

## Subtype Mars Large R290 Series 50 60 70kW

Certificate Holder	GD Midea Heating & Ventilating Equipment Co., Ltd.
Address	Penglai Industry Road
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City	Beijiao, Shunde, Foshan
Country	CN
Certification Body	ICIM S.p.A.
Subtype title	Mars Large R290 Series 50 60 70kW
Registration number	ICIM-PDC-000312
Heat Pump Type	Outdoor Air/Water
Refrigerant	R290
Mass of Refrigerant	5.6 kg
Certification Date	21.01.2025
Testing basis	HP Keymark Rules V14
Testing laboratory	Intertek Testing Services Shenzhen LTD. Guangzhou Branch, CN

## Model MHS-SVC50-RN7TL-B

Model name	MHS-SVC50-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	50.00 kW	50.00 kW
El input	10.64 kW	15.15 kW
COP	4.70	3.30

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	185 %	153 %
Prated	50.0 kW	50.0 kW
SCOP	4.70	3.90
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	45.18 kW	44.14 kW
COP Tj = -7°C	2.80	2.40
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	28.40 kW	28.61 kW
COP Tj = +2°C	4.49	3.86
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	17.57 kW	17.21 kW

COP Tj = +7°C	6.58	5.21
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	7.83 kW	12.09 kW
COP Tj = 12°C	7.59	6.24
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	45.18 kW	44.14 kW
COP Tj = Tbiv	2.80	2.40
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.39 kW	51.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.52	2.12
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	22051 kWh	26324 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	155 %	138 %
Prated	50.0 kW	50.0 kW
SCOP	3.68	3.28
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	30.10 kW	30.33 kW
COP Tj = -7°C	3.45	2.85
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	17.98 kW	19.73 kW
COP Tj = +2°C	4.53	4.20
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	12.04 kW	12.35 kW
COP Tj = +7°C	6.63	5.69
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	7.83 kW	12.13 kW
COP Tj = 12°C	7.32	5.69
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	42.15 kW	40.33 kW
COP Tj = Tbiv	2.34	2.18

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.90 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.60
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.10 kW	0.00 kW
Annual energy consumption Qhe	31231.00 kWh	35048.00 kWh
Pdh Tj = -15°C (if TOL	42.15	40.33
COP Tj = -15°C (if TOL	2.34	2.18
Cdh Tj = -15 °C	0.90	0.90

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	247.70 %	189.30 %
Prated	50.0 kW	50.0 kW
SCOP	6.27	4.81
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	50.00 kW	48.86 kW
COP Tj = +2°C	3.42	2.60
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	32.41 kW	31.46 kW
COP Tj = +7°C	5.81	4.30
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	14.02 kW	14.04 kW
COP Tj = 12°C	8.05	6.36
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	32.41 kW	31.46 kW
COP Tj = Tbiv	5.81	4.30
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.00 kW	48.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.42	2.60
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W

PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	1.14 kW
Annual energy consumption Qhe	10659.00 kWh	13898.00 kWh

## Model MHS-SVC60-RN7TL-B

Model name	MHS-SVC60-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	60.00 kW	60.00 kW
El input	13.95 kW	19.61 kW
COP	4.30	3.06

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	181 %	151 %
Prated	60.0 kW	60.0 kW
SCOP	4.60	3.86
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	52.46 kW	51.15 kW
COP Tj = -7°C	2.61	2.21
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	32.53 kW	32.14 kW
COP Tj = +2°C	4.39	3.73
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	21.65 kW	21.58 kW

COP Tj = +7°C	6.59	5.36
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	9.79 kW	11.86 kW
COP Tj = 12°C	8.66	6.89
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	52.46 kW	51.15 kW
COP Tj = Tbiv	2.61	2.21
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.61 kW	59.95 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.36	2.01
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.39 kW	0.05 kW
Annual energy consumption Qhe	26927 kWh	32176 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	145 %	129 %
Prated	60.0 kW	60.0 kW
SCOP	3.69	3.29
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	39.69 kW	39.97 kW
COP Tj = -7°C	3.01	2.74
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	22.96 kW	24.38 kW
COP Tj = +2°C	4.45	3.89
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	14.53 kW	14.90 kW
COP Tj = +7°C	6.46	5.48
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	7.72 kW	12.15 kW
COP Tj = 12°C	7.45	5.48
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	52.33 kW	50.64 kW
COP Tj = Tbiv	2.10	2.04

