



# HELIOTHERM HEAT PUMPS

## TECHNICAL DATA SHEETS

**Ground Source Heat Pump with Surface Collector, Modulating  
& Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating  
WEB CONTROL Series**



# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 $\Delta$ 10 K		
Surface collector	E4W35	E4W50
Heating capacity	10,24 kW	9,09 kW
Cooling capacity	8,49 kW	6,70 kW
Input	1,75 kW	2,39 kW
COP	5,85	3,81

Performance Data <sup>1)</sup> EN15879-1 $\Delta$ 5 K		
Surface collector	E4W35	E4W50
Heating capacity	10,00 kW	8,93 kW
Cooling capacity	8,20 kW	6,47 kW
Input	1,81 kW	2,46 kW
COP	5,54	3,63

Compressor	
Type	Scroll
Speed RPM	1200-5400 min <sup>-1</sup>
Max. input power	3,1 kW
Oil amount	1,3 l

Surface Collector Evaporator / Energy Source	
Type	Tube evaporator
Material	Cu with PE coating
Amount at 10 mm x 70 m	8
Total length	560 m
Tested pressure	45 bar

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	1,0 - 2,1 m <sup>3</sup> /h
Pressure loss	1,1 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Cooling Capacity (optional) <sup>2)</sup>	
E15/W18	9,90 kW

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	8,6 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 16 A
Max. compressor operating current	13,2 A
Starting current	14 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	46 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	10/22	mm
Height x Width x Depth	1.380x550x620	mm
Weight	162	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications E = Ground temperature in °C  
W = Heating water temperature in °C

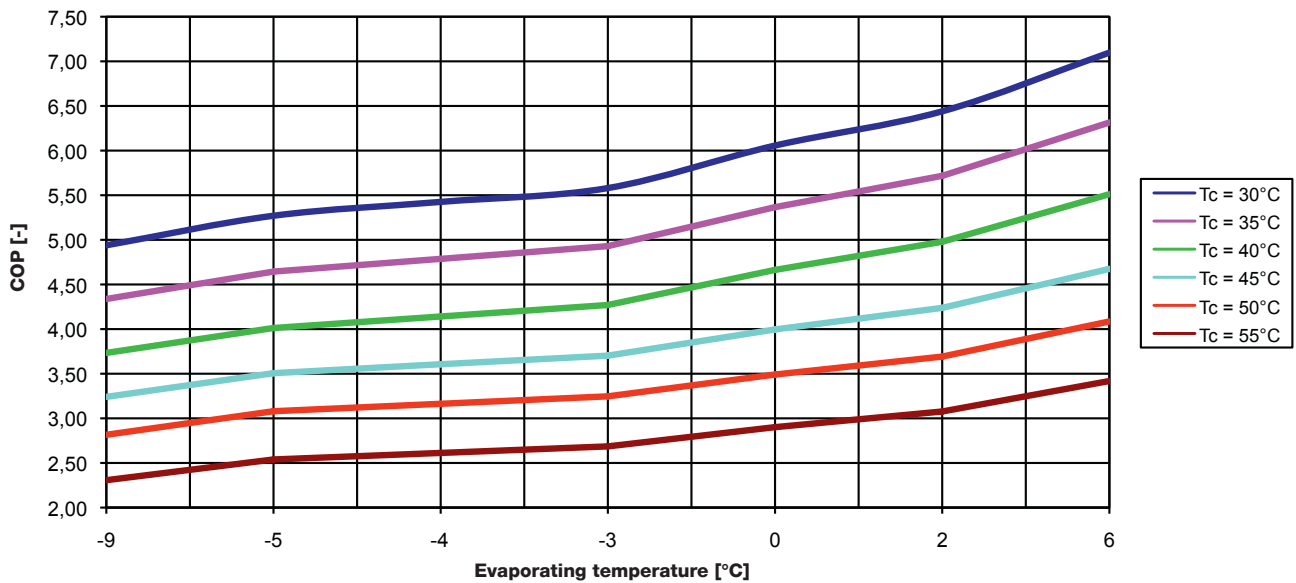
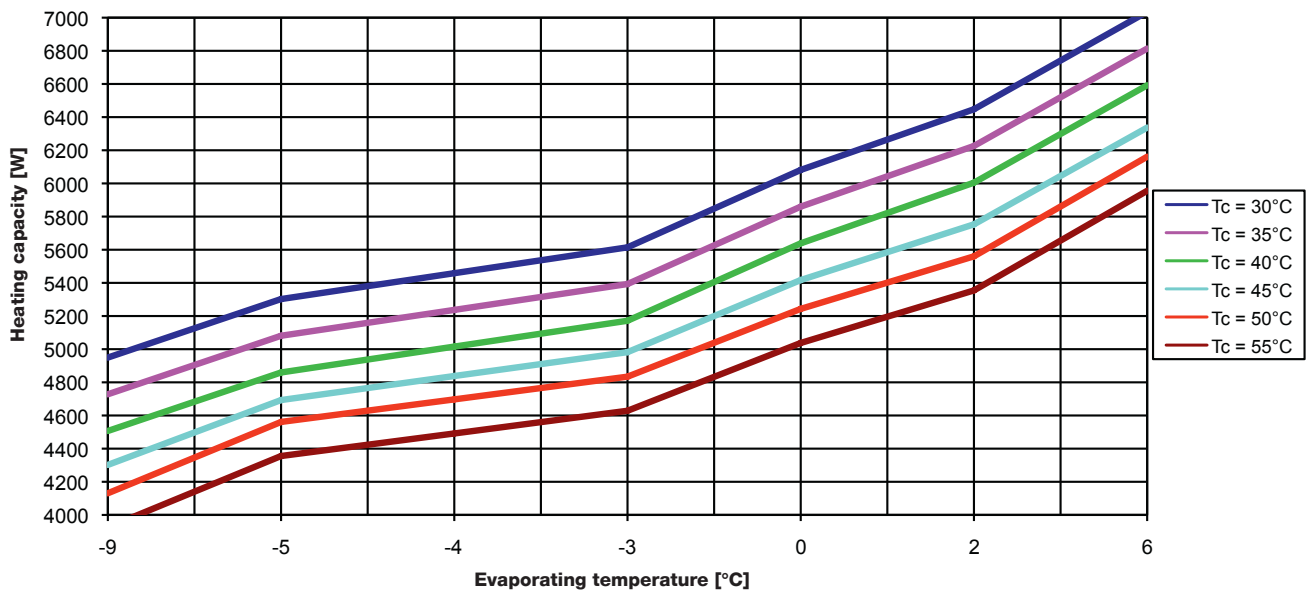
<sup>2)</sup> Values given in counter-current flow in cooling mode.  
Values in (DC) direct current flow minimizes cooling capacity by about 50 %.  
0,25 kW/person are to be calculated to the heating load for DHW preparation.

Tolerance results of EN 12900 are valid for the above mentioned performance data.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity

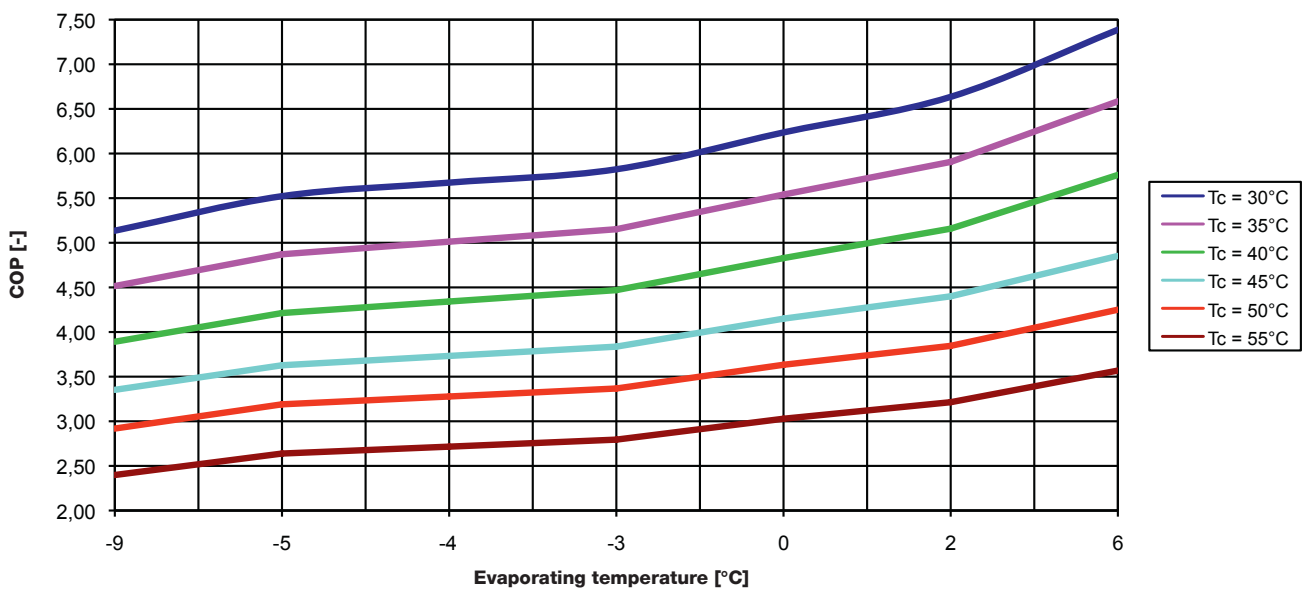
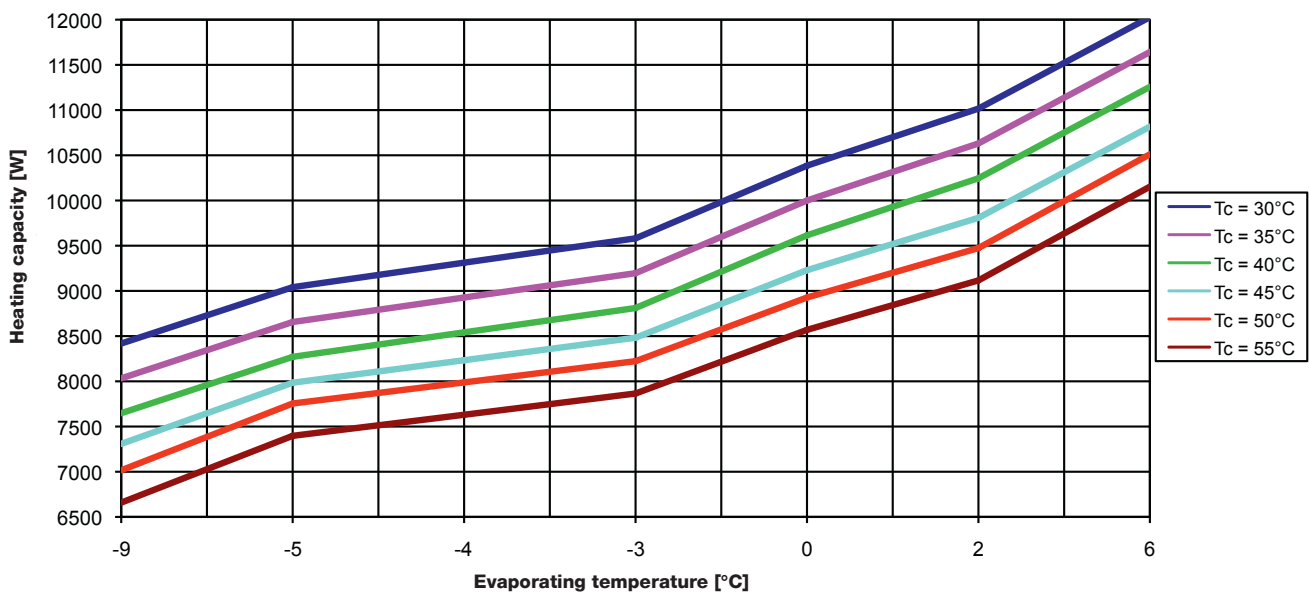


