

SEC-2TLA Sealed Lead Acid VRLA 2 Volt Flat Pasted Plate Battery Range Capacities: 50Ah to 3850Ah



SEC -TLA 2 Volt sealed valve regulated rechargeable batteries are maintenance free. SEC -TLA 2 Volt range advanced AGM absorbed electrolyte technology ensures reliable performance, safety, outstanding battery life and value. Batteries have a design life of 15 years at 20°C and comply with BS 6290 Part 4 (with flame retardant V-0 case) EUROBAT (draft IEC 896-2) standards and is a recognized component of UL 1989 under Standby Battery Category.

SPECIFICATION:

- * **POSITIVE PLATE:** Calcium flat plate grid
- * **NEGATIVE PLATE:** Flat pasted grid
- * **ELECTROLYTE:** Dilute sulphuric acid
- * **CONTAINER:** Grade 6 ABS - V-0 (optional)
- * **SEPARATORS:** Absorptive glass matt separator
- * **FLOAT VOLTAGE:** 2.25 vpc +/- 1% at 20/25°C
- * **MAX CHARGE VOLTAGE:** 2.35 vpc at 20/25°C
- * **SAFETY ONE WAY VALVE:** 1-3 p.s.i. self-resealing
- * **TERMINALS:** Integral brass insert
- * **INTERCONNECTS:** Copper bar or insulated cable

APPLICATIONS

- * Telecommunications
- * UPS
- * Emergency Lighting
- * Fire & Security
- * Standby Power
- * Switchgear
- * Control Systems
- * Cellular Radio
- * Photovoltaic

Introduction

SEC TLA 2 Volt batteries are of the absorbed electrolyte type. The cells are designed so that a controlled amount of electrolyte, dilute sulphuric acid, is contained within an absorbent non woven separator material that also separates the battery plates. This type of separator construction allows full wetting of the plates with the available electrolyte and also allows the free passage of the oxygen generated during charging. This construction is generally referred to as absorbed glass mat (AGM) type.

Valve regulated batteries are fully sealed with the exception of a one way valve that opens when excess pressure builds up inside the battery and closes when the pressure is released. The recombination of charge gases is accomplished by allowing oxygen produced at the positive plate to pass through the separator material to the negative plate where the recombination reaction occurs. The safety valve controls the internal pressure of the battery to optimize the efficiency of the recombination reaction and minimize the possible loss of water.

SEC's **CELLYTE 2TLA** batteries are manufactured using modern technology in a new 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 the most modern production equipment in the world makes continuous product improvement possible.

* Valve Regulated Construction (sealed)

The SEC valve regulated AGM (Absorbed Glass Mat) rechargeable lead acid battery for safe, trouble free operation in Vertical or Horizontal position. The acid is suspended in a specially formulated non woven glass mat separator. All the acid is absorbed in this manner and it provides a safe non-spillable battery.

* Gas Recombination System.

The gasses generated in the normal charge/discharge use of the battery is recombined during normal operation. In normal operation more than 99% of the gases generated are efficiently recombined.

* SEC-CAT Catvent™ Catalyst Vent Plug

SEC's VRLA cells incorporate the Philadelphia Scientific precious metal catalyst **Catvent™** to enhance the water recombination process within the cell, reduce cell dry out, reduces float current by 50%, positive plate corrosion, thermal runaway, and capacity loss due to negative plate polarisation.

* Maintenance.

The battery has been designed and built such that no addition of water is needed for the life of the battery thus there is no need to add water or take specific gravity readings.

* Battery Life - Float Service.

The SEC **CELLYTE 2TLA** cell is designed for float /standby service with design life of 15 years at 20°C

* Safety Valve.

If excess pressure builds up within the battery, the safety valve automatically opens and re closes, releasing the gas at 1-3 p.s.i. The valve does not allow the ingress of oxygen which is harmful and reduces the life expectation of the battery.

* Temperature Range for Normal Operation.

