

# froling

## Product data SP Dual compact



All errors and omissions excepted.

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# 1 Technical specifications

## 1.1 SP Dual compact 15/20

### Technical specifications of the firewood boiler

Refer to the technical data of the firewood boiler for technical specifications and information regarding efficiency and emissions in firewood operation.

### Technical specifications of the pellet unit

Description		SP Dual compact	
		15	20
Nominal output	kW	15	20
Output range - pellet operation	kW	4,4-15,0	4,4-20,0
Electrical connection		230V / 50Hz / fused C16A	
Power consumption in pellet mode	W	37-56	37-63
Power consumption in slumber mode		3	
Boiler weight incl. pellet unit	kg	645	655
Weight of pellet unit		190	
Total boiler capacity (water)	l	105	
Pellet container capacity		40	
Water pressure drop ( $\Delta T = 10 / 20 \text{ K}$ )	mbar	4.5	
At least boiler return temperature	°C	60	
Max. permitted operating temperature	°C	90	
Permitted operating pressure	bar	3	
Boiler class as per EN 303-5:2012		5	
Permitted fuel as per EN ISO 17225		Part 2: Wood pellets class A1 / D06	
Airborne sound level	dB(A)	<70	
Test book number		PB 082	PB 083

Regulation (EU) 2015/1187		SP Dual compact	
		15	20
Energy efficiency class of boiler		A+	A+
Energy efficiency index (EEI) of boiler		118	118
Heating space annual rate of use $\eta_s$	%	80	80
Energy efficiency index (EEI) of boiler and controller combined		120	120
Energy efficiency class of boiler and controller combined		A+	A+

**Additional data for regulation (EU) 2015/1189**

Description		SP Dual compact	
		15	20
Heating up mode		automatic	
Condensing boiler		No	
Solid fuel boiler for combined heat and power		No	
Combined heating system		No	
Storage tank volume		↻ "Storage tank" ▶ 4]	
Characteristics when operated exclusively with the preferred fuel			
Useful heat delivered at rated heat output ( $P_n$ )	kW	15.2	19.5
Useful heat delivered at 30% of rated heat output ( $P_p$ )		4.4	4.4
Fuel efficiency at rated heat output ( $\eta_n$ )	%	88.1	87.3
Fuel efficiency at 30% of rated heat output ( $\eta_p$ )		84.3	84.3
Auxiliary current consumption at rated heat output ( $e_{l_{max}}$ )	kW	0.056	0.063
Auxiliary current consumption at 30% of rated heat output ( $\eta_p$ )		0.037	0.037
Auxiliary current consumption in standby mode ( $P_{SB}$ )		0.012	0.012

Regulation (EU) 2015/1189 – emissions in [mg/m <sup>3</sup> ] <sup>1)</sup>	
Annual space heating emissions of dust (PM)	≤ 30
Annual space heating emissions of gaseous organic compounds (GOC)	≤ 20
Annual space heating emissions of carbon monoxide (CO)	≤ 380
Annual space heating emissions of nitrogen oxides (NO <sub>x</sub> )	≤ 200

1. The emissions of dust, gaseous organic compounds, carbon monoxide and nitrogen oxides are stated in a standardised form based on dry flue gas with a oxygen content of 10 % and under standard conditions at 0°C and 1013 millibar

## 2 Storage tank

Observe the regional regulations for using a storage tank!

Certain subsidy guidelines prescribe compulsory requirements for the installation of storage tanks. Up-to-date information about individual subsidy guidelines can be found at [www.froeling.com](http://www.froeling.com).

Channelling the heat generated by the Dual fuel boiler to a storage tank can bring major advantages, such as

- better utilisation of fuel
- more user-friendly operation in terms of reloading intervals
- maximum independence from instantaneous heating requirements
- minimal dirt in boiler and flue gas system

As the boiler's minimum continuous heat output is 30% above the nominal heat output, we as boiler manufacturer are obliged under EN 303-5:2012, Section 4.4.6 to advise that the Dual fuel boiler SP Dual compact must always be connected to a storage tank with adequate storage capacity.

Certain countries have recommended storage capacities; these are listed below. The specified values apply when the nominal heat output of the boiler corresponds to the heating requirements of the building and a maximum of 50% of the nominal heat output can be dissipated to the building being heated under partial load conditions.

The storage tank capacity can be calculated according to EN 303-5:2012 using the following formula:

$$V_{Sp} = 15 T_B \times Q_N (1 - 0.3 \times Q_H / Q_{min})$$

$V_{Sp}$	Storage tank capacity in [l]
$Q_N$	Nominal heat output of boiler in [kW]
$T_B$	Burn-off period of boiler in [h] <sup>1)</sup>
$Q_H$	Heating load of building in [kW]
$Q_{min}$	Minimum heat output of boiler in [kW] <sup>2)</sup>

1. Sample combustion times for various fuels are provided in the technical data

2. The boiler's minimum output is the lowest value of the output range in the technical data. If there is no minimum heat output specified, use the nominal heat output ( $Q_{min} = Q_N$ )

For the correct dimensions of the storage tank and the line insulation (for instance to ÖNORM M 7510 or guideline UZ37) please consult your installer or Fröling.

### Recommended storage tank capacity:

	Unit	SP Dual compact 15	SP Dual compact 20
Recommended storage tank capacity <sup>1)</sup>	[l]	1000	1250
1. Values for calculating the capacity can be found in the technical data or the technical data with partial load inspection (if available)			

The exact design of the storage tank capacity is in accordance with the locally applicable guidelines and regulations:

*Austria* According to the relevant Austrian laws governing energy technology, which are based on Art. 15a B-VG "Agreement on protective measures for small furnaces" (2012):

No storage tank is required on manually fed biomass boilers that have been positively tested at both nominal load and partial load (below 50% of nominal load) to ensure they adhere to the emissions limits specified in that agreement.

*Germany* The first BImSchV (Ordinance on small and medium-sized heating plants of 26 January 2010, BGBl. I P. 38) stipulates a minimum water heat storage tank volume of 55 litres per kilowatt of rated heat output; a water heat storage tank with a volume of 12 litres per litre of fuel loading chamber is recommended.

*Switzerland* In accordance with the Swiss Federal Ordinance on Air Pollution Control (LRV 2018), appendix 3, paragraph 523 "Special requirements for boilers", hand-fed boilers up to 500 kW rated heat output must be fitted with a minimum heat storage tank volume of 12 litres per litre of fuel loading chamber. The volume may not fall below 55 litres per kW rated heat output.

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