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity



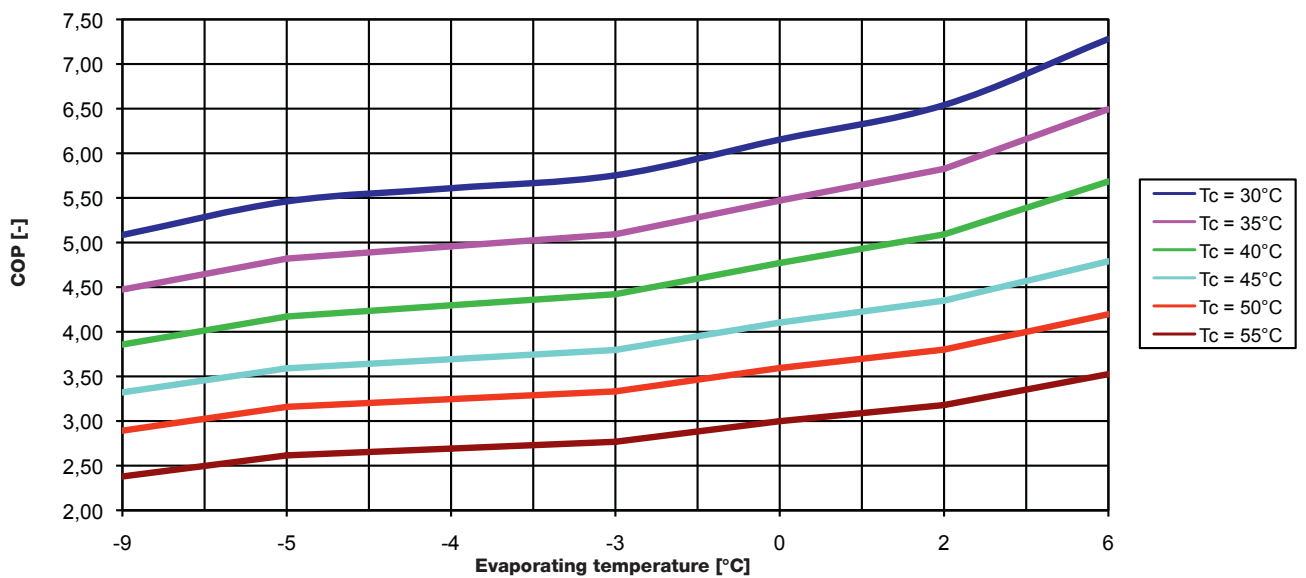
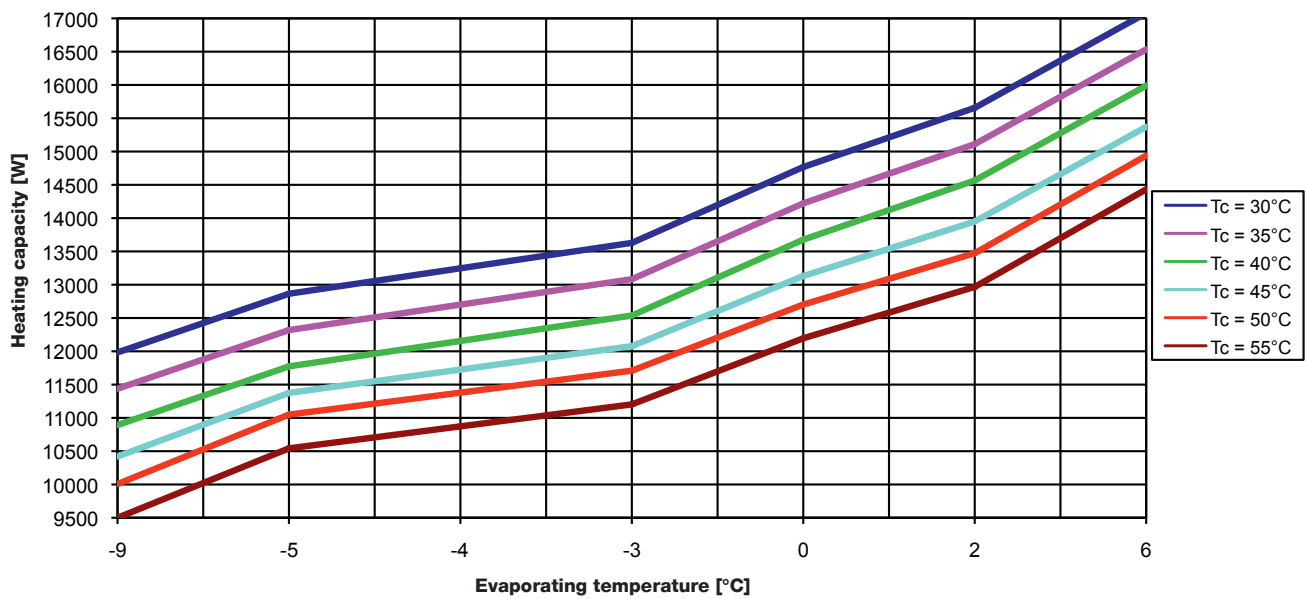
EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.



# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 Δ 10 K		
Surface collector	E4W35	E4W50
Heating capacity	13,09 kW	11,60 kW
Cooling capacity	10,89 kW	8,60 kW
Input	2,20 kW	3,00 kW
COP	5,95	3,86

Performance Data <sup>1)</sup> EN15879-1 Δ 5 K		
Surface collector	E4W35	E4W50
Heating capacity	12,77 kW	11,39 kW
Cooling capacity	10,51 kW	8,30 kW
Input	2,27 kW	3,09 kW
COP	5,64	3,68

Compressor	
Type	Scroll
Speed RPM	1200-5400 min <sup>-1</sup>
Max. input power	4,1 kW
Oil amount	1,7 l

Surface Collector Evaporator / Energy Source	
Type	Tube evaporator
Material	Cu with PE coating
Amount at 10 mm x 70 m	11
Total length	770 m
Tested pressure	45 bar

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	1,2 - 2,7 m <sup>3</sup> /h
Pressure loss	1,6 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Cooling Capacity (optional) <sup>2)</sup>	
E15/W18	12,70 kW

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	11,4 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 16 A
Max. compressor operating current	15 A
Starting current	19 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	46 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	10/22	mm
Height x Width x Depth	1.380x550x620	mm
Weight	162	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications E = Ground temperature in °C  
W = Heating water temperature in °C

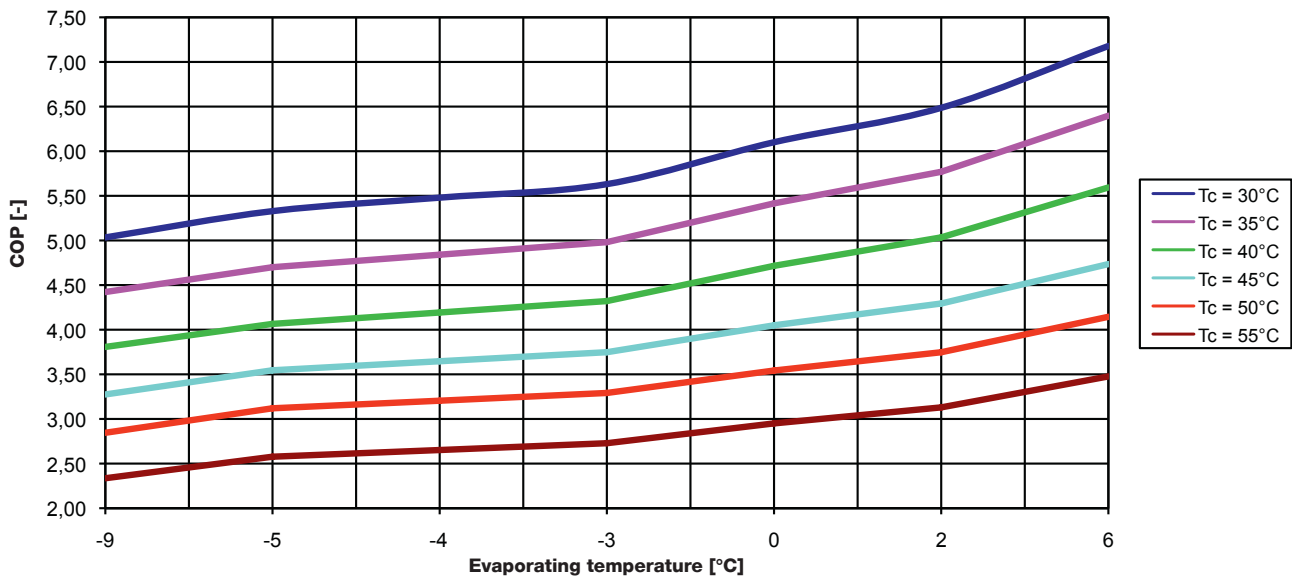
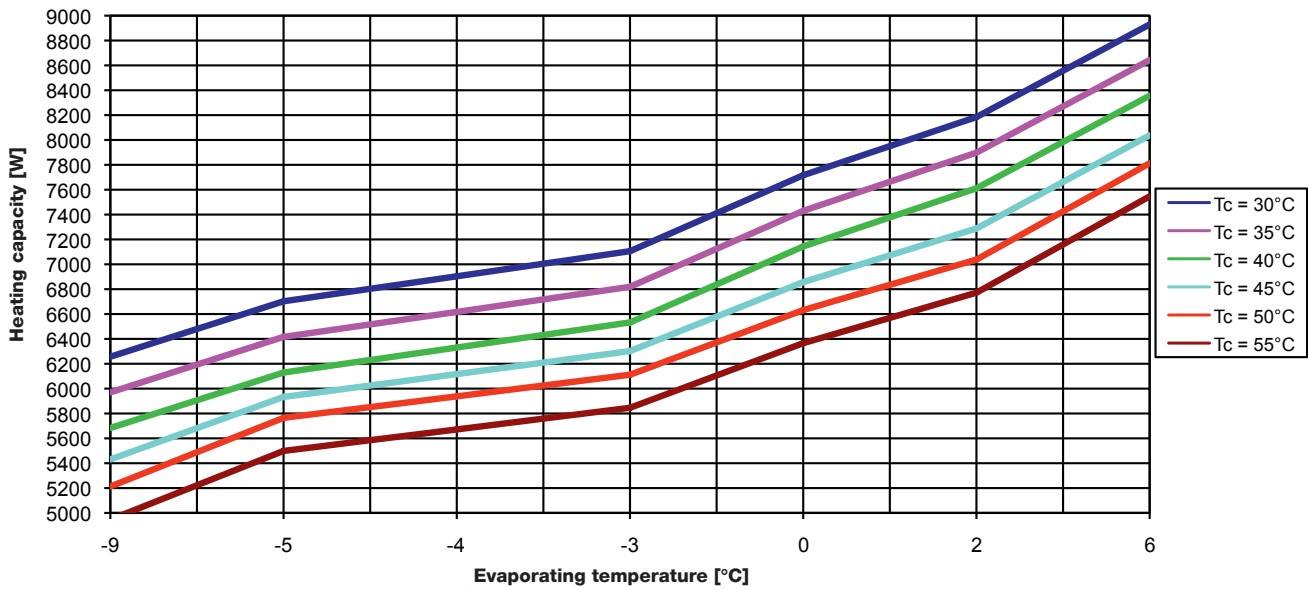
<sup>2)</sup> Values given in counter-current flow in cooling mode.  
Values in (DC) direct current flow minimizes cooling capacity by about 50 %.  
0,25 kW/person are to be calculated to the heating load for DHW preparation.

