

## CELLYTE 2CMTG Range

### STATIONARY MODULAR RACK GEL BATTERIES USING GEL TECHNOLOGY

20 YEARS DESIGN LIFE IN FLOAT SERVICE @ 20C



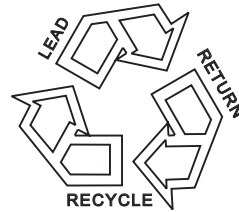
**HORIZONTAL LAYOUT MINIMISES  
BATTERY FOOT PRINT**

#### **INNOVATIVE FEATURES**

- \* Valve regulated with Catalyst
- \* Fully tank formed plates
- \* Never requires watering
- \* Spill proof and leak proof
- \* Low gassing on float charge
- \* Explosion proof
- \* Operates at low internal pressure
- \* Increased safety
- \* For use in vertical or horizontal position
- \* Increased capacity in given area

**Sealed Valve Regulated  
Maintenance Free  
Lead Acid Batteries**

**CAPACITY 100 Ah. TO 1500 Ah.  
C/10 RATE TO 1.80 Vpc @ 20C  
or C/8 to 1.75 Vpc @ 25C**



**CADMIUM FREE  
FULLY RECYCLABLE  
LEAD ACID BATTERIES**

CONFORMS TO THE EUROPEAN  
E.C.1992 DIRECTIVE ON  
DANGEROUS SUBSTANCES

#### **APPLICATIONS**

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



## CELLYTE 2CMTG - Gel Modular/Tubular - Ampere Hour Data to 1.80 vpc @ 20 C.

SEC Battery TYPE	END Volts / Cell	DATA AMPS @ 20 C						END Volts / Cell	DISCHARGE DATA AMPS HOURS TO 1.80 vpc @ 20 C												
		DISCHARGE TIME IN MINUTES							DISCHARGE TIME IN HOURS												
	5	10	15	20	30	45	1	1.5	2	3	4	5	6	8	10	12	24	48	100		
2CMTG100	1.75	147	128	116	105	86.6	70.2	1.80	54.2	60.4	66.1	74.0	80.7	85.1	89.4	98.0	100	103	111	113	122
2CMTG150	1.75	220	192	174	157	130	105	1.80	81.3	90.6	99.2	111	121	128	134	147	150	155	167	170	183
2CMTG200	1.75	293	256	232	209	173	140	1.80	108	121	132	148	161	170	179	196	200	206	222	226	244
2CMTG250	1.75	367	320	290	262	216	175	1.80	136	151	165	185	202	213	224	245	250	258	278	283	305
2CMTG300	1.75	440	384	348	314	260	211	1.80	163	181	198	222	242	255	268	294	300	309	333	339	366
2CMTG350	1.75	513	448	406	366	303	246	1.80	190	211	231	259	282	298	313	343	350	361	389	396	427
2CMTG400	1.75	586	512	464	418	346	281	1.80	217	242	264	296	323	340	358	392	400	412	444	452	488
2CMTG420	1.75	616	537	487	439	364	295	1.80	228	254	278	311	339	357	375	412	420	433	467	475	512
2CMTG450	1.75	660	576	522	471	390	316	1.80	244	272	297	333	363	383	402	441	450	464	500	509	549
2CMTG500	1.75	733	640	580	523	433	351	1.80	271	302	331	370	404	426	447	490	500	516	556	566	610
2CMTG550	1.75	806	704	638	575	476	386	1.80	298	332	364	407	444	468	492	539	550	567	611	622	670
2CMTG600	1.75	880	767	696	628	519	421	1.80	325	362	397	444	484	511	536	588	600	619	667	679	731
2CMTG650	1.75	953	831	754	680	563	456	1.80	352	393	430	481	525	553	581	637	650	670	722	735	792
2CMTG700	1.75	1026	895	812	732	606	491	1.80	379	423	463	518	565	596	626	686	700	722	778	792	853
2CMTG750	1.75	1100	959	870	785	649	526	1.80	407	453	496	555	605	638	671	735	750	773	833	848	914
2CMTG800	1.75	1173	1023	928	837	692	562	1.80	434	483	529	592	646	681	715	784	800	825	889	905	975
2CMTG850	1.75	1246	1087	986	889	736	597	1.80	461	513	562	629	686	723	760	833	850	876	944	961	1036
2CMTG900	1.75	1319	1151	1044	941	779	632	1.80	488	544	595	666	726	766	805	882	900	928	1000	1018	1097
2CMTG1000	1.75	1466	1279	1160	1046	866	702	1.80	542	604	661	740	807	851	894	980	1000	1031	1111	1131	1220
2CMTG1100	1.75	1613	1407	1276	1151	952	772	1.80	596	664	727	814	888	936	983	1078	1100	1134	1222	1244	1341
2CMTG1200	1.75	1759	1535	1392	1255	1039	842	1.80	650	725	793	888	968	1021	1073	1176	1200	1237	1333	1357	1463
2CMTG1300	1.75	1906	1663	1508	1360	1125	912	1.80	705	785	859	962	1049	1106	1162	1274	1300	1340	1444	1470	1585
2CMTG1400	1.75	2053	1791	1624	1464	1212	983	1.80	759	846	925	1036	1130	1191	1252	1372	1400	1443	1555	1583	1707
2CMTG1500	1.67	2199	1919	1740	1569	1298	1053	1.80	813	906	992	1110	1211	1277	1341	1470	1500	1547	1667	1697	1829

