

This document classifies the biomass-fired heat generator

wood according to the parameters of Annex 2 of the Regional Decree N.5656 of 3 October 2016 of the Lombardy Region and Annex A of the d.G.R. 1908 of 29 November 2016 of the Veneto Region.

In accordance with the tests carried out by a notified laboratory and also relying on declaration of conformity n. 110/2016 the undersigned company, as representative for Italy of **BERNA LUX**, declares under his own responsibility that the device:

TYPE OF PRODUCT: Wood stove

PRODUCT STANDARD: EN 13240:2001/A2:2004/AC:2007, EU 2015/1185

DEVELOPED NOMINAL POWER: 5,3 kw

produced and marketed under the complete brand BLIST, by the undersigned company, based on what is reported in the PROTOCOL (type testing of the product) № 141 / 10.02.2021 and OPINION regulation dated on 10.02.2021 drawn up by the LABORATORY NOTIFIED AND ACCREDITED "Termoplam LTD Sofia", identified with code NB2608, has the following technical characteristics (* at 13% O₂):

- PM (mg / Nm³) * 23
- OGC (mg / Nm³) * 51
- NO_x (mg / Nm³) * 142
- CO (mg / Nm³) * 1114
- PERFORMANCE (%) * 77.1

THUS RESULTING IN COMPLIANCE WITH THE CLASSIFICATION REPORTED ANNEX 2 OF THE D.G.R. N.5656, BACK IN THE CLASS 4 STARS *****

Valjevo, 14.05.2021



Mech. Eng. Dragan Timotic

DECLARATION OF PERFORMANCE

according to Regulation (EU) 305/2011

No. B058-CPR-2013/07/01

1) Unique identification code of the product-type:

Room heater burning solid fuel *without* hot water supply EN 13240:2001/A2:2004/AC:2007

2) Type, batch or serial number or any other element allowing identification of the construction product as required under Article 11 (4): *Model „Berna Lux”*

Fireplace stoves burning wood made by BLIST d.o.o. are designed for heating and additional heating of residential and social rooms, i.e. standard environment without the explosion hazard and the presence of volatile substances. The fireplace stoves are designed for interrupted operation.

Basic technical specifications of fireplace stoves

Type	Main dimensions (mm)			Weight (kg)	Rated capacity (kW)	Fuel consumption (kg/hour)	Flue diameter (mm)	Operating draught (Pa)
	Height	Width	Depth					
BERNA LUX	900	400	460	48	5.3	1.3	120	12±2

3) Intended use or uses of the construction product, in accordance with the applicable harmonised technical specification, as foreseen by the manufacturer:

Room heater burning solid fuel *without* hot water supply

Appliances are determined for intermittent operation. According to EN 13240:2001/A2:2004/AC:2007

Room heaters fired by solid fuel-Requirements and test methods table 1 - "Sorting of appliances" it concerns products 1a.

4) Name, registered trade name or registered trademark and contact address of the manufacturer as required pursuant Article 11 (5):

BLIST d.o.o.

Belosevac bb

14000 Valjevo

Serbia

5) Where applicable, name and contact address of the authorised representative whose mandate covers the tasks specified in Article 12 (2):

6) System or systems of assessment and verification of constancy of performance of the construction product as set out in Annex V:

System 3 (Annex V, Clause 1.4 of Regulation 305/2011 of the European Parliament and of the Council of 9 March 2011)

7) The Declaration of Performance concerning a construction product covered by a harmonised standard:
EN 13240:2001/A2:2004/AC:2007

The assessment acc. to System 3 has been carried out by „TERMOPLAM“ - Ltd SOFIA, c. Sofia residential district of "Razsadnik-Konyovitsa", bl.№ 82, ent.B, 3rd floor, apt. 53, Notified Body 2608, which issued the Report on Initial Type Testing № 141 of 10.02.2021.

