

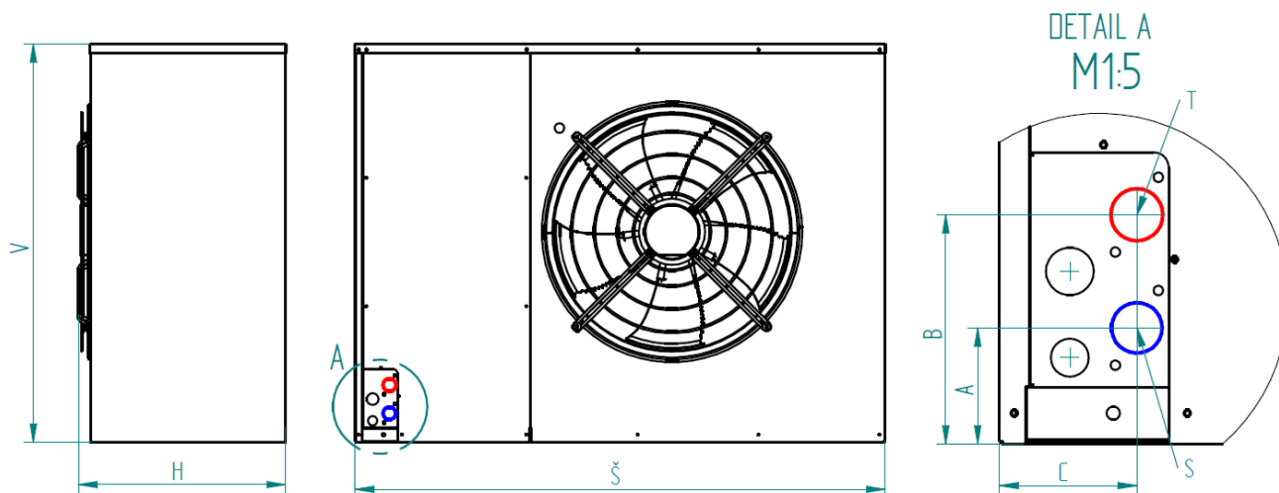
Technical parameters of the Izzifast R290 Pro heat pump

A compact monoblock heat pump that uses a variable speed scroll compressor with an ecologic refrigerant. The heat pump consist from out door unit and indoor functional assemblies such as electric distributor, hydromodul or hydrobox according to the chosen accessories. The product also includes and indoor thermostat placed in reference rom.

The warranty for the compressor is 10 years and for the heat pump 5 years.

Model	PRO-N	PRO-R
Feeding voltage code; circuit breaker	3~N/PE/400V/50Hz; B16A	3~N/PE/400V/50Hz; B20A
Outdoor unit's voltage code; circuit breaker	1~N/PE/230V/50Hz; B16A	3~N/PE/400V/50Hz; B20A
Compressor Model	Scroll	Scroll
Maximum current of outdoor unit [A]	13	12
Starting current [A]	5	5
Protection class	IP44	IP44
Refrigerant	R290	R290
Refrigerant weight [kg]	1,35	2,75
Cooling	Yes	Yes
Maximum allowable pressure – high pressure side [bar]	26	26
Maximum allowable pressure – low pressure side [bar]	26	26
Air temperature limit range [°C]	-22 to 35	-22 to 35
Water temperature limit range [°C]	20 to 70	20 to 70
Water flow range [m ³ /h]	0,5 to 3	0,5 to 3

