



**CYCLON PRODUCT FAMILY (All capacities at 10 hr. rate 25°C to 1.67 vpc)**

**CYCLON 2V single cell:**

Products (capacity)	Part Number	Internal res. of fully charged cell mΩ @ 25°C	Nominal short circuit current for charged cell	DIMENSIONS				
				Diameter in. (mm)	Height in. (mm)	Height with terminals in. (mm)	Weight oz. (gm)	Tabs in. (mm)
D cell (2.5Ah)	0810-0004	5.0	400A	1.35 (34.3)	2.41 (61.2)	2.68 (68.1)	6.28 (178.0)	.187 x .025 (4.75 x 0.64)
DT cell (4.5Ah)	0860-0004	5.0	400A	1.35 (34.3)	3.78 (96.0)	4.05 (102.9)	9.68 (274.4)	.187x .025 (4.75 x 0.64)
X cell (5.0Ah)	0800-0004	3.5	570A	1.75 (44.5)	2.87 (72.9)	3.21 (81.5)	12.77 (362.0)	.250 x .025 (6.35 x 0.64)
E cell (8.0Ah)	0850-0004	3.0	665A	1.75 (44.5)	3.94 (100.1)	4.28 (108.7)	17.28 (489.9)	.250 x .025 (6.35 x 0.64)
J cell (12.0Ah)	0840-0004	2.5	800A	2.04 (51.8)	4.85 (123.2)	5.34 (135.6)	29.60 (839.2)	0.312 x 0.032 (7.92 x 0.81)
BC cell (25Ah)	0820-0004	1.5	1335A	2.57 (65.3)	6.25 (158.8)	6.82 (173.2)	58.88 (1669.2)	M6 (-) and M8 (+) terminals

**CYCLON 4V monobloc:**

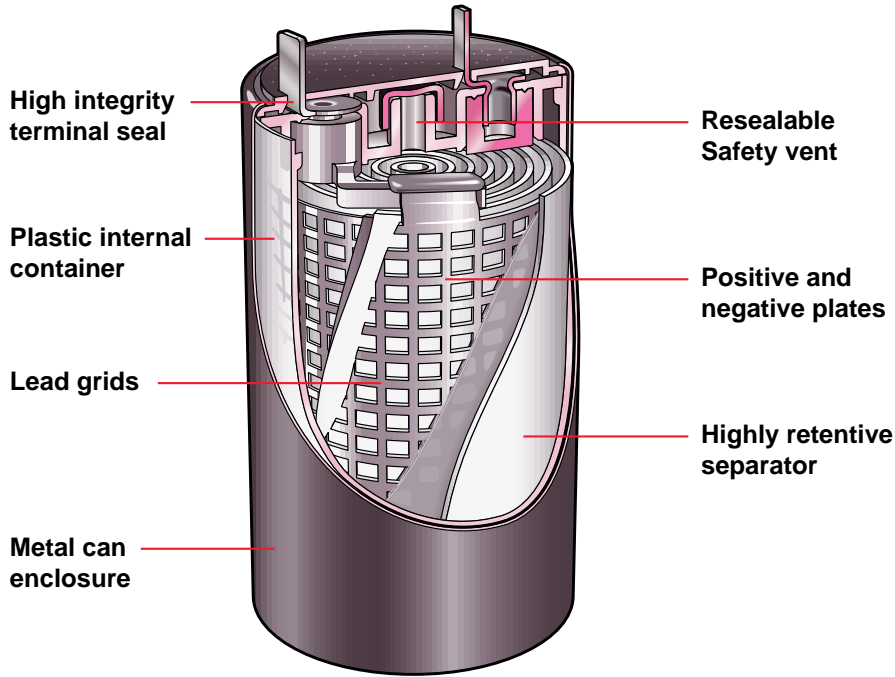
Products (capacity)	Part Number	Internal res. of fully charged Monobloc mΩ @ 25°C	Nominal short circuit current for charged Monobloc	DIMENSIONS				
				Length in. (mm)	Width in. (mm)	Height in. (mm)	Weight lb. (kg)	Tabs in. (mm)
D (2.5Ah)	0819-0010	10.0	400A	3.13 (79.5)	1.81 (46.0)	2.75 (69.9)	.80 (.36)	0.187 x .025 (4.75 x 0.64)
X (5.0Ah)	0809-0010	7.0	570A	3.80 (96.5)	2.12 (53.8)	3.02 (76.7)	1.62 (.74)	.250 x .025 (6.35 x 0.64)
E (8.0Ah)	0859-0010	6.0	665A	3.81 (96.8)	2.13 (54.1)	4.00 (101.6)	2.11 (.96)	0.250 x .025 (6.35 x 0.64)

