

# Powering The Future



THE POWER OF CARBON FOAM



# G31M

(VRLA AGM GEL)

Developed by scientists at Firely Energy, Microcell Carbon Foam is a material that's revolutionizing the battery industry. Compared to lead Alloy 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 Firely MCF battery.

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

OASIS™

## SALIENT FEATURES

- ▶ Sealed maintenance free
- ▶ More than 3 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

OASIS™



The Firefly OASIS MCF G31M battery is a true deep-cycle battery, engineered to withstand the rigor and abuse of deep discharge applications.

Our OASIS MCF G31M 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 G31M delivers high power cycling for extended periods of time, with the ability to deliver 630 cold cranking amps.

FIREFLY OASIS heavy duty batteries are the pinnacle of AGM battery technology. FIREFLY micro carbon foam batteries are built to provide years of worry-free and maintenance-free operation.

# 12V G31M Battery



(VRLA AGM GEL)

Partial state of charge Cycling Efficiency	Ampere-hour >97% & watt hour >90%
Nominal Voltage	12V
Maximum Charge Voltage	14.40V
Maximum Charge Current	0.7C Amps current limit for continuous charge @ 14.40V constant voltage charging 1C Amps can be tolerated for Sporadic session
Internal Resistance	5.0 Milli ohms ( Fully charged condition)
Shelf life@25°C(77°F)	2 years
Self- Discharge	<2% per Month
CCA	630 Amps

Construction	
Terminal Configuration	3/8" - 16UNC
Case/Cover	ABS
Racks	Available Upon Request

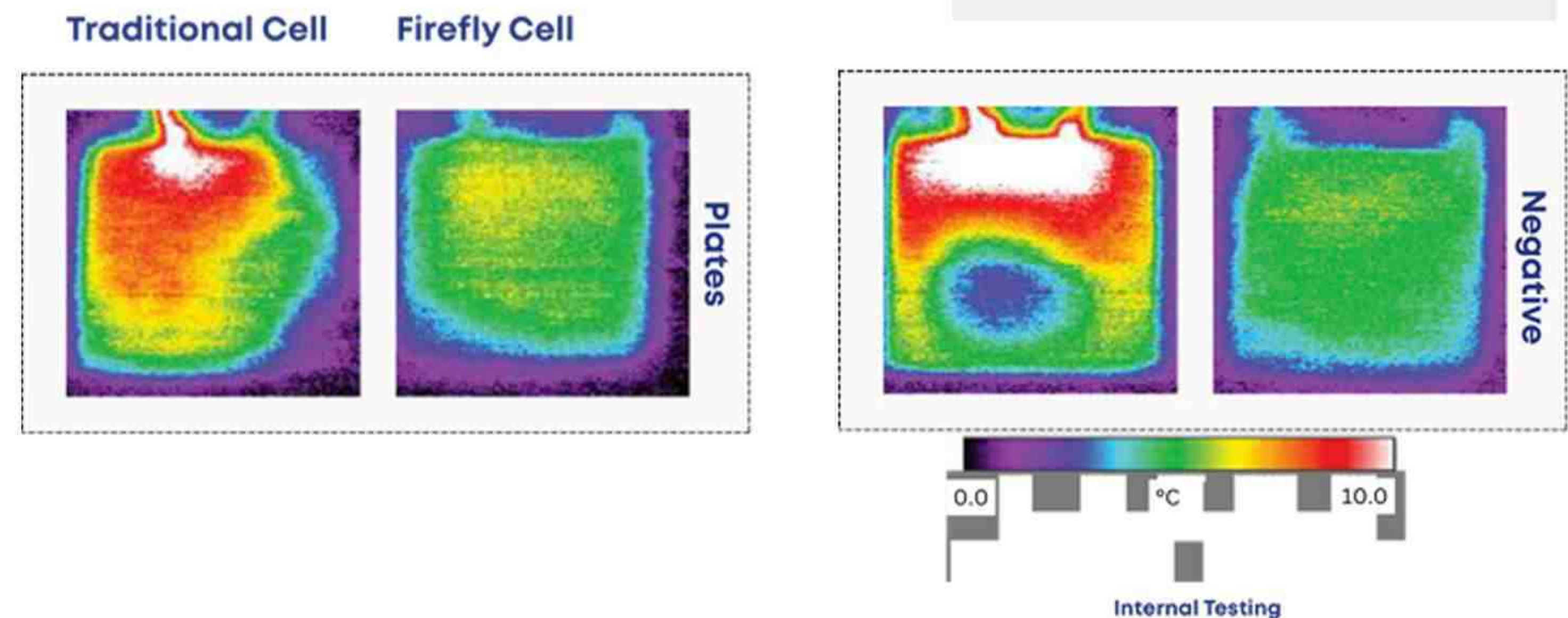
**International Compliance**

IEC 60896 -21/22 :2004  
 IEC 61427  
 IS 15549:2005  
 ISO 9001:2008  
 IEC 60095

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

Weights & Dimensions	
Length	13.0 in/330 mm
Width	6.8 in/171 mm
Height	8.6 in/218 mm
Weight	69.5 lbs /31.5 kgs
Volume	Volume 760.2 Cu.in/12.3 liters

Charge Temperature Compensation					
Operating Temperature	°C	-20	25	40	50
	°F	-4	77	104	122
Absorption Charge Voltage	v	15.6	14.4	14.1	13.9



Infrared thermal images snapped at the end of a 5C 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.