



The CELLYTE TLGM Series

2 Volt flat plate Gel batteries
fitted with SEC CatVent™
catalyst

**Ideal for high
capacity, cyclic
applications**

FITTED
WITH





Specification

Positive electrode:	Lead Calcium Tin grid alloy
Negative electrode:	Lead Calcium grid alloy
Float voltage:	2.25 - 2.30 vpc ± 1% at 25°C
Max. charge voltage:	2.35 vpc ± 1% at 25°C
Electrolyte:	Thixotropic high purity silica Gel electrolyte
Safety valve:	1-3 psi self-resealing
Separators:	Microporous separator
Terminals:	Integral brass insert for M-10 bolt
Electrical:	2V 100Ah - 2V 1500Ah at C/10 to 1.80vpc @ 25°C

Design life

Float life:	15-years in float service @ 30°C with an approved catalyst
Cycle life:	1300 cycles @ 80% DOD at 25°C

Product compliance

IEC	60896-21/22-2004
BS	6290 part 4
UL component approval	
Eurobat	

Company accreditation

ISO	9001:2015
ISO	14001:2004

Product information

The Cellyte TLGM series

Offers rugged, reliable performance

The Cellyte TLGM series uses VRLA principles to provide a tough, no-nonsense Gel battery. The 2TLGM is perfect for cycling applications where a high-powered reliable solution is required.

The TLGM is backed by the SEC accreditation from the highly prestigious TUV SUD organisation. It has a 15-year design life and offers up to 1300 cycles at 80% DOD in the correct environment. The TLGM range is manufactured in SEC's ISO-approved factories and is backed by a full 5-year warranty as standard.

Industry leading construction

The Cellyte TLGM series has a classic top terminal construction and a heavy duty terminal plastic cover for increased security. Our engineers used European (IEC) dimensions to provide consolidation across a variety of applications. This 2V power house also features an SEC CatVent™ catalyst and Lead Calcium grids for enhanced performance.

The series features a range of high powered options with a choice of standard or flame retardant casing. It employs international components including highly pure thixotropic Gelled electrolyte, Swedish safety valves and Japanese triple-post sealant.

Product features

- ✦ Fitted with life extending CatVent™ catalyst
- ✦ Electrolyte immobilised for high cyclic applications
- ✦ High-powered with a wide capacity range
- ✦ Advanced one-way safety valve for gas release
- ✦ Spill-proof and leak-proof with triple-sealed posts
- ✦ Long service life when used in correct conditions
- ✦ Ideal in a wide range of high cycling applications
- ✦ Standard or flame retardant container options
- ✦ Engineered with international components
- ✦ Thick Lead Calcium grids for improved performance and life
- ✦ Wide operating temperature range
- ✦ For use in vertical or horizontal positions

“The 2 Volt flat plate design is enhanced by thicker grid construction and a gelled electrolyte specifically formulated for flat plate cells. When combined with the CatVent™ catalyst it becomes a low-cost, long-life option where power as well as capacity are required.”

Dr. Mike McDonagh **SEC Group**

Product benefits

Reliable valve regulated gel battery design

The TLGM features a patented safety valve as standard. This means reduced risk of accidental fire plus highly efficient operation. The valve does not allow the ingress of oxygen which is harmful to the function and life of the battery.

Suited for vertical or horizontal rack use

This high-integrity, high-energy battery is supplied as a free standing 2V vertical or horizontal cell and can be paired with modular or tubular steel battery racking systems for size management and cooling.

Higher power and efficiency

The TLGM competes well in both power capabilities and cost. Low resistance plates enables cooler running temperatures and fast recharge times. This makes it more efficient when your application demands a quick turnaround.

Extended battery life and cycle service

The TLGM was constructed for long life and reliability. In the right conditions it has a design life of 15-years at an average of 1300 charge/discharge cycles at 80% DOD.

Fitted with CatVent™ catalyst

The TLGM is fitted with SEC's industry leading CatVent™ catalyst. This stabilises the negative plate, enhances the water recombination process, reduces cell dry out and plate corrosion, reduces float current by 50% and reduces capacity loss. It's ideal for any high-powered cycling application.

Performs well under fluctuating temperature conditions

The operating limits for this battery are -15°C to +50°C. Although suited to many applications over a wide temperature range, the TLGM, like all VRLA batteries, is not recommended for continuous operation above 45°C.

