

# Installation dimensions

*KWB Multifire*

Classicfire  
Combifire

Easyfire 1  
Easyfire 1 Plus

Easyfire

Pelletfire Plus

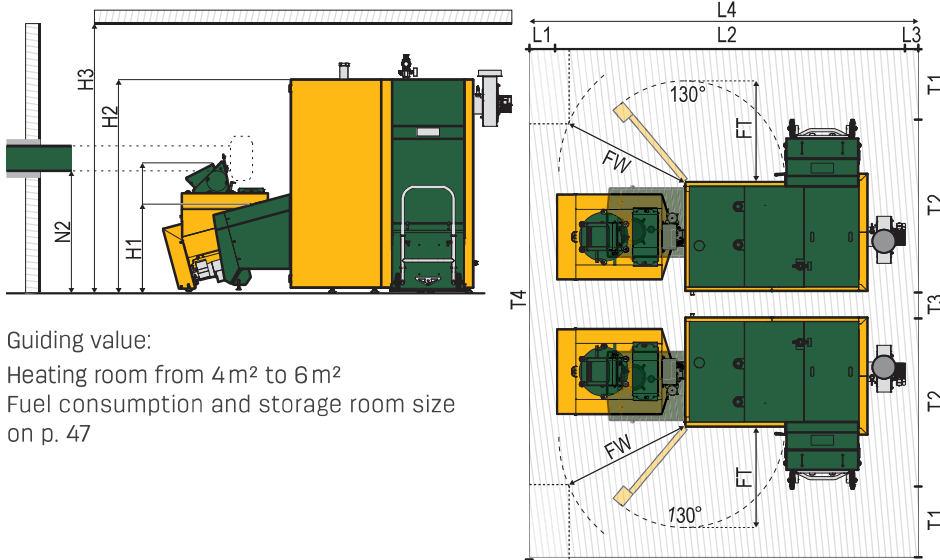
Multifire

Powerfire

Control  
C3 & C4

Conveyor and  
storage  
systems

Storage and  
hydraulic  
systems



**Conveyor and storage systems**  
for pellets P. 48–81  
for wood chips P. 68–81

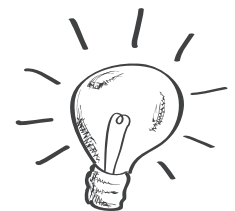
Guiding value:  
Heating room from 4 m<sup>2</sup> to 6 m<sup>2</sup>  
Fuel consumption and storage room size  
on p. 47

[cm]		MF2 20–50kW		MF2 60–80 kW		MF2 100–120 kW	
		D	ZI	D	ZI	D	ZI
H1	Connection boiler-conveyor system: upper dropping edge cellular wheel sluice P16S	92	–	92	–	92	–
	Connection boiler-conveyor system: upper dropping edge cellular wheel sluice P31S	–	–	103	–	103	–
	Connection boiler-conveyor system: upper dropping edge - fire shutter ZI	–	102	–	102	–	102
H2	Height KWB Multifire	159	159	167	167	167	167
H3	Min. room height	198 (210 recommended)	198 (210 recommended)	200 (215 recommended)	200 (215 recommended)	206 (215 recommended)	206 (215 recommended)
	Min. room height - exhaust pipe is placed above heat exchanger	219 (∅ 150)	219 (∅ 150)	231 (∅ 180)	231 (∅ 180)	233 (∅ 200)	233 (∅ 200)
UK	Lower edge conveyor channel M P16S / P31S	88 / 98	97 / –	88 / 98	97 / –	88 / 98	97 / –
L1	Free space P16S / P31S	30 / –	22 / –	34 / 25	21	34 / 25	21
L2	Heating system length P16S / P31S	212 / –	252 / –	234 / 243	247 / –	246 / 255	286 / –
L3	Free space	7	7	7	7	7	7
L4	Min. room length P16S / P31S	>254	>284	>276 / >275	>306	>288 / >287	>318
T1	Free space	40	40	40	40	40	40
T2	Heating system depth	124	124	135	135	135	135
T3	Free space	7	7	7	7	7	7
T4	Min. room depth	>171	>171	>182	>182	>182	>182
FW	Clearance for maintenance	± =	65	70	70	70	70
FT	Door clearance	± ×	63	76	76	76	76