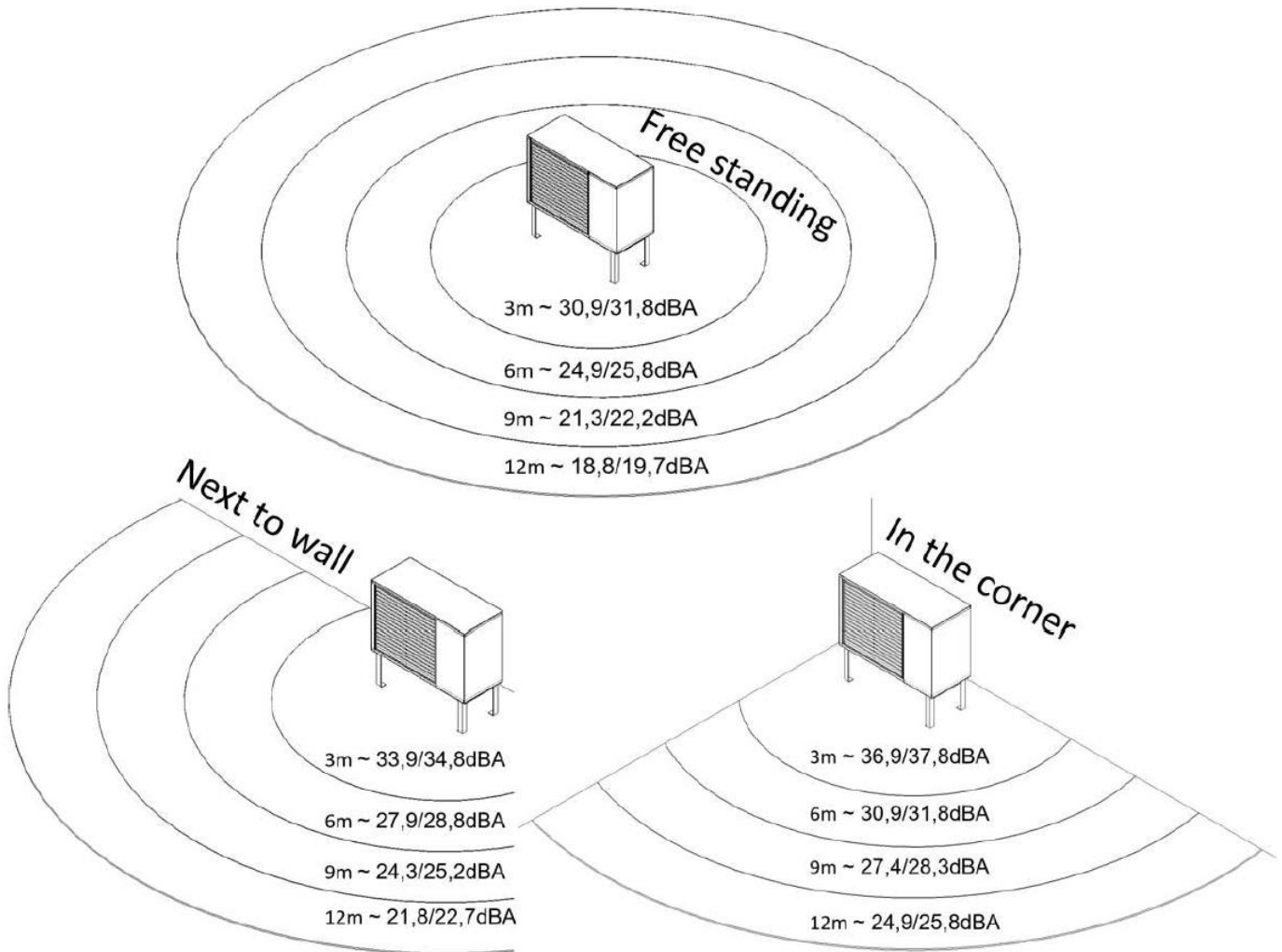
Heat pump dimensions



Model	PRO-N	PRO-R
V [mm]	740	1070
S [mm]	1130	1430
H [mm]	500	560
A [mm]	110	90
B [mm]	107	78
C [mm]	183	154
Weight [kg]	115	195
T – hot water [mm]	G1" DIN ISO 228	G1" DIN ISO 228
S – cold water [mm]	G1" DIN ISO 228	G1" DIN ISO 228

		PRO-R
Acoustic pressure power L_{WA} [dB(A)]	48,4	49,3

The values of acoustic pressure are stated as follows - PRO-N /PRO-R.



