



OorjaPac™ Model III



Return On Investment Less Than 24 Months!

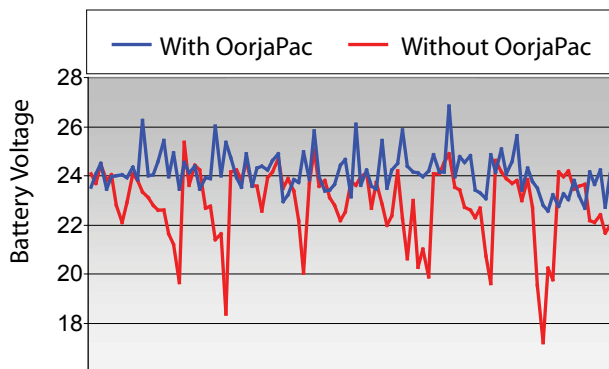
The OorjaPac Model III is a liquid fuel cell that operates as an on-board battery charger for a wide variety of Class 3 vehicles in the material handling industry. The OorjaPac keeps the vehicle's battery at a constant state of charge eliminating the need for battery swapping and rapid charging. Refueling infrastructure is inexpensive and safe because the fuel is a common industrial liquid, methanol. The OorjaPac provides full grid independence and reduces CO2 emissions by 30 to 66%.

IMPROVES PRODUCTIVITY

Refueling the OorjaPac takes less than one minute and supplies enough power to run the vehicle 12 to 16 hours. This power system keeps the vehicle charged and productive throughout the entire shift. It eliminates the downtime of swapping heavy batteries or driving to the battery room for charging.

INCREASES PERFORMANCE

The OorjaPac increases the performance of the vehicle and the lifetime of the battery by continuously monitoring the battery and maintaining its state-of-charge (SOC). The chart below shows two 24V batteries on class 3 vehicles; one using the OorjaPac and the other using conventional charging over a two-week period. Conventional charging often results in the battery dropping below a 20% state-of-charge, reducing both battery life vehicle performance. The OorjaPac keeps the battery between 30-80% SOC prolonging the life of the battery and the performance of the vehicle.



REDUCES OPERATING COSTS

The OorjaPac eliminates the need for charging equipment, extra batteries, and redundant vehicles allowing you to "right size" your fleet. Fewer batteries also mean less hazardous materials handling. Grid independence eliminates electricity costs and enables facilities to recapture battery room floor space for more productive use.

PROVIDES A CLEAN AND SAFE SOLUTION

Refueling the OorjaPac is as simple as putting gas in a car and it runs on liquid methanol, which is a widely available and produced from natural gas, landfill gases, and biomass. It is one of the most commonly used chemicals worldwide present in plastics and textiles, windshield washer fluid, and paint thinner. It's easy to handle and requires no special facilities.

Oorja Protonics is committed to providing a safe power solution for your fleet. The OorjaPac is CE compliant and the OorjaRig refueling station is FM certified. Both systems use components that meet or exceed NEC Class 1 Division II standards. The CE compliance ensures that the OorjaPac will not interfere with other electronics and will not be affected by conducted emissions. FM approval meets both National and State fire and explosion safety requirements.



OorjaPac™ Model III

OPERATING CONDITIONS

OorjaPac operates in both indoor and outdoor conditions with temperatures ranging from -20°C to 45°C. It is designed to fit on existing vehicles with minor modifications, and it operates in a wide variety of taxing industrial environments and can tolerate freezers, dust, rain and airborne particulates.

TECHNICAL HIGHLIGHTS

POWER

Energy Output:	20 KWH/day
Output Voltage:	24V/36V/48V
Idle to Peak Power:	Less than 10 Minutes
Refueling Time:	Less than 1 Minute
Fuel Tank Capacity:	12 liters lasts approx 12-16 hrs

PHYSICAL

Dimensions:	30.5" x 12.75" x 13.5"
Weight:	170 lbs (79 Kg)
Operating Temperature:	-20°C to 45°C
Internal Pressure	Less than 2 psi

ERGONOMICS

Ease-of-use	Push button operation, automatic equalization
Handling	No lifting required for standard operation
Refueling Connections	Self-sealing quick connectors

EMISSIONS

CO2	30-66% less emissions than charging from the grid depending the source of the methanol
NOx, SOx and particulates	None
Sulfuric Acid Vapors	None

ADDITIONAL INFORMATION

The OorjaPac is CE compliant
The OorjaRig refueling station is FM approved
NEC Class 1 Division 2 approved

AWARDS

Modern Material Handling - Products of the year 2009
Frost and Sullivan - Product of the Year 2009
Always ON Going Green - Top 100 Green Company of 2008 and 2009

About Oorja Protonics

Founded in 2005, Oorja Protonics is the leader in providing reliable and economical liquid fuel cells for the material handling industry. By leveraging its breakthrough technologies, Oorja manufactures the most efficient and powerful portable liquid fuel cells that significantly reduce operating costs and green house gas emissions.



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