

## Maintenance-Free Rechargeable VRLA Lead Acid Cyclic Batteries 6 Volt 10Ah to 12 Volt 250Ah



**MICROLYTE** 'Red Top' Cyclic Monobloc, sealed valve regulated lead acid rechargeable batteries are maintenance free. Safety, outstanding battery life and value, **MICROLYTE MRT** batteries are designed for universal float service and cyclic applications. Battery life will depend on frequency and depth of discharge and temperature of operation. UL Recognised Component under MH 28022

### APPLICATIONS

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

### INNOVATIVE FEATURES

- \* Propriety - Virgin pure lead /1.6% Tin grid alloy
- \* Valve Regulated Lead Acid - Cyclic
- \* Multi-position usage
- \* Low self-discharge
- \* FAA and IATA Approved as NON Hazardous
- \* Flame Retardant material V-0 - Option

### SPECIFICATIONS

- Voltage .....6 and 12 volt nominal
- Plate alloy ..... Virgin pure lead /1.6% Tin grid alloy
- Container/Case .... Grade 6 ABS as standard
- Charge voltage ..... Cycle 2.35 Vpc; Float 2.25 Vpc @ 20/25°C
- Specific gravity ..... SG. 1.330
- Electrolyte ..... Sulphuric acid
- Vent ..... Self sealing - 2psi Operation

# Introduction.

SEC Batteries have been used in the industrial battery market for nearly 30 years. SEC's high quality, long design life, reliable AGM technology lead acid batteries have a proven record and we have extended our range of **MICROLYT Red Top** batteries to include larger 6 and 12 volt sizes. New features include handles for easy lifting, brass insert terminals for higher current capacity and reduced damage during transportation, designed to comply with the new IEC 60896-21/22 – 2004 standard BS 6290 Part 4, UL certified components in an ISO 9001-ISO 14001 manufacturing facility.

- **Valve Regulated Construction (Sealed)**

The battery is of the AGM (Absorbed Glass Mat) valve regulated (sealed) VRLA lead acid secondary rechargeable type. The electrolyte is suspended in a specially formulated non woven glass mat separator. All the electrolyte is absorbed in this manner and 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 for the life of the battery. There is no need to add water or take specific gravity readings.

- **Battery Life - Float Service & Cyclic**

The **MICROLYTE Red Top** battery is suitable for float (standby) service with life of 5 to 10 years at 20°C. Life in Cyclic applications will depend on the frequency and depth of the Cycles.

- **Safety Valve.**

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

- **Temperature Range for Normal Operation.**

The **MICROLYTE Red Top** battery has a wide operating temperature range of -20°C to +55°C. However for maximum life and safety, continuous operation over 40 Deg C is not recommended. In fact this is not recommended for any valve regulated battery.

- **Grid Design and Paste Formulation.**

The **MICROLYTE Red Top** battery uses a proprietary Cyclic Virgin pure lead / 1.6% Tin alloy in the positive grid which was developed for the challenges of the Telecom industry. Thus SEC has optimized the grid design and paste formulation to maximize the operating in both float service and Cyclic operation. T

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 for an AGM battery (Gel batteries will always cycle better)

Adequate safety margins in tough operating conditions.

- **Use In any Position.**

The **MICROLYTE Red Top** battery is designed to use in both Vertical and Horizontal position.



