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This information was generated by the HP KEYMARK database on 5 Mar 2021

Summary of	M thermal A series 12 14 16 kW	Reg. No.	041-K007-09	
Certificate Holder				
Name	GD Midea Heating & Ventilating Equipment Co., Ltd.			
Address	Penglai Industry Road	Zip	528311	
City	Beijiao, Shunde, Foshan	Country	China	
Certification Body	BRE Global Limited	BRE Global Limited		
Subtype title	M thermal A series 12 14 16 kW			
Heat Pump Type	Outdoor Air/Water			
Refrigerant	R32			
Mass Of Refrigerant	1.84 kg			
Certification Date	02.12.2020			
Testing basis	HP Keymark Scheme Rules Rev 08			



Model: MHA-V12W/D2N8-B+HB-A160/C****GN8-B

General Data	
Power supply	1x230V 50Hz

Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	12.10 kW	12.00 kW
El input	2.44 kW	3.87 kW
СОР	4.95	3.10

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	189 %	135 %
Prated	12.00 kW	11.58 kW
SCOP	4.81	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.61 kW	10.25 kW
COP Tj = -7°C	2.88	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	6.69 kW	6.52 kW
COP Tj = +2°C	4.65	3.44
Cdh	0.90	0.90
Pdh Tj = +7°C	4.44 kW	4.36 kW
COP Tj = +7°C	6.62	4.59
Cdh	0.90	0.90





Pdh Tj = 12°C	3.74 kW	3.30 kW
COP Tj = 12°C	8.47	6.05
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.61 kW	10.25 kW
COP Tj = Tbiv	2.88	2.01
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.75 kW	9.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	1.79
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	1.26 kW	2.50 kW
Annual energy consumption Qhe	5152 kWh	6927 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{S}	256 %	174 %
Prated	11.11 kW	12.51 kW
SCOP	6.53	4.43
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	11.26 kW	12.08 kW
COP Tj = +2°C	3.59	2.31
Cdh	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	7.14 kW	8.04 kW
$COP Tj = +7^{\circ}C$	5.87	3.86
Cdh	0.90	0.90
Pdh Tj = 12°C	3.56 kW	3.75 kW
COP Tj = 12°C	7.94	5.70
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.87	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.26 kW	12.08 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
WTOL	65 °C	65 °C





Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0 kW	0.44 kW
Annual energy consumption Qhe	2292 kWh	3776 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	118 %
Prated	11.38 kW	10.32 kW
SCOP	4.08	3.02
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C





This information was gene	rated by the Hi KETM	ARK database on 5 Mar 202
Pdh Tj = -7°C	7.05 kW	6.63 kW
COP Tj = -7°C	3.48	2.63
Cdh	0.90	0.90
Pdh Tj = +2°C	4.68 kW	4.07 kW
COP Tj = +2°C	4.96	3.60
Cdh	0.90	0.90
Pdh Tj = $+7$ °C	3.14 kW	2.78 kW
$COPTj = +7^{\circ}C$	6.10	4.54
Cdh	0.90	0.90
Pdh Tj = 12°C	3.57 kW	3.33 kW
COP Tj = 12°C	7.87	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	9.28 kW	8.42 kW
COP Tj = Tbiv	2.59	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	7.01 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.98	1.13
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	o w	0 W



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This information was generated by the HP KEYMARK database on 5 Mar 2021

Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.37 kW	6.12 kW
Annual energy consumption Qhe	6870 kWh	8419 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.28	8.42
COP Tj = -15°C (if TOL $<$ -20°C)	2.59	1.84
Cdh	0.90	0.90

Model: MHA-V16W/D2N8-B+HB-A160/C****GN8-B

General Data	
Power supply 1x230V 50Hz	

Heating

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

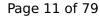
EN 14511-2		
Low temperature Medium temperature		
Heat output	16.00 kW	16.00 kW
El input	3.56 kW	5.52 kW
СОР	4.50	2.90

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	182 %	133 %
Prated	15.21 kW	13.02 kW
SCOP	4.62	3.41
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.45 kW	11.52 kW
COP Tj = -7°C	2.72	1.99
Cdh	0.90	0.90
Pdh Tj = +2°C	8.57 kW	7.18 kW
COP Tj = +2°C	4.41	3.34
Cdh	0.90	0.90
Pdh Tj = +7°C	5.70 kW	4.68 kW
COP Tj = +7°C	6.56	4.61
Cdh	0.90	0.90

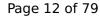




3.78 kW	3.32 kW
8.51	6.07
0.90	0.90
13.45 kW	11.52 kW
2.72	1.99
12.52 kW	10.33 kW
2.48	1.80
65 °C	65 °C
14 W	14 W
24 W	24 W
14 W	14 W
o w	0 W
electric	electric
2.68 kW	2.67 kW
6804 kWh	7895 kWh
	8.51 0.90 13.45 kW 2.72 12.52 kW 2.48 65 °C 14 W 24 W 14 W 0 W electric 2.68 kW