Optimised grid design and paste formulation

SEC has optimised the grid design and paste formulation to maximise the operational and storage life of the battery. This feature gives excellent recovery from deep-discharge or over-discharge; it also ensures low rates of self-discharge.

ISO:9001 Approved

With installation of the most modern production and design equipment, SEC ensures that continuous product improvement is a given. At SEC we have recently had our efforts recognised with the coveted TUV SUD ISO:9001-2015 accreditation and are proud to be the first and only in the industry to hold this mark of quality.

Applications



Telecommunication



UPS system



Photovoltaic system



Energy storage



Navigation aids



Control systems



Standby power



Cellular radio

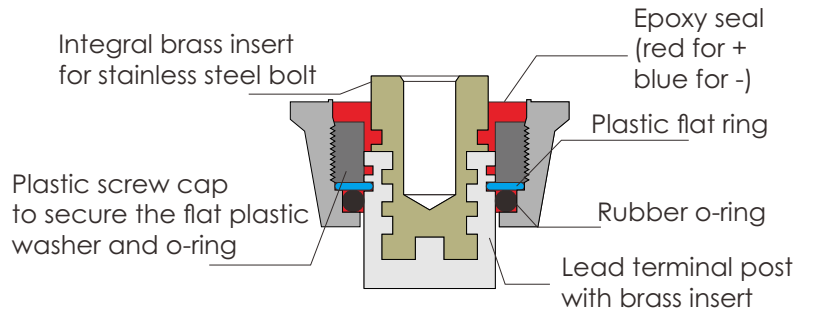
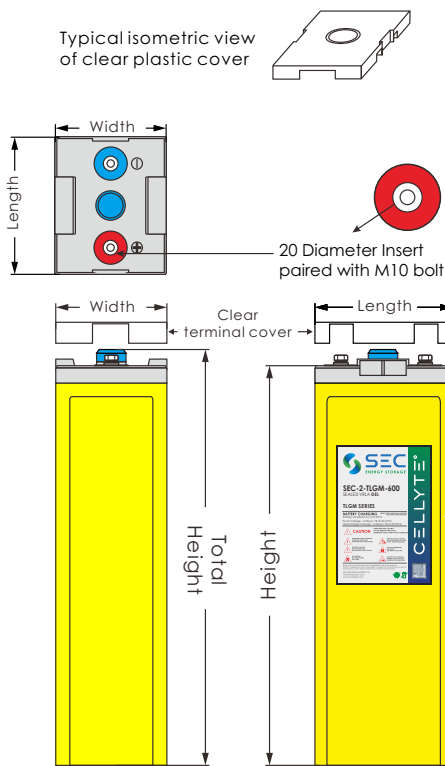


Alternative energy storage

Engineering

Cell outline

Triple-seal detail



SEC TRIPLE-SEAL DESIGN

Cell dimensions

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/10 1.80 vpc	Battery weight		Overall battery dimension								Internal resistance (mΩ)	Maximum charge current (A)	Short circuit current (A)	No. of terminal post
				Length		Width		Height		Total height					
		kg	lbs	mm	Inch	mm	Inch	mm	Inch	mm	Inch				
2-TLGM-100	100	7.5	16.5	187	7.36	102	4.02	278	10.9	300	11.8	0.70	20.0	1080	2
2-TLGM-150	150	10	22.0	187	7.36	102	4.02	278	10.9	300	11.8	0.60	30.0	1500	2
2-TLGM-200	200	12.5	27.6	187	7.36	102	4.02	374	14.7	396	15.6	0.50	40.0	1600	2
2-TLGM-250	250	15	33.1	187	7.36	102	4.02	374	14.7	396	15.6	0.45	50.0	1900	2
2-TLGM-300	300	17.5	38.6	187	7.36	102	4.02	374	14.7	396	15.6	0.40	60.0	2400	2
2-TLGM-350	350	22.5	49.6	187	7.36	151	5.94	374	14.7	396	15.6	0.39	70.0	2900	2
2-TLGM-400	400	24.5	54.0	187	7.36	151	5.94	374	14.7	396	15.6	0.36	80.0	3200	2
2-TLGM-420	420	25	55.1	187	7.36	151	5.94	374	14.7	396	15.6	0.35	84.0	3300	2
2-TLGM-450	450	26	57.3	187	7.36	151	5.94	374	14.7	396	15.6	0.34	90.0	3600	2
2-TLGM-500	500	31	68.3	187	7.36	151	5.94	543	21.4	565	22.2	0.34	100	4000	2
2-TLGM-550	550	33	72.8	187	7.36	151	5.94	543	21.4	565	22.2	0.33	110	4500	2

