

# MICROLYTE Red Top Range

Maintenance-Free Rechargeable  
VRLA Lead Acid Cyclic Batteries  
6 Volt 10Ah to 12 Volt 275Ah



**MICROLYTE** 'Red Top' Cyclic Monobloc, sealed valve regulated lead acid rechargeable batteries are maintenance free. Safety, outstanding battery life and value, **MICROLYTE Red Top (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 **MICROLYTE 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 design life of 10 years for batteries from 35Ah to 250Ah 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 re closes, 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 –20C to +55C. 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.

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.



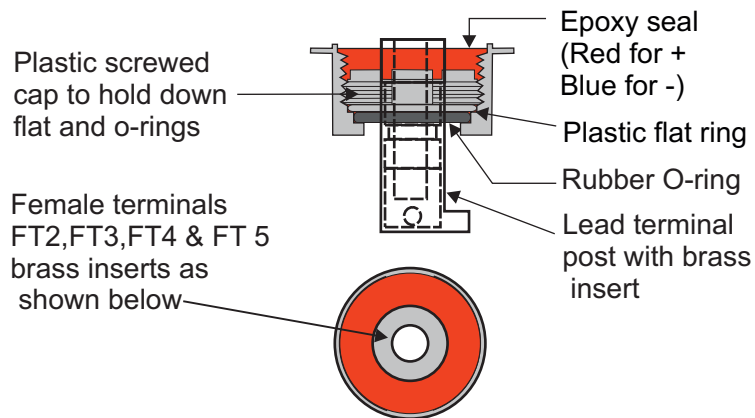




## MICROLYTE Red Top - Cyclic - Data & Dimensions

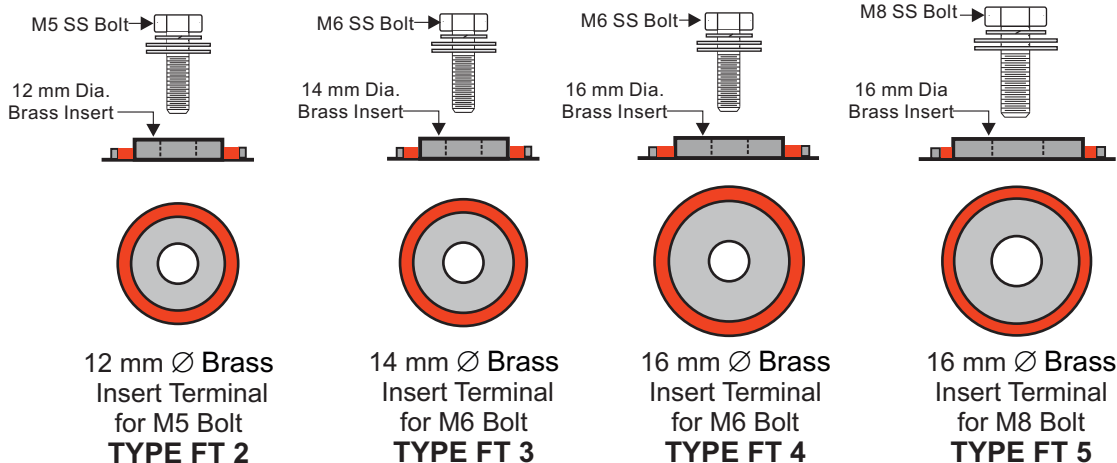
SEC Battery Type	Capacity Nom C/20 1.75 vpc	CCA at -18 C 0 F.	CCA at 0 C. 32 F.	Short Circuit Amps	Internal Resistance m Ohms	Female Terminal Type	Battery Weight		Overall Battery Dimensions					
							KG	lbs	Length		Width		Height	
									Inch	mm	Inch	mm	Inch	mm
6MRT-10	10	70	90	310	10	ST1	1.70	3.7	5.94	151	1.97	50	3.90	99
6MRT-12	12	74	98	380	9.0	ST1	1.87	4.1	5.94	151	1.97	50	3.90	99
6MRT-130	130	760	1010	3200	3.0	FT 4	17.0	37.4	7.72	196	6.69	170	8.27	210
6MRT-150	150	860	1120	3700	2.9	FT 5	19.0	41.8	10.24	260	7.09	180	9.72	247
6MRT-200	198	980	1290	4600	2.4	FT 5	28.7	63.1	12.05	306	6.61	168	8.66	220
6MRT-220	220	1200	1600	5000	2.3	FT 5	30.2	66.4	12.72	323	7.01	178	8.82	224
6MRT-230	230	1300	1740	5500	2.2	FT 5	33.0	72.6	9.57	243	7.40	188	10.83	275
12MRT-3.3	3.3	15	22	85	60	ST1	1.30	2.9	5.28	134	2.64	67.0	2.64	67.0
12MRT-5SP	5.0	24	34	130	40	ST1+ST2	2.00	4.4	5.94	151	2.01	51.0	3.90	99.0