Actual discharge data may be +/- 5% of data shown - Largest single cell is 1500 ah

### CELLYTE 2CMTG in Modular or Tubular rack are 2 Volt Gel-VRLA Stationary Batteries

The SEC **CELLYTE** 2CMTG Gel available with Modular or Tubular rack, Sealed, valve regulated VRLA battery line fitted with VRLA Catalyst is a range of long life sealed, valve regulated batteries that require very little maintenance and can be mounted in any space without special ventilation. The **CELLYTE** 2CMTG in Modular or Tubular rack is designed to provide service for twenty years when used in float service at 20°C. These cells / batteries comply with BS 6290 Part 4, with flame retardant V-0 case, EUROBAT and the new IEC 60896-21/22-2004 standard. This range may be installed in either a horizontal or vertical configuration, although for the larger cell sizes only the horizontal configuration is recommended because of improved service life, savings in floor space and ease of installation. The container and clear plastic cover have a flame retardant rating of UL94 V-0 cells but can also be provided in standard plastic. Cells can be supplied in a Seismic Zone 4 rated steel module rack or in a Zone 0 rated tubular steel rack. 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 **CELLYTE** 2CMTG Gel cell plates are made from virgin pure lead 1.6% Tin alloy and are tank formed prior to assembly. The chemical composition, and morphological structure of the positive plate active material, is optimised to give plates and cells which have the highest possible service-life in float service and up to 1200 x 80% deep cycles. The battery end of life is defined as when the battery system can no longer deliver 80% of the rated capacity for which it was initially designed. Modular /Tubular rack batteries are clearly marked with the SEC battery reference, nominal capacity (C/10 to 1.8 Vpc 20 C or C/8 to 1.75 Vpc at 25C), environmental related information and date of manufacture.

### Applicable Standards

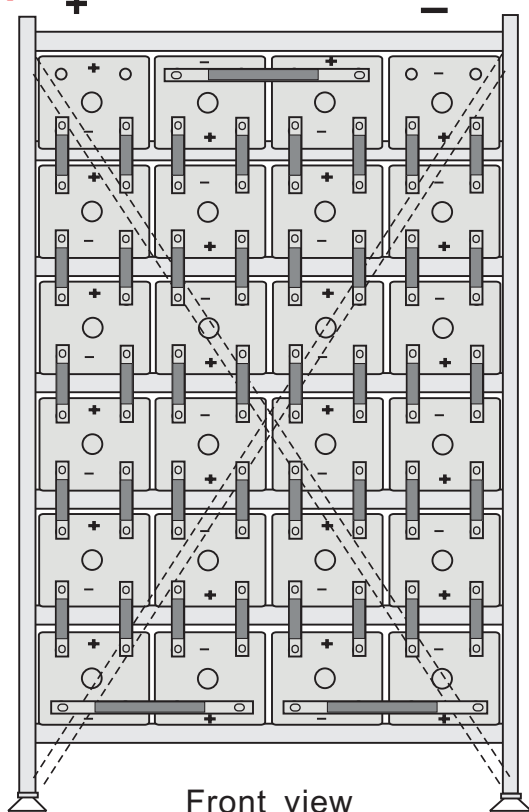
IEC 60896-21/22-2004  
BS 6290 Part 4  
Eurobat  
UL Component approval