Tolerance results of EN 12900 are valid for the above mentioned performance data.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity

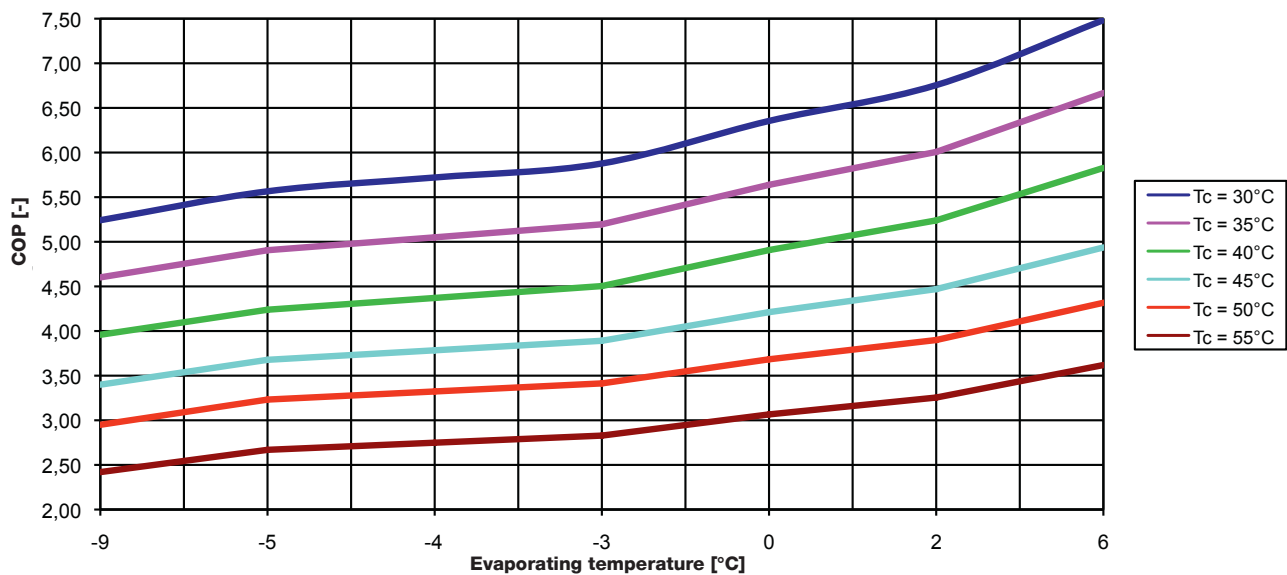
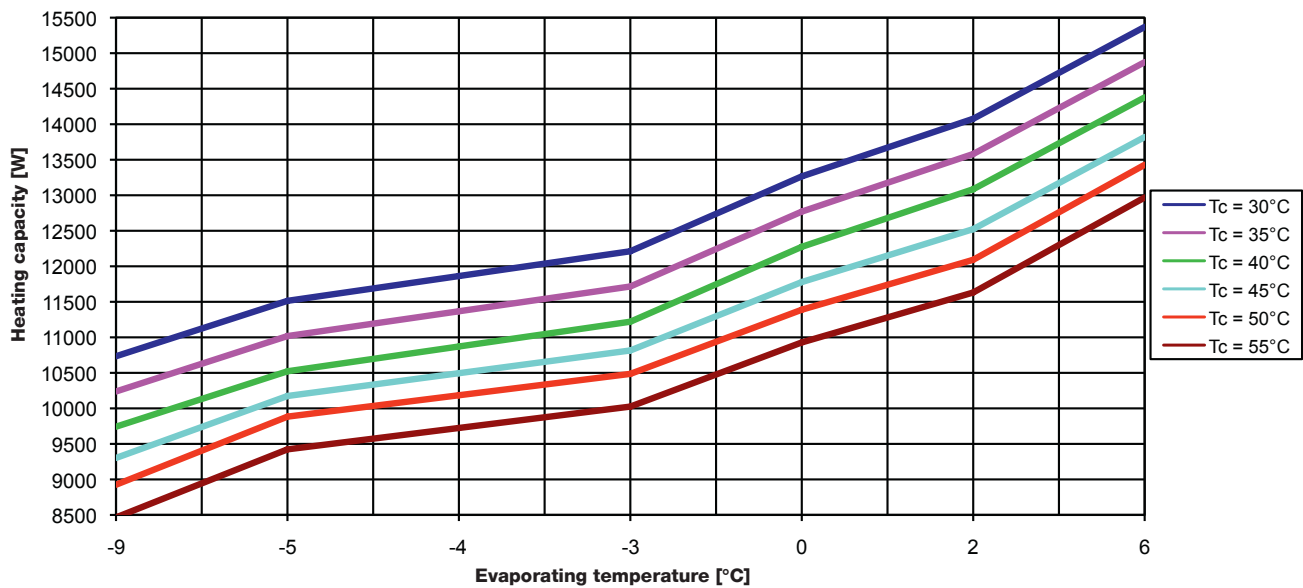


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity

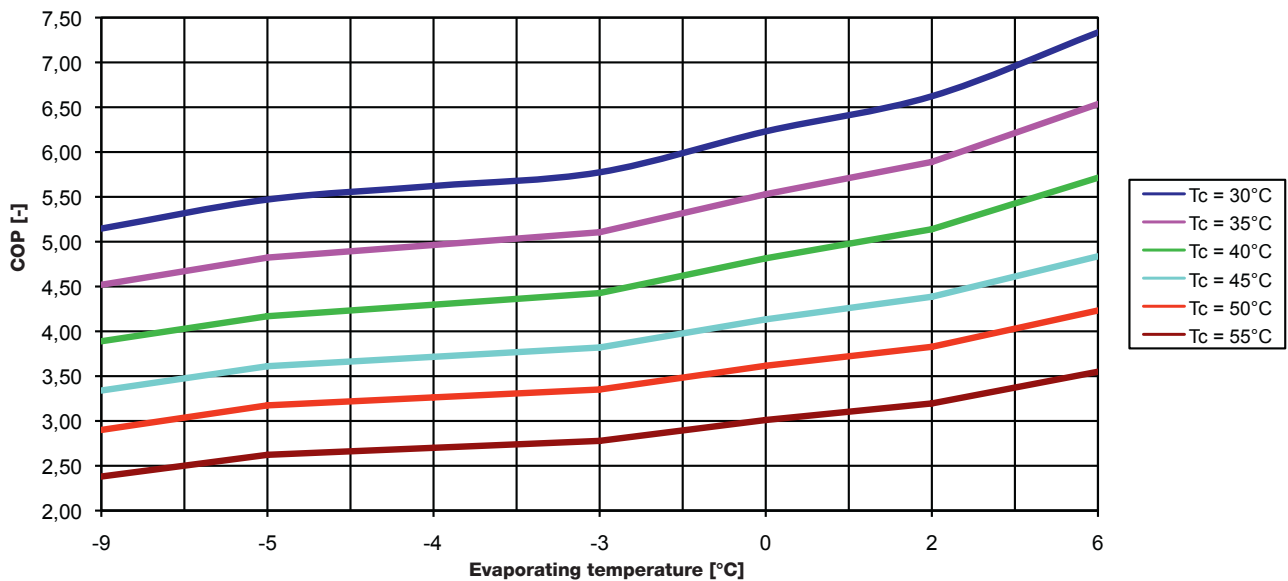
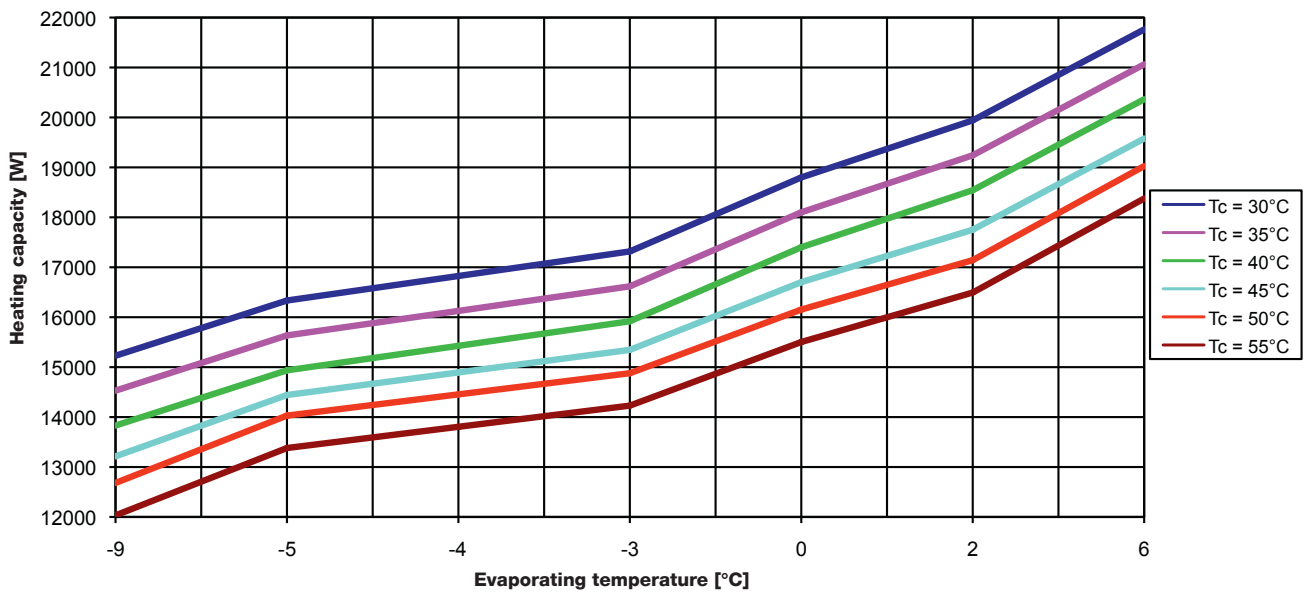


EN 12900 tolerance results are valid for the above mentioned performance data.  
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# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 Δ 10 K		
Surface collector	E4W35	E4W50
Heating capacity	22,99 kW	20,43 kW
Cooling capacity	18,94 kW	14,96 kW
Input	4,05 kW	5,48 kW
COP	5,67	3,73

Performance Data <sup>1)</sup> EN15879-1 Δ 5 K		
Surface collector	E4W35	E4W50
Heating capacity	22,45 kW	20,07 kW
Cooling capacity	18,28 kW	14,43 kW
Input	4,17 kW	5,64 kW
COP	5,38	3,56

Compressor	
Type	Scroll
Speed RPM	1200-5400 min <sup>-1</sup>
Max. input power	6,0 kW
Oil amount	2,3 l

Surface Collector Evaporator / Energy Source	
Type	Tube evaporator
Material	Cu with PE coating
Amount at 10 mm x 70 m	18
Total length	1.260 m
Tested pressure	45 bar

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	1,8 - 3,9 m <sup>3</sup> /h
Pressure loss	2,1 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Cooling Capacity (optional) <sup>2)</sup>	
E15/W18	21,90 kW

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	12,8 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 20 A
Max. compressor operating current	16 A
Starting current	20 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	48 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	16/28	mm
Height x Width x Depth	1.380x550x620	mm
Weight	175	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications E = Ground temperature in °C  
W = Heating water temperature in °C

<sup>2)</sup> Values given in counter-current flow in cooling mode.  
Values in (DC) direct current flow minimizes cooling capacity by about 50 %.

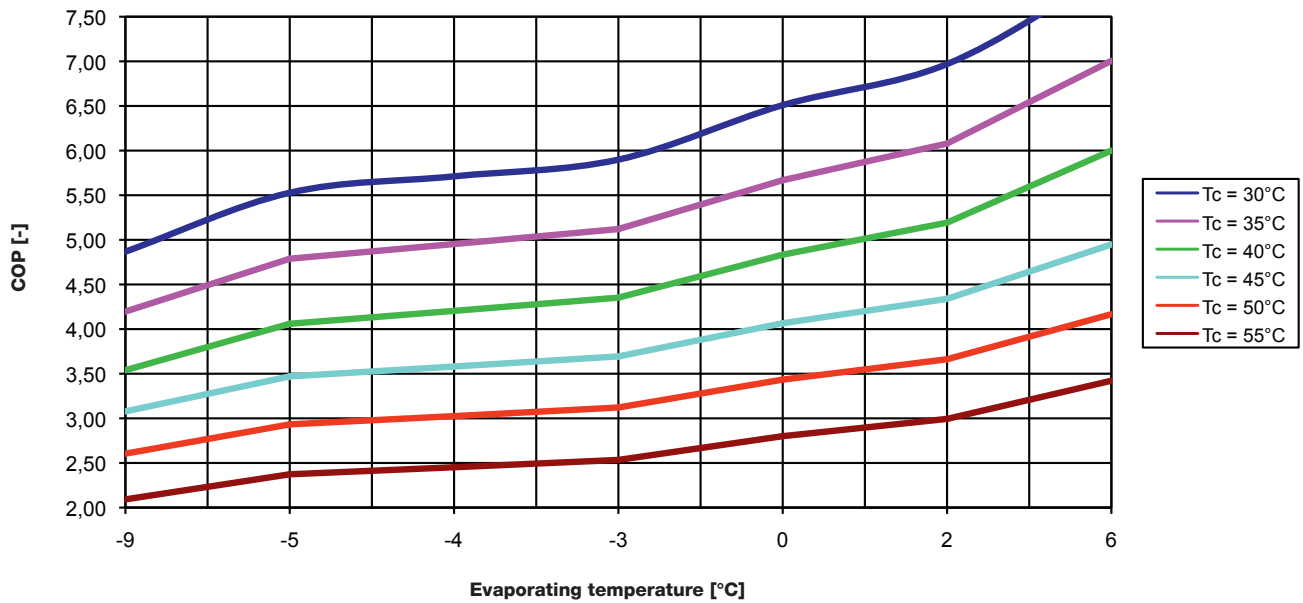
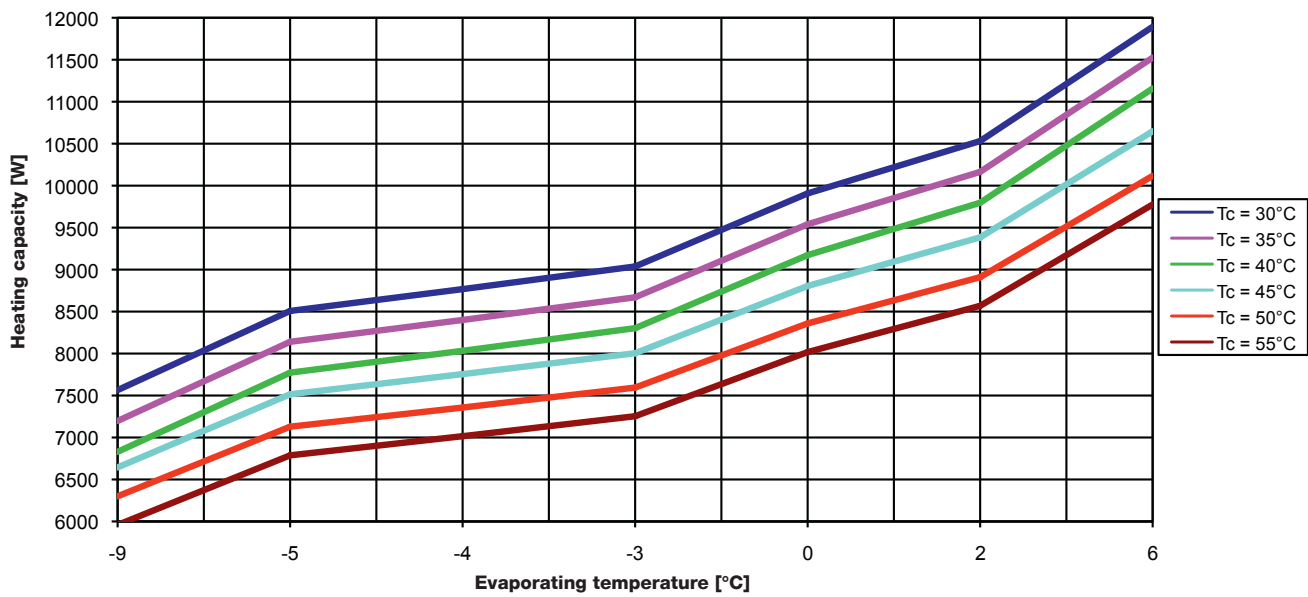
0,25 kW/person are to be calculated to the heating load for DHW preparation.