Performance parameters

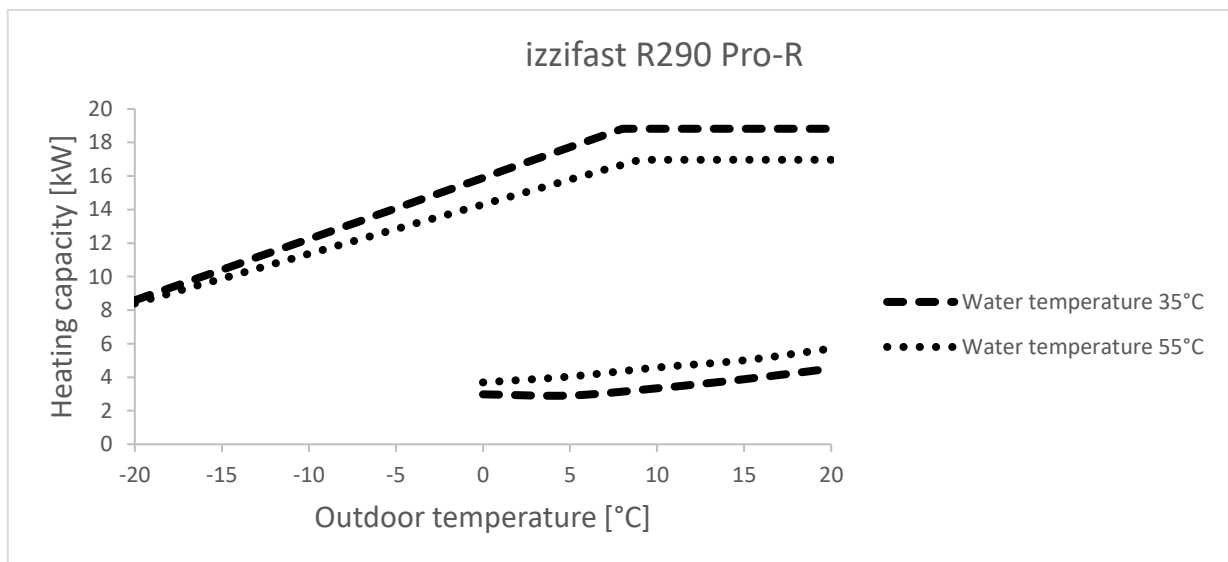
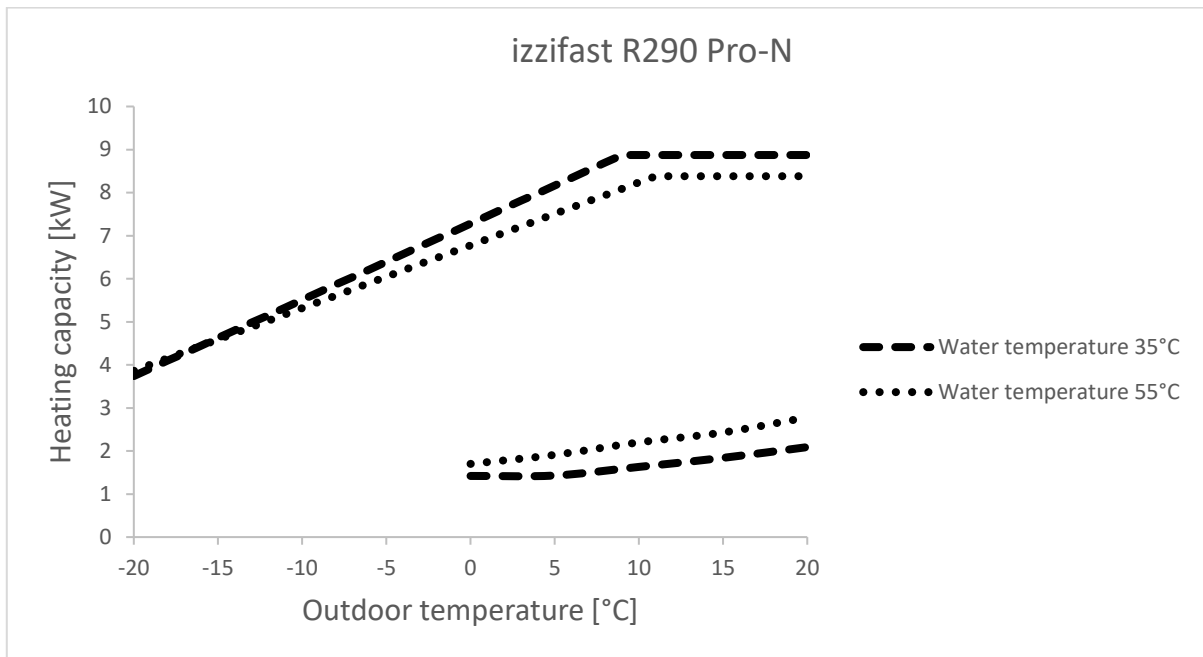
Model	PRO-N	PRO-R
Performance parameters at nominal conditions according to EN 14 511		
Heating capacity x COP at A7/W35 [kW x 1]	3,28 x 4,9	6,77 x 5,22
Heating capacity x COP at A2/W35 [kW x 1]	2,74 x 4,31	5,7 x 4,49
Heating capacity x COP at A7/W55 [kW x 1]	3,87 x 3,28	7,41 x 3,29
		4,05 x 7,11
Heating capacity x COP at A7/W27 [kW x 1]	1,63 x 5,55	3,81 x 6,33
Heating capacity x COP at A2/W30 [kW x 1]	2,54 x 4,94	5,46 x 5,03
Heating capacity x COP at A-7/W34 [kW x 1]	4,17 x 3,14	9,23 x 3,24
		3,88 x 5,92
Heating capacity x COP at A7/W36 [kW x 1]	1,6 x 4,41	3,52 x 4,97
Heating capacity x COP at A2/W42 [kW x 1]	2,48 x 3,74	5,53 x 3,87
Heating capacity x COP at A-7/W52 [kW x 1]	4,08 x 2,38	9 x 2,5
Parameters for average climate, Equithermal regulation		
P _{rated} x SCOP W35 [kW x 1]	4,71 x 4,74	10,38 x 5,05
P _{rated} x SCOP W55 [kW x 1]	4,61 x 3,68	
Parameters for warmer climate, Equithermal regulation		
P _{rated} x SCOP W35 [kW x 1]	4,52 x 5,54	9,53 x 6,27
P _{rated} x SCOP W55 [kW x 1]	4,41 x 4,17	
Parameters for colder climate, Equithermal regulation		
P _{rated} x SCOP W35 [kW x 1]	6,9 x 3,83	15,21 x 4,15
P _{rated} x SCOP W55 [kW x 1]	6,8 x 3,19	14,74 x 3,36

