

Technical data



Pellematic® SmartXS 4 - 18 kW

ENGLISH

Version valid from: 07/2025

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Subject to modifications

1 Technical data

Information according to EU regulation 2015/1187 and 2015/1189

Designation of the series	Pellematic Smart XS				
Model designation: Pellematic Smart XS	10	12	14	16	18
Manufacturer and contact details	ÖkoFEN Forschungs- und Entwicklungs GmbH, Gewerbepark 1, 4133 Niederkappel, Austria				
Boiler class	5				
Heat-up mode	Automatically				
Condensing boiler	yes				
Solid fuel boiler with cogeneration system	no				
Combined heater	yes				
Energy efficiency class	A++				
Energy efficiency index (EEI)	131				132
seasonal space heating energy efficiency in active mode η_{son}	93			94	
Seasonal space heating energy efficiency η_{s} (based on upper heating value)	89				
Delivered useful heat at nominal heat power P_{n} [kW]	10,0	12,0	14,0	16,0	18,0
Delivered useful heat at 30 % of the nominal heat power P_{p} [kW]	3,0	4,0	4,0	5,0	5,0
Fuel efficiency at nominal heat output η_{n} (based on upper heating value) [%]	93,6	93,7		93,8	
Fuel efficiency at 30% of the nominal heat power η_{p} (based on upper heating value) [%]	93,4		93,5		
Boiler eff. rated power standard heat. mode [%]*	101,2	101,1		101,0	101,0

* Test bench value related to the lower calorific value of the fuel. Determined at continuous full-load ideal operation according to the measurement procedures in EN303-5. Practical values and seasonal efficiencies may deviate due to local conditions, fuel properties and individual modes of operation. The values do not refer to an individual boiler, but serve solely for comparison purposes between the different boiler types.

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Fuel	Pellets made of 100% natural wood according to EN ISO 17225-2, class A1				
Colorific value [kWh/kg]	$\geq 4,6$				
Bulk density [kg/m ³]	≥ 600				
Water content [Gew.%]	≤ 10				
Ash parts [Gew.%]	$\leq 0,7$				
Length [mm]	≤ 40				
Diameter [mm]	6 ± 1				

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Annual space heating emissions					
PM [mg/m ³]	< 40				
OGC [mg/m ³]	< 20				
CO [mg/m ³]	< 500				
NOx [mg/m ³]	< 200				

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Auxiliary power consumption					
Auxiliary power consumption at nominal heat power $e_{l_{max}}$ [kW]	0,029	0,033	0,037	0,041	0,045
Auxiliary power consumption at 30 % of nominal heat power $e_{l_{min}}$ [kW]	0,015	0,016	0,017	0,018	0,020
Standby auxiliary power consumption P_{SB} [kW]	0,007				

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Water area					
Boiler temperature [°C]	28 - 85				
Minimum boiler temperature [°C]	28				
Minimum return (boiler inlet) temperature	5				
Combustion chamber temperature [°C]	400 - 870				
Water capacity [l]	335				
Cleaning connection [inch]	3/4" IG				
Feed / return connection [inch]	1" IG				
Feed / return connection Ø [DN]	25				
Warm/Cold water connection Ø [inch]	3/4" IG				
Water resistance at 10K [mbar]	6,5	9,8	13,7	17,5	21,4
Water resistance at 20K [mbar]	1,8	2,7	3,7	4,6	5,6
Water content heat exchanger [l]	0,8				
Content thermal solar rib pipe heat exchanger [l]	0,75				
Freshwater module - max. performance at operating point A [l/min]	21				
Operating point A [°C]	10-45/65 (cold water temp. - DHW temp. / flow temp.)				

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Operating pressure maximum					
Test pressure [Bar]	4,6				
Boiler [Bar]	3				
Fresh water module [Bar]	6				
Thermal solar rib pipe heat exchanger [Bar]	6				