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.90 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.60
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	16.10 kW	9.46 kW
Annual energy consumption Qhe	40105.00 kWh	44978.00 kWh
Pdh Tj = -15°C (if TOL	52.33	50.64
COP Tj = -15°C (if TOL	2.10	2.04
Cdh Tj = -15 °C	0.90	0.90

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	248.70 %	187.20 %
Prated	60.0 kW	60.0 kW
SCOP	6.29	4.75
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	59.13 kW	57.59 kW
COP Tj = +2°C	3.05	2.39
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	38.39 kW	37.72 kW
COP Tj = +7°C	5.67	4.20
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	18.37 kW	17.74 kW
COP Tj = 12°C	8.47	6.44
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	38.39 kW	37.72 kW
COP Tj = Tbiv	5.67	4.20
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.13 kW	57.59 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.05	2.39
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W



PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.87 kW	2.41 kW
Annual energy consumption Qhe	12741.00 kWh	16860.00 kWh

## Model MHS-SVC70-RN7TL-B

Model name	MHS-SVC70-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	70.00 kW	70.00 kW
El input	17.50 kW	23.73 kW
COP	4.00	2.95

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	177 %	147 %
Prated	65.0 kW	65.0 kW
SCOP	4.50	3.76
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	57.34 kW	57.95 kW
COP Tj = -7°C	2.48	2.13
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	34.71 kW	35.42 kW
COP Tj = +2°C	4.31	3.61
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	21.65 kW	21.58 kW

COP Tj = +7°C	6.59	5.36
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	9.79 kW	11.86 kW
COP Tj = 12°C	8.66	6.89
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	57.34 kW	57.95 kW
COP Tj = Tbiv	2.48	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.61 kW	64.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.36	1.95
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.39 kW	0.54 kW
Annual energy consumption Qhe	29758 kWh	35694 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	128 %
Prated	64.0 kW	64.0 kW
SCOP	3.95	3.52
Tbiv	-15.00 °C	-15.00 °C
TOL	-22.00 °C	-22.00 °C
Pdh Tj = -7°C	39.69 kW	39.97 kW
COP Tj = -7°C	3.01	2.74
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	22.96 kW	24.38 kW
COP Tj = +2°C	4.45	3.80
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	14.53 kW	14.90 kW
COP Tj = +7°C	6.46	5.48
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	7.72 kW	12.15 kW
COP Tj = 12°C	7.43	5.45
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	52.33 kW	50.64 kW
COP Tj = Tbiv	2.10	2.04

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.90 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.60
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	20.10 kW	13.46 kW
Annual energy consumption Qhe	42832.00 kWh	48107.00 kWh
Pdh Tj = -15°C (if TOL	52.33	50.64
COP Tj = -15°C (if TOL	2.10	2.04
Cdh Tj = -15 °C	0.90	0.90

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	243.20 %	187.20 %
Prated	65.0 kW	65.0 kW
SCOP	6.15	4.75
Tbiv	7.00 °C	7.00 °C
TOL	2.00 °C	2.00 °C
Pdh Tj = +2°C	63.03 kW	63.70 kW
COP Tj = +2°C	2.89	2.38
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	41.36 kW	41.07 kW
COP Tj = +7°C	5.50	4.13
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	18.37 kW	17.74 kW
COP Tj = 12°C	8.47	6.44
Cdh Tj = +12 °C	0.90	0.90
Pdh Tj = Tbiv	41.36 kW	41.07 kW
COP Tj = Tbiv	5.50	4.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	63.03 kW	63.70 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.89	2.38
WTOL	85.00 °C	85.00 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W

PCK	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.97 kW	1.30 kW
Annual energy consumption Qhe	14110.00 kWh	18264.00 kWh

## Model MHS-SVC50(M)-RN7TL-B

Model name	MHS-SVC50(M)-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	50 kW	50 kW
El input	10.64 kW	15.15 kW
COP	4.7	3.3