12MRT-8	8.0	39	55	210	35	ST1 or ST2	2.50	5.5	5.94	151	2.62	66.5	3.90	99.0
12MRT-14	14	93	130	420	30	ST2	4.10	9.0	5.98	152	3.90	99.0	4.02	102
12MRT-20	20	125	155	650	28	FT 2	7.50	16.5	7.13	181	2.99	76.0	6.61	168
12MRT-26E	25	165	205	940	12	FT 3	8.10	17.8	6.90	175	6.54	166	4.94	126
12MRT-28	28	200	165	1220	8.2	FT 3	9.70	21.3	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	14.5	31.9	7.80	198	6.54	166	6.69	170
12MRT-60	60	280	380	1900	5.6	FT 3	18.6	40.9	9.06	230	5.43	138	8.43	214
12MRT-70J	71	330	450	2000	5.5	FT 3/Flag	21.3	46.9	13.78	350	6.54	166	6.85	174
12MRT-80	77	410	550	2100	5.4	FT 3	22.0	48.4	10.20	259	6.65	169	8.19	208
12MRT-90	88	460	620	2400	4.5	FT 3	24.0	52.8	10.20	259	6.65	169	8.19	208
12MRT-100	100	510	680	2650	4.3	FT 4	26.8	59.0	12.09	307	6.69	170	8.46	215
12MRT-110	110	580	780	2900	3.9	FT 4	30.5	67.1	12.91	328	6.77	172	8.46	215
12MRT-120	121	710	960	3000	3.4	FT 4	31.2	68.6	13.35	339	6.81	173	8.46	215
12MRT-130	132	760	1020	3300	3.1	FT 4	36.0	79.2	13.46	342	6.81	173	11.22	285
12MRT-150	148	970	1300	4200	2.9	FT 5	42.5	93.5	13.46	342	6.81	173	11.22	285
12MRT-160	165	1060	1370	4500	2.8	FT 5	44.5	98	19.02	483	6.69	170	9.49	241
12MRT-175	176	1060	1370	4500	2.6	FT 5	53.4	117	20.87	530	8.23	209	8.86	225
12MRT-200	198	1100	1440	4700	2.3	FT 5	56.3	124	20.87	530	8.23	209	8.86	225
12MRT-220	220	1240	1670	5400	2.2	FT 5	61.5	135	20.55	522	9.45	240	8.86	225
12MRT-250	253	1460	1951	6157	2.0	FT 5	66.0	145	20.55	522	10.59	269	8.66	220
12MRT-275	275	1560	2100	6600	1.9	FT 5	76.0	167	20.55	522	10.59	269	8.86	225

Actual Battery Discharge Data may be +/-5% of figures shown.



TYPICAL TRIPLE SEAL DETAIL

### 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.

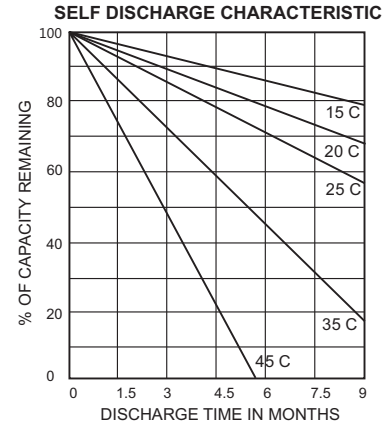
Cycle Service  $2.35 \pm 1\%$  Volts Per Cell at 20/25 Deg C.

