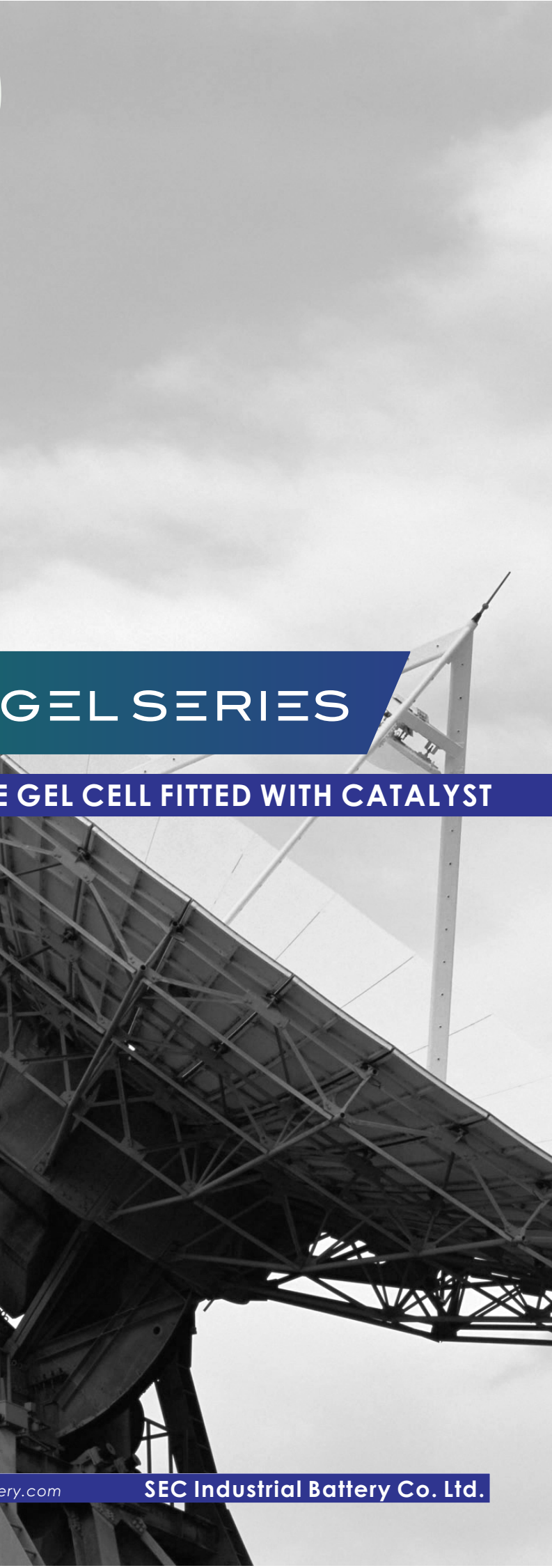
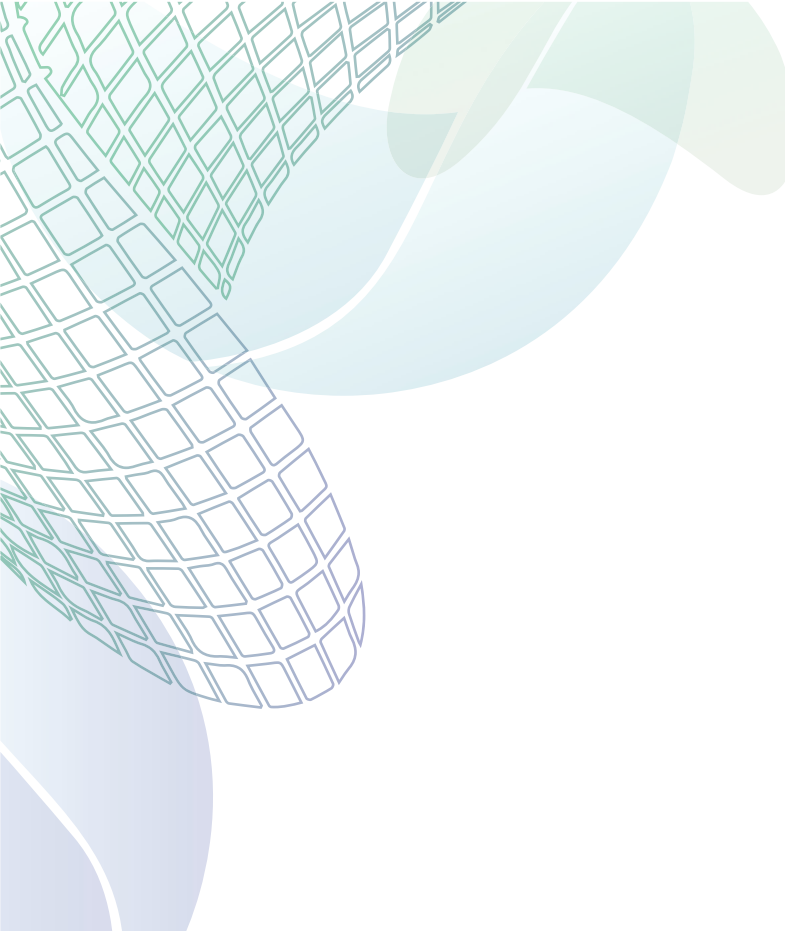




