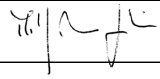


TEST REPORT N° EP21-0064413-01 - RP01

Standards references	EN 15502-1:2012 + A1:2015 EN 15502-2-1:2012 + A1:2016
Laboratory name	IMQ Spa Via dell'Industria 55, 31020 Zoppè - San Vendemiano Tel. (+39) 0438 470255 / 778358
Testing location	IMQ Spa Via dell'Industria 55, 31020 Zoppè - San Vendemiano
Applicant	FIAMMA GIRO S.r.l.
Applicant's address	Via Landucci, 2/B - 51100 Pistoia (PT)
Manufacturer	FIAMMA GIRO S.r.l.
Factory's address	Via P. Bettini, 19 - 37049 Villa Bartolomea (VR)
Type of appliance tested	Electrical boiler
Trade mark	Fiamma
Model	ELECKTRA COMPACT 12 BP-L Wi-Fi
Receipt date of the samples	2021-01-20
BEM	BEM 102511/1
Sampling method	Chosen by the manufacturer
Gas category	N.A.
Installation type	N.A.
Date examination started	2021-04-22
Date examination finished	2021-07-22
Date of issue	2021-07-22
Total number of pages	12
N° of enclosures	-
Compiled by	M.A. Gandin 
Approved by	Giovanni Granzotto
General disclaimer	<i>The results of tests and checks reported in this Test Report refer exclusively to the samples tested and described in the Report itself. This report shall not be reproduced partially without the written approval of IMQ S.p.A.. The authenticity of this Test Report and its contents can be verified by contacting IMQ S.p.A., responsible for this Test Report.</i>

Manufacturer **FIAMMA GIRO S.r.l.**
 Model **ELEKTRA COMPACT 12 BP-L Wi-Fi**
 Test report N° **EP21-0064413-01 - RP01**

Foto
Pictures



Fiamma®		TIPO/TYPE	
37049 - VILLABARTOLOMEA (VR) - ITALY		-	
Tel. (+39) 0442.659028 - Fax (+39) 0442.659045		Paese/Country	
51100 - PISTOLA - ITALY - Tel. (+39) 0573.532812 Fax (+39) 0573.532890		IT - GB	
CE Matr./Sr n°		N°2021 /	
MODELLO ELEKTRA COMPACT 12 BP-L Wi-Fi			
MODEL			
PMS	0,3 MPa	T _{MAX}	80 °C
PMS _{nom}	0,25 MPa		
PMW	0,65 MPa	D _{MAX}	7,1 l/min
PMW _{nom}	0,6 MPa	D _{MIN}	5,7 30K
Bollitore sanitario / Sanitary Tank			37 l
Pn RISCALDAMENTO / HEATING	2,0 + 12,0 kW		
Pn SANITARIO Comfort / Comfort SANITARY	12,0 kW		
Pn SANITARIO Economy / Economy SANITARY	2,0 kW		
Pn RISCALDAMENTO+BOLLITORE / HEATING+SANITARY TANK	4,0 + 12,0 kW		
V	230-240	kW	12,1
Hz	50	IP	X1
			Made in Italy
<small>Conforme alle Norme / Complies with the IEC 60335-2-21 2012 with IEC 60335-1 2010 with EN 60335-2-21 2003+A1 2009+A2 2008 EN 60335-1 2012 EN 62233 2008</small>			

Manufacturer **FIAMMA GIRO S.r.l.**
Model **ELECKTRA COMPACT 12 BP-L Wi-Fi**
Test report N° **EP21-0064413-01 - RP01**

Note Generali
General Note

- Le incertezze di misura dichiarate in questo documento sono state espresse come incertezza estesa ottenuta moltiplicando l'incertezza tipo composta per un fattore di copertura $k=2$ corrispondente ad un livello di fiducia di circa il 95%.
Vedi allegato n°1 per incertezze strumentali
*The measurement uncertainties reported in this document have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor $K=2$ corresponding to a confidence level of about 95%.
See enclosure n°1 for the equipment uncertainty*

- I campioni oggetto delle prove sono stati prelevati e consegnati dal fabbricante.
The samples tested have been taken and delivered by the manufacturer.