## CELLYTE 2CMTG - Gel Modular/Tubular Dimensions, Weights & Data

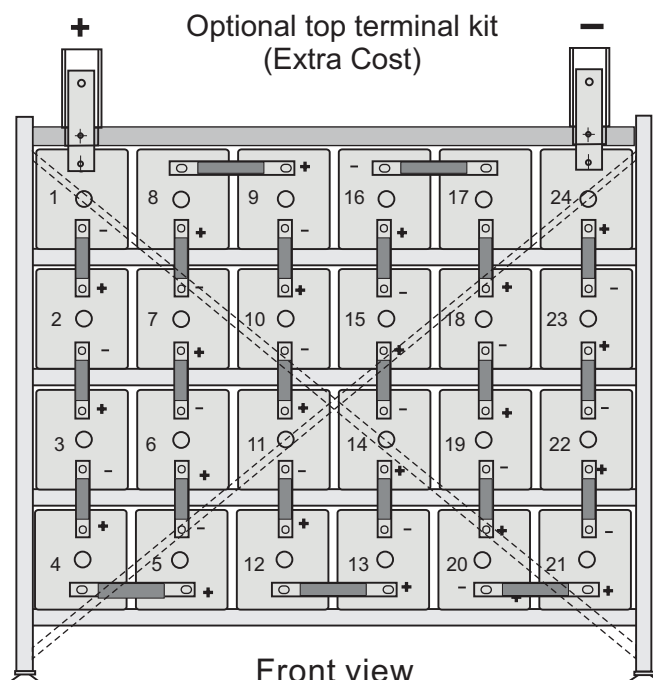
SEC Battery TYPE	Capacity C/10 1.80 vpc	Single Cell Sizes	CELL DIMENSIONS & WEIGHT					24 CELL BATTERY DIMENSIONS mm				Internal Resist. m Ohms	1 Minute Rate to 1.67 vpc	Short Circuit Current	No. of Terminal Post
			Length mm	Width mm	Height mm H1	Height mm H2	CELL KG	Length Mod./Tub.	Depth Mod.&Tub.	Height Mod.&Tub.	Weight Mod./Tub.				
2CMTG100	100	1 x 100	102	187	278	300	7.0	672 / 720	310	1010	202/188	0.70	216	1080	2
2CMTG150	150	1 x 150	102	187	278	300	9.0	672 / 720	310	1010	288/270	0.60	300	1500	2
2CMTG200	200	1 x 200	102	187	278	300	13.6	672 / 720	310	1010	430/400	0.50	340	1600	2
2CMTG250	250	1 x 250	102	187	374	396	15.2	672 / 720	410	1010	490/460	0.45	380	1900	2
2CMTG300	300	1 x 300	102	187	374	396	18.8	672 / 720	410	1010	605/565	0.40	480	2400	2
2CMTG350	350	1 x 350	151	187	374	396	25.0	966 / 1010	410	1010	720/670	0.39	580	2900	2
2CMTG400	400	1 x 400	151	187	374	396	28.0	966 / 1010	410	1010	810/750	0.36	640	3200	2
2CMTG420	420	1 x 420	151	187	374	396	28.0	966 / 1010	410	1010	810/750	0.35	660	3300	2
2CMTG450	450	1 x 450	151	187	374	396	32.0	966 / 1010	410	1010	920/860	0.33	720	3600	2
2CMTG500	500	1 x 500	151	187	543	565	28.5	966 / 1010	580	1010	980/910	0.30	800	4000	2
2CMTG550	550	1 x 550	151	187	543	565	36.0	966 / 1010	580	1010	1040/970	0.29	900	4500	2
2CMTG600	600	1 x 600	151	187	543	565	38.0	966 / 1010	580	1010	1100/1000	0.28	970	4800	2
2CMTG650	650	1 x 650	151	187	543	565	41.0	966 / 1010	580	1010	1180/1080	0.24	1030	5100	2
2CMTG700	700	1 x 700	151	187	543	565	45.0	966 / 1010	580	1010	1300/1190	0.23	1120	5600	2
2CMTG750	750	1 x 750	223	187	543	565	45.0	966 / 1010	580	1010	1390/1270	0.22	1200	6000	4
2CMTG800	800	1 x 800	223	187	543	565	58	958 / 980	580	1500	1670/1530	0.20	1280	6400	4
2CMTG850	850	1 x 850	223	187	543	565	61	958 / 980	580	1500	1750/1600	0.190	1380	6900	4
2CMTG900	900	1 x 900	223	187	543	565	65	958 / 980	580	1500	1870/1710	0.180	1460	7300	4
2CMTG1000	1000	1 x 1000	223	187	543	565	68	958 / 980	580	1500	1950/1800	0.160	1580	7900	4
2CMTG1100	1100	1 x 1100	235	212	665	690	74	1010 / 1030	690	1670	2130/1950	0.140	1720	8600	4
2CMTG1200	1200	1 x 1200	235	212	665	690	78	1010 / 1030	690	1670	2250/2060	0.130	1800	9000	4
2CMTG1300	1300	1 x 1300	235	212	665	690	82	1010 / 1030	690	1670	2360/2160	0.125	1900	9500	4
2CMTG1400	1400	1 x 1400	235	212	665	690	88	1010 / 1030	690	1670	2530/2320	0.120	2100	10500	4
2CMTG1500	1500	1 x 1500	235	212	665	690	100	10100 / 1030	690	1670	2770 / 2530	0.110	2380	12000	4