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	249 %	176 %
Prated	13.09 kW	13.78 kW
SCOP	6.33	4.48
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.12 kW	13.38 kW
COP Tj = +2°C	3.35	2.29
Cdh	0.90	0.90
Pdh Tj = +7°C	8.42 kW	8.86 kW
$COPTj = +7^{\circ}C$	5.36	3.84
Cdh	0.90	0.90
Pdh Tj = 12°C	3.88 kW	4.06 kW
COP Tj = 12°C	8.11	5.86
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.42 kW	8.86 kW
COP Tj = Tbiv	5.36	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.12 kW	13.38 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.29
WTOL	65 °C	65 °C





Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0.00 kW	0.40 kW
Annual energy consumption Qhe	2781 kWh	4112 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	158 %	122 %
Prated	13.76 kW	11.79 kW
SCOP	4.02	3.12
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C





This information was gene	rated by the HF KLTMA	TIN Gatabase on 5 Mai 202.
Pdh Tj = -7°C	8.31 kW	7.64 kW
$COPTj = -7^{\circ}C$	3.37	2.65
Cdh	0.90	0.90
Pdh Tj = $+2$ °C	5.27 kW	4.43 kW
COP Tj = +2°C	4.86	3.79
Cdh	0.90	0.90
Pdh Tj = +7°C	3.62 kW	2.98 kW
$COPTj = +7^{\circ}C$	6.49	4.81
Cdh	0.90	0.90
Pdh Tj = 12°C	3.35 kW	3.43 kW
COP Tj = 12°C	7.40	6.29
Cdh	0.90	0.90
Pdh Tj = Tbiv	11.22 kW	9.62 kW
COP Tj = Tbiv	2.43	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.89 kW	5.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.23
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	0 W	o w
	-	-



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Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.87 kW	6.57 kW
Annual energy consumption Qhe	8431 kWh	9309 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.22	9.62
COP Tj = -15°C (if TOL $<$ -20°C)	2.43	1.86
Cdh	0.90	0.90



Model: MHC-V12W/D2N8-B****

General Data	
Power supply 1x230V 50Hz	

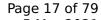
Heating

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

EN 14511-2			
Low temperature Medium temperature			
Heat output	12.10 kW	11.90 kW	
El input	2.44 kW	3.90 kW	
СОР	4.95	3.05	

Average Climate

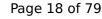
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	189 %	135 %
Prated	12.00 kW	11.58 kW
SCOP	4.81	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.61 kW	10.25 kW
COP Tj = -7°C	2.88	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	6.69 kW	6.52 kW
COP Tj = +2°C	4.65	3.44
Cdh	0.90	0.90
Pdh Tj = +7°C	4.44 kW	4.36 kW
COP Tj = +7°C	6.62	4.59
Cdh	0.90	0.90
Pdh Tj = 12°C	3.74 kW	3.30 kW
COP Tj = 12°C	8.47	6.05
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.61 kW	10.25 kW
COP Tj = Tbiv	2.88	2.01





Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.75 kW	9.10 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	1.79
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	o w
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	1.26 kW	2.50 kW
Annual energy consumption Qhe	5152 kWh	6927 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825			
Low temperature Medium temperature			
η_{s}	256 %	174 %	
Prated	11.11 kW	12.51 kW	
SCOP	6.53	4.43	





The transfer		THE GALADASE OIL 2 MAI 202.
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.26 kW	12.08 kW
COP Tj = +2°C	3.59	2.31
Cdh	0.90	0.90
Pdh Tj = +7°C	7.14 kW	8.04 kW
$COP Tj = +7^{\circ}C$	5.87	3.86
Cdh	0.90	0.90
Pdh Tj = 12°C	3.56 kW	3.75 kW
COP Tj = 12°C	7.94	5.70
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.87	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.26 kW	12.08 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric



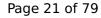


Supplementary Heater: PSUP	0 kW	0.44 kW
Annual energy consumption Qhe	2292 kWh	3776 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	118 %
Prated	11.38 kW	10.32 kW
SCOP	4.08	3.02
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.05 kW	6.63 kW
COP Tj = -7°C	3.48	2.63
Cdh	0.90	0.90
Pdh Tj = +2°C	4.68 kW	4.07 kW
COP Tj = +2°C	4.96	3.60
Cdh	0.90	0.90





3.14 kW	2.78 kW
	2.70 NVV
6.10	4.54
0.90	0.90
3.57 kW	3.33 kW
7.87	6.25
0.90	0.90
9.28 kW	8.42 kW
2.59	1.84
7.01 kW	4.20 kW
1.98	1.13
65 °C	65 °C
14 W	14 W
24 W	24 W
14 W	14 W
0 W	0 W
electric	electric
4.37 kW	6.12 kW
6870 kWh	8419 kWh
9.28	8.42
2.59	1.84
0.90	0.90
	0.90 3.57 kW 7.87 0.90 9.28 kW 2.59 7.01 kW 1.98 65 °C 14 W 24 W 14 W 0 W electric 4.37 kW 6870 kWh 9.28 2.59



Model: MHC-V14W/D2N8-B****

General Data	
Power supply	1x230V 50Hz

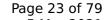
Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	14.50 kW	13.80 kW
El input	3.15 kW	4.68 kW
СОР	4.60	2.95

