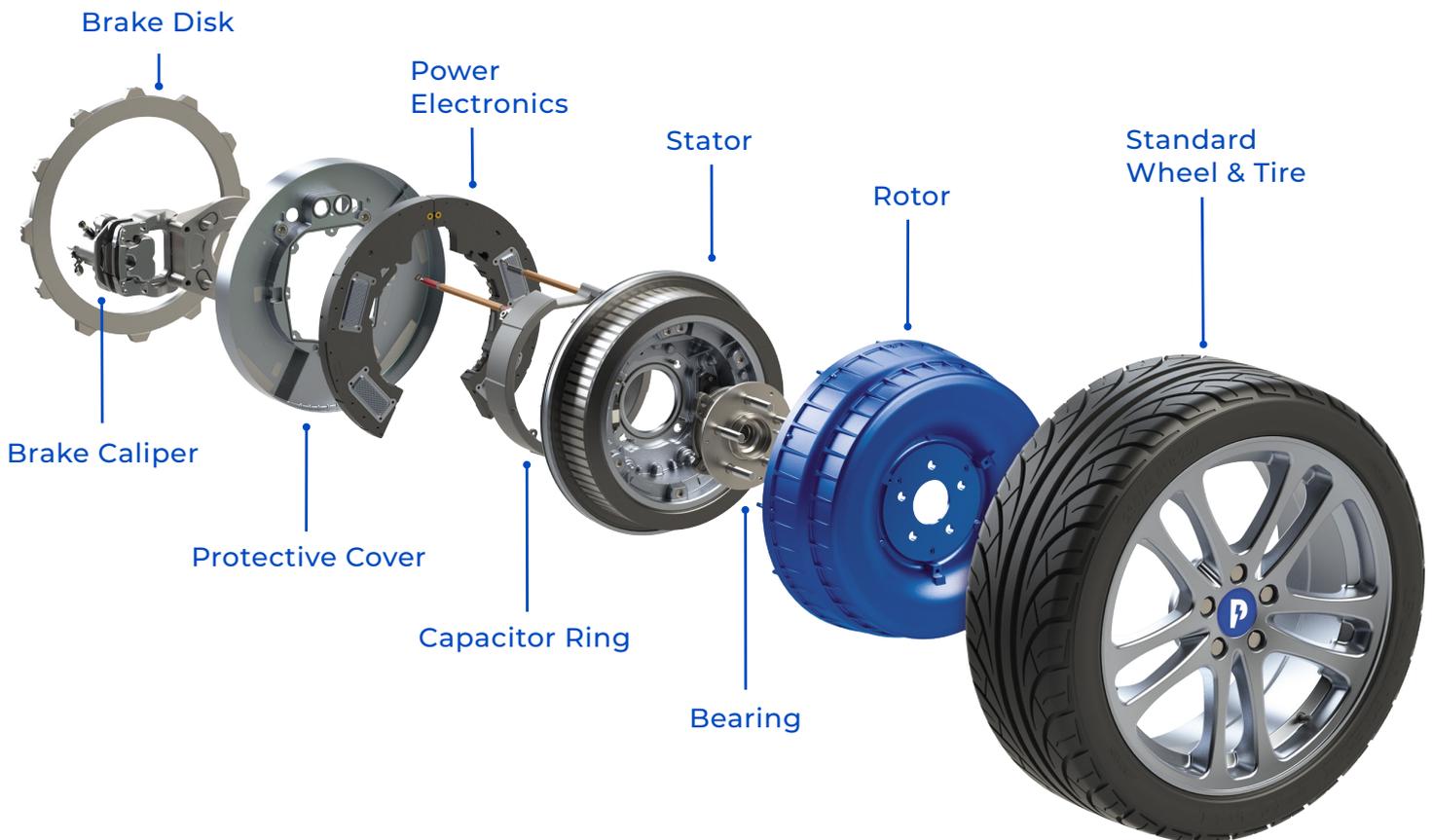


Protean Electric is an automotive technology firm. Our ProteanDrive in-wheel motors have integrated power electronics and digital control, packaged with a compatible friction brake. All made using patented technologies to withstand a 300,000km vehicle lifetime, including water and dirt ingress, shock and vibration, pot-holes and kerb strike.