D ... KWB Multifire type MF2 D    ZI ... KWB Multifire type MF2 ZI

## Dimensions for moving the boiler into the respective space

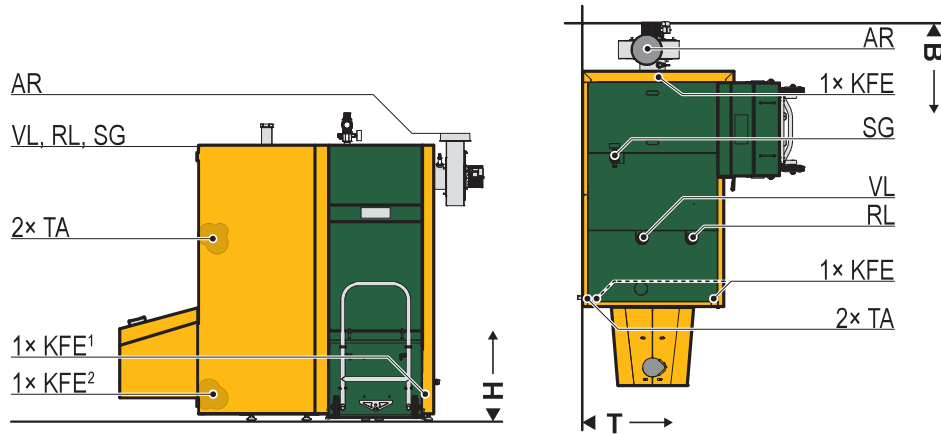
KWB Multifire	Conditioned as delivered	Disassembled state Combustion chamber	Disassembled state Heat exchanger
Type MF2 D / ZI 20–50 kW	154×66×168	96×66×120	72×66×168
Type MF2 D / ZI 60–120 kW	185×80×180	115×77×130	86×80×180



All dimensions in cm | Width x Height | Distances stated are minimum!

# Connecting dimensions

KWB Multifire



Legend	Connecting dimensions MF2	20–50 kW	60–80 kW	100–120 kW		
AR	Exhaust gas pipe	Ø 15 W: 72	Ø 18 W: 85	Ø 20 W: 85		
	Exhaust pipe upwards	H: 166 D: 37	H: 175 D: 39	H: 175 D: 39		
	Exhaust pipe upwards with bend	H: 184	H: 192	H: 192		
	Exhaust pipe upwards with bend via heat exchanger	H: 196	H: 206	H: 215		
	Exhaust pipe 90° rear (for fuel supply from the left)	H: 140 D: 11	H: 144 D: 16	H: 144 D: 16		
	Exhaust pipe 90° front (for fuel supply from the left)	H: 140 D: 64	H: 152 D: 69	H: 152 D: 69		
	Exhaust pipe 90° rear (for fuel supply from the right)	H: 140 D: 11	H: 152 D: 16	H: 152 D: 16		
	Exhaust pipe 90° front (for fuel supply from the right)	H: 140 D: 64	H: 144 D: 69	H: 144 D: 69		
	FF	Forward flow	Ø 32, G 5/4" H: 157 W: 44 D: 32	Ø 50, G 2" H: 180 W: 44 D: 36	Ø 50, G 2" H: 180 W: 44 D: 36	
RL			Return flow	Ø 32, G 5/4" H: 157 W: 44 D: 56	Ø 50, G 2" H: 180 W: 44 D: 65	Ø 50, G 2" H: 180 W: 44 D: 65
				SG	Safety group	Ø R 1" H: 157 W: 72 D: 17
TA	Thermal safety valve - inflow	Ø R 1/2" H: 107 W: 29 D: 42	Ø R 1/2" H: 127 W: 31 D: 47			Ø R 1/2" H: 127 W: 31 D: 47
		TA	Thermal safety valve - outflow			Ø R 1/2" H: 107 W: 29 D: 32
KFE <sup>1</sup>	Connecting height boiler filling and emptying			Ø Rp 3/4" H: 23 W: 23 D: 37	Ø Rp 3/4" H: 23 W: 28 D: 42	Ø Rp 3/4" H: 23 W: 28 D: 42
		KFE <sup>2</sup>	Connecting height boiler filling and emptying	Ø Rp 3/4" H: 22 W: 117 D: 66	Ø Rp 3/4" H: 22 W: 137 D: 77	Ø Rp 3/4" H: 22 W: 150 D: 77

