Subtype FHA-Monoblock 8-10kW

Certificate Holder	WOLF GmbH
Address	Industriestr. 1
ZIP	84048
City	Mainburg
Country	DE
Certification Body	DIN CERTCO Gesellschaft für Konformitätsbewertung mbH
Subtype title	FHA-Monoblock 8-10kW
Registration number	011-1W0559
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.4 kg
Certification Date	17.10.2022
Testing basis	European KEYMARK Scheme for Heat Pumps Rev. 10 (as of 2022-06)

Model FHA-08/10-230V-M2 FS-B2	
Model name	FHA-08/10-230V-M2 FS-B2
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer, Warmer Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data	
Power supply	1x230V 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	10.73 kW	9.69 kW
El input	2.29 kW	3.38 kW
COP	4.69	2.87

EN 14511-2 | Cooling		
	+7°C/+12°C	+18°C/+23°C
El input	2.66 kW	2.22 kW
Cooling capacity	8.10	9.72
EER	3.04	4.38

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	195 %	119 %
Prated	6.95 kW	3.59 kW
SCOP	4.95	3.06
Tbiv	-10 °C	-10 °C

TOL	-10 °C	-10 °C
Pdh Tj = -7°C	6.39 kW	4.45 kW
COP Tj = -7°C	3.27	1.98
Cdh Tj = -7 °C	0.900	0.996
Pdh Tj = +2°C	3.92 kW	4.11 kW
COP Tj = +2°C	4.82	2.98
Cdh Tj = +2 °C	0.900	0.993
Pdh Tj = +7°C	3.78 kW	4.51 kW
COP Tj = +7°C	6.30	4.06
Cdh Tj = +7 °C	0.984	0.991
Pdh Tj = 12°C	4.89 kW	4.26 kW
COP Tj = 12°C	8.00	5.71
Cdh Tj = +12 °C	0.984	0.987
Pdh Tj = Tbiv	6.95 kW	3.59 kW
COP Tj = Tbiv	2.70	1.12
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.95 kW	3.59 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	2896 kWh	2427 kWh

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	259 %	166 %
Prated	8.33 kW	7.22 kW
SCOP	6.55	4.23
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.33 kW	7.22 kW
COP Tj = +2°C	3.69	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.62 kW	4.96 kW

COP Tj = +7°C	5.91	3.64
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.89 kW	4.22 kW
COP Tj = 12°C	8.00	5.44
Cdh Tj = +12 °C	0.984	0.987
Pdh Tj = Tbiv	8.33 kW	7.22 kW
COP Tj = Tbiv	3.69	2.25
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.33 kW	7.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	n/a	n/a
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1699 kWh	2280 kWh

EN 14825 | Cooling		
	+7°C/+12°C	+18°C/+23°C
Pdesignc	8.10 kW	9.72 kW
SEER	3.72	5.46
Pdc Tj = 35°C	8.10 kW	9.72 kW
EER Tj = 35°C	3.04	4.38
Pdc Tj = 30°C	5.85 kW	6.87 kW
EER Tj = 30°C	4.13	6.10
Cdc Tj = 30 °C	0.900	0.900
Pdc Tj = 25°C	3.74 kW	4.64 kW
EER Tj = 25°C	4.46	7.73
Cdc Tj = 25 °C	0.250	0.250
Pdc Tj = 20°C	3.41 kW	4.25 kW
EER Tj = 20°C	5.81	7.44
Cdc Tj = 20 °C	0.983	0.983
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Annual energy consumption Qce	2077 kWh	1698 kWh

Model FHA-08/10-230V-M2 FS-e6-B2	
Model name	FHA-08/10-230V-M2 FS-e6-B2
Application	Heating (medium temp)
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data	
Power supply	1x230V 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	10.73 kW	9.69 kW
El input	2.29 kW	3.38 kW
COP	4.69	2.87

EN 14511-2 | Cooling		
	+7°C/+12°C	+18°C/+23°C
El input	2.66 kW	2.22 kW
Cooling capacity	8.10	9.72
EER	3.04	4.38

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	196 %	133 %
Prated	8.62 kW	8.17 kW
SCOP	4.98	3.41
Tbiv	-7 °C	-7 °C

TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.63 kW	7.22 kW
COP Tj = -7°C	2.97	2.13
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.53 kW	4.53 kW
COP Tj = +2°C	5.01	3.41
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.81 kW	3.50 kW
COP Tj = +7°C	6.49	4.39
Cdh Tj = +7 °C	0.983	0.988
Pdh Tj = 12°C	4.90 kW	4.35 kW
COP Tj = 12°C	8.15	6.07
Cdh Tj = +12 °C	0.984	0.986
Pdh Tj = Tbiv	7.63 kW	7.22 kW
COP Tj = Tbiv	2.97	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.95 kW	3.59 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.68 kW	4.57 kW
Annual energy consumption Qhe	3576 kWh	4949 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	158 %	112 %
Prated	7.82 kW	7.19 kW
SCOP	4.03	2.86
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	4.82 kW	4.53 kW
COP Tj = -7°C	3.62	2.52
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	2.85 kW	2.88 kW

COP Tj = +2°C	4.54	3.48
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.79 kW	3.53 kW
COP Tj = +7°C	6.52	4.62
Cdh Tj = +7 °C	0.983	0.987
Pdh Tj = 12°C	4.89 kW	4.56 kW
COP Tj = 12°C	8.06	6.57
Cdh Tj = +12 °C	0.984	0.986
Pdh Tj = Tbiv	6.38 kW	5.87 kW
COP Tj = Tbiv	2.55	1.92
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.36 kW	5.87 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.92
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.46 kW	7.19 kW
Annual energy consumption Qhe	4784 kWh	6187 kWh
Pdh Tj = -15°C (if TOL	6.38	5.87
COP Tj = -15°C (if TOL	2.55	1.92
Cdh Tj = -15 °C	0.900	0.900

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	259 %	166 %
Prated	8.33 kW	7.22 kW
SCOP	6.55	4.23
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.33 kW	7.22 kW
COP Tj = +2°C	3.69	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.62 kW	4.96 kW
COP Tj = +7°C	5.91	3.64
Cdh Tj = +7 °C	0.900	0.900

Pdh Tj = 12°C	4.89 kW	4.22 kW
COP Tj = 12°C	8.00	5.44
Cdh Tj = +12 °C	0.984	0.987
Pdh Tj = Tbiv	8.33 kW	7.22 kW
COP Tj = Tbiv	3.69	2.25
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.33 kW	7.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1699 kWh	2280 kWh

EN 14825 | Cooling		
	+7°C/+12°C	+18°C/+23°C
Pdesignc	8.10 kW	9.72 kW
SEER	3.72	5.46
Pdc Tj = 35°C	8.10 kW	9.72 kW
EER Tj = 35°C	3.04	4.38
Pdc Tj = 30°C	5.85 kW	6.87 kW
EER Tj = 30°C	4.13	6.10
Cdc Tj = 30 °C	0.900	0.900
Pdc Tj = 25°C	3.74 kW	4.64 kW
EER Tj = 25°C	4.46	7.73
Cdc Tj = 25 °C	0.250	0.250
Pdc Tj = 20°C	3.41 kW	4.25 kW
EER Tj = 20°C	5.81	7.44
Cdc Tj = 20 °C	0.983	0.983
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Annual energy consumption Qce	2077 kWh	1698 kWh

Model FHA-08/10-230V-M2 FS-e6-B2 + CEW-2-200 (FHA-08/10-230V-M2 FC-200-e6-B2; FHA-08/10-230V-M2 FC-200-R35-e6-B2)	
Model name	FHA-08/10-230V-M2 FS-e6-B2 + CEW-2-200 (FHA-08/10-230V-M2 FC-200-e6-B2; FHA-08/10-230V-M2 FC-200-R35-e6-B2)
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Colder, Warmer, Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	+7°C/12°C, +18°C/+23°C
Any additional heat sources	n/a

General data	
Power supply	n/a
Off-peak product	n/a

Outdoor Air/Water	
EN 16147 | Average Climate	
Declared load profile	XL
Efficiency ηDHW	110 %
COP	2.66
Heating up time	2:06 h:min
Standby power input	42.8 W
Reference hot water temperature	51.9 °C
Mixed water at 40°C	233 l
EN 16147 | Warmer Climate	
Declared load profile	XL
Efficiency ηDHW	140 %
COP	3.35
Heating up time	1:59 h:min
Standby power input	43.6 W
Reference hot water temperature	51.7 °C
Mixed water at 40°C	237 l

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	10.73 kW	9.69 kW

El input	2.29 kW	3.38 kW
COP	4.69	2.87

EN 14511-2 | Cooling		
	+7°C/+12°C	+18°C/+23°C
El input	2.66 kW	2.22 kW
Cooling capacity	8.10	9.72
EER	3.04	4.38

