

HUB RADIATOR PACK CF

High efficiency patented integrated hybrid system in heat pump with direct refrigerant / water exchange with support boiler to produce domestic hot water and heating, air conditioning for small and medium users



ENERGY RATING



Technical and construction features

The HUB RADIATOR PACK CF hybrid system consists of an external heat pump evaporating unit (Booster HR Hot / Cold 3.0 or 7.8) and an internal storage unit of 75 liters with direct refrigerant / water exchange condenser and instant domestic hot water exchanger. immersion, coupled with a backup modulating condensing boiler (20 or 32 kW).

They are also included as standard:

- High efficiency inverter electronic circulation pump
- Manual filling group
- System expansion vessel
- Safety valve and automatic vent valve
- External temperature probe
- Base support template to facilitate handling

In the dockyard

The condensing boiler is directly connected to the technical storage unit, both components are housed in a special covering shell.

The methane gas heat generator uses a highly modular premix condensing burner mounted on the latest generation boiler body with powers of 20 kW, 24 kW and 32 kW.

Combustion with a constant stoichiometric air-gas ratio makes it possible to eliminate polluting CO2 emissions and reduce NOx emissions. The patented HUB RADIATOR PACK CF system uses the thermodynamic cycle of the heat pump as its primary source. The high efficiency of the heat pump with the help, when necessary, of the condensing boiler allows for great savings, excellent reliability and operation down to temperatures of -20 °C. The electronic control unit makes the product versatile and easy to manage with a very intuitive user interface.

Specifically, the system is equipped with a latest generation microprocessor that allows the user to set an automatic management of the hybrid system with the Energy Efficiency function which allows to optimize energy consumption both for the production of DHW and for the winter air conditioning by activating the boiler only if strictly necessary based on the outside temperature. During the summer, the external booster will keep the technical water contained in the 75-liter puffer refrigerated and the boiler will provide instant DHW production.













HUB RADIATOR PACK CF is supplied as standard with an external climatic probe and lower support to facilitate installation.



Modello	Codice	€
HUB RADIATOR PACK CF 3.0/20 pensile	76801920	7.050,00
HUB RADIATOR PACK CF 3.0/24 pensile	76800920	7.250,00
HUB RADIATOR PACK CF 3.0/32 pensile	76803920	7.300,00
HUB RADIATOR PACK CF 7.8/20 pensile	76801021	9.090,00
HUB RADIATOR PACK CF 7.8/24 pensile	76802921	9.290,00
HUB RADIATOR PACK CF 7.8/32 pensile	76803921	9.340,00
HUB RADIATOR PACK CF 3.0/20 incasso	76801922	7.490,00
HUB RADIATOR PACK CF 3.0/24 incasso	76802022	7.690,00
HUB RADIATOR PACK CF 3.0/32 incasso	76802922	7.740,00
HUB RADIATOR PACK CF 7.8/20 incasso	76801932	9.530,00
HUB RADIATOR PACK CF 7.8/24 incasso	76802025	9.730,00
HUB RADIATOR PACK CF 7.8/32 incasso	76802932	9.780,00
Unità interna HUB RADIATOR PACK CF 3.0/20	76801924	4.620,00
Unità interna HUB RADIATOR PACK CF 3.0/24	76802024	4.820,00
Unità interna HUB RADIATOR PACK CF 3.0/32	76802924	4.870,00
Unità interna HUB RADIATOR PACK CF 7.8/20	76801925	4.960,00
Unità interna HUB RADIATOR PACK CF 7.8/24	76803025	5.160,00
Unità interna HUB RADIATOR PACK CF 7.8/32	76803925	5.210,00
Unità esterna Booster HR 3.0 caldo/freddo	76020240	2.430,00
Unità esterna Booster HR 7.8 caldo/freddo	76020500	4.130,00




