H ... Height D ... Depth W ... Width

All dimensions in cm

Classicfire  
Combifire

Easyfire 1  
Easyfire 1 Plus

Easyfire

Pelletfire<sup>Plus</sup>

Multifire

Powerfire

Control  
C3 & C4

Conveyor and  
storage  
systems

Storage and  
hydraulic  
systems

# Technical specifications

## KWB Multifire – wood chip operation

Classicfire  
 Combifire  
 Easyfire 1  
 Easyfire 1 Plus  
 Easyfire  
 Pelletfire Plus  
 Multifire  
 Powerfire  
 Control C3 & C4  
 Conveyor and storage systems  
 Storage and hydraulic systems

MF2 D / MF2 ZI	Unit	20	30 <sup>1</sup>	30 <sup>2</sup>	40	45 <sup>1</sup>	50 <sup>1</sup>	60 <sup>1</sup>	65 <sup>1</sup>	70 <sup>1</sup>	80	100 <sup>2</sup>	108 <sup>1</sup>	120
Rated power	kW	20	30	32,5	40	45	49,5	60	65	69,5	80	99	101	120
Partial load	kW	6,0	9,0	9,8	12,0	13,5	15,0	18,0	19,5	20,9	24,0	30,0	32,4	36,0
Boiler efficiency at rated power	%	93,0	93,6	93,8	94,2	94,2	94,2	94,2	94,2	94,2	94,2	94,3	94,3	94,4
Boiler efficiency at partial load	%	90,2	91,6	92,0	93,0	93,1	93,2	93,5	93,6	93,7	94,0	94,4	94,6	94,8
Fuel thermal output at rated power	kW	21,5	32,1	34,7	42,5	47,8	52,5	63,7	69,0	73,8	84,9	106,0	114,5	127,1
Fuel thermal output at partial load	kW	6,7	9,8	10,7	12,9	14,5	16,1	19,3	20,8	22,3	25,5	31,8	34,2	38,0
Boiler class according to EN 303-5:2012	-	5	5	5	5	5	5	5	5	5	5	5	5	5
<b>Water side</b>														
Water content	l	155	155	155	135	135	135	165	165	165	165	195	195	195
Water connection, forward/return flow (internal thread) without return-flow boost device	Inch mm DN	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	6/4 50,1 50	6/4 50,1 50	6/4 50,1 50	6/4 50,1 50	6/4 50,1 50	6/4 50,1 50
Water connection, forward/return flow (internal thread) with return-flow boost device	Inch mm DN	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	5/4 31,8 32	6/4 38,1 40	6/4 38,1 40	6/4 38,1 40	6/4 38,1 40	2 50,1 50	2 50,1 50	2 50,1 50
Water connection for filling and/or emptying (internal thread)	inch mm	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05
Water connection for thermal safety valve (external thread)	Inch mm	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7
Thermal safety valve: pressure	bar	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6
Thermal safety valve: required cold water temperature	°C	20	20	20	20	20	20	20	20	20	20	20	20	20
Water-side resistance at 10 K	mbar Pa	36,97 3697	36,97 3697	85,38 8538	153,75 15375	200,2 20020	242,08 24208	56,10 5610	67,2 6720	77,2 7720	100,61 10061	158,03 15803	172,8 17280	228,37 22837
Water-side resistance at 20 K	mbar Pa	8,51 851	8,51 851	20,24 2024	36,97 3697	48,4 4840	58,68 5868	13,53 1353	16,3 1630	18,7 1870	24,49 2449	38,68 3868	42,3 4230	56,10 5610
Boiler-entry temperature	°C	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70
Working temperature/operating temperature	°C	90	90	90	90	90	90	90	90	90	90	90	90	90
Maximum permitted temperature	°C	110	110	110	110	110	110	110	110	110	110	110	110	110
Max. operating pressure	bar	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