Cell dimensions

Dimensions/ Weights/ Data

SEC bloc type	Nominal capacity C/10 1.80 vpc	Battery weight		Overall battery dimension								Internal resistance (mΩ)	Maximum charge current (A)	Short circuit current (A)	No. of terminal post
				Length		Width		Height		Total height					
		kg	lbs	mm	Inch	mm	Inch	mm	Inch	mm	Inch				
2-TLGM-600	600	35.5	78.3	187	7.36	151	5.94	543	21.4	565	22.2	0.33	120	4800	2
2-TLGM-650	650	38	83.8	187	7.36	151	5.94	543	21.4	565	22.2	0.32	130	5100	2
2-TLGM-700	700	40.5	89.3	187	7.36	151	5.94	543	21.4	565	22.2	0.31	140	5600	4
2-TLGM-750	750	46.5	103	223	8.78	187	7.36	543	21.4	565	22.2	0.31	150	6000	4
2-TLGM-800	800	49	108	223	8.78	187	7.36	543	21.4	565	22.2	0.30	160	6400	4
2-TLGM-850	850	51.5	114	223	8.78	187	7.36	543	21.4	565	22.2	0.29	170	6900	4
2-TLGM-900	900	54	119	223	8.78	187	7.36	543	21.4	565	22.2	0.29	180	7300	4
2-TLGM-1000	1000	59	130	223	8.78	187	7.36	543	21.4	565	22.2	0.28	200	7900	4
2-TLGM-1100	1100	64	141	223	8.78	187	7.36	543	21.4	565	22.2	0.28	220	8600	4
2-TLGM-1200	1200	67	148	223	8.78	187	7.36	643	25.3	665	26.2	0.27	240	9000	4
2-TLGM-1300	1300	72	159	223	8.78	187	7.36	643	25.3	665	26.2	0.26	260	9500	4
2-TLGM-1400	1400	77	170	223	8.78	187	7.36	643	25.3	665	26.2	0.26	280	10500	4
2-TLGM-1500	1500	82	181	235	9.25	212	8.35	653	25.7	675	26.6	0.25	300	12000	4

Operating temperature

Design operating temperature	30°C with an approved catalyst
Limit for charging	-10 to +50°C
Limit for discharging	-15 to +50°C
Limit for storage	-20 to +50°C

Charging method

Float charging voltage at 25°C	2.25 - 2.30vpc with temperature compensation
Maximum charging voltage at 25°C	2.35vpc with temperature compensation
Float charge temperature compensation factor	-3 mV/cell/°C above 25°C +3 mV/cell/°C below 25°C
Cyclic charge temperature compensation factor	-5 mV/cell/°C above 25°C +5 mV/cell/°C below 25°C