8) Declared performance

Harmonized technical specification	EN 13240:2001/A2:2004/AC:2007
Essential characteristics	Performance
Firesafety	
Reaction to fire	A1
Distance to combustible materials	Minimum distances, in mm rear = 550 sides = 750 ceiling = 1200 front = 800 floor = 800
Risk of burning fuel falling out	Pass
Emission of combustion products	CO (at 13% O ₂) [0.0891 %]
Surface temperature	Pass
Electrical safety	Pass
Cleanability	Pass
Maximum operating pressure	-
Flue gas temperature at nominal heat output	T [282 °C]
Mechanical resistance (to carry a chimney/flue)	NPD
Thermal output	
Nominal heat output	5.3 kW
Room heating output	5.3 kW
Water heating output	-
Energy efficiency	[77.1 %] □

9) The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 8.

This Declaration of Performance is issued under the sole responsibility of the manufacturer identified in point 4.

Signed for and on behalf of the manufacturer by:

Mech. Eng. Dragan Timotic

In Valjevo, 14.04.2021



"TERMOPLAM" - Ltd.	QUALITY FORM	CODE: FC 13-5.2
R. Bulgaria Sofia city	PROTOCOL from type testing of the product	VERSION: 05 COPY № 1 Page: 1/5

"TERMOPLAM" - Ltd. SOFIA
Permission for assessing the performance of construction products № CPR 22 - NB 2608
since 04.10.2015, from MRDPW

c. Sofia residential district of "Razsadnik-Konyovitsa", bl.№ 82, ent.B, 3rd floor, apt. 53
GSM 0888 862 192, <http://www.termoplam.eu>, e-mail: termoplam2011@abv.bg



HEAD OF LABORATORY:.....

(eng. Plamen Iliev)

PROTOCOL
from
(type testing of the product)
№ 141/10.02.2021

I. OBJECT OF TEST:

Family of Room heaters fired by solid fuel: "Berna" including "Berna" and
"Berna Lux" , with type representative: "Berna", 2021.
(Name, type, model, serial number and year of manufacture of the product)

II. MANUFACTURER:

"BLIST" d.o.o Belosevac bb, 14000 Valjevo, Serbia
(Name and address)

III. APPLICANT FOR THE TEST:

"BLIST" d.o.o Belosevac bb, 14000 Valjevo, Serbia
Request № 141/05.02.2021
(Name, address, № and date of the request-query)

IV. NORMATIVE AND TECHNICAL BASIS FOR EXECUTION OF TEST:

EN 13240:2001/A2:2004/AC:2007 Room heaters fired by solid fuel-Requirements and test methods;
(№ and name of the legal document)

V. TEST RESULTS:

The test results are given in Table 1 and Table 2.

Table 1

1	2	3	4	5	6
№	Essential Characteristics	Unit	Test results	Value and tolerance of the indicator; Point from the standard	Test Conditions
-	Fire safety				
p.4.2.1	General construction (Non-combustible materials)	-	Yes	-	-
p.4.2.3	Cleaning of heating surfaces (Access and cleaning)		Yes	-	-
p.4.2.4	Flue spigot or socket (Contact surface)	mm	40 Yes	≥40 horizontal	-
p.4.2.6	Ashpan and ash removal (2 full charges and passability)		Yes	-	-
p.4.2.7	Bottomgrate (Correct installation and easy cleaning)		Yes	-	-
p.4.2.8	Combustion air supply (Regulator and an indications)		Yes	-	-
p.4.2.10	Firedoors and charging doors (Size and retention of coal)		Yes	-	-
p.4.2.12	Front firebars and/or deepening plate (Correct installation and retention of fuel)		Yes	-	-
p.5.2	Operation with open firedoors (Release of zest)		Not intended	-	A.4.9.1
p.5.4	Temperature rise in the fuel storage container (other than fuel hopper) (Exceeding)	°C	40.637 Yes	Tr +65°C=17.4+65=82.4°C	Tr= 17.4 °C A.4.7 & A.4.9
p.5.5	Temperature rise of the operating compopnents (handles)	°C	51.612 Yes	for rubber/wood Tr +60K =17.4+60=77.4 °C	Tr= 17.4 °C
p.5.6	Temperatures of adjacent combustible materials (Exceeding)	°C	64.936 Back Panel Yes	Tr +65°C=17.4+65=82.4°C	Tr= 17.4 °C A.4.7
p.6.1	Flue gas temperature- ta	°C	282	-	Tr= 17.4 °C
-	Emissions from combustion products				
p.4.2.1	General construction (Poisonous gas and coal)		No	-	-
p.4.2.2	Integral boiler (Material Certificate)		Not applicable	-	table 2÷7
p.4.2.5	Flueways (Size in the narrowest Part-Cleaning)	mm	≥30 Yes	≥30	-
p.4.2.8	Combustion air supply (Ash or fuel does not interfere with the work)		Yes	-	-
p.4.2.9	Control of flue gas (Incomplete closure of output)	cm ² %	≥ 20 Yes	≥ 20 cm ² or ≥ 3%	-
p.4.2.11	Flue bypass device (Easy management, clear marking)		No	-	-