Average Climate

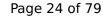
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	186 %	136 %
Prated	13.73 kW	12.08 kW
SCOP	4.72	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.14 kW	10.69 kW
COP Tj = -7°C	2.79	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	7.95 kW	6.86 kW
COP Tj = +2°C	4.52	3.43
Cdh	0.90	0.90
Pdh Tj = +7°C	5.20 kW	4.64 kW
COP Tj = +7°C	6.68	4.66
Cdh	0.90	0.90
Pdh Tj = 12°C	3.76 kW	3.32 kW
COP Tj = 12°C	8.52	6.13
Cdh	0.90	0.90
Pdh Tj = Tbiv	12.14 kW	10.69 kW
COP Tj = Tbiv	2.79	2.01





Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.48 kW	9.19 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.76
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.23 kW	2.91 kW
Annual energy consumption Qhe	6012 kWh	7202 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
Low temperature	Medium temperature	
260 %	177 %	
12.11 kW	13.74 kW	
6.63	4.49	
	Low temperature 260 % 12.11 kW	





	The state of the s	THE GALADASE OIL 2 Mai 202.
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.04 kW	13.05 kW
COP Tj = +2°C	3.44	2.20
Cdh	0.90	0.90
Pdh Tj = +7°C	7.78 kW	8.83 kW
$COP Tj = +7^{\circ}C$	5.84	3.91
Cdh	0.90	0.90
Pdh Tj = 12°C	3.75 kW	4.09 kW
COP Tj = 12°C	8.25	5.90
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.04 kW	13.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.20
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric





Supplementary Heater: PSUP	0.07 kW	0.69 kW
Annual energy consumption Qhe	2457 kWh	4088 kWh

Colder Climate

EN 12102-1		
Low temperature Medium temperature		
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	119 %
Prated	12.64 kW	10.97 kW
SCOP	4.07	3.05
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.97 kW	6.89 kW
$COP Tj = -7^{\circ}C$	3.44	2.66
Cdh	0.90	0.90
Pdh Tj = +2°C	5.05 kW	4.32 kW
COP Tj = +2°C	4.92	3.66
Cdh	0.90	0.90





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Pdh Tj = +7°C	3.16 kW	3.06 kW
COP Tj = +7°C	6.11	4.72
Cdh	0.90	0.90
Pdh Tj = 12°C	3.58 kW	3.33 kW
COP Tj = 12°C	7.82	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	8.95 kW
COP Tj = Tbiv	2.53	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.57 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.13
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	5.07 kW	6.77 kW
Annual energy consumption Qhe	7667 kWh	8866 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.31	8.95
COP Tj = -15°C (if TOL $<$ -20°C)	2.53	1.79
Cdh	0.90	0.90



Model: MHC-V16W/D2N8-B****

General Data		
Power supply	1x230V 50Hz	

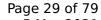
Heating

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

EN 14511-2			
Low temperature Medium temperature			
Heat output	15.90 kW	16.00 kW	
El input	3.53 kW	5.61 kW	
СОР	4.50	2.85	

Average Climate

EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	68 dB(A)	68 dB(A)	





EN 14825

	Low temperature	Medium temperature
η_{s}	182 %	133 %
Prated	15.21 kW	13.02 kW
SCOP	4.62	3.41
Гbіv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.45 kW	11.52 kW
COP Tj = -7°C	2.72	1.99
Cdh	0.90	0.90
Pdh Tj = +2°C	8.57 kW	7.18 kW
COP Tj = +2°C	4.41	3.34
Cdh	0.90	0.90
Pdh Tj = +7°C	5.70 kW	4.68 kW
COP Tj = +7°C	6.56	4.61
Cdh	0.90	0.90
Pdh Tj = 12°C	3.78 kW	3.32 kW
COP Tj = 12°C	8.51	6.07
Cdh	0.90	0.90
Pdh Tj = Tbiv	13.45 kW	11.52 kW
COP Tj = Tbiv	2.72	1.99



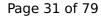


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Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.52 kW	10.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.80
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	o w
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.68 kW	2.67 kW
Annual energy consumption Qhe	6804 kWh	7895 kWh

Warmer Climate

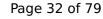
EN 12102-1		
Low temperature Medium temperature		
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	249 %	176 %
Prated	13.09 kW	13.78 kW
SCOP	6.33	4.48





		THE GALADASE OIL 2 Mai 202.
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.12 kW	13.38 kW
COP Tj = +2°C	3.35	2.29
Cdh	0.90	0.90
Pdh Tj = +7°C	8.42 kW	8.86 kW
$COP Tj = +7^{\circ}C$	5.36	3.84
Cdh	0.90	0.90
Pdh Tj = 12°C	3.88 kW	4.06 kW
COP Tj = 12°C	8.11	5.86
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.42 kW	8.86 kW
COP Tj = Tbiv	5.36	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.12 kW	13.38 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.29
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric



