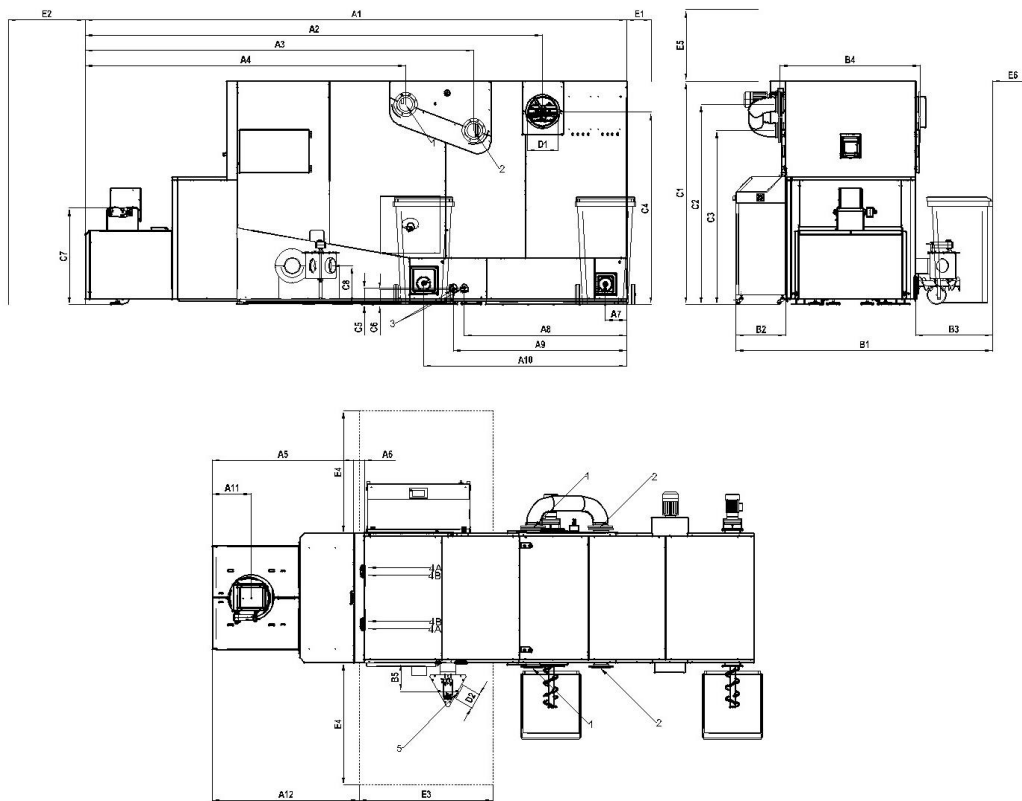


Created: RB

Responsible: RST (Construction)

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Dimensions			400-500	600-800	1000	1250-1500
A1	Length	mm	4490	4980	5285	5890
A2	Length	mm	3800	4160	4465	5070
A5	Length	mm	1380	1380	1380	1560
A6	Length	mm	100			
A7	Length	mm	210			
A10	Length	mm	1630	1905	1980	1980
A11	Length	mm	380			
A12	Length	mm	1450	1450	1450	1640
B1	Width	mm	2505	2505	2505	2865
B2	Width	mm	480			
B3	Width	mm	750			
B4	Width	mm	1370	1370	1370	1735
C1	Height	mm	1990	1990	2190	2475
C4	Height	mm	1685	1685	1890	2185
C7	Height	mm	945			
C8	Height	mm	380			
D1	Diameter flue pipe	mm	300			
Minimal gap			400-500	600-800	1000	1250-1500
E1	[min]	mm	150			
E2	[min]	mm	750			
E3	[min]	mm	1100	1310	1310	1450
E4	[min]	mm	1200			
E5	[min]	mm	700	700	700	850
E6	[min]	mm	400			

