

## Worcester 2000

30 C NG

7736902028

**Technical documentation (combination heater):** This document covers information requirements according (EU) No 811/2013, (EU) No 813/2013 as well as (EU) No 2017/1369, specifically Art. 12 (5) regarding: General description of the model, Measured technical parameters of the model.

**BOSCH** 

Productdata	Symbol	Unit	7736902028
Declared load profile			XL
Rated heat output		kW	20
Annual energy consumption (average climate conditions)	Q <sub>HE</sub>	kWh	62
Annual energy consumption	Q <sub>HE</sub>	GJ	-
Annual electricity consumption	AEC	kWh	26
Annual fuel consumption	AFC	GJ	18
Seasonal space heating energy efficiency	η <sub>s</sub>	%	93
Water heating energy efficiency	η <sub>wh</sub>	%	84
Sound power level, indoors	L <sub>WA</sub>	dB	43
Condensing boiler			Yes
Low temperature boiler			No
B1 boiler			No
Cogeneration space heater			No
Equipped with a supplementary heater?			-
Combination heater			Yes
Useful heat output			
At rated heat output and high temperature regime	P <sub>4</sub>	kW	20,0
At 30 % of rated heat output and low temperature regime	$P_1$	kW	6,7
Useful efficiency			
At rated heat output and high temperature regime	$\eta_4$	%	87,7
At 30 % of rated heat output and low temperature regime	η1	%	97,9
Auxiliary electricity consumption			
At full load	elmax	kW	0,028
At part load	elmin	kW	0,011
In standby mode	$P_{SB}$	kW	0,003
Other items			
Standby heat loss	P <sub>stby</sub>	kW	0,050
Ignition burner power consumption	$P_{ign}$	kW	-
Emissions of nitrogen oxides (only gas- or oil fired)	NO <sub>x</sub>	mg/kWh	35
Additional data for combination heaters			
Daily electricity consumption (average climate conditions)	Q <sub>elec</sub>	kWh	0,120
Daily fuel consumption	Q <sub>fuel</sub>	kWh	22,436



Technical documentation (temperature control): This document covers information requirements according (EU) No 811/2013.

Productdata	Symbol	Unit	7736902028
Class of the temperature control			V
Contribution of the temperature control to seasonal space heating efficiency		%	3,0



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The energy efficiency given in this data sheet for the product combination may deviate from the energy efficiency after its installation in a building, since this is influenced by other factors such as heat loss in the distribution system and the dimensioning of the products in relation to the size and characteristics of the building.

Information about calculating the space heating energy efficiency							
I Value for the space heating energy efficiency of the preferential space heater							
II Factor for the weighting of the heat output of the preferential and supplementary heaters of a package system							
III Value of the mathematical expression 294/(11 · Prated)	-	-					
Value of the mathematical expression 115/(11 · Prated)	-	-					
Seasonal space heating energy efficiency of the boiler I = 1	93	]%					
Temperature control (From the data sheet of the temperature control)     +     2	3,0	]%					
Class: I = 1 %, II = 2 %, III = 1.5 %, IV = 2 %, V = 3 %, VI = 4 %, VII = 3.5 %, VIII = 5 %							
Supplementary boiler (From the data sheet of the boiler) $( I) \times 0, 1 = \pm 3$	-	%					
Seasonal space heating energy efficiency (in %)							
Solar contribution $(III \times - + IV \times -) \times 0.9 \times (- /100) \times - = + 4$	-	<b>%</b>					
(From the data sheet of the solar device)		]					
Collector size (in m <sup>2</sup> )							
Storage tank volume (in m <sup>3</sup> )							
Collector efficiency (in %)							
Storage tank rating: A <sup>+</sup> = 0.95, A = 0.91, B = 0.86, C = 0.83, D-G = 0.81							
Supplementary heat pump (from the data sheet of the heat pump) $( I) \times II = + 5$	-	]%					
Seasonal space heating energy efficiency (in %)							
Solar contribution AND supplementary heat pump     0,5     x     4     -     OR     0,5     x     5     -     =     -     6       (Select smaller value)     (Select smaller	-	]%					
Seasonal space heating energy efficiency of the package system 7	96	%					
Seasonal space heating energy efficiency class of the package system		•					
$G < 30 \%, F \ge 30 \%, E \ge 34 \%, D \ge 36 \%, C \ge 75 \%, B \ge 82 \%, A \ge 90 \%, A^+ \ge 98 \%, A^{++} \ge 125 \%, A^{+++} \ge 150 \%$							
Installation of boiler and supplementary heat pump with low-temperature heat radiators (35 °C)?							
(From the data sheet of the heat pump) $7 96 + (50 \times II) =$	-	%					

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Inf	ormation about cal	culating the water heating energy efficiency				
I	Value of the water h	neating energy efficiency of the combination heater, exp	ressed in %	84	%	
II	Value of the mathematical expression (220 · Qref)/Qnonsol				-	
III	Value of the mather	natical expression (Qaux · 2.5)/(220 · Qref)		-	-	
Water heating energy efficiency of the combination heater   I   =   1     Given load profile   XL						
So	lar contribution (Fr	om the data sheet of the solar device)	$(1,1 \times I - 10 \%) \times II - III - I = + 2$	-	%	
Water heating energy efficiency of the package system with average climate conditions       3						
Wa	iter heating energy	efficiency class of the package system with average	climate conditions	A	•	
Loa	ad profile M:	G < 27 %, F ≥ 27 %, E ≥ 30 %, D ≥ 33 %, C ≥ 36 %	%, B ≥ 39 %, A ≥ 65 %, A <sup>+</sup> ≥ 100 %, A <sup>++</sup> ≥ 130 %, A <sup>+++</sup> ≥ 1	63%		
Loa	ad profile L:	G < 27 %, F ≥ 27 %, E ≥ 30 %, D ≥ 34 %, C ≥ 37 %	%, B ≥ 50 %, A ≥ 75 %, A <sup>+</sup> ≥ 115 %, A <sup>++</sup> ≥ 150 %, A <sup>+++</sup> ≥ 1	88%		
Loa	ad profile XL:	G < 27 %, F ≥ 27 %, E ≥ 30 %, D ≥ 35 %, C ≥ 38 %	%, B ≥ 55 %, A ≥ 80 %, A <sup>+</sup> ≥ 123 %, A <sup>++</sup> ≥ 160 %, A <sup>+++</sup> ≥ 2	00 %		
Loa	ad profile XXL:	$G < 28\%, F \ge 28\%, E \ge 32\%, D \ge 36\%, C \ge 40\%$	%, B $\ge$ 60 %, A $\ge$ 85 %, A <sup>+</sup> $\ge$ 131 %, A <sup>++</sup> $\ge$ 170 %, A <sup>+++</sup> $\ge$ 2	13%		
Wa	iter heating energy	efficiency				
- v	vith colder climate	conditions:	<b>3</b> 0,2 x <b>2</b> - =	-	%	
- v	vith warmer climate	e conditions:	<b>3</b> - +0,4x <b>2</b> - =	-	%	