Tolerance results of EN 12900 are valid for the above mentioned performance data.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity



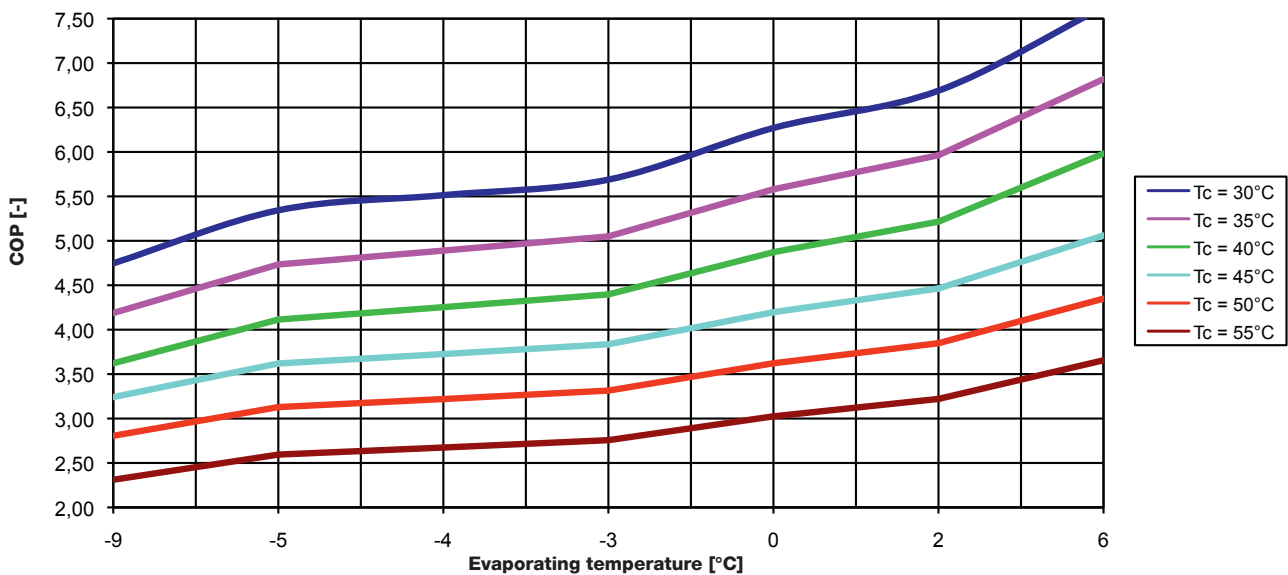
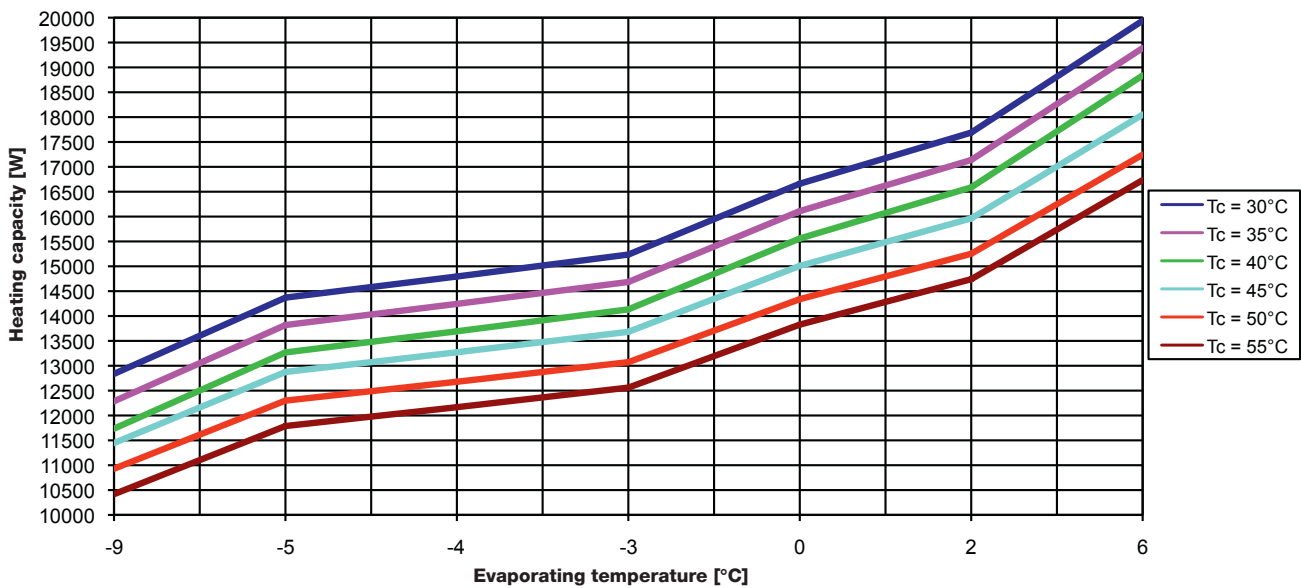
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All performance data is according to EN 15879-1.



# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity

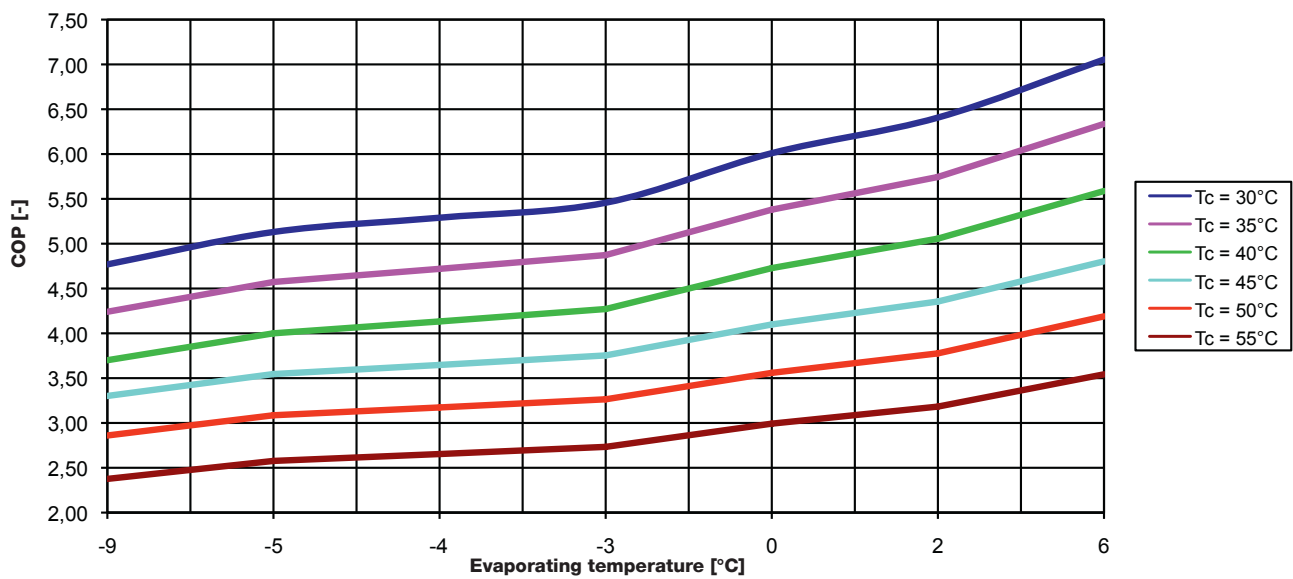
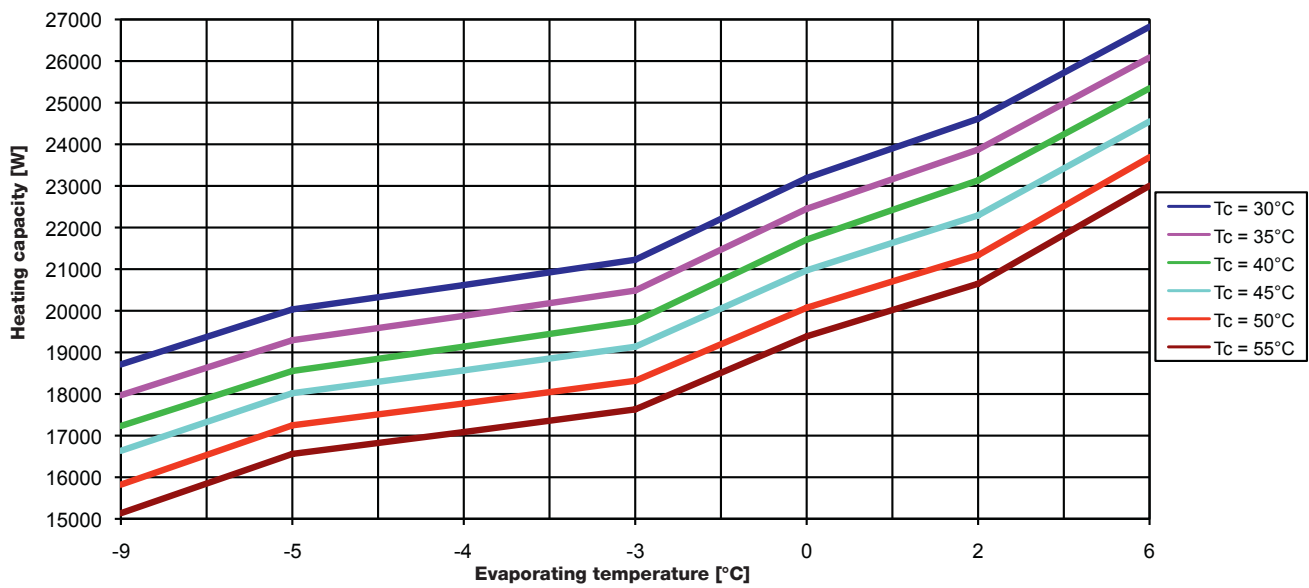


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with Surface Collector, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 Δ 10 K		
	V-3W35	V-3W50
Heating capacity	9,40 kW	8,34 kW
Cooling capacity	7,68 kW	5,99 kW
Input	1,72 kW	2,35 kW
COP	5,47	3,55

Performance Data <sup>1)</sup> EN14511 Δ 5 K		
	V-3W35	V-3W50
Heating capacity	9,20 kW	8,22 kW
Cooling capacity	7,41 kW	5,78 kW
Input	1,79 kW	2,44 kW
COP	5,15	3,37