Features:

- Packaged into an 18" wheel rim
- Torque demand control over CAN bus
- High torque direct drive (no gearing) for optimal efficiency
- Permanent magnet synchronous machine with outer rotor
- Integrated power and control electronics with distributed architecture
- Integrated friction brake
- Integrated wheel bearing
- Development in accordance with the ISO26262 Functional Safety Standard
- Design lifetime of 300,000km and 15 years with verification through bench and vehicle durability testing
- Designed to exceed, and tested in line with, major automotive manufacturers' EMC standards

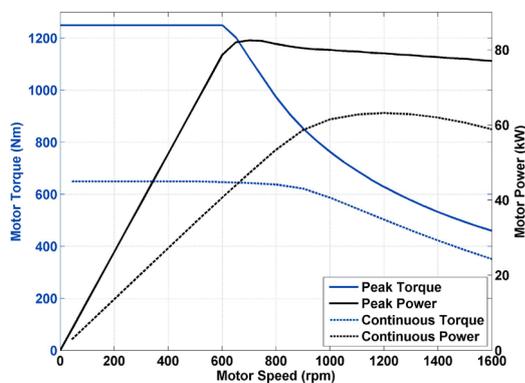
Parameters

Characteristic		Pd18	Units
Peak Output Power*	@400 Vdc	80	kW
Continuous Output Power*		60	kW
Peak Torque		1250	Nm
Continuous Torque		650	Nm
Motor Dimensions (diameter, axial depth to rear or stator, excluding cable glands)		433, 125	mm
Motor Mass (including power electronics, excluding bearing, brake and cables)		36	kg
Maximum Speed		1600	rpm
HV DC Supply Voltage Range (for full performance)		200 to 400	Vdc
Coolant Inlet Temperature Range (for full performance)		-20 to +50	°C
Cooling Fluid		50/50 Water/Glycol	
Ambient Temperature Range (for full performance)		-40 to +90	°C
Control Interface (torque demand)		CAN 2.0b	
Ingress Protection Rating		IP6K9K	
Power and Control Electronics		Integrated	
Friction Braking Solution		Integrated	

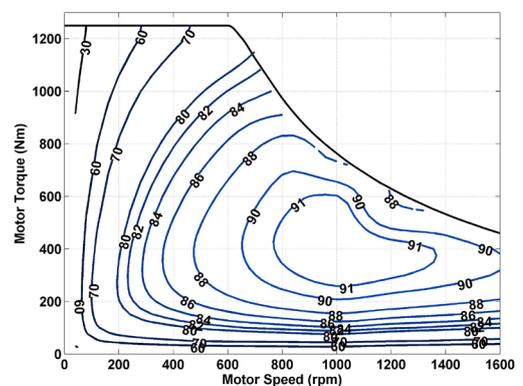
*Maximum achievable power is approximately proportional to HV DC supply voltage.

Performance at 400 Vdc with 50/50 water/glycol coolant at 50°C inlet temperature and 13 litres/minute flow:

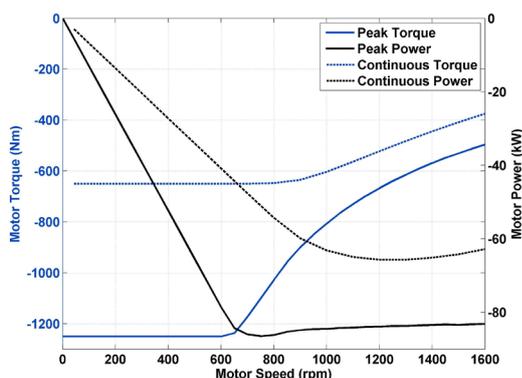
Driving Torque & Power



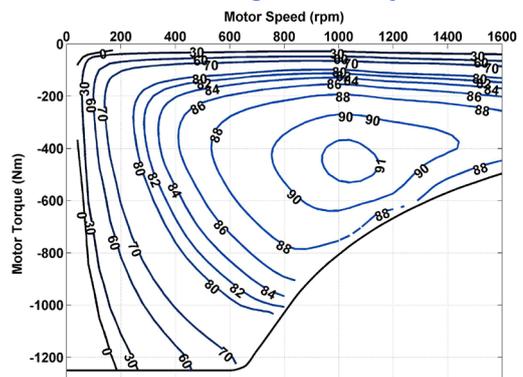
Motoring Efficiency



Braking Torque & Power



Braking Efficiency



For more information please visit our website or email enquiries@proteanelectric.com