<b>Exhaust-gas side (for chimney calculation)</b>														
Combustion chamber temperature	°C	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100
Combustion chamber pressure	mbar Pa	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50	-0,5...-5 -5...-50
Required draft at rated power	mbar Pa	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5	0,05 5
Required draft at partial load	mbar Pa	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3	0,03 3
Suction required: yes	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exhaust-gas temperature at rated power	°C	140	140	140	140	140	140	140	140	140	140	140	140	140
Exhaust-gas temp. Partial load	°C	100	100	100	100	100	100	100	100	100	100	100	100	100
Exhaust-gas mass flow at rated power	kg/s	0,014	0,014	0,021	0,029	0,032	0,036	0,043	0,046	0,050	0,057	0,071	0,082	0,086
Exhaust-gas mass flow at partial load	kg/s	0,005	0,005	0,006	0,010	0,009	0,010	0,012	0,013	0,014	0,016	0,020	0,023	0,024
Exhaust-gas mass flow at rated power	kg/h	51,3	51,3	77,0	102,6	115,5	128,3	154,0	166,8	178,3	205,3	258,6	295,1	307,9
Exhaust-gas mass flow at partial load	kg/h	18,5	18,5	27,8	37,0	41,7	46,3	55,5	60,2	64,3	74,1	92,6	106,5	111,1
Exhaust-gas volume at rated power	Nm <sup>3</sup> /h	40,1	40,1	60,1	80,2	90,2	100,2	120,2	130,3	139,3	160,3	200,4	230,5	240,5
Exhaust-gas volume at partial load	Nm <sup>3</sup> /h	14,5	14,5	21,7	28,9	32,5	36,1	43,4	47,0	50,2	57,8	72,3	83,1	86,7
Incline of the exhaust-gas pipe	°	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Connection height exhaust-gas pipe	mm	>1395	>1395	>1395	>1395	>1395	>1395	>1445	>1445	>1445	>1445	>1445	>1445	>1445
Exhaust-gas pipe diameter	mm	150	150	150	150	150	150	180	180	180	180	200	200	200
Chimney diameter (approx. values)	mm	180	180	180	180	180	180	200	200	200	200	220	220	220
Chimney design: Moisture-resistant	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Fuel: Wood chips, ISO 17225-4</b>														
Maximum water content	-	M40	M40	M40	M40	M40	M40	M40	M40	M40	M40	M40	M40	M40
Maximum fuel size	-	P16S	P16S	P16S	P16S	P16S	P16S	P16S P31S	P16S P31S	P16S P31S	P16S P31S	P16S P31S	P16S P31S	P16S P31S
<b>Ash</b>														
Ash container volume	l	70	70	70	70	70	70	70	70	70	70	70	70	70
Ash container filled	kg	80	80	80	80	80	80	80	80	80	80	80	80	80
Ash removal system	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Electrical system</b>														
Connection: CEE 5-pole 400 V <sub>AC</sub>	-	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A
Connected power MF2 D: P16S/P31S	W	1769	1769	1769	1769	1769	1769	1827	1827	1827	1827	1827	1827	1827
Connected power MF2 ZI	W	1655	1655	1655	1655	1655	1655	1713	1713	1713	1713	1713	1713	1713
<b>Weights</b>														
Water jacket	kg	300	300	300	340	340	340	360	360	360	360	450	450	450
Boiler body	kg	265	265	265	265	265	265	320	320	320	320	320	320	320
Boiler weight MF2 D (P16S/P31S)	kg	920	920	920	980	980	980	1100	1100	1100	1100	1200	1200	1200
Boiler weight MF2 ZI	kg	890	890	890	930	930	930	1070	1070	1070	1070	1170	1170	1170