# MICROLYTE Red Top - Cyclic - Ampere Hour Data @ 20 C.

SEC MRT AGM TYPE	END Volts / CELL	DISCHARGE DATA AMPS @ 20 C.							END Volts / CELL	DISCHARGE DATA AMPERE HOURS @ 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	20	24	48	100
6MRT-10	1.67	32.2	23.9	18.9	16.7	12.1	9.04	1.75	6.80	7.13	7.45	8.10	8.30	8.50	8.75	9.25	9.50	9.79	10.0	10.2	10.6	11.1
6MRT-12	1.67	37.8	28.2	22.3	19.6	14.3	10.6	1.75	8.00	8.32	8.65	9.30	9.50	9.75	10.2	11.1	11.4	11.7	12.0	12.2	12.7	13.3
6MRT-130	1.80	337	251	198	175	127	95	1.85	67.8	78.4	83.9	89.6	93.8	97.2	101	108	109	111	120	121	127	133
	1.75	388	281	215	158	131	98	1.80	71.3	83.2	89.0	95.1	100	103	107	114	117	119	128	130	136	142
	1.67	418	306	228	185	134	98	1.75	73.4	85.2	91.2	97.4	102	106	109	117	120	122	132	134	140	147
6MRT-150	1.80	379	282	223	197	143	107	1.85	76.3	88.2	94.4	101	106	109	113	121	123	125	137	137	145	152
	1.75	436	316	242	198	148	110	1.80	80.2	93.5	100	107	112	116	120	128	131	134	146	148	155	162
	1.67	470	344	254	207	151	110	1.75	82.6	95.9	103	110	115	119	123	131	135	138	150	152	159	167
6MRT-200	1.80	506	376	298	262	191	142	1.85	102	118	126	134	141	146	151	161	164	167	180	181	191	200
	1.75	582	422	323	240	197	147	1.80	107	125	134	143	149	155	160	171	175	179	192	195	204	214
	1.67	627	459	339	251	202	147	1.75	110	128	137	146	153	158	164	175	180	184	198	201	210	220
6MRT-220	1.80	562	418	331	291	212	158	1.85	113	131	140	149	156	162	168	179	182	186	200	201	212	222
	1.75	646	468	359	264	219	163	1.80	119	139	148	159	166	172	178	190	195	198	214	217	227	237
	1.67	697	510	377	275	224	164	1.75	122	142	152	162	170	176	182	195	200	204	220	223	233	244
6MRT-230	1.80	590	439	347	306	222	166	1.85	119	137	147	157	164	170	176	188	191	195	209	210	222	232
	1.75	679	492	377	264	230	171	1.80	125	146	156	166	174	180	187	199	205	208	224	227	237	248
	1.67	732	536	396	275	235	172	1.75	129	149	160	171	179	185	191	205	210	214	230	233	244	255
12MRT-5SP	1.67	14.2	10.6	8.35	7.36	5.35	3.99	1.75	3.00	3.15	3.30	3.60	3.75	3.90	4.16	4.68	4.80	4.94	5.00	5.10	5.30	5.55
12MRT-8	1.67	23.7	17.6	13.9	12.3	8.91	6.65	1.75	5.00	5.21	5.42	5.83	6.11	6.39	6.73	7.40	7.60	7.83	8.00	8.16	8.48	8.88
12MRT-14	1.67	42.6	31.7	25.0	22.1	16.0	12.0	1.75	9.00	9.38	9.75	10.5	10.8	11.0	11.6	13.0	13.3	13.7	14.0	14.3	14.8	15.5
12MRT-20	1.80	53.4	39.7	31.4	27.7	20.1	15.0	1.85	10.7	12.4	13.3	14.2	14.9	15.4	15.9	17.0	17.3	17.6	18.2	18.3	19.3	20.2
	1.75	61.4	44.5	34.1	31.7	20.8	15.5	1.80	11.3	13.2	14.1	15.1	15.8	16.3	16.9	18.0	18.5	18.9	19.4	24.0	20.6	21.6
	1.67	66.2	48.5	35.8	33.1	21.3	15.5	1.75	11.6	13.5	14.4	15.4	16.2	16.7	17.3	18.5	19.0	19.4	20.0	20.3	21.2	22.2
12MRT-25	1.80	63.2	47.1	37.2	32.8	23.8	17.8	1.85	12.7	14.7	15.7	16.8	17.6	18.2	18.9	20.2	20.5	20.9	22.3	22.4	23.6	24.7
	1.75	72.7	52.7	40.4	34.3	24.7	18.3	1.80	13.4	15.6	16.7	17.8	18.7	19.3	20.0	21.4	21.9	22.3	23.8	26.0	25.2	26.4
	1.67	78.4	57.4	42.4	35.8	25.2	18.4	1.75	13.8	16.0	17.1	18.3	19.1	19.8	20.5	21.9	22.5	23.0	24.5	24.9	26.0	27.2
12MRT-28	1.80	73.1	54.4	43.0	37.9	27.5	20.5	1.85	14.7	17.0	18.2	19.4	20.3	21.0	21.8	23.3	23.7	24.1	25.5	25.6	27.0	28.3
	1.75	84.0	60.9	46.6	34.3	28.5	21.2	1.80	15.4	18.0	19.3	20.6	21.6	22.3	23.1	24.7	25.3	25.8	27.2	26.0	28.8	30.2
	1.67	90.8	66.3	49.0	35.8	29.1	21.3	1.75	15.9	18.5	19.8	21.1	22.1	22.9	23.7	25.3	26.0	26.5	28.0	28.4	29.7	31.1
12MRT-35	1.80	90.5	67.3	53.2	46.9	34.1	25.4	1.85	18.2	21.0	22.5	24.1	25.2	26.1	27.0	28.9	29.3	29.9	31.9	32.0	33.8	35.4
	1.75	104	75.4	57.8	43.5	35.3	26.2	1.80	19.1	22.3	23.9	25.5	26.7	27.7	28.6	30.6	31.4	32.0	34.0	33.0	36.1	37.8
	1.67	112	82.2	60.7	45.5	36.1	26.3	1.75	19.7	22.9	24.5	26.1	27.4	28.3	29.3	31.4	32.2	32.8	35.0	35.5	37.1	38.9
12MRT-50	1.80	124	92.0	72.8	64.1	46.6	34.8	1.85	24.9	28.7	30.8	32.9	34.4	35.6	36.9	39.4	40.0	40.8	43.7	41.0	46.3	48.5
	1.75	142	103	78.9	58.0	48.2	35.8	1.80	26.1	30.5	32.6	34.9	36.5	37.8	39.1	41.8	42.9	43.7	46.7	44.0	49.5	51.8
	1.67	153	112	82.9	60.6	49.3	36.0	1.75	26.9	31.2	33.4	35.7	37.4	38.7	40.1	42.9	44.0	44.9	48.0	48.7	50.9	53.3
12MRT-60	1.80	156	116	91.8	80.9	58.8	43.9	1.85	31.4	36.3	38.8	41.5	43.4	44.9	46.5	49.7	50.5	51.5	54.6	52.0	57.9	60.6
	1.75	179	130	100	72.8	60.8	45.2	1.80	33.0	38.5	41.2	44.0	46.0	47.7	49.3	52.7	54.1	55.1	58.3	55.0	61.8	64.7
	1.67	193	142	105	75.8	62.2	45.4	1.75	34.0	39.4	42.2	45.1	47.2	48.8	50.6	54.1	55.5	56.6	60.0	60.9	63.6	66.6
12MRT-70J	1.80	195	145	115	101	73.3	54.7	1.85	36.7	42.5	45.4	48.6	50.8	52.6	54.5	58.2	59.2	60.3	64.6	64.9	68.5	71.7
	1.75	224	162	124	84.3	75.9	56.4	1.80	41.2	45.0	48.2	51.5	53.9	55.8	57.8	61.7	63.3	64.5	69.0	65.0	73.2	76.6
	1.67	241	177	131	88.0	77.6	56.6	1.75	42.4	46.2	49.4	52.8	55.3	57.2	59.2	63.3	65.0	66.3	71.0	72.1	75.3	78.8
12MRT-80	1.80	197	146	116	102	74.1	55.3	1.85	39.5	45.7	48.9	52.3	54.7	56.7	58.7	62.7	63.7	65.0	70.1	70.3	74.3	77.8
	1.75	226	164	126	92.4	76.7	57.0	1.80	41.6	46.5	51.9	55.5	58.1	60.1	62.2	66.5	68.2	69.5	74.8	75.9	79.3	83.1
	1.67	244	179	132	96.4	78.4	57.3	1.75	42.8	49.7	53.2	56.8	59.5	61.6	63.8	68.2	70.0	71.4	77.0	78.2	81.6	85.5
12MRT-90	1.80	225	167	132	117	84.7	63.2	1.85	45.2	52.3	55.9	59.8	62.6	64.8	67.1	71.7	72.8	74.3	80.1	80.4	84.9	88.9
	1.75	259	187	144	103	87.7	65.2	1.80	47.5	55.4	59.3	63.4	66.4	68.7	71.1	76.0	77.9	79.4	85.5	77.0	90.7	94.9
	1.67	279	204	151	107	89.6	65.4	1.75	49.0	56.8	60.8	65.0	68.0	70.4	72.9	77.9	80.0	81.6	88.0	89.3	93.3	97.7
12MRT-100	1.80	253	188	149	131	95	71.1	1.85	50.8	58.8	62.9	67.2	70.4	72.9	75.5	80.6	81.9	83.5	91.0	91.4	96.5	101
	1.75	291	211	161	119	99	73.3	1.80	53.5	62.4	66.8	71.3	74.7	77.3	80.0	85.5	87.7	89.3	97.2	89.0	103	108
	1.67	314	230	170	124	101	73.6	1.75	55.1	63.9	68.4	73.1	76.5	79.2	82.0	87.7	90.0	91.8	100	102	106	111
12MRT-110	1.80	281	209	165	146	106	79.0	1.85	56.5	65.3	69.9	74.7	78.2	81.0	83.8	89.6	91.0	92.8	100	103	106	111
	1.75	323	234	179	132	110	81.5	1.80	59.4	69.3	74.2	79.3	83.0	85.9	88.9	95.0	97.4	99.2	107	109	113	119
	1.67	348	255	188	138	112	81.8	1.75	61.2	71.0	76.0	81.2	85.0	88.0	91.1	97.4	100	102	110	112	117	122



