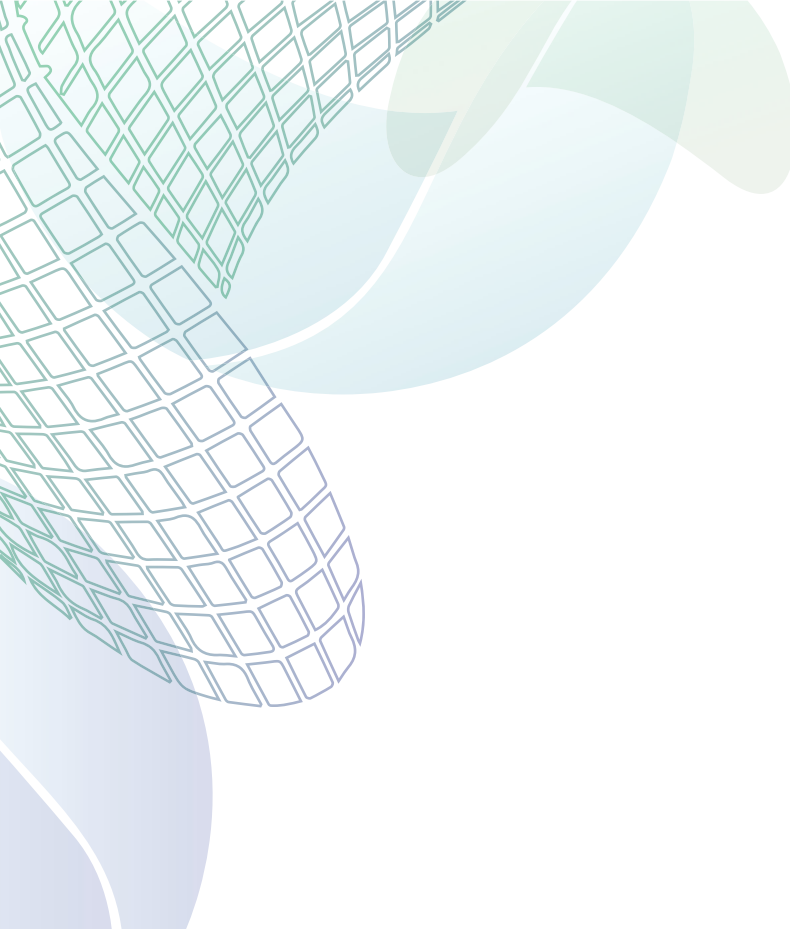




CELLYTE 6-12 TSG GEL SERIES

6 / 12V SEALED VRLA SOLAR MONOBLOC BATTERY



SEC - 6 / 12 - TSG

info@secbattery.com / www.secbattery.com

SEC Industrial Battery Co. Ltd.

Battery Profile



DESIGN LIFE

10-12 year in float service at 20°C - 30°C with Catalyst.

15Ah-235Ah at C/10 to 1.80vpc @ 25°C.

MANUFACTURED TO COMPLY

BS EN 6290 Part 4
Eurobat
UL Component approval
IEC 60896 - 21 / 22- 2004
ISO 9001 : 2000
ISO 14001 : 2004

APPLICATIONS

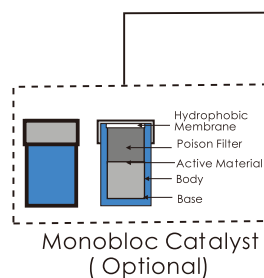
Alternative Energy Storage
Solar Photovoltaic / Wind
Cycling / Float Service
Wheelchair / Electric vehicle
Boats/Marine/Navigational Aids
Floor Cleaning machines
Engine Starting
Water Pumping / Golf caddy
Portable medical equipment
Cathodic protection

SPECIFICATIONS

Positive electrode:	Virgin Pure Lead 1.6% 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:	Sulphuric Acid thixotropic gel
Safety Valve:	1-3 PSI Self-Resealing
Post Seal :	Triple Seal / barrier
Terminals:	Copper Insert for Stainless Steel bolts
Container / Cover:	Standard ABS or Flame Retardant V-O (optional)

INNOVATIVE FEATURES

Valve Regulated Lead Acid
Quality system - ISO 9001
Gelled Thixotropic electrolyte
Spill-proof / leak proof
Multi-position usage
Multi-cell container
Low self-discharge
FAA and IATA Approved as NON Hazardous



CAPACITY

Ampere Hour @ 25°C



SEC Bloc Type	End Volts /Cell	DISCHARGE DATA AMPS			End Volts /Cell	DISCHARGE DATA AMPERE HOURS at 25°C													
		DISCHARGE TIME IN MINS				DISCHARGE TIME IN HOURS													
		15MINS	30MINS	45MINS		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48hr	72hr	100hr
6-TSG-130	1.80	159	102	76.2	1.85	63.0	64.6	72.5	78.5	82.4	85.4	88.2	96.8	98.3	100	113	118	122	126
	1.75	173	106	78.5	1.80	64.5	68.5	76.9	83.3	87.5	90.5	93.6	102	105	107	118	122	126	130
	1.67	182	108	78.9	1.75	65.0	70.2	78.8	85.2	89.6	92.9	96.0	105	108	110	122	125	129	133
6-TSG-220	1.80	265	170	127	1.85	105	108	121	131	137	142	147	161	164	167	188	196	203	210
	1.75	288	176	131	1.80	108	114	128	139	146	151	156	171	175	179	197	204	210	217
	1.67	303	180	131	1.75	108	117	131	142	149	155	160	175	180	184	203	209	215	221
6-TSG-250	1.80	305	196	146	1.85	121	124	139	150	158	164	169	185	188	192	216	226	234	242
	1.75	331	202	151	1.80	124	131	147	160	168	174	180	197	202	205	227	234	242	250
	1.67	348	207	151	1.75	125	135	151	164	172	178	184	202	207	211	233	240	247	255

