

FIAMM



The FIAMM's LM battery range can be used in standby mode or for duties requiring repeated charging and discharging operations (cycling applications). The LM battery range is specially designed for difficult environments and special applications such as solar and long discharge rates. Its tubular positive plates, a very reliable post seal and the fully insulated connections among cells, guarantee a long life, even in the worst operating conditions. FIAMM has a program of continuous improvement, investing in manufacturing processes, equipment and technology. FIAMM's Standby Battery manufacture is in compliance with ISO 9001 and ISO 14001 quality assurance. Our continuous investment in battery technology is reflected by means of premium products that are of the highest quality and reliability. FIAMM's LM tubular vented lead acid batteries are the ideal energy source for many different standby applications.

LM (OPzS)

ENDURLITE range

TECHNICAL FEATURES

- ▶ **Positive tubular plates:** with lead selenium alloy to reduce frequency of watering intervals. The tubular design prevents the loss of active material during operation, this result in a longer operating life and high performance.
- ▶ **Negative plates:** designed to have service life consistent with the positive plates. The alloy and curing process are designed so that porosity of active material is maintained during operation.
- ▶ **Electrolyte:** high purity sulfuric acid solution with a specific gravity of 1.24 (± 0.01) at 77°F, lower specific gravity acid available upon request.
- ▶ **Separators:** made of high quality microporous material, with low electrical resistance to achieve the lowest self discharge and highest efficiency.
- ▶ **Containers:** injection moulded from high quality transparent SAN (Styrene acrylonitrile) for easy cell status inspection.
- ▶ **Lids:** made of opaque SAN, flame retardant ABS is optional.
- ▶ **Vent Caps:** effectively prevent acid spray from the cell when 'gassing' during boost charge. They are provided with ceramic filter and bayonet lock, designed to prevent any errant spark or flame from entering the cell.
- ▶ **Connectors:** flexible, fully insulated cable connectors, bolted to the terminal with an insulated screw, having a probe hole on the top for electrical measurement.
- ▶ **Terminals:** female threaded terminals (M10) ensure perfect contact and a low resistance with the flexible cable connectors.
- ▶ **Post seals:** high integrity post seal design to prevent electrolyte leakage and terminal corrosion.

APPLICATIONS

- ▶ Telecommunications
- ▶ Solar and Wind Power Stations
- ▶ Electric Utilities
- ▶ Railway signalling
- ▶ Airport and Seaport signalling



PRODUCT FEATURES

- ▶ High Operational reliability
- ▶ Design Life: up to 20 years on float in temperature controlled environments
- ▶ Very Low Maintenance
- ▶ Excellent for cycling applications: up to 1500 cycles to 80% DOD
- ▶ Capacity Range from 100 Ah to 3500 Ah

Standby Batteries

LM (OPzS)