# MICROLYTE *Red Top* - Cyclic - Amps Data @ 20 C.

SEC MRT AGM TYPE	END Volts / CELL	DISCHARGE DATA AMPS @ 20 C.						END Volts / CELL	DISCHARGE DATA AMPS @ 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	20	24
6MRT-10	1.67	32.2	23.9	18.9	16.7	12.1	9.04	1.75	6.80	4.75	3.73	2.70	2.08	1.70	1.46	1.16	0.95	0.82	0.50	0.43
6MRT-12	1.67	37.8	28.2	22.3	19.6	14.3	10.6	1.78	8.00	5.55	4.33	3.10	2.38	1.95	1.70	1.39	1.14	0.98	0.60	0.51
6MRT-130	1.80	285	212	168	148	107	80.2	1.85	67.8	52.3	42.0	29.9	23.5	19.4	16.8	13.4	10.9	9.28	6.01	5.02
	1.75	328	238	182	158	111	82.7	1.80	71.3	55.4	44.5	31.7	24.9	20.6	17.8	14.2	11.7	9.92	6.42	5.42
	1.67	353	259	191	165	114	83.0	1.75	73.4	58.8	45.6	32.5	25.5	21.1	18.2	14.6	12.0	10.2	6.80	5.58
6MRT-150	1.80	356	265	210	184	134	100	1.85	76.3	58.8	47.2	33.6	26.4	21.9	18.9	15.1	12.3	10.4	6.83	5.71
	1.75	410	297	227	198	139	103	1.80	80.2	62.4	50.1	35.7	28.0	23.2	20.0	16.0	13.1	11.2	7.29	6.16
	1.67	442	323	239	207	142	104	1.75	82.6	63.9	51.3	36.5	28.7	23.8	20.5	16.4	13.5	11.5	7.50	6.34
6MRT-200	1.80	432	322	254	224	163	122	1.85	102	78.4	62.9	44.8	35.2	29.1	25.2	20.2	16.4	13.9	9.01	7.54
	1.75	497	360	278	240	169	125	1.80	107	83.2	66.8	47.6	37.3	30.9	26.7	21.4	17.5	14.9	9.62	8.13
	1.67	536	392	290	251	172	126	1.75	110	85.2	68.4	48.7	38.3	31.7	27.3	21.9	18.0	15.3	9.90	8.37
6MRT-220	1.80	475	353	279	246	179	134	1.85	113	87.1	69.9	49.8	39.1	32.4	27.9	22.4	18.2	15.5	10.0	8.37
	1.75	546	396	303	264	185	138	1.80	119	92.4	74.2	52.8	41.5	34.4	29.6	23.7	19.5	16.5	10.7	9.03
	1.67	589	431	319	275	189	138	1.75	122	94.7	76.0	54.1	42.5	35.2	30.4	24.4	20.0	17.0	11.0	9.30
6MRT-230	1.80	475	353	279	246	179	134	1.85	119	91.4	73.4	52.3	41.1	34.0	29.3	23.5	19.1	16.2	10.5	8.75
	1.75	546	396	303	264	185	138	1.80	125	97.0	77.9	55.5	43.6	36.1	31.1	24.9	20.5	17.4	11.2	9.44
	1.67	589	431	319	275	189	138	1.75	129	99.4	79.8	56.8	44.8	37.0	31.9	25.6	21.0	17.9	11.5	9.73
12MRT-5SP	1.67	42.7	31.8	25.1	22.1	16.1	12.0	1.75	3.0	2.10	1.65	1.20	0.94	0.78	0.69	0.58	0.48	0.41	0.25	0.21
12MRT-8	1.67	49.2	35.6	27.3	23.7	16.7	12.4	1.75	5.0	3.47	2.71	1.94	1.53	1.28	1.12	0.93	0.76	0.65	0.40	0.34
12MRT-14	1.67	53.0	38.8	28.7	24.8	17.0	12.4	1.75	9.0	6.25	4.88	3.49	2.69	2.19	1.94	1.62	1.33	1.14	0.70	0.60
12MRT-20	1.80	57.0	42.4	33.5	29.5	21.5	16.0	1.85	10.7	8.27	6.64	4.73	3.71	3.08	2.66	2.13	1.73	1.47	0.91	0.76
	1.75	65.5	47.5	36.4	31.7	22.2	16.5	1.80	11.3	8.8	7.05	5.02	3.94	3.26	2.82	2.26	1.85	1.57	0.97	1.00
	1.67	70.7	51.7	38.2	33.1	22.7	16.6	1.75	11.6	9.0	7.22	5.14	4.04	3.34	2.89	2.31	1.90	1.62	1.00	0.85
12MRT-25	1.80	61.7	45.9	36.3	32.0	23.3	17.4	1.85	12.7	9.8	7.87	5.60	4.40	3.64	3.14	2.52	2.05	1.74	1.11	0.93
	1.75	71.0	51.5	39.4	34.3	24.1	17.9	1.80	13.4	10.4	8.34	5.94	4.67	3.86	3.33	2.67	2.19	1.86	1.19	1.08
	1.67	76.6	56.1	41.4	35.8	24.6	18.0	1.75	13.8	10.7	8.55	6.09	4.78	3.96	3.42	2.74	2.25	1.91	1.23	1.04
12MRT-28	1.80	61.7	45.9	36.3	32.0	23.3	17.4	1.85	14.7	11.3	9.09	6.47	5.08	4.21	3.63	2.91	2.37	2.01	1.27	1.07
	1.75	71.0	51.5	39.4	34.3	24.1	17.9	1.80	15.4	12.0	9.64	6.87	5.39	4.47	3.85	3.09	2.53	2.15	1.36	1.08