12-TSG-20	1.80	22.6	14.5	10.8	1.85	8.90	9.10	10.3	11.1	11.7	12.1	12.5	13.7	13.9	14.2	16.0	16.7	17.3	17.9
	1.75	24.5	15.0	11.1	1.80	9.10	9.70	10.9	11.8	12.4	12.8	13.3	14.5	14.9	15.2	16.8	17.3	17.9	18.0
	1.67	25.7	15.3	11.2	1.75	9.20	9.90	11.2	12.1	12.7	13.2	13.6	14.9	15.3	15.6	17.3	17.7	18.0	18.8
12-TSG-30	1.80	34.5	22.1	16.5	1.85	13.6	14.0	15.7	17.0	17.9	18.5	19.1	21.0	21.3	21.7	24.4	25.4	26.4	27.0
	1.75	37.4	22.9	17.0	1.80	14.0	14.8	16.7	18.0	19.0	19.6	20.3	22.2	22.8	23.2	25.6	26.4	27.3	28.0
	1.67	39.3	23.4	17.1	1.75	14.1	15.2	17.1	18.5	19.4	20.1	20.8	22.8	23.4	23.9	26.4	27.1	28.0	28.8
12-TSG-40	1.80	41.2	26.4	19.7	1.85	16.3	16.7	18.7	20.3	21.3	22.1	22.8	25.0	25.4	25.9	29.0	30.2	31.5	32.6
	1.75	44.7	27.3	19.7	1.80	16.7	17.7	19.8	21.5	22.6	23.4	24.2	26.5	27.2	27.7	30.5	31.6	32.4	33.6
	1.67	46.9	27.9	20.4	1.75	16.8	18.1	20.4	22.0	23.2	24.0	24.8	27.2	27.9	28.4	31.4	32.2	33.1	34.0
12-TSG-50	1.80	55.8	35.7	26.7	1.85	22.0	22.6	25.4	27.5	28.9	29.9	31.0	33.8	34.4	35.0	39.4	41.2	42.5	44.0
	1.75	60.5	37.0	27.5	1.80	22.6	24.0	26.9	29.1	30.6	31.7	32.8	35.9	36.8	37.5	41.3	42.7	43.9	45.6
	1.67	63.6	37.8	27.6	1.75	22.7	24.6	27.6	29.9	31.4	32.5	33.6	36.8	37.8	38.5	42.6	43.7	45.2	46.0
12-TSG-60	1.80	73.0	46.8	34.9	1.85	28.9	29.6	33.2	36.0	37.8	39.2	40.5	44.3	45.0	45.9	51.6	53.8	55.9	57.8
	1.75	79.2	48.4	36.0	1.80	29.6	31.4	35.2	38.1	40.0	41.5	43.0	47.0	48.2	49.1	54.2	56.0	57.6	59.7
	1.67	83.2	49.5	36.1	1.75	29.8	32.2	36.1	39.0	41.1	42.6	44.0	48.2	49.5	50.5	55.8	57.4	59.0	60.9
12-TSG-70	1.80	86.3	55.3	41.3	1.85	34.1	35.0	39.2	42.5	44.7	46.3	47.9	52.4	53.2	54.2	61.0	63.8	66.1	68.0
	1.75	94.0	57.2	42.5	1.80	35.0	37.1	41.6	45.0	47.2	49.0	50.8	55.5	57.0	58.1	64.1	66.2	68.3	70.5
	1.67	98.0	58.5	42.7	1.75	35.2	38.0	42.7	46.2	48.4	50.3	52.1	57.0	58.5	59.6	66.0	67.7	69.8	72.0
12-TSG-80	1.80	92.9	59.5	44.4	1.85	36.7	37.7	42.3	45.8	48.0	49.8	51.6	56.5	57.3	58.4	65.7	68.6	71.2	73.6
	1.75	101	61.6	45.8	1.80	37.6	39.9	44.8	48.6	51.0	52.9	54.7	59.8	61.4	62.5	68.9	71.0	73.4	75.9
	1.67	106	63.0	46.0	1.75	37.9	41.0	46.0	49.8	52.3	54.0	56.1	61.4	63.0	64.3	71.0	73.0	75.3	77.0
12-TSG-90	1.80	106	68.0	50.8	1.85	42.0	43.1	48.4	52.2	54.8	57.0	58.8	64.5	65.5	66.8	75.1	78.5	81.3	84.0
	1.75	115	70.4	52.4	1.80	43.0	45.7	51.2	55.5	58.3	60.4	62.4	68.4	70.1	71.4	78.8	81.4	84.1	86.8
	1.67	121	71.9	52.6	1.75	43.3	46.8	52.6	56.9	59.6	61.9	64.1	70.1	72.0	73.4	81.1	83.5	86.0	88.6
12-TSG-100	1.80	119	76.5	57.1	1.85	47.2	48.4	54.4	58.8	61.9	64.0	66.3	72.6	73.7	75.2	84.5	88.3	92.1	96.0
	1.75	130	79.2	58.9	1.80	48.4	51.4	57.7	62.4	65.6	68.0	70.2	76.9	78.9	80.4	88.7	91.6	95.6	99.6
	1.67	136	80.9	59.1	1.75	48.7	52.7	59.1	63.9	67.2	69.5	72.0	78.9	81.0	82.6	91.4	94.0	97.2	101
12-TSG-110	1.80	133	85.0	63.5	1.85	52.5	53.8	60.4	65.4	68.7	71.0	73.7	80.6	81.9	83.5	93.8	97.9	102	105
	1.75	144	88.0	65.5	1.80	53.8	57.1	64.1	69.3	72.8	75.5	78.0	85.5	87.7	89.3	98.6	102	105	108
	1.67	151	89.9	65.7	1.75	54.1	58.5	65.7	71.1	74.7	77.4	80.1	87.7	90.0	91.8	102	104	107	111
12-TSG-120	1.80	146	93.5	69.8	1.85	57.7	59.2	66.4	72.0	75.6	78.3	81.0	88.7	90.1	91.9	103	108	112	116
	1.75	158	96.8	72.0	1.80	59.2	62.8	70.5	76.2	80.0	83.0	85.8	94.0	96.4	98.3	108	112	116	119
	1.67	166	98.9	72.3	1.75	59.6	64.4	72.2	78.2	82.0	85.0	88.1	96.4	99.0	101	112	115	118	122
12-TSG-130	1.80	159	102	76.2	1.85	63.0	64.6	72.5	78.5	82.4	85.4	88.2	96.8	98.3	100	113	118	122	126
	1.75	173	106	78.5	1.80	64.5	68.5	76.9	83.3	87.5	90.5	93.6	102	105	107	118	122	126	130
	1.67	182	108	78.9	1.75	65.0	70.2	78.8	85.2	89.6	92.9	96.0	105	108	110	122	125	129	133
12-TSG-150	1.80	181	116	86.3	1.85	71.4	73.2	82.2	89.0	93.5	96.8	100	110	111	114	128	133	138	143
	1.75	196	120	89.0	1.80	73.1	77.7	87.2	94.4	99.2	103	106	116	119	121	134	138	143	148
	1.67	206	122	89.4	1.75	73.6	79.5	89.4	96.6	102	105	109	119	122	125	138	142	146	151
12-TSG-170	1.80	202	129	96.5	1.85	79.8	81.8	91.8	99.0	104	108	112	122	124	127	143	149	155	160
	1.75	219	134	99.5	1.80	81.7	86.8	97.0	105	111	115	119	130	133	136	150	155	160	166
	1.67	230	137	100	1.75	82.3	88.9	99.8	108	114	118	122	133	137	139	154	159	163	168
12-TSG-190	1.80	227	145	109	1.85	89.7	92.0	103	112	118	122	126	138	140	143	161	168	174	180
	1.75	246	150	112	1.80	92.0	97.7	110	119	125	129	134	146	150	152	168	174	180	186
	1.67	259	154	112	1.75	92.6	100	112	122	128	132	137	150	154	157	174	179	184	190
12-TSG-210	1.80	252	162	121	1.85	99.7	102	115	124	130	135	140	153	156	158	178	186	193	200
	1.75	274	167	124	1.80	102	108	122	132	138	144	149	162	167	169	187	193	200	206
	1.67	288	171	125	1.75	103	111	125	135	142	147	152	166	171	174	193	198	204	211
12-TSG-250	1.80	305	196	146	1.85	121	124	139	150	158	164	169	185	188	192	216	226	234	242
	1.75	331	202	151	1.80	124	131	147	160	168	174	180	197	202	205	227	234	242	250
	1.67	348	207	151	1.75	125	135	151	164	172	178	184	202	207	211	233	240	247	255
12-TSG-300	1.80	356	228	170	1.85	141	144	162	175	184	191	197	216	219	224	252	263	273	282
	1.75	386	236	175	1.80	144	153	172	186	195	202	209	229	235	239	264	273	282	291
	1.67	406	241	176	1.75	145	157	176	191	200	207	215	235	241	246	272	280	288	297

