Specifications

Motors
4 x 750Nm 1800rpm high efficiency Brushless permanent magnet sine wave Hi-Pa drive™ 24 phase water-cooled

Drive electronics
4 x 480Amp 450V Hi-Pa drive™ 24 phase sine wave inverter IGBT water cooled
CAN bus communications

Battery
300V nominal 70Amp Hour Lithium Polymer 700Amp peak

Battery Management system
Active cell balancing, temperature and voltage monitoring
CAN bus communications

Ultra Capacitor
350V 11 Farad 700Amp limited

Energy re–circulator
1400Amp continuous IGBT water cooled
CAN bus communications

Generator

Engine	250cc 2 cylinder 4 stroke gasoline 15kW at 7000rpm
Generator	20kW continuous at 250V 80Amp
Controller	350V 80Amp water-cooled CAN bus communications

Display
Touch screen high resolution LCD with steering wheel and 4 area screen menu indexing
Displays battery, ultra cap, fuel status, mileage calculator, boost display and options for GPRS link to allow remote diagnostics and tracking
Diagnostic and configuration menus
CAN bus communications

Software and safety features
Anti-skid
Dynamically monitors wheel to detect skid onset. Manages state to obtain maximum non-skid torque from wheel in either acceleration or braking modes.

Traction control
Dynamically distributes torque when any wheel is in skid management mode to obtain optimum tractive effort and stability.

Steering sensor
Optional addition to provide feed forward input to traction control system. Allows driver intent and wheel alignment to influence vehicle stability and tractive effort functions.

Vehicle attitude, yaw and gyroscopic sensors
Optional addition to provide further stability inputs to traction control system. Allows vehicle orientation and direction (if different from steering wheel implied direction) to be accounted for in determining optimum tractive effort distribution.

Differential/torque share functions
Standard feature incorporated within each wheel to allow optimum speed and torque share when cornering. Minimises tyre scrub and power wasted energy.

Efficiency optimisation
Dynamic management of power delivery to wheel ensures best use of available power. Accounts for motor related efficiency variations across speed and torque ranges.

Key safety items
Dual circuit power distribution
Dual circuit brake and accelerator systems ensure 100% redundancy
Hi-Pa™ drive ensures multi level redundancy in critical power systems
Dual wheel sensors
Dual CAN bus systems
Temperature monitors of all drive electronics, motor windings, battery cells and ultra capacitors. All temperature monitors fitted with fold-back control function.
Software and hardware over voltage and over current monitors
CAN watchdog
Processor watchdogs

PML is also active or involved in Wind turbine generators and controls; Marine and underwater motors and drives; robotics; winches and hoists; very large diameter motors and drives (i.e. 2m to 22m diameter); other integrated motor and electronics systems for various wheeled applications including lightweight plastic wheels; joysticks and sensors.

(Much of the data above is predicted and is dependent upon the terrain, weather conditions, driving style etc. PML has used its best endeavours to present accurate information, but accepts no liability for any errors and/or omissions). E&OE