

CURRENT SELECTION HIGHLIGHTED IN YELLOW



CYCLON® Battery 4V/6V Monobloc standard assemblies



CYCLON® Battery 4 Volt Monoblocs

Product Number	Description	Length		Width		Height		Weight	
		in.	mm	in.	mm	in.	mm	lbs.	kg
0819-0010	4V, 2.5Ah Monobloc	3.13	79.5	1.81	46.0	2.75	69.9	.80	.36
0809-0010	4V, 5.0Ah Monobloc	3.80	96.5	2.12	53.8	3.02	76.7	1.62	.74
0859-0010	4V, 8.0Ah Monobloc	3.81	96.8	2.13	54.1	4.00	101.6	2.11	.96

CYCLON® Battery 6 Volt Monoblocs



Product Number	Description	Length		Width		Height		Weight	
		in.	mm	in.	mm	in.	mm	lbs.	kg
0819-0012	6V, 2.5Ah Monobloc	4.48	113.8	1.81	46.0	2.75	69.9	1.15	.52
0809-0012	6V, 5.0Ah Monobloc	5.48	139.2	2.12	53.8	3.02	76.7	2.16	.98
0859-0012	6V, 8.0Ah Monobloc	5.48	139.2	2.13	54.1	4.00	101.6	3.15	1.43

CYCLON® Battery 12 Volt 2x3 Monoblocs



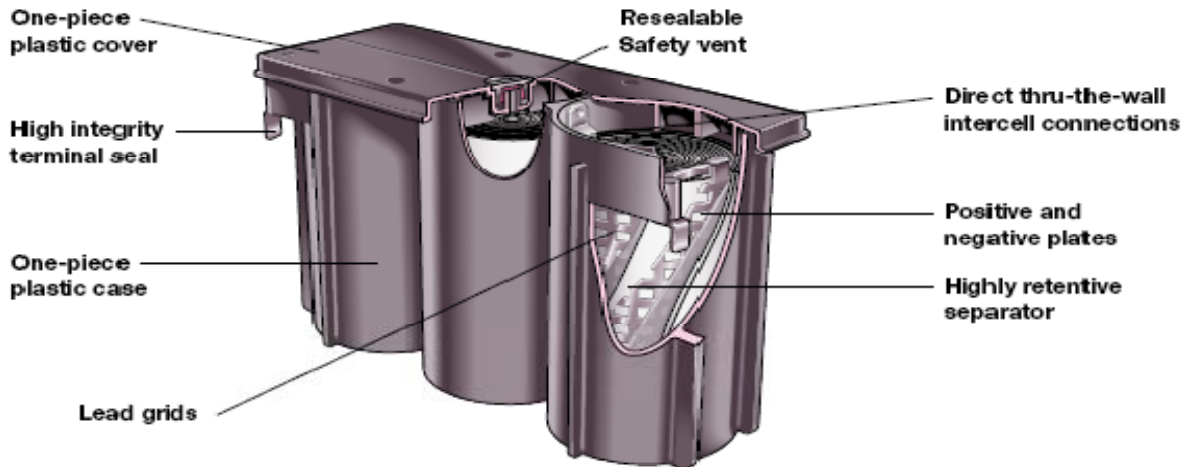
Product Number	Description	Length		Width		Height		Weight	
		in.	mm	in.	mm	in.	mm	lbs.	kg
0819-0030	12V, 2.5Ah, 2x3	4.48	113.8	3.52	89.4	2.77	70.4	2.30	1.04
0809-0030	12V, 5.0Ah, 2x3	5.48	139.2	4.18	106.2	3.04	77.2	4.32	1.96
0859-0030	12V, 8.0Ah, 2x3	5.48	139.2	4.18	106.2	4.02	102.1	6.30	2.86

CYCLON® Battery 12 Volt 1x6 Monoblocs



Product Number	Description	Length		Width		Height		Weight	
		in.	mm	in.	mm	in.	mm	lbs.	kg
0819-0016	12V, 2.5Ah, 1x6	8.84	224.5	1.81	46.0	2.77	70.4	2.30	1.04
0809-0016	12V, 5.0Ah, 1x6	10.88	276.4	2.12	53.8	3.04	77.2	4.32	1.96
0859-0016	12V, 8.0Ah, 1x6	10.88	276.4	2.13	54.1	4.02	102.1	6.30	2.86