	1.67	76.6	56.1	41.4	35.8	24.6	18.0	1.75	15.9	12.3	9.88	7.04	5.53	4.58	3.95	3.17	2.60	2.21	1.40	1.18
12MRT-35	1.80	78.4	58.3	46.1	40.6	29.5	22.1	1.85	18.2	14.0	11.3	8.02	6.30	5.21	4.50	3.61	2.93	2.49	1.59	1.33
	1.75	90.1	65.3	50.0	43.5	30.6	22.7	1.80	19.1	14.9	11.9	8.51	6.68	5.53	4.77	3.82	3.14	2.66	1.70	1.38
	1.67	97.2	71.1	52.8	45.5	31.2	22.8	1.75	19.7	15.2	12.2	8.72	6.84	5.67	4.89	3.92	3.22	2.74	1.75	1.48
12MRT-50	1.80	104	77.8	61.5	54.1	39.4	29.4	1.85	24.9	19.2	15.4	11.0	8.60	7.12	6.15	4.93	4.00	3.40	2.18	1.71
	1.75	120	87.1	66.7	58.0	40.7	30.3	1.80	26.1	20.3	16.3	11.6	9.13	7.56	6.52	5.22	4.29	3.64	2.33	1.83
	1.67	130	94.9	70.1	60.8	41.6	30.4	1.75	26.9	20.8	16.7	11.9	9.35	7.74	6.68	5.36	4.40	3.74	2.40	2.03
12MRT-60	1.80	131	97	75.8	67.6	49.2	36.8	1.85	31.4	24.2	19.4	13.8	10.9	8.99	7.76	6.22	5.05	4.29	2.73	2.17
	1.75	150	109	83.4	72.6	50.9	37.9	1.80	33.0	25.6	20.6	14.7	11.5	9.53	8.22	6.59	5.41	4.59	2.92	2.29
	1.67	162	119	87.8	75.8	52.1	38.0	1.75	34.0	26.3	21.1	15.0	11.8	9.77	8.43	6.76	5.55	4.72	3.00	2.54
12MRT-70J	1.80	152	113	89.3	78.6	57.2	42.7	1.85	36.7	28.3	22.7	16.2	12.7	10.5	9.08	7.28	5.92	5.03	3.23	2.70
	1.75	174	126	96.8	84.3	59.2	44.0	1.80	41.2	30.0	24.1	17.2	13.5	11.2	9.63	7.72	6.33	5.38	3.45	2.71
	1.67	188	138	102	88	60.5	44.2	1.75	42.4	30.8	24.7	17.6	13.8	11.4	9.87	7.91	6.50	5.53	3.55	3.00
12MRT-80	1.80	166	124	97.8	86.1	62.6	46.8	1.85	39.5	30.5	24.5	17.4	13.7	11.3	9.78	7.84	6.37	5.41	3.50	2.93
	1.75	191	139	106	92	64.8	48.2	1.80	41.6	32.3	26.0	18.5	14.5	12.0	10.4	8.31	6.82	5.79	3.74	3.16
	1.67	206	151	111	96	66.3	48.4	1.75	42.8	33.1	26.6	18.9	14.9	12.3	10.6	8.52	7.00	5.95	3.85	3.26
12MRT-90	1.80	185	138	109	96	69.8	52.1	1.85	45.2	34.8	28.0	19.9	15.6	13.0	11.2	8.96	7.28	6.19	4.00	3.35
	1.75	213	154	118	103	72.2	53.7	1.80	47.5	37.0	29.7	21.1	16.6	13.7	11.9	9.50	7.79	6.62	4.28	3.21
	1.67	230	168	124	107	73.8	53.9	1.75	49.0	37.9	30.4	21.7	17.0	14.1	12.2	9.74	8.00	6.80	4.40	3.72
12MRT-100	1.80	214	159	126	111	80.5	60.1	1.85	50.8	39.2	31.5	22.4	17.8	14.6	12.6	10.08	8.19	6.96	4.55	3.81
	1.75	246	178	136	119	83.3	62.0	1.80	53.5	41.6	33.4	23.8	18.7	15.5	13.3	10.7	8.77	7.44	4.86	3.71
	1.67	265	194	143	124	85.2	62.2	1.75	55.1	42.6	34.2	24.4	19.1	15.8	13.7	11.0	9.00	7.65	5.00	4.23
12MRT-110	1.80	237	177	140	123	89.5	66.8	1.85	56.5	43.5	35.0	24.9	19.6	16.2	14.0	11.2	9.10	7.74	5.01	4.29
	1.75	273	198	152	132	92.6	68.9	1.80	59.4	46.2	37.1	26.4	20.7	17.2	14.8	11.9	9.74	8.27	5.35	4.54
	1.67	294	216	159	138	95	69.2	1.75	61.2	47.3	38.0	27.1	21.3	17.6	15.2	12.2	10.0	8.50	5.50	4.85
12MRT-120	1.80	261	194	154	135	98	73.5	1.85	62.1	47.9	38.5	27.4	21.5	17.8	15.4	12.3	10.0	8.51	5.51	4.61
	1.75	300	218	167	145	102	75.8	1.80	65.4	50.8	40.8	29.1	22.8	18.9	16.3	13.1	10.7	9.10	5.88	4.54
	1.67	324	237	175	152	104	76.1	1.75	67.3	52.1	41.8	29.8	23.4	19.4	16.7	13.4	11.0	9.35	6.05	5.12
12MRT-130	1.80	285	212	168	148	107	80.2	1.85	67.8	52.3	42.0	29.9	23.5	19.4	16.8	13.4	10.9	9.10	6.01	5.02
	1.75	328	238																	



