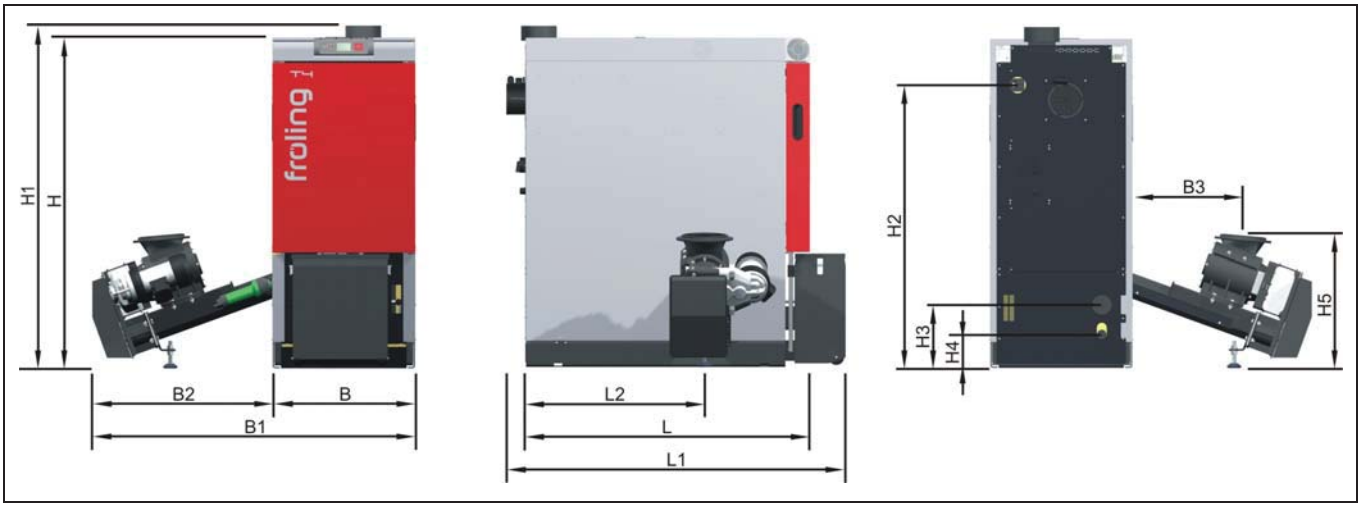
2 Technology

2.1 Dimensions - T4



Item	Description	Unit	24/30	40/50	60/75	90/100/110
H	Height of boiler	mm	1390	1620	1620	1720
H1	Total height including flue gas pipe connection		1440	1670	1670	1770
H2	Height, outfeed connection	mm	1195	1425	1425	1530
	Boiler outfeed connection	Zoll	6/4	6/4	6/4	2
H3	Height, return connection	mm	270	270	270	170
	Boiler return connection	Zoll	6/4	6/4	6/4	2
H4	Height, drainage connection	mm	140	140	140	140
	Boiler drainage connection	Zoll	1/2	1/2	1/2	1
H5	Height, rotary valve connection	mm	580	650	650	650
B	Width of boiler	mm	600	770	770	880
B1	Total width with stoker unit		1360	1530	1530	1640
B2	Width, stoker unit		760	760	760	760
B3	Distance from boiler side to stoker connection		470	470	470	470
L	Length, boiler	mm	1200	1200	1570	1570
L1	Total length including ash container and ID fan		1430	1430	1920	1920
L2	Length from back side of boiler to stoker connection		755	755	1045	1045

2.2 Technical specifications

		T4			
Description	**Unit**	**24**	**30**	**40**	**50**
Rated heat output	kW	24	30	40	50
Heating efficency range		7,2-24,0	9,0-30,0	12,0-40,0	15,0-50,0
Electrical connection		400V / 50Hz / C20A			
Electrical consumption	W	45 - 115	54 - 142	51 - 150	47 - 158
Boiler weight	kg	620	640	840	860
Boiler water capacity	l	105	105	160	160
Upstream resistence (ΔT= 10 / 20°C)	mbar	3,9 / 1,2	4,8 / 1,4	5,2 / 1,8	5,5 / 2,2
Minimum return temperature	°C	45			
Maximum permitted boiler operating temperature		90			
Permitted operating pressure	bar	3			
Airborne sound level	dB(A)	< 70			
Boiler class according to EN 303-5: 1999 (pr EN 303-5: 2012)		3 (5)			
Permitted fuel according to EN 14961[1)]		Part 2: wood pellets class A1 / D06 Part 4: wood chips class A2 / P16A-P45A			

