

### Assessment in conformance to requirements of standards:

- IEC 60896-21 Stationary lead-acid batteries – Part 21: Valve regulated types – Methods of test
- IEC 60896-22 Stationary lead-acid batteries – Part 22: Valve regulated types – Requirements

**APPLICANT: FIAMM ENERGY TECHNOLOGY S.p.A – Industrial Batteries**

LABORATORY FACILITY: **Laboratory R&D,**

Viale Europa 75; I-36075 Montecchio Maggiore (VI)

LABORATORY TEST REPORT No.: **RD-2229-3**

**ASSESSMENT TARGET: VRLA AGM Batteries – FG Range**

PRODUCTS DATA SHEET					
Model	Nominal capacity	Weight	Dimensions [mm]		
	[Ah]		[kg]	Length	Width
FG10121	1,2	0,28	97	24	59
FG10301	3	0,62	134	34	67
FG10381	3,8	0,60	66	33	125
FG10451	4,5	0,74	70	47	106
FG10721	7,2	1,15	151	34	100
FG11201/2	12	1,76	151	50	99
FG20086	0,8	0,33	96	25	62
FG20121	1,2	0,57	97	49	57
FG20121A	1,2	0,52	97	43	59
FG20201	2	0,80	178	35	67
FG20271	2,7	1,06	79	56	105
FG20341	3,4	1,24	134	67	67
FG20451	4,5	1,48	90	70	107
FG20721/2	7,2	2,43	151	65	100
FG21201/2	12	3,73	151	98	100
FG21703	17	5,90	181	76	167
FG21803	18	5,80	181	76	167
FG22703	27	9,00	166	175	125
FG24204	42	13,80	197	165	170
FG27004	70	22,60	350	166	174

Inspection Body: TÜV Thüringen - Industrial Services

Inspector: Dipl.-Ing. Justo Moreno



Data 01.02.2017

The test results are exclusively related to the test samples. This report must not be copied in an abridged version without the written permission of the test institute

**TECHNICAL FEATURES**

<b>Grids</b>	Gravity casted grids with high purity lead calcium tin alloy
<b>Container and cover</b>	Thick walled ABS plastics, designed for unsurpassed mechanical strength
<b>Design life</b>	5 years
<b>Maintenance</b>	Non-spillable and maintenance free
<b>Eurobat classification</b>	Eurobat "Standard Commercial" – 3-5 years
<b>Applications</b>	Unstable grid & off-grid installation; Leisure & toys; Minor traction & medical equipment; Renewable energy storage
<b>Nominal voltage</b>	6V and 12V
<b>Capacity range [20 h]</b>	0,8 to 70 Ah

**ASSESSMENT PURPOSE**

Documentation review for updating of corporate name of Attestation No.: **257402-1092**

**TEST RESULTS**

The sampling at 02/03/2015 has been carried out according to the section 5.4 of IEC 60896-21:

- Safe operation characteristics – Sec. 6.6: **3** samples
- Performance characteristics – Sec. 6.11: **6** samples
- Durability characteristics – Sec. 6.20 and Sec. 6.21: **3** samples

The dimensional and material compliance with the ranges listed in the brochure has been checked by visual control on the tested samples.

Product performance		IEC 60896-21 test clause result	
6.6 Content and durability of required markings	W	Legibility after tests ensured	
6.11 Discharge capacity in 20 hours	R	>95 % at C <sub>20</sub>	
6.20 Dimensional stability at elevated internal pressure and temperature	R	Deviation measured on the middle: Length: <1%    Width: <1%	
6.21 Stability against mechanical abuse of units during installation	W	Shortest drop edge test: pass	Corner drop test: pass

**R = Review / W = Witness**



<b>Document No.:</b>	AR-1701-FAT-109	<b>Data</b>	01/02/2017
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**EMPLOYED TEST INSTRUMENTS AND CALIBRATION**

INSTRUMENT	MATR.	CALIBRATION DATE	RANGE	Certificate No.	CALIBRATION LABORATORY
Power supply	14023179	March 2014	0-250 VDC 0-5 A 0-100°C	012015/21	BERTOLA Manufacturer
Multimeter	MY49510032	01 April 2014	0-1000 V	1-5811541270	AGILENT
Power supply	AIF	November 2014	0-120 V 0-250 A	C-1631	ELTRA Manufacturer
Calipers	48038	March 2015	0 – 1000 mm	36M20	MITUTOYO

**CONCLUSIONS AND REQUIRED ACTIONS**

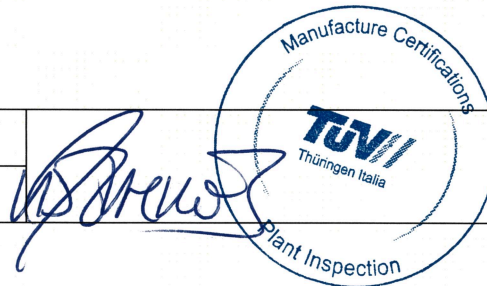
Having assessed the reported results, we declare that these are compliant with the requirements of the product specifications.

Annexes:

1. Laboratory Test Report No.: RD-2229-3
2. Instruments calibration certificates: 4 certificates

**INSPECTOR**

Name	Date
Justo Moreno	01/02/2017


**COMPANY'S REPRESENTATIVE**

Name	Date
Sergio Agnolin	01/02/2017

Dott. Agnolin Sergio

 R&D LABORATORY  
Supervisor

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