Inserting dimensions heat exchanger module			400-500	600-800	1000	1250-1500
Length		mm	1400	1600	1600	1600
Width		mm	1400	1400	1400	1980
Height		mm	1977	1977	2177	2480
Inserting dimensions combustion chamber module			400-500	600-800	1000	1250-1500
Length		mm	2200	2400	2400	2800
Width		mm	1400	1400	1400	1980
Height		mm	1977	1977	2177	2480
Connections			400-500	600-800	1000	1250-1500
1	Flow	DN100 / PN6	DN125 / PN6			
A4	Length	mm	2600	2825	3130	3735
C2	Height	mm	1760	1760	1965	2265
2	Backflow	DN100 / PN6	DN125 / PN6			
A3	Length	mm	3255	3490	3795	4400
C3	Height	mm	1510	1510	1710	2010
3	Filling/drain	3/4" IG				
A8	Length	mm	1320	1585	1585	1585
A9	Length	mm	1420	1690	1690	1695
C5	Height	mm	165			
C6	Height	mm	150			
4A	Safety heat exchanger input			1" IG		
4B	Safety heat exchanger output			1" IG		
5	Connection flue gas recirculation (optional) [mm]			150		
B5	Width	mm	270	270	270	250
D2	Diameter flue gas recirculation (optional)		mm	150		
C8	Height	mm	380			

Changes in the sense of the technical progress reserved



BioFire 400-1500

Development / Technical Documentation / Standard Specification Sheet

TD_NB_biofire 400-1500_ENG_rev.01

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Power Data (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Power range - declaration at rating plate	kW	117 - 400	117 - 450	145,4 - 500	180 - 600	240 - 800	300 - 1000	375 - 1250	450 - 1500
Fuel heat output	kW	430 / 420	483 / 473	541 / 538	649 / 645	858 / 857	1086 / 1092	1338 / 1335	1615 / 1616
Efficiency* Nominal Load	%	93,1 / 95,2	94,2 / 95,5	95,3 / 95,8	95,0 / 95	94,4 / 94,4	93,7 / 93,8	93,4 / 93,3	93 / 92,8
Boiler class EN 303-5		5							
Boiler Data (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Boiler weight	kg	5317	5317	5317	5915	5915	6796	10003	10003
Operation temperature [max]	°C	102							
Setting Safety Temperature Limiter [max]	°C	110							
Grate area	m ²	0,68	0,68	0,68	0,83	0,83	1,01	1,25	1,25
Volume combustion chamber	m ³	1	1	1	1,15	1,15	1,66	2,5	2,5
Operating overpressure [min. / max.]	bar	1,5 / 6							
Number of thermal safety valves		2							
Recommended minimal volume of buffer tank	l	5000	5000	5000	5000	10000	10000	20000	20000
Opening temperatur Thermal safety valve	°C	95 - 108							
Heat exchanger [Nr. conduits / Nr. tubes]		1 / 63	1 / 63	1 / 63	1 / 77	1 / 77	1 / 77	1 / 110	1 / 110
Surface heat exchanger	m ²	31,23	31,23	31,23	37,25	37,25	42,85	70,7	70,7
Safety-Heat-Exchanger surface	m ²	1,64	1,64	1,64	1,95	1,95	2,27	2,27	2,27
Flow safety heat exchanger [min]	l/h	per > 1200							
Pressure cold water [min]	bar	2							
Weight of combustion chamber modul	kg	1263	1263	1263	1375	1375	1650	2232	2232
Weight of heat exchanger modul	kg	2138	2138	2138	2430	2430	2828	4200	4200
Weight feed-in (charging auger with RSE)	kg	180	180	180	180	180	180	241	241
Weight of boiler covering and control weight	kg	471	471	471	511	511	571	611	611
Weight of burner (trough, grate elements, drive, etc.)	kg	675	675	675	750	750	835	1530	1530
Weight of combustion chamber stones	kg	470	470	470	550	550	613	1010	1010
Weight of accessories and ash removal	kg	120	120	120	120	120	120	180	180
Min. / max. delivery pressure	mbar	0,05 / 0,10							
Hydraulic Data (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Water capacity	l	1146	1146	1146	1660	1660	1950	3275	3275
Min. flow rate at ΔT = 20K and partial load	l/h	5160	5160	6449	7739	10318	12898	16122	19347
Resistance of boiler at ΔT = 10K	mBar	57	68	88	61	95	185	112	168
Resistance of boiler at ΔT = 20K	mBar	31	39	47	37	41	78	51	74
Resistance of boiler at ΔT = 35K	mBar	21	27	36	28	31	44	34	47
Electrical Data (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Electrical connection	V/Hz/A	3x 400 / 50 / 32							
Electric power consumption at nominal load	kW	0,758	0,758	1,026	~2,2	~2,7	~3,3	~3,8	~3,8
Electric power consumption at part load	kW	0,433	0,433	0,441	~0,9	~1,1	~1,4	~1,6	~1,6
Electric power consumption at "stand by" mode	kW	0,010							
Test Report Data		400	450	500	600	800	1000	1250	1500
Test report reference number		32-10982/T	32-10982/T	32-10982/T	39-17150/1/T	39-17150/1/T	39-17150/2/T	39-17150/2/T	39-17150/2/T
Test institute		SZU							