Actual discharge data may be +/- 5% of data shown - Largest single cell is 1500 ah

### Typical Tubular Zone 0 racks for 48Volt System



Front view  
24 x 2CMTG750 to 1500  
4 post cells



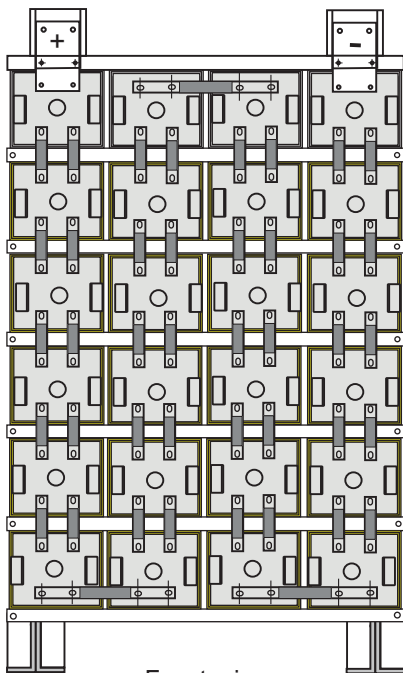
Front view  
24 x 2CMTG100 to 700  
2 post cells

## CELLYTE 2CMTG - Gel Modular/Tubular - Data Amps to 1.80 vpc @ 20 C.

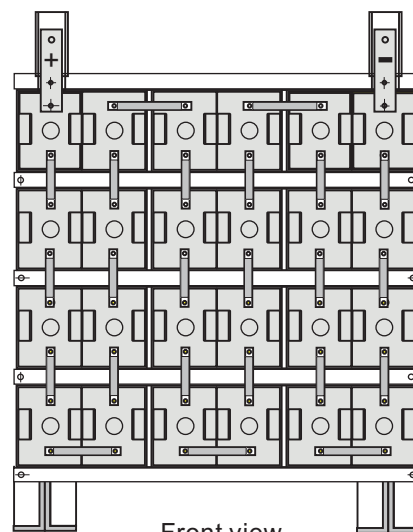
SEC Battery TYPE	END Volts / Cell	DATA AMPS @ 20 C						END Volts / Cell	DISCHARGE DATA AMPS TO 1.80 vpc @ 20 C													
		DISCHARGE TIME IN MINUTES							DISCHARGE TIME IN HOURS													
		5	10	15	20	30	45		1	1.5	2	3	4	5	6	8	10	12	24	48	100	
2CMTG100	1.75	147	128	116	105	86.6	70.2	1.80	54.2	40.3	33.1	24.7	20.2	17.0	14.9	12.3	10.0	8.59	4.63	2.36	1.22	
2CMTG150	1.75	220	192	174	157	130	105	1.80	81.3	60.4	49.6	37.0	30.3	25.5	22.4	18.4	15.0	12.9	6.94	3.53	1.83	
2CMTG200	1.75	293	256	232	209	173	140	1.80	108	80.5	66.1	49.3	40.4	34.0	29.8	24.5	20.0	17.2	9.26	4.71	2.44	
2CMTG250	1.75	367	320	290	262	216	175	1.80	136	101	82.6	61.7	50.4	42.6	37.3	30.6	25.0	21.5	11.6	5.89	3.05	
2CMTG300	1.75	440	384	348	314	260	211	1.80	163	121	99.2	74.0	60.5	51.1	44.7	36.8	30.0	25.8	13.9	7.07	3.66	
2CMTG350	1.75	513	448	406	366	303	246	1.80	190	141	116	86.3	70.6	59.6	52.2	42.9	35.0	30.1	16.2	8.25	4.27	
2CMTG400	1.75	586	512	464	418	346	281	1.80	217	161	132	98.7	80.7	68.1	59.6	49.0	40.0	34.4	18.5	9.43	4.88	
2CMTG420	1.75	616	537	487	439	364	295	1.80	228	169	139	104	84.7	71.5	62.6	51.5	42.0	36.1	19.4	9.90	5.12	
2CMTG450	1.75	660	576	522	471	390	316	1.80	244	181	149	111	90.8	76.6	67.1	55.1	45.0	38.7	20.8	10.6	5.49	