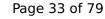


Supplementary Heater: PSUP	0.00 kW	0.40 kW
Annual energy consumption Qhe	2781 kWh	4112 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	68 dB(A)	68 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	158 %	122 %
Prated	13.76 kW	11.79 kW
SCOP	4.02	3.12
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	8.31 kW	7.64 kW
COP Tj = -7°C	3.37	2.65
Cdh	0.90	0.90
Pdh Tj = +2°C	5.27 kW	4.43 kW
COP Tj = +2°C	4.86	3.79
Cdh	0.90	0.90
	1	





	died by the Hi Kerma	THE GUILDUSC OIL S MAI 202
Pdh Tj = $+7^{\circ}$ C	3.62 kW	2.98 kW
$COP Tj = +7^{\circ}C$	6.49	4.81
Cdh	0.90	0.90
Pdh Tj = 12°C	3.35 kW	3.43 kW
COP Tj = 12°C	7.40	6.29
Cdh	0.90	0.90
Pdh Tj = Tbiv	11.22 kW	9.62 kW
COP Tj = Tbiv	2.43	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.89 kW	5.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.23
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	o w	o w
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.87 kW	6.57 kW
Annual energy consumption Qhe	8431 kWh	9309 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.22	9.62
COP Tj = -15 °C (if TOL< -20 °C)	2.43	1.86
Cdh	0.90	0.90
	*	•



Model: MHA-V12W/D2RN8-B+HB-A160/C****GN8-B

General Data		
Power supply	3x400V 50Hz	

Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	12.10 kW	12.00 kW
El input	2.44 kW	3.87 kW
СОР	4.95	3.10

Average Climate



EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	43 dB(A)	43 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	189 %	135 %
Prated	12.00 kW	11.58 kW
SCOP	4.81	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.61 kW	10.25 kW
COP Tj = -7°C	2.88	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	6.69 kW	6.52 kW
COP Tj = +2°C	4.65	3.44
Cdh	0.90	0.90
Pdh Tj = +7°C	4.44 kW	4.36 kW
COP Tj = +7°C	6.62	4.59
Cdh	0.90	0.90





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Pdh Tj = 12°C	3.74 kW	3.30 kW	
COP Tj = 12°C	8.47	6.05	
Cdh	0.90	0.90	
Pdh Tj = Tbiv	10.61 kW	10.25 kW	
COP Tj = Tbiv	2.88	2.01	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.75 kW	9.10 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	1.79	
WTOL	65 °C	65 °C	
Poff	20 W	20 W	
РТО	30 W	30 W	
PSB	20 W	20 W	
PCK	o w	o w	
Supplementary Heater: Type of energy input	electric	electric	
Supplementary Heater: PSUP	1.26 kW	2.50 kW	
Annual energy consumption Qhe	5153 kWh	6928 kWh	

Warmer Climate

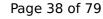
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	64 dB(A)	64 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	256 %	174 %
Prated	11.11 kW	12.51 kW
SCOP	6.53	4.42
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.26 kW	12.08 kW
COP Tj = +2°C	3.59	2.31
Cdh	0.90	0.90
Pdh Tj = +7°C	7.14 kW	8.04 kW
$COP Tj = +7^{\circ}C$	5.87	3.86
Cdh	0.90	0.90
Pdh Tj = 12°C	3.56 kW	3.75 kW
COP Tj = 12°C	7.94	5.70
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.87	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	11.26 kW	12.08 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
WTOL	65 °C	65 °C





Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0.00 kW	0.44 kW
Annual energy consumption Qhe	2296 kWh	3780 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	43 dB(A)	43 dB(A)	
Sound power level outdoor	64 dB(A)	64 dB(A)	

EN 14825		
Low temperature	Medium temperature	
160 %	118 %	
11.38 kW	10.32 kW	
4.08	3.02	
-15 °C	-15 °C	
-22 °C	-22 °C	
	Low temperature 160 % 11.38 kW 4.08 -15 °C	





This information was gener	ated by the Hi KETMA	THE GALADASE OIL 2 Mai 2021
Pdh Tj = -7°C	7.05 kW	6.63 kW
$COPTj = -7^{\circ}C$	3.48	2.63
Cdh	0.90	0.90
Pdh Tj = $+2$ °C	4.68 kW	4.07 kW
$COPTj = +2^{\circ}C$	4.96	3.60
Cdh	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.14 kW	2.78 kW
$COPTj = +7^{\circ}C$	6.10	4.54
Cdh	0.90	0.90
Pdh Tj = 12°C	3.57 kW	3.33 kW
COP Tj = 12°C	7.87	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	9.28 kW	8.42 kW
COP Tj = Tbiv	2.59	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.01 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.98	1.13
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	0 W	o w



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This information was generated by the HP KEYMARK database on 5 Mar 2021

Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.37 kW	6.12 kW
Annual energy consumption Qhe	6871 kWh	8420 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.28	8.42
COP Tj = -15°C (if TOL $<$ -20°C)	2.59	1.84
Cdh	0.90	0.90

Model: MHA-V14W/D2RN8-B+HB-A160/C****GN8-B

General Data	
Power supply 3x400V 50Hz	

Heating

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

EN 14511-2			
	Low temperature	Medium temperature	
Heat output	14.50 kW	13.80 kW	
El input	3.09 kW	4.60 kW	
СОР	4.70	3.00	

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	186 %	136 %
Prated	13.73 kW	12.08 kW
SCOP	4.72	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.14 kW	10.69 kW
COP Tj = -7°C	2.79	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	7.95 kW	6.86 kW
COP Tj = +2°C	4.52	3.43
Cdh	0.90	0.90
Pdh Tj = +7°C	5.20 kW	4.64 kW
COP Tj = +7°C	6.68	4.66
Cdh	0.90	0.90