MF2 D / MF2 ZI	Unit	20	30 <sup>1</sup>	30 <sup>2</sup>	40	45 <sup>1</sup>	50 <sup>1</sup>	60 <sup>1</sup>	65 <sup>1</sup>	70 <sup>1</sup>	80	100 <sup>2</sup>	108 <sup>1</sup>	120
<b>Emissions according to test report</b>														
Test report no.	-	13-UW/Wels-EX-344/1-4												
<b>Noise emissions (EN 15036-1)</b>														
Normal operating noise at rated power	dB(A)	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70
<b>Ref. 10 % O<sub>2</sub> dry (EN303-5)</b>														
CO at rated power	mg/Nm <sup>3</sup>	16	12	9	4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	3
CO at partial load	mg/Nm <sup>3</sup>	102	83	78	63	58	54	44	39	34	24	22	21	19
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	132	121	118	109	106	104	99	96	94	88	107	115	126
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	109	107	106	103	102	100	98	96	95	93	88	86	83
OGC at rated power	mg/Nm <sup>3</sup>	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
OGC at partial load	mg/Nm <sup>3</sup>	4	3	< 3	2	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dust at rated power	mg/Nm <sup>3</sup>	15	16	16	17	17	18	19	19	19	20	20	19	19
Dust at partial load	mg/Nm <sup>3</sup>	11	12	12	12	12	12	13	13	12	12	13	13	14
<b>Ref. 11 % O<sub>2</sub> dry</b>														
CO at rated power	mg/Nm <sup>3</sup>	15	11	8	4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	3
CO at partial load	mg/Nm <sup>3</sup>	92	75	71	57	53	49	40	35	31	22	20	19	17
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	120	110	107	99	97	94	90	87	85	80	97	105	114
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	99	97	96	93	92	91	89	87	86	84	80	79	76
OGC at rated power	mg/Nm <sup>3</sup>	< 3	< 3	< 3	< 2	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
OGC at partial load	mg/Nm <sup>3</sup>	3	3	< 3	2	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dust at rated power	mg/Nm <sup>3</sup>	14	15	15	15	16	16	17	17	17	18	18	18	17
Dust at partial load	mg/Nm <sup>3</sup>	10	10	11	11	11	11	12	12	11	11	12	12	13
<b>Ref. 13 % O<sub>2</sub> dry</b>														
CO at rated power	mg/Nm <sup>3</sup>	11	9	7	3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	3
CO at partial load	mg/Nm <sup>3</sup>	74	60	56	32	42	39	32	28	25	18	16	15	14
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	96	88	86	79	77	75	72	70	68	64	78	84	91
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	80	78	77	75	74	73	71	70	69	67	64	63	61
OGC at rated power	mg/Nm <sup>3</sup>	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
OGC at partial load	mg/Nm <sup>3</sup>	3	2	< 2	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dust at rated power	mg/Nm <sup>3</sup>	11	12	12	12	13	13	14	14	14	14	14	14	14
Dust at partial load	mg/Nm <sup>3</sup>	8	8	8	8	9	9	9	9	9	9	9	9	10
PPBT <sup>3</sup>	mg/Nm <sup>3</sup>	12	13	13	13	14	14	14	15	15	15	15	15	15
<b>In accordance with § 15a-BVG Austria</b>														
CO at rated power	mg/MJ	8	5	4	2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	2	2
CO at partial load	mg/MJ	50	49	49	48	44	39	30	26	21	12	11	10	9
NO <sub>x</sub> at rated power	mg/MJ	66	60	59	54	53	51	49	47	46	43	53	56	62
NO <sub>x</sub> at partial load	mg/MJ	54	53	52	51	50	50	49	48	47	46	44	43	41
OGC at rated power	mg/MJ	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
OGC at partial load	mg/MJ	2	< 2	< 2	1	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dust at rated power	mg/MJ	7	8	8	8	8	8	9	9	9	10	10	9	9
Dust at partial load	mg/MJ	5	6	6	6	6	6	6	6	6	6	7	7	7

22.12.2015

1 ... Drawing inspection

2 ... Typification variants

3 ... PPBT = PP (dust) + 42% OGC according to Conto Termico 28.12.2012

mg/Nm<sup>3</sup> ... milligram per standard cubic meter (Nm<sup>3</sup> - standard cubic meter under 1013 hectopascal at 0 °C)



When using wood chips of quality categories A2 and B1 pursuant to ISO 17225-4, additional technical measures may be required in order to comply with statutory dust emission limit values depending on the aerosol-forming ash content. The statutory dust emission limit values for Germany pursuant to the 1st BImSchV Level 2, and the national dust emission values of the Swiss LRV are met when using wood chips of quality category A1 pursuant to EN ISO 17225-4 without additional technical measures.

Additional technical measures may be necessary in order to comply with the 1st BImSchV Level 2 in Germany for wood chips of quality categories A2 and B1 and to meet Swiss cantonal requirements; these may be included or retrofitted by KWB, if commissioned, respectively. In such a case, it will be necessary to coordinate with KWB.

