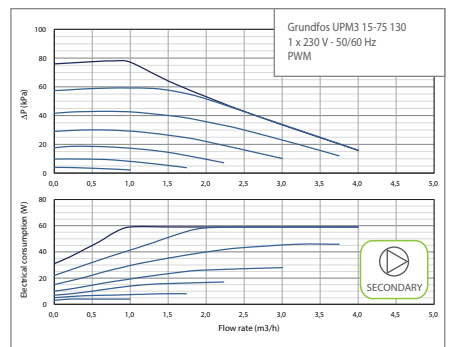
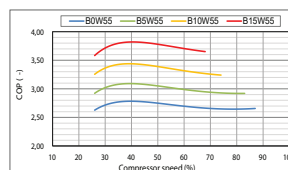
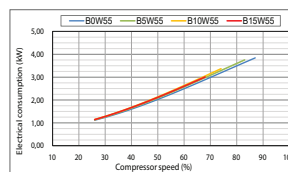
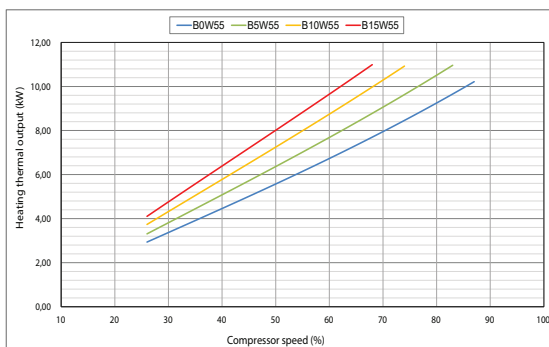
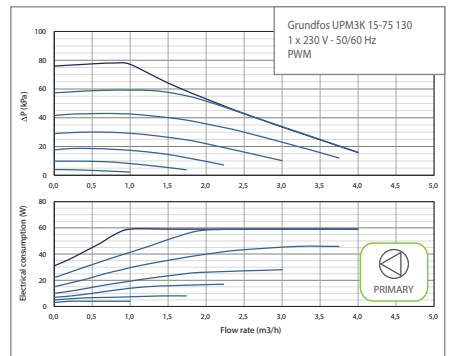
Performance curves

Thermal performance

Conversions for heating/cooling capacities, pressure, and flow rate:
 1 kw = 3.412 MBH
 1 kw = 0.284 tons
 kPa = 0.145 psi
 1 m³/hr = 4.4 GPM



Hydraulic performance





DCECO W 3-12 / TECHNICAL DATA

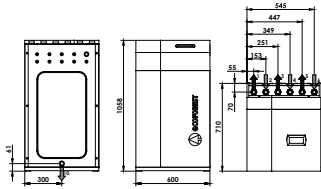
- Modulating thermal power control within a wide range (12,5-100%) and modulating flow rate control of both brine and production circuits (20-100%).
- Inverter technology and scroll compressor.
- Compact design including brine and production circulation pumps, brine and production expansion vessels (8l and 12l respectively), brine and production safety valves and DHW three-way valve.
- High Temperature Recovery system (HTR) for DHW production up to 158 °F without electrical support and simultaneous production of DHW and heating/cooling.
- Integrated management of up to 4 different emission temperatures, 2 buffer tanks (heating and cooling), 1 DHW tank, 1 pool and hourly control of DHW recirculation.
- Integrated management of aerothermal collection modulating units, in case of air source or hybrid configurations.
- Integrated management of external On/Off or modulating auxiliary systems, such as electrical heaters, On/Off boilers or modulating boilers.
- Integrated management of cascade systems up to 3 units.
- Integrated management of simultaneous cooling/heating systems according to scheme.
- Integrated free cooling in models 2 and 4.
- Integrated active cooling in models 3 and 4.
- Single-phase and Three-phase versions available.
- Integrated photovoltaic hybridisation.
- Integrated energy meters to measure the electrical consumption, the heating/cooling thermal power, the COP and the monthly and annual SPF.

Model DCECO W 3-12		UNITS	B4/C4
APPLICATION	Place of installation	-	Indoors
	Type of brine system ¹	-	Ground source / Air source / Hybrid source
	DHW, Heating and Pool	-	✓
	High Temperature Recovery (HTR) system option	-	✓ by default
	Integrated Active cooling	-	✓
	Integrated Passive cooling	-	✓
PERFORMANCE	Modulation range of the compressor	%	12.5 to 100
	Heating power output ² , B0W35 (B32W95°F)	MBH	7.2 to 54.6
	COP ² , B0W35 (B32W95°F)	-	4.6
	Active cooling power output ² , B35W7 (B95W44.6°F)	MBH	7.2 to 51.2 (0.6 to 4.3 tons)
	EER ² , B35W7 (B95W44.6°F)	-	5.2
	Max. DHW temperature without / with support ⁵	°F	145 / 158
	Noise power emission level ⁶	db	34 to 45
	Energy label / I _s / SCOP W35 average climate control	-	A+++ / 194% / 4.95
	Energy label / I _s / SCOP W55 average climate control	-	A++ / 142% / 3.65
	OPERATION LIMITS	Distribution / Set heating outlet temperature range	°F
Distribution / Set cooling outlet temperature range		°F	41 to 95 / 44.6 to 77
Brine inlet temperature range in heating applications		°F	-13 to 95
Brine inlet temperature range in cooling applications		°F	50 to 140
Minimum / Maximum refrigerant circuit pressure		psi	29 / 653
Production / Pre-load circuit pressure		psi	7.3 to 43.5 / 21.8
Brine / Pre-load circuit pressure		psi	7.3 to 43.5 / 10.2
Volume / Max. DHW storage tank pressure (DCECO C)		gpm / psi	43.6 / 116
WORKING FLUIDS	R410A Refrigerant load without HTR / with HTR	lbs	1.6
	Compressor oil type / load	lbs	POE / 1.6
CONTROL ELECTRICAL DATA	1/N/PE 230 V / 50-60 Hz ⁸	-	✓
	Maximum recommended external protection ⁹	-	C16A
	Transformer primary circuit fuse	A	0.5
	Transformer secondary circuit fuse	A	2.5
ELECTRICAL DATA: SINGLE-PHASE	1/N/PE 230 V / 50-60 Hz ⁸	-	✓
	Maximum recommended external protection ⁹	-	C32A
	Maximum consumption ² , B0W35 (B32W95°F)	kW / A	4.2 / 18.6
	Maximum consumption ² , B0W55 (B32W131°F)	kW / A	5.0 / 21.7
	Minimum / Maximum starting current ⁷	A	2.0 / 8.0
	Correction of cosine Ø	-	0.96 / 1
ELECTRICAL DATA: THREE-PHASE	3/N/PE 400 V / 50-60Hz ⁸	-	✓
	Maximum recommended external protection ⁹	-	C16A
	Maximum consumption ² , B0W35 (B32W95°F)	kW / A	4.2 / 6.2
	Maximum consumption ² , B0W55 (B32W131°F)	kW / A	5.0 / 7.2
	Minimum / Maximum starting current ⁷	A	0.7 / 2.6
	Correction of cosine Ø	-	0.96 / 1
DIMENSIONS/WEIGHT	Height x width x depth	ft	DCECO B: 3.5x2x2.3 · DCECO C: 6.1x2x2.4
	Empty weight (without assembly)	lbs	B 426 · C 600

