

POWERPHASE® HD 220(+)

UQM PowerPhase® HD 220(+) was specifically designed for heavy-duty drive applications. Providing up to 94 percent efficiencies, this system consists of a next-generation performance liquid cooled permanent magnet motor and a high-power, liquid-cooled inverter with a full-featured digital signal processor controller. The UQM PowerPhase® HD 220(+) provides an impressive 20% performance gain over previous models.



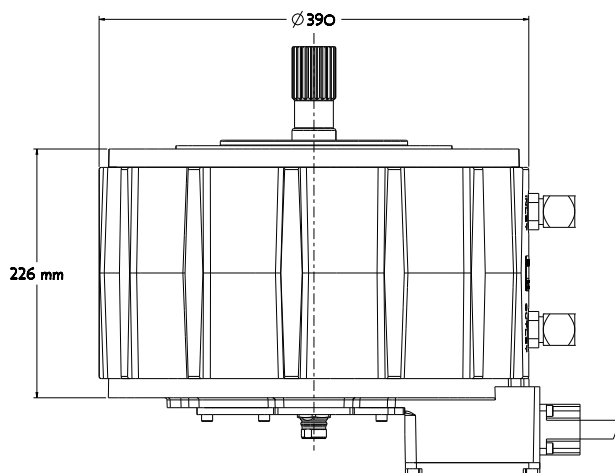
FEATURES

- EV/HEV traction drive
- Power dense, brushless permanent magnet motor
- High efficiency (94%)
- CAN bus communication
- Torque control, speed control and voltage control
- Built-in safety features
- Real time data event logging

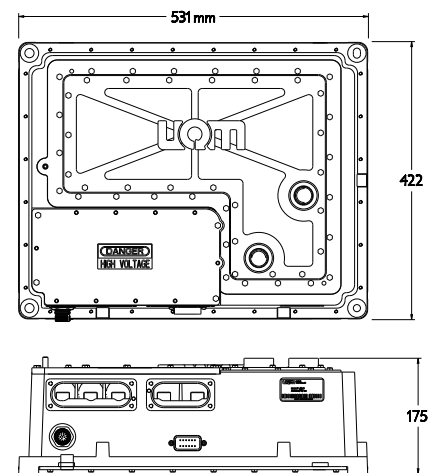
SYSTEM SPECIFICATIONS

Operating speed	0-6000 rpm
Maximum / continuous power	220 kW / 150 kW
Maximum / continuous torque	700 Nm / 440 Nm
Peak efficiency	94%
Operating voltage	250-440 VDC
Communication	CAN bus

POWERPHASE® HD 220(+) MOTOR



POWERPHASE® HD 220(+) CONTROLLER



POWERPHASE® HD 220(+)

MOTOR PERFORMANCE

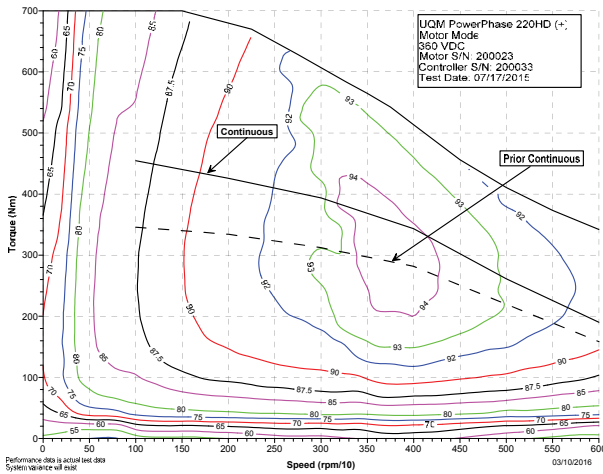
SPECIFICATIONS

Peak power	295 hp	220 kW
Continuous power [◇]	201 hp	150 kW
Peak torque	516 lbf ft	700 Nm
Continuous torque	325 lbf ft	440 Nm
Maximum efficiency	94%	
Continuous Power density	.87 hp/lb	1.5 kW/kg

DIMENSIONS

Length	8.9 in	226 mm
Diameter	15.4 in	390 mm
Weight	198 lb	90 kg

PERFORMANCE CURVE



To view additional efficiency maps, please contact us.

CONTROLLER PERFORMANCE

OPERATING VOLTAGE

Operating voltage input range	250-440 VDC
Minimum voltage	250 VDC
Nominal input voltage	360 VDC
Maximum voltage	440 VDC
DC current limitation, motoring	500 A

DIGITAL SIGNAL PROCESSOR

Nominal input voltage	12 VDC or 24 VDC
Input supply voltage range	9 to 35 VDC
Input supply current range	1 to 5 A

LIQUID COOLING SYSTEM

Minimum coolant flow	10 l/min 50/50 water/glycol
Maximum inlet temperature	140° F 60° C

INVERTER TYPE

Control type	PWM & phase advance
Power device	IGBT
Switching frequency	3 to 12 kHz
Standby power	14 W

DIMENSIONS

Length	20.9 in	531 mm
Width	16.6 in	422 mm
Height	6.9 in	175 mm
Weight	88.0 lb	40 kg

*All product photos are illustrative only, default configuration may have less items than pictured. [◇]150kW attained with 40° C or cooler coolant. 135kW attained with 60° C or cooler coolant. [^]Performance data based on testing at 360 VDC, variation will exist. **All specifications are subject to change.



UQM Technologies is a developer and manufacturer of power-dense, high-efficiency electric motors, generators and power electronic controllers for the automotive, commercial truck, bus and military markets. A major emphasis for UQM is developing products for the alternative-energy technologies sector, including propulsion systems for electric, hybrid electric, plug-in hybrid electric and fuel cell electric vehicles.

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