Energy parameters

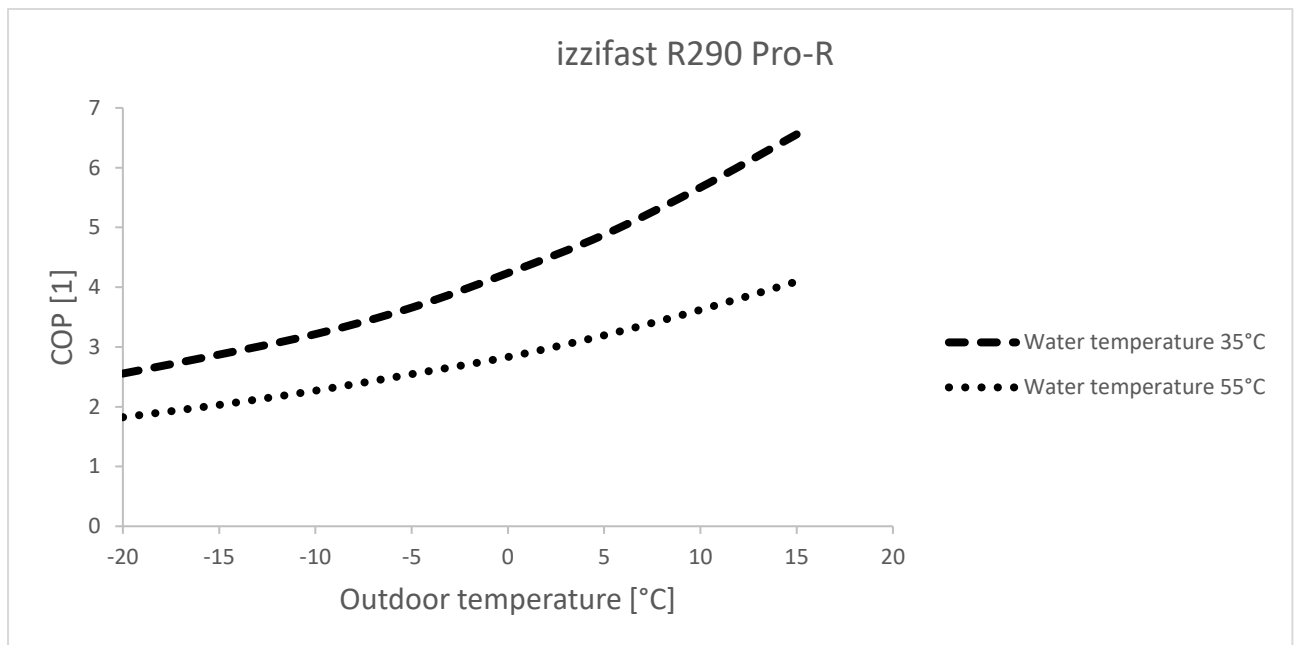
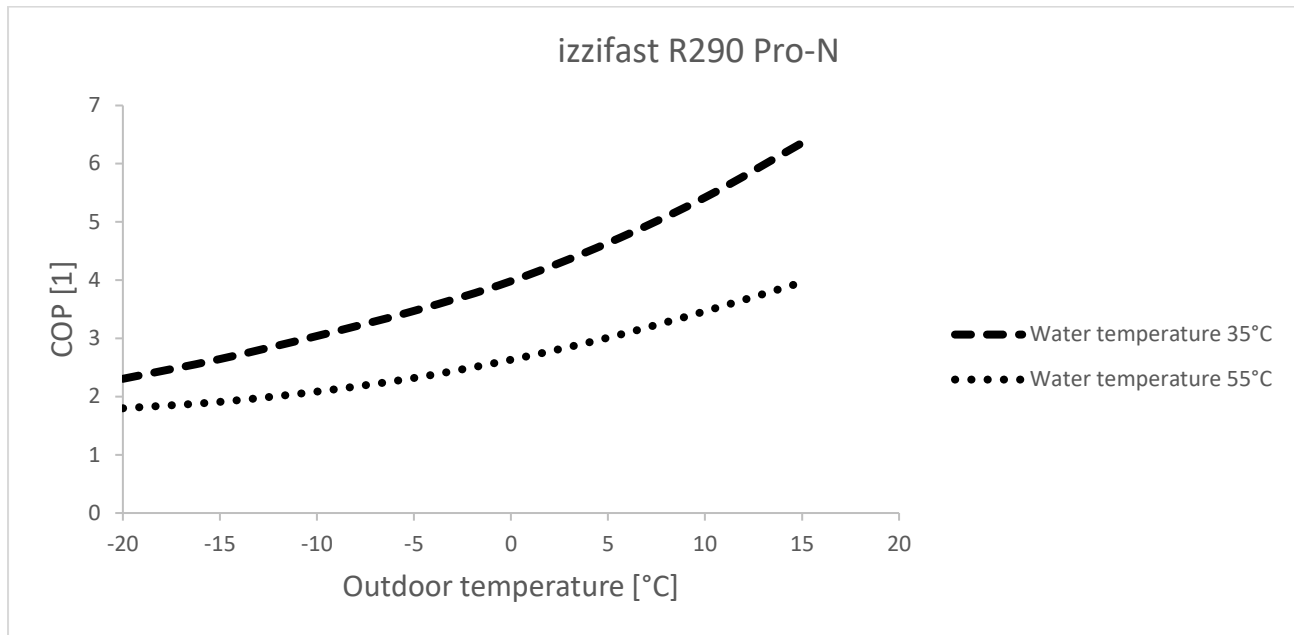
Model		PRO-N		PRO-R	
Reference water temperature [°C]		35	55	35	55
Average climate	Energy class	A+++	A++	A+++	A+++
	Seasonal heating energy efficiency [%]	187	144	199	155
	Annual heating power consumption [kWh]	2053	2588	4246	5351
Warmer climate	Energy class	A+++	A+++	A+++	A+++
	Seasonal heating energy efficiency [%]	219	164	248	189
	Annual heating power consumption [kWh]	1089	1412	2029	2562
Colder climate	Energy class	A+++	A++	A+++	A++
	Seasonal heating energy efficiency [%]	150	125	163	131
	Annual heating power consumption [kWh]	4442	5256	9037	10815