Compressor	
Type	Scroll
Speed RPM	1.200-5.400 min <sup>-1</sup>
Max. input power	3,1 kW
Oil amount	1,3 l

CO <sub>2</sub> Probe Evaporator / Energy Source	
Type	CO <sub>2</sub> -Copper heat exchanger
Material	Cu with PE coating Ø 18 mm
Tube / Probe	3
Single length	100 m
Probe quantity	2
Heat exchanger quantity	6
Tested pressure	45 bar

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	0,8 - 1,8 m <sup>3</sup> /h
Pressure loss	0,8 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	3,9 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 16 A
Max. compressor operating current	13,2 A
Starting current	14 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	46 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	10/22	mm
Height x Width x Depth	1.380x550x620	mm
Weight	162	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications

W = Heating water temperature in °C

V = Evaporating temperature in °C

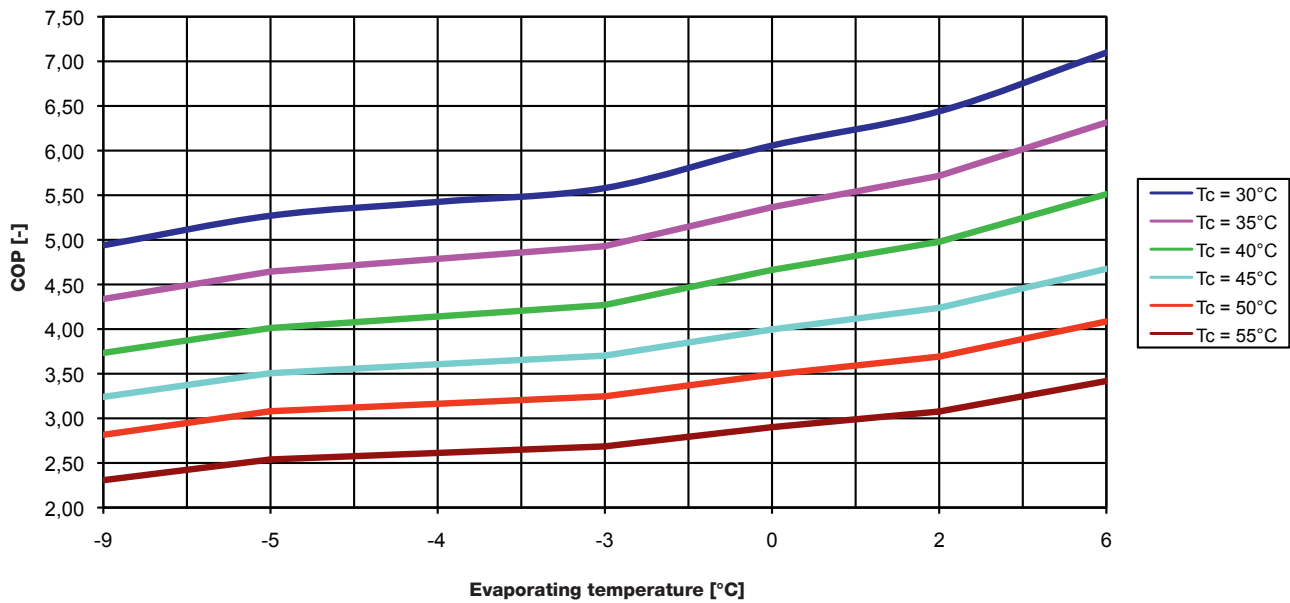
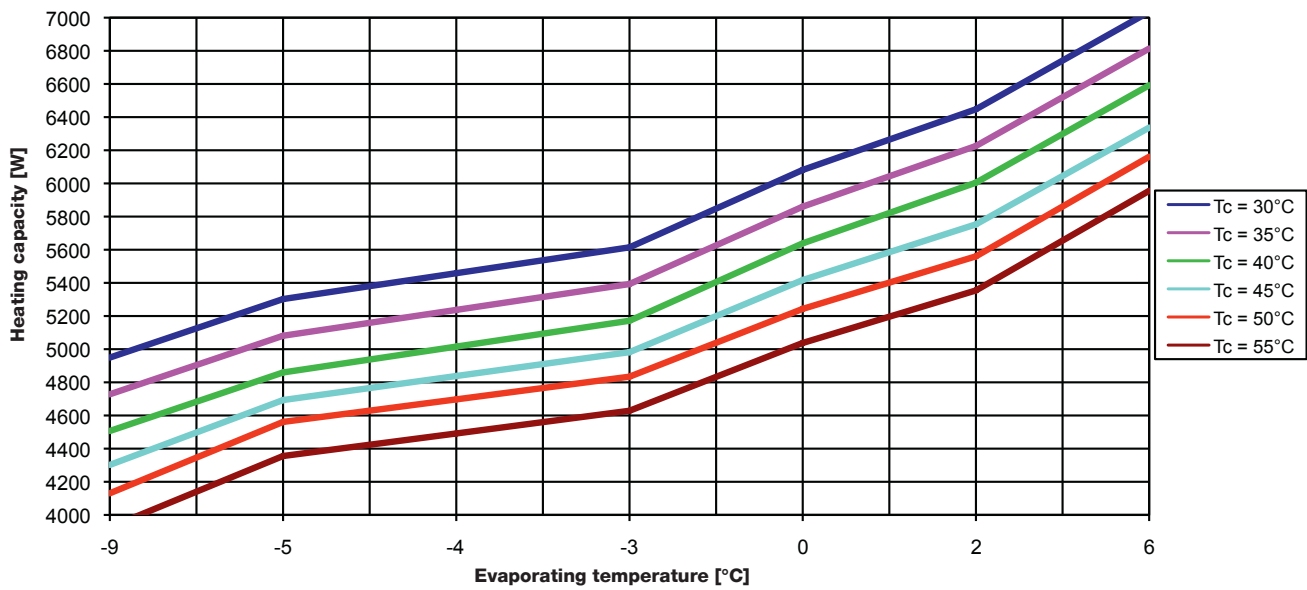
0,25 kW/person are to be calculated to the heating load for DHW preparation.

Tolerance results of EN 12900 are valid for the above mentioned performance data.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity

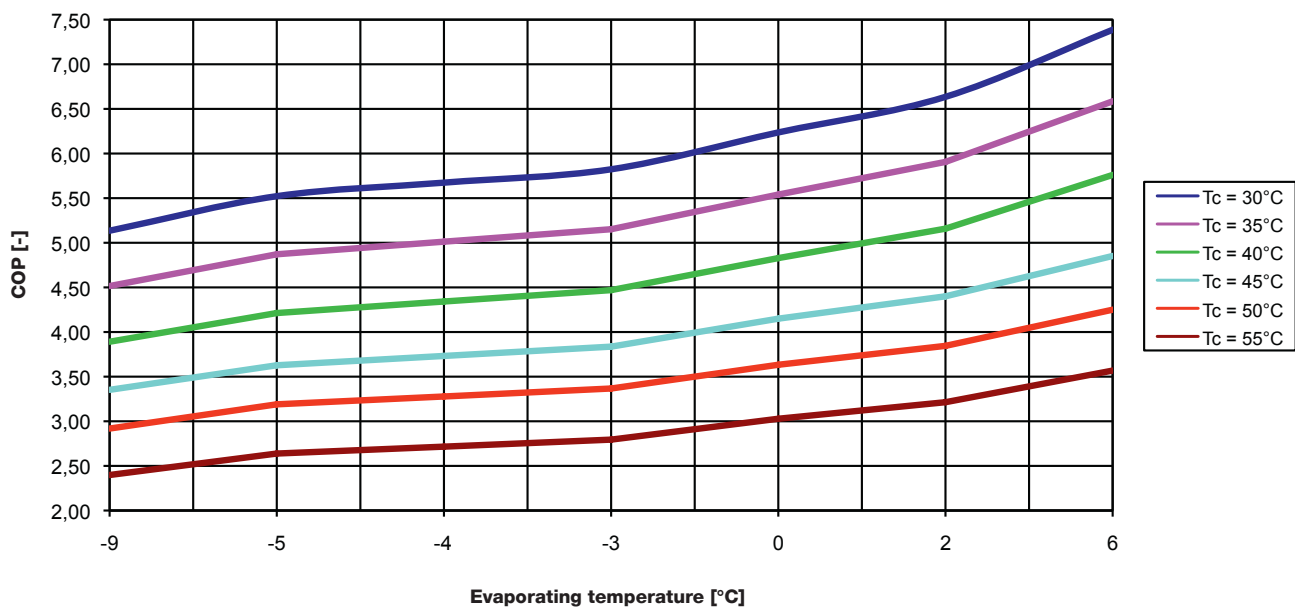
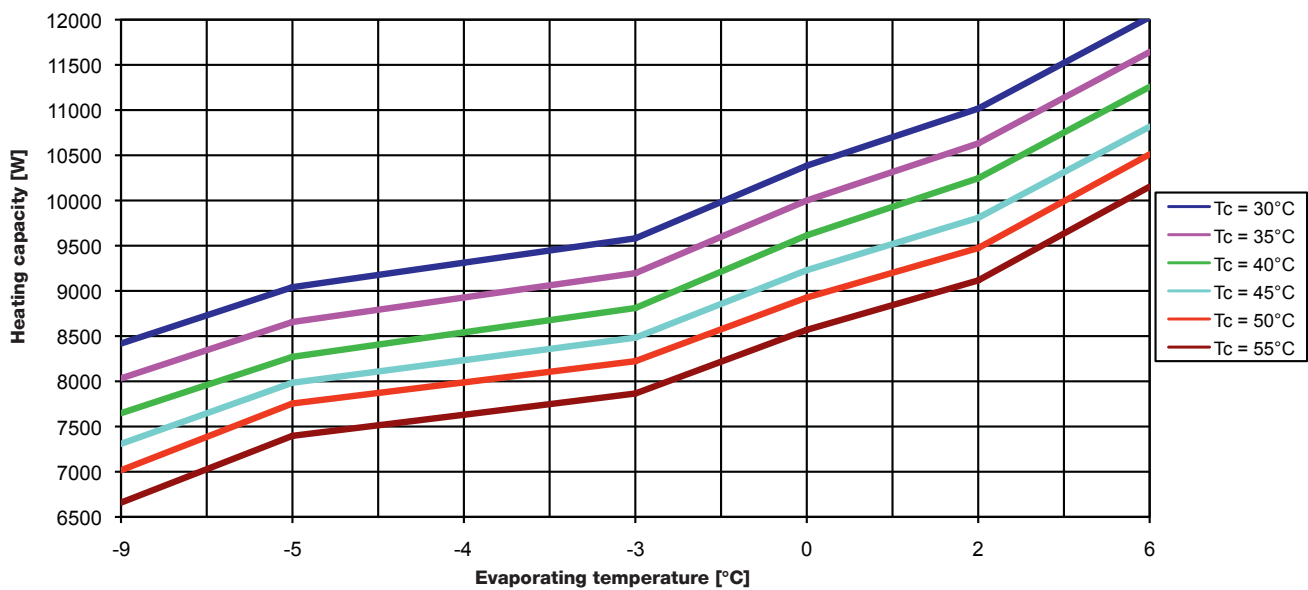