All dimensions, excluding weight, are maximum



CURRENT SELECTION HIGHLIGHTED IN YELLOW

CYCLON® Battery 4V Monobloc mechanical specifications (A, B & C - maximum)

Product Number	DIMENSIONS													
	A		B		C		D		E		Weight		Tabs	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg	in.	mm
D Monobloc	2.75	69.9	3.13	79.5	1.81	46.0	.61	15.5	1.23	31.2	.80	.36	.187x.025	4.75x0.64
X Monobloc	3.02	76.7	3.80	96.5	2.12	53.8	.73	18.5	1.45	36.8	1.62	.74	.250x.025	6.35x0.64
E Monobloc	4.00	101.6	3.81	96.8	2.13	54.1	.73	18.5	1.45	36.8	2.11	.96	.250x.025	6.35x0.64

CYCLON® Battery 6V Monobloc mechanical specifications (A, B & C - maximum)

Product Number	DIMENSIONS																	
	A		B		C		D		E		F		G		Weight		Tabs	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lb.	kg	in.	mm
D Monobloc	2.75	69.9	4.48	113.8	1.81	46.0	.61	15.5	1.23	31.2	1.33	33.8	.67	17.0	1.15	.52	.187x.025	4.75x0.64
X Monobloc	3.02	76.7	5.48	139.2	2.12	53.8	.73	18.5	1.45	36.8	1.71	43.4	.86	21.8	2.12	.98	.250x.025	6.35x0.64
E Monobloc	4.00	101.6	5.48	139.2	2.13	54.1	.73	18.5	1.45	36.8	1.71	43.4	.86	21.8	3.15	1.43	.250x.025	6.35x0.64

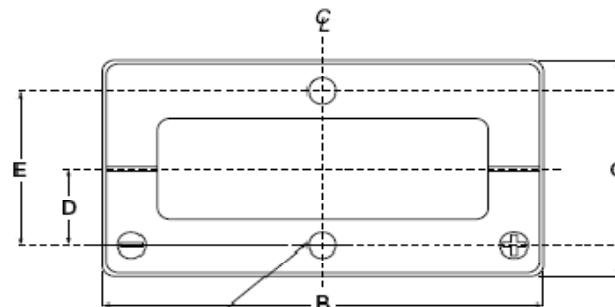
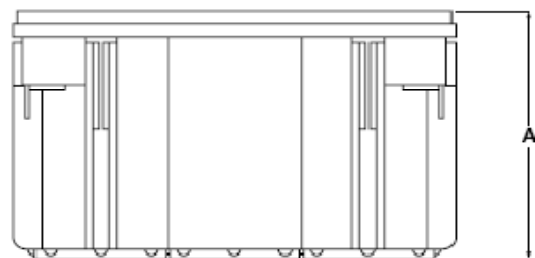
CYCLON® Battery 4V Monoblocs:

Products	Capacity	Part Number	DIMENSIONS											
			Internal res. of fully charged Monobloc mΩ @ 25°C	Nominal short circuit current for charged cell	Diameter		Height		Height		Weight		Tabs	
					in.	mm	in.	mm	in.	mm	oz.	gm	in.	mm
D cell	2.5Ah	0819-0010	10.0	400A	3.13	79.5	1.81	46.0	2.75	69.9	.80	.36	.187x.025	4.75x0.64
X cell	5.0Ah	0809-0010	7.0	570A	3.80	96.5	2.12	53.8	3.02	76.7	1.62	.74	.250x.025	6.35x0.64
E cell	8.0Ah	0859-0010	6.0	665A	3.81	96.8	2.13	54.1	4.00	101.6	2.11	.96	.250x0.25	6.35x0.64