# MICROLYTE *Red Top* - Cyclic- Watts per Cell @ 20 C.

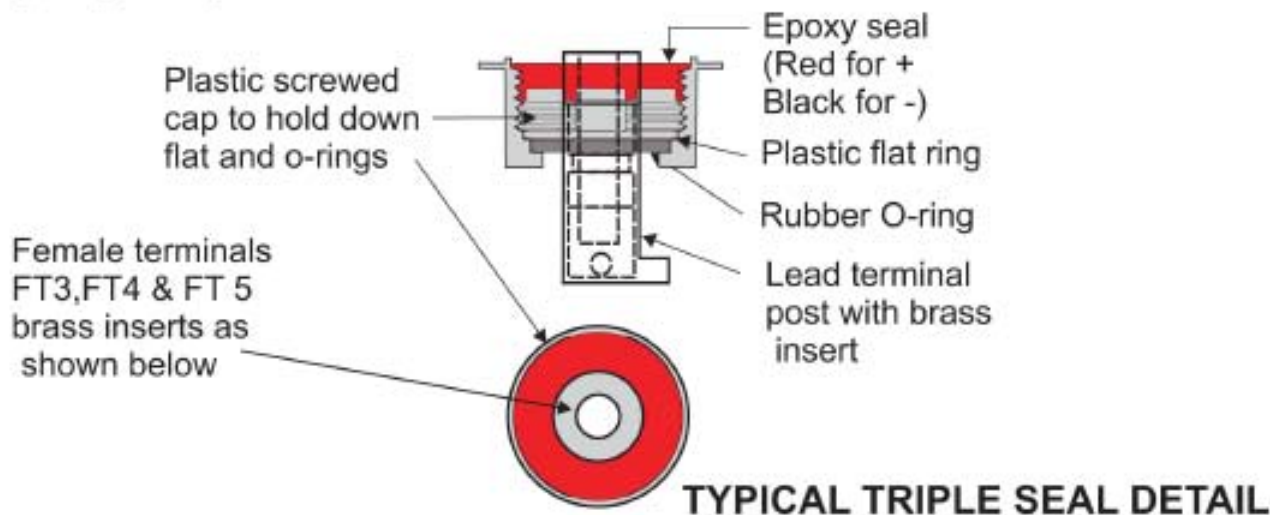
SEC MRT AGM TYPE	END Volts / CELL	DISCHARGE DATA Watts @ 20 C.							END Volts / CELL	DISCHARGE DATA Watts Per Cell @ 20 C.										
		DISCHARGE TIME IN MINUTES								DISCHARGE TIME IN HOURS										
		5	10	15	20	30	45	1		1.5	2	3	4	5	6	8	10	12	20	24
6MRT-10	1.67	54.7	43.6	34.8	30.9	22.7	17.2	1.75	13.1	9.15	7.20	5.26	4.07	3.35	2.85	2.30	1.89	1.63	1.00	0.85
	1.67	64.3	51.3	41.0	36.3	26.7	20.2	1.75	15.4	10.7	8.36	6.04	4.66	3.84	3.32	2.76	2.27	1.96	1.20	1.02
6MRT-130	1.80	573	457	365	324	238	180	1.85	130	101	81.1	58.2	46.0	38.3	33.2	28.7	21.8	18.6	12.0	10.1
	1.75	642	507	403	349	251	188	1.80	133	106	85.5	61.4	48.5	40.4	35.0	28.2	23.0	19.7	12.8	10.8
	1.67	719	563	446	377	264	197	1.75	134	108	87.6	62.7	49.5	41.2	35.6	28.6	23.5	20.1	13.1	11.1
6MRT-150	1.80	645	514	411	364	267	203	1.85	146	113	91.2	65.5	51.8	43.1	37.3	30.0	24.5	20.9	13.7	11.5
	1.75	722	570	454	393	282	212	1.80	150	119	96.1	69.1	54.6	45.4	39.4	31.7	25.9	22.2	14.5	12.3
	1.67	809	633	502	425	297	221	1.75	151	121	96.5	70.5	55.7	46.3	40.1	32.2	26.5	22.6	14.8	12.6
6MRT-200	1.80	860	685	548	485	356	270	1.85	195	151	122	87.4	69.0	57.4	49.7	40.1	32.7	27.8	18.1	15.1
	1.75	963	760	605	524	376	282	1.80	200	159	128	92.1	72.8	60.6	52.5	42.2	34.5	29.6	19.2	16.3
	1.67	1079	844	669	566	397	295	1.75	201	162	131	94.0	74.2	61.8	53.4	43.0	35.3	30.1	19.6	16.6
6MRT-220	1.80	955	761	608	539	396	300	1.85	217	168	135	97.1	76.7	63.8	55.3	44.5	36.3	30.9	20.1	16.8
	1.75	1070	845	672	582	418	314	1.80	222	176	142	102	80.9	67.3	58.4	46.9	38.4	32.9	21.3	18.1
	1.67	1199	938	743	629	441	328	1.75	224	180	146	104	82.5	68.6	59.4	47.7	39.2	33.5	21.8	18.4
6MRT-230	1.80	1003	799	639	566	416	315	1.85	226	176	142	102	80.5	67.0	58.0	48.7	38.1	32.5	21.0	17.6
	1.75	1124	887	706	612	439	329	1.80	233	185	150	107	84.9	70.7	61.3	49.3	40.3	34.5	22.3	18.9
	1.67	1259	985	780	660	463	344	1.75	235	189	153	110	86.6	72.1	62.4	50.1	41.2	35.2	22.7	19.3
12MRT-5SP	1.67	24.1	19.2	15.4	13.6	10.0	7.58	1.75	5.76	4.04	3.19	2.34	1.84	1.54	1.35	1.16	0.96	0.82	0.50	0.43
12MRT-8	1.67	40.2	32.0	25.6	22.7	16.7	12.6	1.75	9.80	6.88	5.24	3.79	3.00	2.52	2.19	1.84	1.52	1.30	0.80	0.68
12MRT-14	1.67	72.4	57.7	46.1	40.8	30.0	22.7	1.75	17.3	12.0	9.42	6.80	5.27	4.32	3.79	3.22	2.65	2.28	1.40	1.19
12MRT-20	1.80	90.8	72.3	57.8	51.2	37.6	28.5	1.85	20.6	15.9	12.8	9.2	7.29	6.06	5.25	4.23	3.45	2.94	1.82	1.53
	1.75	102	80	63.9	55.3	39.7	29.8	1.80	21.1	16.8	13.5	9.7	7.68	6.39	5.54	4.46	3.65	3.13	1.94	2.00
	1.67	114	89	70.6	59.6	41.9	31.2	1.75	21.3	17.1	13.9	9.9	7.83	6.52	5.64	4.53	3.72	3.18	1.98	1.67
12MRT-25	1.80	107	86	68.5	60.7	44.5	33.8	1.85	24.4	18.9	15.2	10.9	8.63	7.18	6.22	5.01	4.08	3.48	2.23	1.87
	1.75	120	95	75.6	65.5	47.0	35.3	1.80	25.0	19.8	16.0	11.5	9.10	7.57	6.57	5.28	4.32	3.70	2.37	2.17
	1.67	135	106	84	70.6	49.6	36.9	1.75	25.2	20.2	16.4	11.8	9.28	7.72	6.68	5.37	4.41	3.77	2.42	2.05
12MRT-28	1.80	124	99	79.1	70.1	51.5	39.0	1.85	28.2	21.8	17.6	12.6	10.0	8.29	7.18	5.79	4.72	4.02	2.55	2.14