*Actual Battery Discharge Data may be ± 5% of figures shown.

SEC Bloc Type	End Volts /Cell	DISCHARGE DATA AMPS			End Volts /Cell	DISCHARGE DATA AMPS at 25°C														
		DISCHARGE TIME IN MINS				DISCHARGE TIME IN HOURS														
		15MINS	30MINS	45MINS		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48	72	100	
6-TSG-130	1.80	159	102	76.2	1.85	63.0	43.1	36.3	26.2	20.6	17.1	14.7	12.1	9.83	8.33	4.69	2.45	1.69	1.26	
	1.75	173	106	78.5	1.80	64.5	45.7	38.5	27.8	21.9	18.1	15.6	12.8	10.5	8.92	4.92	2.54	1.75	1.30	
	1.67	182	108	78.9	1.75	65.0	46.8	39.4	28.4	22.4	18.6	16.0	13.1	10.8	9.17	5.08	2.60	1.79	1.33	
6-TSG-220	1.80	265	170	127	1.85	105	71.8	60.4	43.6	34.3	28.4	24.5	20.1	16.4	13.9	7.82	4.08	2.82	2.10	
	1.75	288	176	131	1.80	108	76.0	64.0	46.3	36.5	30.2	26.0	21.4	17.5	14.9	8.21	4.24	2.92	2.17	
	1.67	303	180	131	1.75	108	78.0	65.5	47.3	37.3	31.0	26.7	21.9	18.0	15.3	8.46	4.35	2.99	2.21	
6-TSG-250	1.80	305	196	146	1.85	121	82.5	69.5	50.0	39.5	32.8	28.2	23.1	18.8	16.0	9.00	4.70	3.25	2.42	
	1.75	331	202	151	1.80	124	87.3	73.5	53.2	41.9	34.7	30.0	24.6	20.2	17.1	9.44	4.88	3.36	2.50	
	1.67	348	207	151	1.75	125	89.7	75.5	54.5	43.0	35.6	30.7	25.2	20.7	17.6	9.71	5.00	3.43	2.55	
12-TSG-20	1.80	22.6	14.5	10.8	1.85	8.90	6.07	5.14	3.70	2.92	2.42	2.08	1.71	1.39	1.18	0.67	0.35	0.24	0.18	
	1.75	24.5	15.0	11.1	1.80	9.10	6.47	5.45	3.93	3.10	2.56	2.22	1.81	1.49	1.27	0.70	0.36	0.25	0.18	
	1.67	25.7	15.3	11.2	1.75	9.20	6.60	5.60	4.03	3.17	2.63	2.27	1.86	1.53	1.30	0.72	0.37	0.25	0.19	
12-TSG-30	1.80	34.5	22.1	16.5	1.85	13.6	9.33	7.85	5.67	4.47	3.70	3.19	2.62	2.13	1.81	1.02	0.53	0.37	0.27	
	1.75	37.4	22.9	17.0	1.80	14.0	9.87	8.34	6.00	4.74	3.92	3.38	2.78	2.28	1.93	1.07	0.55	0.38	0.28	
	1.67	39.3	23.4	17.1	1.75	14.1	10.1	8.54	6.16	4.85	4.02	3.47	2.85	2.34	1.99	1.10	0.56	0.39	0.29	
12-TSG-40	1.80	41.2	26.4	19.7	1.85	16.3	11.1	9.35	6.76	5.33	4.41	3.80	3.13	2.54	2.16	1.21	0.63	0.44	0.33	
	1.75	44.7	27.3	20.3	1.80	16.7	11.8	9.90	7.17	5.65	4.68	4.03	3.31	2.72	2.31	1.27	0.66	0.45	0.34	
	1.67	46.9	27.9	20.4	1.75	16.8	12.1	10.2	7.33	5.79	4.80	4.13	3.40	2.79	2.37	1.31	0.67	0.46	0.34	
12-TSG-50	1.80	55.8	35.7	26.7	1.85	22.0	15.1	12.7	9.16	7.22	5.98	5.16	4.23	3.44	2.92	1.64	0.86	0.59	0.44	
	1.75	60.5	37.0	27.5	1.80	22.6	16.0	13.5	9.70	7.65	6.34	5.47	4.49	3.68	3.13	1.72	0.89	0.61	0.46	
	1.67	63.6	37.8	27.6	1.75	22.7	16.4	13.8	10.0	7.84	6.50	5.60	4.60	3.78	3.21	1.78	0.91	0.63	0.46	
12-TSG-60	1.80	73.0	46.8	34.9	1.85	28.9	19.7	16.6	12.0	9.45	7.83	6.75	5.54	4.50	3.83	2.15	1.12	0.78	0.58	
	1.75	79.2	48.4	36.0	1.80	29.6	20.9	17.6	12.7	10.0	8.30	7.17	5.88	4.82	4.09	2.26	1.17	0.80	0.60	
	1.67	83.2	49.5	36.1	1.75	29.8	21.5	18.1	13.0	10.3	8.51	7.34	6.03	4.95	4.21	2.33	1.20	0.82	0.61	
12-TSG-70	1.80	86.3	55.3	41.3	1.85	34.1	23.3	19.6	14.2	11.2	9.26	7.98	6.55	5.32	4.52	2.54	1.33	0.92	0.68	
	1.75	94.0	57.2	42.5	1.80	35.0	24.7	20.8	15.0	11.8	9.80	8.47	6.94	5.70	4.84	2.67	1.38	0.95	0.71	
	1.67	98.0	58.5	42.7	1.75	35.2	25.3	21.4	15.4	12.1	10.1	8.68	7.12	5.85	4.97	2.75	1.41	0.97	0.72	
12-TSG-80	1.80	92.9	59.5	44.4	1.85	36.7	25.1	21.2	15.3	12.0	10.0	8.60	7.06	5.73	4.87	2.74	1.43	0.99	0.74	
	1.75	101	61.6	45.8	1.80	37.6	26.6	22.4	16.2	12.8	10.6	9.12	7.48	6.14	5.21	2.87	1.48	1.02	0.76	