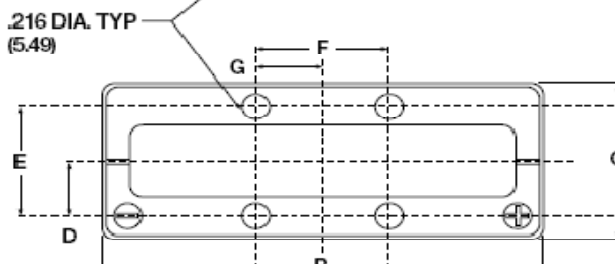
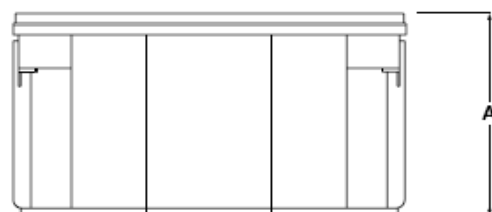
CYCLON® Battery 6V Monoblocs:

Products	Capacity	Part Number	DIMENSIONS											
			Internal res. of fully charged Monobloc mΩ @ 25°C	Nominal short circuit current for charged cell	Diameter		Height		Height		Weight		Tabs	
					in.	mm	in.	mm	in.	mm	oz.	gm	in.	mm
D cell	2.5Ah	0819-0012	15.0	400A	4.48	113.8	1.81	46.0	2.75	69.9	1.15	.52	.187x.025	4.75x0.64
X cell	5.0Ah	0809-0012	10.0	570A	5.48	139.2	2.12	53.8	3.02	76.7	2.16	.98	.250x0.25	6.35x0.64
E cell	8.0Ah	0859-0012	8.0	665A	5.48	139.2	2.13	54.1	4.00	101.6	3.15	1.43	.250x0.25	6.35x0.64

D Monobloc



X & E Monobloc



CURRENT SELECTION HIGHLIGHTED IN YELLOW

CYCLON® Battery 4V/6V Monobloc performance specifications

4V & 6V Constant current discharge/amps to 1.67Vpc @ 25°C

Products	DURATION									
	5 min	10 min	15 min	30 min	60 min	90 min	5 hr	8 hr	10 hr	20 hr
D cell (2.5Ah)	14.3	8.1	5.9	3.4	1.9	1.4	.48	.32	.26	.13
X cell (5.0Ah)	28.9	18.1	13.5	7.1	4.0	2.8	1.0	.61	.52	.26
E cell (8.0Ah)	41.7	26.4	19.0	11.0	6.2	4.4	1.6	1.0	.81	.42

4V & 6V Constant power discharge/watts per cell to 1.67Vpc @ 25°C

Products	DURATION									
	5 min	10 min	15 min	30 min	60 min	90 min	5 hr	8 hr	10 hr	20 hr
D cell (2.5Ah)	25.3	15.9	11.7	6.8	3.8	2.7	.93	.60	.49	.25
X cell (5.0Ah)	48.8	32.3	24.2	13.8	7.8	5.6	2.0	1.2	1.0	.52
E cell (8.0Ah)	77.8	51.0	35.5	21.1	12.4	8.9	3.1	2.0	1.7	.85

Charging/Temperature/Life

Products	CHARGING PER CELL		TEMPERATURE RANGE		LIFE EXPECTANCY	
	Cyclic	Float	Storage, discharge & charge	Safety pressure relief valve	C/5 Cycle life 100% DOD	Float life at 25°C (20°C)
4V D, X, & E	CV 4.90-5.00	CV 4.54-4.70	-40°C to +40°C	8 psi	300	Up to 8 yrs
Monobloc	CC*	CC*				(Up to 8 yrs)
6V D, X, & E	CV 7.35-7.50	CV 6.81-7.05	-40°C to +40°C	8 psi	300	Up to 8 yrs
Monobloc	CC*	CC*				(Up to 8 yrs)

Maximum recommended storage time before recharge -24 months @ 25°C or 2.0Vpc, whichever is earlier

Atmospheric pressure range -Vacuum to 2 atmospheres

Mounting -Each Monobloc is equipped with mounting holes in the cover. The tightening torque for mounting the Monobloc is 25 in-lbs. When using 4 mounting bolts, small spacers (washers) 1 to 3 mm thick should be placed between the battery and the mounting surface to prevent bowing or stressing the battery case.

