

# FULL FORCE

## BATTERY

# FFD180-8



### CYCLING CAPACITY

20 Hour Rate **180 Amp Hours**

### RESERVE CAPACITY

Reserve @25 AMPS **335 Minutes** Reserve @56 AMPS **125 Minutes**

### ELECTRICAL SPECIFICATIONS

Nominal Voltage	<b>8 Volt</b>
C100	<b>198 AH</b>
C20	<b>180 AH</b>
C10	<b>169 AH</b>
C5	<b>148 AH</b>
CCA	<b>1000 Amps</b>
CA or MCA	<b>1200 Amps</b>
Internal Resistance	<b>2.8 mΩ</b>

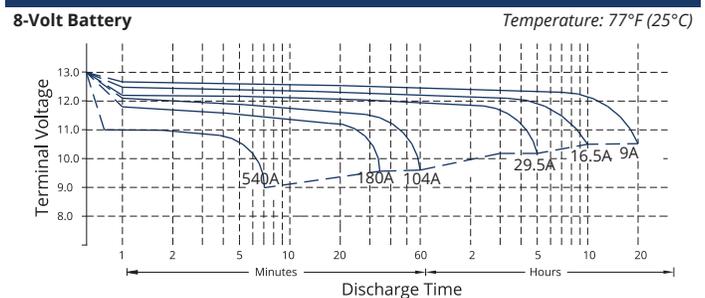
### MECHANICAL SPECIFICATIONS

Group Size	<b>GC8</b>	
Terminal Type	<b>M8</b>	
Terminal Torque	<b>5.8 - 6.7 ft/lbs 62 - 80 lbs/in 7 - 9 Nm</b>	
Height (w/ terminal)	<b>10.71"</b>	<b>272 mm</b>
Height (case only)	<b>10.51"</b>	<b>267 mm</b>
Width	<b>7.17"</b>	<b>182 mm</b>
Length	<b>10.24"</b>	<b>260 mm</b>
Weight	<b>75 lbs</b>	<b>34 kg</b>
Case Type	<b>ABS Plastic</b> Flame Res. Rating UL94-HB	

### DISCHARGE TABLE (Constant Current)

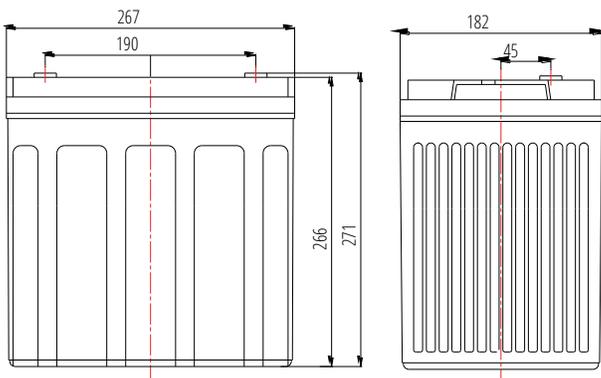
Time	Amps	Rate
20hr	9.0	0.05 CA
10hr	16.5	0.10 CA
8hr	20.0	0.13 CA
5hr	29.5	0.20 CA
3hr	45.5	0.33 CA
2hr	63.2	0.50 CA
1hr	102	1.00 CA

### DISCHARGE PROFILE (Constant Current)

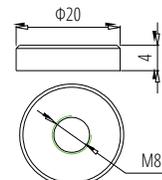


- All listed ratings are @ 100% SoC, T=77°F (25°C), 1.75VPC unless otherwise specified.  
 - Specifications listed are for estimation purposes only. Battery performance can vary depending on application. Battery design subject to change.

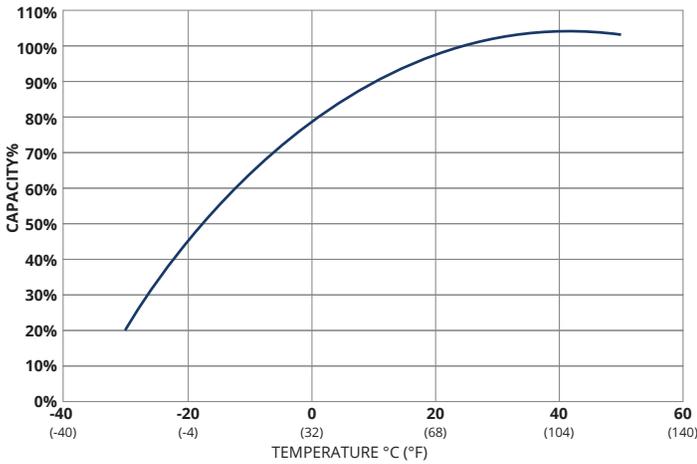
### BATTERY & TERMINAL DIMENSIONS (All units shown in mm)



