



# BioFire 500-1500 P45S

	500	600	800	1000	1250	1500
size of heat exchanger [m <sup>2</sup> ]	31,23	37,25	42,85	47,77	52,77	57,77
heat exchanger - number of tube rows / conduits	1 / 63	1 / 77	1 / 77	1 / 77	1 / 110	1 / 110
size of grate surface [m <sup>2</sup> ]	0,68	0,83	1,01	1,01	1,25	1,25
volume of combustion chamber [m <sup>3</sup> ]	1	1,15	1,66	1,66	2,5	2,5
size of safety heat exchanger [m <sup>2</sup> ]	1,64	1,95	2,27	2,27	2,27	2,27
minimum flow safety heat exchanger [ltr./h]	> 1200					
minimum pressure cold water [bar]	2					
opening temperature thermal safety valve [°C]	95 - 108					
number of thermal safety valve [Stk.]	2					
minimal volume of buffer tank [litr.]	5000		10000		20000	
<b>electrical datas</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
electrical connection [V/Hz/A] / delivery rate [kW]	3x 400/50/16 / -					
electric power consumption at nominal load [kW]	-1,8	-2,2	-2,7	-3,3	-3,8	-3,8
electric power consumption at part load [kW]	-0,7	-0,9	-1,1	-1,4	-1,6	-1,6
electric power consumption at "stand by" mode [kW]	-	-	-	-	-	-
secondary air fan 1 [kW]	0,38	0,38	0,38	0,38	0,38	0,38
secondary air fan 1 - cable cross section [mm <sup>2</sup> ] / amount "wires"	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6
secondary air fan 2 [kW]	0,38	0,38	0,38	0,38	0,38	0,38
secondary air fan 2 - cable cross section [mm <sup>2</sup> ] / amount "wires"	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6
motor burn back protection device [kW]	0,0065	0,0065	0,0065	0,0065	0,0065	0,0065
motor bbpd - cable cross section [mm <sup>2</sup> ] / amount "wires"	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6
bypass motor [kW]	0,0065	0,0065	0,0065	0,0065	0,0065	0,0065
bypass motor - cable cross section [mm <sup>2</sup> ] / amount "wires"	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6	0,75 / 6
heat exchanger cleaning [kW]	0,55	0,55	0,55	0,55	0,55	0,55
heat exchanger cleaning - cable cross section [mm <sup>2</sup> ] / amount "wires"	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
flue ash discharge [kW]	0,37	0,37	0,37	0,37	0,37	0,37
flue ash discharge - cable cross section [mm <sup>2</sup> ] / amount "wires"	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
ash discharge [kW]	0,37	0,37	0,37	0,37	0,37	0,37
ash discharge - cable cross section [mm <sup>2</sup> ] / amount "wires"	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4	1 / 4
primary air fan 1 [kW]	0,4	0,4	0,4	0,4	0,4	0,4
primary air fan 1 - cable cross section [mm <sup>2</sup> ] / amount "wires"	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3
primary air fan 2 [kW]	0,12	0,12	0,12	0,12	0,12	0,12
primary air fan 2 - cable cross section [mm <sup>2</sup> ] / amount "wires"	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6	0,5 / 6
motor ash scraper floor [kW]	0,37	0,37	0,37	0,37	0,37	0,37
motor ash scraper floor - cable cross section [mm <sup>2</sup> ] / amount "wires"	- / -	- / -	- / -	- / -	- / -	- / -
motor grate above/below [kW]	0,25	0,25	0,25	0,25	0,25	0,25
motor grate above/below - cable cross section [mm <sup>2</sup> ] / amount "wire"	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3
motor feeding [kW]	1,50	1,50	1,50	1,50	1,50	1,50
motor stoker - cable cross section [mm <sup>2</sup> ] / amount "wires"	1,5 / 4	1,5 / 4	1,5 / 4	1,5 / 4	1,5 / 4	1,5 / 4
ignition fan [kW]	1,6	1,6	1,6	1,6	1,6	1,6
ignition fan - cable cross section [mm <sup>2</sup> ] / amount "wires"	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3	1 / 3
flue gas fan [kW]	3	6	6	6	6	6
flue gas fan - cable cross section [mm <sup>2</sup> ] / amount "wires"	2,5 / 5	2,5 / 5	2,5 / 5	2,5 / 5	2,5 / 5	2,5 / 5
<b>emissions (nominal load) - wood chips</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
exhaust gas temperature [°C]	-150	-120	-140	-160	-130	-150
mass flow flue gas [kg/s]**	0,365	-0,45	0,532	0,678	0,891	1,064
volume flow flue gas [Nm <sup>3</sup> /h]**	1012	-1245	1473	1877	2468	2946
volume flow flue gas [***Bm <sup>3</sup> /h]**	1567	-1929	2228	2977	3642	4564
CO <sub>2</sub> -content [Vol. %]*	12,33	-12	12,55	12,27	12,43	12,65
efficiency [%]	92,4	-92,5	93,2	91,1	93,4	92,6
<b>emissions (part load) - wood chips</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
exhaust gas temperature [°C]	-90	-90	-90	-90	-90	-90
mass flow flue gas [kg/s]**	0,122	-0,147	0,177	0,221	0,309	0,37
volume flow flue gas [Nm <sup>3</sup> /h]**	337	-407	490	612	855	1025
volume flow flue gas [***Bm <sup>3</sup> /h]**	448	-541	651	814	1136	1363
CO <sub>2</sub> -content [Vol. %]*	11,23	-11	11,02	11,02	10,82	10,82
efficiency [%]	91,2	-92,5	94,5	94,5	94,3	94,3
<b>reportdatas</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
report log-number	39-9910/T4	-	39-9910/T2	39-9910/T3	39-9910/T2	39-9910/T2
testing institute	SZU	-	SZU	SZU	SZU	SZU
<b>inserting dimensions heat exchanger module</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
length [mm]	1400	1600	1600	1600	1600	1600
width [mm]	1400	1400	1400	1400	1980	1980
height [mm]	1977	1977	1977	2177	2480	2480
<b>inserting dimensions combustion chamber module</b>	<b>500</b>	<b>600</b>	<b>800</b>	<b>1000</b>	<b>1250</b>	<b>1500</b>
length [mm]	2200	2400	2400	2400	2800	2800
width [mm]	140	1400	1400	1400	1980	1980
height [mm]	1977	1977	1977	2177	2480	2480