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Accessories HUB RADIATOR PACK CF		Codice	€
	HUB RADIATOR PACK CF recessed template complete with flush-to-the-wall closing panel in galvanized sheet metal	76801916	440,00
	Cover box HUB RADIATOR PACK CF mandatory for the installation of the indoor unit outside the building made of insulated white painted galvanized steel Height 160 cm - Width 80 cm - Depth 35 cm	75101022	490,00
	HUB RADIATOR PACK CF wall-mounted installation template for the preparation of all pipes on site	76801919	190,00
	Command and remote control panel	mod. incasso mod. a parete	75100005 75100028 90,00 110,00
	Command and remote control panel condensing boiler		30400034 140,00
	Load control relay for managing the absorbed power	mod. Collegamento BUS mod. Radiofrequenza	37081062 37081063 148,00 336,00
	Web server home automation control unit		75101005 580,00
	Mixing valve for radiant systems	mod. regolazione fissa meccanica mod. regolazione motorizzata	75101032 75101033 90,00 530,00
	Anchoring shelf for external Booster including rubber anti-vibration mounts	mod. Booster HR 3.0 mod. Booster HR 7.8	37081060 37081061 50,00 90,00
	Anchoring bracket for inclined roof for external Booster mod. HR 3.0 - 7.8 including rubber anti-vibration mounts		37081064 130,00
	Antivibration floor base in vulcanized rubber (height from the ground mm 95) with level and screws for Booster HR 3.0 - 7.8 (pack of 2 pieces)		75100018 94,00
	Anti-vibration kit for installation on shelves		75100022 18,00