	1.67	106	63.0	46.0	1.75	37.9	27.3	23.0	16.6	13.1	10.8	9.35	7.67	6.30	5.36	2.96	1.52	1.05	0.77	
12-TSG-90	1.80	106	68.0	50.8	1.85	42.0	28.7	24.2	17.4	13.7	11.4	9.80	8.06	6.55	5.57	3.13	1.64	1.13	0.84	
	1.75	115	70.4	52.4	1.80	43.0	30.5	25.6	18.5	14.6	12.1	10.4	8.55	7.01	5.95	3.28	1.70	1.17	0.87	
	1.67	121	71.9	52.6	1.75	43.3	31.2	26.3	19.0	14.9	12.4	10.7	8.76	7.20	6.12	3.38	1.74	1.19	0.89	
12-TSG-100	1.80	119	76.5	57.1	1.85	47.2	32.3	27.2	19.6	15.5	12.8	11.1	9.07	7.37	6.27	3.52	1.84	1.28	0.96	
	1.75	130	79.2	58.9	1.80	48.4	34.3	28.9	20.8	16.4	13.6	11.7	9.61	7.89	6.70	3.70	1.91	1.33	1.00	
	1.67	136	80.9	59.1	1.75	48.7	35.1	29.6	21.3	16.8	13.9	12.0	9.86	8.10	6.88	3.81	1.96	1.35	1.01	
12-TSG-110	1.80	133	85.0	63.5	1.85	52.5	35.9	30.2	21.8	17.2	14.2	12.3	10.1	8.19	6.96	3.91	2.04	1.41	1.05	
	1.75	144	88.0	65.5	1.80	53.8	38.1	32.1	23.1	18.2	15.1	13.0	10.7	8.77	7.44	4.11	2.12	1.46	1.08	
	1.67	151	89.9	65.7	1.75	54.1	39.0	32.9	23.7	18.7	15.5	13.4	11.0	9.00	7.65	4.23	2.17	1.49	1.11	
12-TSG-120	1.80	146	93.5	69.8	1.85	57.7	39.5	33.2	24.0	18.9	15.7	13.5	11.1	9.01	7.66	4.29	2.25	1.55	1.16	
	1.75	158	96.8	72.0	1.80	59.2	41.9	35.3	25.4	20.0	16.6	14.3	11.8	9.64	8.19	4.50	2.33	1.61	1.19	
	1.67	166	98.9	72.3	1.75	59.6	42.9	36.1	26.1	20.5	17.0	14.7	12.1	9.90	8.42	4.65	2.39	1.64	1.22	
12-TSG-130	1.80	159	102	76.2	1.85	63.0	43.1	36.3	26.2	20.6	17.1	14.7	12.1	9.83	8.33	4.69	2.45	1.69	1.26	
	1.75	173	106	78.5	1.80	64.5	45.7	38.5	27.8	21.9	18.1	15.6	12.8	10.5	9.73	4.92	2.54	1.75	1.30	
	1.67	182	108	78.9	1.75	65.0	46.8	39.4	28.4	22.4	18.6	16.0	13.1	10.8	9.17	5.08	2.60	1.79	1.33	
12-TSG-150	1.80	181	116	86.3	1.85	71.4	48.8	41.1	29.7	23.4	19.4	16.7	13.7	11.1	9.5	5.32	2.77	1.92	1.43	
	1.75	196	120	89.0	1.80	73.1	51.8	43.6	31.5	24.8	20.5	17.7	14.5	11.9	10.1	5.58	2.88	1.99	1.48	
	1.67	206	122	89.4	1.75	73.6	53.0	44.7	32.2	25.4	21.0	18.2	14.9	12.2	10.4	5.75	2.96	2.03	1.51	
12-TSG-170	1.80	202	129	96.5	1.85	79.8	54.5	45.9	33.0	26.0	21.6	18.7	15.3	12.4	10.6	5.95	3.10	2.15	1.60	
	1.75	219	134	99.5	1.80	81.7	57.9	48.5	35.0	27.7	23.0	19.8	16.2	13.3	11.3	6.24	3.22	2.22	1.66	
	1.67	230	137	100	1.75	82.3	59.3	49.9	36.0	28.4	23.5	20.3	16.6	13.7	11.6	6.42	3.31	2.26	1.68	
12-TSG-190	1.80	227	145	109	1.85	89.7	61.3	51.5	37.3	29.4	24.4	21.0	17.2	14.0	11.9	6.69	3.50	2.42	1.80	
	1.75	246	150	112	1.80	92.0	65.1	54.8	39.6	31.2	25.8	22.3	18.3	15.0	12.7	7.02	3.63	2.50	1.86	
	1.67	259	154	112	1.75	92.6	66.7	56.0	40.5	31.9	26.4	22.8	18.7	15.4	13.1	7.23	3.72	2.56	1.90	
12-TSG-210	1.80	252	162	121	1.85	99.7	68.0	57.4	41.3	32.6	27.0	23.3	19.1	15.6	13.2	7.42	3.88	2.68	2.00	
	1.75	274	167	124	1.80	102	72.0	60.9	43.9	34.6	28.7	24.8	20.3	16.7	14.1	7.79	4.02	2.78	2.06	
	1.67	288	171	125	1.75	103	74.0	62.4	45.0	35.5	29.4	25.3	20.8	17.1	14.5	8.04	4.13	2.84	2.11	
12-TSG-250	1.80	305	196	146	1.85	121	82.5	69.5	50.0	39.5	32.8	28.2	23.1	18.8	16.0	9.00	4.70	3.25	2.42	
	1.75	331	202	151	1.80	124	87.3	73.5	53.2	41.9	34.7	30.0	24.6	20.2	17.1	9.44	4.88	3.36	2.50	
	1.67	348	207	151	1.75	125	89.7	75.5	54.5	43.0	35.6	30.7	25.2	20.7	17.6	9.71	5.00	3.44	2.55	
12-TSG-300	1.80	356	228	170	1.85	141	96.0	81.0	58.3	46.0	38.2	32.8	27.0	21.9	18.7	10.5	5.48	3.79	2.82	
	1.75	386	236	175	1.															

