

Testing basis

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

#### <u>Login</u> M thermal P series 12 14 16 kW Summary of Reg. No. 041-K007-15 Certificate Holder Name GD Midea Heating & Ventilating Equipment Co., Ltd. Penglai Industry Road Address Zip 528311 Beijiao, Shunde, Foshan Country China City **BRE Global Limited** Certification Body Subtype title M thermal P series 12 14 16 kW Heat Pump Type Outdoor Air/Water Refrigerant R32 Mass of Refrigerant 1.8 kg 14.12.2021 Certification Date

Heat Pump Keymark Scheme Rules Rev 09



# Model: MHC-V12WD2N8-C

Configure model		
Model name	MHC-V12WD2N8-C	
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

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	12.2 kW	12 kW		
El input	2.49 kW	4 kW		
СОР	4.9	3		

# Average Climate



EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825				
Low temperature Medium temperature				
$\eta_{s}$	200.1 %	141.6 %		
Prated	12.3 kW	12.5 kW		
SCOP	5.08	3.62		
Tbiv	-7 °C	-7 °C		
TOL	-10 °C	-10 °C		
Pdh Tj = -7°C	10.85 kW	11.06 kW		
COP Tj = -7°C	3.11	2.15		
Cdh Tj = -7 °C	0.9	0.9		
Pdh Tj = +2°C	6.79 kW	6.91 kW		
COP Tj = +2°C	4.86	3.59		
Cdh Tj = +2 °C	0.9	0.9		
Pdh Tj = +7°C	4.79 kW	4.64 kW		
COP Tj = +7°C	6.98	5.07		
Cdh Tj = +7 °C	0.9	0.9		
Pdh Tj = 12°C	3.73 kW	2.15 kW		





COP Tj = 12°C	9.02	4.52
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	10.85 kW	11.06 kW
COP Tj = Tbiv	3.11	2.15
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.3 kW	10.97 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.8	1.98
WTOL	65 °C	65 °C
Poff	13 W	13 W
РТО	20 W	20 W
PSB	13 W	13 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	1.53 kW
Annual energy consumption Qhe	5004 kWh	7148 kWh

### Warmer Climate

EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825		
	Low temperature	Medium temperature





This information was general	,	
$\eta_{s}$	262.3 %	179 %
Prated	12.1 kW	12 kW
SCOP	6.63	4.55
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.1 kW	12 kW
COP Tj = +2°C	3.53	2.39
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	7.78 kW	7.73 kW
COP Tj = +7°C	5.82	3.86
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	3.64 kW	3.59 kW
COP Tj = 12°C	8.31	5.88
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	7.78 kW	7.73 kW
COP Tj = Tbiv	5.82	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.1 kW	12 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.53	2.39
WTOL	65 °C	65 °C
Poff	13 W	13 W





РТО	20 W	20 W
PSB	13 W	13 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	2437 kWh	3524 kWh

### Colder Climate

EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825				
Low temperature Medium temper				
126 %				
11.3 kW				
3.23				
-15 °C				
-22 °C				
7.09 kW				
2.75				
	2.75			





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Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	4.93 kW	4.44 kW
COP Tj = +2°C	5.34	3.88
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = $+7^{\circ}$ C	3.17 kW	3 kW
$COPTj = +7^{\circ}C$	5.28	4.88
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	3.69 kW	3.6 kW
COP Tj = 12°C	9.34	6.61
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	10.17 kW	9.21 kW
COP Tj = Tbiv	2.66	1.92
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.72 kW	7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.08	1.38
WTOL	65 °C	65 °C
Poff	13 W	13 W
РТО	20 W	20 W
PSB	13 W	13 W
РСК	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.78 kW	4.3 kW
	+	



Annual energy consumption Qhe	7153 kWh	8628 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.17	9.21
COP Tj = -15°C (if TOL $<$ -20°C)	2.66	1.92
Cdh Tj = -15 °C	0.9	0.9



