Technical data

Pellematic© PES(K)(B) 10 - 56

ENGLISH

Author

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1 Technical data

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

Designation of the series	Pellematic								
Model designation: Pellematic PE(S)	10	12	15	20	25	32	36	48	56
Manufacturer and contact details	ÖkoFEN Forschungs- und Entwicklungs GmbH, Gewerbepark 1, 4133 Niederkappel, Austria								
Boiler class	5								
Heat-up mode	Automatically								
Condensing boiler	no								
Solid fuel boiler with cogeneration system	no								
Combined heater	no								
Energy efficiency class	A+								
Energy efficiency index (EEI)	118			119	120	122	123		
seasonal space heating energy efficiency in active mode η_{son}	85	85	84	85	86	87	87	87	87
Seasonal space heating energy efficiency η_s (based on upper heating value)	79	80		81	82	83		84	
Delivered useful heat at nominal heat power P_n [kW]	10,0	12,0	15,0	20,0	25,0	32,0	36,0	48,0	56,0
Delivered useful heat at 30 % of the nominal heat power P_p [kW]	3,0	3,4	5,0	6,0	8,0	10,0	11,0	15,0	17,0
Boiler eff. rated power standard heat. mode [%]*	92,4	92,7	93,0	94,0	94,6	95,5			95,4

* 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.

Fuel	Pellets made of 100% natural wood according to EN ISO 17225–2, class A1
Colorific value [kWh/kg]	4,6 - 5,3
Bulk density [kg/m^3]	≥ 600
Water content [Gew.%]	≤ 10
Ash parts [Gew.%]	≤ 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								

Auxiliary power consumption									
Auxiliary power consumption at nominal heat power el_{max} [kW]	0,069		0,068	0,082	0,099	0,120			
Auxiliary power consumption at 30 % of nominal heat power el_{min} [kW]	0,030	0,029	0,027	0,029	0,033	0,036			
Standby auxiliary power consumption P_{SB} [kW]	0,007								

Water area									
Water capacity [l]	64				104		135		
Feed / return connection [inch]	1				5/4		2		
Feed / return connection Ø [DN]	25				32		50		
Water resistance at 10K [mbar]	54,7	95,2	150	220	284	376	38,9	51,9	60,5
Water resistance at 20K [mbar]	14,0	24,2	38,0	55,0	72,0	95,0	10,4	13,9	16,2
Boiler temperature [°C]	65 - 90								
Minimum boiler temperature [°C]	55								
Operating pressure maximum [Bar]	3								
Test pressure [Bar]	4,6								

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Flue gas area (Flue gas = F.g.)									
Combustion chamber temperature [°C]	500 - 870								
Need of draught rated power [mBar]	0,08								
Flue gas temperature partial load [mBar]	0,03								
Flue gas temp. rated power [°C]	160								
Flue gas temp. partial load [°C]	100								
F.g. volume rated power at f.g.tem. [kg/h]	20,3	24,2	30,4	39,2	48,0	66,5	73,1	92,9	106,1
F.g. volume partial load at f.g. tem. [kg/h]	6,4	7,9	10,3	14,6	19,0	28,1	31,0	39,8	45,6
F.g. volume rated power at AGT [m^3/h]	21,9	28,9	37,6	50,2	63,2	51,2	56,3	71,5	81,7
F.g. volume partial load at AGT [m^3/h]	5,8	6,9	10,9	13,0	17,4	21,6	23,9	30,6	35,1
Flue gas tube diameter (at the boiler) [mm]	130				150		180		
Chimney diameter	as per chimney calculation								
Chimney construction	as per chimney calculation								