The SEC **CELLYTE 2TLA** battery range has a wide operating temperature range. However for maximum life and safety, continuous operation over 45 Deg C is not recommended, in fact this is not recommended for any valve regulated battery.

* Grid Design and Paste Formulation.

SEC has optimized the grid design and paste formulation to maximize the operating and storage life of the battery. This optimized design provides the following advantages:- Excellent recovery from deep discharge or over discharge. Low self discharge to ensures maximum storage time when not in use. Excellent cycling capability for an AGM battery. Adequate safety margins in tough operating conditions.

* Recommended Charging Voltages;

Float/Boost 2.25 ±1% Vpc at 20/25C

Cycle Service 2.35 ±1% Vpc at 20/25C

SEC TLA 2 Volt AGM Range - Battery Specification

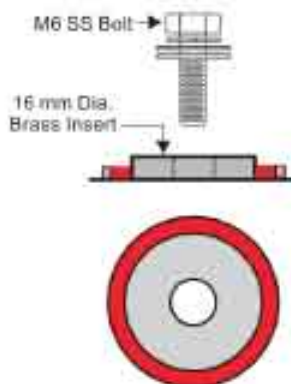
SEC CELL TYPE	CELL Volts	Nominal Capacity Amp Hour	Cell Length (L) mm	Cell Length (L) inch	Cell Width (W) mm	Cell Width (W) inch	Cell Height (H1) mm	Cell Height (H1) inch	Cell Height (H2) mm	Cell Height (H2) inch	Cell Weight KG	Cell Weight lbs	Inter. Res. mV/ohms	Short Circuit Current	No. of Term.	Terminal Type
SEC 2TLA-50	2	50	161	6.34	50	1.97	166	6.54	166	6.54	4.5	9.90	0.90	500	2	FT 4
SEC 2TLA-100	2	100	171	6.73	72	2.83	205	8.07	245	9.65	8.0	17.6	0.70	1000	2	FT 4
SEC 2TLA-150	2	150	172	6.77	102	4.02	205	8.07	245	9.65	11.0	24.2	0.60	1550	2	FT 4
SEC 2TLA-200	2	200	173	6.81	111	4.37	329	12.95	365	14.37	14.0	30.8	0.50	1600	2	FT 5
SEC 2TLA-250	2	250	173	6.81	111	4.37	329	12.95	365	14.37	18.0	39.6	0.45	2000	2	FT 5
SEC 2TLA-300	2	300	171	6.73	151	5.94	330	12.99	366	14.41	21.0	46.2	0.40	2400	2	FT 5
SEC 2TLA-375	2	375	171	6.73	151	5.94	330	12.99	366	14.41	23.5	51.7	0.39	3000	2	FT 5
SEC 2TLA-400	2	400	211	8.31	176	6.93	329	12.95	367	14.45	27.0	59.4	0.36	3200	4	FT 5
SEC 2TLA-420	2	420	211	8.31	176	6.93	329	12.95	367	14.45	27.4	60.3	0.35	3300	4	FT 5
SEC 2TLA-450	2	450	223	8.78	187	7.36	351	13.82	373	14.69	30.0	66.0	0.33	3600	4	FT 5
SEC 2TLA-500	2	500	211	8.31	176	6.93	329	12.95	367	14.45	32.0	70.4	0.30	4000	4	FT 5
SEC 2TLA-570	2	570	223	8.78	187	7.36	351	13.82	373	14.69	35.0	77.0	0.29	4600	4	FT 5
SEC 2TLA-600	2	600	301	11.85	175	6.89	331	13.03	366	14.41	40.0	88.0	0.28	4800	4	FT 5
SEC 2TLA-625	2	625	241	9.49	172	6.77	331	13.03	366	14.41	47.0	103	0.25	5000	4	FT 5
SEC 2TLA-750	2	750	301	11.85	175	6.89	331	13.03	366	14.41	55.0	121	0.22	6000	4	FT 5
SEC 2TLA-800	2	800	410	16.14	175	6.89	330	12.99	365	14.37	57.0	125	0.20	6400	8	FT 5
SEC 2TLA-1000	2	1000	410	16.14	175	6.89	330	12.99	365	14.37	63.0	139	0.16	7000	8	FT 5
SEC 2TLA-1250	2	1250	475	18.70	175	6.89	328	12.91	365	14.37	78.0	172	0.13	10050	8	FT 5
SEC 2TLA-1500	2	1500	401	15.79	351	13.82	342	13.46	378	14.88	100	220	0.11	11950	8	FT 5
SEC 2TLA-1850	2	1850	401	15.79	351	13.82	342	13.46	378	14.88	125	275	0.10	15050	8	FT 5
SEC 2TLA-2000	2	2000	491	19.33	351	13.82	344	13.54	383	15.08	132	290	0.09	16100	8	FT 5
SEC 2TLA-2500	2	2500	491	19.33	351	13.82	344	13.54	383	15.08	175	385	0.08	19850	8	FT 5
SEC 2TLA-3000	2	3000	712	28.03	353	13.90	341	13.43	382	15.04	210	462	0.08	24100	8	FT 5
SEC 2TLA-3850	2	3850	712	28.03	353	13.90	341	13.43	382	15.04	261	574	0.07	30800	8	FT 5