# Model: MHC-V14WD2N8-C

Configure model		
Model name MHC-V14WD2N8-C		
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility Yes		
Cooling mode application (optional)	n/a	

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	14.10 kW	14.00 kW
El input	3.00 kW	4.75 kW
СОР	4.70	2.95

# Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	192.5 %	141.8 %
Prated	14.15 kW	14.15 kW
SCOP	4.89	3.62
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	12.52 kW	12.52 kW
COP Tj = -7°C	2.97	2.20
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.98 kW	7.71 kW
COP Tj = +2°C	4.56	3.58
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.04 kW	5.07 kW
COP Tj = +7°C	7.01	5.06
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.73 kW	2.15 kW



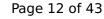


COP Tj = 12°C	9.02	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.52 kW	12.52 kW
COP Tj = Tbiv	2.97	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.41 kW	11.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.96
WTOL	65.00 °C	65.00 °C
Poff	13.00 W	13.00 W
РТО	20.00 W	20.00 W
PSB	13.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.75 kW	2.65 kW
Annual energy consumption Qhe	5984 kWh	8079 kWh

### Warmer Climate

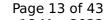
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature





This information was genera	•	
$\eta_{s}$	260.5 %	184.6 %
Prated	13.20 kW	14.20 kW
SCOP	6.59	4.69
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	12.94 kW	13.01 kW
COP Tj = +2°C	3.51	2.37
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	8.51 kW	9.12 kW
$COPTj = +7^{\circ}C$	5.72	3.95
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.96 kW	4.26 kW
COP Tj = 12°C	8.51	6.37
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.51 kW	9.12 kW
COP Tj = Tbiv	5.72	3.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.94 kW	13.01 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.51	2.37
WTOL	65.00 °C	65.00 °C
Poff	13.00 W	13.00 W





# This information was generated by the HP KEYMARK database on 18 Mar 2022 20.00 W 20.00 W

РТО	20.00 W	20.00 W
PSB	13.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.26 kW	1.18 kW
Annual energy consumption Qhe	2684 kWh	4040 kWh

### Colder Climate

EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{S}$	171.3 %	126.6 %
Prated	14.31 kW	12.49 kW
SCOP	4.36	3.24
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	8.74 kW	7.80 kW
COP Tj = -7°C	3.59	2.77
•		



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Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = $+2$ °C	5.52 kW	4.64 kW
COP Tj = +2°C	5.35	3.91
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.70 kW	3.00 kW
$COP Tj = +7^{\circ}C$	7.06	4.88
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.69 kW	3.61 kW
COP Tj = 12°C	9.34	6.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	11.67 kW	10.19 kW
COP Tj = Tbiv	2.58	1.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.14 kW	7.28 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.35
WTOL	65.00 °C	65.00 °C
Poff	13.00 W	13.00 W
РТО	20.00 W	20.00 W
PSB	13.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.17 kW	5.21 kW



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Annual energy consumption Qhe	8095 kWh	9496 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.67	10.19
COP Tj = -15°C (if TOL $<$ -20°C)	2.58	1.91
Cdh Tj = -15 °C	0.90	0.90



# Model: MHC-V16WD2N8-C

Configure model		
Model name	MHC-V16WD2N8-C	
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

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	5.61 kW
СОР	4.50	2.85

# Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	190.5 %	140.6 %
Prated	15.23 kW	14.70 kW
SCOP	4.84	3.59
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.49 kW	13.03 kW
COP Tj = -7°C	2.87	2.16
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.59 kW	8.50 kW
COP Tj = +2°C	4.53	3.55
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.55 kW	5.27 kW
$COP Tj = +7^{\circ}C$	7.01	5.05
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.73 kW	2.15 kW