Model designation	Pellematic								
	10	12	15	20	25	32	36	48	56
Chimney calculation									
Rated heating power [kW]	10	12	15	20	25	32	36	48	56
Firing thermal capacity nominal load [kW]	11	13	16	22	27	35	39	52	60
CO2 volume concentration nominal load [%]	12,9	13,0	13,2	13,6	13,2	13,0	14,4	15,4	16,0
Flue gas iniertia current for chimney calculation nominal load [kg/s]	0,0056	0,0067	0,0084	0,0109	0,0133	0,0185	0,0203	0,0258	0,0295
Flue gas temperature for chimney calculation nominal load [° C]	120	120	160	160	160	160	160	160	160
Required (+) or maximum (-) delivery pressure nominal load [Pa]	8	8	8	8	8	8	8	8	8
Rated heating power partial load [kW]	3,0	3,4	5,0	6,0	8,0	10,0	11,0	15,0	17,0
Rated thermal power partial load [kW]	3,20	3,69	5,20	6,59	8,78	11,0	12,1	16,5	18,7
CO2 volume concentration partial load [%]	10,1	9,6	8,6	10,5	10,6	10,7	10,5	10,7	10,8
Flue gas iniertia current for chimney calculation partial load [kg/s]	0,0014	0,0017	0,0022	0,0031	0,0041	0,0060	0,0066	0,0085	0,0098
Flue gas temperature for chimney calculation partial load [° C]	80	80	100	100	100	100	100	100	100
Required (+) or maximum (-) delivery pressure partial load [Pa]	3	3	3	3	3	3	3	3	3

Weight			
Weight of boiler packaged on pallet with wooden frame [kg]	385	470	650
Overall Weight [kg]	350	430	605
Boiler Body Weight [kg]	240	300	422
Ash capacity ash box [kg]	25	30	

Model designation	Pellematic
Electrical Components	
Connection value	230 VAC, 50Hz, 16A
Main Drive [W]	40
Drive Motor [W]	250 / 370
Vacuum turbine [W]	1400
Combustion Air Blower [W]	62
Flue gas fan [W]	9 - 120W
Electrical Ignition – [W]	250
Cleaning Motor [W]	40
Motor External Ash Box [W]	40
Motor Burner plate cleaning system [W]	40
Flame Return Gate [W]	5
Protection class	IP20

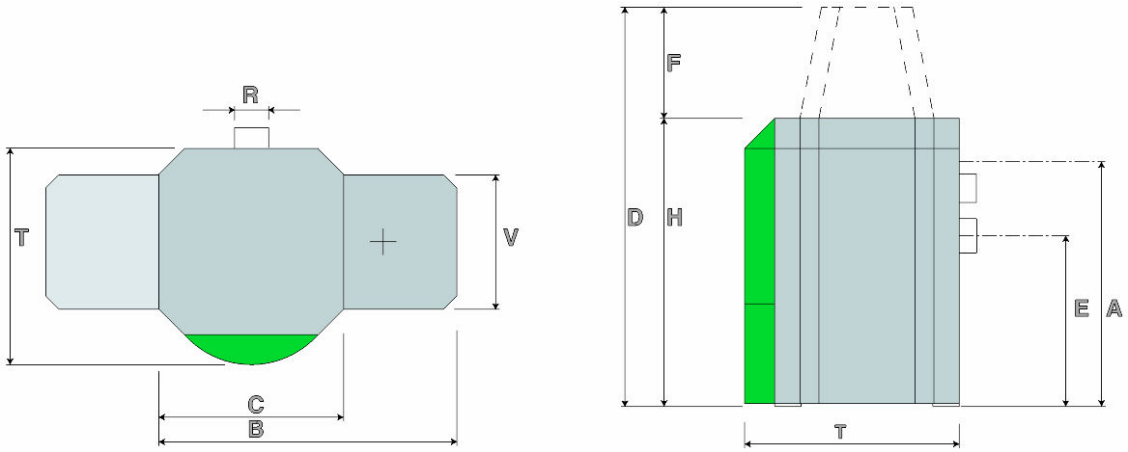
Further technical data and results of the type test available on request from your ÖkoFEN contact.

2 Notes on bringing the unit into the building

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.