Manufacturer **FIAMMA GIRO S.r.l.**
Model **ELECKTRA COMPACT 12 BP-L Wi-Fi**
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Elenco prove
Test list

Standard: EN 15502-1:2012 + A1:2015
EN 15502-2-1:2012 + A1:2016

Clause	Test
8.2.3	Soundness of the water circuit
8.11.3.1.1.1	Soundness of parts containing domestic water
9.2 - 9.3	USEFUL EFFICIENCIES
10	Electric auxiliary energy

Manufacturer **FIAMMA GIRO S.r.l.**
 Model **ELECKTRA COMPACT 12 BP-L Wi-Fi** Date 2021-04-22
 Test report N° **EP21-0064413-01 - RP01** Technician M.A. Gandin

Dati nominali
Nominal data

Brand name	Fiamma
Model	ELECKTRA COMPACT 12 BP-L Wi-Fi
Installation type admitted	-----
Registration number	Prototype
Burner adjusting	-----
Flame surveillance	-----
Ignition type	-----
<u>Heating circuit</u>	
Max temperature of heating water	75,0 °C
Max pressure of heating water (PMS)	3,0 bar
Heating water circulation	Forced
Pressure class	2
<u>Sanitary circuit</u>	
Sanitary hot water production	7,1 l/min
Kind of production	Istantaneous + 37 l storage
Max pressure of DHW (PMW)	6,0 bar
<u>Electrical nominal data</u>	
Input voltage	230-240 V
Frequency	50 Hz
Electrical power	12,1 kW
Protection level against moistness and water inlet	IP X1

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Dati tecnici
Technical data

Nominal heat INPUT			
Maximum		kW	12,1
Minimum		kW	-----
Nominal heat OUTPUT			
Maximum		kW	12,0
Minimum		kW	-----
Efficiency			
Maximum heat input	(80-60°C)	%	99,0
Minimum heat input	(80-60°C)	%	
Maximum heat input	(50-30°C)	%	
Minimum heat input	(50-30°C)	%	
Partial load return 47°C	(direct method)	%	99,2
Partial load return 30°C	(direct method)	%	99,4
Sanitary circuit			
Specific rate ($\Delta T=30K$)		l/min	7,1
Injectors identification			
G20		marking	-----
G25		marking	-----
G30		marking	-----
G31		marking	-----
Injectors pressure			
			MAX MIN
G20	mbar	-----	-----
G25	mbar	-----	-----
G30	mbar	-----	-----
G31	mbar	-----	-----
Gas diaphragm diameter (cat. E+)			
		mm	-----

Manufacturer **FIAMMA GIRO S.r.l.**
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8.2 SOUNDNESS

	cm	cm ³	sec	Measured leakage cm ³ /h	Limit cm ³ /h	
8.2.1 Soundness of the gas circuit						
Upstream pressure: ----- mbar						
Delivery condition	-----	-----	-----	-----	140	-----
At the end of the tests	-----	-----	-----	-----	140	-----
8.2.3 Soundness of the water circuit						
Pressure class: 2						
Maximum waterside operating pressure 3,0 bar						
10 min to a pressure of 4,5 bar						✓
8.11.3.1.1.1 Soundness of parts containing domestic water						
Maximum pressure given on the data plate 6,0 bar						
10 min to a pressure of 9,0 bar						✓
✓ = Conformity NC = Not in conformity ----- = Not applicable x = Not done						

Manufacturer **FIAMMA GIRO S.r.l.**
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 Technician **M.A. Gandin**

9.2 - 9.3 USEFUL EFFICIENCIES

Maximum heat input	12,1	kW	Maximum heat output	12,0	kW
Minimum heat input	-----	kW	Minimum heat output	-----	kW
Average heat input	-----	kW	Average heat output	-----	kW
Range rated	no				
Type of boiler	electric				
Type of gas	-----		<u>Parameter for partial load test</u>		
Installation type	-----		Method	Direct	
Evacuation duct diameter	-----	mm	Operating mode		
Air inlet duct diameter	-----	mm	Conditions		
Evacuation duct length	-----	m	T _{ON}	175,0	sec
Air inlet duct length	-----	m	T _{OFF}	425,0	sec
Diaphragm diameter	-----	mm			

Test n°		1	2	3	4	5	6	7
Ambient temperature	°C	23,9					23,1	23,0
Ambient air speed	m/s							
Relative humidity	%	45,6					45,8	45,9
Specific humidity	g/kg	8,5					8,1	8,1
Atmospheric pressure	(Pa) mbar	1015					1013	1012
Net calorific value of used gas	(Hi) MJ/m ³ st	-----					-----	-----
Gas meter pressure	(Pg) mbar	-----					-----	-----
Gas injector pressure	(Pb) mbar	-----					-----	-----
Gas temperature	(Tg) °C	-----					-----	-----
Gas meter correction		-----					-----	-----
Supply voltage	V	235,2					235,3	234,9
Time	s	600,0					600,0	600,0
Measured heat input	kW	12,48					3,66	3,64
Loss at test bench	(Dp) kJ							
Water rate	kg/h	538,1					531,3	536,4
Return temperature	°C	55,0					30,0	47,0
Flow temperature	°C	74,7					35,9	52,7
ΔT measured		19,7					5,9	5,8
Power issued to water	kW	12,36					3,64	3,61
Water efficiency	%	99,0					99,4	99,2
Water efficiency uncertainty	%							

