

Subtype Aquami All in Split 12/14/16 kW 240L

Certificate Holder	Rotenso Sp. z o.o.
Address	ul. Szyb Walenty 16
ZIP	41-700
City	Ruda Śląska
Country	PL
Certification Body	BRE Global Limited
Subtype title	Aquami All in Split 12/14/16 kW 240L
Registration number	041-K078-15
Heat Pump Type	Outdoor Air/Water
Refrigerant	R32
Mass of Refrigerant	1.84 kg
Certification Date	18.07.2024
Testing basis	Heat Pump Keymark Scheme Rules Rev 14
Testing laboratory	TÜV SÜD Certification and Testing Co., Ltd. Guangzhou Branch, CN

Model AQS120X3o/AQS160T240X13i

Model name	AQS120X3o/AQS160T240X13i
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
Reversibility	Yes
Cooling mode application (optional)	n/a
Any additional heat sources	n/a

General data

Power supply	1x230V 50Hz
Off-peak product	n/a

Outdoor Air/Water

EN 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	123 %
COP	3.00
Heating up time	1:38 h:min
Standby power input	34.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	92 %
COP	2.24
Heating up time	2:06 h:min
Standby power input	36.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	153 %
COP	3.73
Heating up time	1:33 h:min
Standby power input	30.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 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	12.10 kW	12.00 kW
El input	2.44 kW	3.87 kW
COP	4.95	3.10
EN 12102-1 Average Climate		
	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 Average Climate		
	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 Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	6.69 kW	6.52 kW
COP Tj = +2°C	4.65	3.44
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	4.44 kW	4.36 kW
COP Tj = +7°C	6.62	4.59
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.74 kW	3.30 kW
COP Tj = 12°C	8.47	6.05
Cdh Tj = +12 °C	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
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	1.26 kW	2.50 kW
Annual energy consumption Q _{he}	5153 kWh	6928 kWh

EN 12102-1 | Colder Climate

	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 | Colder Climate

	Low temperature	Medium temperature
η_s	160 %	118 %
Prated	11.38 kW	10.32 kW
SCOP	4.08	3.02
T _{biv}	-15 °C	-15 °C
TOL	-22 °C	-22 °C
P _{dh} T _j = -7°C	7.05 kW	6.63 kW
COP T _j = -7°C	3.48	2.63
C _{dh} T _j = -7 °C	0.90	0.90
P _{dh} T _j = +2°C	4.68 kW	4.07 kW
COP T _j = +2°C	4.96	3.60
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.14 kW	2.78 kW
COP T _j = +7°C	6.10	4.54
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	3.57 kW	3.33 kW
COP T _j = 12°C	7.87	6.25
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	9.28 kW	8.42 kW
COP T _j = T _{biv}	2.59	1.84
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	7.01 kW	4.20 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.98	1.13
WTOL	65 °C	65 °C
P _{off}	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	Electricity	Electricity
Supplementary Heater: PSUP	4.37 kW	6.12 kW
Annual energy consumption Q _{he}	6871 kWh	8420 kWh
P _{dh} T _j = -15°C (if TOL	9.28	8.42
COP T _j = -15°C (if TOL	2.59	1.84
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	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 | Warmer Climate

	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	11.11 kW	12.08 kW
COP Tj = +2°C	3.59	2.31
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.14 kW	8.04 kW
COP Tj = +7°C	5.87	3.86
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.56 kW	3.75 kW
COP Tj = 12°C	7.94	5.70
Cdh Tj = +12 °C	0.900	0.900
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	11.11 kW	12.08 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.59	2.31
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.44 kW
Annual energy consumption Qhe	2296 kWh	3780 kWh

Model AQS140X3o/AQS160T240X13i

Model name	AQS140X3o/AQS160T240X13i
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	123 %
COP	3.00
Heating up time	1:38 h:min
Standby power input	34.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	92 %
COP	2.24
Heating up time	2:06 h:min
Standby power input	36.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	153 %
COP	3.73
Heating up time	1:33 h:min
Standby power input	30.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 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	14.50 kW	13.80 kW
El input	3.09 kW	4.60 kW
COP	4.70	3.00