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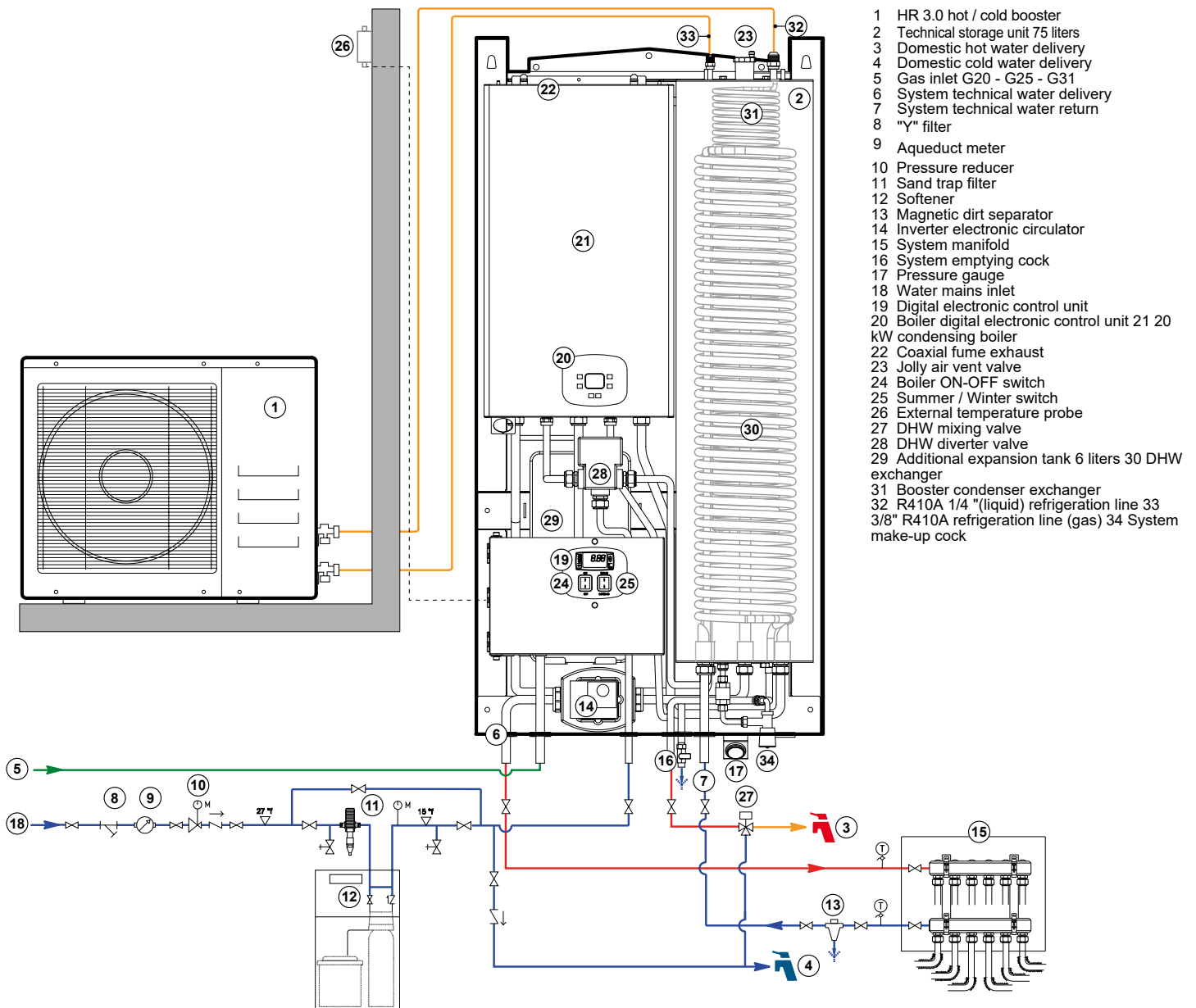
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Accessories HUB RADIATOR PACK CF			Codice	€
	Spring anti-vibration kit in stainless steel complete with bolts, washers and nuts (pack of 2 pieces)	mod. HR 3.0 mod. HR 7.8	37081065 37081066	52,00 56,00
	Condensate anti-freeze heating cable with thermal sensor, factory fitted	mod. 3 meters 90 W mod. 6 meters 120 W	37081067 37081068	56,00 66,00
	Auxiliary basin for installation under shelf equipped with 90 W heating cable	mod. HR 3.0 mod. HR 7.8	37081069 37081070	252,00 272,00
	Floor support complete with auxiliary basin equipped with 90 W heating cable	mod. HR 3.0 H fixed mod. HR 7.8 H fixed mod. HR 7.8 H variable	37081071 37081073 37081074	308,00 330,00 354,00
	1/2 "DHW mixing valve kit		75100023	146,00
	Anti-vibration flexible joint kit with connecting flange and straight union	mod. HR 7.8 (5/8") mod. HR 3.0 (3/8")	75100014 75100015	120,00 60,00
	Anti-vibration flexible joint kit with connecting flange and 90 ° curved union	mod. HR 7.8 (5/8") mod. HR 3.0 (3/8")	75100016 75100017	120,00 60,00
	Coaxial starting curve Ø 60/100 at 90 ° with smoke extraction		30403123	23,00
	Vertical coaxial outlet Ø 60/100 with smoke sampling		30403124	25,00
	Coaxial flue exhaust kit Ø 60/100		30403000	50,00
	Coaxial roof terminal Ø 60/100		30403014	118,00
	Coaxial extension Ø 60/100 M / F = 1000 mm		30403002	28,00
	Coaxial 90 ° bend Ø 60/100 M / F		30403004	30,00
	45 ° coaxial bend Ø 60/100 M / F		30403003	30,00
	Splitter kit with strip from Ø 60/100 to Ø 80/80		30403018	33,00
	Separate duct kits Ø 80/80 with smoke extraction		30403022	22,00
	Extension Ø 80 M / F = 1000 mm		30403011	8,00
	90 ° coaxial bend Ø 80 M / F		30403013	5,00
	45 ° coaxial bend Ø 80 M / F		30403012	5,00