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Easyfire 1 Plus

Easyfire

Pelletfire<sup>Plus</sup>

Multifire

Powerfire

Control  
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Conveyor and  
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# Technical specifications

## KWB Multifire – pellet operation

Classicfire Combifire
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Easyfire
Pelletfire Plus
Multifire
Powerfire
Control C3 & C4
Conveyor and storage systems
Storage and hydraulic systems

MF2 D / MF2 ZI	Unit	20	30 <sup>1</sup>	30 <sup>2</sup>	40	45 <sup>1</sup>	50 <sup>1</sup>	60 <sup>1</sup>	65 <sup>1</sup>	70 <sup>1</sup>	80	100 <sup>2</sup>	108 <sup>1</sup>	120
Rated power	kW	20	30	32,5	40	45	49,5	60	65	69,5	80	99 101	108	120
Partial load	kW	6,0	9,0	9,8	12,0	13,5	15,0	18,0	19,5	20,9	24,0	30,0	32,4	36,0
Boiler efficiency at rated power (pellets)	%	93,6	94,4	94,5	95,1	95,0	94,8	94,6	94,4	94,3	94,0	94,0	94,1	94,1
Boiler efficiency at partial load (pellets)	%	90,4	91,9	92,3	93,4	93,6	93,7	94,0	94,2	94,3	94,6	94,4	94,3	94,0
Fuel thermal output at rated power (pellets)	kW	21,4	31,8	34,4	42,1	47,4	52,2	63,4	68,9	73,7	85,1	106,3	114,8	127,5
Fuel thermal output at partial load (pellets)	kW	6,6	9,8	10,6	12,8	14,4	16,0	19,1	20,7	22,1	25,4	31,8	34,4	38,3
Boiler class according to EN 303-5:2012	-	5	5	5	5	5	5	5	5	5	5	5	5	5
<b>Water side</b>														
Water content	l	155	155	155	135	135	135	165	165	165	165	195	195	195
Water connection, forward/return flow (internal thread) without return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	2	2	2	2	2	2	2
	mm DN	31,8 32	31,8 32	31,8 32	31,8 32	31,8 32	31,8 32	50,1 50	50,1 50	50,1 50	50,1 50	50,1 50	50,1 50	50,1 50
Water connection, forward/return flow (internal thread) with return-flow boost device	Inch	5/4	5/4	5/4	5/4	5/4	5/4	6/4	6/4	6/4	6/4	2	2	2
	mm DN	31,8 32	31,8 32	31,8 32	31,8 32	31,8 32	31,8 32	38,1 40	38,1 40	38,1 40	38,1 40	50,1 50	50,1 50	50,1 50
Water connection for filling and/or emptying (internal thread)	inch mm	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05	3/4 19,05
Water connection for thermal safety valve (external thread)	Inch mm	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7	1/2 12,7
Thermal safety valve: pressure	bar	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6	2-6
Thermal safety valve: required cold water temperature	°C	20	20	20	20	20	20	20	20	20	20	20	20	20
Water-side resistance at 10 K	mbar	36,97	36,97	85,38	153,75	200,2	242,08	56,10	67,2	77,2	100,61	158,03	172,8	228,37
	Pa	3697	3697	8538	15375	20020	24208	5610	6720	7720	10061	15803	17280	22837
Water-side resistance at 20 K	mbar	8,51	8,51	20,24	36,97	48,4	58,68	13,53	16,3	18,7	24,49	38,68	42,3	56,10
	Pa	851	851	2024	3697	4840	5868	1353	1630	1870	2449	3868	4230	5610
Boiler-entry temperature	°C	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70	55-70
Working temperature/operating temperature	°C	90	90	90	90	90	90	90	90	90	90	90	90	90