CELLYTE 2 TLGM GEL SERIES

2V FLAT PLATE GEL CELL FITTED WITH CATALYST



SEC - 2 - TLGM

info@secbattery.com / www.secbattery.com

SEC Industrial Battery Co. Ltd.

Battery Profile

DESIGN LIFE

15 year design life in float service @ 25°C with catalyst.

100Ah-3200Ah at C/10 to 1.80vpc @ 25°C.

MANUFACTURED TO COMPLY

IEC 60896-21/22-2004

BS 6290 Part 4

Eurobat

UL Component approval

ISO 9001:2000

ISO 14001:2004

APPLICATIONS

Telecommunications
Emergency Lighting
Photovoltaic/Solar
Navigation Aids
Control System
Standby Power
Cellular Radio
Switchgear
UPS

SPECIFICATIONS

Positive electrode:	Pure Lead Tin
Negative electrode:	Calcium Grid Plate
Float Voltage:	2.25 vpc $\pm$ 1% at 25°C
Max.Charge Voltage:	2.35 vpc $\pm$ 1% at 25°C
Electrolyte:	Suspended Thixotropic Gel
Safety Valve:	1-3 PSI Self-Resealing
Separators:	Grey Gel Separators
Terminals:	Integral Copper Insert for M10 Bolt

INNOVATIVE FEATURES

Valve regulated with Catalyst
Propriety virgin Lead 1.6% Tin Alloy
Latest plates formation technology
Uniform cell cooling
Increased Capacity with Catalyst
Never requires addition of water
Spill proof and leak proof
Very low gassing on float charge
Explosion proof / Increased safety
Operates at low internal pressure
For use in vertical or horizontal positions