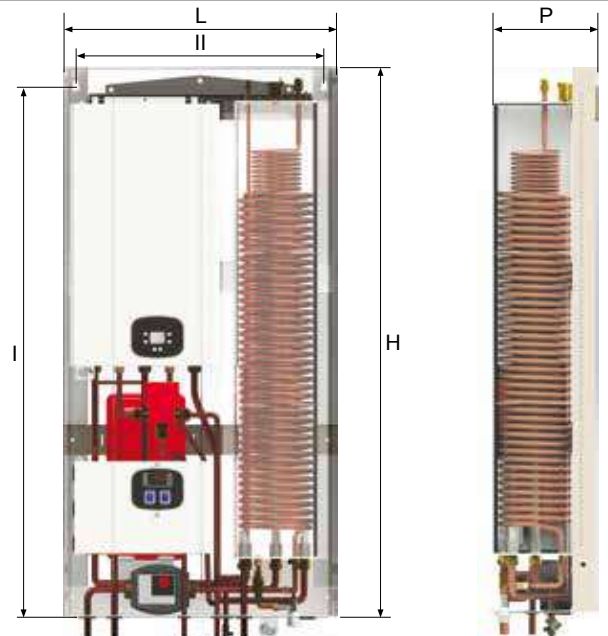
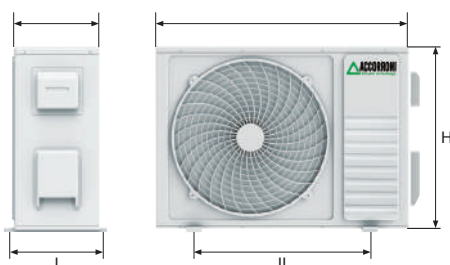
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Application example HUB RADIATOR PACK CF 3.0/20



