

## Sealed VRLA Monobloc Gel Battery SOLAR POWER BATTERY Capacities : 20 Ah to 300 Ah @ C/100



**CELLYTE TLG Bloc Gel**, sealed valve regulated lead acid rechargeable batteries are maintenance free. **CELLYTE TLG** advanced gelled electrolyte gas recombination technology ensures reliable performance, safety, outstanding battery life and value. **CELLYTE TLG** batteries are designed for universal float service / cycling applications. Battery life will depend on frequency and depth of discharge and temperature of operation. (See curve) UL Recognised Component.

### APPLICATIONS

- \* Photovoltaic / Solar / Wind
- \* Telecommunications
- \* Cycling / Float service
- \* Wheelchair / Electric vehicle
- \* Boats/Marine/Navigational Aids
- \* Engine Starting
- \* Golf caddy
- \* Portable medical equipment
- \* Cathodic Protection

### SPECIFICATIONS

Voltage .....6 and 12 volt nominal  
Plate alloy ..... Lead calcium/Tin grid alloy  
Container/Case .... Grade 6 ABS  
Charge voltage ..... Cycle 2.35 vpc; Float 2.25 vpc @ 20/25°C  
Specific gravity ..... 1.280  
Electrolyte ..... Sulphuric acid thixotropic gel  
Vent ..... Self sealing - 2psi Operation

### INNOVATIVE FEATURES

- \* Gelled Thixotropic electrolyte
- \* Central Point Gassing System  
(Check Catalogues for Models)
- \* Valve Regulated Lead Acid  
with optional Mini-Catalyst
- \* Multi-position usage
- \* Low self-discharge
- \* Complies - BS 6290 Part 4 (with V-0 option)
- \* FAA and IATA Approved as NON Hazardous
- \* Flame Retardant material V-0  
Available to meet BS 6290 Part 4)

# Introduction.

SEC batteries have been used in the industrial battery market for over 20 years. SEC's high quality, 10 year design life, reliable Gel technology lead acid batteries have a proven record and we have now extended our range of 12TLG batteries to include larger sizes. New features include handles for easy lifting, brass insert terminals for higher current capacity and reduced damage during transportation, designed to comply with EUROBAT (draft IEC 896-2), IEEE, JIS and BS 6290 Part 4, using UL certified components.

- **Valve Regulated (Sealed) Construction.**

The battery is of the Gel ( gelled electrolyte technology), valve regulated (sealed) VRLA rechargeable type. The acid is immobilised in a specially formulated mixture of gelling agent and sulphuric acid electrolyte. 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 a rechargeable battery are internally recombined during normal operating parameters. In fact, in normal operational use, more than 99% of the gases generated are recombined.

- **Maintenance.**

The battery has been designed and built such that no addition of electrolyte is needed during the life of the battery. There is no requirement to add water or take time consuming specific gravity readings.

- **Battery Life - Float Service.**

The SEC TLG battery is suitable for float (standby) service with life of 10 years at 20 °C

- **Battery Life - Cycle Service.**

The SEC TLG battery is designed for 500 to 3700 charge/discharge cycles, actual quantity will depend on the depth of discharge. (see cycling curve)

- **Safety Valve.**

If excess pressure builds up within the battery, the safety valve automatically opens releasing the gas at 1-3 p.s.i then automatically closes. Fitted with optional Mini-Catalyst to enhance the gas recombination, reduce cell dry-out, lower float current, minimize thermal runaway, positive plate corrosion and negative plate polarization. The valve does not allow the ingress of oxygen which is harmful to the efficient operation and life of the battery.

- **Temperature Range for Normal Operation.**

The SEC battery has a wide operating temperature range. However for maximum life and safety, continuous operation over 45 Deg C is not recommended for any VRLA 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 ensure maximum storage time when not in use. Excellent cycling capability. Adequate safety margins in tough operating conditions.

- **Use In any Position.**

The SEC TLG battery is designed to use in horizontal and vertical positions.