		Minimum door width	Minimum ceiling height
PES, PESK	10, 12, 15, 20 kW	690 mm	1500 mm
PES, PESK	25, 32 kW	750 mm	1700 mm
PES	36, 48, 56 kW	800 mm	2000 mm

Boiler dimensions

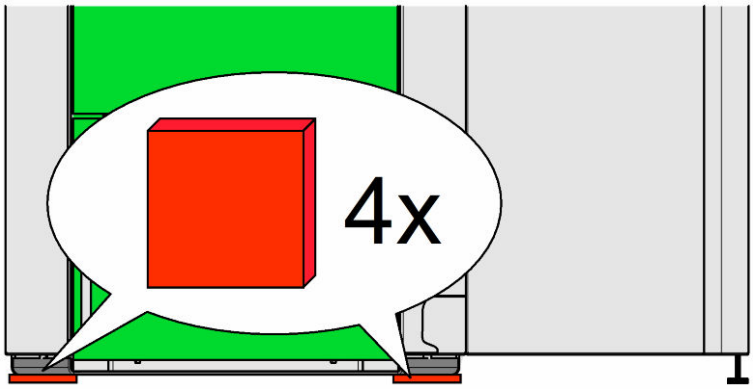


Boiler size in mm	PES 10	PES 12	PES 15	PES 20	PES 25	PES 32	PES 36	PES 48	PES 56
B: overall width of pellet boiler	1130				1186		1297		
C: width of boiler casing	705				761		862		
H: height of boiler casing	1090				1290		1553		
D: height of pellet suction system	1392				1592		1855		
F: height of suction system filling unite	302								
T: depth of boiler casing	814				870		990		
V: depth of burner casing	508								
E: height of flue gas tube connection	645				844		1040		
A: height of inlet/return	905				1100		1320		
R: diameter of flue gas tube	130				150		180		

Boiler Weight

Weight in kg	PES 10	PES 12	PES 15	PES 20	PES 25	PES 32	PES 36	PES 48	PES 56
Weight of boiler packaged on pallet with wooden frame	385				470		650		
Weight of boiler with casing, hopper and burner	350				430		605		
Weight of boiler without casing, hopper and burner	240				300		422		

Placement of rubber plates

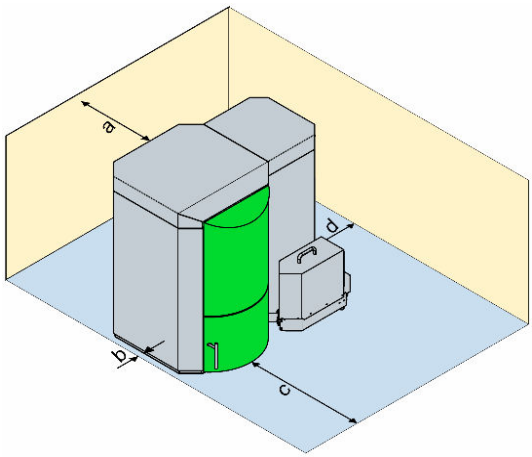


NOTICE

The pellet heating boiler must be placed on the supplied rubber plates.

Minimum clearance dimensions required

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.



a	Min. clearance of flue gas connection from wall or part of building	450 mm
b	Min. clearance of side of boiler from wall or part of building	50 mm
c	Min. clearance of front of boiler from wall or part of building	700 mm
d	Min. clearance of side of burner from wall or part of building	300 mm

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.