Heating capacity limits in dependence on outdoor and water temperature

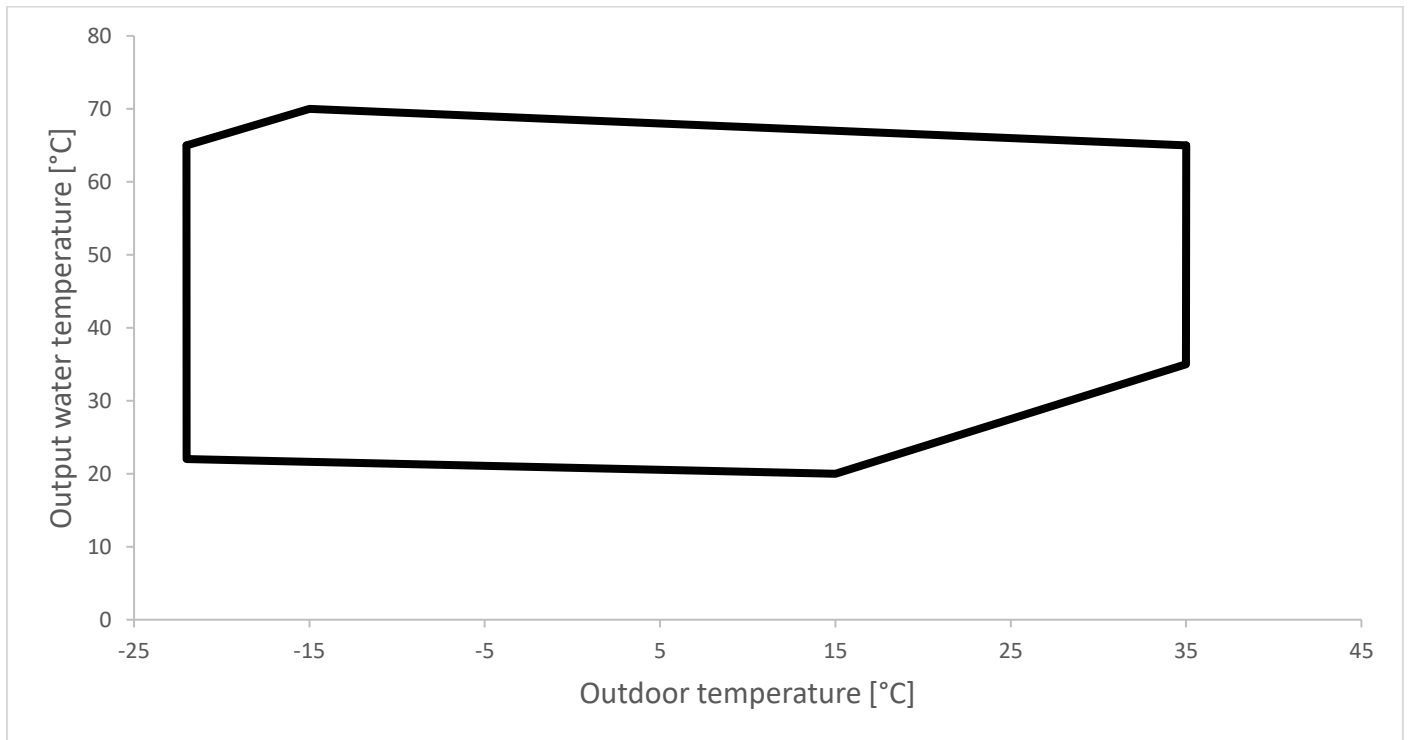
The following values are measured during continuous mode.



Maximum coefficient of performance in dependence on outdoor and water temperature



Working area



Model(s):				PRO-N			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with a supplementary heater: (yes/no)				no			
Heat pump combination heater: (yes/no)				no			
Application: (low temperature/medium temperature)				medium temperature			
Climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output (1)	P _{rated}	5	kW	Seasonal heating energy efficiency	η_s	144	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T _j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T _j			
T _j = -7°C	P _{dh}	4,1	kW	T _j = -7°C	COP _d	2,4	-
T _j = +2°C	P _{dh}	2,5	kW	T _j = +2°C	COP _d	3,7	-
T _j = +7°C	P _{dh}	1,6	kW	T _j = +7°C	COP _d	4,4	-
T _j = +12°C	P _{dh}	1,8	kW	T _j = +12°C	COP _d	5,4	-
T _j = bivalent temperature	P _{dh}	4,6	kW	T _j = bivalent temperature	COP _d	2,1	-
T _j = operation limit temperature	P _{dh}	4,6	kW	T _j = operation limit temperature	COP _d	2,1	-
For air-to-water heat pumps: T _j = -15°C (if TOL < -20°C)	P _{dh}	-	kW	For air-to-water heat pumps: T _j = -15°C (if TOL < -20°C)	COP _d	-	-
Bivalent temperature	T _{biv}	-10	°C	For air-to-water heat pumps: operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P _{cyh}	-	kW	Cycling interval capacity for heating	COP _{cyh}	-	-
Degradation co-efficient (2)	C _{dh}	0,9	-	Heating water operating limit temperature	WTOL	70	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P _{OFF}	0,016	kW	Rated heat output (1)	P _{sup}	0	kW
Thermostat-off mode	P _{TO}	0,016	kW	Type of energy input	Electric		
Standby mode	P _{SB}	0,016	kW				
Crankcase heater mode	P _{CK}	0	kW				
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	1600	m ³ /h
Sound power level, indoors/outdoors	L _{WA}	-48,4	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides	NO _x	-	mg/kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}		%
Daily electricity consumption	Q _{elec}	-	kWh	Daily fuel consumption	Q _{fuel}		kWh