ENDURLITE range



FIAMM LM (OPzS) Range

Cell Type	DIN Type	Capacity Ah 8 hrs to 1.75 Vpc at 77°F (Sg 1.24)	Weight (Filled) lbs.	Electrolyte amount (Gals)	Dimensions in/(mm)			Terminals
					Length	Width	Height	+/-
LM 100	2 OPzS 100	109	30.8	1.06	4.1/(104)	8.1/(206)	16.5/(419)	1/1
LM 150	3 OPzS 150	164	35.3	0.98	4.1/(104)	8.1/(206)	16.5/(419)	1/1
LM 200	4 OPzS 200	220	39.7	0.9	4.1/(104)	8.1/(206)	16.5/(419)	1/1
LM 250	5 OPzS 250	274	46.3	1.22	4.9/(125)	8.1/(206)	16.5/(419)	1/1
LM 300	6 OPzS 300	329	55.1	1.37	5.7/(145)	8.1/(206)	16.5/(419)	1/1
LM 350	5 OPzS 350	390	63.9	1.56	4.9/(125)	8.1/(206)	21.1/(536)	1/1
LM 420	6 OPzS 420	468	77.2	1.85	5.7/(145)	8.1/(206)	21.1/(536)	1/1
LM 490	7 OPzS 490	546	88.2	2.06	6.5/(165)	8.1/(206)	21.1/(536)	1/1
LM 600	6 OPzS 600	640	103.6	2.67	5.7/(145)	8.1/(206)	28/(711)	1/1
LM 700	7 OPzS 700	746	132.3	3.70	8.3/(210)	7.5/(191)	28/(711)	2/2
LM 800	8 OPzS 800	856	138.9	3.59	8.3/(210)	7.5/(191)	28/(711)	2/2
LM 900	9 OPzS 900	960	163.1	4.76	8.3/(210)	9.2/(234)	28/(711)	2/2
LM 1000	10 OPzS 1000	1064	169.8	4.50	8.3/(210)	9.2/(234)	28/(711)	2/2
LM 1200	12 OPzS 1200	1280	198.4	5.34	8.3/(210)	10.8/(274)	28/(711)	2/2
LM 1500	12 OPzS 1500	1648	249.1	5.97	8.3/(210)	10.8/(274)	33.9/(861)	2/2
LM 1750	14 OPzS 1750	1920	326.3	9.38	8.4/(214)	15.7/(399)	32.9/(837)	3/3
LM 1875	15 OPzS 1875	2056	335.1	8.98	8.4/(214)	15.7/(399)	32.9/(837)	3/3
LM 2000	16 OPzS 2000	2192	343.9	8.48	8.4/(214)	15.7/(399)	32.9/(837)	3/3
LM 2250	18 OPzS 2250	2464	414.5	11.5	8.4/(214)	19.2/(488)	32.9/(837)	4/4
LM 2500	20 OPzS 2500	2744	432.1	10.67	8.4/(214)	19.2/(488)	32.9/(837)	4/4
LM 3000	24 OPzS 3000	3288	504.9	13.40	8.4/(214)	22.7/(577)	32.9/(837)	4/4
LM 3500	28 OPzS 3500	3544	540.1	12.20	8.4/(214)	22.7/(577)	32.9/(837)	4/4

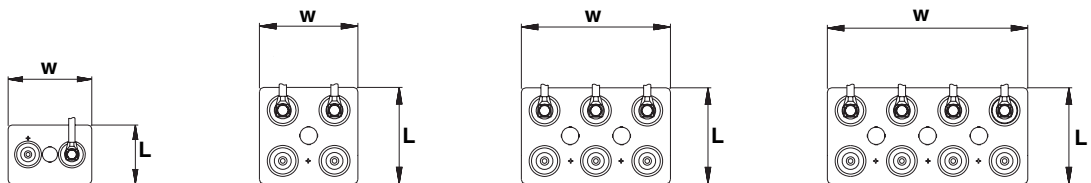
Terminal Lay Outs

LM 100
TO
LM 600

LM 700
TO
LM 1500

LM 1750
TO
LM 2000

LM 2250
TO
LM 3500



Standby Batteries

FIAMM

LM (OPzS)

ENDURLITE range

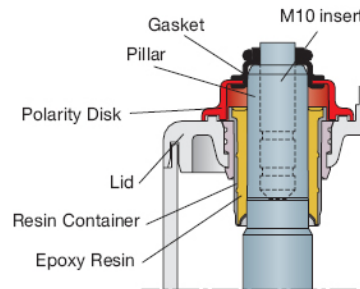
Constant current discharge rates Amperes to 1.75 Vpc at 77°F (25°C) Sg 1.24