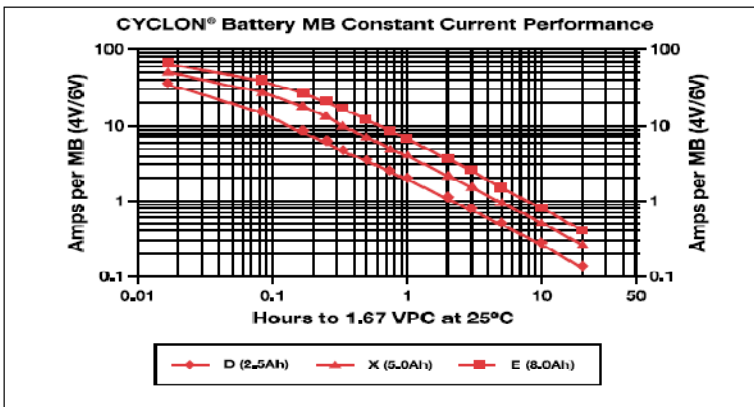
*Users planning to use CC should consult the EnerSys® Application Support Department.

UL Recognized Component. Meets UL 1989

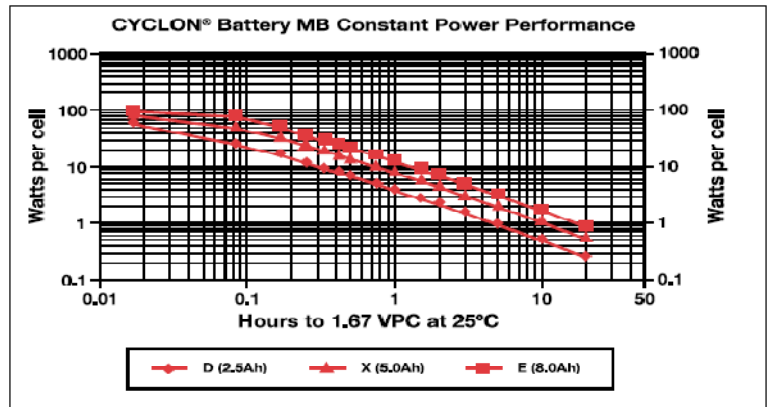
Caution: Batteries contain toxic materials (Pb and H2SO4) • Avoid short circuit • Do not charge in gas-tight container

Sealed-lead rechargeable battery must be recycled or disposed of properly. Contact EnerSys® Customer Service for details.

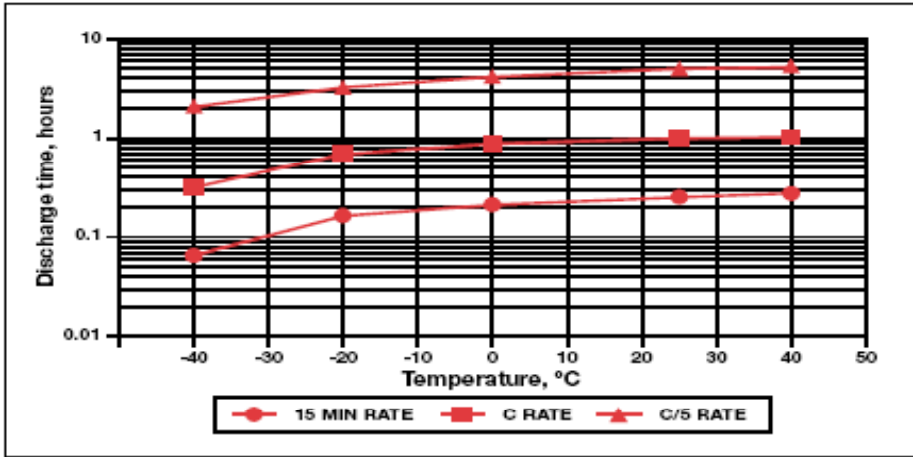
4V/6V Monobloc constant current (CC) curves to 1.67Vpc