Maximum permitted temperature	°C	110	110	110	110	110	110	110	110	110	110	110	110	110
Max. operating pressure	bar	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5	3,5
<b>Exhaust-gas side (for chimney calculation)</b>														
Combustion chamber temperature	°C	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100	900-1100
Combustion chamber pressure	mbar	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5	-0,5...-5
	Pa	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50	-5...-50
Required draft at rated power	mbar	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05	0,05
	Pa	5	5	5	5	5	5	5	5	5	5	5	5	5
Required draft at partial load	mbar	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03	0,03
	Pa	3	3	3	3	3	3	3	3	3	3	3	3	3
Suction required: yes	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Exhaust-gas temperature at rated power	°C	140	140	140	140	140	140	140	140	140	140	140	140	140
Exhaust-gas temp. Partial load	°C	100	100	100	100	100	100	100	100	100	100	100	100	100
Exhaust-gas mass flow at rated power	kg/s	0,014	0,014	0,021	0,029	0,032	0,036	0,043	0,046	0,050	0,057	0,071	0,082	0,086
Exhaust-gas mass flow at partial load	kg/s	0,005	0,005	0,006	0,010	0,009	0,010	0,012	0,013	0,014	0,016	0,020	0,023	0,024
Exhaust-gas mass flow at rated power	kg/h	51,3	51,3	77,0	102,6	115,5	128,3	154,0	166,8	178,3	205,3	256,6	295,1	307,9
Exhaust-gas mass flow at partial load	kg/h	18,5	18,5	27,8	37,0	41,7	46,3	55,5	60,2	64,3	74,1	92,6	106,5	111,1
Exhaust-gas volume at rated power	Nm³/h	40,1	40,1	60,1	80,2	90,2	100,2	120,2	130,3	139,3	160,3	200,4	230,5	240,5
Exhaust-gas volume at partial load	Nm³/h	14,5	14,5	21,7	28,9	32,5	36,1	43,4	47,0	50,2	57,8	72,3	83,1	86,7
Incline of the exhaust-gas pipe	°	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3	≥ 3
Connection height exhaust-gas pipe	mm	>1395	>1395	>1395	>1395	>1395	>1395	>1445	>1445	>1445	>1445	>1445	>1445	>1445
Exhaust-gas pipe diameter	mm	150	150	150	150	150	150	180	180	180	180	200	200	200
Chimney diameter (approx. values)	mm	180	180	180	180	180	180	200	200	200	200	220	220	220
Chimney design: Moisture-resistant	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Fuel: Pellets of pure wood in accordance with ISO 17225-2</b>														
Calorific value	MJ/kg	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5	16,5
Density	kg/m³	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600	≥ 600
<b>Ash</b>														
Ash container volume	l	70	70	70	70	70	70	70	70	70	70	70	70	70
Ash container filled	kg	80	80	80	80	80	80	80	80	80	80	80	80	80
Ash removal system	-	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
<b>Electrical system</b>														
Connection: CEE 5-pole 400 V <sub>AC</sub>	-	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A	50 Hz 13 A
Connected power MF2 D: P16S	W	1769	1769	1769	1769	1769	1769	1827	1827	1827	1827	1827	1827	1827
Connected power MF2 ZI	W	1655	1655	1655	1655	1655	1655	1713	1713	1713	1713	1713	1713	1713