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity

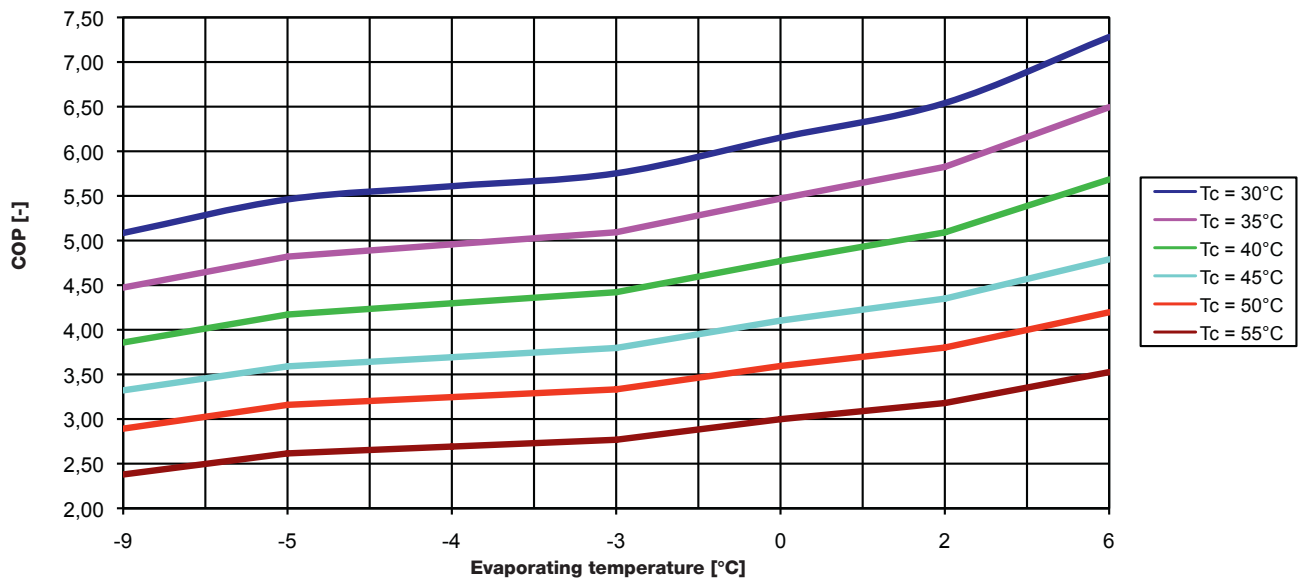
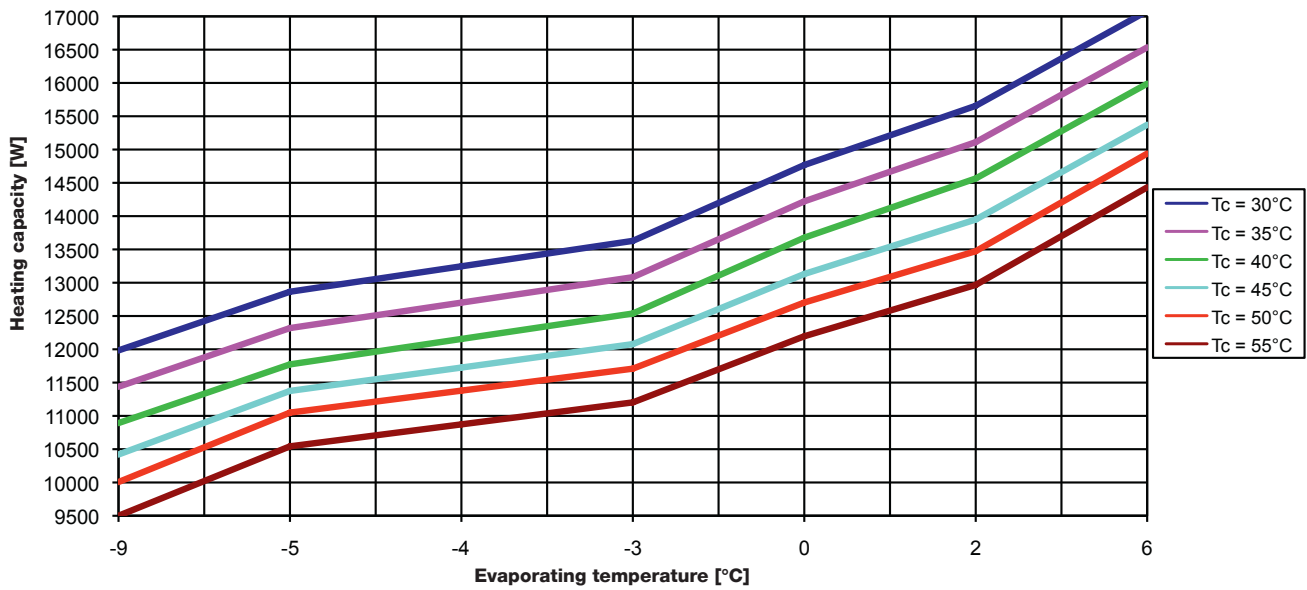


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP08E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 Δ 10 K		
	V-3W35	V-3W50
Heating capacity	11,97 kW	10,64 kW
Cooling capacity	9,80 kW	7,68 kW
Input	2,17 kW	2,95 kW
COP	5,52	3,60

Performance Data <sup>1)</sup> EN14511 Δ 5 K		
	V-3W35	V-3W50
Heating capacity	11,72 kW	10,49 kW
Cooling capacity	9,46 kW	7,41 kW
Input	2,26 kW	3,07 kW
COP	5,20	3,41

Compressor	
Type	Scroll
Speed RPM	1200-5400 min <sup>-1</sup>
Max. input power	4,1 kW
Oil amount	1,7 l

CO <sub>2</sub> Probe Evaporator / Energy Source		
Type	CO <sub>2</sub> -Copper heat exchanger	
Material	Cu with PE coating Ø 18 mm	
Tube / Probe	3	3
Single length	120 m	80 m
Probe quantity	2	3
Heat exchanger quantity	6	9
Tested pressure	45 bar	

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	1,0 - 2,3 m <sup>3</sup> /h
Pressure loss	1,5 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	4,9 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 16 A
Max. compressor operating current	15 A
Starting current	19 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	46 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	10/22	mm
Height x Width x Depth	1.380x550x620	mm
Weight	162	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications

W = Heating water temperature in °C

V = Evaporating temperature in °C

0,25 kW/person are to be calculated to the heating load for DHW preparation.

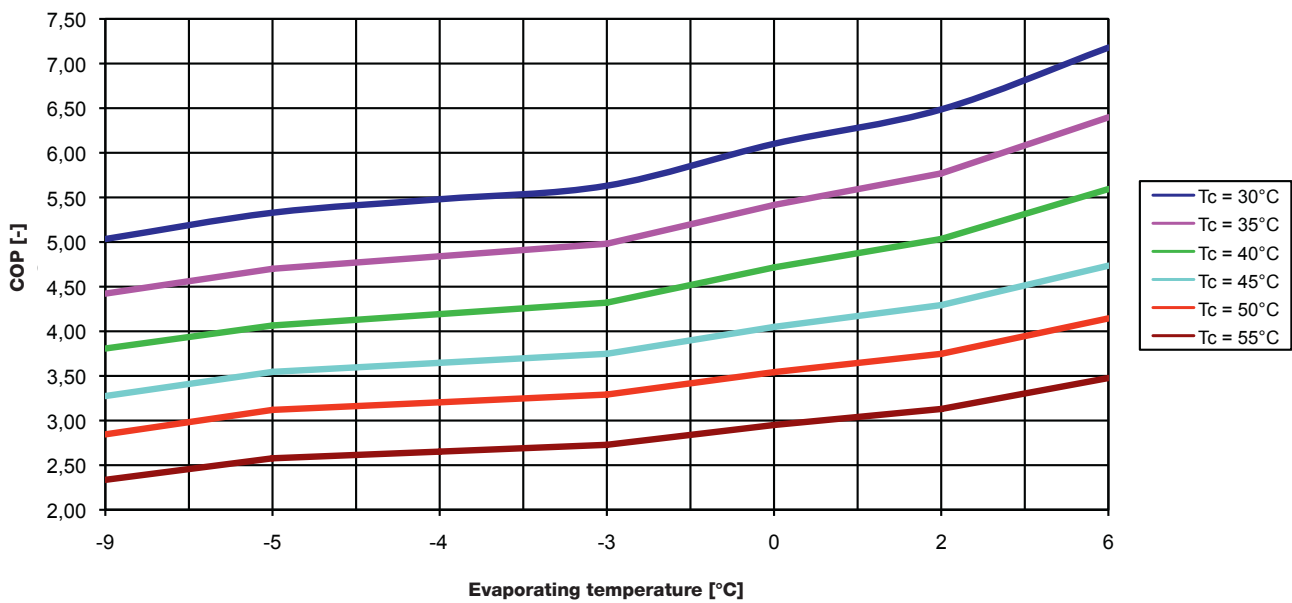
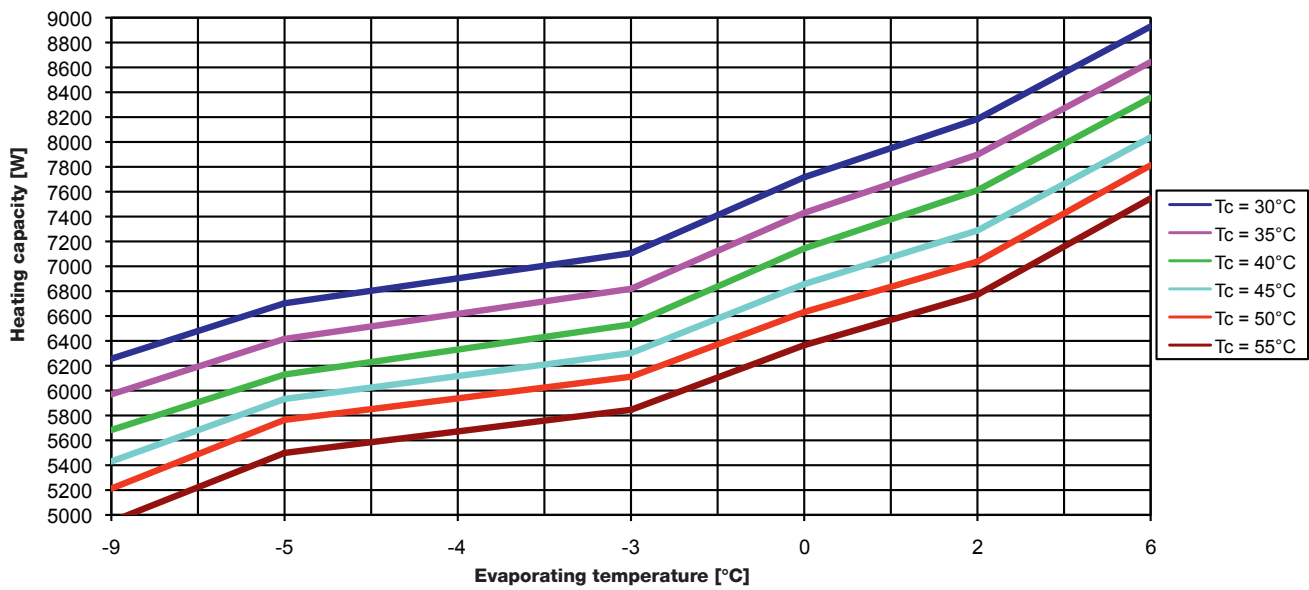
Tolerance results of EN 12900 are valid for the above mentioned performance data.



# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity

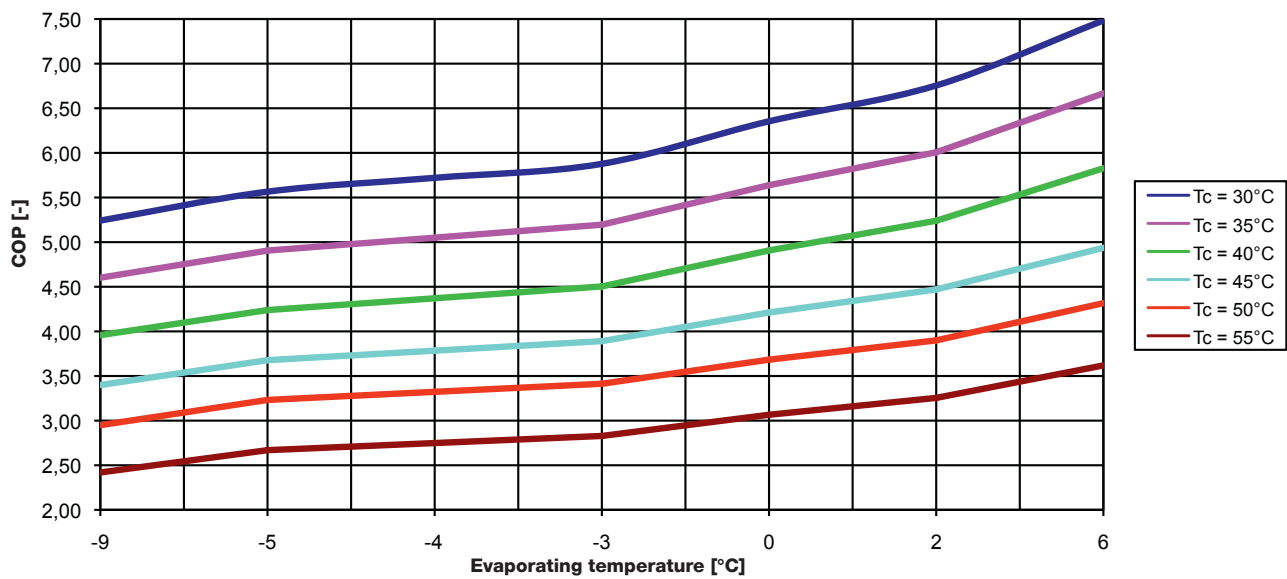
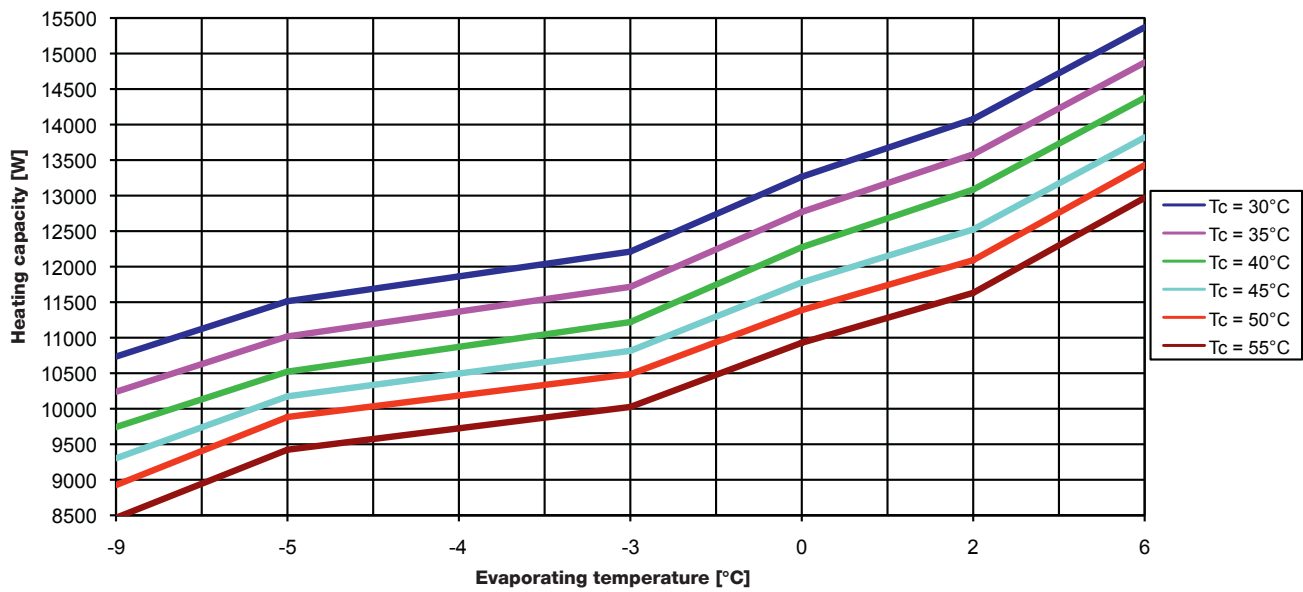


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity

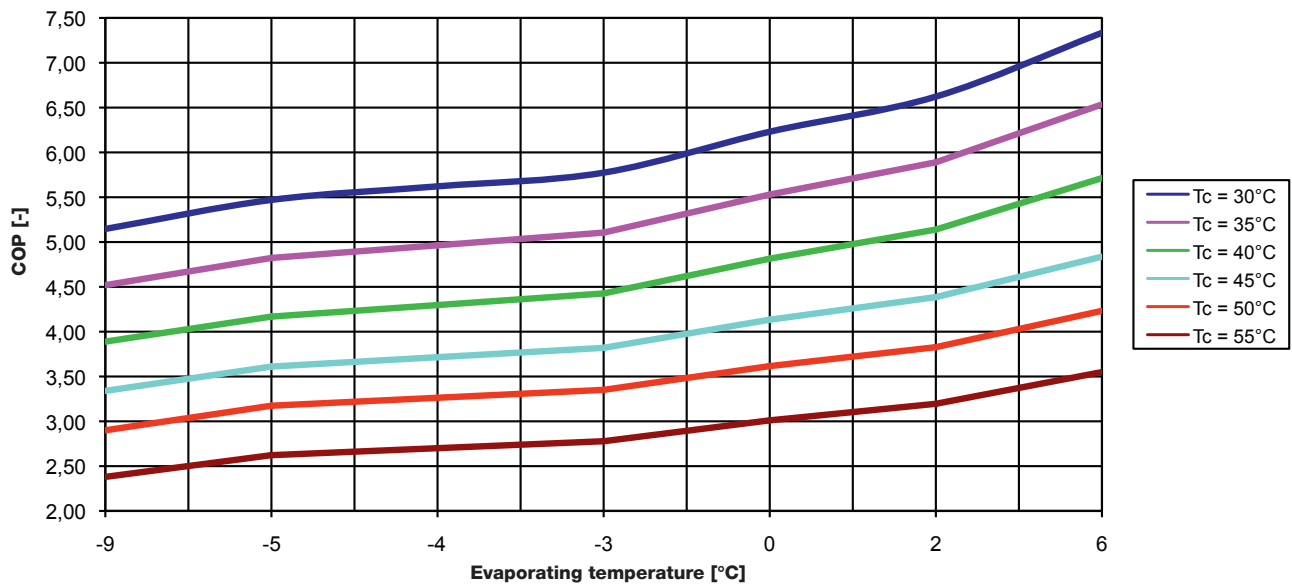
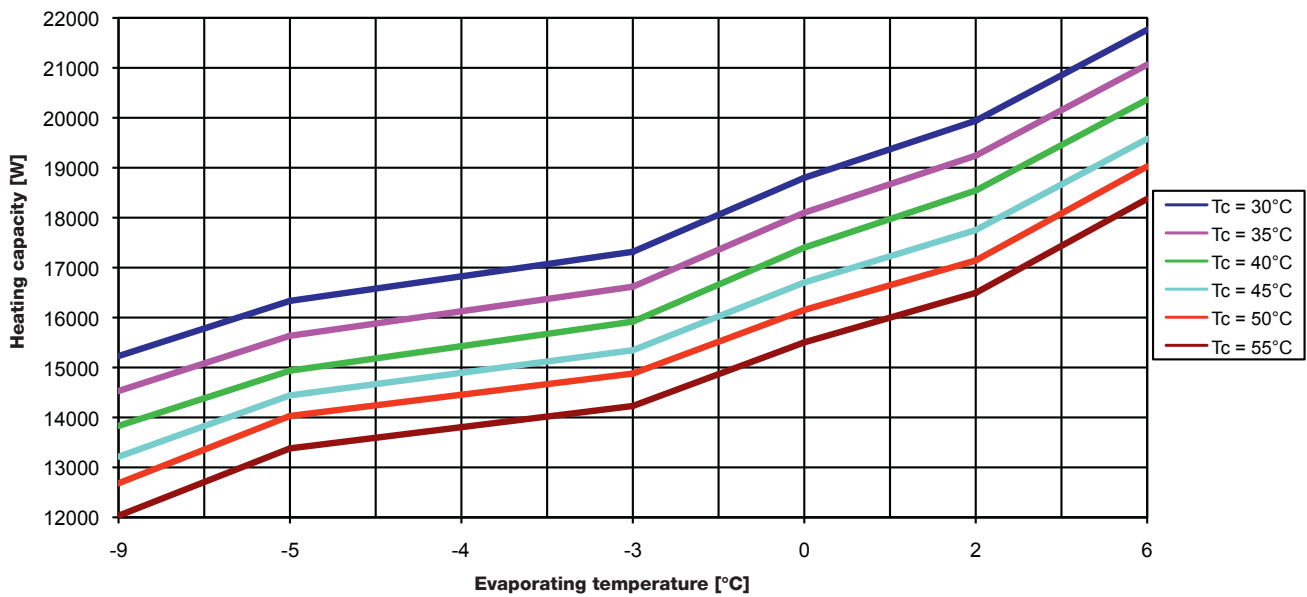


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP12E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

Performance Data <sup>1)</sup> EN255 Δ 10 K		
	V-3W35	V-3W50
Heating capacity	20,91 kW	18,56 kW
Cooling capacity	16,87 kW	13,17 kW
Input	4,04 kW	5,40 kW
COP	5,17	3,44

Performance Data <sup>1)</sup> EN14511 Δ 5 K		
	V-3W35	V-3W50
Heating capacity	20,49 kW	18,32 kW
Cooling capacity	16,28 kW	12,71 kW
Input	4,20 kW	5,61 kW
COP	4,87	3,26

Compressor	
Type	Scroll
Speed RPM	1.200-5.400 min <sup>-1</sup>
Max. input power	6,0 kW
Oil amount	2,3 l

CO <sub>2</sub> Probe Evaporator / Energy Source	
Type	CO <sub>2</sub> -Copper heat exchanger
Material	Cu with PE coating Ø 18 mm
Tube / Probe	3
Single length	100 m
Probe quantity	3
Heat exchanger quantity	9
Tested pressure	45 bar

Condenser & Subcooler / Heating	
Type	Plate heat exchanger
Material	Stainless steel / Cu soldered
Flow amount	1,8 - 3,9 m <sup>3</sup> /h
Pressure loss	2,1 mWs
Temperature difference	5 K
Content	2,5 l
Tested pressure	45 bar

Refrigerant Cycle	
Working fluid	R410a
Fill amount with 10 m split line	6,3 kg

Electric	
Voltage	400 V
Frequency	50 Hz
Time lag fuse	3 x 20 A
Max. compressor operating current	16 A
Starting current	20 A
Starting current with soft starter	FU

Acoustic Pressure Level	
1 m distance	48 dB(A)

Connections, Dimensions		
Heating outlet and inlet	5/4"	ET
Pressure line / Suction line	16/28	mm
Height x Width x Depth	1.380x550x620	mm
Weight	175	kg

Operating Limit Values		
Max. operating water pressure	10	bar
Max. operating refrigerant pressure	40	bar
Max. heat outlet temperature	62	°C

<sup>1)</sup> Performance specifications

W = Heating water temperature in °C

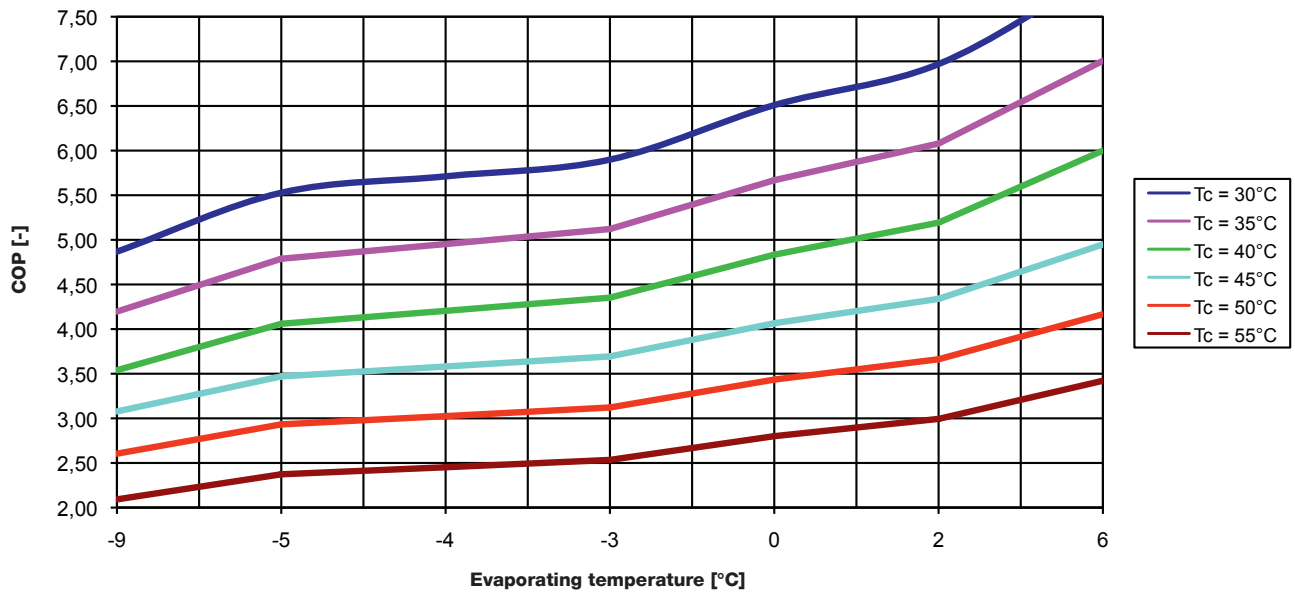
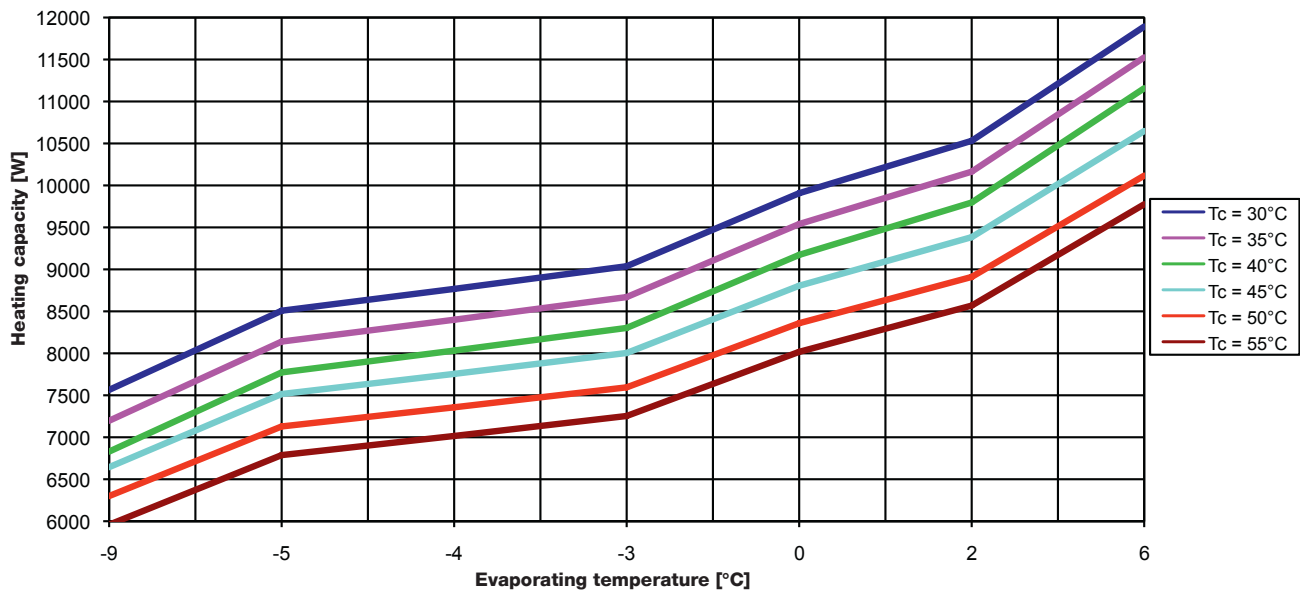
V = Evaporating temperature in °C