Pdh Tj = 12°C	3.76 kW	3.32 kW
COP Tj = 12°C	8.52	6.13
Cdh	0.90	0.90
Pdh Tj = Tbiv	12.14 kW	10.69 kW
COP Tj = Tbiv	2.79	2.01
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.48 kW	9.19 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.76
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.23 kW	2.91 kW
Annual energy consumption Qhe	6013 kWh	7203 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	260 %	176 %
Prated	12.11 kW	13.74 kW
SCOP	6.63	4.48
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.04 kW	13.05 kW
COP Tj = +2°C	3.44	2.20
Cdh	0.90	0.90
Pdh Tj = +7°C	7.78 kW	8.83 kW
$COP Tj = +7^{\circ}C$	5.84	3.91
Cdh	0.90	0.90
Pdh Tj = 12°C	3.75 kW	4.09 kW
COP Tj = 12°C	8.25	5.90
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	12.04 kW	13.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.20
WTOL	65 °C	65 °C





Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	o w	o w
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0.07 kW	0 kW
Annual energy consumption Qhe	2462 kWh	4092 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	119 %
Prated	12.64 kW	10.97 kW
SCOP	4.06	3.05
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C





This information was gener	area by the in Rein	in the database on sind Lot
Pdh Tj = -7°C	7.97 kW	6.89 kW
COP Tj = -7°C	3.44	2.66
Cdh	0.90	0.90
Pdh Tj = $+2$ °C	5.05 kW	4.32 kW
COP Tj = +2°C	4.92	3.66
Cdh	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.16 kW	3.06 kW
$COPTj = +7^{\circ}C$	6.11	4.72
Cdh	0.90	0.90
Pdh Tj = 12°C	3.58 kW	3.33 kW
COP Tj = 12°C	7.82	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	8.95 kW
COP Tj = Tbiv	2.53	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.57 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.13
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	o w	o w
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$$\operatorname{\textit{Page}}\xspace$ 47 of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	5.07 kW	6.77 kW
Annual energy consumption Qhe	7667 kWh	8867 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.31	8.95
COP Tj = -15°C (if TOL $<$ -20°C)	2.53	1.79
Cdh	0.90	0.90



Model: MHA-V16W/D2RN8-B+HB-A160/C****GN8-B

General Data	
Power supply	3x400V 50Hz

Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	16.00 kW	16.00 kW
El input	3.56 kW	5.52 kW
СОР	4.50	2.90

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	182 %	133 %
Prated	15.21 kW	13.02 kW
SCOP	4.62	3.41
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.45 kW	11.52 kW
COP Tj = -7°C	2.72	1.99
Cdh	0.90	0.90
Pdh Tj = +2°C	8.57 kW	7.18 kW
COP Tj = +2°C	4.41	3.34
Cdh	0.90	0.90
Pdh Tj = +7°C	5.70 kW	4.68 kW
COP Tj = +7°C	6.56	4.61
Cdh	0.90	0.90

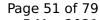




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Pdh Tj = 12°C	3.78 kW	3.32 kW	
COP Tj = 12°C	8.51	6.07	
Cdh	0.90	0.90	
Pdh Tj = Tbiv	13.45 kW	11.52 kW	
COP Tj = Tbiv	2.72	1.99	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.52 kW	10.33 kW	
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.80	
WTOL	65 °C	65 °C	
Poff	20 W	20 W	
РТО	30 W	30 W	
PSB	20 W	20 W	
PCK	o w	o w	
Supplementary Heater: Type of energy input	electric	electric	
Supplementary Heater: PSUP	2.68 kW	2.67 kW	
Annual energy consumption Qhe	6805 kWh	7896 kWh	

Warmer Climate

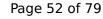
EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	248 %	176 %
Prated	13.09 kW	13.78 kW
SCOP	6.33	4.47
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.12 kW	13.38 kW
$COP Tj = +2^{\circ}C$	3.35	2.29
Cdh	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	8.42 kW	8.86 kW
$COP Tj = +7^{\circ}C$	5.36	3.84
Cdh	0.90	0.90
Pdh Tj = 12°C	3.88 kW	4.06 kW
COP Tj = 12°C	8.11	5.86
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.42 kW	8.86 kW
COP Tj = Tbiv	5.36	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.12 kW	13.38 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.29
WTOL	65 °C	65 °C



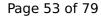


Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0.00 kW	0.40 kW
Annual energy consumption Qhe	2786 kWh	4116 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
Low temperature	Medium temperature	
158 %	122 %	
13.76 kW	11.79 kW	
4.02	3.12	
-15 °C	-15 °C	
-22 °C	-22 °C	
	Low temperature 158 % 13.76 kW 4.02 -15 °C	





This information was gene	acca by the Hi Kenni	ARK database on 5 Mar 202
Pdh Tj = -7 °C	8.31 kW	7.64 kW
COP Tj = -7°C	3.37	2.65
Cdh	0.90	0.90
Pdh Tj = +2°C	5.27 kW	4.43 kW
COP Tj = +2°C	4.86	3.79
Cdh	0.90	0.90
Pdh Tj = $+7$ °C	3.62 kW	2.98 kW
$COP Tj = +7^{\circ}C$	6.49	4.81
Cdh	0.90	0.90
Pdh Tj = 12°C	3.35 kW	3.43 kW
COP Tj = 12°C	7.40	6.29
Cdh	0.90	0.90
Pdh Tj = Tbiv	11.22 kW	9.62 kW
COP Tj = Tbiv	2.43	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.89 kW	5.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.23
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	0 W	0 W
		I



$$\operatorname{\textit{Page}}\xspace$ 54 of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.87 kW	6.57 kW
Annual energy consumption Qhe	8431 kWh	9310 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.22	9.62
COP Tj = -15°C (if TOL $<$ -20°C)	2.43	1.86
Cdh	0.90	0.90