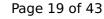


Cdh Tj = +12 °C $Pdh Tj = Tbiv$ $13$	0.90 13.49 kW 2.87	4.52 0.90 13.03 kW 2.16
Pdh Tj = Tbiv	13.49 kW 2.87	13.03 kW 2.16
	2.87	2.16
COP Tj = Tbiv 2.		
	14.05 kW	
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		12.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh 2.	2.65	1.94
WTOL 65	65.00 °C	65.00 °C
Poff 13	13.00 W	13.00 W
PTO 20	20.00 W	20.00 W
PSB 13	13.00 W	13.00 W
PCK 0.	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP 1.	1.18 kW	2.63 kW
Annual energy consumption Qhe 65	6510 kWh	8471 kWh

### Warmer Climate

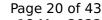
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825		
	Low temperature	Medium temperature





This information was general	,	
$\eta_s$	255.4 %	184 %
Prated	14.20 kW	14.50 kW
SCOP	6.46	4.68
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	14.20 kW	13.62 kW
$COPTj = +2^{\circ}C$	3.22	2.35
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	9.15 kW	9.35 kW
$COP Tj = +7^{\circ}C$	5.41	3.94
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.24 kW	4.26 kW
COP Tj = 12°C	8.56	6.37
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.15 kW	9.35 kW
COP Tj = Tbiv	5.41	3.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.20 kW	13.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.22	2.35
WTOL	65.00 °C	65.00 °C
Poff	13.00 W	13.00 W



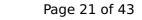


PTO	20.00 W	20.00 W
PSB	13.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.91 kW
Annual energy consumption Qhe	2937 kWh	4154 kWh

### Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	170.9 %	124.3 %
Prated	15.10 kW	13.52 kW
SCOP	4.35	3.18
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	9.26 kW	8.43 kW
COP Tj = -7°C	3.59	2.77





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Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.76 kW	5.20 kW
COP Tj = +2°C	5.35	3.74
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.76 kW	3.53 kW
$COP Tj = +7^{\circ}C$	7.04	5.19
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.72 kW	3.61 kW
COP Tj = 12°C	8.78	6.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.30 kW	11.03 kW
COP Tj = Tbiv	2.58	1.85
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.43 kW	7.52 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.00	1.30
WTOL	65.00 °C	65.00 °C
Poff	13.00 W	13.00 W
РТО	20.00 W	20.00 W
PSB	13.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.67 kW	6.00 kW



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Annual energy consumption Qhe	8546 kWh	10473 kWh
Pdh Tj = -15°C (if TOL<-20°C)	12.30	11.03
COP Tj = -15°C (if TOL $<$ -20°C)	2.58	1.85
Cdh Tj = -15 °C	0.90	0.90



# Model: MHC-V12WD2RN8-C

Configure model		
Model name	MHC-V12WD2RN8-C	
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

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	12.2 kW	12 kW	
El input	2.49 kW	4 kW	
СОР	4.9	3	

# Average Climate



EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825			
	Low temperature	Medium temperature	
$\eta_{s}$	200.2 %	141.6 %	
Prated	12.3 kW	12.5 kW	
SCOP	5.08	3.62	
Tbiv	-7 °C	-7 °C	
TOL	-10 °C	-10 °C	
Pdh Tj = -7°C	10.85 kW	11.06 kW	
COP Tj = -7°C	3.11	2.15	
Cdh Tj = -7 °C	0.9	0.9	
Pdh Tj = +2°C	6.79 kW	6.91 kW	
COP Tj = +2°C	4.86	3.59	
Cdh Tj = +2 °C	0.9	0.9	
Pdh Tj = +7°C	4.79 kW	4.64 kW	
COP Tj = +7°C	6.98	5.07	
Cdh Tj = +7 °C	0.9	0.9	
Pdh Tj = 12°C	3.73 kW	2.15 kW	