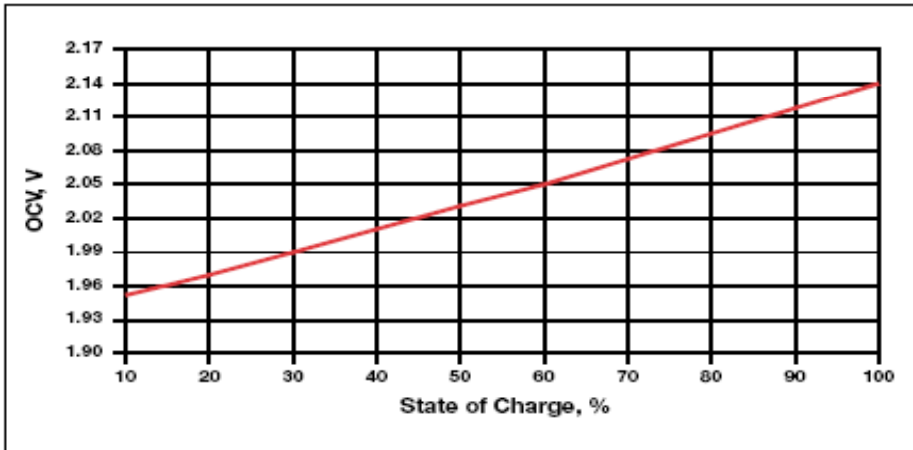
4V/6V Monobloc constant power (CP) curves to 1.67Vpc



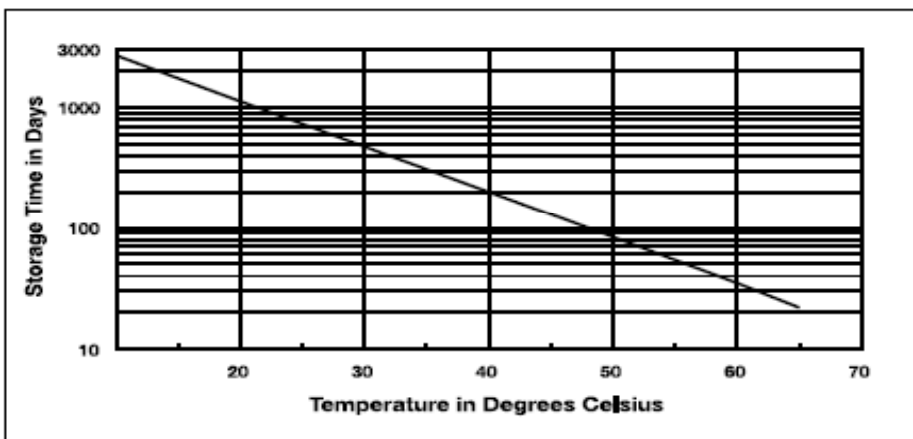
Capacity as a function of temperature for CYCLON® Battery Single Cells & Monoblocs (use graph up to 40°C for Monoblocs)



State of charge for CYCLON® Battery Single Cells & Monoblocs



Storage time as a function of temperature for CYCLON® Battery Single Cells & Monoblocs (fully charged cell)



Charging recommendations:

Broadly speaking, a battery may be recharged using either a constant voltage (CV) charger or a constant current (CC) charger, or a modification of either or both of these.

The exact regime chosen generally depends upon the time and economic constraints imposed by the system. Constant current charging is widely used in cyclic applications where a recharge must be accomplished in a relatively short time period. Constant voltage charging, where a single voltage level is applied across the battery terminals, is the most suitable method to recharge CYCLON® batteries. Depending on the CV charger's current limit, it is possible to recharge these batteries from a 100% discharged condition to better than 95% state of charge in less than one hour, using only the cyclic charge voltage.

Constant voltage charging

Constant voltage (CV) charging should be within the following ranges:

Fast Chargers, Per cell:

2.45 to 2.50 volts @ 25°C

12 volts:

14.70 to 15.0 volts @ 25°C

(for a maximum of 16-20 hours)

Float Chargers, Per cell:

2.27 to 2.35 volts @ 25°C

12 volts:

13.62 to 14.10 volts @ 25°C

To avoid thermal runaway in warmer temperatures, and to improve charge acceptance in colder temperatures, the charger voltage should be compensated by approximately 3 millivolts per cell per degree Centigrade variance from 25°C.

This is a negative coefficient, with the voltage being lowered as the temperature increases, and vice versa.