1	2	3	4	5	6
p.5.1	Natural draught (Mode for continuous combustion)	-	Not intended	-	A.4.9.3
	Common chimney		Not intended	-	A.4.9.3
	Draught	Pa	Not intended	≥ 3	-
	Volume of CO at draught ≤ 3 Pa	CO _B dm ³	Not intended	≤ 3 ≤ 250	A.6.2.8 Duration ≥ 10 h
p.5.2	Operation with open firedoors (Release of exhaust gases)		Not intended	-	A.4.9.1
p.6.2	Carbon monoxide emissions (Concentration at 13% O ₂)	%	0.0891	$\leq 1\%$	A.4.7
-	Release of dangerous substances ZA1				-
p.5.8	Electrical safety		Not applicable	EN 60335-2-102:2016	-
	Presence		Not applicable		
	Complies		Not applicable		
-	Maximum operating pressure				
p.4.2.2	Integral boiler (Prevention of air leakage, water or smoke)		Not applicable	-	A.4.7
p.5.3	Strength and leak tightness of boiler shells (Weatherproofing and resistance to mechanical deformation Pressure test)	bar	- Not applicable	P _t =2x _p n= - bar 10 min	A.4.9.4 A.4.9.4 A.4.7
p.5.7	Thermal discharge control (In a closed system if it activates)	°C	Not applicable	$\leq 105^{\circ}\text{C}$	A.4.9.5
-	Mechanical stability (Maintenance of chimney / flue pipe)				
p.4.2.1	General construction (Properly designed & marked details)		Yes		-
p.4.2.4	Flue spigot or socket (For appliances with lime filling)	mm	Not applicable	≥ 6 vertical	-
-	Heat emission (Energy efficiency)				
p.6.3	Efficiency	%	77.1 Yes	$> 50\%$	A.4.7
p.6.4	Flue draught (Value of draft)	Pa	Yes	acc. figure 1	A.4.7 A.4.8 A.4.9
p.6.5	Recovery (Renewal of a good level)	min	7 Yes	20 min	A.4.8 A.4.8.4
p.6.6	Refueling Intervals (Period of burning process)	h	0.75 Yes	acc. figure 10	A.4.7 A.4.8
p.6.7	Space heating output (Value of the measured power)	kW	5.3	-	A.4.7
p.6.8	Water heating output (Value of the measured power)	kW		-	A.4.7

VI. TEST OBJECTIVES :

- 6.1. Test operation at rated power;
- 6.2. Test duration of burning;
- 6.3. Testing combustion at reduced heat flow;
- 6.4. Testing of recovery capability;
- 6.5. Safety test;

VII. USED EQUIPMENT:

- 7.1 Air speed meter TESTO 405-V1.
- 7.2 Digital thermometer MS8127 with perceiver - DS18B20 to ambient temperature and walls of the test area;
- 7.3 Vacuum-gauge- Testo 512;
- 7.4 Electronic stopwatch Casio FA109;
- 7.5 Thermohygrometer HAMA;
- 7.6 Gas analyzer KANE KM800;
- 7.7 Scales up to 510 kg - to measure the weight of the testing device;
- 7.8 Scales from 5 g to 40 kg - measuring the weight of the fuel;
- 7.9 Tape measure;
- 7.10 Caliper;
- 7.11 Auxiliary devices: PC package applications;