Dimensions of outdoor unit and indoor unit HUB RADIATOR PACK CF pensile

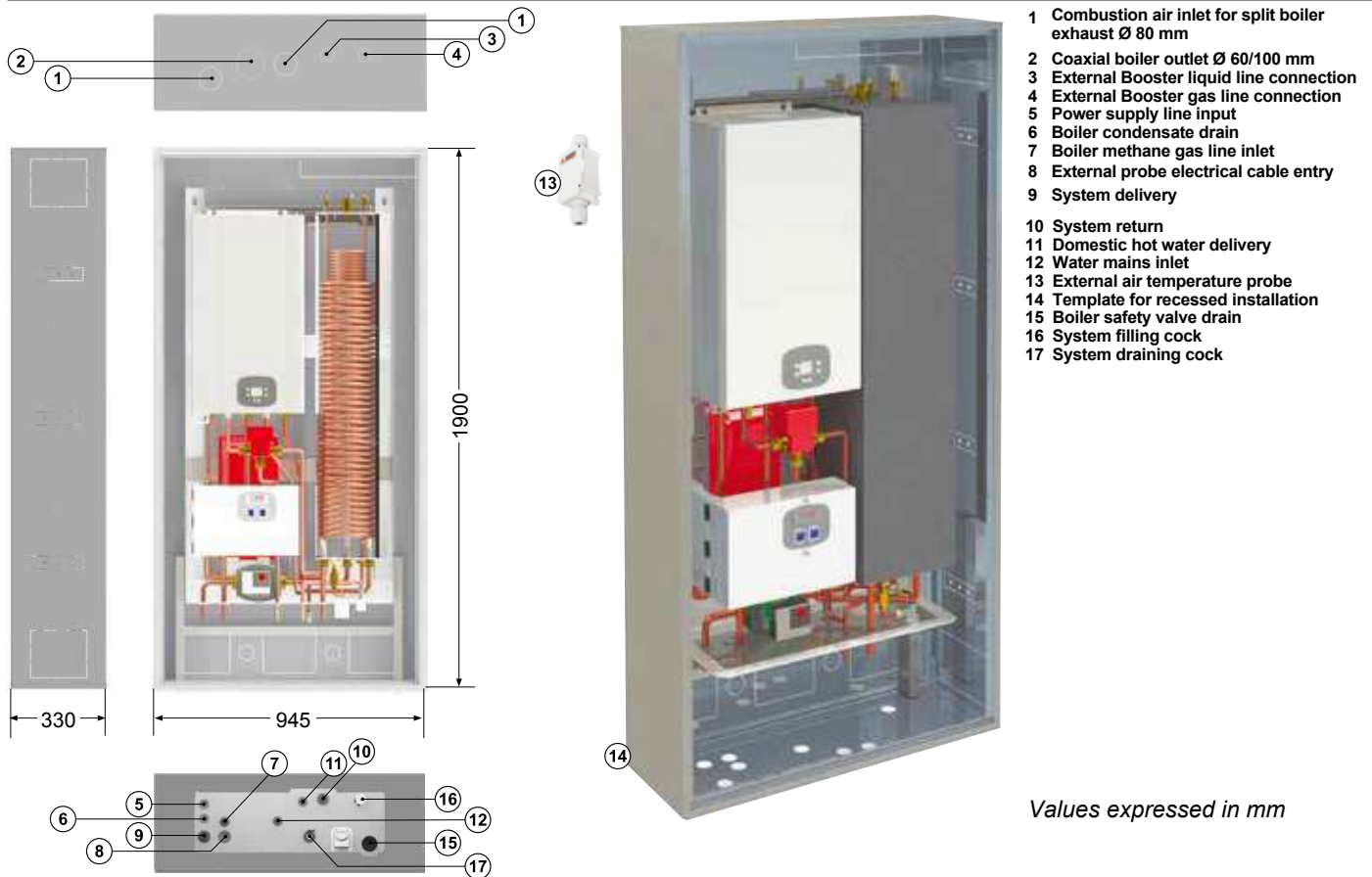


Model	L	H	P	I	II	weight
	mm	mm	mm	mm	mm	kg
O.U. Booster HR 3.0	700	552	256	275	435	33
O.U. Booster HR 7.8	830	585	300	330	515	43
O.U. Booster HR 9.0 INV	925	785	380	358	540	62
I.U. HR PACK CF 20	720	1450	300	1410	656	130
I.U. HR PACK CF 24	720	1450	300	1410	656	130
I.U. HR PACK CF 32	720	1450	300	1410	656	130

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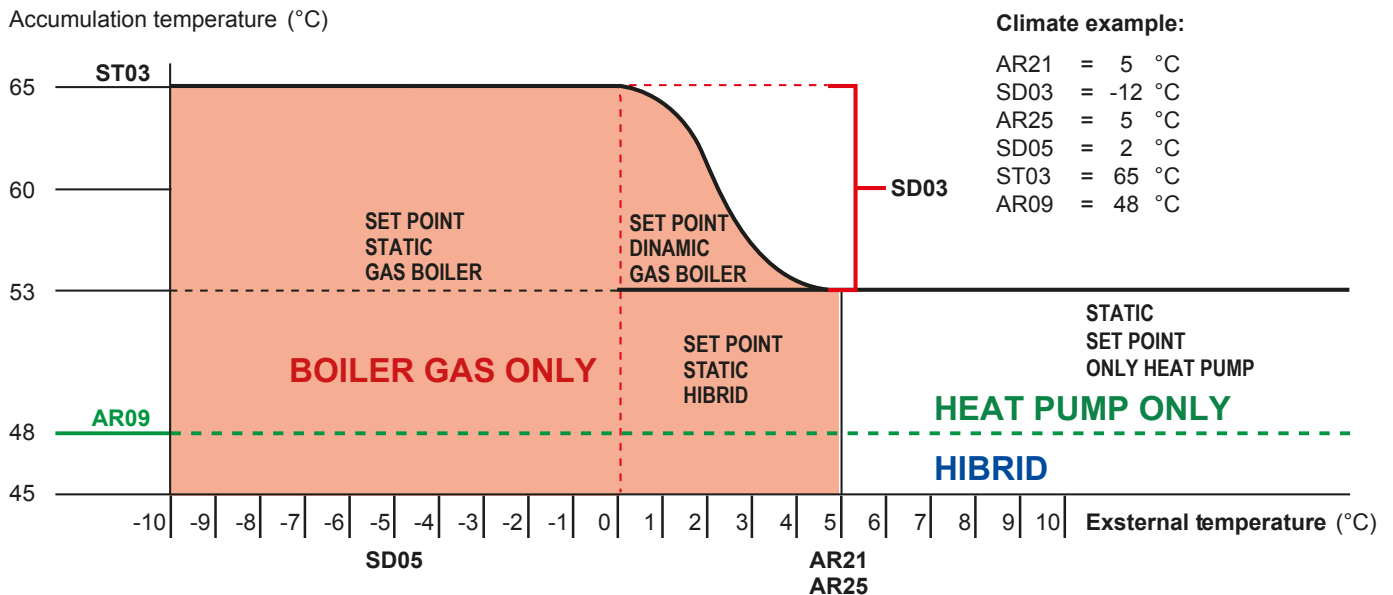
Indoor unit dimensions HUB RADIATOR PACK CF recessed



