



firefly[®]
international
energy

OASIS[™]

POWERING THE FUTURE



OASIS MCF G31

(VRLA AGM GEL) BATTERY

Developed by scientists at Firefly Energy, Microcell Carbon Foam is a material that's revolutionizing the battery industry. Compared to lead plates, one of the main components of all lead acid batteries, carbon foam delivers longer service life, increased energy efficiency and better performance under extreme conditions. That's why we used it to create our revolutionary Firefly MCF battery.

Firefly carbon foam design resists sulfation and corrosion (two of the primary causes of failure in lead-acid batteries), while dramatically increasing the surface area within the battery, resulting in greater energy capacity, faster recharges, and deeper discharge capability.

SALIENT FEATURES

- ▶ Sealed maintenance free
- ▶ More than 3-4 times cycle life compared to flooded gel & AGM VRLA batteries at 50% DOD
- ▶ Lower cost per kWh delivered compared to premium VRLA batteries
- ▶ Unmatched ability to recover from extended storage in discharged state
- ▶ Throughput efficiency greater than 90%
- ▶ Improved high/low temperature performance
- ▶ Superior protection against corrosion and sulfation related problems
- ▶ Lowest Cost of ownership and Industry leading warranty
- ▶ Compatible with existing lead acid battery recycling infrastructure
- ▶ Outstanding long life even under partial state of charge operation

Transportation

The Firefly OASIS MCF G31™ battery is a true deep-cycle battery, engineered to withstand the rigor and abuse of deep discharge applications.

Our OASIS MCF G31 incorporates a series of design features essential to deliver the energy storage required for heavy-duty starting, creature comforts, medical devices such as CPAP, electric auxiliary power unit (APU) and lift gate applications for long durations.

Selecting the wrong type of battery will cause disappointing performance, shortened lifetime and wasted money.

Most flooded starting and traditional AGM batteries are best suited for intermittent use and not deep-cycle applications.

The Firefly OASIS MCF G31 delivers high power cycling for extended periods of time, with the ability to deliver 720 cold cranking amps.

FIREFLY OASIS heavy duty batteries are the pinnacle of AGM battery technology. Backed by up to a **4 years warranty**, FIREFLY micro carbon foam batteries are built to provide years of worry-free and maintenance-free operation.

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Partial state of charge	Ampere-hour >97% & watt hour >90%	
Cycling Efficiency		
Nominal Voltage	12V	
Maximum charge voltage	14.40V	
Maximum charge current	0.5C Amps for continuous charge	
	1C Amps can be tolerated for Sporadic sessions	
Internal resistance	3.8 mΩ	
Shelf life@25°C(77°F)	2 years	
Self- Discharge	<2% per Month	
CCA	720 Amps	

Temperature	Low	High
Operation	-20°C/-4°F	50°C/122°F
Storage	-30°C/-22°F	60°C/140°F

Weights & Dimensions	
Length	13.4 in/340 mm
Width	6.8 in/172 mm
Height	9.4 in/238 mm
Weight	74 lbs /33.5 kgs
Volume	856.5 Cu.in/13.9 liters
Construction	
Terminal configuration	3/8 "-16 UNC
Case/Cover	Poly propylene-Co polymer
Racks	Available upon request along with BEMS

Discharge Rates to 1.75V Per Cell*

Hours	Amps	Ah	Kwh
0.25	180	45	0.54
1	68	68	0.82
3	29.3	87.9	1.05
5	19.2	96	1.15
10	11	110	1.32
20	6	120	1.44

Battery Life *

DOD(%)	Cycles
30	9000-13500
50	3600-4200
65	1800-2400
80	1000-1300
100	600-800

* All above are at 25°C/77°F

International Compliance

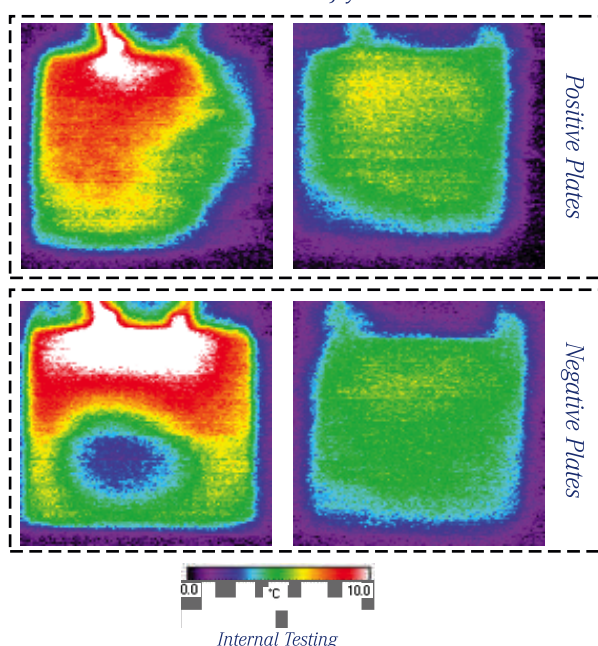
- IS 15549:2005
- ISO 9001:2015

Charge Temperature Compensation

Operating Temperature	°C	-20	25	40	55
	°F	-4	77	104	131
Absorption Charge Voltage	V	15.6	14.4	14.1	13.98

Traditional Cell

Firefly Cell



Infrared thermal images snapped at the end of a 5C (12 minute) discharge of both a Firefly 3D cell and a Traditional cell.

More uniform temperature distribution, as the Carbon Foam is thermally conductive, results in

- Uniform current density distribution.
- Higher overall active material utilization.
- Less localized positive grid corrosion.
- Less localized positive active material wear out.

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