EN 12102-1 | Average Climate

	Low temperature	Medium temperature
Sound power level indoor	43 dB(A)	43 dB(A)
Sound power level outdoor	65 dB(A)	65.00 dB(A)

EN 14825 | Average Climate

	Low temperature	Medium temperature
η_s	186.00 %	136 %
Prated	13.73 kW	12.08 kW
SCOP	4.72	3.47
Tbiv	-7 °C	-7 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	12.14 kW	10.69 kW
COP Tj = -7°C	2.79	2.01
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	7.95 kW	6.86 kW
COP Tj = +2°C	4.52	3.43
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.20 kW	4.64 kW
COP Tj = +7°C	6.68	4.66
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.76 kW	3.32 kW
COP Tj = 12°C	8.52	6.13
Cdh Tj = +12 °C	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
PTO	30 W	30 W
PSB	20 W	20 W
PCK	0 W	0 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	2.23 kW	2.91 kW
Annual energy consumption Q _{he}	6013.00 kWh	7203 kWh

EN 12102-1 | Colder Climate

	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 | Colder Climate

	Low temperature	Medium temperature
η_s	160 %	119 %
Prated	12.64 kW	10.97 kW
SCOP	4.06	3.05
T _{biv}	-15 °C	-15 °C
TOL	-22 °C	-22.00 °C
P _{dh} T _j = -7°C	7.97 kW	6.89 kW
COP T _j = -7°C	3.44	2.66
C _{dh} T _j = -7 °C	0.90	0.90
P _{dh} T _j = +2°C	5.05 kW	4.32 kW
COP T _j = +2°C	4.92	3.66
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.16 kW	3.06 kW
COP T _j = +7°C	6.11	4.72
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	3.58 kW	3.33 kW
COP T _j = 12°C	7.82	6.25
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	10.31 kW	8.95 kW
COP T _j = T _{biv}	2.53	1.79
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	7.57 kW	4.20 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.92	1.13
WTOL	65 °C	65 °C
P _{off}	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	Electricity	Electricity
Supplementary Heater: PSUP	5.07 kW	6.77 kW
Annual energy consumption Q _{he}	7667.00 kWh	8867.00 kWh
P _{dh} T _j = -15°C (if TOL	10.31	8.95
COP T _j = -15°C (if TOL	2.53	1.79
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	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 | Warmer Climate

	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 Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	7.78 kW	8.83 kW
COP Tj = +7°C	5.84	3.91
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.75 kW	4.09 kW
COP Tj = 12°C	8.25	5.90
Cdh Tj = +12 °C	0.900	0.900
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
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
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	Electricity	Electricity
Supplementary Heater: PSUP	0.07 kW	0.69 kW
Annual energy consumption Qhe	2462 kWh	4092 kWh

Model AQS160X3o/AQS160T240X13i

Model name	AQS160X3o/AQS160T240X13i
Application	Heating + DHW + low temp
Units	Indoor, Outdoor
Climate zone (for heating)	Warmer Climate, Colder Climate
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 16147 | Average Climate

Declared load profile	XL
Efficiency η_{DHW}	123 %
COP	3.00
Heating up time	1:38 h:min
Standby power input	34.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Colder Climate

Declared load profile	XL
Efficiency η_{DHW}	92 %
COP	2.24
Heating up time	2:06 h:min
Standby power input	36.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 l