MF2 D / MF2 ZI	Unit	20	30 <sup>1</sup>	30 <sup>2</sup>	40	45 <sup>1</sup>	50 <sup>1</sup>	60 <sup>1</sup>	65 <sup>1</sup>	70 <sup>1</sup>	80	100 <sup>2</sup>	108 <sup>1</sup>	120
<b>Weights</b>														
Water jacket	kg	300	300	300	340	340	340	360	360	360	360	450	450	450
Boiler body	kg	265	265	265	265	265	265	320	320	320	320	320	320	320
Boiler weight MF2 D (P16B/P45A)	kg	920	920	920	980	980	980	1100	1100	1100	1100	1200	1200	1200
Boiler weight MF2 ZI	kg	-	-	-	-	-	-	1129	1129	1129	1129	1229	1229	1229
<b>Emissions according to test report</b>														
Test report no.	-	13-UWWels-EX-344/1-4												
<b>Noise emissions (EN 15036-1)</b>														
Normal operating noise at rated power	dB(A)	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70	< 70
<b>Ref. 10 % O<sub>2</sub> dry (EN303-5)</b>														
CO at rated power	mg/Nm <sup>3</sup>	13	9	7	4	6	8	12	14	16	20	14	12	< 4
CO at partial load	mg/Nm <sup>3</sup>	65	50	46	34	32	30	25	22	20	15	24	28	40
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	120	124	124	127	125	122	117	115	112	107	117	121	134
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	117	107	105	97	97	98	98	98	99	99	100	101	102
OGC at rated power	mg/Nm <sup>3</sup>	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
OGC at partial load	mg/Nm <sup>3</sup>	5	4	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dust at rated power	mg/Nm <sup>3</sup>	14	17	17	19	19	19	18	18	18	17	17	18	18
Dust at partial load	mg/Nm <sup>3</sup>	10	12	13	14	14	14	13	12	12	11	12	13	14
<b>Ref. 11 % O<sub>2</sub> dry</b>														
CO at rated power	mg/Nm <sup>3</sup>	12	8	6	3	5	7	11	13	15	19	13	11	< 4
CO at partial load	mg/Nm <sup>3</sup>	59	45	42	31	29	27	23	20	18	14	22	25	36
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	109	113	113	115	114	111	106	105	102	97	106	110	121
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	106	97	95	88	88	89	89	89	90	90	91	92	93
OGC at rated power	mg/Nm <sup>3</sup>	< 3	< 3	< 3	< 2	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
OGC at partial load	mg/Nm <sup>3</sup>	5	4	4	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3
Dust at rated power	mg/Nm <sup>3</sup>	12	15	15	17	17	17	16	16	16	15	15	16	16
Dust at partial load	mg/Nm <sup>3</sup>	9	11	12	12	13	13	12	11	11	10	11	12	12
<b>Ref. 13 % O<sub>2</sub> dry</b>														
CO at rated power	mg/Nm <sup>3</sup>	10	7	5	3	4	6	9	10	12	15	10	9	< 3
CO at partial load	mg/Nm <sup>3</sup>	48	36	33	27	23	22	18	16	15	12	17	20	29
NO <sub>x</sub> at rated power	mg/Nm <sup>3</sup>	87	90	90	92	91	89	85	84	81	78	85	88	97
NO <sub>x</sub> at partial load	mg/Nm <sup>3</sup>	85	78	76	70	71	71	71	71	72	72	73	73	74
OGC at rated power	mg/Nm <sup>3</sup>	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
OGC at partial load	mg/Nm <sup>3</sup>	4	3	3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dust at rated power	mg/Nm <sup>3</sup>	10	12	12	14	14	14	13	13	13	12	12	13	13
Dust at partial load	mg/Nm <sup>3</sup>	7	9	9	10	10	10	9	9	9	8	9	9	10
PPBT <sup>3</sup>	mg/Nm <sup>3</sup>	11	13	14	15	15	15	14	14	14	13	14	14	14
<b>In accordance with § 15a-BVG Austria</b>														
CO at rated power	mg/MJ	7	5	4	2	3	4	6	7	8	10	6	4	< 2
CO at partial load	mg/MJ	32	25	23	18	17	16	13	12	11	8	14	16	20
NO <sub>x</sub> at rated power	mg/MJ	59	66	67	72	70	67	63	60	58	53	60	62	66
NO <sub>x</sub> at partial load	mg/MJ	58	53	52	48	48	48	49	49	49	49	50	50	50
OGC at rated power	mg/MJ	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 1
OGC at partial load	mg/MJ	3	< 3	< 3	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2
Dust at rated power	mg/MJ	7	8	8	9	9	9	9	8	8	8	9	9	9
Dust at partial load	mg/MJ	5	6	6	7	7	7	6	6	6	5	6	6	7

**22.12.2015**

1 ... Drawing inspection

2 ... Typification variants

3 ... PPBT = PP (dust) + 42% OGC according to Conto Termico 28.12.2012

mg/Nm<sup>3</sup> ... milligram per standard cubic meter (Nm<sup>3</sup> - standard cubic meter under 1013 hectopascal at 0 °C)

Classicfire  
Combifire

Easyfire 1  
Easyfire 1 Plus

Easyfire

Pelletfire<sup>Plus</sup>

Multifire

Powerfire

Control  
C3 & C4

Conveyor and  
storage  
systems

Storage and  
hydraulic  
systems

Information regarding the hydraulics requirements can be found at [www.kwb.en](http://www.kwb.en).