SEC Bloc Type	End Volts /Cell	DISCHARGE DATA WATTS/CELL			End Volts /Cell	DISCHARGE DATA WATTS/CELL at 25°C													
		DISCHARGE TIME IN MINS				DISCHARGE TIME IN HOURS													
		15MINS	30MINS	45MINS		1hr	1.5hr	2hr	3hr	4hr	5hr	6hr	8hr	10hr	12hr	24hr	48	72	100
6-TSG-130	1.80	294	191	143	1.85	121	82.9	70.1	51.0	40.4	33.6	29.1	24.0	19.6	16.7	9.41	4.92	3.39	2.57
	1.75	311	193	145	1.80	122	87.2	73.8	53.8	42.7	35.5	30.7	25.3	20.8	17.7	9.83	5.08	3.50	2.64
	1.67	319	194	144	1.75	121	88.2	74.8	54.5	43.3	36.1	31.2	25.7	21.3	18.1	10.1	5.17	3.55	2.70
6-TSG-220	1.80	490	319	239	1.85	201	138	117	85.0	67.2	55.9	48.4	40.0	32.7	27.8	15.7	8.20	5.66	4.28
	1.75	518	321	242	1.80	205	145	123	89.7	71.2	59.2	51.1	42.3	34.7	29.6	16.4	8.48	5.83	4.41
	1.67	530	324	240	1.75	201	147	124	90.8	72.0	60.2	52.0	42.9	35.4	30.2	16.8	8.64	5.93	4.49
6-TSG-250	1.80	564	368	275	1.85	231	159	134	97.5	77.5	64.6	55.7	45.9	37.5	32.0	18.1	9.43	6.52	4.93
	1.75	596	369	279	1.80	235	167	141	103	81.7	68.0	59.0	48.6	40.1	34.0	18.9	9.75	6.72	5.09
	1.67	609	373	276	1.75	233	169	143	105	83.1	69.1	59.8	49.4	40.7	34.7	19.3	9.93	6.81	5.18
12-TSG-20	1.80	41.8	27.2	20.3	1.85	17.0	11.7	9.94	7.21	5.73	4.77	4.12	3.40	2.77	2.36	1.34	0.70	0.48	0.36
	1.75	44.1	27.4	20.5	1.80	17.2	12.3	10.5	7.61	6.05	5.02	4.36	3.58	2.96	2.52	1.40	0.72	0.50	0.37
	1.67	45.0	27.5	20.5	1.75	17.2	12.4	10.6	7.73	6.12	5.11	4.42	3.65	3.01	2.56	1.43	0.73	0.50	0.38
12-TSG-30	1.80	63.8	41.5	31.1	1.85	26.0	18.0	15.2	11.0	8.77	7.29	6.31	5.21	4.25	3.61	2.04	1.06	0.74	0.55
	1.75	67.3	41.8	31.4	1.80	26.5	18.8	16.0	11.6	9.24	7.68	6.65	5.49	4.52	3.85	2.13	1.10	0.76	0.57
	1.67	68.8	42.1	31.3	1.75	26.3	19.0	16.2	11.8	9.37	7.81	6.76	5.59	4.61	3.93	2.18	1.12	0.77	0.58
12-TSG-40	1.80	76.2	49.6	37.1	1.85	31.2	21.4	18.1	13.2	10.4	8.69	7.51	6.21	5.06	4.31	2.43	1.26	0.88	0.66
	1.75	80.5	49.8	37.5	1.80	31.6	22.5	19.0	13.9	11.0	9.17	7.93	6.54	5.40	4.59	2.54	1.32	0.90	0.68
	1.67	82.1	50.2	37.3	1.75	31.3	22.7	19.4	14.1	11.2	9.32	8.06	6.66	5.49	4.68	2.60	1.33	0.91	0.69
12-TSG-50	1.80	103	67.0	50.2	1.85	42.1	29.0	24.5	17.9	14.2	11.8	10.2	8.41	6.86	5.84	3.29	1.72	1.18	0.90
	1.75	109	67.5	50.7	1.80	42.8	30.5	25.8	18.8	14.9	12.4	10.7	8.87	7.30	6.22	3.44	1.78	1.22	0.93
	1.67	111	68.0	50.5	1.75	42.3	30.9	26.2	19.1	15.1	12.6	10.9	9.02	7.44	6.33	3.53	1.81	1.25	0.93
12-TSG-60	1.80	135	87.8	65.7	1.85	55.3	37.9	32.1	23.4	18.5	15.4	13.3	11.0	8.97	7.65	4.32	2.25	1.56	1.18
	1.75	143	88.3	66.4	1.80	56.1	39.9	33.8	24.6	19.5	16.3	14.1	11.6	9.56	8.14	4.52	2.33	1.60	1.21
	1.67	146	89.1	66.1	1.75	55.6	40.5	34.3	24.9	19.9	16.5	14.3	11.8	9.74	8.30	4.62	2.37	1.63	1.24
12-TSG-70	1.80	160	104	77.7	1.85	65.2	44.8	37.9	27.6	21.9	18.2	15.8	13.0	10.6	9.04	5.10	2.67	1.84	1.39
	1.75	169	104	78.4	1.80	66.3	47.2	39.9	29.1	23.0	19.2	16.6	13.7	11.3	9.63	5.34	2.76	1.90	1.43
	1.67	172	105	78.1	1.75	65.6	47.8	40.5	29.5	23.4	19.5	16.9	14.0	11.5	9.81	5.46	2.80	1.93	1.46
12-TSG-80	1.80	172	112	83.6	1.85	70.2	48.3	40.9	29.8	23.5	19.6	17.0	14.0	11.4	9.74	5.49	2.87	1.98	1.50
	1.75	182	112	84.5	1.80	71.2	50.8	43.0	31.4	24.9	20.7	17.9	14.8	12.2	10.4	5.74	2.96	2.04	1.54