Model(s):				PRO-R			
Air-to-water heat pump: (yes/no)				yes			
Brine-to-water heat pump: (yes/no)				no			
Water-to-water heat pump: (yes/no)				no			
Low-temperature heat pump: (yes/no)				no			
Equipped with a supplementary heater: (yes/no)				no			
Heat pump combination heater: (yes/no)				no			
Application: (low temperature/medium temperature)				medium temperature			
Climate: (colder/average/warmer)				average			
Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output ⁽¹⁾	P_{rated}	10	kW	Seasonal heating energy efficiency	η_s	155	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature T_j				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature T_j			
$T_j = -7^\circ\text{C}$	P_{dh}	9	kW	$T_j = -7^\circ\text{C}$	COP_d	2,5	-
$T_j = +2^\circ\text{C}$	P_{dh}	5,5	kW	$T_j = +2^\circ\text{C}$	COP_d	3,9	-
$T_j = +7^\circ\text{C}$	P_{dh}	3,5	kW	$T_j = +7^\circ\text{C}$	COP_d	5	-
$T_j = +12^\circ\text{C}$	P_{dh}	3,9	kW	$T_j = +12^\circ\text{C}$	COP_d	6,1	-
$T_j = \text{bivalent temperature}$	P_{dh}	10,2	kW	$T_j = \text{bivalent temperature}$	COP_d	2,1	-
$T_j = \text{operation limit temperature}$	P_{dh}	10,2	kW	$T_j = \text{operation limit temperature}$	COP_d	2,1	-
For air-to-water heat pumps: $T_j = -15^\circ\text{C}$ (if $TOL < -20^\circ\text{C}$)	P_{dh}	-	kW	For air-to-water heat pumps: $T_j = -15^\circ\text{C}$ (if $TOL < -20^\circ\text{C}$)	COP_d	-	-
Bivalent temperature	T_{biv}	-10	°C	For air-to-water heat pumps: operation limit temperature	TOL	-10	°C
Cycling interval capacity for heating	P_{cyc}	-	kW	Cycling interval capacity for heating	COP_{cyc}	-	-
Degradation co-efficient ⁽²⁾	C_{dh}	0,9	-	Heating water operating limit temperature	WTOL	70	°C
Power consumption in modes other than active mode				Supplementary heater			
Off mode	P_{OFF}	0,016	kW	Rated heat output ⁽¹⁾	P_{sup}	0	kW
Thermostat-off mode	P_{TO}	0,016	kW	Type of energy input	Electric		
Standby mode	P_{SB}	0,016	kW				
Crankcase heater mode	P_{CK}	0	kW				
Capacity control	variable			For air-to-water heat pumps: Rated air flow rate, outdoors	-	3400	m ³ /h
Sound power level, indoors/outdoors	L_{WA}	-49,3	dB	For water-/brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	-	m ³ /h
Emissions of nitrogen oxides	NO_x	-	mg/kWh				
For heat pump combination heater:							
Declared load profile	-			Water heating energy efficiency	η_{wh}		%
Daily electricity consumption	Q_{elec}	-	kWh	Daily fuel consumption	Q_{fuel}		kWh
Contact details	Acond a.s., Štěrboholská 1434/102a, 102 00 Praha 10 – Hostivař, Česká republika						

(1) For heat pump space heaters and heat pump combination heaters, the rated heat output P_{rated} is equal to the design load for heating $P_{designh}$, and the rated heat output of a supplementary heater P_{sup} is equal to the supplementary capacity for heating $sup(T_j)$.

(2) If C_{dh} is not determined by measurement then the default degradation coefficient is $C_{dh} = 0,9$.