2CMTG500	1.75	733	640	580	523	433	351	1.80	271	201	165	123	101	85.1	74.5	61.3	50.0	43.0	23.1	11.8	6.10	
2CMTG550	1.75	806	704	638	575	476	386	1.80	298	221	182	136	111	93.6	82.0	67.4	55.0	47.3	25.5	13.0	6.70	
2CMTG600	1.75	880	767	696	628	519	421	1.80	325	242	198	148	121	102	89.4	73.5	60.0	51.6	27.8	14.1	7.31	
2CMTG650	1.75	953	831	754	680	563	456	1.80	352	262	215	160	131	111	96.9	79.6	65.0	55.8	30.1	15.3	7.92	
2CMTG700	1.75	1026	895	812	732	606	491	1.80	379	282	231	173	141	119	104	85.8	70.0	60.1	32.4	16.5	8.53	
2CMTG750	1.75	1100	959	870	785	649	526	1.80	407	302	248	185	151	128	112	91.9	75.0	64.4	34.7	17.7	9.14	
2CMTG800	1.75	1173	1023	928	837	692	562	1.80	434	322	264	197	161	136	119	98.0	80.0	68.7	37.0	18.9	9.75	
2CMTG850	1.75	1246	1087	986	889	736	597	1.80	461	342	281	210	171	145	127	104	85.0	73.0	39.3	20.0	10.4	
2CMTG900	1.75	1319	1151	1044	941	779	632	1.80	488	362	297	222	182	153	134	110	90.0	77.3	41.7	21.2	11.0	
2CMTG1000	1.75	1466	1279	1160	1046	866	702	1.80	542	403	331	247	202	170	149	123	100	85.9	46.3	23.6	12.2	
2CMTG1100	1.75	1613	1407	1276	1151	952	772	1.80	596	443	364	271	222	187	164	135	110	94.5	50.9	25.9	13.4	
2CMTG1200	1.75	1759	1535	1392	1255	1039	842	1.80	650	483	397	296	242	204	179	147	120	103	55.6	28.3	14.6	
2CMTG1300	1.75	1906	1663	1508	1360	1125	912	1.80	705	523	430	321	262	221	194	159	130	112	60.2	30.6	15.8	
2CMTG1400	1.75	2053	1791	1624	1464	1212	983	1.80	759	564	463	345	282	238	209	172	140	120	64.8	33.0	17.1	
2CMTG1500	1.75	2199	1919	1740	1569	1298	1053	1.80	813	604	496	370	303	255	224	184	150	129	69.4	35.3	18.3	

Actual discharge data may be +/- 5% of data shown - Largest single cell is 1500 ah