Model: MHC-V12W/D2RN8-B****

General Data	
Power supply 3x400V 50Hz	

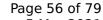
Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	12.10 kW	11.90 kW
El input	2.44 kW	3.90 kW
СОР	4.95	3.05

Average Climate

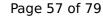
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)





EN 14825

	Low temperature	Medium temperature
η _s	189 %	135 %
Prated	12.00 kW	11.58 kW
SCOP	4.81	3.45
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	10.61 kW	10.25 kW
COP Tj = -7°C	2.88	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	6.69 kW	6.52 kW
COP Tj = +2°C	4.65	3.44
Cdh	0.90	0.90
Pdh Tj = +7°C	4.44 kW	4.36 kW
COP Tj = +7°C	6.62	4.59
Cdh	0.90	0.90
Pdh Tj = 12°C	3.74 kW	3.30 kW
COP Tj = 12°C	8.47	6.05
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.61 kW	10.25 kW
COP Tj = Tbiv	2.88	2.01





COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh 2.77 1.79 WTOL 65 °C 65 °C Poff 20 W 20 W PTO 30 W 30 W PSB 20 W 20 W PCK 0 W 0 W Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW			
WTOL 65 °C 65 °C 20 W 20 W PTO 30 W 30 W PSB 20 W 20 W PCK 0 W 0 W Supplementary Heater: Type of energy input electric supplementary Heater: PSUP 1.26 kW 20 W 20 W	Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	10.75 kW	9.10 kW
Poff 20 W 20 W PTO 30 W 30 W PSB 20 W 20 W PCK 0 W 0 W Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW	COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.77	1.79
PTO 30 W 30 W PSB 20 W 20 W PCK 0 W 0 W Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW	WTOL	65 °C	65 °C
PSB 20 W 20 W PCK 0 W 0 W Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW	Poff	20 W	20 W
PCK 0 W 0 W Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW	РТО	30 W	30 W
Supplementary Heater: Type of energy input electric electric Supplementary Heater: PSUP 1.26 kW 2.50 kW	PSB	20 W	20 W
Supplementary Heater: PSUP 1.26 kW 2.50 kW	PCK	o w	0 W
	Supplementary Heater: Type of energy input	electric	electric
Annual energy consumption Qhe 5153 kWh 6928 kWh	Supplementary Heater: PSUP	1.26 kW	2.50 kW
	Annual energy consumption Qhe	5153 kWh	6928 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{S}	256 %	174 %
Prated	11.11 kW	12.51 kW
SCOP	6.53	4.42
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The transfer		THE UNITED ASE OF SHALL 202.
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	11.26 kW	12.08 kW
COP Tj = +2°C	3.59	2.31
Cdh	0.90	0.90
Pdh Tj = +7°C	7.14 kW	8.04 kW
$COP Tj = +7^{\circ}C$	5.87	3.86
Cdh	0.90	0.90
Pdh Tj = 12°C	3.56 kW	3.75 kW
COP Tj = 12°C	7.94	5.70
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.14 kW	8.04 kW
COP Tj = Tbiv	5.87	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.26 kW	12.08 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric





Supplementary Heater: PSUP	0.00 kW	0.44 kW
Annual energy consumption Qhe	2296 kWh	3780 kWh

Colder Climate

EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	65 dB(A)	65 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	118 %
Prated	11.38 kW	10.32 kW
SCOP	4.08	3.02
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.05 kW	6.63 kW
COP Tj = -7°C	3.48	2.63
Cdh	0.90	0.90
Pdh Tj = +2°C	4.68 kW	4.07 kW
COP Tj = +2°C	4.96	3.60
Cdh	0.90	0.90
	'	1





1		The database of 5 Mai 2021
Pdh Tj = +7°C	3.14 kW	2.78 kW
$COP Tj = +7^{\circ}C$	6.10	4.54
Cdh	0.90	0.90
Pdh Tj = 12°C	3.57 kW	3.33 kW
COP Tj = 12°C	7.87	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	9.28 kW	8.42 kW
COP Tj = Tbiv	2.59	1.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.01 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.98	1.13
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.37 kW	6.12 kW
Annual energy consumption Qhe	6871 kWh	8420 kWh
Pdh Tj = -15°C (if TOL<-20°C)	9.28	8.42
COP Tj = -15 °C (if TOL< -20 °C)	2.59	1.84
Cdh	0.90	0.90



Model: MHC-V14W/D2RN8-B****

General Data	
Power supply 3x400V 50Hz	

Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	14.50 kW	13.80 kW
El input	3.15 kW	4.68 kW
СОР	4.60	2.95

Average Climate

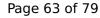
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	65 dB(A)	65 dB(A)	