Test report data									
Testing institute		TÜV [2)]				[3) 4)]		TÜV [2)]	
Test report no.		10-UW/ Wels-EX-191/2		10-UW/ Wels-EX-191/4		-		10-UW/ Wels-EX-191/5	
Test data – Fuel wood chip		**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**
Carbon monoxide (CO)	[mg/MJ]	9	28	35	28	24,5	34	14	40
Nitrogen oxide (NOx)	[mg/MJ]	70	-	92	-	88	-	84	64
Organic Hydrocarbons (OGC)	[mg/MJ]	<1	1,3	<1	1,3	<1	<2	<1	<1
Dust	[mg/MJ]	13	-	13	-	11,5	-	10	7
Boiler efficiency rating	[%]	92,3	91,6	91,0	91,6	92,1	92,4	93,1	93,2
Test data – Fuel pellets		**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**
Carbon monoxide (CO)	[mg/MJ]	8	69	7	23	<6	18	<4	12
Nitrogen oxide (NOx)	[mg/MJ]	70	-	72	-	72	-	71	54
Organic Hydrocarbons (OGC)	[mg/MJ]	<1	1,4	<1	<1	<1	<1	<1	<1
Dust	[mg/MJ]	11	-	12	-	10,5	-	9	6
Boiler efficiency rating	[%]	92,2	91,0	92,0	91,4	93,1	92,3	94,2	93,2

1) Detailed information on the fuel is included in the operating instructions, in the section on “Permitted fuels”

2) TÜV Austria Services GmbH, Environment and Chemistry Division, Am Thalbach 15, A-4600 Thalheim/Wels

3) In accordance with ÖNORM / DIN EN 303-5, Kap. 5.1.3 type test: for a boiler from a range with a consistent structure it is sufficient, if the ratio of rated heat output from the largest to the smallest boiler ≤ 2 : 1, to carry out the tests with the smallest and the largest boilers. The boiler manufacturer must ensure that all boilers, including those that have not been tested in a range, whose values have been determined depending on rated heat output by interpolation, fulfil the requirements of the norm.

4) Values of the model T4 - 40 are interpolated between the test protocol 10-UW/Wels-EX-191/4 and 10-UW/Wels-EX-191/5!

		T4				
Description	**Unit**	**60**	**75**	**90**	**100**	**110**
Rated heat output	kW	60	75	90	100	110
Heating efficiency range		18 – 60	22,5 – 75	27 – 90	30 – 100	33 - 110
Electrical connection		400V / 50Hz / C20A				
Electrical consumption	W	51 - 176	56 - 204	61 - 232	65 - 250	65 - 250
Boiler weight	kg	1060	1060	1350	1360	1370
Boiler water capacity	l	220	220	260	260	260
Upstream resistence (ΔT= 10 / 20°C)	mbar	7,8 / 2,6	11,4 / 3,2	14,9 / 3,8	17,2 / 4,2	18,7 / 5,2
Minimum return temperature	°C	45				
Maximum permitted boiler operating temperature		90				
Permitted operating pressure	bar	3				
Airborne sound level	dB(A)	< 70				
Boiler class according to EN 303-5:1999 (pr EN 303-5: 2012)		3 (5)				
Permitted fuel according to EN 14961[1)]		Part 2: wood pellets class A1 / D06 Part 4: wood chips class A2 / P16A-P45A				

Test report data											
Testing institute		[2) 3)]						TÜV [4)]		TÜV [4)]	
Test report no.		-						10-UW/ Wels-EX-191/6		10-UW/ Wels-EX-191/7	
Test data- Fuel wood chip		**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**
Carbon monoxide (CO)	[mg/MJ]	12,6	33,2	10,5	23	8,4	12,8	7	6	7	6
Nitrogen oxide (NOx)	[mg/MJ]	82	65	79	68	76	70	74	71	74	71
Organic Hydrocarbons (OGC)	[mg/MJ]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dust	[mg/MJ]	10,6	7,6	11,5	8,5	12,4	9,4	13	10	13	10
Boiler efficiency rating	[%]	93,1	93,3	93,0	93,6	92,9	93,8	92,9	93,9	92,9	93,9
Test data – Fuel pellets		**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**	**RL**	**PL**
Carbon monoxide (CO)	[mg/MJ]	5	11,6	6,5	11	8	10,4	9	10	9	10
Nitrogen oxide (NOx)	[mg/MJ]	70	53	69	53	68	52	67	51	67	51
Organic Hydrocarbons (OGC)	[mg/MJ]	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dust	[mg/MJ]	10	7	11,5	8,5	13	10	14	11	14	11
Boiler efficiency rating	[%]	94,1	93,5	93,9	93,9	93,8	94,3	93,7	94,6	93,7	94,6

1) Detailed information on the fuel is included in the operating instructions, in the section on “Permitted fuels”

2) In accordance with ÖNORM / DIN EN 303-5, Kap. 5.1.3 type test: for a boiler from a range with a consistent structure it is sufficient, if the ratio of rated heat output from the largest to the smallest boiler ≤ 2 : 1, to carry out the tests with the smallest and the largest boilers. The boiler manufacturer must ensure that all boilers, including those that have not been tested in a range, whose values have been determined depending on rated heat output by interpolation, fulfil the requirements of the norm.

3) Values of the models T4-60, T4-75 and T4-90 are interpolated between the test protocol 10-UW/Wels-EX-191/5 and 10-UW/Wels-EX-191/6!

4) TÜV Austria Services GmbH, Environment and Chemistry Division, Am Thalbach 15, A-4600 Thalheim/Wels