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Flue gas area (Flue gas = F.g.)					
Available delivery pressure of fan [mBar]	0,05				
F.g. temp. rated power condensation mode [°C]	40 - 80				
F.g. temp. partial load condensation mode [°C]	40 - 80				
F.g. volume rated power at f.g.tem. condensation mode [kg/h]	21,0	23,5	26,0	28,6	31,1
F.g. volume partial load at f.g. tem. condensation mode [kg/h]	9,1				
F.g. vol. rated power at AGT condens. mode [m³/h]	16,2	18,1	20,0	22,0	23,9
F.g. vol. partial load at AGT condens. mode [m³/h]	7,0				
F.g. temp. rated power standard heat. mode [°C]	60 - 90				
F.g. temp. partial load standard heat. mode [°C]	60 - 90				
F.g. vol. rated power at f.g.tem. standard heating mode [kg/h]	21,3	25,5	29,7	33,8	38,0
F.g. vol. partial load at f.g. tem. standard heating mode [kg/h]	7	7	7	7	7
F.g. vol. rated power at AGT standard heating mode [m³/h]	15,8	18,9	22,0	25,1	28,2
F.g. vol. partial load at AGT standard heating mode [m³/h]	5,2				
Flue gas tube diameter (at the boiler) [mm]	132 (interior)				
Connecting height flue [mm]	445				
Connecting height condensate drain [mm]	230				
Chimney diameter	as per chimney calculation, min. 130mm				
Chimney construction	qualified for condensing, solid fuel, damp resistant, N1 or P1 (depending on chimney calculation)				
Flue tube	Made off stainless steel, moisture-resistant, condensate-proof, min. 20 Pascal overpressure-tight				

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Chimney calculation					
Rated heating power [kW]	10,1	11,94	13,78	15,62	17,46
Firing thermal capacity nominal load [kW]	10,0	11,84	13,68	15,52	17,36
CO ₂ volume concentration nominal load [%]	12,1	12,66	13,22	13,78	14,34
Flue gas inertia current for chimney calculation nominal load [kg/s]	0,0058	0,0065	0,0072	0,0079	0,0086
Flue gas temperature for chimney calculation nominal load [° C]	45	45	45	45	45
Required (+) or maximum (-) delivery pressure nominal load [Pa]	-5	-5	-5	-5	-5
Rated heating power partial load [kW]	3,1	3,1	3,1	3,1	3,1
Rated thermal power partial load [kW]	3,1	3,1	3,1	3,1	3,1
CO ₂ volume concentration partial load [%]	8,5	8,5	8,5	8,5	8,5
Flue gas inertia current for chimney calculation partial load [kg/s]	0,0025	0,0025	0,0025	0,0025	0,0025
Flue gas temperature for chimney calculation partial load [° C]	40	40	40	40	40
Required (+) or maximum (-) delivery pressure partial load [Pa]	-8	-8	-8	-8	-8

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Dimensions					
Width - overall [mm]	1040				
Height - overall [mm]	1820				
Height - filling unit (handfilling) [mm]	1480				
Depth - overall [mm]	850				
Depth - overall [mm]	695				
Tilted height [mm]	1680				

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Weight					
Installation weight without attachments [kg]	293				
Volume hopper [kg]	32				
Ash capacity ash box [kg]	6				

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Electrical Components					
Connection value	230VAC / 50Hz / 16A / 1930W				
Main Drive [W]	40				
Main Drive [W]	40				
Drive Motor [W]	250 / 370				
Vacuum turbine [W]	1400				
Flue gas fan [W]	120				
Electrical Ignition - [W]	250				
Cleaning Motor [W]	40				
Motor hopper [W]	25				
Protection class	IP20				

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Insulation					
Cleaving	Special woll with glass fiber coating 0,035W/mK, 100mm				



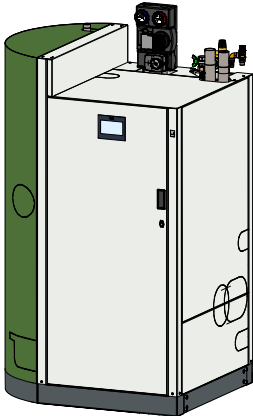
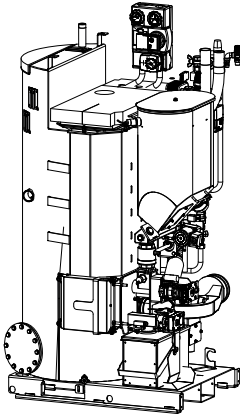
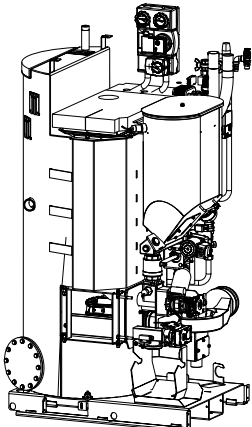
Further technical data and results of the type test available on request from your ÖkoFEN contact.

2 Notes on bringing the unit into the building

If an upright, ground-level transport of the Pellematic Smart XS to the installation location is not possible with a width of 85cm, certain components must be removed. This reduces the transport dimensions and weight and permits practicable transport to the installation location. You need several persons for transport to the installation location.

Minimum door width — max. unit dimension

Before bringing the unit into the building, check the dimensions of all doors to ensure that the boiler has sufficient clearance and can be set up properly.