- 1 Combustion air inlet for split boiler exhaust Ø 80 mm
- 2 Coaxial boiler outlet Ø 60/100 mm
- 3 External Booster liquid line connection
- 4 External Booster gas line connection
- 5 Power supply line input
- 6 Boiler condensate drain
- 7 Boiler methane gas line inlet
- 8 External probe electrical cable entry
- 9 System delivery
- 10 System return
- 11 Domestic hot water delivery
- 12 Water mains inlet
- 13 External air temperature probe
- 14 Template for recessed installation
- 15 Boiler safety valve drain
- 16 System filling cock
- 17 System draining cock

Values expressed in mm

Example of winter operation with external climatic probe HUB RADIATOR PACK CF



The factory made hybrid system HUB RADIATOR PACK CF is equipped as standard with an external temperature probe which, thanks to the microprocessor in the indoor unit, allows you to set a fully automatic operation aimed at ensuring maximum energy efficiency based on the actual external climatic conditions. Specifically, it will be possible to establish an external temperature value (AR21) above which the use of only the renewable energy of the HP Booster is preferred both for the production of DHW and for the production of heating. Above this temperature, however, the "integration boiler" mode will remain active upon request from the storage probe

to ensure the system never drops below a preset limit temperature which may vary according to the type of system terminals present.

In the external temperature range that goes from the value of the parameter (AR21) to (AR25) we will have a hybrid combined operation with the 2 generators operating simultaneously. Below the "critical" external temperature (AR25), a "boiler only" operation will be activated which will also activate a dynamic technical water set-point so as to obtain a system delivery temperature that increases proportionally to the decrease in the temperature of the outside air.

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Indoor unit technical data table HUB RADIATOR PACK CF

