



Motors & Generators

Apex Drive Laboratories, Inc.



APEX PM Brushless Motor

Model Number	DD14	DD25	DD31w	DDS ² (dual motor system)
Application	Electric vehicle	Electric Vehicle	Electric Vehicle	Electric Vehicle
Cooling type	Passive air	Passive air	Liquid	Passive air
Cont. power	14.3 kW 19.2 hp	25 kW 33.5 hp	31.3 kW	28.6 kW 38.4 hp
Torque density	3.2 Nm / kg	3.4 Nm / kg	4.2 Nm / kg	3.2 Nm / kg
Power density	630 W / kg	675 W / kg	1263 W / kg	630 W / kg
Outer diameter	284 mm 11.2 in	340 mm 13.4 in	340 mm 13.4 in	284 mm 11.2 in
Length	130 mm 5.2 in	156 mm 6.14 in	156 mm 6.14 in	260 mm 10.2 in
Weight	22.7 kg 50 lbs	37 kg 81.5 lbs	38 kg 84 lbs	45.4 kg 100 lbs
Battery voltage	72-290 V, DC	72-290 V, DC	240-450 V, DC	72-290 V, DC
Cont. torque	72 Nm 53 ft-lbs	126 Nm 93 ft-lbs	158 Nm 117 ft-lbs	144 Nm 106 ft-lbs
Peak power	21 kW 28.2 hp	37 kW 49.6 hp	46 kW 61.7 hp	42 kW 56.3 hp
Peak torque	264 Nm 195 ft-lbs	461 Nm 340 ft-lbs	576 Nm 425 ft-lbs	528 Nm 389 ft-lbs
Peak efficiency	90+%** (NO gearbox loss)	90+%** (NO gearbox loss)	90+%** (NO gearbox loss)	90+%** (NO gearbox loss)

APEX PM Generator

Model Number	GDD50	GDD100	GDD200
Application	Tidal Generator	Wind Generator	Wave Generator
Cooling type	Ambient water	Passive air	Passive air
Cont. power	50 kW 67.0 hp	100 kW 134.1 hp	200 kW 268.2 hp
Torque density	13.3 Nm / kg	15.9 Nm / kg	17.1 Nm / kg
Power density	55.7 W / kg	77.0 W / kg	82.9 W / kg
Outer diameter	1.0 m 39.4 in	1.7 m 68.4 in	2.2 m 86.6 in
Length	457 mm 18.0 in	229 mm 9.0 in	254 mm 10.0 in
Weight	897 kg 1,977 lbs	1,298 kg 2,861 lbs	2,412 kg 5,317 lbs
Rated RPM	40	50	50
Cont. torque	11,937 Nm 8,804 ft-lbs	20,625 Nm 15,211 ft-lbs	41,250 Nm 30,422 ft-lbs
Peak power	100 kW 28.2 hp	200 kW 268.2 hp	400 kW 536.4 hp
Peak torque	23,874 Nm 17,607 ft-lbs	41,250 Nm 5,317 ft-lbs	82,500 Nm 10,634 ft-lbs
Peak efficiency	90+%** (NO gearbox loss)	90+%** (NO gearbox loss)	90+%** (NO gearbox loss)

**** Apex drive trains do not require a gearbox, therefore typical transmission losses of an additional 8-12% are avoided.**