VIII. REQUIREMENTS:

- 8.1 Have met the safety measures required under Section 5; Yes
 - 8.2 The test subject complies to the installation and exploitation manual according to section 7; Yes
 - 8.3. Existence of a plate according to point 8; Yes
 - 8.4 Requirements regarding the type of fuel - see. Annex B, dimensions and arrangement , and that the camera meets the manufacturer's instructions; Yes
 - 8.5 Real values of measuring thicknesses and others, along with additional certificates for plumbing parts - after the test in accordance with A.4.9.4; Not applicable
- $p_{\text{test}} = 2 * p_{\text{nom}} = \text{bar}$ leaks and visible deformation (elastic and plastic)
- $p_{\text{nom}} = - \text{bar}$

Certificate Number: № -

- 8.6 Testing of the thermal protection of outputs (safety) according to A.4.9.5;
 - presence of mounted discharge spiral: Not applicable
 - reacts: Not applicable
- 8.7 Distance from the heater to the part with the highest measured temperature of trihedrone: in accordance with item 5.6; 378 mm
- Type of fuel: Back Panel
 - Wood briquettes with humidity $W=5,75 \pm 0,12\%$ with a test report № 8557/06.06.2018 issued by, the EUROTTEST - Control SA
- 8.8 Mass of fuel burned per hour kg / h according to Table A.3; B= 1.3 kg/h
- 8.9 Mass flow rate of the exhaust gases g/s according to paragraph A.6.2.5; M= 5.2 g/s

Table 2

1	2	3	4	5	6	7
№	Essential Characteristics	Unit of value	№ of specimen	Test results	Value and tolerance of indicator of indicator Standard & Norm. doc	Test conditions
1	Ambient temperature- Tr	°C		17.4		17.4 °C; ≤ 0.01 m/s
2	Temperature of exhaust gas- ta	°C		282		
3	CO	%		0.0891	≤ 1,0% acc. p.6.2	
4	CO ₂	%		8.5		
5	M _w	kg/h				
6	tentering water	°C				
7	texiting water	°C				
8	η	%		77.1	≥ 50% acc. p.6.3	
9	O ₂	%		12.2		
10	Mass of fireplace (Dry/Wet)	Kg		39		
11	Spatial thermal power	kW		5.3		
12	Water heat output	kW				
13	Total thermal power	kW		5.3		


CONDUCTING THE TEST:.....

(eng. Georgi Iliev)

CAUTION:

The test results apply only to test samples.

Recreating this test report is only permitted in a holistic manner.

Extracts from the test report may not be reproduced without written consent, but "TERMOPLAM" - LTD.



BLIST d.o.o. Belosevac bb, 14000 Valjevo , Serbia

21

EN 13240:2001/A2:2004/AC:2007

Peć na čvrsto gorivo / Room heater fired by solid fuel / Peci na drwno / Pec na drevo /
Kamna na dřevo / Stufa a combustibile solido / Holzofen / Обогреватель помещения
работающий на твердом топливе

BERNA / BERNA LUX

Ukupna snaga / Nominal power / Moc cieplna / Tepelný výkon / Tepelný výkon /
Potenza termica / Nominalleistung / Номинальная мощность**5,3 kW**

Minimalna razdaljina od zapaljivih materijala: od napred/sa strana/pozadi

Minimum distance from combustible materials: front/sides/rear

Odstęp od części palnych: przód/bok/tył

Vzdialenosť od horľavých častí: pred/bok/zad

Vzdálenost od hořlavých částí: přední část/bok/zadní část

Distanza minima da materiali combustibili: anteriore / lati / posteriore

Mindestabstand von brennbaren Materialien: vorderseite / seite / zurück

Минимальное расстояние от горючих материалов: спереди / сбоку / сзади.....**80cm/40cm/40cm**