EN 16147 | Warmer Climate

Declared load profile	XL
Efficiency η_{DHW}	153 %
COP	3.73
Heating up time	1:33 h:min
Standby power input	30.0 W
Reference hot water temperature	48.5 °C
Mixed water at 40°C	280 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	16.00 kW	16.00 kW
El input	3.56 kW	5.52 kW
COP	4.50	2.90
EN 12102-1 Average Climate		
	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 Average Climate		
	Low temperature	Medium temperature
η_s	182 %	133 %
Prated	15.21 kW	13.02 kW
SCOP	4.62	3.41
Tbiv	-7.00 °C	-7.00 °C
TOL	-10.00 °C	-10.00 °C
Pdh Tj = -7°C	13.45 kW	11.52 kW
COP Tj = -7°C	2.72	1.99
Cdh Tj = -7 °C	0.90	0.90
Pdh Tj = +2°C	8.57 kW	7.18 kW
COP Tj = +2°C	4.41	3.34
Cdh Tj = +2 °C	0.90	0.90
Pdh Tj = +7°C	5.70 kW	4.68 kW
COP Tj = +7°C	6.56	4.61
Cdh Tj = +7 °C	0.90	0.90
Pdh Tj = 12°C	3.78 kW	3.32 kW
COP Tj = 12°C	8.51	6.07
Cdh Tj = +12 °C	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	0.00 W	0.00 W
Supplementary Heater: Type of energy input	Electricity	Electricity

Supplementary Heater: PSUP	2.68 kW	2.67 kW
Annual energy consumption Q _{he}	6805.00 kWh	7896 kWh

EN 12102-1 | Colder Climate

	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 | Colder Climate

	Low temperature	Medium temperature
η_s	158 %	122 %
Prated	13.76 kW	11.79 kW
SCOP	4.02	3.12
T _{biv}	-15 °C	-15 °C
TOL	-22.00 °C	-22.00 °C
P _{dh} T _j = -7°C	8.31 kW	7.64 kW
COP T _j = -7°C	3.37	2.65
C _{dh} T _j = -7 °C	0.90	0.90
P _{dh} T _j = +2°C	5.27 kW	4.43 kW
COP T _j = +2°C	4.86	3.79
C _{dh} T _j = +2 °C	0.90	0.90
P _{dh} T _j = +7°C	3.62 kW	2.98 kW
COP T _j = +7°C	6.49	4.81
C _{dh} T _j = +7 °C	0.90	0.90
P _{dh} T _j = 12°C	3.35 kW	3.43 kW
COP T _j = 12°C	7.40	6.29
C _{dh} T _j = +12 °C	0.90	0.90
P _{dh} T _j = T _{biv}	11.22 kW	9.62 kW
COP T _j = T _{biv}	2.43	1.86
P _{dh} T _j = TOL or P _{dh} T _j = T _{designh} if TOL < T _{designh}	8.89 kW	5.22 kW
COP T _j = TOL or COP T _j = T _{designh} if TOL < T _{designh}	1.97	1.23
WTOL	65 °C	65 °C
P _{off}	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	Electricity	Electricity
Supplementary Heater: PSUP	4.87 kW	6.57 kW
Annual energy consumption Q _{he}	8431 kWh	9310 kWh
P _{dh} T _j = -15°C (if TOL	11.22	9.62
COP T _j = -15°C (if TOL	2.43	1.86
C _{dh} T _j = -15 °C	0.90	0.90

EN 12102-1 | Warmer Climate

	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 | Warmer Climate

	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	13.09 kW	13.38 kW
COP Tj = +2°C	3.35	2.29
Cdh Tj = +2 °C	0.900	0.900
Pdh Tj = +7°C	8.42 kW	8.86 kW
COP Tj = +7°C	5.36	3.84
Cdh Tj = +7 °C	0.900	0.900
Pdh Tj = 12°C	3.88 kW	4.06 kW
COP Tj = 12°C	8.11	5.86
Cdh Tj = +12 °C	0.900	0.900
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	13.09 kW	13.38 kW
COP Tj = TOL or COP Tj = Tdesignh if TOL < Tdesignh	3.35	2.29
Cdh Tj = TOL or Pdh Tj = Tdesignh if TOL < Tdesignh		
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	Electricity	Electricity
Supplementary Heater: PSUP	0.00 kW	0.40 kW
Annual energy consumption Qhe	2786 kWh	4116 kWh