Smart XS fully epuiped, not packed, without water	Smart XS without casing, fresh water module and air hose	Smart XS without casing, fresh water module, air hose, combustion chamber door and ashbox
		
Width - 104 cm Depth - 85 cm Weight - 445 kg	Width - 95 cm Depth - 76 cm Weight - 368 kg	Width - 95 cm Tief - 69,5 cm Weight - 357 kg
In order to reduce weight to 293 kg, burner and hopper may also be dismantled.		

Minimum clearance dimensions required

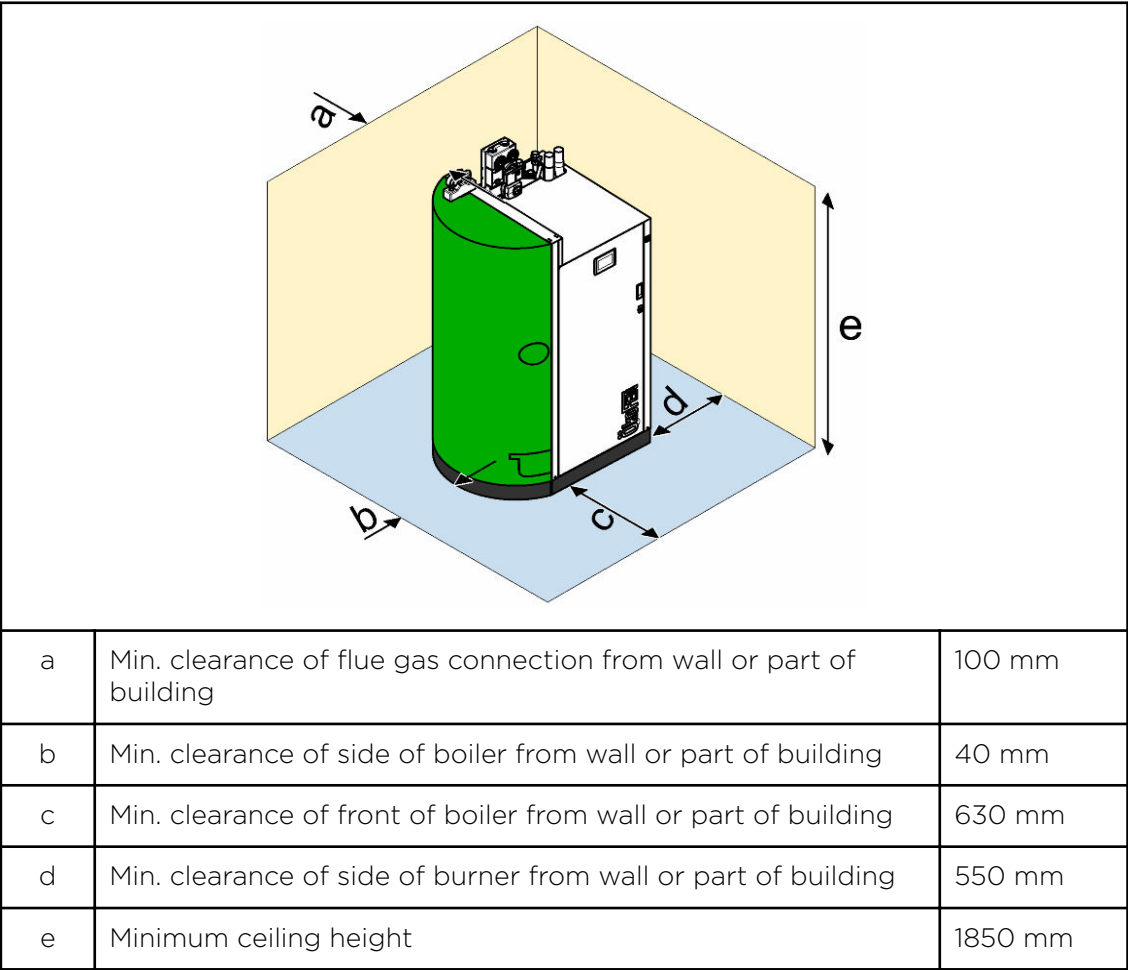


If possible, larger distances should be preferred in the interest of service friendliness.



To install the heating system properly and ensure economical operation, you need to make sure that minimum clearance dimensions indicated below are observed when setting up the boiler.

In addition, make sure that legislation in your country is complied with relating to the minimum clearance of the flue gas tube.



The indicated values must not fall below by piping or other.

NOTICE

Due to a low boiler surface temperature, the specified minimum distances can be observed.

- Legislation in your country must be observed!