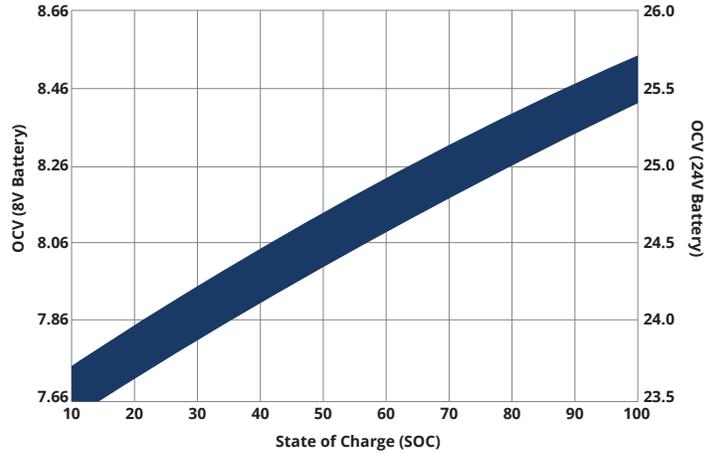
### Terminal: M8 + TP



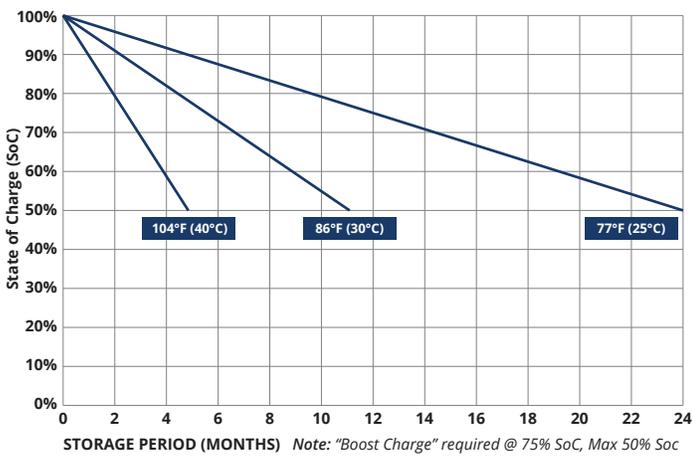
## TEMPERATURE vs CAPACITY



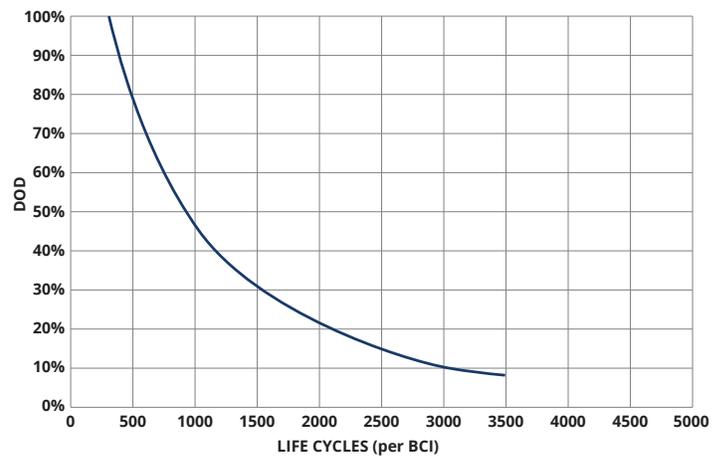
## STATE of CHARGE (SOC) vs OPEN CIRCUIT VOLTAGE (OCV)



## SELF DISCHARGE vs TIME/TEMPERATURE



## CYCLE LIFE vs DEPTH of DISCHARGE (DOD)



## TEMPERATURE RANGE SPECIFICATIONS

Condition	Recommended		Maximum	
	°F	°C	°F	°C
Storage	5°F to 122°F	-40°C to 160°C	-15°C to 50°C	-40°C to 71°C
Operation	5°F to 104°F	-40°C to 160°C	-15°C to 40°C	-40°C to 71°C
Charge with TC	5°F to 122°F	-40°C to 160°C	-15°C to 50°C	-40°C to 71°C
Charge w/o TC	32°F to 104°F	5°F to 122°F	0°C to 40°C	-15°C to 50°C

\*TC= Temperature Compensation

## CHARGE VOLTAGES

Charge Stage	Battery Voltages			
	8V	24V	36V	48V
Bulk	9.60V	28.80V	43.00V	58.00V
Absorption	9.40V	28.00V	42.00V	56.00V
Float	9.00V	27.00V	40.50V	54.00V

TC Factor: (-2mV°F/cell) or (-4mV°C/cell)

## TERMINAL TORQUE SPECS

M5TAS	M6	M8	M10	M6M (Stud)	M8M (Stud)	M10M (Stud) & 3/8" Stud	FR45	TP06 (AP)	TP08/TP68 (AP)	AP
1.67-2.5ft-lbs	3.3-4.8ft-lbs	5.2-6.7ft-lbs	8.1-10.3ft-lbs	2.6-3.7ft-lbs	4.4-5.9ft-lbs	7.4-8.8ft-lbs	4.8-6.3ft-lbs	2.6-3.3ft-lbs	4.6-6.3ft-lbs	4.2-5.8ft-lbs
20-30lbs-in	40-57.5lbs-in	62-80lbs-in	97-124lbs-in	31-44lbs-in	53-71lbs-in	88.5-106lbs-in	57-75lbs-in	31-40lbs-in	55-75lbs-in	50-70lbs-in
2.26-3.39Nm	4.5-6.5Nm	7-9Nm	11-14Nm	3.5-5Nm	6-8Nm	10-12Nm	6.5-8.5Nm	3.5-4.5Nm	6.2-8.5Nm	5.6-7.9Nm



9001:2008 Quality Management System  
 14001:2004 Environmental Management System  
 18001:2007 Occupational Health & Safety Management System

DELIVERY APPROVED!  
**LAND, SEA  
 & AIR**

Fullriver batteries are sealed lead acid batteries made with Absorbed Glass Mat (AGM) technology. The electrolyte is absorbed into the fiberglass separator material rather than in a free-flowing liquid form. Fullriver batteries are non-spillable electric storage batteries. They are excepted from the requirements of DOT's hazardous materials regulations, since they adhere to the requirements of code 49 CFR Section 173.159(D) - (CLASSIFIED APPROVED: DOT, CFR, HMR49, IATA, ICAO67, IMDG27)