CAPACITY

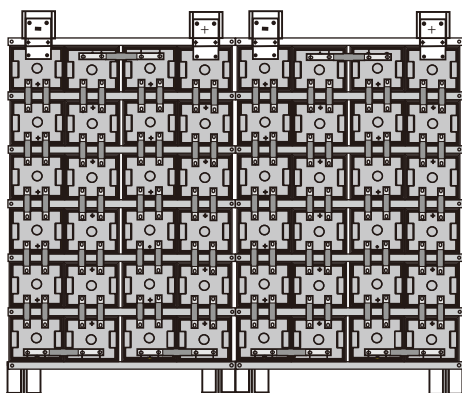
Ampere Hour @ 25°C

SEC CELL Type	End Volts /Cell	DATA AMPS @ 25°C			End Volts /Cell	DISCHARGE DATA AMPERE HOURS @ 25°C												
		DISCHARGE TIME IN MINUTES				DISCHARGE TIME IN HOURS												
		15mins	30mins	45mins		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48hr	100hr
2-TLGM-100	1.75	119	86.9	69.5	1.80	54.2	60.4	66.1	74.0	80.7	85.0	89.4	98.0	100	103	111	113	122
2-TLGM-150	1.75	179	130	104	1.80	81.3	90.6	99.2	111	121	128	134	147	150	155	167	169	183
2-TLGM-200	1.75	239	174	139	1.80	108	121	132	148	161	170	179	196	200	206	222	226	244
2-TLGM-250	1.75	298	217	174	1.80	136	151	165	185	202	213	224	245	250	258	278	283	305
2-TLGM-300	1.75	358	261	209	1.80	163	181	198	222	242	255	268	294	300	309	333	339	366
2-TLGM-350	1.75	418	304	243	1.80	190	211	231	259	282	298	313	343	350	361	389	396	427
2-TLGM-400	1.75	478	348	278	1.80	217	242	264	296	323	340	358	392	400	412	444	452	488
2-TLGM-420	1.75	478	348	278	1.80	228	254	278	311	339	357	375	412	420	433	466	475	512
2-TLGM-450	1.75	537	391	313	1.80	244	272	297	333	363	383	402	441	450	464	499	509	549
2-TLGM-500	1.75	597	434	348	1.80	271	302	330	369	404	426	447	490	500	516	554	566	610
2-TLGM-550	1.75	657	478	382	1.80	298	332	364	407	444	468	492	539	550	567	611	622	670
2-TLGM-600	1.75	716	521	417	1.80	325	362	396	444	484	510	536	588	600	619	667	677	731
2-TLGM-650	1.75	776	565	452	1.80	352	393	430	480	524	553	581	637	650	670	722	734	792
2-TLGM-700	1.75	836	608	487	1.80	379	423	462	518	564	595	624	686	700	721	778	792	853
2-TLGM-750	1.75	895	652	521	1.80	407	453	496	555	604	638	671	735	750	773	833	848	914
2-TLGM-800	1.75	955	695	556	1.80	434	483	528	591	644	680	714	784	800	824	888	905	975
2-TLGM-850	1.75	1015	738	591	1.80	461	513	562	629	684	723	760	832	850	876	943	960	1036
2-TLGM-900	1.75	1074	782	626	1.80	488	543	594	666	726	765	804	880	900	928	1000	1018	1097
2-TLGM-1000	1.75	1194	869	695	1.80	542	604	661	740	807	850	894	980	1000	1031	1111	1131	1220
2-TLGM-1100	1.75	1313	956	765	1.80	596	664	727	813	888	935	983	1078	1100	1134	1222	1243	1340
2-TLGM-1200	1.75	1433	1043	834	1.80	650	725	793	888	968	1020	1073	1176	1200	1236	1333	1357	1460
2-TLGM-1300	1.75	1552	1129	904	1.80	705	785	859	962	1048	1105	1162	1272	1300	1340	1444	1469	1580
2-TLGM-1400	1.75	1671	1216	973	1.80	759	846	925	1035	1128	1190	1252	1372	1400	1440	1555	1583	1707
2-TLGM-1500	1.75	1791	1303	1043	1.80	813	906	992	1110	1211	1275	1341	1470	1500	1547	1666	1694	1829

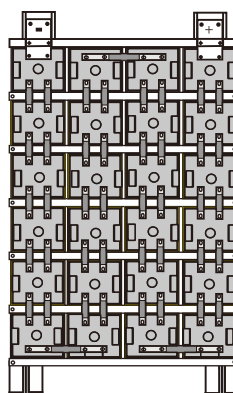
*Actual Battery Discharge Data may be $\pm 5\%$ of figures shown.

Typical Modular Zone 4 Racks for 48 Volt Systems

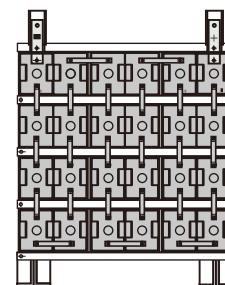
Note: Cells up to 1600Ah. are single cells. Cells over 1600Ah. are made up of 2 x 850Ah. to 2 x 1600Ah. connected in parallel or series to give 1700Ah. to 3200Ah.



