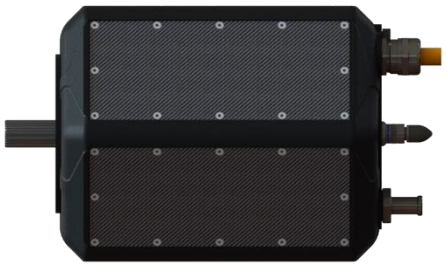
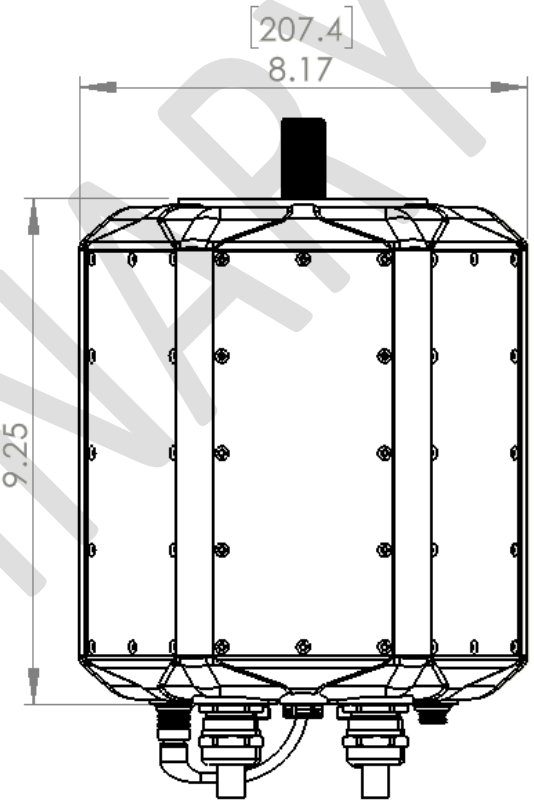
HPDM-250 Datasheet v1.1 | 11-5-2020



The HPDM-250 is a high-performance integrated motor drive for electric aircraft applications. It combines the electric motor and power electronics into a single powerful unit. If desired, H3X can design a high torque density planetary gearbox integrated into the front endcap of the HPDM-250 to meet torque-speed requirements.

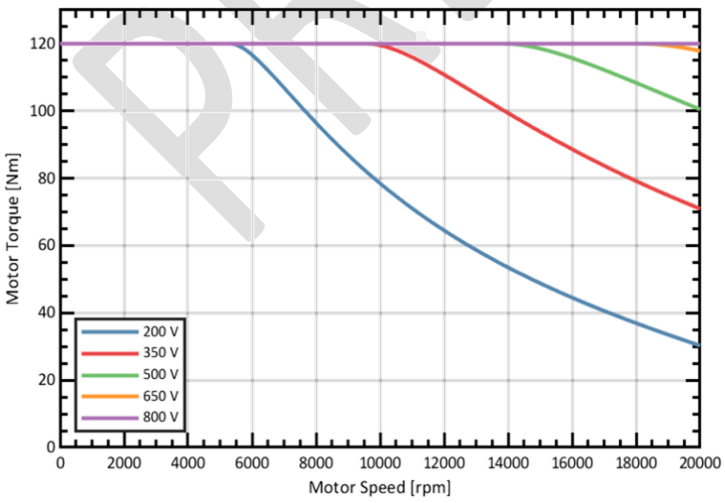
Technical Specifications		
	No planetary	With 4:1 planetary
Peak Torque	120 Nm	480 Nm
Continuous Torque	95 Nm	380 Nm
Peak Power	250 kW	
Continuous Power	200 kW	
Peak Duration	30 seconds	
Speed Range	0 – 20K RPM	0 – 5K RPM
Takeoff System Efficiency (Full Power – 250kW)	94.5%	91.7%
Cruise System Efficiency (1/3 Power – 83 kW)	95.7%	92.9%
Mass	15 kg	18 kg
Volume	6.75 L	8.25 L
Rotational Inertia	0.0015 kg-m^2	0.030 kg-m^2
Ambient Temperature	-40 – 60 °C	
Coolant Flow Rate	15 – 30 LPM	
Coolant Temperature	-40 – 60 °C	
Coolant Type	Water Ethylene Glycol (WEG)	
Cooling Tube Size	½" ID tube	
DC Bus Voltage	200 – 800 VDC	
Required DC Cables	50 mm^2 shielded HV Cable	
LV Power Input	9 – 15 VDC	
LV Mating Connector	LEMO FMN.1M.308.XLCT	
Communication Interface	CAN 2.0A/B (0.5 - 1 Mbps)	
Mounting	Front: 6x M6 threaded holes	

These specifications are estimates based on electromagnetic, thermal, and structural simulations. Data from dynamometer will be available Q2 2021.



Motor only. No planetary shown.
3D model available on website.

Torque Curves



Power Curves