	1.75	139	110	87.4	75.7	54.3	40.8	1.80	28.9	22.9	18.5	13.3	10.5	8.75	7.59	6.10	4.99	4.28	2.71	2.17
	1.67	156	122	97	81.8	57.3	42.6	1.75	29.1	23.4	19.0	13.6	10.7	8.92	7.72	6.20	5.10	4.35	2.77	2.34
12MRT-35	1.80	154	123	98	86.8	63.8	48.3	1.85	34.9	27.0	21.8	15.6	12.4	10.3	8.90	7.17	5.84	4.98	3.19	2.67
	1.75	172	136	108	93.8	67.3	50.5	1.80	35.6	28.4	22.9	16.5	13.0	10.8	9.40	7.56	6.18	5.30	3.39	2.75
	1.67	193	151	120	101	71.0	52.8	1.75	36.0	29.0	23.5	16.8	13.3	11.1	9.56	7.68	6.31	5.39	3.46	2.93
12MRT-50	1.80	210	167	134	119	87.1	66.1	1.85	47.7	36.9	29.7	21.4	16.9	14.0	12.2	9.79	7.96	6.80	4.38	3.43
	1.75	235	186	148	128	91.9	69.0	1.80	48.9	38.8	31.3	22.5	17.8	14.8	12.8	10.3	8.44	7.24	4.65	3.67
	1.67	264	206	163	138	97.0	72.1	1.75	49.3	39.6	32.1	23.0	18.1	15.1	13.1	10.5	8.62	7.37	4.75	4.02
12MRT-60	1.80	265	211	169	150	110	83.3	1.85	60.2	46.5	37.5	26.9	21.3	17.7	15.3	12.4	10.1	8.58	5.47	4.35
	1.75	297	234	187	162	116	87.1	1.80	61.7	48.9	39.5	28.4	22.4	18.7	16.2	13.0	10.6	9.13	5.81	4.58
	1.67	333	260	206	175	122	91.0	1.75	62.1	49.9	40.5	29.0	22.9	19.0	16.5	13.2	10.9	9.29	5.93	5.02
12MRT-70J	1.80	331	264	211	187	137	104	1.85	70.5	54.5	43.9	31.5	24.9	20.7	18.0	14.5	11.8	10.1	6.47	5.42
	1.75	371	293	233	202	145	109	1.80	72.3	57.3	46.3	33.3	26.3	21.9	19.0	15.3	12.5	10.7	6.88	5.42
	1.67	415	325	257	218	153	114	1.75	72.6	58.5	47.4	34.0	26.8	22.3	19.3	15.5	12.7	10.9	7.02	5.95
12MRT-80	1.80	334	266	213	189	139	105	1.85	75.9	58.6	47.3	34.0	26.8	22.3	19.3	15.6	12.7	10.8	7.02	5.88
	1.75	375	296	235	204	146	110	1.80	77.8	61.7	49.8	35.8	28.3	23.6	20.4	16.4	13.4	11.5	7.46	6.32
	1.67	420	328	260	220	154	115	1.75	78.4	63.0	51.1	36.6	28.9	24.0	20.8	16.7	13.7	11.7	7.62	6.45
12MRT-90	1.80	382	305	243	216	158	120	1.85	86.8	67.0	54.1	38.8	30.7	25.5	22.1	17.8	14.5	12.4	8.02	6.72
	1.75	428	338	269	233	167	126	1.80	88.9	70.6	57.0	40.9	32.4	26.9	23.3	18.8	15.4	13.2	8.53	6.42
	1.67	479	375	297	252	176	131	1.75	89.5	71.9	58.4	41.8	33.0	27.5	23.8	19.1	15.7	13.4	8.70	7.37
12MRT-100	1.80	430	343	274	243	178	135	1.85	97.6	75.4	60.8	43.7	34.5	28.7	24.9	20.0	16.3	13.9	9.12	7.64
	1.75	482	380	303	262	188	141	1.80	100	79.4	64.1	46.1	36.4	30.3	26.3	21.1	17.3	14.8	9.69	7.42
	1.67	539	422	334	283	198	148	1.75	101	80.9	65.7	47.0	37.1	30.9	26.7	21.5	17.6	15.1	9.89	8.37
12MRT-110	1.80	476	381	304	270	198	150	1.85	108	83.8	67.6	48.5	38.4	31.9	27.6	22.3	18.1	15.5	10.0	8.61
	1.75	535	422	336	291	209	157	1.80	111	88.2	71.2	51.2	40.4	33.7	29.2	23.5	19.2	16.5	10.7	9.08
	1.67	598	469	371	314	220	164	1.75	112	89.9	73.0	52.2	41.2	34.3	29.7	23.9	19.6	16.7	10.9	9.21
12MRT-120	1.80	526	419	335	297	218	165	1.85	119	92.2	74.3	53.4	42.2	35.1	30.4	24.5	20.0	17.0	11.0	9.24
	1.75	589	465	370	320	230	173	1.80	122	97.0	78.3	56.3	44.5	37.0	32.1	25.8	21.1	18.1	11.7	9.08
	1.67	659	516	409	346	242	180	1.75	123	98.9	80.3	57.5	45.3	37.8	32.7	26.2	21.6	18.4	12.0	10.1
12MRT-130	1.80	573	457	365	324	238	180	1.85	130	101	81.1	58.2	46.0	38.3	33.2	28.7	21.8	18.2	12.0	10.1
	1.75	642	507	403	349	251	188	1.80	133	106	85.5	61.4	48.5	40.4	35.0	28.2	23.0			



