

POWER SHEET

COMMERCIAL DEEP CYCLE CR-165



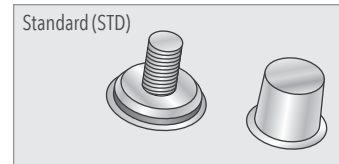
PURE POWER. PURE PERFORMANCE.



Crown Battery Manufacturing's team of research and development engineers welcome the opportunity to discuss your technical requirements during the design and specification stage. To access this technical assistance, please contact:

Crown Battery Manufacturing's Product Support Department
+1.419.334.7181 | commercial@crownbattery.com

AVAILABLE TERMINAL STYLES:



VENT CAP OPTIONS:



PHYSICAL SPECIFICATIONS

BCI Group Size	Model Description	Nominal Voltage	Length		Width		Container Height		Terminal Height		Weight		Cover & Container Material	Case to Cover Seal Method
			in	mm	in	mm	in	mm	in	mm	lbs	kgs		
GC8	CR-165	8	10.31	262	7.06	179	9.72	247	10.82	275	64	29	Polypropylene Plastic	Heat Seal

ELECTRICAL SPECIFICATIONS

Ampere Hour Capacity (Ah)				Reserve Capacity Minutes			Storage	
100-Hr	20-Hr	10-Hr	5-Hr	75-Amps	56-Amps	25-Amps	kWh ¹ 100-Hr	kWh ¹ 20-Hr
183	165	152	140	82	117	304	1.42	1.28

¹Storage kWh specifications are calculated using a Depth-of-Discharge (DoD) of 50%, or 1.94 VPC.

SUSTAINABILITY

- ▶ Fully Recyclable
- ▶ Do Not Discard



CHARGING INSTRUCTIONS

Electric Vehicle (EV) & Motive Power Application: *Normal Charger Settings at 80°F / 27°C*

Maximum Charge Current ^a (% of C/20)	Absorption Voltage ^b (V/Cell)	Maximum Absorption Phase Time (Hrs)	Finish Current (% of C/20)	Equalization Voltage (V/Cell)	Float Voltage (V/Cell)	Temperature Compensation (V/Cell)	
						°F	°C
20%	2.42	4	3 - 5%	2.70	2.25	1.6 mV	3.0 mV

- If charging time is limited, contact Crown Battery Product Support for assistance
- If charger has a bulk voltage parameter instead of a current parameter, refer to the absorption voltage per-cell above
- Chronic undercharging or overcharging will damage batteries and may lead to shortened life. Do not install or charge batteries in a sealed or unventilated compartment.
- Pro Charging Systems charger models with DeltaVolt Technology are qualified for all FLA deep cycle models. Delta-Q Technologies charger models with Algorithm 61 (scaled to battery Ah) are qualified for all FLA deep cycle models. Contact Crown Battery for questions regarding other charging equipment algorithm settings or qualification.

ENERGY STORAGE SYSTEM VOLTAGE SETTINGS

Off-Grid & Grid Connected Storage Applications:
Normal System Settings at 80°F / 27°C

System Voltage	6V	12V	24V	48V
Absorption	7.26	14.52	29.04	58.08
Float	6.75	13.50	27.00	54.00
Equalize	7.95	15.90	31.80	63.60

CR-165 COMMERCIAL DEEP CYCLE BATTERY

APPLICATION RECOMMENDATIONS

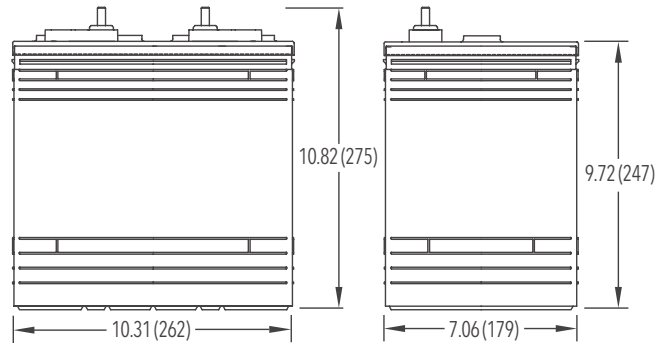
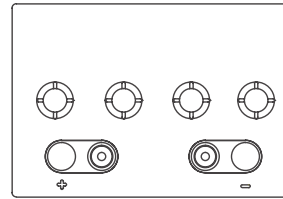
Specific Gravity	Operating Temperature Range	Self Discharge	Terminal Torque Specifications
Fully charged battery specific gravity (100% SOC) is 1.265 to 1.270 (max SG). Fully discharged battery specific gravity in a high rate discharge application (>50A Load) is 1.145 Fully discharged battery specific gravity in a low-rate discharge application (<40A Load) is 1.045	-40°F to 120°F (-40°C to 49°C). Flooded lead acid battery capacities are temperature sensitive: refer to the temperature / capacity projection chart below to identify available capacity at the application operating temperature. APPLICATION NOTE: Maintain a state of charge greater than 60% when operating flooded lead acid batteries at temperatures below 32°F (0°C).	Fully charged batteries that are stored at a temperature of 80°F (27°C) will self-discharge at a rate of 3.5% per week.	SAE / Automotive Terminal Style: 50 to 70 in-lbs / 6 to 8 Nm Stainless Threaded Terminal : 100 to 120 in-lbs / 11 to 14 Nm