Front view
24 x 2TLGM2000 to 3200
(2 x 24 x 1000 to 1600)
2 x 4 post cells



Front view
24 x 2TLGM750 to 1600
4 post cells



Front view
24 x 2TLGM100 to 700
2 post cells

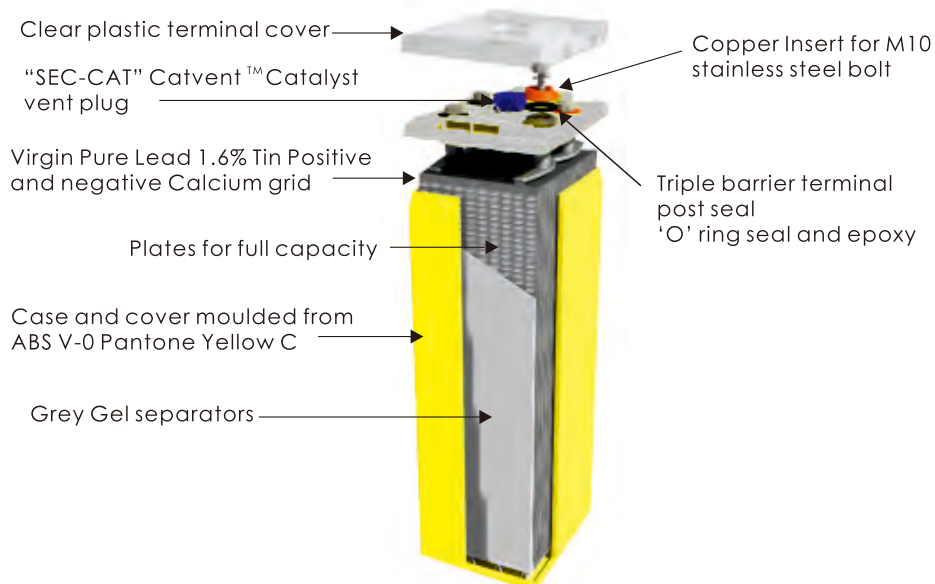
CURRENT

Amps @ 25°C

SEC CELL Type	End Volts /Cell	DATA AMPS @ 25°C			End Volts /Cell	DISCHARGE DATA AMPS @ 25°C													
		DISCHARGE TIME IN MINUTES				DISCHARGE TIME IN HOURS													
		15mins	30mins	45mins		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48hr	100hr	
2-TLGM-100	1.75	119	86.9	69.5	1.80	54.2	40.3	33.1	24.7	20.2	17.0	14.9	12.3	10.0	8.58	4.63	2.35	1.22	
2-TLGM-150	1.75	179	130	104	1.80	81.3	60.4	49.6	37.0	30.3	25.5	22.3	18.4	15.0	12.9	6.94	3.53	1.83	
2-TLGM-200	1.75	239	174	139	1.80	108	80.5	66.0	49.3	40.3	34.0	29.8	24.5	20.0	17.2	9.25	4.71	2.44	
2-TLGM-250	1.75	298	217	174	1.80	136	101	82.5	61.7	50.4	42.6	37.3	30.6	25.0	21.5	11.6	5.89	3.05	
2-TLGM-300	1.75	358	261	209	1.80	163	121	99.0	74.0	60.5	51.0	44.7	36.8	30.0	25.8	13.9	7.06	3.66	
2-TLGM-350	1.75	418	304	243	1.80	190	141	116	86.3	70.5	59.6	52.2	42.9	35.0	30.1	16.2	8.25	4.27	
2-TLGM-400	1.75	478	348	278	1.80	217	161	132	98.7	80.7	68.0	59.6	49.0	40.0	34.3	18.5	9.42	4.88	
2-TLGM-420	1.75	478	348	278	1.80	228	169	139	104	84.7	71.4	62.5	51.5	42.0	36.1	19.4	9.90	5.12	
2-TLGM-450	1.75	537	391	313	1.80	244	181	149	111	90.8	76.6	67.0	55.1	45.0	38.7	20.8	10.6	5.49	
2-TLGM-500	1.75	597	434	348	1.80	271	201	165	123	101	85.1	74.5	61.3	50.0	43.0	23.1	11.8	6.10	
2-TLGM-550	1.75	657	478	382	1.80	298	221	182	136	111	93.6	82.0	67.4	55.0	47.3	25.5	13.0	6.70	
2-TLGM-600	1.75	716	521	417	1.80	325	241	198	148	121	102	89.3	73.5	60.0	51.6	27.8	14.1	7.31	
2-TLGM-650	1.75	776	565	452	1.80	352	262	215	160	131	111	96.8	79.6	65.0	55.8	30.1	15.3	7.92	
2-TLGM-700	1.75	836	608	487	1.80	379	282	231	173	141	119	104	85.8	70.0	60.1	32.4	16.5	8.53	
2-TLGM-750	1.75	895	652	521	1.80	407	302	248	185	151	128	112	91.9	75.0	64.4	34.7	17.7	9.14	
2-TLGM-800	1.75	955	695	556	1.80	434	322	264	197	161	136	119	98.0	80.0	68.7	37.0	18.9	9.75	
2-TLGM-850	1.75	1015	738	591	1.80	461	342	281	210	171	145	127	104	85.0	73.0	39.3	20.0	10.4	
2-TLGM-900	1.75	1074	782	626	1.80	488	362	297	222	182	153	134	110	90.0	77.3	41.7	21.2	11.0	
2-TLGM-1000	1.75	1194	869	695	1.80	542	403	331	247	202	170	149	123	100	85.9	46.3	23.6	12.2	
2-TLGM-1100	1.75	1313	956	765	1.80	596	443	364	271	222	187	164	135	110	94.5	50.9	25.9	13.4	
2-TLGM-1200	1.75	1433	1043	834	1.80	650	483	397	296	242	204	179	147	120	103	55.5	28.3	14.6	
2-TLGM-1300	1.75	1552	1129	904	1.80	705	523	430	321	262	221	194	159	130	112	60.2	30.6	15.8	
2-TLGM-1400	1.75	1671	1216	973	1.80	759	564	463	345	282	238	209	172	140	120	64.8	33.0	17.1	
2-TLGM-1500	1.75	1791	1303	1043	1.80	813	604	496	370	303	255	224	184	150	129	69.4	35.3	18.3	

