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Summary of	HA 10-5 OS 230V / HA 12-5 OS 230V / HA 10-5 OS / HA 12-5 OS			Reg. No.	40049244
Certificate Holder					
Name	Saunier Duval Brand Group				
Address				Zip	
City				Country	Germany
Certification Body	VDE Prüf- und Zertifizierungsinstitut GmbH				
Subtype title	HA 10-5 OS 230V / HA 12-5 OS 230V / HA 10-5 OS / HA 12-5 OS				
Heat Pump Type	Outdoor Air/Water				
Refrigerant	R410A				
Mass of Refrigerant	3.6 kg				
Certification Date	28.04.2021				
Testing basis	DIN EN 14511-1:2019-07; EN 14511-1:2018				

Model: HA 10-5 OS 230V + HA 12-5 WSB

Configure model	
Model name	HA 10-5 OS 230V + HA 12-5 WSB
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	9.70 kW	10.35 kW
El input	2.12 kW	3.74 kW
COP	4.57	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

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EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	128 %
Prated	11.50 kW	9.56 kW
SCOP	4.58	3.28
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.18 kW	8.46 kW
COP Tj = -7°C	2.83	2.12
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	6.53 kW	5.05 kW
COP Tj = +2°C	4.57	3.14
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.66 kW	5.18 kW
COP Tj = +7°C	5.78	4.27
Cdh Tj = +7 °C	0.990	0.990

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Pdh Tj = 12°C	6.52 kW	6.11 kW
COP Tj = 12°C	7.35	5.79
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	10.18 kW	8.46 kW
COP Tj = Tbiv	2.83	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.05 kW	7.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.71
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.59 kW
Annual energy consumption Qhe	5189 kWh	6029 kWh

Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	212 %	158 %
Prated	8.23 kW	9.30 kW
SCOP	5.37	4.03
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2046 kWh	3076 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	152 %	111 %
Prated	9.49 kW	9.42 kW
SCOP	3.88	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	6.32 kW	6.14 kW
COP Tj = -7°C	3.41	2.56
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	4.94 kW	4.48 kW
COP Tj = +2°C	4.53	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.53 kW	5.31 kW
COP Tj = +7°C	5.86	4.59
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	6.44 kW	6.21 kW
COP Tj = 12°C	7.27	5.99
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	7.74 kW	7.68 kW
COP Tj = Tbiv	2.34	1.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.41 kW	7.68 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	9.49 kW	9.42 kW
Annual energy consumption Qhe	6025 kWh	8124 kWh
Pdh Tj = -15°C (if TOL<-20°C)	7.74	7.68
COP Tj = -15°C (if TOL<-20°C)	2.34	1.89
Cdh Tj = -15 °C	1.000	1.000

Model: HA 10-5 OS 230V + HA 12-5 STB

Configure model	
Model name	HA 10-5 OS 230V + HA 12-5 STB
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	9.70 kW	10.35 kW
El input	2.12 kW	3.74 kW
COP	4.57	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	128 %
Prated	11.50 kW	9.56 kW
SCOP	4.58	3.28
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.18 kW	8.46 kW
COP Tj = -7°C	2.83	2.12
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	6.53 kW	5.05 kW
COP Tj = +2°C	4.57	3.14
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.66 kW	5.18 kW
COP Tj = +7°C	5.78	4.27
Cdh Tj = +7 °C	0.990	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.52 kW	6.11 kW
COP Tj = 12°C	7.35	5.79
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	10.18 kW	8.46 kW
COP Tj = Tbiv	2.83	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.05 kW	7.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.71
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.59 kW
Annual energy consumption Qhe	5189 kWh	6029 kWh