	1.67	186	113	84.2	1.75	70.7	51.5	43.7	31.8	25.3	21.0	18.2	15.0	12.4	10.6	5.88	3.02	2.08	1.56
12-TSG-90	1.80	196	128	95.6	1.85	80.3	55.2	46.8	33.9	26.9	22.5	19.4	16.0	13.1	11.1	6.28	3.28	2.27	1.71
	1.75	207	128	96.7	1.80	81.4	58.2	49.2	35.8	28.4	23.7	20.4	16.9	13.9	11.8	6.57	3.39	2.34	1.77
	1.67	212	129	96.3	1.75	80.8	58.8	49.9	36.4	28.8	24.0	20.8	17.2	14.2	12.1	6.71	3.45	2.37	1.80
12-TSG-100	1.80	220	144	107	1.85	90.3	62.1	52.6	38.2	30.4	25.2	21.8	18.0	14.7	12.5	7.06	3.69	2.57	1.96
	1.75	234	145	109	1.80	91.7	65.4	55.4	40.3	32.0	26.6	23.0	19.0	15.7	13.3	7.39	3.82	2.66	2.03
	1.67	238	146	108	1.75	90.8	66.2	56.1	40.9	32.5	27.0	23.4	19.3	15.9	13.6	7.56	3.89	2.68	2.05
12-TSG-110	1.80	246	160	120	1.85	100	69.0	58.4	42.5	33.7	28.0	24.3	20.0	16.3	13.9	7.85	4.09	2.83	2.14
	1.75	259	161	121	1.80	102	72.7	61.5	44.7	35.5	29.6	25.6	21.1	17.4	14.8	8.22	4.24	2.92	2.20
	1.67	264	162	120	1.75	101	73.5	62.3	45.5	36.1	30.1	26.0	21.5	17.7	15.1	8.40	4.30	2.96	2.25
12-TSG-120	1.80	270	175	131	1.85	110	75.9	64.2	46.8	37.1	30.9	26.7	22.0	18.0	15.3	8.61	4.52	3.11	2.36
	1.75	284	177	133	1.80	112	79.9	67.7	49.2	39.0	32.5	28.1	23.2	19.1	16.3	9.00	4.66	3.22	2.42
	1.67	291	178	132	1.75	111	80.9	68.5	50.0	39.6	33.0	28.6	23.6	19.5	16.6	9.23	4.75	3.25	2.48
12-TSG-130	1.80	294	191	143	1.85	121	82.9	70.1	51.0	40.4	33.6	29.1	24.0	19.6	18.2	9.41	4.92	3.39	2.57
	1.75	311	193	145	1.80	122	87.2	73.8	53.8	42.7	35.5	30.7	25.3	20.8	19.4	9.83	5.08	3.50	2.64
	1.67	319	194	144	1.75	121	88.2	74.8	54.5	43.3	36.1	31.2	25.7	21.3	19.7	10.1	5.17	3.55	2.70
12-TSG-150	1.80	335	218	162	1.85	137	93.9	79.4	57.8	45.9	38.1	33.0	27.2	22.1	18.9	10.7	5.56	3.85	2.91
	1.75	353	219	164	1.80	138	98.9	83.7	61.0	48.4	40.2	34.7	28.7	23.6	20.1	11.2	5.75	3.97	3.01
	1.67	361	220	164	1.75	137	99.9	84.8	61.8	49.1	40.8	35.4	29.2	24.0	20.5	11.4	5.88	4.03	3.07
12-TSG-170	1.80	374	242	182	1.85	153	105	88.7	64.3	51.0	42.6	36.9	30.4	24.7	21.2	11.9	6.23	4.32	3.26
	1.75	394	245	184	1.80	155	110	93.1	67.8	54.0	45.1	38.9	32.0	26.4	22.5	12.5	6.44	4.44	3.38
	1.67	403	247	183	1.75	153	112	94.7	69.0	54.9	45.6	39.6	32.6	27.0	22.9	12.7	6.57	4.50	3.41
12-TSG-190	1.80	420	272	205	1.85	172	118	99.5	72.7	57.7	48.1	41.5	34.2	27.9	23.8	13.4	7.02	4.85	3.67
	1.75	443	274	207	1.80	174	124	105	76.7	60.8	50.5	43.8	36.1	29.8	25.3	14.0	7.25	5.00	3.78
	1.67	453	277	205	1.75	173	126	106	77.7	61.6	51.3	44.4	36.7	30.3	25.8	14.4	7.39	5.08	3.86
12-TSG-210	1.80	466	304	228	1.85	191	131	111	80.6	64.0	53.2	46.1	38.0	31.1	26.4	14.9	7.78	5.38	4.07
	1.75	493	305	229	1.80	193	137	117	85.0	67.5	56.2	48.8	40.0	33.1	28.0	15.6	8.04	5.56	4.19
	1.67	504	308	229	1.75	192	139	118	86.3	68.6	57.1	49.4	40.8	33.7	28.6	16.0	8.19	5.64	4.28
12-TSG-250	1.80	564	368	275	1.85	231	159	134	97.5	77.5	64.6	55.7	45.9	37.5	32.0	18.1	9.43	6.52	4.93
	1.75	596	369	279	1.80	235	167	141	103	81.7	68.0	59.0	48.6	40.1	34.0	18.9	9.75	6.72	5.09
	1.67	609	373	276	1.75	233	169	143	105	83.1	69.1	59.8	49.4	40.7	34.7	19.3	9.93	6.83	5.18
12-TSG-300	1.80	659	428	320	1.85	270	185	157	114	90.3	75.3	64							