Capacity

Ampere Hour at 25°C

SEC bloc type	Discharge ampere hour at 25°C																	
	End volts /Cell	Discharge time in minutes			End Volts /Cell	Discharge time in hours												
		15min	30min	45min		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48hr	100hr
2-TLGM-100	1.75	29.8	43.5	52.1	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	44.8	65.0	78.0	1.80	81.3	90.6	99.2	111	121	128	134	147	150	155	167	169	183
2-TLGM-200	1.75	59.8	87.0	104	1.80	108	121	132	148	161	170	179	196	200	206	222	226	244
2-TLGM-250	1.75	74.5	109	131	1.80	136	151	165	185	202	213	224	245	250	258	278	283	305
2-TLGM-300	1.75	89.5	131	157	1.80	163	181	198	222	242	255	268	294	300	309	333	339	366
2-TLGM-350	1.75	105	152	182	1.80	190	211	231	259	282	298	313	343	350	361	389	396	427
2-TLGM-400	1.75	120	174	209	1.80	217	242	264	296	323	340	358	392	400	412	444	452	488
2-TLGM-420	1.75	120	174	209	1.80	228	254	278	311	339	357	375	412	420	433	466	475	512
2-TLGM-450	1.75	134	196	235	1.80	244	272	297	333	363	383	402	441	450	464	499	509	549
2-TLGM-500	1.75	149	217	261	1.80	271	302	330	369	404	426	447	490	500	516	554	566	610
2-TLGM-550	1.75	164	239	287	1.80	298	332	364	407	444	468	492	539	550	567	611	622	670
2-TLGM-600	1.75	179	261	313	1.80	325	362	396	444	484	510	536	588	600	619	667	677	731
2-TLGM-650	1.75	194	283	339	1.80	352	393	430	480	524	553	581	637	650	670	722	734	792
2-TLGM-700	1.75	209	304	365	1.80	379	423	462	518	564	595	624	686	700	721	778	792	853
2-TLGM-750	1.75	224	326	391	1.80	407	453	496	555	604	638	671	735	750	773	833	848	914
2-TLGM-800	1.75	239	348	417	1.80	434	483	528	591	644	680	714	784	800	824	888	905	975
2-TLGM-850	1.75	254	369	443	1.80	461	513	562	629	684	723	760	832	850	876	943	960	1036
2-TLGM-900	1.75	269	391	470	1.80	488	543	594	666	726	765	804	880	900	928	1000	1018	1097
2-TLGM-1000	1.75	299	435	521	1.80	542	604	661	740	807	850	894	980	1000	1031	1111	1131	1220
2-TLGM-1100	1.75	328	478	574	1.80	596	664	727	813	888	935	983	1078	1100	1134	1222	1243	1340
2-TLGM-1200	1.75	358	522	626	1.80	650	725	793	888	968	1020	1073	1176	1200	1236	1333	1357	1460
2-TLGM-1300	1.75	388	565	678	1.80	705	785	859	962	1048	1105	1162	1272	1300	1340	1444	1469	1580
2-TLGM-1400	1.75	418	608	730	1.80	759	846	925	1035	1128	1190	1252	1372	1400	1440	1555	1583	1707
2-TLGM-1500	1.75	448	652	782	1.80	813	906	992	1110	1211	1275	1341	1470	1500	1547	1666	1694	1829

Current

Amps at 25°C

SEC bloc type	Discharge amps at 25°C																	
	End volts /Cell	Discharge time in minutes			End Volts /Cell	Discharge time in hours												
		15min	30min	45min		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

Power

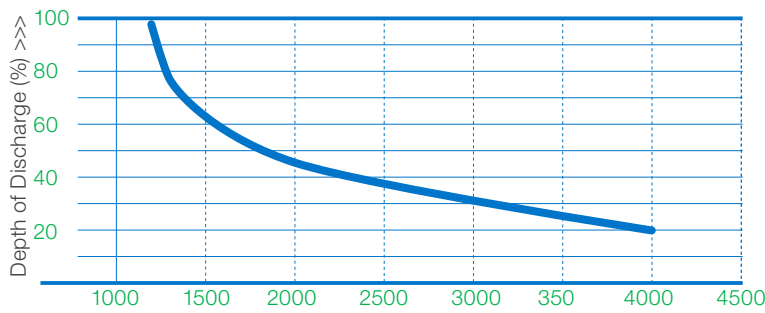
Watts/cell at 25°C

SEC bloc type	Discharge watts/cell at 25°C																	
	End volts /Cell	Discharge time in minutes			End Volts /Cell	Discharge time in hours												
		15min	30min	45min		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

Cycle life

Relationship between depth of discharge and life

Ambient temperature 25°C



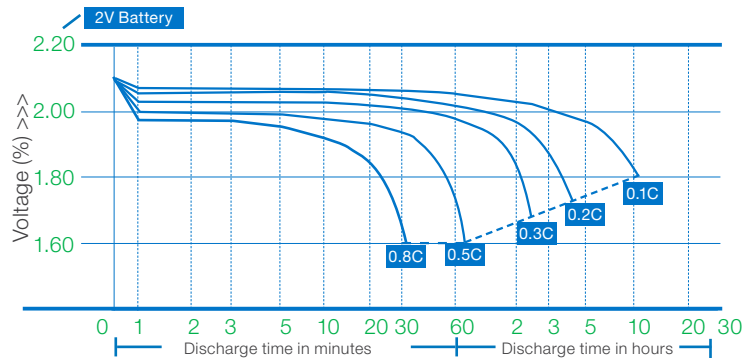
Cycle Life >>>

The depth of discharge critically affects the number of cycles which a battery will complete during its life time.