**These features make the 12TLG batteries suitable for renewable energy deep cycle applications.**







# CELLYTE 6-12TLG Bloc Data & Dimensions

SEC Battery Type	Capacity C/100 1.80 vpc	Capacity C/20 1.75 vpc	Capacity C/5 1.75 vpc	CCA at -18 C 0 F.	CCA at 0 C. 32 F.	Short Circuit Amps	Internal Resistance $\Omega$ Ohms	Female Terminal Type	Battery Weight		Overall Battery Dimensions					
									Length		Width		Height			
									KG	lbs	Inch	mm	Inch	mm	Inch	mm
6TLG 130*	130	120	92.9	760	1010	3200	3.0	FT 4	16.0	35.2	7.68	195	6.69	170	8.13	207
6 TLG 220*	221	200	155	1150	1440	5000	2.3	FT 5	31.5	69.3	12.7	323	7.01	178	9.25	235
6 TLG 250	255	230	178	1240	1650	5400	2.1	FT 5	33.0	72.6	9.57	243	7.40	188	10.8	275
12TLG20	18.8	17.0	13.2	110	165	750	12	FT 3	6.0	13.2	7.07	180	2.99	76	6.61	168
12TLG 30	28.8	26.0	20.1	190	250	1100	8.2	FT 3	10.0	22.0	6.54	165	4.96	127	6.93	176
12TLG 40	34.3	31.0	24.0	240	320	1500	7.3	FT 3	11.0	24.2	7.72	196	5.16	131	6.34	161
12TLG 50	46.5	42.0	32.5	260	350	1700	6.0	FT 3	14.8	32.56	7.76	197	6.54	166	6.69	170
12 TLG 60	60.9	55.0	42.6	280	380	1900	5.6	FT 3	19.0	41.8	9.02	229	5.43	138	8.43	214
12TLG 70	72.0	65.0	50.6	390	510	2000	5.5	FT3	22.5	49.5	13.8	350	6.61	168	7.05	179
12TLG 80	77.5	70.0	54.2	410	550	2100	5.4	FT 3	25.5	56.1	10.2	259	6.61	168	8.44	215
12TLG 90	88.6	80.0	61.9	460	620	2400	4.5	FT 3	26.5	58.3	10.2	259	6.61	168	8.46	215
12TLG 100	99.6	90.0	69.7	510	680	2650	4.3	FT 3	30.5	67.1	12.1	307	6.65	169	8.46	215
12TLG 110	111	100	77.4	580	780	2900	3.9	FT 4	32.5	71.5	13.0	330	6.69	170	8.46	215
12TLG 120	122	110	85.1	710	960	3000	3.4	FT 4	34.0	74.8	13.3	339	6.73	171	9.06	230
12TLG 130	133	120	92.9	760	1020	3300	3.1	FT 4	35.0	77	13.3	339	6.73	171	9.06	230
12TLG 150	151	136	105	970	1300	4200	2.9	FT 4	42.5	93.5	13.5	342	6.81	173	11.2	285
12TLG 170	168	152	118	1060	1390	4500	2.7	FT 5	48.5	107	19.0	483	6.69	170	9.49	241
12TLG 190	190	171	132	1100	1410	4600	2.5	FT 5	57.0	125	20.9	530	8.23	209	8.86	225
12TLG 210	211	190	147	1150	1440	4700	2.3	FT 5	60.0	132	20.9	530	8.23	209	8.86	225
12TLG 250	255	230	178	1240	1670	5400	2.2	FT 5	66.0	145	20.6	522	9.45	240	8.86	225
12TLG 300	294	265	205	1240	1670	5400	2.2	FT 5	80.5	177	20.6	522	10.59	269	8.66	220