*Actual Battery Discharge Data may be $\pm 5\%$ of figures shown.

CELLYTE 2-TLGM Cell - Section View



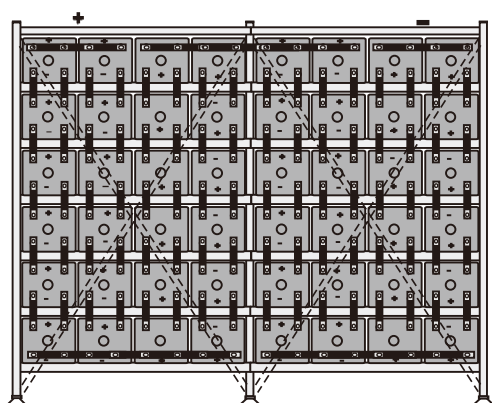
Heavy duty ABS cell jar can be free standing or in zone 4 modular rack

SEC CELL Type	End Volts /Cell	DATA WATTS/CELL @ 25°C			End Volts /Cell	DISCHARGE DATA WATTS/CELL @ 25°C												
		DISCHARGE TIME IN MINUTES				DISCHARGE TIME IN HOURS												
		15mins	30mins	45mins		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48hr	100hr
2-TLGM-100	1.75	214	159	128	1.80	103	76.9	63.5	47.8	39.3	33.3	29.3	24.2	19.8	17.1	9.25	4.71	2.48
2-TLGM-150	1.75	322	237	192	1.80	154	115	95	71.7	59.0	50.0	43.9	36.3	29.8	25.7	13.9	7.06	3.72
2-TLGM-200	1.75	430	318	256	1.80	205	154	127	95.5	78.5	66.6	58.6	48.4	39.7	34.1	18.5	9.42	4.96
2-TLGM-250	1.75	536	396	321	1.80	258	192	158	119	98.3	83.5	73.3	60.5	49.6	42.8	23.2	11.8	6.20
2-TLGM-300	1.75	644	476	386	1.80	309	230	190	143	118	99.9	87.8	72.7	59.5	51.2	27.8	14.1	7.44
2-TLGM-350	1.75	752	555	448	1.80	360	269	222	167	137	117	103	84.8	69.4	59.8	32.4	16.5	8.69
2-TLGM-400	1.75	860	635	513	1.80	411	307	253	191	157	133	117	96.9	79.4	68.3	37.0	18.8	9.93
2-TLGM-420	1.75	860	635	513	1.80	432	323	267	201	165	140	123	102	83.3	71.8	38.8	19.8	10.4
2-TLGM-450	1.75	967	714	577	1.80	462	346	285	215	177	150	132	109	89.3	76.9	41.6	21.2	11.2
2-TLGM-500	1.75	1075	792	642	1.80	513	384	317	238	197	167	146	121	99.2	85.5	46.2	23.6	12.4
2-TLGM-550	1.75	1183	872	705	1.80	564	422	349	263	216	183	161	133	109	94.0	50.9	25.9	13.6
2-TLGM-600	1.75	1289	951	769	1.80	616	461	380	287	236	200	176	145	119	103	55.6	28.2	14.9
2-TLGM-650	1.75	1397	1031	834	1.80	667	500	413	310	255	217	190	157	129	111	60.2	30.6	16.1
2-TLGM-700	1.75	1505	1110	899	1.80	718	538	444	334	275	233	204	170	139	120	64.8	33.0	17.4
2-TLGM-750	1.75	1611	1190	961	1.80	771	577	476	358	294	250	220	182	149	128	69.4	35.3	18.6
2-TLGM-800	1.75	1719	1268	1026	1.80	822	615	507	382	314	266	234	194	159	137	74.0	37.7	19.8
2-TLGM-850	1.75	1827	1347	1090	1.80	873	653	540	406	333	283	249	206	169	145	78.6	40.0	21.1
2-TLGM-900	1.75	1933	1427	1155	1.80	924	691	570	430	354	300	263	217	179	154	83.3	42.4	22.3
2-TLGM-1000	1.75	2149	1586	1282	1.80	1027	769	635	478	393	333	293	242	198	171	92.6	47.1	24.8
2-TLGM-1100	1.75	2363	1745	1411	1.80	1129	845	698	525	433	366	322	266	218	188	102	51.8	27.3
2-TLGM-1200	1.75	2579	1903	1539	1.80	1231	922	761	573	472	400	352	291	238	205	111	56.5	29.7
2-TLGM-1300	1.75	2794	2060	1668	1.80	1335	998	825	621	511	433	381	314	258	222	120	61.2	32.1
2-TLGM-1400	1.75	3008	2219	1795	1.80	1438	1077	888	668	550	466	410	339	278	239	130	66.0	34.7
2-TLGM-1500	1.75	3224	2378	1924	1.80	1540	1153	952	717	590	500	439	363	298	256	139	70.6	37.2