Test n° 1	Maximum heat input	75-55°C	Circulator not supplied	T _{ret} =60°C ±1K	ΔT=20K ±2
Test n° 2	Minimum heat input	75-55°C		T _{ret} =60°C ±1K	ΔT=20K ±2
Test n° 3	Average heat input	75-55°C		T _{ret} =30°C ±1K	ΔT=20K ±2
Test n° 4	Maximum heat input	50-30°C		T _{ret} =30°C ±1K	ΔT=20K ±2
Test n° 5	Minimum heat input	50-30°C		T _{ret} =30°C ±1K	ΔT=20K ±2
Test n° 6	Partial load (30%Q _{max}) return 30°C		Circulator not supplied	T _{ret} =30°C ±1K	Q _{mes} =±1%Q _{ref}
Test n° 7	Partial load (30%Q _{max}) return 47°C		Circulator not supplied	T _{ret} =30°C ±1K	Q _{mes} =±1%Q _{ref}

General note: The measurement uncertainties reported in this document have been estimated as expanded uncertainty obtained multiplying the standard uncertainty by the coverage factor K=2 corresponding to a confidence level of about 95%.
See enclosure n°1 for the equipment uncertainty

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10.6 AUXILIARY ELECTRICITY CONSUMPTION MEASUREMENTS REQUIRED FOR ECO-DESIGN AND LABELLING REGULATIONS

		Unit	Measured
<p>10.6.2 The system boundary contains all electrical components between the manual shut-off device and the flue outlet of the combustion circuit, <u>excluding the circulation pump.</u></p>			
<p>10.6.3 Auxiliary electricity consumption at nominal heat input</p> <p>Test conditions as pt. 9.2.2</p>			
Measured auxiliary energy	$e_{l_{max}}$	kW	12,4821
<p>10.6.4 Auxiliary electricity consumption at part load</p> <p>Test conditions as pt. 9.3.2.2 or 9.3.2.2</p>			
Measured auxiliary energy	$e_{l_{min}}$	kW	3,6640
<p>10.6.5 Auxiliary electricity consumption at stand-by</p> <p>Power input measured during operation in stand-by</p>			
Measured auxiliary energy	P_{SB}	kW	0,0080

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STANDBY LOSSES

	Unit	Measured
9.3.2.3.1.3 Standby losses		
<u>Test with fan OFF</u>		
Electrical power consumed	kW	0,266
Mean water temperature	°C	52,2
Mean ambient temperature	°C	23,0
Temperature difference	°C	29,2
Heat losses from the test rig	kW	0,130
Standby losses with fan OFF	kW	0,141
<u>Test with fan ON</u>		
Electrical power consumed	kW	-----
Mean water temperature	°C	-----
Mean ambient temperature	°C	-----
Temperature difference	°C	-----
Heat losses from the test rig	kW	-----
Standby losses with fan ON	kW	-----
Does the fan run during the stand-by period? No		
Stand-by period:	s	-----
Time for which the fan is in operation during the stand-by period	s	-----
Standby losses	kW	0,146

V=in conformity with the standard NC = not in conformity ----- = Not applicable x = Not done

Manufacturer **FIAMMA GIRO S.r.l.**
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SEASONAL SPACE HEATING ENERGY EFFICIENCY

Trade mark	Fiamma		
Model	ELECKTRA COMPACT 12 BP-L Wi-Fi		
Type of boiler	Electrical boiler		
<i>Nominal data</i>			
Nominal output	P ₄	kW	12,4
Useful efficiency at Q _n	μ ₄	%	99,00
Standby mode power consumption	P _{SB}	kW	0,008
Standby losses	P _{stby}	kW	0,146
Conversion coefficient	CC		2,5
Electric power consumption at full load	e _{lmax} = EC	kW	12,482
Ignition burner power consumption		kW	0,000
Correction due to temperature controls	F1	%	3,000
Correction due to auxiliary electricity consumption	F2	%	0,000
Correction due to standby heat loss	F3	%	0,002
Correction due to ignition burner power consumption	F4	%	0,000
Seasonal space heating efficiency in active mode	μ _{SON}	%	99,00
Seasonal space heating energy efficiency	μ_s	%	96,0
Seasonal space heating energy class	A		

Seasonal space heating energy efficiency classes of heaters, with the exception of low-temperature heat pumps and heat pump space heaters for low-temperature application

Seasonal space heating energy efficiency class	Seasonal space heating energy efficiency η _s in %
A ⁺⁺⁺	η _s ≥ 150
A ⁺⁺	125 ≤ η _s < 150
A ⁺	98 ≤ η _s < 125
A	90 ≤ η _s < 98
B	82 ≤ η _s < 90
C	75 ≤ η _s < 82
D	36 ≤ η _s < 75
E	34 ≤ η _s < 36
F	30 ≤ η _s < 34
G	η _s < 30

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Fine del rapporto di prova
End of test report