EN 14825

	Low temperature	Medium temperature
η_{s}	186 %	136 %
Prated	13.73 kW	12.08 kW
SCOP	4.72	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.14 kW	10.69 kW
COP Tj = -7°C	2.79	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	7.95 kW	6.86 kW
COP Tj = +2°C	4.52	3.43
Cdh	0.90	0.90
Pdh Tj = +7°C	5.20 kW	4.64 kW
COP Tj = +7°C	6.68	4.66
Cdh	0.90	0.90
Pdh Tj = 12°C	3.76 kW	3.32 kW
COP Tj = 12°C	8.52	6.13
Cdh	0.90	0.90
Pdh Tj = Tbiv	12.14 kW	10.69 kW
COP Tj = Tbiv	2.79	2.01





Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.48 kW	9.19 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.76
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.23 kW	2.91 kW
Annual energy consumption Qhe	6013 kWh	7203 kWh

Warmer Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	65 dB(A)	65 dB(A)	

EN 14825		
	Low temperature	Medium temperature
η_{s}	260 %	176 %
Prated	12.11 kW	13.74 kW
SCOP	6.63	4.48





The management of the second o		THE GALADASE OIL 2 Mail 2021
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.04 kW	13.05 kW
COP Tj = +2°C	3.44	2.20
Cdh	0.90	0.90
Pdh Tj = +7°C	7.78 kW	8.83 kW
$COP Tj = +7^{\circ}C$	5.84	3.91
Cdh	0.90	0.90
Pdh Tj = 12°C	3.75 kW	4.09 kW
COP Tj = 12°C	8.25	5.90
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.04 kW	13.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.20
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric





Supplementary Heater: PSUP	0.07 kW	0 kW
Annual energy consumption Qhe	2462 kWh	4092 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	160 %	119 %
Prated	12.64 kW	10.97 kW
SCOP	4.06	3.05
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	7.97 kW	6.89 kW
COP Tj = -7°C	3.44	2.66
Cdh	0.90	0.90
Pdh Tj = +2°C	5.05 kW	4.32 kW
COP Tj = +2°C	4.92	3.66
Cdh	0.90	0.90
	1	





Pdh Tj = $+7^{\circ}$ C	3.16 kW	3.06 kW
COP Tj = +7°C	6.11	4.72
Cdh	0.90	0.90
Pdh Tj = 12°C	3.58 kW	3.33 kW
COP Tj = 12°C	7.82	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	8.95 kW
COP Tj = Tbiv	2.53	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.57 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.13
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	5.07 kW	6.77 kW
Annual energy consumption Qhe	7667 kWh	8867 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.31	8.95
COP Tj = -15°C (if TOL<-20°C)	2.53	1.79
Cdh	0.90	0.90

Model: MHC-V16W/D2RN8-B****

General Data	
Power supply	3x400V 50Hz

Heating

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

EN 14511-2		
	Low temperature	Medium temperature
Heat output	15.90 kW	16.00 kW
El input	3.53 kW	5.61 kW
СОР	4.50	2.85

Average Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)





EN 14825

	Low temperature	Medium temperature
η_{s}	182 %	133 %
Prated	15.21 kW	13.02 kW
SCOP	4.62	3.41
Гbіv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.45 kW	11.52 kW
COP Tj = -7°C	2.72	1.99
Cdh	0.90	0.90
Pdh Tj = +2°C	8.57 kW	7.18 kW
COP Tj = +2°C	4.41	3.34
Cdh	0.90	0.90
Pdh Tj = +7°C	5.70 kW	4.68 kW
COP Tj = +7°C	6.56	4.61
Cdh	0.90	0.90
Pdh Tj = 12°C	3.78 kW	3.32 kW
COP Tj = 12°C	8.51	6.07
Cdh	0.90	0.90
Pdh Tj = Tbiv	13.45 kW	11.52 kW
COP Tj = Tbiv	2.72	1.99





Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.52 kW	10.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.48	1.80
WTOL	65 °C	65 °C
Poff	20 W	20 W
PTO	30 W	30 W
PSB	20 W	20 W
PCK	o w	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.68 kW	2.67 kW
Annual energy consumption Qhe	6805 kWh	7896 kWh

Warmer Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	248 %	176 %
Prated	13.09 kW	13.78 kW
SCOP	6.33	4.47





The transfer and general		THE GALADASE OIL 2 Mai 202.
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	13.12 kW	13.38 kW
COP Tj = +2°C	3.35	2.29
Cdh	0.90	0.90
Pdh Tj = +7°C	8.42 kW	8.86 kW
$COP Tj = +7^{\circ}C$	5.36	3.84
Cdh	0.90	0.90
Pdh Tj = 12°C	3.88 kW	4.06 kW
COP Tj = 12°C	8.11	5.86
Cdh	0.90	0.90
Pdh Tj = Tbiv	8.42 kW	8.86 kW
COP Tj = Tbiv	5.36	3.84
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.12 kW	13.38 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.29
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
РСК	o w	o w
Supplementary Heater: Type of energy input	electric	electric



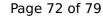


Supplementary Heater: PSUP	0.00 kW	0.40 kW
Annual energy consumption Qhe	2786 kWh	4116 kWh

Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	68 dB(A)	68 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	158 %	122 %
Prated	13.76 kW	11.79 kW
SCOP	4.02	3.12
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7° C	8.31 kW	7.64 kW
$COP Tj = -7^{\circ}C$	3.37	2.65
Cdh	0.90	0.90
Pdh Tj = +2°C	5.27 kW	4.43 kW
COP Tj = +2°C	4.86	3.79
Cdh	0.90	0.90





Pdh Tj = +7°C	3.62 kW	2.98 kW
Tull 1] = +7 C	J.02 KW	2.90 KW
COP Tj = +7°C	6.49	4.81
Cdh	0.90	0.90
Pdh Tj = 12°C	3.35 kW	3.43 kW
COP Tj = 12°C	7.40	6.29
Cdh	0.90	0.90
Pdh Tj = Tbiv	11.22 kW	9.62 kW
COP Tj = Tbiv	2.43	1.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.89 kW	5.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.97	1.23
WTOL	65 °C	65 °C
Poff	20 W	20 W
РТО	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	4.87 kW	6.57 kW
Annual energy consumption Qhe	8431 kWh	9310 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.22	9.62
COP Tj = -15°C (if TOL<-20°C)	2.43	1.86
Cdh	0.90	0.90



Model: MHA-V14W/D2N8-B+HB-A160/C****GN8-B

General Data	
Power supply	1x230V 50Hz

Heating

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

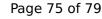
EN 14511-2			
	Low temperature	Medium temperature	
Heat output	14.50 kW	13.80 kW	
El input	3.09 kW	4.60 kW	
СОР	4.70	3.00	

Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65 dB(A)

EN 14825		
	Low temperature	Medium temperature
η_{s}	186 %	136 %
Prated	13.73 kW	12.08 kW
SCOP	4.72	3.47
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.14 kW	10.69 kW
COP Tj = -7°C	2.79	2.01
Cdh	0.90	0.90
Pdh Tj = +2°C	7.95 kW	6.86 kW
COP Tj = +2°C	4.52	3.43
Cdh	0.90	0.90
Pdh Tj = +7°C	5.20 kW	4.64 kW
COP Tj = +7°C	6.68	4.66
Cdh	0.90	0.90





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Pdh Tj = 12°C	3.76 kW	3.32 kW
COP Tj = 12°C	8.52	6.13
Cdh	0.90	0.90
Pdh Tj = Tbiv	12.14 kW	10.69 kW
COP Tj = Tbiv	2.79	2.01
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	11.48 kW	9.19 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.59	1.76
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	2.23 kW	2.91 kW
Annual energy consumption Qhe	6012 kWh	7202 kWh

Warmer Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	43 dB(A)	43 dB(A)	
Sound power level outdoor	65 dB(A)	65 dB(A)	





EN 14825

	Low temperature	Medium temperature
η_{s}	260 %	177 %
Prated	12.11 kW	13.74 kW
SCOP	6.63	4.49
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.04 kW	13.05 kW
COP Tj = +2°C	3.44	2.20
Cdh	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh	0.90	0.90
Pdh Tj = 12°C	3.75 kW	4.09 kW
COP Tj = 12°C	8.25	5.90
Cdh	0.90	0.90
Pdh Tj = Tbiv	7.78 kW	8.83 kW
COP Tj = Tbiv	5.84	3.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL $<$ Tdesignh	12.04 kW	13.05 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.44	2.20
WTOL	65 °C	65 °C





Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	0.07 kW	0.69 kW
Annual energy consumption Qhe	2457 kWh	4088 kWh

Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level indoor	43 dB(A)	43 dB(A)	
Sound power level outdoor	65 dB(A)	65 dB(A)	

EN 14825		
Low temperature	Medium temperature	
160 %	119 %	
12.64 kW	10.97 kW	
4.07	3.05	
-15 °C	-15 °C	
-22 °C	-22 °C	
	Low temperature 160 % 12.64 kW 4.07 -15 °C	





This information was gene	rated by the HF KLTMP	ANN database on 5 Mai 202.
Pdh Tj = -7°C	7.97 kW	6.89 kW
$COPTj = -7^{\circ}C$	3.44	2.66
Cdh	0.90	0.90
Pdh Tj = +2°C	5.05 kW	4.32 kW
COP Tj = +2°C	4.92	3.66
Cdh	0.90	0.90
Pdh Tj = +7°C	3.16 kW	3.06 kW
$COPTj = +7^{\circ}C$	6.11	4.72
Cdh	0.90	0.90
Pdh Tj = 12°C	3.58 kW	3.33 kW
COP Tj = 12°C	7.82	6.25
Cdh	0.90	0.90
Pdh Tj = Tbiv	10.31 kW	8.95 kW
COP Tj = Tbiv	2.53	1.79
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	7.57 kW	4.20 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.92	1.13
WTOL	65 °C	65 °C
Poff	14 W	14 W
РТО	24 W	24 W
PSB	14 W	14 W
РСК	0 W	o w
	!	-



$$\operatorname{\textit{Page}}\ 79$$ of 79 This information was generated by the HP KEYMARK database on 5 Mar 2021

Supplementary Heater: Type of energy input	electric	electric
Supplementary Heater: PSUP	5.07 kW	6.77 kW
Annual energy consumption Qhe	7667 kWh	8866 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.31	8.95
COP Tj = -15°C (if TOL $<$ -20°C)	2.53	1.79
Cdh	0.90	0.90