Koncentracija CO (pri 13% O₂) / Concentracion CO (at 13% O₂) / Emisja CO w produktach

spalania 13% O₂ / Emisia CO spalovanja vo výrobkoch 13% O₂ / Emise CO v produktech
hoření 13% O₂ / Emissione CO al 13% O₂ / CO - Emmission(bei 13% O₂) /

Концентрация CO (при 13% O₂)**0,0891%**

Stepen korisnog dejstva (drvo) / Energy efficiency (wood) / Sprawność energetyczna/

Vhodný Výber / Energetická účinnosť / Rendimento / Wirkungsgrad/

Энергоэффективность (дрова)**77,1%**

Temperatura dimnih gasova / Temp. of the gases / Temperatura spalin/ Temperatura spalin/

Temperatura spalin / Temperatura uscita fumi / Abgastemperatur / Температура газов**282°C**

Preporučeno gorivo / Recommended fuel / Rodzaj paliwa /

Empfohlener Kraftstoff / Druh paliva / Combustibile /

Рекомендуемое топливо**drvo/wood logs and pure wood briquettes / drwn / drevo / dřevo / legno / holz / дрова**

Pažljivo proučite uputstvo za upotrebu i postupajte u skladu sa njim. Koristite samo preporučeno gorivo /

Read carefully user manual and proceed in accordance with it. Use only recommended fuel /

Montaż i eksploatacja zgodnie z instrukcją obsługi i instalowania. Używaj tylko zalecanego paliwa /

Montáž a prevádzka v súlade s inštrukciou a inštaláciou obsluhy. Používajte pouze doporučené palivo /

Montáž a provoz v souladu s instrukcí a instalací obsluhy. Používejte len odporúčané palivo /

Leggere attentamente il manuale utente e procedere in conformità

à con esso. Utilizzare solo il carburante raccomandato /

Lesen Sie sorgfältig das benutzerhandbuch. Verwenden Sie nur den empfohlenen Kraftstoff



**Termoplam Ltd.
Testing laboratory**

**Page number: 1
Number of pages: 4**

Republic of Bulgaria, Sofia,
www.termoplam.eu , e-mail: termoplam2011@abv.bg, GSM 0885 449 216

OPINION

on the compliance of fireplaces "BERNA" and "BERNA LUX" with the requirements of
COMMISSION REGULATION (EU) 2015/1185 of 24 April 2015
and Decreto del Ministero dell'Ambiente 7 novembre 2017, n.186.

I. NAME AND SIGNATURE OF THE TESTED SAMPLE:

Family of Room heaters fired by solid fuel: wood and wood briquettes "BERNA"
which include the following specimens: "BERNA" and "BERNA LUX" with type
representative: "BERNA" with total heat output 5.3 kW.

II. NAME AND DESCRIPTION OF THE TESTED SAMPLE:

Fireplace models "BERNA" and "BERNA LUX" made of (steel sheet metal by welding)

III. LEGAL DOCUMENT: COMMISSION REGULATION (EU) 2015/1185 of
April 2015 and Decreto del Ministero dell'Ambiente 7 novembre 2017, n.186



Picture of fireplace "BERNA"