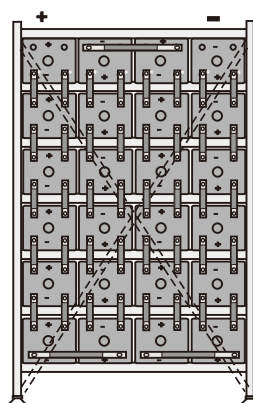
*Actual Battery Discharge Data may be $\pm 5\%$ of figures shown.

Typical Tubular Zone 0 racks for 48Volt System

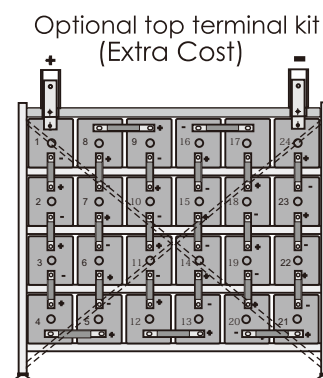
Note: Cells up to 1600Ah. are single cells. Cells over 1600Ah. are made up of 2 x 850Ah. to 2 x 1600Ah. connected in parallel or series to give 1700Ah. to 3200Ah.



Front view
24 x 2TLGM2000 to 3200
(2 x 24 x 1000 to 1600)
2 x 4 post cells



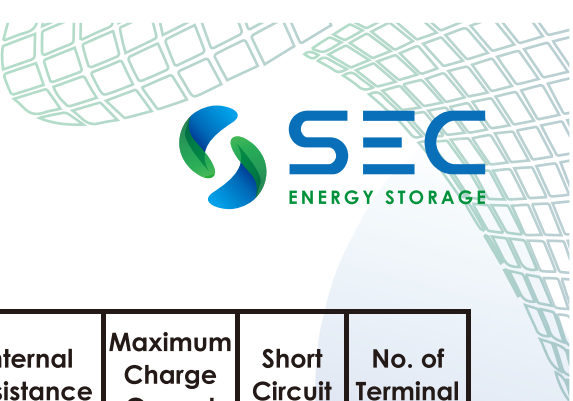
Front view
24 x 2TLGM750 to 1600
4 post cells



Front view
24 x 2TLGM100 to 700
2 post cells

Optional top terminal kit
(Extra Cost)