Cdh Tj = +12 °C       0.9       0.9         Pdh Tj = Tbiv       10.85 kW       11.06 kW         COP Tj = Tbiv       3.11       2.15         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh       12.3 kW       10.97 kW         COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh       2.8       1.98         WTOL       65 °C       65 °C         Poff       6 W       6 W         PTO       18 W       18 W         PSB       6 W       6 W         PCK       0 W       0 W         Supplementary Heater: Type of energy input       Electricity       Electricity         Supplementary Heater: PSUP       0 kW       1.53 kW			
Pdh Tj = Tbiv       10.85 kW       11.06 kW         COP Tj = Tbiv       3.11       2.15         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	COP Tj = 12°C	9.02	4.52
COP Tj = Tbiv       3.11       2.15         Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	Pdh Tj = Tbiv	10.85 kW	11.06 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	COP Tj = Tbiv	3.11	2.15
WTOL 65 °C 65 °C  Poff 6 W 6 W  PTO 18 W 18 W  PSB 6 W 6 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0 kW 1.53 kW	Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.3 kW	10.97 kW
Poff 6 W 6 W  PTO 18 W 18 W  PSB 6 W 6 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0 kW 1.53 kW	COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.8	1.98
PTO  18 W  18 W  PSB  6 W  0 W  0 W  Supplementary Heater: Type of energy input  Electricity  Electricity  Supplementary Heater: PSUP  0 kW  1.53 kW	WTOL	65 °C	65 °C
PSB 6 W 6 W  PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0 kW 1.53 kW	Poff	6 W	6 W
PCK 0 W 0 W  Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0 kW 1.53 kW	РТО	18 W	18 W
Supplementary Heater: Type of energy input Electricity Electricity  Supplementary Heater: PSUP 0 kW 1.53 kW	PSB	6 W	6 W
Supplementary Heater: PSUP 0 kW 1.53 kW	PCK	o w	o w
	Supplementary Heater: Type of energy input	Electricity	Electricity
Annual energy consumption Qhe 5003 kWh 7148 kWh	Supplementary Heater: PSUP	0 kW	1.53 kW
	Annual energy consumption Qhe	5003 kWh	7148 kWh

### Warmer Climate

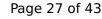
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825		
	Low temperature	Medium temperature





$\eta_{s}$	262.5 %	179 %
Prated	12.1 kW	12 kW
SCOP	6.64	4.55
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	12.1 kW	12 kW
COP Tj = +2°C	3.53	2.39
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = $+7^{\circ}$ C	7.78 kW	7.73 kW
$COP Tj = +7^{\circ}C$	5.82	3.86
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	3.64 kW	3.59 kW
COP Tj = 12°C	8.31	5.88
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	7.78 kW	7.73 kW
COP Tj = Tbiv	5.82	3.86
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.1 kW	12 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.53	2.39
WTOL	65 °C	65 °C
Poff	6 W	6 W



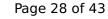


РТО	18 W	18 W
PSB	6 W	6 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	0 kW
Annual energy consumption Qhe	2435 kWh	3523 kWh

### Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	70 dB(A)	70 dB(A)	

EN 14825			
	Low tempera	ture Medium temperature	
$\eta_{s}$	168.8 %	126 %	
Prated	12.5 kW	11.3 kW	
SCOP	4.3	3.23	
Tbiv	-15 °C	-15 °C	
TOL	-22 °C	-22 °C	
Pdh Tj = -7°C	8.08 kW	7.09 kW	
COP Tj = -7°C	3.64	2.75	





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Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	4.93 kW	4.44 kW
$COP Tj = +2^{\circ}C$	5.34	3.88
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = $+7^{\circ}$ C	3.17 kW	3 kW
$COPTj = +7^{\circ}C$	5.28	4.88
Cdh Tj = $+7$ °C	0.9	0.9
Pdh Tj = 12°C	3.69 kW	3.6 kW
COP Tj = 12°C	9.34	6.61
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	10.17 kW	9.21 kW
COP Tj = Tbiv	2.66	1.92
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.72 kW	7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.08	1.38
WTOL	65 °C	65 °C
Poff	6 W	6 W
РТО	18 W	18 W
PSB	6 W	6 W
PCK	o w	o w
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.78 kW	4.3 kW