DESCRIPTION	U.M.	20	24	32
Appliance category		I12H3P		
Minimum boiler heat output in methane gas heating G20	kW	2,8	2,8	3,4
Maximum heat output of the boiler in natural gas heating G20	kW	20,0	24,0	32,0
Minimum boiler heat output in gas heating LPG	kW	2,8	2,8	3,4
Maximum boiler heat output in gas heating LPG	kW	20,0	24,0	32,0
Minimum boiler heat output in heating (80-60 ° C) methane gas G20	kW	2,5	2,5	3,3
Maximum boiler heat output in heating (80-60 ° C) methane gas G20	kW	19,2	23,0	30,8
Minimum boiler heat output in heating (80-60 ° C) LPG gas	kW	2,5	2,5	3,3
Maximum boiler heat output in heating (80-60 ° C) LPG gas	kW	19,2	23,0	30,8
Minimum boiler heat output in heating (50-30 ° C) methane gas G20	kW	2,9	2,9	3,5
Maximum boiler heat output in heating (50-30 ° C) natural gas G20	kW	20,7	24,9	33,5
Minimum boiler heat output in heating (50-30 ° C) LPG gas	kW	2,9	2,9	3,5
Maximum boiler heat output in heating (50-30 ° C) LPG gas	kW	20,7	24,9	33,5
G20 methane gas fired boiler supply pressur	mbar	20		
LPG gas fired boiler supply pressur	mbar	30/37		
Diaphragm diameter of the boiler fed with natural gas G20	mm	5,6	5,6	6,3
LPG gas fired boiler diaphragm diamete	mm	5,6	5,6	6,3
Minimum CO2 emission from natural gas boiler G20	%	9,3	9,3	8,4
Maximum CO2 emission from natural gas boiler G20	%	9,8	9,8	10,6
Minimum CO2 emission from LPG gas fired boile	%	10,4	10,4	10,5
Maximum CO2 emission from LPG gas fired boile	%	10,7	10,7	10,6
Minimum pressure of the heating circuit	bar	0,5		
Maximum pressure of the heating circuit	bar	3		
Useful boiler thermal efficiency at maximum power (60/80 ° C	%	95,8	95,9	96,3
Useful boiler thermal efficiency at maximum power (30/50 ° C	%	103,4	103,7	104,5
Useful boiler thermal efficiency at minimum power (60/80 ° C	%	90,0	90,0	95,7
Useful boiler thermal efficiency at minimum power (30/50 ° C	%	102,1	102,1	103,5
Useful boiler thermal efficiency at 30% of the loa	%		107,1	
NOx emission class		6	6	5
NOx emission	mg/kWh	23	23	55
Smoke temperature	°C	70,0	70,0	74,5
Max operating temperature in heating	°C	85,0		
Methane gas consumption at maximum heating flow rate(1	m ³ /h	2,08	2,54	3,37
LPG consumption at maximum flow rate in heating (1	m ³ /h	0,64	0,75	0,97
Seasonal energy efficiency of the space heating boile	%		92,0	
Useful boiler efficiency at nominal heat output at high temperature regime(2	%	86,3	86,4	86,7
Useful boiler efficiency at 30% of nominal heat output at low temperature regime (3	%		96,4	
Heat loss in boiler stand-by	kW	0,069	0,069	0,071
Annual boiler energy consumption	GJ	38,7	42,2	62,7
Seasonal boiler energy efficiency clas		A		
Technical water inertial storage volume	l	62		
Volume of expansion vessels	l	7		
System flow / return connection		3/4"		
Hot water and cold sanitary water connections		1/2"		
G20 / LPG methane gas inlet connection		3/4"		
Diameter of the boiler condensate drain hose	mm	22		
Coaxial smoke evacuation pipe diameter	mm	60/100		
Diameter of double ropes evacuation ducts	mm	80		
Maximum system circulator flow rat	m ³ /h	3,3		
Maximum system circulator head	m	6,2		
Maximum absorbed electrical power	W	118	118	147
Power supply		230V/1/50Hz		

(1) Value referred to the external temperature of 15 ° C and 1013 mbar

(2) High temperature mode with 60 ° C return and 80 ° C flow

(3) Low temperature regime 30 ° C (return temperature at the boiler inlet)

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Technical data table for domestic hot water withdrawal HUB RADIATOR PACK CF

DESCRIPTION	U.M.	3.0/20	3.0/24	3.0/32	7.8/20	7.8/24	7.8/32
DHW production with ΔT 25 °C (winter/summer)	l/min	15,0 / 14,0	15,5 / 15,4	20,4 / 19,0	16,0 / 14,0	16,0 / 15,4	21,8 / 19,0
DHW production with ΔT 30 °C (winter/summer)	l/min	12,0 / 11,0	12,6 / 12,0	15,1 / 14,0	13,3 / 11,0	13,3 / 12,0	16,4 / 14,0
DHW production with ΔT 35 °C (winter/summer)	l/min	11,0 / 10,0	11,3 / 11,0	14,2 / 13,6	11,4 / 10,0	11,4 / 11,0	15,8 / 13,6
DHW production with ΔT 40 °C (winter/summer)	l/min	9,6 / 9,0	9,9 / 9,6	12,6 / 11,9	10,0 / 9,0	10,0 / 9,6	13,8 / 11,9
DHW production with ΔT 45 °C (winter/summer)	l/min	8,6 / 8,0	8,8 / 8,6	11,2 / 10,5	8,9 / 8,0	8,9 / 8,6	12,1 / 10,5