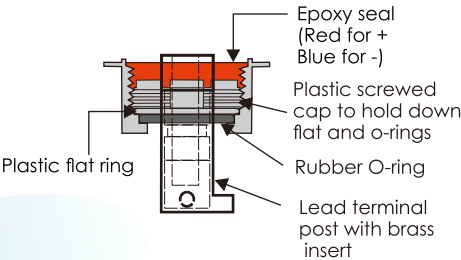
DIMENSIONS



Dimensions, Weights, Data

SEC CELL Type	Nominal Capacity C/10 1.80vpc	Overall Battery Dimesion					Internal Resistance (mΩ)	Maximum Charge Current (A)	Short Circuit (A)	No. of Terminal Post
		Weight (kg)	Length (mm)	Width (mm)	Height (mm)	Total Height (mm)				
2-TLGM-100	100	8.0	187	102	278	300	0.70	17.0	1080	2
2-TLGM-150	150	10	187	102	278	300	0.60	25.5	1500	2
2-TLGM-200	200	14	187	102	278	300	0.50	34.0	1600	2
2-TLGM-250	250	16	187	102	374	396	0.45	42.6	1900	2
2-TLGM-300	300	20	187	102	374	396	0.40	51.0	2400	2
2-TLGM-350	350	22	187	151	374	396	0.39	59.6	2900	2
2-TLGM-400	400	24	187	151	374	396	0.36	68.0	3200	2
2-TLGM-420	420	25	187	151	374	396	0.35	71.4	3300	2
2-TLGM-450	450	27	187	151	374	396	0.34	76.6	3600	2
2-TLGM-500	500	30	187	151	543	565	0.34	85.1	4000	2
2-TLGM-550	550	36	187	151	543	565	0.33	93.6	4500	2
2-TLGM-600	600	39	187	151	543	565	0.33	102	4800	2
2-TLGM-650	650	40	187	151	543	565	0.32	111	5100	2
2-TLGM-700	700	42	187	151	543	565	0.31	119	5600	4
2-TLGM-750	750	49	223	187	543	565	0.31	128	6000	4
2-TLGM-800	800	54	223	187	543	565	0.30	136	6400	4
2-TLGM-850	850	56	223	187	543	565	0.29	145	6900	4
2-TLGM-900	900	58	223	187	543	565	0.29	153	7300	4
2-TLGM-1000	1000	63	223	187	543	565	0.28	170	7900	4
2-TLGM-1100	1100	65	223	187	543	565	0.28	187	8600	4
2-TLGM-1200	1200	74	223	187	643	665	0.27	204	9000	4
2-TLGM-1300	1300	77	223	187	643	665	0.26	221	9500	4
2-TLGM-1400	1400	82	223	187	643	665	0.26	238	10500	4
2-TLGM-1500	1500	90	235	212	653	675	0.25	255	12000	4

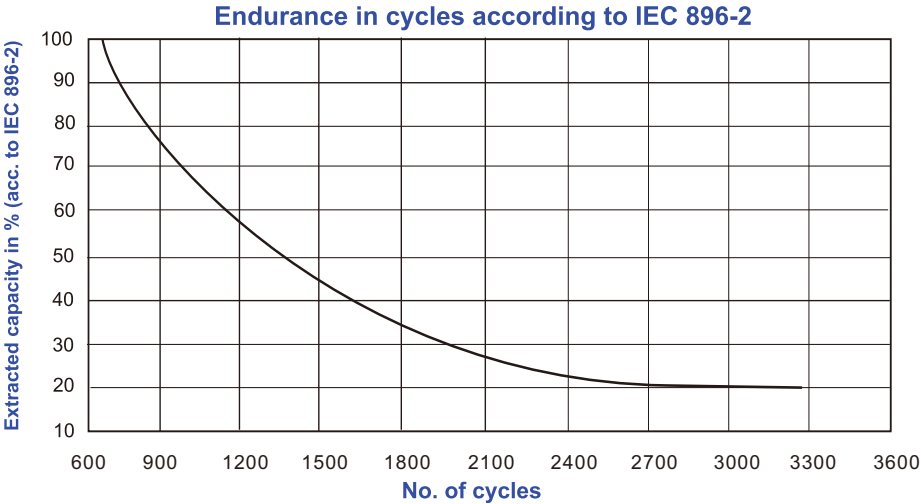
*Actual Dimension may be ± 5% from the figures shown.



Female terminal inserts for M10 Bolt



TYPICAL TRIPLE BARRIER POST SEAL DETAIL



CELLYTE 2TLGM Modular/ Tubular GEL-VRLA Stationary Batteries

The SEC CELLYTE 2TLGM batteries are manufactured using modern technology in a new joint venture battery manufacturing facility. SEC has been able to draw on a wealth of international experience and knowledge to produce high quality reliable lead acid batteries. The continuing installation of modern production equipment makes continuous product improvement possible.