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Annual energy consumption Qhe	7153 kWh	8628 kWh
Pdh Tj = -15°C (if TOL<-20°C)	10.17	9.21
COP Tj = -15°C (if TOL $<$ -20°C)	2.66	1.92
Cdh Tj = -15 °C	0.9	0.9



# Model: MHC-V14WD2RN8-C

Configure model		
Model name	MHC-V14WD2RN8-C	
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

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	14.10 kW	14.00 kW		
El input	3.00 kW	4.75 kW		
СОР	4.70	2.95		

# **Average Climate**



EN 12102-1			
Low temperature Medium temperature			
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825				
Low temperature Medium temperature				
$\eta_{s}$	192.5 %	141.8 %		
Prated	14.20 kW	14.20 kW		
SCOP	4.89	3.62		
Tbiv	-7 °C	-7 °C		
TOL	-10 °C	-10 °C		
Pdh Tj = -7°C	12.52 kW	12.52 kW		
COP Tj = -7°C	2.97	2.20		
Cdh Tj = -7 °C	0.90	0.90		
Pdh Tj = +2°C	7.98 kW	7.71 kW		
COP Tj = +2°C	4.56	3.58		
Cdh Tj = +2 °C	0.90	0.90		
Pdh Tj = +7°C	5.04 kW	5.07 kW		
$COP Tj = +7^{\circ}C$	7.01	5.06		
Cdh Tj = +7 °C	0.90	0.90		
Pdh Tj = 12°C	3.73 kW	2.15 kW		



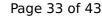


COP Tj = 12°C	9.02	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.52 kW	12.52 kW
COP Tj = Tbiv	2.97	2.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	13.41 kW	11.51 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.66	1.96
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	6.00 W
РТО	18.00 W	18.00 W
PSB	6.00 W	6.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.80 kW	2.69 kW
Annual energy consumption Qhe	5984 kWh	8079 kWh

### Warmer Climate

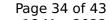
EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825		
	Low temperature	Medium temperature





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$\eta_{s}$	260.6 %	184.6 %
Prated	13.20 kW	14.20 kW
SCOP	6.59	4.69
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = $+2$ °C	12.94 kW	13.01 kW
$COP Tj = +2^{\circ}C$	3.51	2.37
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	8.51 kW	9.12 kW
COP Tj = +7°C	5.72	3.95
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.96 kW	4.26 kW
COP Tj = 12°C	8.51	6.37
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	8.51 kW	9.12 kW
COP Tj = Tbiv	5.72	3.95
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	12.94 kW	13.01 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.51	2.37
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	6.00 W



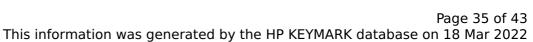


This information was generated by the HP KEYMARK database on 18 Mar 2022		
РТО	18.00 W	18.00 W
PSB	6.00 W	6.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.26 kW	1.18 kW
Annual energy consumption Qhe	2683 kWh	4039 kWh

### Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	171.3 %	126.6 %
Prated	14.30 kW	12.50 kW
SCOP	4.36	3.24
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	8.74 kW	7.80 kW
COP Tj = -7°C	3.59	2.77





Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = $+2$ °C	5.52 kW	4.64 kW
COP Tj = +2°C	5.35	3.91
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.70 kW	3.00 kW
$COPTj = +7^{\circ}C$	7.06	4.88
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.69 kW	3.61 kW
COP Tj = 12°C	9.34	6.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	11.67 kW	10.19 kW
COP Tj = Tbiv	2.58	1.91
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.14 kW	7.28 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.02	1.35
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	6.00 W
PTO	18.00 W	18.00 W
PSB	6.00 W	6.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.16 kW	5.22 kW