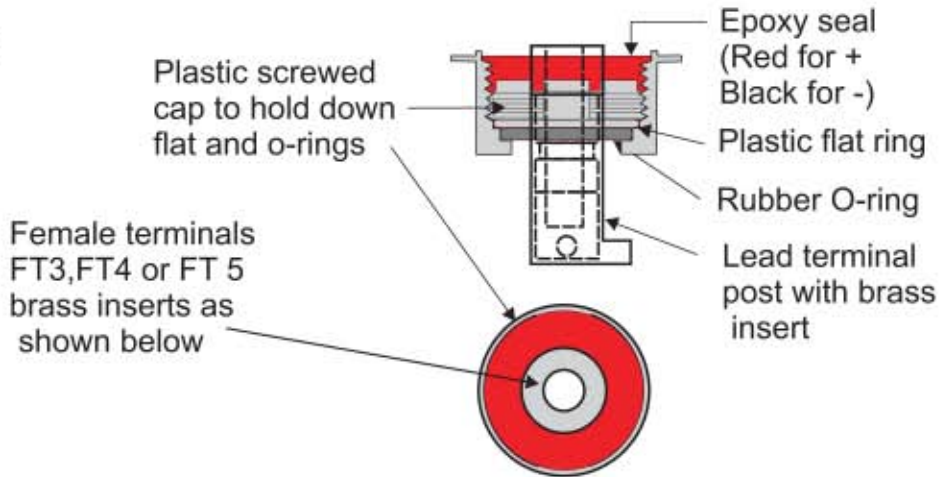
\* Gel sizes not yet available

## \* NOTE:-

SEC Battery Types \*12TLG 60, \*12TLG 90 and \*12TLG 110 have a central manifold gassing systems, which incorporates a sintered PP flame-arrestor membrane so that they can be used in enclosed cabinets, and any gases vented and dispersed safely to the outside environment. With the V-0 cover and case material batteries available to meet BS 6290 Part 4.

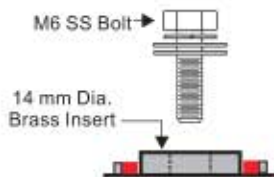
## Applicable Standards

UL Component approval  
BS 6290 Part 4  
Eurobat  
IEC 60896-21/22-2004  
(Testing in progress)

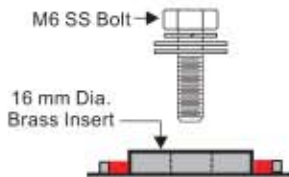


TYPICAL TRIPLE SEAL DETAIL

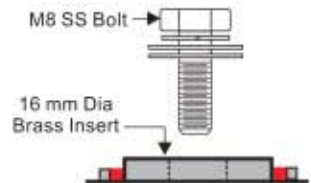
## FEMALE TERMINAL (FT) DETAILS



14 mm  $\varnothing$  Brass Insert Terminal for M6 Bolt  
**TYPE FT 3**



16 mm  $\varnothing$  Brass Insert Terminal for M6 Bolt  
**TYPE FT 4**



16 mm  $\varnothing$  Brass Insert Terminal for M8 Bolt  
**TYPE FT 5**

# Constant Voltage Charging.

It is recommended to use Constant Voltage method of charging for Valve Regulated lead acid (VRLA) batteries. Charging voltages must be regularly checked and to optimize the battery performance it is necessary to ensure that the voltage is kept within the following limits.

Float Service 2.25 ±1% Volts Per Cell at 20/25 Deg C.  
 Cycle Service 2.35 ±1%Volts Per Cell at 20/25 Deg C.

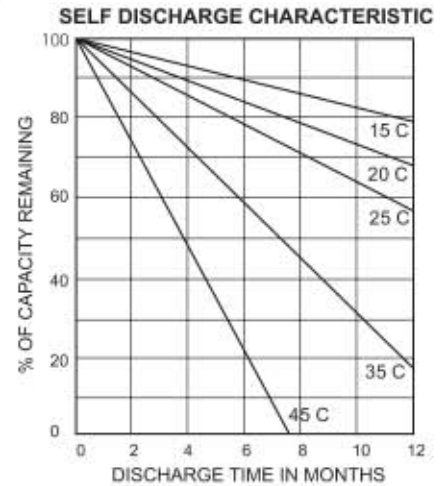
## Temperature Effects.