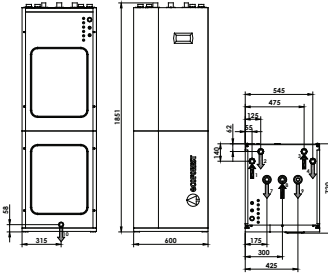
1. Air source/Hybrid source by replacing/combining the ground source circuit by/with one or more DEECO AU. Consult the DEECO AU manual for more detailed information.
2. In compliance with EN 14511, this includes the consumption of the circulation pumps and the compressor driver.
3. Considering brine and production flow rates in compliance with EN 14511.
4. Considering a heat slope from 68°F to 122°F in absence of consumption.
5. Considering support provided by the emergency electrical heater or the HTR system. Maximum DHW temperature with the HTR system can be limited by the compressor discharge temperature.
6. In compliance with EN 12102.
7. Starting current depends on the working conditions of the hydraulic circuits.
8. The admissible voltage range for proper operation of the heat pump is ±10%.
9. Maximum consumption can vary significantly according to working conditions, or if the compressor's operation range is restricted. Consult the technical service manual for more detailed information.
10. Certification in process.
11. i.e. B0W35 refers to the temperature of the brine entering the evaporator and temperature of the water leaving the condenser.

Dimensions and hydraulic connections

DCECO W B

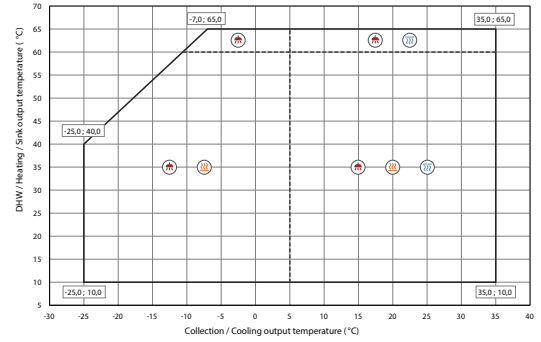


DCECO W C

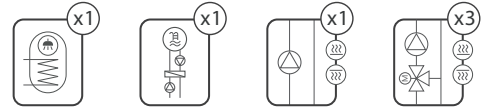


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|--------------------------------------|-------------------------------------|
| 1. Heating/Cooling Outlet - 1 1/4" M | 6. DHW System Inlet - 1 1/4" M |
| 2. Heating/Cooling Inlet - 1 1/4" M | 7. CW Inlet - 1" F |
| 3. Brine Outlet - 1 1/4" M | 8. DHW Outlet - 1" F |
| 4. Brine Inlet - 1 1/4" M | 9. DHW Recirculation Inlet - 3/4" F |
| 5. DHW system Outlet - 1 1/4" M | 10. Drain - 16 mm |

Operational chart



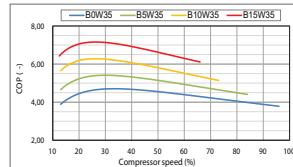
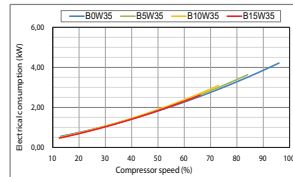
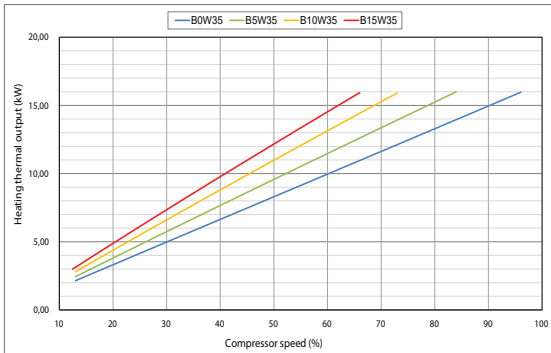
Installation management



Performance curves

Thermal performance

Conversions for heating/cooling capacities, pressure, and flow rate:
 1 kw = 3.412 MBH
 1 kw = 0.284 tons
 kPa = 0.145 psi
 1 m³/hr = 4.4 GPM



Hydraulic performance