**notes:**

\* measured value according test report

\*\* calculated with fuel values from test report

\*\*\* Operating cubic meter (calculated with fuel values from test report)

**technical notes:**acceptable fuel

wood chips M40 (water content max. 40% / water content min. 15%) according - EN ISO17225-4: quality class A1, A2, B1 and particle size P16S, P31S und P45S

heating water:

With regard to the quality of the heating water, take into account ÖNORM H 5195 (current edition), EN 12828 part 1, for germany: VDI 2035.

Regardless of the respective standards or guidelines, the following values apply as a minimum requirement for filling and supplementary water:

conductivity: &lt;150µS / pH: 8,2 - 10 / total hardness: &lt;0,1mmol/l

If a standard or guideline requires a lower value, this is to be used. The heating water must be checked at regular intervals in accordance with the applicable regulation. The results must be documented and kept.

buffer tank:

A buffer tank is not required if guaranteed:

permanent minimum heat decline: 100% of the nominal load for min. 3 hrs. or 30% of the nominal load for min. 5 hrs.

The size of the buffer tank depends on the system. This must be calculated by planner in accordance with the present heating system.

minimum heat loss:

permanent minimum heat loss (24 hrs.) for maintenance of combustion:

40% of nominal load at moist fuel M40 or „W40“

changes in the senses of the technical progress reserve!

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