Battery Dimensions may be changed without prior notice.

FT4 = 16 mm Diameter copper post with M6 Bolt

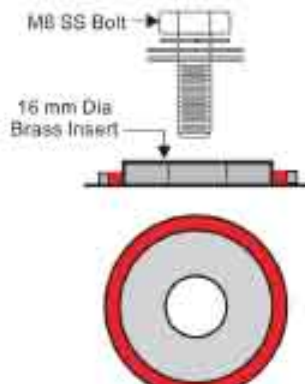
FT5 = 16 mm Diameter copper post with M8 Bolt

Terminal Type FT 4

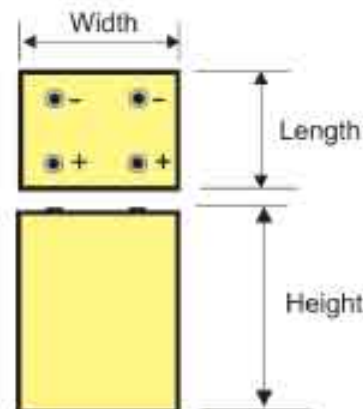


16 mm Ø Brass Insert Terminal for M6 Bolt

Terminal Type FT 5



16 mm Ø Brass Insert Terminal for M8 Bolt



Cell Dimensions for rack layout

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

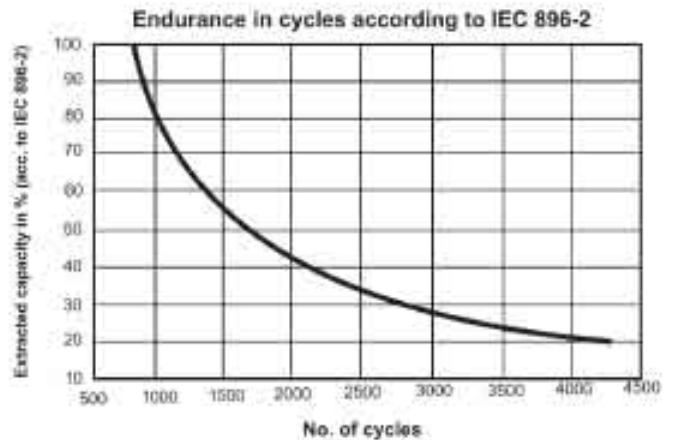
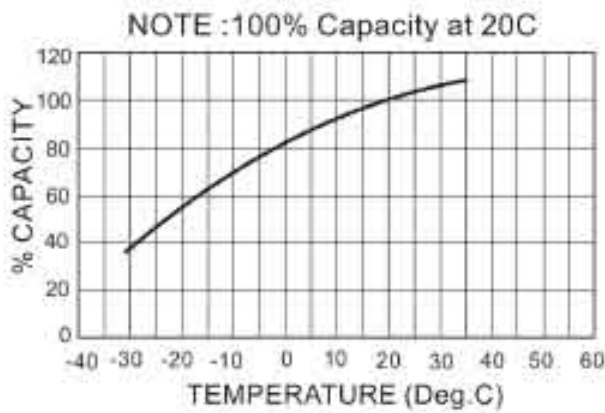
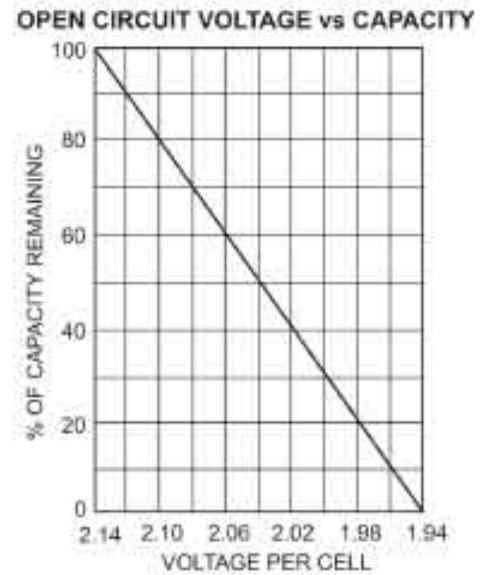
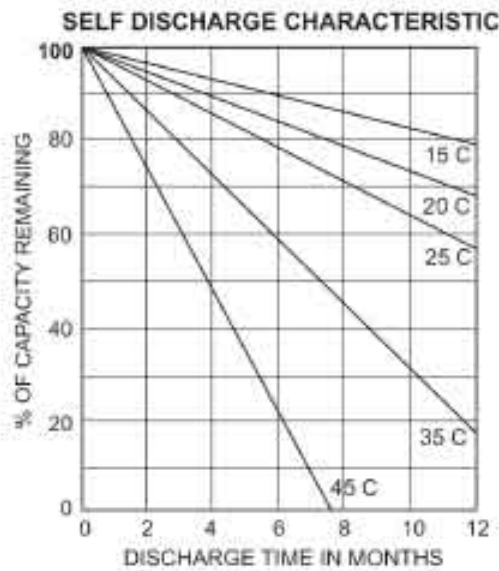
* Minimize positive plate corrosion

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.

CELLYTE 2TLA Cells - PERFORMANCE CURVES



Standards / Approvals

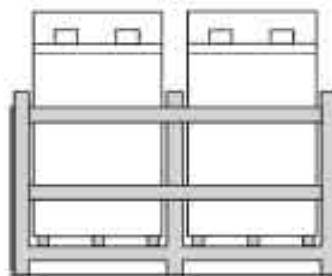
UL approval
 BS 6290 Part 4 (Optional)
 Eurobat (Draft IEC 896-2)
 IEEE
 JIS

SEC CELLYTE 2TLA Cells - Horizontal & Vertical Racking Systems.

SEC2TLA Range can be mounted on/in vertical or Horizontal Racking System
 It is not recommended to mount cells larger than 1000 AH in horizontal position.



Typical rack for horizontal cell configuration



Typical anti-seismic rack for vertical cell configuration



Typical standard rack for vertical cell configuration



CELLYTE 2CMT/G Modular



CELLYTE 2TLAM/G Tubular



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



CELLYTE 12FTA/G Range



CELLYTE 6-12TLA Range



CELLYTE 6-12TUA Range



CELLYTE 6-12TLG Range



CELLYTE 6-12TSG Range



MICROLYTE +Plus Range



MICROLYTE Red Top Range



CELLYTE 2TLA/G Range



**SEC 2ETG OPzV Range
in Tubular Rack**



SEC Tubular OPzS Range



SEC Nickel Cadmium Range



Typical VRLA Catalyst