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PES, PESK	10, 12, 15, 20 kW	690 mm	1500 mm
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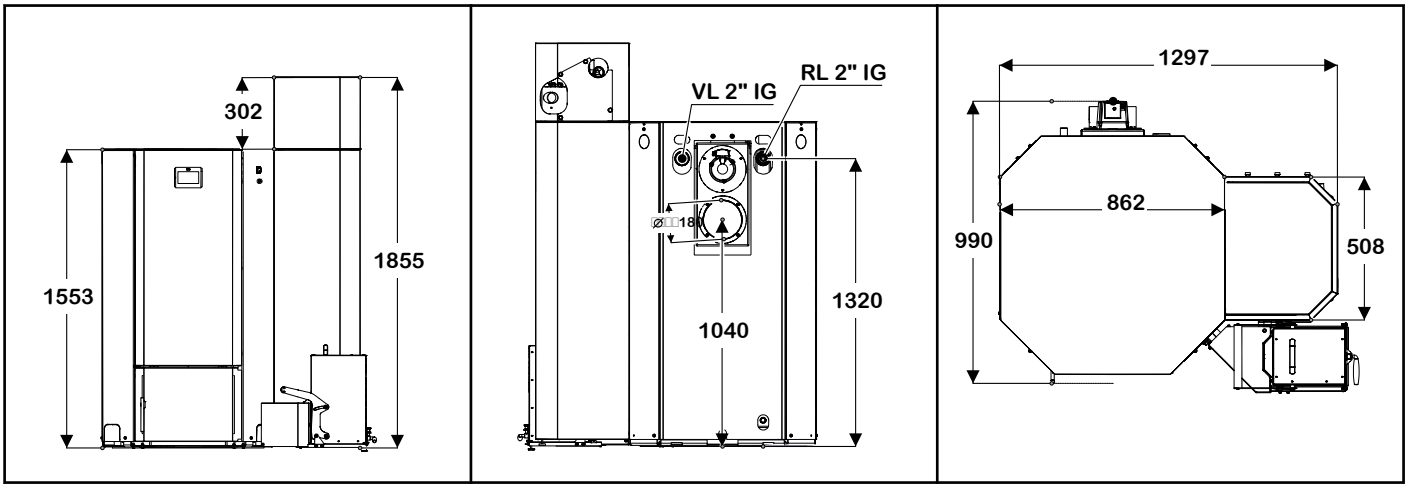

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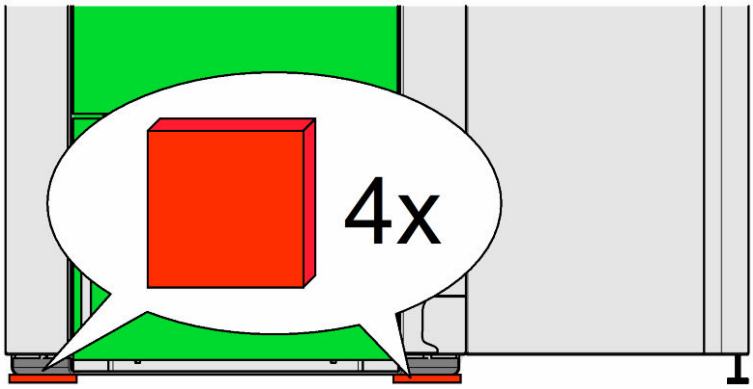

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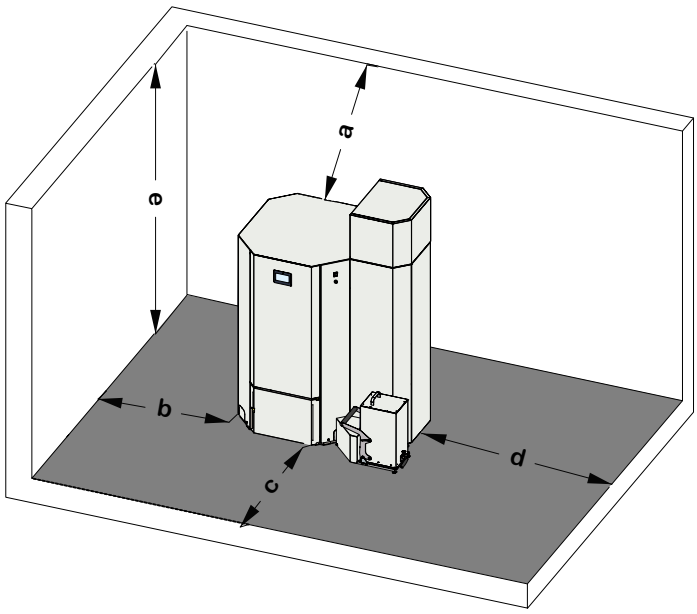

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b	Min. clearance of side of boiler from wall or part of building	50 mm
c	Min. clearance of front of boiler from wall or part of building	700 mm
d	Min. clearance of side of burner from wall or part of building	300 mm
e	Min. room height	2000 mm

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!