DIMENSIONS



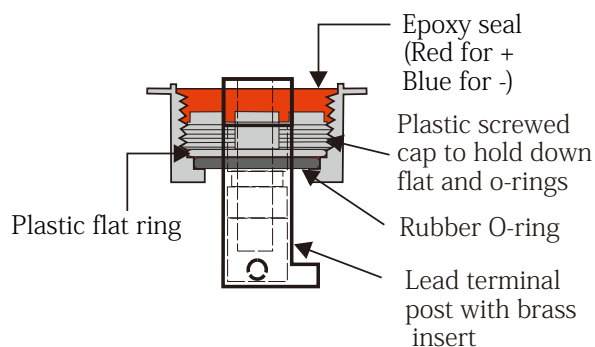
Dimensions, Weights, Data

SEC Battery Type	Capacity C/10 1.80 Vpc	Short Circuit Amps	Internal resistance m Ohms	Femal Terminal Type	Battery Weight		Overall Length		Battery Width		Dimensions Height	
					KG	lbs	Inch	mm	Inch	mm	Inch	mm
6-TSG-130	105	3200	3.0	FT4	16.0	35.2	7.68	195	6.69	170	8.13	207
6-TSG-220	175	5000	2.3	FT5	31.5	69.3	12.7	323	7.01	178	9.25	235
6-TSG-250	202	5400	2.1	FT5	33.0	72.6	9.57	243	7.40	188	10.8	275