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	185 %	153 %
Prated	50 kW	50 kW
SCOP	4.7	3.9
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	45.18 kW	44.14 kW
COP Tj = -7°C	2.8	2.4
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	28.4 kW	28.61 kW
COP Tj = +2°C	4.49	3.86
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	17.57 kW	17.21 kW

COP Tj = +7°C	6.58	5.21
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	7.83 kW	12.09 kW
COP Tj = 12°C	7.59	6.24
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	45.18 kW	44.14 kW
COP Tj = Tbiv	2.8	2.4
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50.39 kW	51.33 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.52	2.12
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 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	22051 kWh	26324 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	155 %	138 %
Prated	50 kW	50 kW
SCOP	3.68	3.28
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	30.1 kW	30.33 kW
COP Tj = -7°C	3.45	2.85
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	17.98 kW	19.73 kW
COP Tj = +2°C	4.53	4.2
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	12.04 kW	12.35 kW
COP Tj = +7°C	6.63	5.69
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	7.83 kW	12.13 kW
COP Tj = 12°C	7.32	5.69
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	42.15 kW	40.33 kW
COP Tj = Tbiv	2.34	2.18

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.9 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.6
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	6.1 kW	0 kW
Annual energy consumption Qhe	31231 kWh	35048 kWh
Pdh Tj = -15°C (if TOL	42.15	40.33
COP Tj = -15°C (if TOL	2.34	2.18
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	80 dB(A)	80 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	247.7 %	189.3 %
Prated	50 kW	50 kW
SCOP	6.27	4.81
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	50 kW	48.86 kW
COP Tj = +2°C	3.42	2.6
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	32.41 kW	31.46 kW
COP Tj = +7°C	5.81	4.3
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	14.02 kW	14.04 kW
COP Tj = 12°C	8.05	6.36
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	32.41 kW	31.46 kW
COP Tj = Tbiv	5.81	4.3
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	50 kW	48.86 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.42	2.6
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W



PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0 kW	1.14 kW
Annual energy consumption Qhe	10659 kWh	13898 kWh

## Model MHS-SVC60(M)-RN7TL-B

Model name	MHS-SVC60(M)-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	60 kW	60 kW
El input	13.95 kW	19.61 kW
COP	4.3	3.06

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	181 %	151 %
Prated	60 kW	60 kW
SCOP	4.6	3.86
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	52.46 kW	51.15 kW
COP Tj = -7°C	2.61	2.21
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	32.53 kW	32.14 kW
COP Tj = +2°C	4.39	3.73
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	21.65 kW	21.58 kW

COP Tj = +7°C	6.59	5.36
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	9.79 kW	11.86 kW
COP Tj = 12°C	8.66	6.89
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	52.46 kW	51.15 kW
COP Tj = Tbiv	2.61	2.21
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.61 kW	59.95 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.36	2.01
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.39 kW	0.05 kW
Annual energy consumption Qhe	26927 kWh	32176 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	145 %	129 %
Prated	60 kW	60 kW
SCOP	3.69	3.29
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	39.69 kW	39.97 kW
COP Tj = -7°C	3.01	2.74
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.96 kW	24.38 kW
COP Tj = +2°C	4.45	3.89
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	14.53 kW	14.9 kW
COP Tj = +7°C	6.46	5.48
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	7.72 kW	12.15 kW
COP Tj = 12°C	7.45	5.48
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	52.33 kW	50.64 kW
COP Tj = Tbiv	2.1	2.04

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.9 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.6
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	16.1 kW	9.46 kW
Annual energy consumption Qhe	40105 kWh	44978 kWh
Pdh Tj = -15°C (if TOL	52.33	50.64
COP Tj = -15°C (if TOL	2.1	2.04
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	84.4 dB(A)	84.4 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	248.7 %	187.2 %
Prated	60 kW	60 kW
SCOP	6.29	4.75
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	59.13 kW	57.59 kW
COP Tj = +2°C	3.05	2.39
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	38.39 kW	37.72 kW
COP Tj = +7°C	5.67	4.2
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	18.37 kW	17.74 kW
COP Tj = 12°C	8.47	6.44
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	38.39 kW	37.72 kW
COP Tj = Tbiv	5.67	4.2
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.13 kW	57.59 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.05	2.39
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W

PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.87 kW	2.41 kW
Annual energy consumption Qhe	12741 kWh	16860 kWh

## Model MHS-SVC70(M)-RN7TL-B

Model name	MHS-SVC70(M)-RN7TL-B
Application	Heating (medium temp)
Units	Outdoor
Climate zone (for heating)	Colder, Warmer
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

## General data

Power supply	3x400V 50Hz
Off-peak product	n/a

## Outdoor Air/Water

### EN 14511-4 | Heating

Shutting off the heat transfer medium flow passed

Complete power supply failure	passed
Defrost test	passed
Starting and operating test	passed

### EN 14511-2 | Heating

	Low temperature	Medium temperature
Heat output	70 kW	70 kW
El input	17.5 kW	23.73 kW
COP	4	2.95

### EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

### EN 14825 | Average Climate

	Low temperature	Medium temperature
$\eta_s$	177 %	147 %
Prated	65 kW	65 kW
SCOP	4.5	3.76
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	57.34 kW	57.95 kW
COP Tj = -7°C	2.48	2.13
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	34.71 kW	35.42 kW
COP Tj = +2°C	4.31	3.61
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	21.65 kW	21.58 kW

COP Tj = +7°C	6.59	5.36
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	9.79 kW	11.86 kW
COP Tj = 12°C	8.66	6.89
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	57.34 kW	57.95 kW
COP Tj = Tbiv	2.48	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	59.61 kW	64.46 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.36	1.95
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	5.39 kW	0.54 kW
Annual energy consumption Qhe	29758 kWh	35694 kWh

#### EN 12102-1 | Colder Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

#### EN 14825 | Colder Climate

	Low temperature	Medium temperature
ηs	144 %	128 %
Prated	64 kW	64 kW
SCOP	3.95	3.52
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-22 °C
Pdh Tj = -7°C	39.69 kW	39.97 kW
COP Tj = -7°C	3.01	2.74
Cdh Tj = -7 °C	0.9	0.9
Pdh Tj = +2°C	22.96 kW	24.38 kW
COP Tj = +2°C	4.45	3.8
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	14.53 kW	14.9 kW
COP Tj = +7°C	6.46	5.48
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	7.72 kW	12.15 kW
COP Tj = 12°C	7.43	5.45
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	52.33 kW	50.64 kW
COP Tj = Tbiv	2.1	2.04

Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	43.9 kW	50.54 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	1.79	1.6
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	20.1 kW	13.46 kW
Annual energy consumption Qhe	42832 kWh	48107 kWh
Pdh Tj = -15°C (if TOL	52.33	50.64
COP Tj = -15°C (if TOL	2.1	2.04
Cdh Tj = -15 °C	0.9	0.9

#### EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level outdoor	86.7 dB(A)	86.7 dB(A)

#### EN 14825 | Warmer Climate

	Low temperature	Medium temperature
$\eta_s$	243.2 %	187.2 %
Prated	65 kW	65 kW
SCOP	6.15	4.75
Tbiv	7 °C	7 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	63.03 kW	63.7 kW
COP Tj = +2°C	2.89	2.38
Cdh Tj = +2 °C	0.9	0.9
Pdh Tj = +7°C	41.36 kW	41.07 kW
COP Tj = +7°C	5.5	4.13
Cdh Tj = +7 °C	0.9	0.9
Pdh Tj = 12°C	18.37 kW	17.74 kW
COP Tj = 12°C	8.47	6.44
Cdh Tj = +12 °C	0.9	0.9
Pdh Tj = Tbiv	41.36 kW	41.07 kW
COP Tj = Tbiv	5.5	4.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	63.03 kW	63.7 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.89	2.38
WTOL	85 °C	85 °C
Poff	0.14 W	0.14 W
PTO	0.62 W	0.62 W
PSB	0.14 W	0.14 W



PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.97 kW	1.3 kW
Annual energy consumption Q <sub>he</sub>	14110 kWh	18264 kWh