### Typical Modular Zone 4 Racks for 48 Volt Systems



Front view  
24 x 2CMTG750 to 1500  
4 post cells



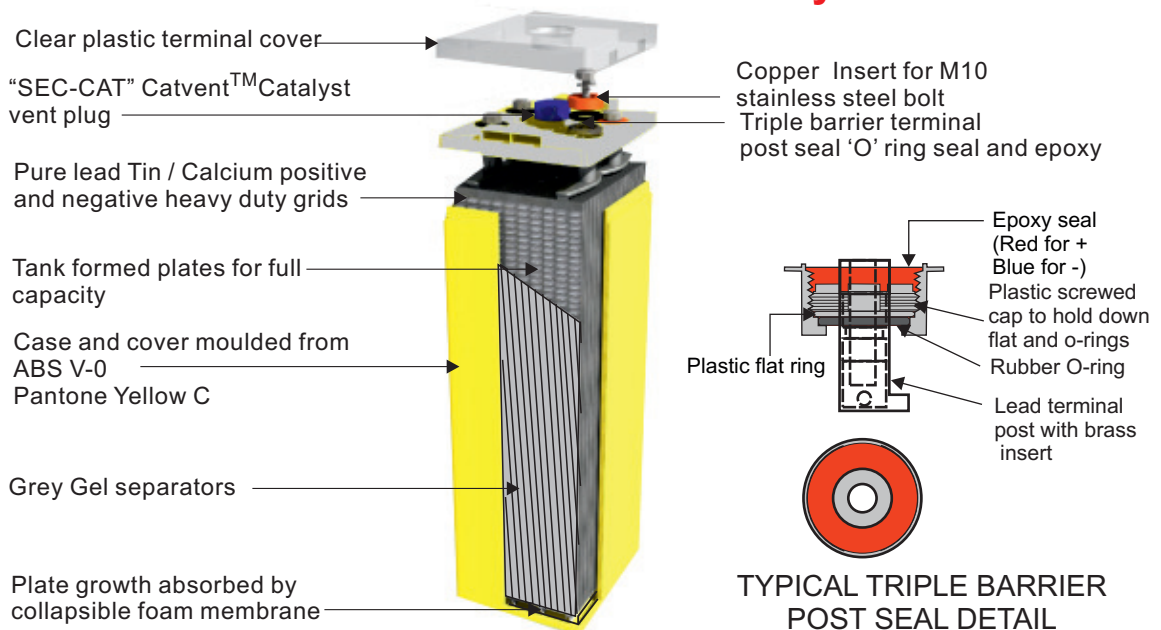
Front view  
24 x 2CMTG100 to 700  
2 post cells

## CELLYTE 2CMTG - Gel Modular/Tubular - Watts to 1.67 / 1.75 vpc @ 20 C.

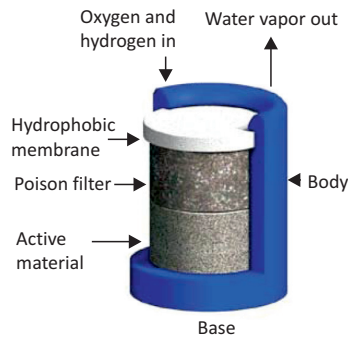
SEC Battery TYPE	END Volts / Cell	DISCHARGE Watts per Cell at 20 C						END Volts / Cell	DISCHARGE DATA Watts Per Cell AT 20 C									
		DISCHARGE TIME IN MINUTES							DISCHARGE TIME IN HOURS									
		5	10	15	20	30	45		1	1.5	2	3	4	5	6	8	10	
2CMTG100	1.67	262	229	208	189	158	130	1.75	109	79.4	65.4	50.0	41.0	34.4	29.8	24.2	20.2	
2CMTG150	1.67	393	343	312	283	237	194	1.75	166	119	97.1	74.2	60.8	51.0	44.2	35.9	29.7	
2CMTG200	1.67	523	458	416	377	316	259	1.75	221	158	130	98.9	81.1	68.0	59.0	47.9	39.6	
2CMTG250	1.67	654	572	520	472	395	324	1.75	276	198	162	124	101	85.0	73.7	59.9	49.5	
2CMTG300	1.67	785	686	624	566	474	389	1.75	331	237	194	148	122	102	88.5	71.9	59.4	
2CMTG350	1.67	916	801	728	660	553	454	1.75	387	277	227	173	142	119	103	83.8	69.3	
2CMTG400	1.67	1047	915	831	755	632	519	1.75	442	316	259	198	162	136	118	95.8	79.1	
2CMTG420	1.67	1099	961	873	793	664	545	1.75	442	316	259	198	162	136	118	95.8	79.1	
2CMTG450	1.67	1178	1030	935	849	711	583	1.75	497	356	291	223	182	153	133	108	89.0	
2CMTG500	1.67	1309	1144	1039	944	790	648	1.75	552	395	324	247	203	170	147	120	99	
2CMTG550	1.67	1439	1258	1143	1038	869	713	1.75	607	435	356	272	223	187	162	132	109	
2CMTG600	1.67	1570	1373	1247	1132	948	778	1.75	663	474	389	297	243	204	177	144	119	
2CMTG650	1.67	1701	1487	1351	1227	1027	843	1.75	718	514	421	321	263	221	192	156	129	
2CMTG700	1.67	1832	1602	1455	1321	1106	908	1.75	773	553	453	346	284	238	206	168	139	
2CMTG750	1.67	1963	1716	1559	1415	1185	972	1.75	828	593	486	371	304	255	221	180	148	
2CMTG800	1.67	2094	1830	1663	1510	1264	1037	1.75	884	632	518	396	324	272	236	192	158	
2CMTG850	1.67	2224	1945	1767	1604	1343	1102	1.75	939	672	550	420	344	289	251	204	168	
2CMTG900	1.67	2355	2059	1871	1698	1422	1167	1.75	994	711	583	445	365	306	265	216	178	
2CMTG1000	1.67	2617	2288	2079	1887	1580	1297	1.75	1105	790	648	494	405	340	295	240	198	
2CMTG1100	1.67	2879	2517	2287	2076	1738	1426	1.75	1215	869	712	544	446	374	324	263	218	
2CMTG1200	1.67	3140	2746	2494	2265	1896	1556	1.75	1325	948	777	593	486	408	354	287	237	
2CMTG1300	1.67	3402	2975	2702	2453	2054	1686	1.75	1436	1027	842	643	527	442	383	311	257	
2CMTG1400	1.67	3664	3203	2910	2642	2213	1815	1.75	1546	1106	907	692	567	476	413	335	277	
2CMTG1500	1.67	3926	3432	3118	2831	2371	1945	1.75	1657	1185	971	742	608	510	442	359	297	