Warmer Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	212 %	158 %
Prated	8.23 kW	9.30 kW
SCOP	5.37	4.03
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2046 kWh	3076 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	152 %	111 %
Prated	9.49 kW	9.42 kW
SCOP	3.88	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	6.32 kW	6.14 kW
COP Tj = -7°C	3.41	2.56
Cdh Tj = -7 °C	0.990	1.000
Pdh Tj = +2°C	4.94 kW	4.48 kW
COP Tj = +2°C	4.53	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.53 kW	5.31 kW
COP Tj = +7°C	5.86	4.59
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	6.44 kW	6.21 kW
COP Tj = 12°C	7.27	5.99
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	7.74 kW	7.68 kW
COP Tj = Tbiv	2.34	1.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.41 kW	7.68 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	9.49 kW	9.42 kW
Annual energy consumption Qhe	6025 kWh	8124 kWh
Pdh Tj = -15°C (if TOL<-20°C)	7.74	7.68
COP Tj = -15°C (if TOL<-20°C)	2.34	1.89
Cdh Tj = -15 °C	1.000	1.000

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	97 %
COP	2.36
Heating up time	01:04 h:min
Standby power input	44.6 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	244 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	108 %
COP	2.62
Heating up time	01:01 h:min
Standby power input	41.3 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	243 l

Colder Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	89 %
COP	2.14
Heating up time	01:13 h:min
Standby power input	51.6 W
Reference hot water temperature	53.4 °C
Mixed water at 40°C	246 l

Model: HA 10-5 OS + HA 12-5 WSB

Configure model	
Model name	HA 10-5 OS + HA 12-5 WSB
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	9.70 kW	10.35 kW
El input	2.12 kW	3.74 kW
COP	4.57	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	128 %
Prated	11.50 kW	9.56 kW
SCOP	4.57	3.27
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.18 kW	8.46 kW
COP Tj = -7°C	2.83	2.12
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	6.53 kW	5.05 kW
COP Tj = +2°C	4.57	3.14
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.66 kW	5.18 kW
COP Tj = +7°C	5.78	4.27
Cdh Tj = +7 °C	0.980	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.52 kW	6.11 kW
COP Tj = 12°C	7.35	5.79
Cdh Tj = +12 °C	0.980	0.990
Pdh Tj = Tbiv	10.18 kW	8.46 kW
COP Tj = Tbiv	2.83	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.05 kW	7.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.71
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.59 kW
Annual energy consumption Qhe	5199 kWh	6040 kWh

Warmer Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	211 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.34	4.02
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	0.99	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.98	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1.00
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2059 kWh	3090 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	152 %	111 %
Prated	9.49 kW	9.42 kW
SCOP	3.87	2.85
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	6.32 kW	6.14 kW
COP Tj = -7°C	3.41	2.56
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.94 kW	4.48 kW
COP Tj = +2°C	4.53	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.53 kW	5.31 kW
COP Tj = +7°C	5.86	4.59
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	6.44 kW	6.21 kW
COP Tj = 12°C	7.27	5.99
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	7.74 kW	7.68 kW
COP Tj = Tbiv	2.34	1.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.41 kW	7.68 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	9.49 kW	9.42 kW
Annual energy consumption Qhe	6040 kWh	8138 kWh
Pdh Tj = -15°C (if TOL<-20°C)	7.74	7.68
COP Tj = -15°C (if TOL<-20°C)	2.34	1.89
Cdh Tj = -15 °C	1.000	1.000

Model: HA 10-5 OS + HA 12-5 STB

Configure model	
Model name	HA 10-5 OS + HA 12-5 STB
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	9.70 kW	10.35 kW
El input	2.12 kW	3.74 kW
COP	4.57	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	180 %	128 %
Prated	11.50 kW	9.56 kW
SCOP	4.57	3.27
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.18 kW	8.46 kW
COP Tj = -7°C	2.83	2.12
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	6.53 kW	5.05 kW
COP Tj = +2°C	4.57	3.14
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.66 kW	5.18 kW
COP Tj = +7°C	5.78	4.27
Cdh Tj = +7 °C	0.980	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.52 kW	6.11 kW
COP Tj = 12°C	7.35	5.79
Cdh Tj = +12 °C	0.980	0.990
Pdh Tj = Tbiv	10.18 kW	8.46 kW
COP Tj = Tbiv	2.83	2.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.05 kW	7.98 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.72	1.71
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.45 kW	1.59 kW
Annual energy consumption Qhe	5199 kWh	6040 kWh

Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	211 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.34	4.02
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	0.99	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.98	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1.00
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2059 kWh	3090 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	42 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	152 %	111 %
Prated	9.49 kW	9.42 kW
SCOP	3.87	2.85
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	6.32 kW	6.14 kW
COP Tj = -7°C	3.41	2.56
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.94 kW	4.48 kW
COP Tj = +2°C	4.53	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.53 kW	5.31 kW
COP Tj = +7°C	5.86	4.59
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	6.44 kW	6.21 kW
COP Tj = 12°C	7.27	5.99
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	7.74 kW	7.68 kW
COP Tj = Tbiv	2.34	1.89
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.41 kW	7.68 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.22	1.89
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	9.49 kW	9.42 kW
Annual energy consumption Qhe	6040 kWh	8138 kWh
Pdh Tj = -15°C (if TOL<-20°C)	7.74	7.68
COP Tj = -15°C (if TOL<-20°C)	2.34	1.89
Cdh Tj = -15 °C	1.000	1.000

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	97 %
COP	2.36
Heating up time	01:04 h:min
Standby power input	44.6 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	244 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	108 %
COP	2.62
Heating up time	01:01 h:min
Standby power input	41.3 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	243 l

Colder Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	89 %
COP	2.14
Heating up time	01:13 h:min
Standby power input	51.6 W
Reference hot water temperature	53.4 °C
Mixed water at 40°C	246 l

Model: HA 12-5 OS 230V + HA 12-5 WSB

Configure model	
Model name	HA 12-5 OS 230V + HA 12-5 WSB
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.25 kW	10.90 kW
El input	2.26 kW	3.94 kW
COP	4.54	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	133 %
Prated	13.57 kW	10.97 kW
SCOP	4.45	3.39
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.01 kW	9.71 kW
COP Tj = -7°C	2.51	2.16
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	7.21 kW	5.81 kW
COP Tj = +2°C	4.47	3.25
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.68 kW	5.22 kW
COP Tj = +7°C	5.83	4.47
Cdh Tj = +7 °C	0.990	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.44 kW	6.06 kW
COP Tj = 12°C	7.38	5.85
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	12.01 kW	9.71 kW
COP Tj = Tbiv	2.51	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.44 kW	8.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.47	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.13 kW	2.01 kW
Annual energy consumption Qhe	6303 kWh	6691 kWh

Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	212 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.37	4.03
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2046 kWh	3076 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	153 %	111 %
Prated	12.31 kW	10.28 kW
SCOP	3.91	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	8.06 kW	6.50 kW
COP Tj = -7°C	3.40	2.57
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	4.95 kW	4.47 kW
COP Tj = +2°C	4.68	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.74 kW	5.33 kW
COP Tj = +7°C	5.94	4.61
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	6.48 kW	6.10 kW
COP Tj = 12°C	7.01	6.08
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	10.04 kW	8.38 kW
COP Tj = Tbiv	2.27	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.63 kW	8.38 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12.31 kW	10.28 kW
Annual energy consumption Qhe	7757 kWh	8863 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.04	8.38
COP Tj = -15°C (if TOL<-20°C)	2.27	1.84
Cdh Tj = -15 °C	1.000	1.000

Model: HA 12-5 OS 230V + HA 12-5 STB

Configure model	
Model name	HA 12-5 OS 230V + HA 12-5 STB
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	1x230V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.25 kW	10.90 kW
El input	2.26 kW	3.94 kW
COP	4.54	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	133 %
Prated	13.57 kW	10.97 kW
SCOP	4.45	3.39
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.01 kW	9.71 kW
COP Tj = -7°C	2.51	2.16
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	7.21 kW	5.81 kW
COP Tj = +2°C	4.47	3.25
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.68 kW	5.22 kW
COP Tj = +7°C	5.83	4.47
Cdh Tj = +7 °C	0.990	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.44 kW	6.06 kW
COP Tj = 12°C	7.38	5.85
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	12.01 kW	9.71 kW
COP Tj = Tbiv	2.51	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.44 kW	8.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.47	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.13 kW	2.01 kW
Annual energy consumption Qhe	6303 kWh	6691 kWh