EN 12102-1 | Average Climate		
	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Average Climate		
	Low temperature	Medium temperature
ηs	196 %	133 %
Prated	8.62 kW	8.17 kW
SCOP	4.98	3.41
Tbiv	-7 °C	-7 °C
TOL	-10 °C	-10 °C
Pdh Tj = -7°C	7.63 kW	7.22 kW
COP Tj = -7°C	2.97	2.13
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	4.53 kW	4.53 kW
COP Tj = +2°C	5.01	3.41
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.81 kW	3.50 kW
COP Tj = +7°C	6.49	4.39
Cdh Tj = +7 °C	0.983	0.988
Pdh Tj = 12°C	4.90 kW	4.35 kW
COP Tj = 12°C	8.15	6.07
Cdh Tj = +12 °C	0.984	0.986
Pdh Tj = Tbiv	7.63 kW	7.22 kW
COP Tj = Tbiv	2.97	2.13
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	6.95 kW	3.59 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.70	1.12
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W

Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	1.68 kW	4.57 kW
Annual energy consumption Qhe	3576 kWh	4949 kWh

EN 12102-1 | Colder Climate		
	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Colder Climate		
	Low temperature	Medium temperature
ηs	158 %	112 %
Prated	7.82 kW	7.19 kW
SCOP	4.03	2.86
Tbiv	-15 °C	-15 °C
TOL	-22 °C	-15 °C
Pdh Tj = -7°C	4.82 kW	4.53 kW
COP Tj = -7°C	3.62	2.52
Cdh Tj = -7 °C	0.900	0.900
Pdh Tj = +2°C	2.85 kW	2.88 kW
COP Tj = +2°C	4.54	3.48
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	3.79 kW	3.53 kW
COP Tj = +7°C	6.52	4.62
Cdh Tj = +7 °C	0.983	0.987
Pdh Tj = 12°C	4.89 kW	4.56 kW
COP Tj = 12°C	8.06	6.57
Cdh Tj = +12 °C	0.984	0.986
Pdh Tj = Tbiv	6.38 kW	5.87 kW
COP Tj = Tbiv	2.55	1.92
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	4.36 kW	5.87 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	2.05	1.92
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	3.46 kW	7.19 kW
Annual energy consumption Qhe	4784 kWh	6187 kWh
Pdh Tj = -15°C (if TOL	6.38	5.87

COP Tj = -15°C (if TOL	2.55	1.92
Cdh Tj = -15 °C	0.900	0.900

EN 12102-1 | Warmer Climate

	Low temperature	Medium temperature
Sound power level indoor	30 dB(A)	30 dB(A)
Sound power level outdoor	59 dB(A)	59 dB(A)

EN 14825 | Warmer Climate

	Low temperature	Medium temperature
ηs	259 %	166 %
Prated	8.33 kW	7.22 kW
SCOP	6.55	4.23
Tbiv	2 °C	2 °C
TOL	2 °C	2 °C
Pdh Tj = +2°C	8.33 kW	7.22 kW
COP Tj = +2°C	3.69	2.25
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	5.62 kW	4.96 kW
COP Tj = +7°C	5.91	3.64
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	4.89 kW	4.22 kW
COP Tj = 12°C	8.00	5.44
Cdh Tj = +12 °C	0.984	0.987
Pdh Tj = Tbiv	8.33 kW	7.22 kW
COP Tj = Tbiv	3.69	2.25
Pdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	8.33 kW	7.22 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.69	2.25
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh	0.900	0.900
WTOL	65 °C	65 °C
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.00 kW
Annual energy consumption Qhe	1699 kWh	2280 kWh

EN 14825 | Cooling

	+7°C/+12°C	+18°C/+23°C
Pdesignc	8.10 kW	9.72 kW
SEER	3.72	5.46

Pdc Tj = 35°C	8.10 kW	9.72 kW
EER Tj = 35°C	3.04	4.38
Pdc Tj = 30°C	5.85 kW	6.87 kW
EER Tj = 30°C	4.13	6.10
Cdc Tj = 30 °C	0.900	0.900
Pdc Tj = 25°C	3.74 kW	4.64 kW
EER Tj = 25°C	4.46	7.73
Cdc Tj = 25 °C	0.250	0.250
Pdc Tj = 20°C	3.41 kW	4.25 kW
EER Tj = 20°C	5.81	7.44
Cdc Tj = 20 °C	0.983	0.983
Poff	6 W	6 W
PTO	10 W	10 W
PSB	10 W	10 W
PCK	0 W	0 W
Annual energy consumption Qce	2077 kWh	1698 kWh