The CELLYTE 2TLGM Modular free standing 2 volt cells - GEL Technology - with Catalyst. Valve Regulated Lead Acid (VRLA) low Maintenance Batteries - for Standby Applications. These are free standing cells and can be supplied as cells only or with Modular zone 4 racks or in vertical or horizontal conventional zone 0 Tubular racks. The steel modular or tubular racks are designed to provide strength, ease of handling, protection against shock and vibration damage, and allows for uniform cooling of all cells.

"SEC-CAT" Catvent™ - Catalyst Vent Plug

SEC's VRLA cells incorporate the Philadelphia Scientific Precious Metal Catalyst Catvent™ to stabilise the negative plate, enhance the water recombination process within the cell, reduce cell dry out, reduces float current by up to 50%, positive plate corrosion, thermal runaway, and capacity loss due to negative plate polarisation. This makes the 2TLGM battery ideally suited for Telecom, UPS, Photovoltaic, Wind power, and other Float & Shallow Cyclic applications. Manufactured to Quality system certified to ISO 9001

SEC CELLYTE 2TLGM battery end of life is defined as when the battery system can no longer deliver 80% of rated capacity for which it was initially designed. The batteries are clearly marked with the SEC battery reference, nominal capacity (C/10 to 1.8 vpc 25°C), environmental related information.

FEATURES

The CELLYTE 2TLGM 'High Integrity' high density battery is supplied as a free standing 2 volt vertical or horizontal cells in a Modular or Tubular steel racking system for minimum floor space, uniform cell cooling and extra long life. The Zone 4 Modular battery rack design provides a stronger battery rack that is reduced in both height, width. The Zone 0 Tubular battery racks for use in regions that are not subject to earthquakes.

System Configuration:

24 and 48 volts for Telecommunications and 120,240 and 480 volts for UPS, Power and Switchgear Control.

Zone 4 rated modules with horizontal cell layout provides smaller battery foot print

Zone 0 rated tubular racks with vertical or horizontal cell layout for minimum battery footprint.

Operating Temperature: -25°C to +55°C

However we recommend that the batteries be operated in the temperature range of 20 to 25°C, to obtain full life and optimum performance.

Benefits of Catalyst in SEC VRLA Batteries

One of the most immediate, observable effects of installing a catalyst in a VRLA cell is a sudden drop in the float current. Typically float currents are one half or less when a catalyst is installed. Adding a catalyst to the cell prevents some of the oxygen reaching the negative plate and allows the negative plate to stay polarized. This means that less current needs to be supplied to the cell from the charging system, manifesting itself as lower float current, leading to the following benefit:

***Minimize water loss**

Gasses are recombined into water inside the cell rather than exiting the cell. Too much gas leaving the cell can lead to premature dry-out and cell failure. Cell dry out is a major cause of VRLA cell failure.

***Increase life**

There are many potential failure modes of VRLA cells. A number of these failure modes can be mitigated by the catalyst technology such as: Cell dry out, positive plate corrosion, thermal runaway, capacity loss due to negative plate depolarization.

***Minimize positive plate corrosion**

A reduction in float current reduces the amount of over-charge on the positive plate which directly impacts the corrosion rate. The design life of a lead acid battery is based on the corrosion of the plate barring any other unforeseen failure modes.

***Maintain cell capacity**

Many VRLA cells in service are failing capacity tests because their negative plates are depolarized. In fact significant capacity increase have been seen on some cells just by installing a catalyst.

SEC ALL PRODUCT RANGE



CELLYTE 2CMT/G
Modular Steel Rack



CELLYTE 2TLAM/G
Tubular Steel Rack



CELLYTE 2CMT/G, CELLYTE 2TLAM/G
with Catalyst



CELLYTE 12PLF & 12PLT Range



CELLYTE 12FTA/G Range



CELLYTE 6-12TUA Range



CELLYTE 6-12TSG Range



CELLYTE 6-12TLA Range



CELLYTE 6-12TLG Range



MICROLYTE +Plus Range



MICROLYTE Red Top Range



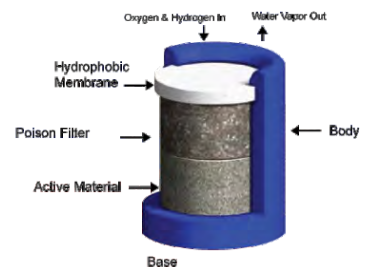
CELLYTE 2ETG OPzV Range
Tubular Steel Rack



CELLYTE TRA Range



Nickel Cadmium Range
Pocket Plate flooded and VR



Typical VRLA catalyst

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