

Test Certificate

Manufacturer	ThermoFLUX d.o.o. Bage 3 70101 Jajce Bosnia and Hercegovina
Client	Firevision Austria GmbH Gewerbestrasse 1/2 5325 Plainfeld Austria
Type of test	Initial testing in accordance with the requirements of EN 303-5
Name of device	Ecologic plus 20
Name of the tested model	LOGIC 20
Testing Fuel	Wood pellets (EN plus A1)
Nominal heat output kW	20,0
Partial heat output in kW	5,6
Test reports for the evaluation	PL-20022-2-P from 09.02.2021 of the Test Laboratory for Combustion Plants at the Institute of Chemical, Environmental & Bioscience Engineering at the Vienna University of Technology.

Assessment:

Based on the testing carried out, the requirements related to EN 303-5, to the agreement pursuant to Article 15a of the Federal Constitution Act on the "Marketing of residential heating and inspection of combustion plants and cogeneration units" as well as to regulation (EU) 2015/1187 and to regulation (EU) 2015/1189 are met.

Test results and limit values	Appendix (2 pages)
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Vienna, 01.03.2022

Person responsible for testing

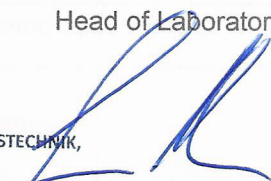


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Appendix to Test Certificate for boiler “Ecologic plus 20“

Date of testing		05.08.2020	04.08.2020
Test run		Full load	Partial load
Test results			
Test period	min	363	365
Fuel quantity	kg	27,8	7,8
Fuel power	kW	22,1	6,1
Fuel conversion	kg/h	4,6	1,3
Mean draught	Pa	12,4	11,5
Barometric pressure	mbar	998,0	1009,9
Atmospheric humidity	%	45,4	47,9
Room temperature	°C	25,8	26,8
Mean flue gas temperature	°C	117,4	58,4
Flue gas mass flow rate	g/s	10,4	4,6
Boiler efficiency (direct)	%	91,7	91,0
Heat output (direct)	kW	20,2	5,6
Mean of O ₂	Vol%	6,6	11,5
Mean of CO ₂	Vol%	14,1	9,0
Mean of CO	ppm	47	131
Mean of NO	ppm	113	63
Mean of HC (Org. C)	ppm	3	1
Mean of PM ¹	mg/m ³	13	10

		Emissions (under standard conditions at 0 °C and 1013 mbar)		
		mg/m ³ at 10 % O ₂	mg/m ³ at 13 % O ₂	mg/MJ
		CO	Full load	45
	Partial load	189	137	89
NO as NO ₂	Full load	177	129	84
	Partial load	149	108	70
OGC (Org. C)	Full load	4	3	<3
	Partial load	<3	<3	<3
PM ¹	Full load	9	7	5
	Partial load	11	8	5

¹Average of four single measurements where at all are lower than the limit value.

	Seasonal space heating emissions (under standard conditions at 0 °C and 1013 mbar)
	mg/m ³ at 10 % O ₂
CO	167
NO as NO ₂	153
OGC	2
PM	11

The test results relate only to the test objects at the time of testing.

Appendix to Test Certificate for boiler “Ecologic plus 20“

Seasonal space heating energy efficiency (η_s)	81
Energy Efficiency Index (EEI)	118
Energy Efficiency Class	A+

Limit values	EN 303-5		Art. 15a B-VG	
	Full load	Partial load	Full load	Partial load
Efficiency %	≥ 88,3		≥ 82,3	
Emissions	mg/m ³ at 10% O ₂		mg/MJ	
CO	500		250	
NO as NO ₂	-		100	
OGC	20		20	
PM	40		20	

Limit values	Regulation (EU) 2015/1189
Seasonal space heating energy efficiency %	≥ 75 / ≥ 77*
Seasonal space heating emissions	mg/m ³ at 10% O ₂
CO	500
NO as NO ₂	200
OGC	20
PM	40

*at nominal heat output >20 kW

Energy Efficiency Class	EEI
A+++	≥ 150
A++	≥ 125
A+	≥ 98
A	≥ 90
B	≥ 82
C	≥ 75
D	≥ 36
E	≥ 34
F	≥ 30
G	< 30