Actual discharge data may be +/- 5% of data shown - Largest single cell is 1500 ah

### CELLYTE 2CMTG Gel Cell - Cutaway View



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



Typical VRLA Catalyst

## Benefits of Catalyst in SEC VRLA Batteries

### Catalyst Reduces Float Current

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 polarised. 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 is a major cause of VRLA cell failure

#### \* Increased 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 cell 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 increases have been seen on some cells just by installing a catalyst.

### “SEC-CAT” Catvent™ - Catalyst Vent Plug

SEC's **CELLYTE 2CMTG Gel** VRLA cells incorporate the Philadelphia Scientific Precious Metal **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 **CELLYTE 2CMTG** battery ideally suited for Telecom, UPS, Photovoltaic, Wind power, and other Float & Shallow Cyclic applications. Manufactured to Quality system certified to ISO 9001-2000

### FEATURES :

The **CELLYTE 2CMTG Gel** '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 strong 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.

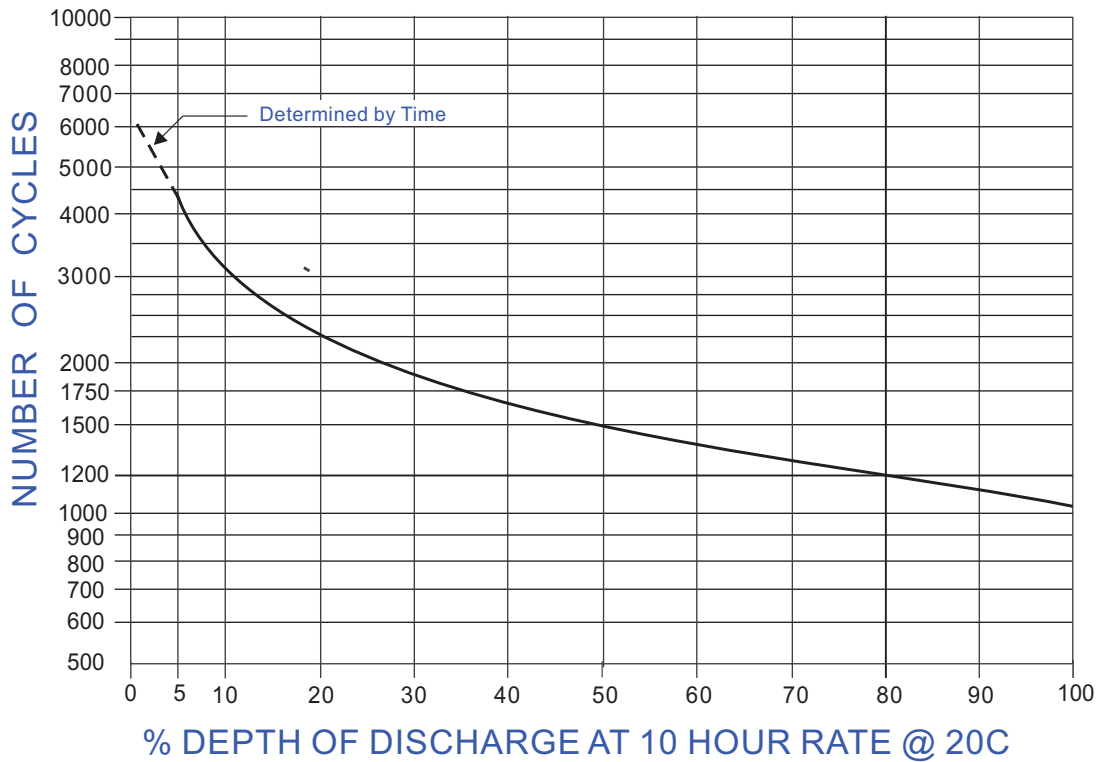
### System Configuration:

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

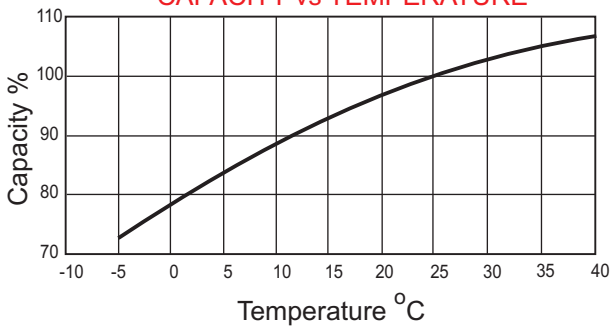
### Operating temperature : -25C to +55C

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

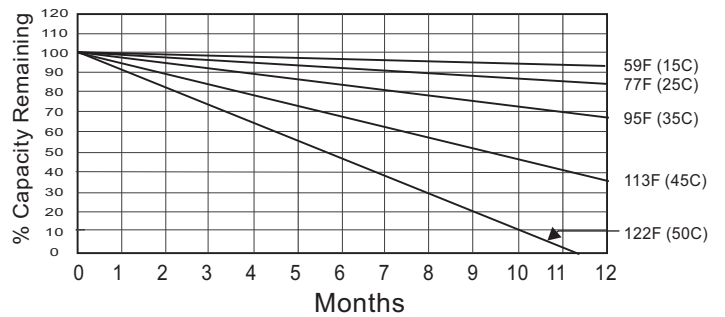
## Cycle Life



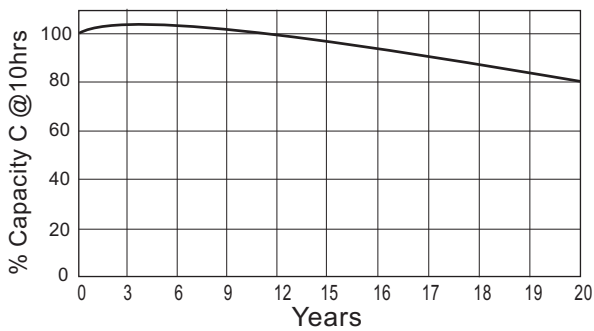
### CAPACITY vs TEMPERATURE



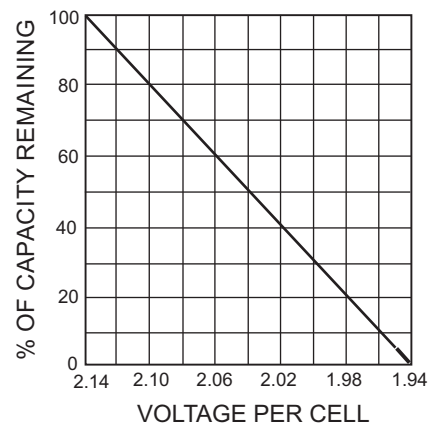
### SELF DISCHARGE CHARACTERISTICS



### AGEING CURVE FOR FLOAT OPERATION AT 20/25C



### OPEN CIRCUIT VOLTAGE





**SEC Industrial Battery Co. Ltd.**  
Thorney Weir House, Iver  
Bucks SLO 9AQ, ENGLAND  
Tel 44 1895 431543  
Fax 44 1895 431880  
brian.harper@secbattery.com

**SEC European Sales Office**  
42 rue de la Rochette  
77000 Melun  
France  
Tel 33 6 75 59 06 92  
christian.dhainaut@secbattery.com

**SEC Industrial Battery Co.Bsc**  
P.O. Box 32225  
Kingdom of Bahrain  
Tel 97317 721322  
Fax 97317 740743  
sujo.pulikottil@secbattery.com

**SEC Industrial Battery Co. Ltd.**  
Unit 6. 6/f, Hewlett Centre  
No. 54 Hoi Yuen Road, Kwun Tong  
Tel 852 230 44382  
Fax 852 230 44013  
duncan.low@secbattery.com



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