**CYCLON 6V monobloc:**

Products (capacity)	Part Number	Internal res. of fully charged Monobloc mΩ @ 25°C	Nominal short circuit current for charged Monobloc	DIMENSIONS				
				Length in. (mm)	Width in. (mm)	Height in. (mm)	Weight lb. (kg)	Tabs in. (mm)
D (2.5Ah)	0819-0012	15.0	400A	4.48 (113.8)	1.81 (46.0)	2.75 (69.9)	1.15 (.52)	0.187 x .025 (4.75 x 0.64)
X (5.0Ah)	0809-0012	10.0	570A	5.48 (139.2)	2.12 (53.8)	3.02 (76.7)	2.16 (.98)	0.250 x .025 (6.35 x 0.64)
E (8.0Ah)	0859-0012	8.0	665A	5.48 (139.2)	2.13 (54.1)	4.00 (101.6)	3.15 (1.43)	0.250 x .025 (6.35 x 0.64)

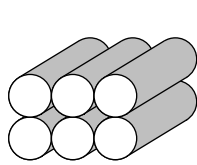
All dimensions, excluding weight and tabs, are maximum

**CYCLON SINGLE CELL**

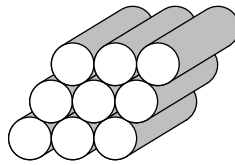


**ALTERNATIVE BATTERY CONFIGURATIONS**

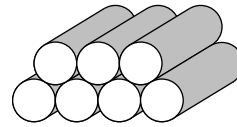
Standard battery configurations are rectangular in overall shape. A sample of other possible configurations are illustrated below. These can be held together with tape (offering the lowest cost and minimum electrical and mechanical protection) or by shrink wrapping. The CYCLON Single Cell can be custom configured in virtually an infinite number of designs.



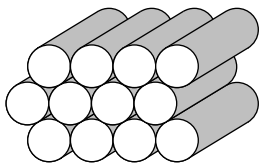
**Rectangular**



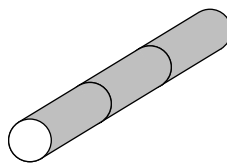
**Rhomboid**



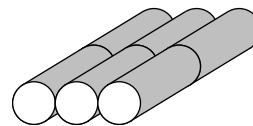
**Trapezoid**



**Nested**



**Tubular**



**Flat Pack**



**CYCLON STANDARD BATTERY DESCRIPTIONS**

CYCLON cells are ideal for small ampere-hour applications up to 25Ah. The sealed-lead construction uses a starved-electrolyte system and a patented grid-alloy providing numerous advantages.

Standard batteries are offered based on combinations of the previously described CYCLON cells and are available in 6 and 12 volt configurations with capacities ranging from 2.5Ah to 25Ah.

**Battery Packages**

Rigid plastic cases or shrink wrap packaging are available.

**Rigid Plastic**

Cases are available for most designs in either flame-retardant ABS Cyclocac (General Electric) material, meeting UL 94V-0 flammability rating, or Styrene (available only in 2X3 D and X battery configurations). Some cases have mounting holes. Rigid plastic cases are recommended for applications in which the battery must withstand vibration, movement or extreme weather conditions.

**Shrink Wrap**

Shrink wrap packaging is less expensive and smaller in size and weight. A plastic extrusion insulates the battery top and keeps the cells in line. A heavy duty shrink sleeve holds the cells firmly in place. Shrink wrap packaging is recommended for applications in which the battery remains stationary.

**Battery Terminations for Single Cell and Monoblocs**

**Tab/Stud**

<i>Cell size</i>	<i>Dimensions</i>
D	.187" X .025"
DT	.187" X .025"
X	.250" X .025"
E	.250" X .025"
J	.312" X .032"
BC	6mm post (negative) 8mm post (positive)

**Tab Adapters (D, DT, X, and E)**

Available to convert .187" tabs to .250" tabs, 0.032" thick, and vice versa.

**BC Quick Disconnect Terminals**

AMP series 250 Faston terminals are available for BC batteries.

**Connection Terminations**

A wide variety of terminations are offered. For recommendations or to specify; contact your Hawker Territory Manager or battery assembler.

**Fusible Links**

Specify your requirement.

**Lead Wires**

Stranded copper wire with insulation meeting UL1015 specifications (Red +, Black -). Standard leads extend 9 inches outside the battery pack. Ends are stripped and dipped in wax, which must be removed before use.

*Standard wire gauges are:*

D batteries	18AWG, UL1015
DT batteries	16AWG, UL1015
X batteries	16AWG, UL1015
E batteries	14AWG, UL1015
J batteries	14AWG, UL1015
BC batteries	12AWG, UL1015

Varying lead lengths and gauges are also available; please specify to your Hawker Territory Manager or battery assembler.