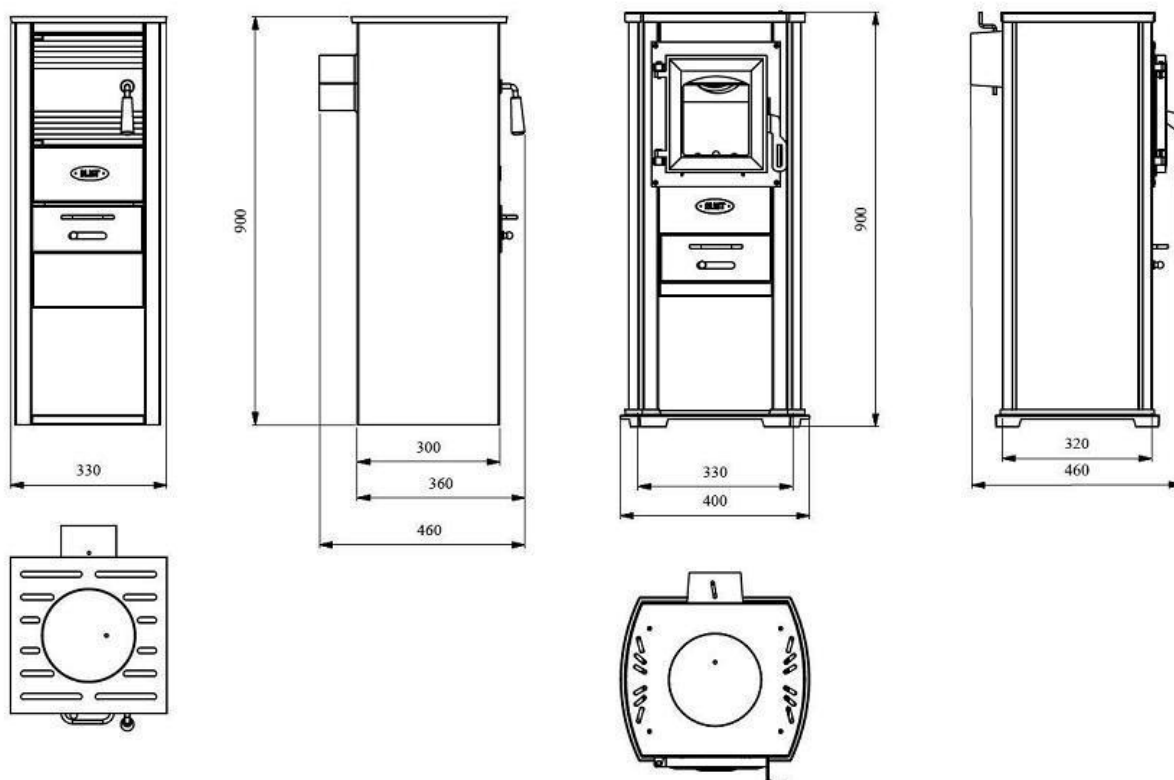
Picture of fireplace "BERNA LUX"

IV. QUANTITY OF THE TESTED SAMPLES: The Room heater device "BERNA" representative of the family with models "BERNA" and "BERNA LUX" is arbitrarily selected unit of regular production, 1 piece.

V. CUSTOMER: BLIST d.o.o. Belosevac bb, 14000 Valjevo, Serbia.

VI. PURPOSE AND OBJECT OF THE TASK: Evaluation the compliance of "BERNA" and "BERNA LUX" with the requirements of COMMISSION REGULATION (EU) 2015/1185 of 24 April 2015 and Decreto del Ministero dell'Ambiente 7 novembre 2017,n.186

VII. TECHNICAL FEATURES:



Scheme of fireplace "BERNA"

Scheme of fireplace "BERNA LUX"

VIII. TEST CONDITIONS:

- 8.1. Working condition of the combustion device - according to the requirements for tests at nominal output according to EN 13240:2001/A2:2004/AC:2007.
- 8.2. Processing of results – calculate according to normal physical conditions and at 13% O₂.
- 8.3. Used results from additional measurements from Laboratory Termoplam, Sofia.
- 8.4. Used results from the Test Report № 141/10.02.2021 of Laboratory Termoplam, Sofia.