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Emissions (nominal load) (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Exhaust gas temperature	°C	~110 / 110	~120 / 120	~150 / 150	~120 / 120	~140 / 140	~160 / 160	~130 / 130	~150 / 150
Mass flow flue gas**	kg/h	957,6 / 954	1076,4 / 1072,8	1314 / 1288,8	1620 / 1587,6	1915,2 / 1850,4	2440,8 / 2268	3207,6 / 2934	3830,4 / 3481,2
Volume flow flue gas**	Nm³/h	735,8/733,5	827,8/825,1	1012 / 992	~1245 / 1222	~1473 / 1424	1877 / 1743	2468 / 2258	2946 / 2679
Volume flow flue gas**	***Bm³/h	956,6/953,5	1161 / 1157	1567 / 1537	~1929 / 1984	~2228 / 2154	2977 / 2765	3642 / 3333	4564 / 4150
CO ² -content*	Vol. %	12,06/12,28	12,06/12,28	12,82/ 13,17	~13,26 / 13,08	~13,6 / 13,43	14,12 / 13,61	13,39 / 13,09	12,65 / 12,56
Efficiency [%]	%	93,1 / 95,2	94,2 / 95,5	95,3 / 95,8	95,0 / 95	94,4 / 94,4	93,7 / 93,8	93,4 / 93,3	93 / 92,8
Emissions (partial load) (wood chips / pellets)		400	450	500	600	800	1000	1250	1500
Exhaust gas temperature	°C	~80 / 80	~80 / 80	~90 / 90	~90 / 90	~90 / 90	~90 / 90	~90 / 90	~90 / 90
Mass flow flue gas**	kg/h	352,8 / 374,4	352,8 / 374,4	439,2 / 424,8	529,2 / 432	637,2 / 619,2	795,6 / 774	1112,4 / 972	1332 / 1166,4
Volume flow flue gas**	Nm³/h	271,1 / 287,0	271,1 / 287,0	337 / ~326	~407 / 333	~490 / 477	612 / 597	~855 / 747	1025 / 896
Volume flow flue gas**	***Bm³/h	371 / 350,5	371 / 350,5	448 / ~434	~541 / 443	~651 / 635	814 / 793	~1136 / 993	1363 / 1191
CO ² -content*	Vol. %	9,75 / 8,85	9,75 / 8,85	9,20 / 11,70	~11,64 / 9,62	~10,45 / 11,52	11,29 / 11,40	~11,06 / 11,26	10,82 / 11,11
Efficiency [%]	%	92,6 / 94,5	93,8 / 95,2	95,0 / 95,9	95 / 95,9	95,2 / 95,8	95,3 / 95,7	94,8 / 94,9	94,3 / 94,1

Notes:

* measured value according test report

** calculated with fuel values from test report

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

Nm³/h = Standard cubic meters / hour

Bm³/h = Operating cubic meters / hour

Technical notes:

Permissible fuel:

Wood pellets according to - EN ISO 17225-2 Property class: A1, A2 - Enplus - DINplus - Swissspellet

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

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: <150µS / pH: 8,2 - 10 / total hardness: <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“

Maintenance/service:

The specified free areas must be strictly adhered to when carrying out maintenance and service work.