Cell Type	Discharge Time (Minutes)											
	1	30	60	90	120	180	240	300	480	600	720	1200
LM 100	100	77.3	55.0	43.8	36.6	28.1	23.3	19.8	13.7	11.4	9.72	6.31
LM 150	150	116	82.5	65.7	54.8	42.2	34.9	29.7	20.6	17.1	14.6	9.47
LM 200	200	155	110	87.6	73.1	56.2	46.5	39.6	27.5	22.9	19.4	12.6
LM 250	250	193	138	109	91.4	70.3	58.1	49.4	34.3	28.6	24.3	15.8
LM 300	300	232	165	131	110	84.4	69.8	59.3	41.2	34.3	29.2	18.9
LM 350	313	252	190	153	129	99.3	81.6	69.7	48.9	41.1	34.9	22.1
LM 420	375	302	228	184	155	119	97.9	83.6	58.7	49.3	41.9	26.5
LM 490	438	353	266	214	180	139	114	97.5	68.5	57.5	48.9	30.9
LM 600	464	393	309	253	216	165	136	115	80.0	66.4	56.4	36.7
LM 700	541	459	361	296	252	193	158	134	93.3	77.4	65.8	42.9
LM 800	619	524	412	338	288	221	181	153	107	88.5	75.2	49.0
LM 900	696	590	464	380	324	248	204	172	120	99.6	84.6	55.1
LM 1000	774	655	515	422	360	276	226	192	133	111	94.0	61.2
LM 1200	928	786	618	507	432	331	271	230	160	133	113	73.5
LM 1500	808	797	711	600	520	407	337	288	206	174	148	93.5
LM 1750	943	930	829	700	606	475	393	335	240	204	173	109
LM 1875	1010	997	888	750	649	509	421	359	257	218	185	117
LM 2000	1077	1063	948	800	693	543	450	383	274	233	198	125
LM 2250	1212	1196	1066	900	779	611	506	431	308	262	222	140
LM 2500	1347	1329	1185	1000	866	679	562	479	343	291	247	156
LM 3000	1616	1594	1421	1200	1039	814	674	575	411	349	297	187
LM 3500	1885	1860	1658	1400	1212	945	764	642	443	366	311	198

ELECTRICAL CHARACTERISTICS

- ▶ **Nominal Voltage** : 2 V
- ▶ **Float Voltage at 77°F** : 2.23 Vpc
- ▶ **Boost Charge** : max 2.4 Vpc with max current of 0.25 C₈(A)
- ▶ **Self Discharge** : <2% per month at 77°F

HIGH RELIABILITY POST SEAL



FIAMM

FIAMM Technologies LLC, One FIAMM Way, Waynesboro, GA 30830 Tel. 888-77-FIAMM (888-773-4266)

Standby Batteries



Secure Power Solutions

HEADQUARTER

ITALY
 FIAMM S.P.A
 Viale Europa,63
 36075 Montecchio Maggiore (VI)
 Tel: + 39 0444 709311
 Fax : +39 0444 694178
 www.fiamm.com

MANUFACTURING PLANTS (Industrial Division)

USA:
 FIAMM Technologies,LLC
 1 FIAMM Way
 Waynesboro, GA 30830
 Tel : +1 (706) 437-3220
 Fax: +1 (706) 437-3300
 www.fiammamerica.com

ITALY:
 A.I.F S.P.A
 Via Dovaro , 8
 36045 Almisano di Lonigo (VI)
 Tel: +39 0444 725511
 Fax: +39 0444725500
 info.standby.italy@fiamm.com

CHINA:
 FIAMM Enertech Co., Ltd.
 Hannan Road 458
 Shamao Town, Hannan District
 430090 Wuhan City, Hubey Province, P.R. China
 Tel: +86 27 84782088
 Fax : +86 27 84782888
 www.fiammenertech.com

CZECH REPUBLIC
 AKUMA-průmyslove baterie s.r.o
 Parizske komuny 96,Debr nad Jizerou
 293 07 Mlada Boleslav
 Tel: +420/326/748344
 Fax: +420/326/748370
 info.standby.czech@fiamm.com

USA SALES OFFICES

FIAMM Technologies,LLC
 1 FIAMM Way
 Waynesboro,GA 30830

Telecom Division
 Tel: +1 (706) 437-3220
 Fax: +1 (706) 437-3300
 telecomsales@fiammtech.com

Industrial Division
 Tel: +1 (706) 437-3220
 Fax: +1 (706) 437-3300
 industrialsales@fiammtech.com

USA TECHNICAL SUPPORT

FIAMM Technologies, LLC
 1 FIAMM Way
 Waynesboro ,GA 30830
 Tel: +1 (706) 437-3226
 Fax: +1 (706) 437-3300
 techsupport@fiammtech.com

USA CUSTOMER SERVICE

FIAMM Technologies,LLC
 1 FIAMM Way
 Waynesboro, GA 30830
 Tel: +1 (706) 437-3220
 Fax: +1 (706) 437-3300
 customersvc@fiammtech.com

PROVIDED BY