Warmer Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	212 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.37	4.03
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	1.00	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.99	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.00	1.00
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2046 kWh	3076 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	153 %	111 %
Prated	12.31 kW	10.28 kW
SCOP	3.91	2.86
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	8.06 kW	6.50 kW
COP Tj = -7°C	3.40	2.57
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	4.95 kW	4.47 kW
COP Tj = +2°C	4.68	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.74 kW	5.33 kW
COP Tj = +7°C	5.94	4.61
Cdh Tj = +7 °C	0.990	0.990
Pdh Tj = 12°C	6.48 kW	6.10 kW
COP Tj = 12°C	7.01	6.08
Cdh Tj = +12 °C	0.990	0.990
Pdh Tj = Tbiv	10.04 kW	8.38 kW
COP Tj = Tbiv	2.27	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.63 kW	8.38 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	11 W	11 W
PTO	11 W	11 W
PSB	11 W	11 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12.31 kW	10.28 kW
Annual energy consumption Qhe	7757 kWh	8863 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.04	8.38
COP Tj = -15°C (if TOL<-20°C)	2.27	1.84
Cdh Tj = -15 °C	1.000	1.000

Domestic Hot Water (DHW)

Average Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	97 %
COP	2.36
Heating up time	01:04 h:min
Standby power input	44.6 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	244 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	108 %
COP	2.62
Heating up time	01:01 h:min
Standby power input	41.3 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	243 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	89 %
COP	2.14
Heating up time	01:13 h:min
Standby power input	51.6 W
Reference hot water temperature	53.4 °C
Mixed water at 40°C	246 l

Model: HA 12-5 OS + HA 12-5 WSB

Configure model	
Model name	HA 12-5 OS + HA 12-5 WSB
Application	Heating (medium temp)
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.25 kW	10.90 kW
El input	2.26 kW	3.94 kW
COP	4.54	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	132 %
Prated	13.57 kW	10.97 kW
SCOP	4.44	3.38
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.01 kW	9.71 kW
COP Tj = -7°C	2.51	2.16
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	7.21 kW	5.81 kW
COP Tj = +2°C	4.47	3.25
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.68 kW	5.22 kW
COP Tj = +7°C	5.83	4.47
Cdh Tj = +7 °C	0.980	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.44 kW	6.06 kW
COP Tj = 12°C	7.38	5.85
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	12.01 kW	9.71 kW
COP Tj = Tbiv	2.51	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.44 kW	8.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.47	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.13 kW	2.01 kW
Annual energy consumption Qhe	6311 kWh	6700 kWh

Warmer Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	211 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.34	4.02
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	0.99	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.98	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1.00
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2059 kWh	3090 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	45 dB(A)	45 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	153 %	111 %
Prated	12.31 kW	10.28 kW
SCOP	3.91	2.85
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	8.06 kW	6.50 kW
COP Tj = -7°C	3.40	2.57
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.95 kW	4.47 kW
COP Tj = +2°C	4.68	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.74 kW	5.33 kW
COP Tj = +7°C	5.94	4.61
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	6.48 kW	6.10 kW
COP Tj = 12°C	7.01	6.08
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	10.04 kW	8.38 kW
COP Tj = Tbiv	2.27	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.63 kW	8.38 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12.31 kW	10.28 kW
Annual energy consumption Qhe	7766 kWh	8875 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.04	8.38
COP Tj = -15°C (if TOL<-20°C)	2.27	1.84
Cdh Tj = -15 °C	1.000	1.000

Model: HA 12-5 OS + HA 12-5 STB

Configure model	
Model name	HA 12-5 OS + HA 12-5 STB
Application	Heating + DHW + low temp
Units	Indoor + Outdoor
Climate Zone	Colder Climate + Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	n/a

General Data	
Power supply	3x400V 50Hz

Heating

EN 14511-2		
	Low temperature	Medium temperature
Heat output	10.25 kW	10.90 kW
El input	2.26 kW	3.94 kW
COP	4.54	2.77

EN 14511-4	
Shutting off the heat transfer medium flow	passed
Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