Temperature affects the battery in a number of different ways.

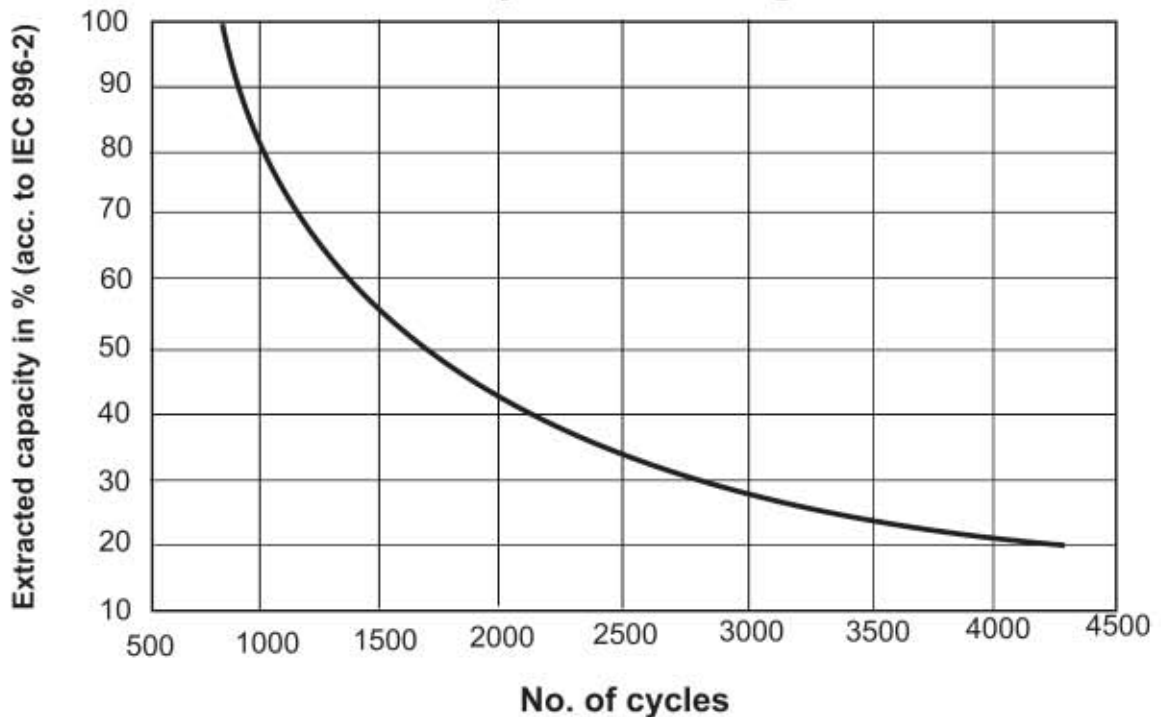
The battery will operate in extreme temperature ranges from below Zero to over 40 Deg C. However the Valve Regulated (VRLA) Battery nominal capacity, and optimum performance are based on operating temperature of 20 Deg C.

Above this temperature the Battery capacity will increase slightly, however the life will decrease at the higher temperature.

When designing your battery system the different discharge and recharge performance at different temperature should be taken into account, details of both listed below.



## Endurance in cycles according to IEC 896-2



Temperature Compensation is the process whereby the charge voltage is changed as a function of the battery temperature. For higher or lower temperatures outside the table range use temperature correction factor of 0.003 ± 0.01 per volt/per/cell/deg.C

Battery Float Charging (Temperature compensation)	
Temperature Deg.C	Float Charge Volts/Cell
5	2.31
10	2.29
15	2.27
20	2.25
25	2.25
30	2.23
35	2.21



**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**