IX. RESULTS FROM AND OBSERVATIONS :

- 9.1. Emissions:
 - 9.1.1 Dust content of exhaust gases: $PM^* = 23 \text{ mg/Nm}^3 \leq [PM] = 40 \text{ mg/Nm}^3$;
[PM] = 40 mg/Nm³ in accordance with point 2 (a) (ii), of Annex II of the REGULATION (EU) 2015/1185.
 - [PM] ≤ 30 mg/Nm³ in accordance to Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle.
 - 9.1.2 CO of exhaust gases: $CO^{**} = 1114 \text{ mg/Nm}^3 \leq [CO] = 1500 \text{ mg/Nm}^3$;
 - [CO] = 1500 mg/Nm³ in accordance with point 2 (c) (ii), of Annex II of the REGULATION (EU) 2015/1185.
 - [CO] ≤ 1250 mg/Nm³ in accordance to Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle
 - 9.1.3 OGC of exhaust gases: $OGC^* = 51 \text{ mg/Nm}^3 \leq [OGC] = 120 \text{ mg/Nm}^3$;
[OGC] = 120 mg/Nm³ in accordance with point 2 (b) (i), of Annex II of the REGULATION (EU) 2015/1185.
 - [OGC] ≤ 70 mg/Nm³ in accordance to Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle
 - 9.1.4 NO_x of exhaust gases: $NO_x^* = 142 \text{ mg/Nm}^3 \leq [NO_x] = 200 \text{ mg/Nm}^3$.
[NO_x] = 200 mg/Nm³ in accordance with point 2 (d) (i), of Annex II of the REGULATION (EU) 2015/1185.
 - [NO_x] ≤ 160 mg/Nm³ in accordance to Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle.

* Results from additional measurements from Laboratory Termoplam, Sofia

** Results from the Test Report № 141/10.02.2021 of Laboratory Termoplam, Sofia

- 9.5. Seasonal space heating energy efficiency:
 $\eta_s = 68,1 \% > [\eta_s] = 65 \%$
Where:

-
- $\eta_s = 68,1 \%$ - the seasonal space heating energy efficiency in active mode is calculated as $\eta_{th,nom}$.
 - $\eta_{th,nom} = 77,1 \%$ is the useful efficiency at nominal heat output, based on NCV. Result from the Test Report № 141/10.02.2021 of Laboratory Termoplam, Sofia.
 - $[\eta_s] \geq 65 \%$ in accordance with point 1 (a) (ii), of Annex II of the REGULATION (EU) 2015/1185.
- $[\eta_{th,nom}] \geq 77 \%$ in accordance to Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle.

X. CONCLUSION:

Roomheater devices "BERNA" and "BERNA LUX" are satisfying and fulfilling the requirements of REGULATION (EU) 2015/1185 and Decreto del Ministero dell'Ambiente 7 novembre 2017, n. 186 per la classe 4 stelle.

XI. ENCLOSURES:

- 10.1. Pictures of fireplace "BERNA" and "BERNA LUX";
- 10.2. Assembly drawing of the sample: 2.



MANAGER:
(eng. Pl. Iliev)

10.02.2021.

NOTE:

The test results and conclusions relate only to the tested samples.
Extracts from the test report can't be reproduced without written agreement of the testing laboratory.
This document is only informative.

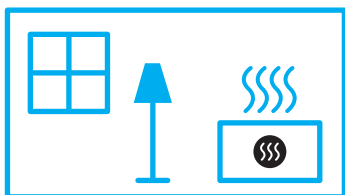
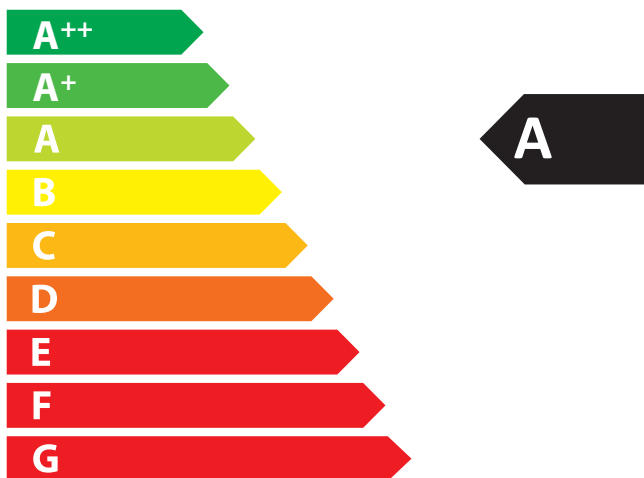


ENERG
енергия · ενέργεια



BLIST d.o.o

BERNA LUX



5,3
kW

ENERGIA · ЕНЕРГИЯ · ΕΝΕΡΓΕΙΑ · ENERGIJA · ENERGY · ENERGIE · ENERGI

2015/1186