**Intercell Connections**

**Standard**

- D, DT, X and E batteries—welded tin-plated steel connector
- J batteries—soldered, stranded wire
- BC batteries—solid copper

**For vibration-prone applications**

- D, DT, X, E and J batteries—soldered, stranded wire
- BC batteries—braided copper straps

**Constant current discharge/amps to 1.67 vpc @ 25°C**

Products	DURATION									
	5 min.	10 min.	15min.	30 min.	60 min.	90 min.	5 hr.	8 hr.	10 hr.	20 hr.
D cell (2.5Ah)	14.8	8.1	5.9	3.4	1.9	1.4	.48	.32	.26	.13
DT cell (4.5Ah)	25.2	15.0	11.2	6.6	3.7	2.6	.85	.55	.45	.24
X cell (5.0Ah)	27.3	17.8	13.2	7.0	3.9	2.8	.96	.61	.50	.26
E cell (8.0Ah)	41.7	26.4	19.0	11.0	6.2	4.4	1.6	1.0	.81	.42
J cell (12.0Ah)	51.7	38.1	29.4	18.0	9.2	6.5	2.3	1.5	1.20	.66

**Constant power discharge/watts per cell to 1.67 vpc @ 25°C**

Products	DURATION									
	5 min.	10 min.	15min.	30 min.	60 min.	90 min.	5 hr.	8 hr.	10 hr.	20 hr.
D cell (2.5Ah)	26.4	16.1	11.6	6.7	3.8	2.7	.94	.61	.50	.25
DT cell (4.5Ah)	45.0	28.1	21.0	12.5	7.1	5.1	1.7	1.1	.90	.46
X cell (5.0Ah)	45.4	31.9	23.9	13.9	7.8	5.6	1.9	1.2	1.0	.51
E cell (8.0Ah)	77.8	51.0	35.5	21.1	12.4	8.9	3.1	2.0	1.6	.85
J cell (12.0Ah)	90.4	68.4	53.4	31.6	18.3	13.2	4.7	3.0	2.3	1.3

**Charging/Temperature/Life:**

Products	CHARGING PER CELL		TEMPERATURE RANGE		LIFE EXPECTANCY	
	Cyclic	Float	Storage & discharge	Charge	C/5 Cycle life 100% DOD	Float life at 25°C (20°C)
D, DT, X, E & J cell	CV 2.45–2.50 CC*	CV 2.27–2.35 CC*	-65°C to +80°C	-40°C to +80°C	300	10 years (15 years)

**Maximum recommended storage time before recharge**—24 months @ 25°C or 2.0vpc, whichever is earlier

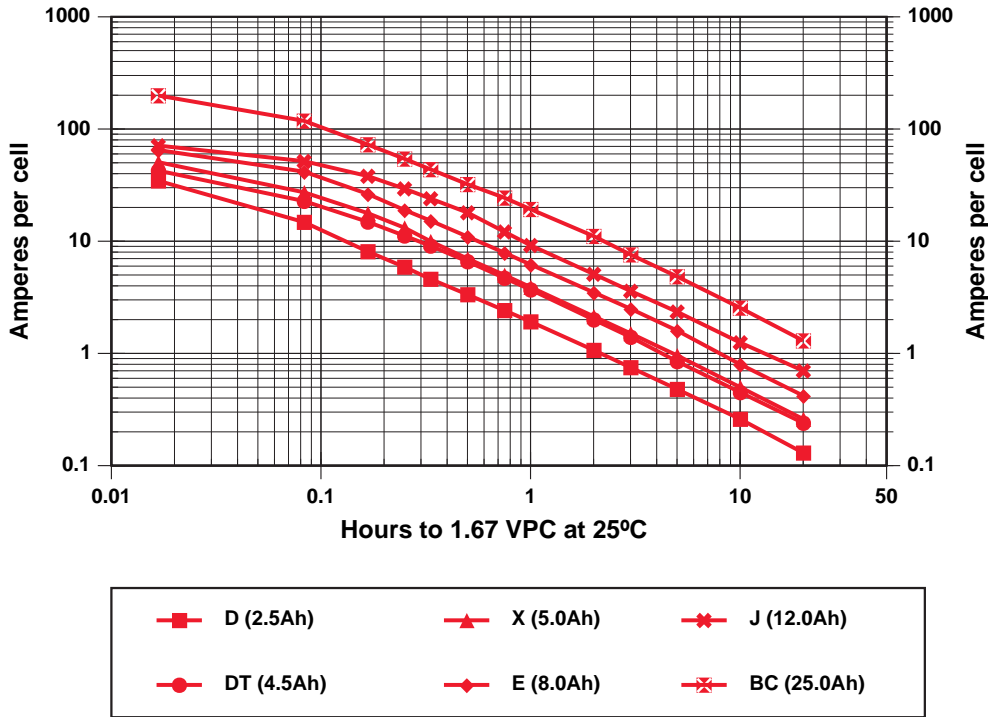
**Atmospheric pressure range**—Vacuum to 8 atmospheres

\* Users planning to use CC should consult the Hawker Application Support Department

**UL Recognized Component. Meets UL 1989**

**Caution:** Batteries contain toxic materials (Pb and H<sub>2</sub>SO<sub>4</sub>) • Avoid short circuit • Do not charge in gas-tight container  
Sealed-lead rechargeable battery must be recycled or disposed of properly. Contact Hawker Customer Service for details.

**CYCLON SINGLE CELL CONSTANT CURRENT (CC) DISCHARGE**



**CYCLON SINGLE CELL CONSTANT POWER (CP) DISCHARGE**