Booster HUB RADIATOR PACK CF outdoor unit technical data table

DESCRIPTION	U.M.	HR 3.0	HR 7.8
Thermal power (1)	kW	3,11	8,12
Absorbed power (1)	kW	0,74	1,96
C.O.P. (1)	W/W	4,20	4,14
Thermal power (2)	kW	2,97	7,75
Absorbed power (2)	kW	0,94	2,52
C.O.P. (2)	W/W	3,16	3,07
Thermal power (3)	kW	2,58	6,73
Absorbed power (3)	kW	0,74	2,00
C.O.P. (3)	W/W	3,48	3,37
Thermal power (4)	kW	2,47	6,44
Absorbed power (4)	kW	0,94	2,54
C.O.P. (4)	W/W	2,67	2,53
Thermal power (5)	kW	2,11	5,52
Absorbed power (5)	kW	0,75	2,00
C.O.P. (5)	W/W	2,81	2,76
Thermal power (6)	kW	1,99	5,20
Absorbed power (6)	kW	0,94	2,53
C.O.P. (6)	W/W	2,11	2,05
S.C.O.P. (7)	W/W	3,78	3,71
Seasonal heating efficiency (η_s)	%	153,1	150,3
Cooling capacity (8)	kW	2,94	7,24
Absorbed power (8)	kW	0,72	1,89
E.E.R. (8)	W/W	4,08	3,82
Cooling capacity (9)	kW	2,63	5,84
Absorbed power (9)	kW	0,89	2,20
E.E.R. (9)	W/W	2,95	2,65
S.E.E.R. (9)	W/W	3,67	3,32
Energy efficiency (10)		A / A++	
Type of refrigerant		R410A	
Technical water temperature min / max	°C	+ 30 / + 58	
Amount of refrigerant (pre-inserted)	Kg	1,1	2,0
Min distance between outdoor and indoor unit	m	3	
Max distance between outdoor and indoor unit without recharging	m	5	
Max distance between outdoor and indoor unit with recharge	m	15	
Max difference in height between outdoor and indoor unit	m	5	
Refrigerant gas line connection		3/8"	5/8"
Coolant line connection		1/4"	1/4"
Sound power (11)	dB(A)	65,1	68,4
Sound pressure at one meter (12)	dB(A)	51,2	54,7
External temperature operating limits	°C	-15 / +45	
Power supply		230V/1/50Hz	

(1) Heating: external air temperature 7 °C d.b. - 6 °C b.u. ; inlet / outlet water temperature 30/35 °C
 (2) Heating: external air temperature 7 °C d.b. - 6 °C b.u. ; inlet / outlet water temperature 40/45 °C
 (3) Heating: external air temperature 0 °C d.b. ; inlet / outlet water temperature 30/35 °C
 (4) Heating: external air temperature 0 °C d.b. ; inlet / outlet water temperature 40/45 °C
 (5) Heating: outside air temperature -7 °C d.b. ; inlet / outlet water temperature 30/35 °C
 (6) Heating: external air temperature -7 °C d.b. ; inlet / outlet water temperature 40/45 °C

(7) Heating: average climatic conditions; inlet / outlet water temperature 30/35 °C
 (8) Cooling: external air temperature 35 °C d.b. ; inlet / outlet water temperature 23/18 °C
 (9) Cooling: external air temperature 35 °C db; inlet / outlet water temperature 12/7 °C
 (10) Water 35 °C / 55 °C (11) Value measured at one meter from the sound source in free field
 (12) Measurements carried out according to UNI EN 14511 in heating mode and boundary conditions (11)
 (12) Value calculated according to ISO 3744: 2010