### Temperature Effects.

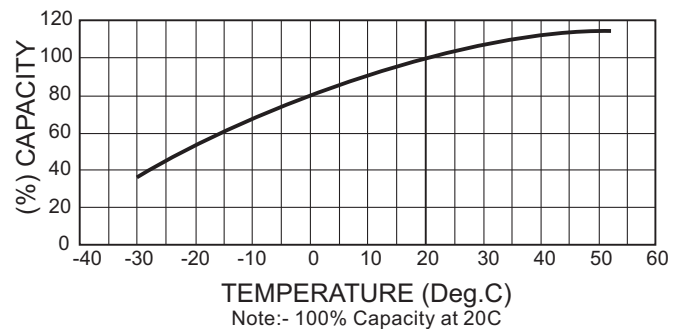
Temperature affects the battery in a number of different ways. The battery will operate in extreme temperature ranges from below Zero to over 40 Deg C. However the Valve Regulated (VRLA) Battery nominal capacity, and optimum performance are based on operating temperature of 20 Deg C.

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.

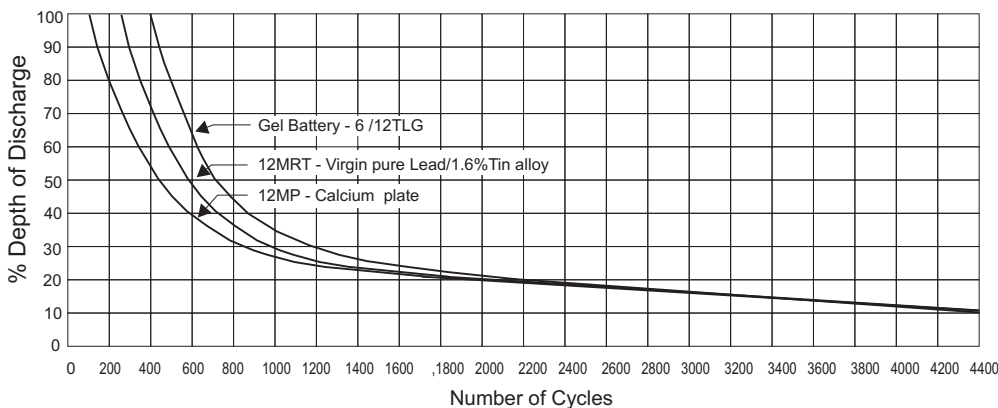


Battery Float Charging (Temperature compensation)	
Temperature Deg.C	Float Charge Volts/Cell
5	2.31
10	2.29
15	2.27
20	2.25
25	2.25
30	2.23
35	2.21



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.

## SEC Industrial Battery Co. range of products

<p>CELLYTE 2CMT/G Modular Steel Rack</p>	<p>CELLYTE 2TLAM/G Tubular Steel Rack</p>	<p>CELLYTE 2CMT/G, CELLYTE 2TLAM/G with Catalyst</p>	
<p>CELLYTE 12PLF &amp; 12PLT Range</p>	<p>CELLYTE 12FTA/G Range</p>	<p>CELLYTE 6-12TUA Range</p>	<p>CELLYTE 6-12TSG Range</p>
<p>CELLYTE 6-12TLA Range</p>	<p>CELLYTE 6-12TLG Range</p>	<p>MICROLYTE +Plus Range</p>	<p>MICROLYTE Red Top Range</p>
<p>CELLYTE 2ETG OPzV Range Tubular Steel Rack</p>	<p>SEC Tubular OPzS Range</p>	<p>Nickel Cadmium Range Pocket Plate flooded and Valve Regulated</p>	<p>Typical VRLA catalyst</p>

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