Annual energy consumption Qhe	8095 kWh	9496 kWh
Pdh Tj = -15°C (if TOL<-20°C)	11.67	10.19
COP Tj = -15°C (if TOL $<$ -20°C)	2.58	1.91
Cdh Tj = -15 °C	0.90	0.90



# Model: MHC-V16WD2RN8-C

Configure model		
Model name MHC-V16WD2RN8-C		
Application	Heating (medium temp)	
Units	Outdoor	
Climate Zone	Colder Climate + Warmer Climate	
Reversibility	Yes	
Cooling mode application (optional)	n/a	

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	5.61 kW
СОР	4.50	2.85

# Average Climate



EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	190.5 %	140.7 %
Prated	15.20 kW	14.70 kW
SCOP	4.84	3.59
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	13.49 kW	13.03 kW
COP Tj = -7°C	2.87	2.16
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.59 kW	8.50 kW
COP Tj = +2°C	4.53	3.55
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.55 kW	5.27 kW
$COP Tj = +7^{\circ}C$	7.01	5.05
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.73 kW	2.15 kW





COP Tj = 12°C	9.02	4.52
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	13.49 kW	13.03 kW
COP Tj = Tbiv	2.87	2.16
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.05 kW	12.07 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.65	1.94
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	6.00 W
РТО	18.00 W	18.00 W
PSB	6.00 W	6.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.15 kW	2.63 kW
Annual energy consumption Qhe	6509 kWh	8460 kWh

### Warmer Climate

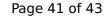
EN 12102-1		
	Low temperature	Medium temperature
Sound power level outdoor	72 dB(A)	72 dB(A)

EN 14825		
	Low temperature	Medium temperature





_	255 5 0/	104.0/
$\eta_{s}$	255.5 %	184 %
Prated	14.20 kW	14.50 kW
SCOP	6.46	4.68
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	14.20 kW	13.62 kW
$COP Tj = +2^{\circ}C$	3.22	2.35
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	9.15 kW	9.35 kW
$COP Tj = +7^{\circ}C$	5.41	3.94
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	4.24 kW	4.26 kW
COP Tj = 12°C	8.56	6.37
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	9.15 kW	9.35 kW
COP Tj = Tbiv	5.41	3.94
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	14.20 kW	13.62 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.22	2.35
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	13.00 W





РТО	18.00 W	20.00 W
PSB	6.00 W	13.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.91 kW
Annual energy consumption Qhe	2935 kWh	4153 kWh

### Colder Climate

EN 12102-1			
	Low temperature	Medium temperature	
Sound power level outdoor	72 dB(A)	72 dB(A)	

EN 14825		
	Low temperature	Medium temperature
$\eta_{s}$	170.9 %	124.3 %
Prated	15.10 kW	13.50 kW
SCOP	4.35	3.18
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	9.26 kW	8.43 kW
COP Tj = -7°C	3.59	2.77





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Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	5.76 kW	5.20 kW
COP Tj = +2°C	5.35	3.74
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = $+7^{\circ}$ C	3.76 kW	3.53 kW
$COP Tj = +7^{\circ}C$	7.04	5.19
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.72 kW	3.61 kW
COP Tj = 12°C	8.78	6.61
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	12.30 kW	11.03 kW
COP Tj = Tbiv	2.58	1.85
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	9.43 kW	7.52 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.00	1.30
WTOL	65.00 °C	65.00 °C
Poff	6.00 W	6.00 W
РТО	18.00 W	18.00 W
PSB	6.00 W	6.00 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.67 kW	5.98 kW



Annual energy consumption Qhe	8546 kWh	10473 kWh
Pdh Tj = -15°C (if TOL<-20°C)	12.30	11.03
COP Tj = -15°C (if TOL $<$ -20°C)	2.58	1.85
Cdh Tj = -15 °C	0.90	0.90