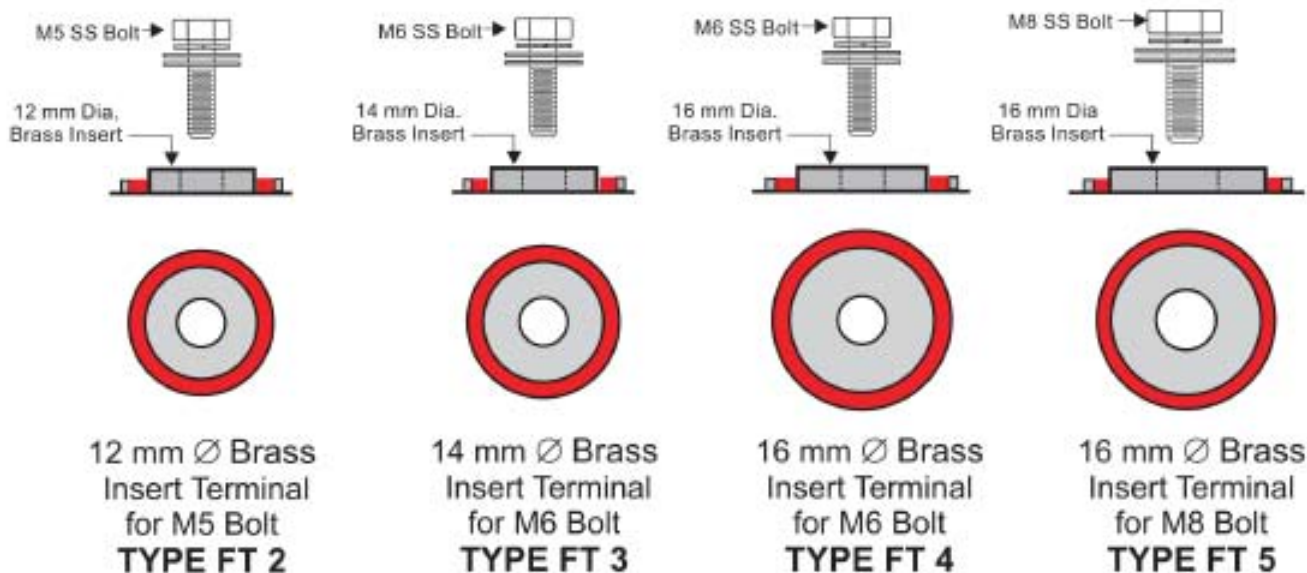
# MICROLYTE Red Top - Cyclic - Data & Dimensions

SEC Battery Type	Capacity Nom C/20 1.75 vpc	CCA at -18 C 0 F.	CCA at 0 C. 32 F.	Short Circuit Amps	Internal Resistance m Ohms	Female Terminal Type	Battery Weight		Overall Battery Dimensions					
							KG	lbs	Length		Width		Height	
									Inch	mm	Inch	mm	Inch	mm
6MRT-10	10	70	90	310	10	ST1	2.0	4.4	5.94	151	1.97	50	3.90	99
6MRT-12	12	74	98	380	9.0	ST1	2.1	4.7	5.94	151	1.97	50	3.90	99
6MRT-130	130	760	1010	3200	3.0	FT 4	16.0	35.2	7.72	196	6.69	170	8.27	210
6MRT-150	150	860	1120	3700	2.9	FT 5	19.0	41.8	10.2	260	7.09	180	9.72	247
6MRT-200	198	980	1290	4600	2.4	FT 5	26.0	57.2	12.0	306	6.61	168	8.66	220
6MRT-220	220	1200	1600	5000	2.3	FT 5	31.5	69.3	12.7	323	7.01	178	8.82	224
6MRT-230	230	1300	1740	5500	2.2	FT 5	35.0	77.0	9.57	243	7.40	188	10.8	275
12MRT-55P	5.0	24	34	130	40	ST1+ST2	2.14	4.7	5.94	151	5.16	51.0	3.90	99
12MRT-8	8.0	39	55	210	35	ST1 or ST2	2.55	5.6	5.94	151	5.16	66.5	3.90	99
12MRT-14	14	93	130	420	30	ST2	4.35	9.6	5.98	152	5.16	99.0	4.02	102
12MRT-20	20	125	155	650	28	FT 2	6.00	13.2	7.13	181	5.16	76.0	6.61	168
12MRT-25	25	165	205	940	12	FT 3	8.52	18.7	6.54	166	4.96	126	6.93	176
12MRT-28	28	200	165	1220	8.2	FT 3	9.40	20.7	6.50	165	4.92	125	6.93	176
12MRT-35	35	240	320	1500	7.3	FT 3	10.5	23.1	7.72	196	5.16	131	6.34	161
12MRT-50	48	260	350	1700	6.0	FT 3	14.7	32.3	7.80	198	6.54	166	6.69	170
12MRT-60	60	280	380	1900	5.6	FT 3	18.5	40.7	9.06	230	5.43	138	8.43	214
12MRT-70J	71	330	450	2000	5.5	FT 3/Flag	23.0	50.6	13.8	350	6.54	166	6.85	174
12MRT-80	77	410	550	2100	5.4	FT 3	23.0	50.6	10.2	259	6.65	169	8.19	208
12MRT-90	88	460	620	2400	4.5	FT 3	27.0	59.4	10.2	259	6.65	169	8.19	208
12MRT-100	100	510	680	2650	4.3	FT 4	28.0	61.6	12.1	307	6.69	170	8.46	215
12MRT-110	110	580	780	2900	3.9	FT 4	31.0	68.2	12.9	328	6.77	172	8.46	215
12MRT-120	121	710	960	3000	3.4	FT 4	31.5	69.3	13.3	339	6.81	173	8.46	215
12MRT-130	132	760	1020	3300	3.1	FT 4	32.5	71.5	15.9	405	6.89	175	8.94	227
12MRT-150	148	970	1300	4200	2.9	FT 5	42.0	92.4	13.5	342	6.81	173	11.2	285
12MRT-160	165	1060	1370	4500	2.8	FT 5	47.0	103	19.0	483	6.69	170	9.49	241
12MRT-180	176	1060	1370	4500	2.6	FT 5	52.0	114	20.9	530	8.23	209	8.86	225
12MRT-200	198	1100	1440	4700	2.3	FT 5	56.7	125	20.9	530	8.23	209	8.86	225
12MRT-220	220	1240	1670	5400	2.2	FT 5	63.0	139	20.6	522	9.45	240	8.86	225
12MRT-250	253	1460	1951	6157	2.0	FT 5	68.0	150	20.6	522	10.59	269	8.46	215

Actual Battery Data may be changed from the figures shown.