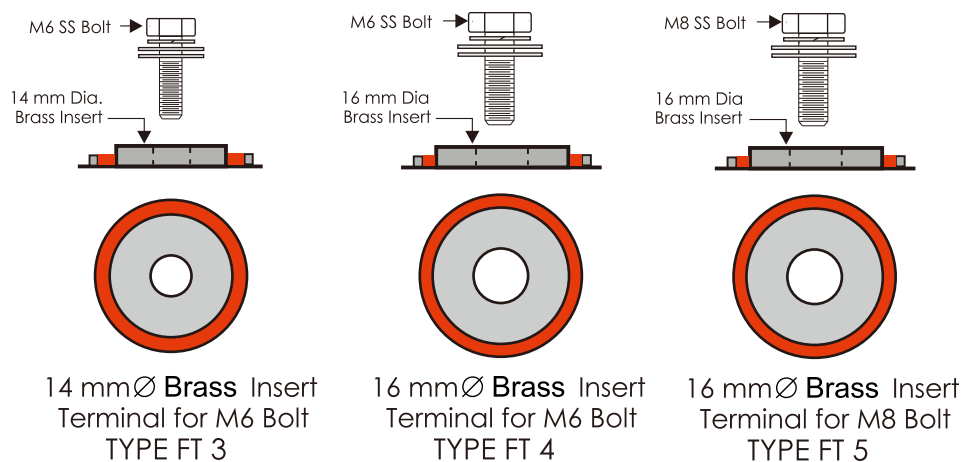
12-TSG-20	14.9	750	12	FT3	6.00	13.2	7.07	180	2.99	76	6.61	168
12-TSG-30	22.8	1100	8	FT3	10.00	22.0	6.54	165	4.96	127	6.93	176
12-TSG-40	27.2	1500	7	FT3	11.00	24.2	7.72	196	5.16	131	6.34	161
12-TSG-50	36.8	1700	6.0	FT3	14.80	32.5	7.76	197	6.54	166	6.69	170
12-TSG-60	48.2	1900	5.6	FT3	19	41.8	9.02	229	5.43	138	8.43	214
12-TSG-70	57.0	2000	5.5	FT3	21.3	46.9	13.80	350	6.61	168	7.05	179
12-TSG-80	61.4	2100	5.4	FT3	25.5	56.1	10.2	259	6.61	168	8.44	215
12-TSG-90	70.1	2400	4.5	FT3	26.5	58.3	10.2	259	6.61	168	8.46	215
12-TSG-100	78.9	2650	4.3	FT3	30.5	67.1	12.1	307	6.65	169	8.46	215
12-TSG-110	87.7	2900	3.9	FT4	32.5	71.5	13.0	330	6.69	170	8.46	215
12-TSG-120	96.4	3000	3.4	FT4	34.0	74.8	13.3	339	6.81	173	8.86	225
12-TSG-130	105	3300	3.1	FT4	36.0	79.2	13.3	339	6.81	173	8.86	225
12-TSG-150	119	4200	2.9	FT4	42.5	93.5	13.5	342	6.81	173	11.22	285
12-TSG-170	133	4500	2.7	FT5	48.5	107	19.0	483	6.69	170	9.49	241
12-TSG-190	150	4600	2.5	FT5	57.0	125	20.9	530	8.23	209	8.86	225
12-TSG-210	167	4700	2.3	FT5	60.0	132	20.9	530	8.23	209	8.86	225
12-TSG-250	202	5400	2.2	FT5	66.0	145	20.6	522	9.45	240	8.86	225
12-TSG-300	235	5400	2.2	FT5	80.5	177	20.6	522	10.55	268	8.666	220

*Actual Dimension may be $\pm 5\%$ from the figures shown.

TYPICAL TRIPLE SEAL DETAIL



TYPICAL FEMALE TERMINAL DETAIL



The Worlds First - Monobloc Catalyst Battery

SEC CELLYTE Solar TSG Monobloc batteries are the first to use a CatVent Catalyst in the cell head space. This is done for several very good reasons. The Catalyst changes the electrochemical actions within the cell, this causes balance within the cell preventing the negative plate from depolarising over time and improves cell capacity. A healthy balance in the cell will be immediately obvious by a reduction of the cell's float current by up to 50%. What that means is a dramatic reduction, by up to 80% in cell gassing, reduced loss which delays cell dry out*, reduced positive plate corrosion, reduced cell heating, reducing the risk of thermal run away and a reduction in the energy required to cool the cells / batteries.

*Please note: Battery dry out is one of the major failure modes of VRLA batteries.

How It Works

The VRLA cell was designed to correct all the problems of flooded technology. All the gas produced inside the cell was intended to recombine back into water on the negative plate self discharge, no positive plate corrosion and no excess charge current needed. Batteries would last forever and go gas would be released from the cell.

In the real world, chemistry dictates that negative plates do self-discharge and they do this more when impurities are present in higher quantities. In our experience the typical high quality, long life (20 yr) VRLA cell has a self discharge rate equivalent to 80ml of Hydrogen gas per day per 100Ah. Oxygen, produced from a variety of processes on the positive plate, will recombine with this hydrogen on the negative plate and cause it to depolarize.

In the real world positive grids also corrode. Designers have done what is typically done on flooded designs for long life and reduced the corrosion rate of the positive grid. Typical state of the art designs will only absorb 10 ml of oxygen on the positive plate instead of the 40ml needed to counter act the hydrogen generated on the negative. This is the paradox of VRLA design. A "better" positive grid can actually impair the life of the design.

This leaves an unbalanced situation with a strongly depolarized negative plate. The charging system will compensate with more current which will lead to excessively high polarization on the positive plate and damaging effects on the cell to the excess current. Electrolysis will generate effects on the cell due to the excess current.

Adding a Microcat™ to the cell gives battery designer a new tool to break out of the deadlock. The catalyst will absorb free oxygen in the headspace and recombine it with the amount of gas venting from the cell, but most importantly this prevents oxygen from reaching the negative plate and buffers the negative plate self discharge reaction from the positive plate corrosion reaction. Now that the cell is in balance the negative remains charged. The charging system responds by only sending the small amount of current needed to keep the cell charged.

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



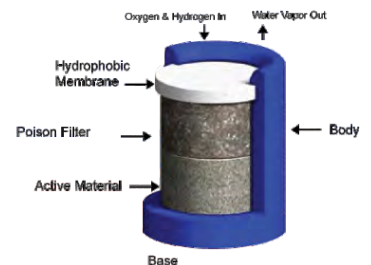
CELLYTE 2ETG OPzV Range
Tubular Steel Rack



CELLYTE TRA Range



Nickel Cadmium Range
Pocket Plate flooded and VR



Typical VRLA catalyst

SEC Industrial Battery CO.LTD.
Thorney Weir House,
Iwer, Bucks SL09AQ
United Kingdom
T. +441895431543
M. +447899980310
europeansales@secbattery.com

SEC Industrial Battery CO.LTD.
Unit 6, 6/F., Hewlett Centre,
54 Hoi Yuen Road, Kwun Tong,
Kowloon Hong Kong
T. +85223044382
F. +85223044013
fareastsales@secbattery.com

SEC Industrial Battery B.S.C.
Office 1304, 10th Floor,
Bldg 614, Rd 1011, Sanabis 410,
Kingdom of Bahrain.
T. +97317721322
F. +97317740743
middleeastsales@secbattery.com