Average Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	175 %	132 %
Prated	13.57 kW	10.97 kW
SCOP	4.44	3.38
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.01 kW	9.71 kW
COP Tj = -7°C	2.51	2.16
Cdh Tj = -7 °C	1.000	1.000
Pdh Tj = +2°C	7.21 kW	5.81 kW
COP Tj = +2°C	4.47	3.25
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.68 kW	5.22 kW
COP Tj = +7°C	5.83	4.47
Cdh Tj = +7 °C	0.980	0.990

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = 12°C	6.44 kW	6.06 kW
COP Tj = 12°C	7.38	5.85
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	12.01 kW	9.71 kW
COP Tj = Tbiv	2.51	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.44 kW	8.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.47	1.85
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.13 kW	2.01 kW
Annual energy consumption Qhe	6311 kWh	6700 kWh

Warmer Climate

EN 12102-1

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

	Low temperature	Medium temperature
η_s	211 %	158 %
Prated	8.23 kW	9.29 kW
SCOP	5.34	4.02
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.23 kW	9.30 kW
COP Tj = +2°C	3.64	2.42
Cdh Tj = +2 °C	0.99	1.00
Pdh Tj = +7°C	5.40 kW	5.73 kW
COP Tj = +7°C	4.92	3.37
Cdh Tj = +7 °C	0.99	0.99
Pdh Tj = 12°C	5.99 kW	6.15 kW
COP Tj = 12°C	6.28	5.20
Cdh Tj = +12 °C	0.98	0.99

This information was generated by the HP KEYMARK database on 18 Mar 2022

Pdh Tj = Tbiv	8.23 kW	9.29 kW
COP Tj = Tbiv	3.64	2.42
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.23 kW	9.30 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.64	2.42
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.99	1.00
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2059 kWh	3090 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	44 dB(A)
Sound power level outdoor	58 dB(A)	60 dB(A)

EN 14825

This information was generated by the HP KEYMARK database on 18 Mar 2022

	Low temperature	Medium temperature
η_s	153 %	111 %
Prated	12.31 kW	10.28 kW
SCOP	3.91	2.85
Tbiv	-15 °C	-15 °C
TOL	-20 °C	-15 °C
Pdh Tj = -7°C	8.06 kW	6.50 kW
COP Tj = -7°C	3.40	2.57
Cdh Tj = -7 °C	0.990	0.990
Pdh Tj = +2°C	4.95 kW	4.47 kW
COP Tj = +2°C	4.68	3.45
Cdh Tj = +2 °C	0.990	0.990
Pdh Tj = +7°C	5.74 kW	5.33 kW
COP Tj = +7°C	5.94	4.61
Cdh Tj = +7 °C	0.980	0.990
Pdh Tj = 12°C	6.48 kW	6.10 kW
COP Tj = 12°C	7.01	6.08
Cdh Tj = +12 °C	0.980	0.980
Pdh Tj = Tbiv	10.04 kW	8.38 kW
COP Tj = Tbiv	2.27	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.63 kW	8.38 kW

This information was generated by the HP KEYMARK database on 18 Mar 2022

COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.17	1.84
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	1.000	1.000
WTOL	55 °C	55 °C
Poff	17 W	17 W
PTO	17 W	17 W
PSB	17 W	17 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	12.31 kW	10.28 kW
Annual energy consumption Qhe	7766 kWh	8875 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.04	8.38
COP Tj = -15°C (if TOL<-20°C)	2.27	1.84
Cdh Tj = -15 °C	1.000	1.000

Domestic Hot Water (DHW)

Average Climate

This information was generated by the HP KEYMARK database on 18 Mar 2022

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	97 %
COP	2.36
Heating up time	01:04 h:min
Standby power input	44.6 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	244 l

Warmer Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	108 %
COP	2.62
Heating up time	01:01 h:min
Standby power input	41.3 W
Reference hot water temperature	53.7 °C
Mixed water at 40°C	243 l

Colder Climate

EN 16147	
Declared load profile	XL
Efficiency η_{DHW}	89 %
COP	2.14
Heating up time	01:13 h:min
Standby power input	51.6 W
Reference hot water temperature	53.4 °C
Mixed water at 40°C	246 l