Discharge characteristics

Discharge current VS discharge time curve

Ambient temperature 25°C

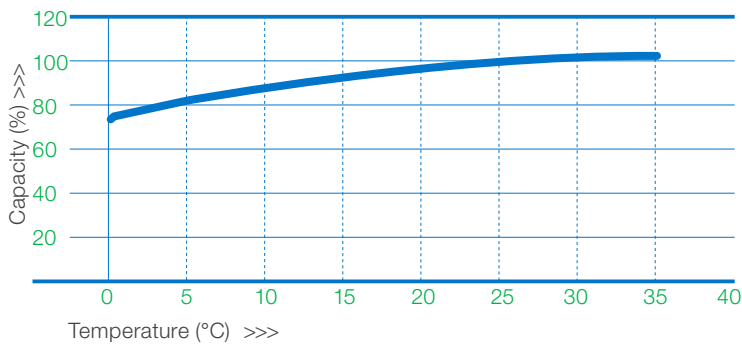


Discharge duration (h) >>>

Effect of discharge rate on battery capacity.

Effect of inclined temperature

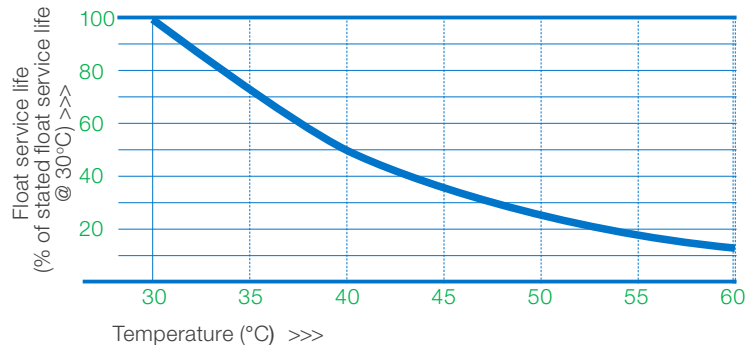
Effect of temperature on capacity at C/10 discharge rate



Temperature (°C) >>>

A high ambient temperature will increase the cell capacity but will significantly shorten its calendar and cycle life.

Float service life VS temperature

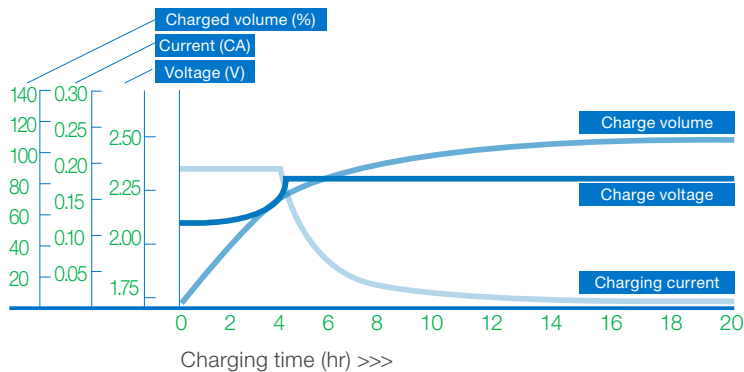


Temperature (°C) >>>

Effect of temperature on float service life.

Charge method

Constant current/voltage charge characteristics



Charging time (hr) >>>

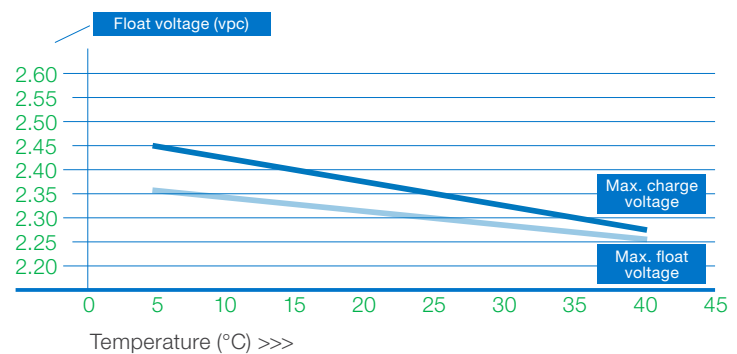
The preferred charging procedure should be in accordance with DIN 41773, constant current/constant voltage (IU characteristic). Constant float charging utilising a constant voltage charger is also acceptable.

Charging voltage measured at the battery terminals: $2.30 \pm 1\% \times \text{number of cells}$.

Equalising or fast charging can occasionally be permitted in which the charging voltage is $2.35V \times \text{number of cells}$ for a maximum fixed period of 8 hours (depends on state of charge). This will apply in deep discharge and limited recharge operations such as stand-by with parallel connections. Automatic changeover to the charging voltage of $2.25V \pm 1\% \times \text{number of cells}$ should follow after this period.

Charge compensation

Temperature compensation for float voltage



Temperature (°C) >>>

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