APPLICATION NOTE: Lead acid batteries contain corrosive battery electrolyte and generate highly flammable hydrogen gas. When working near batteries wear protective clothing, gloves, and safety glasses when handling batteries and electrolyte and always work in a well-ventilated area. Do not over-torque terminals. Over-torque can result in terminal damage, breakage, terminal meltdown or fire.

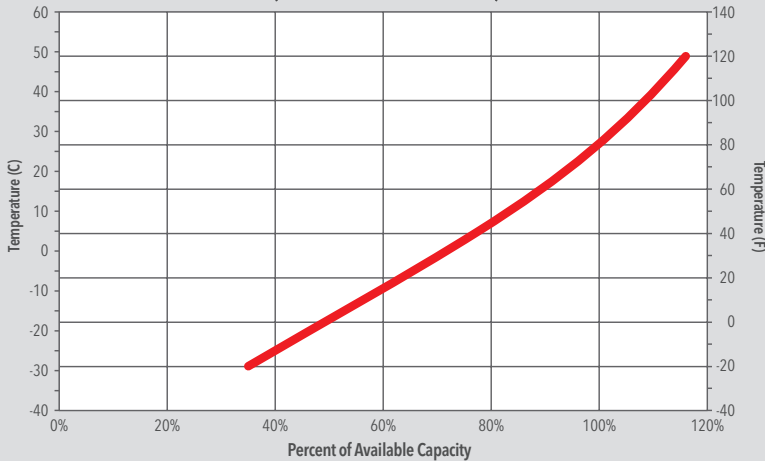
Crown Battery's flooded lead acid deep cycle batteries require periodic preventative maintenance and effective charging service to ensure dependable service life. Customers can find Crown Battery's recommended best practices for deep cycle battery care, maintenance and application at www.crownbattery.com or by contacting Crown Battery to request this information.

STATE OF CHARGE REFERENCE POINTS

Percent Charge	Specific Gravity	2 Volt	8 Volt	24 Volt	48 Volt	72 Volt	Freeze Temperature	
							°	°C
100%	1.270	2.10	8.40	25.2	50.4	75.6	-90°	-67.9°
90%	1.255	2.08	8.32	25.0	49.9	74.9	-68°	-55.5°
80%	1.235	2.06	8.24	24.7	49.4	74.2	-45°	-42.8°
70%	1.225	2.04	8.16	24.5	49.0	73.4	-32°	-35.5°
60%	1.210	2.02	8.08	24.2	48.5	72.7	-18°	-27.8°
50%	1.190	1.99	7.96	23.9	47.8	71.6	-7°	-21.7°
40%	1.170	1.97	7.88	23.6	47.3	70.9	1°	-17.2°
30%	1.150	1.95	7.80	23.4	46.8	70.2	6°	-14.4°
20%	1.130	1.93	7.72	23.2	46.3	69.5	13°	-10.5°
10%	1.105	1.92	7.68	23.0	46.1	69.1	17°	-8.3°
0%	1.100	<1.91	<7.64	<22.92	<45.84	<68.76	20°	-6.6°



AVAILABLE CAPACITY AT APPLICATION OPERATING TEMPERATURE (@ 100% STATE OF CHARGE)



Effect of Battery Temperature on Battery Life

Lead acid batteries are electrochemical storage devices that store and release chemical energy upon demand in the form of electricity. By virtue of their design lead acid batteries are highly reactive to temperature – with the rate of chemical reactions that occur within the battery being affected by the operating temperature where the battery is used. Higher operating temperatures will result in faster chemical reactions within the battery – delivering improved discharge performance; conversely, cooler operating temperatures will result in slower internal chemistry. However, higher operating temperatures also result in shortened battery life as the increased rate of chemical reactions will accelerate the rate of deterioration of internal components.

Typical battery life is based upon a baseline operating temperature of 80°F / 27°C. Temperature increases of 15°F / 10°C over the baseline will cause the battery's rate of internal chemical reactions to double – something that will reduce battery life due to the accelerated deterioration of internal components. Please contact Crown Battery to discuss any minimal requirements for battery life when operating batteries in temperatures greater than 80°F / 27°C.

The data shown are nominal and should not be construed as maximum or minimum values for specification or final design. Data for this product type may vary from that shown herein. Capacity references are based on peak product performance.

The Power Behind Performance



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