Tolerance results of EN 12900 are valid for the above mentioned performance data.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 10 % Compressor Capacity

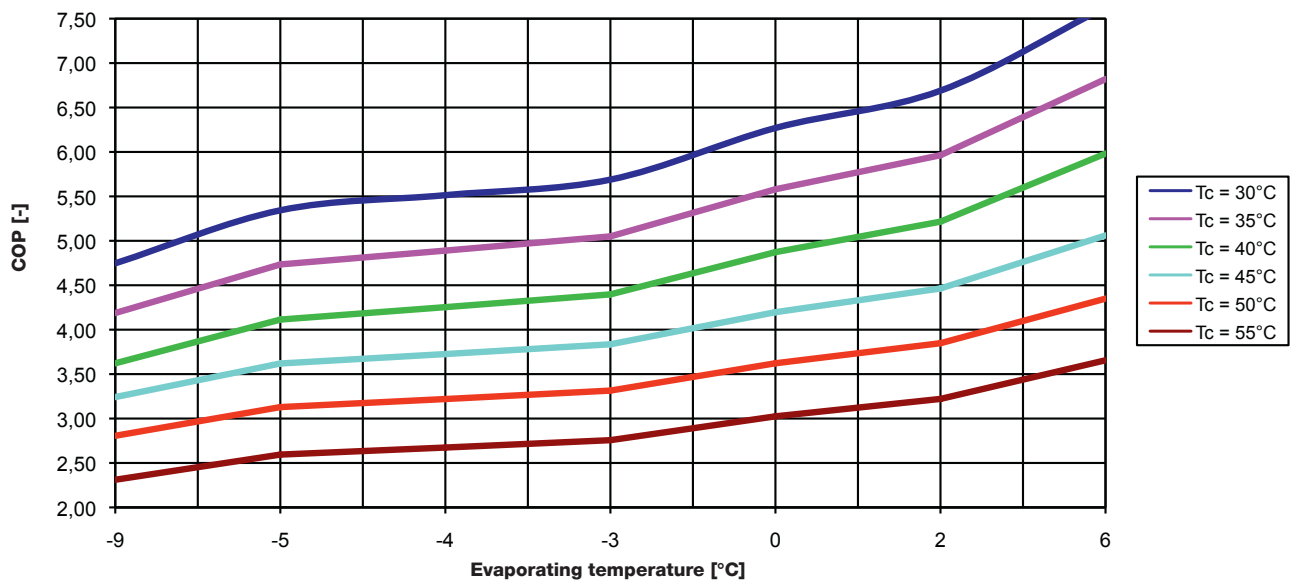
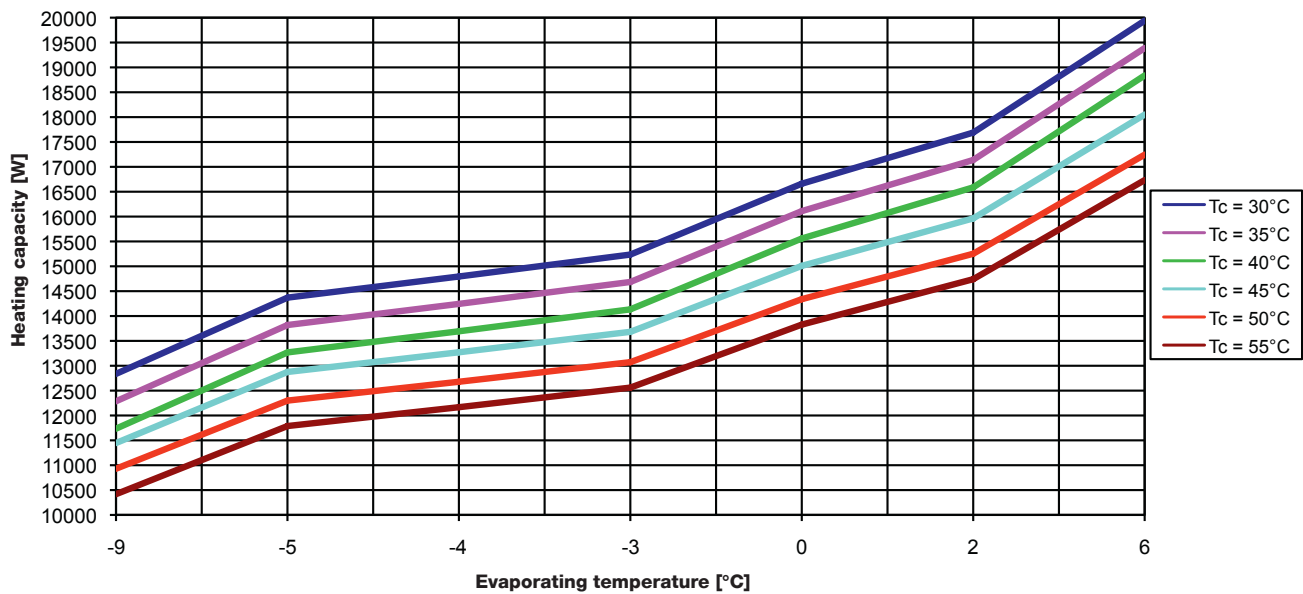


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 30 % Compressor Capacity

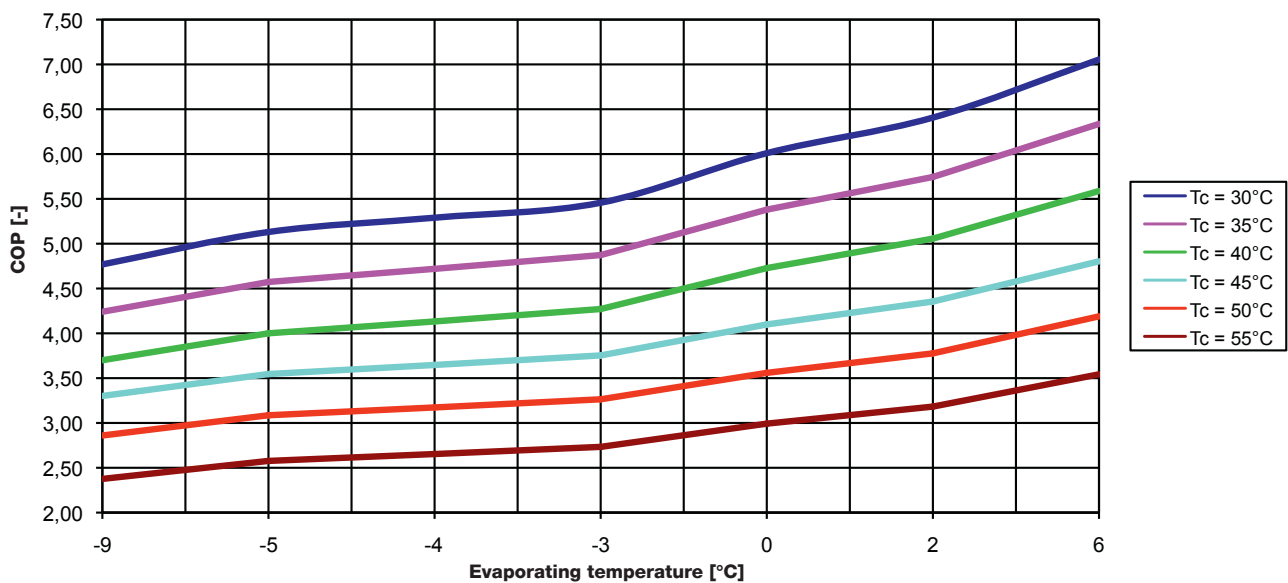
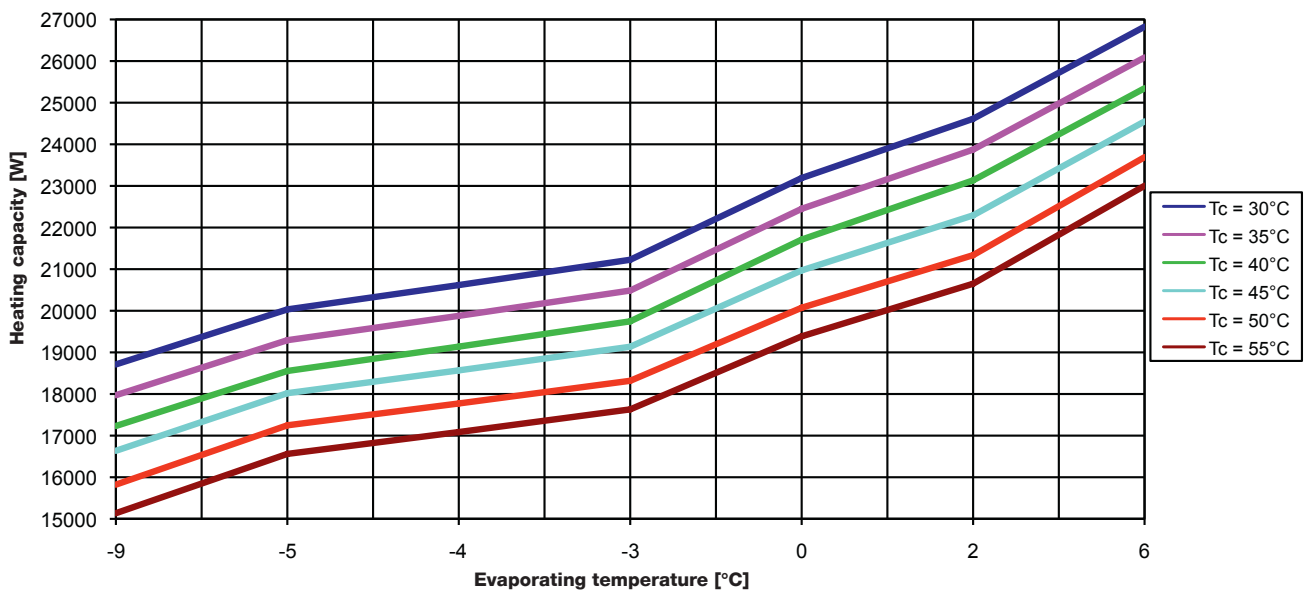


EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.

# TECHNICAL DATA SHEET HP20E-M-WEB

Ground Source Heat Pump with CO<sub>2</sub> Probe, Modulating | WEB CONTROL Series

## Performance Curve at 50 % Compressor Capacity



EN 12900 tolerance results are valid for the above mentioned performance data.  
All performance data is according to EN 15879-1.