## FEMALE TERMINAL (FT) DETAILS



# 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  $2.25 \pm 1\%$  Volts Per Cell at 20/25 Deg C.

Cycle Service  $2.35 \pm 1\%$ Volts Per Cell at 20/25 Deg C.

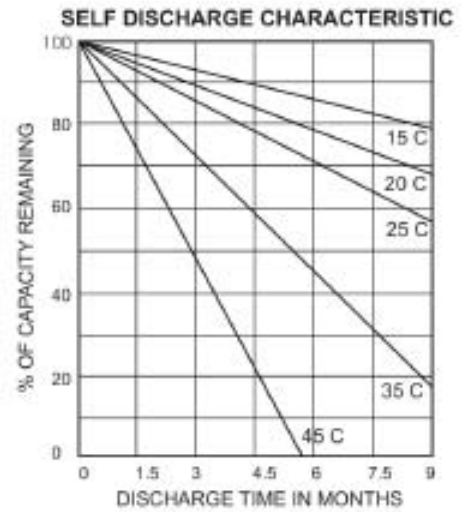
## Temperature Effects.

Temperature affects the battery in a number of different ways.

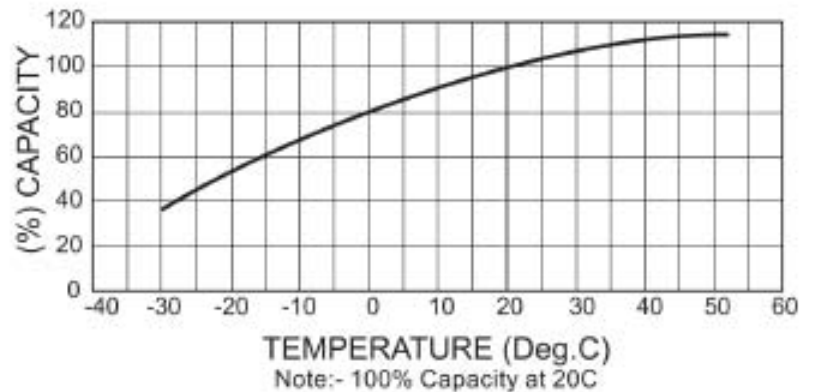
The battery will operate in extreme temperature ranges from below Zero to over 40 Deg C. However the Valve Regulated (VRLA) Battery nominal capacity, and optimum performance are based on operating temperature of 20 Deg C.

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.

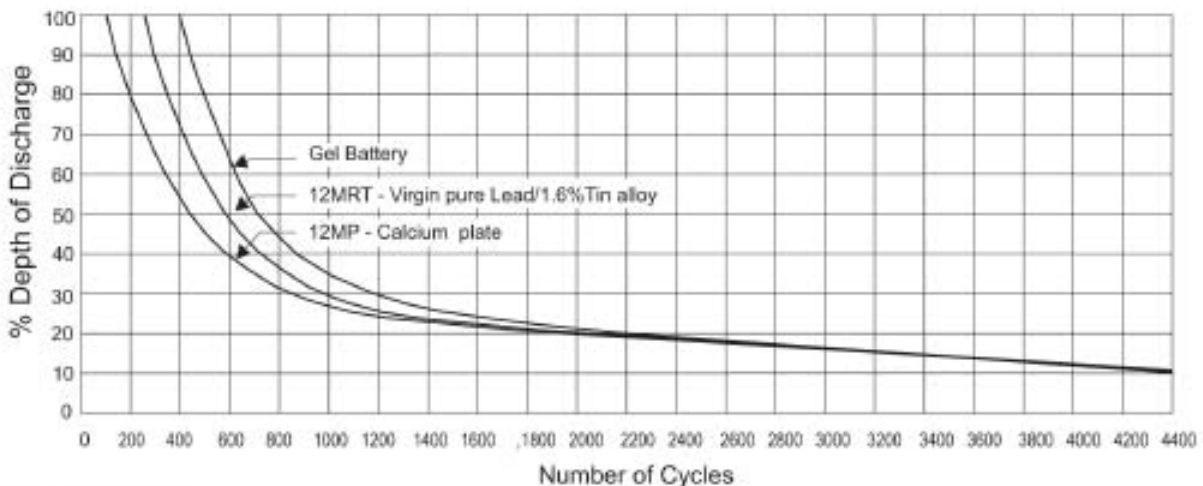


Battery Float Charging (Temperature compensation)	
Temperature Deg.C	Float Charge Volts/Cell
5	2.31
10	2.29
15	2.27
20	2.25
25	2.25
30	2.23
35	2.21



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  $0.003 \pm 0.01$  per volt/per/cell/deg.C



## Cyclic Batteries

There are many Cyclic battery applications where, due to cost, it is not possible to use a Gel battery. For these applications SEC has developed an AGM battery designed to deep cycle. You can see from the curve that the MICROLYTE Red Top battery does not cycle as well as the Gel battery but is a lot better than the standard AGM batteries with Calcium grids.





**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**



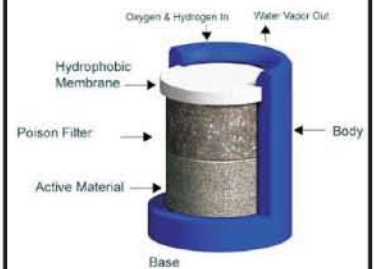
**SEC 2ETG OPzV Range  
in Tubular Rack**



**SEC Tubular OPzS Range**



**SEC Nickel Cadmium Range**



**Typical VRLA Catalyst**