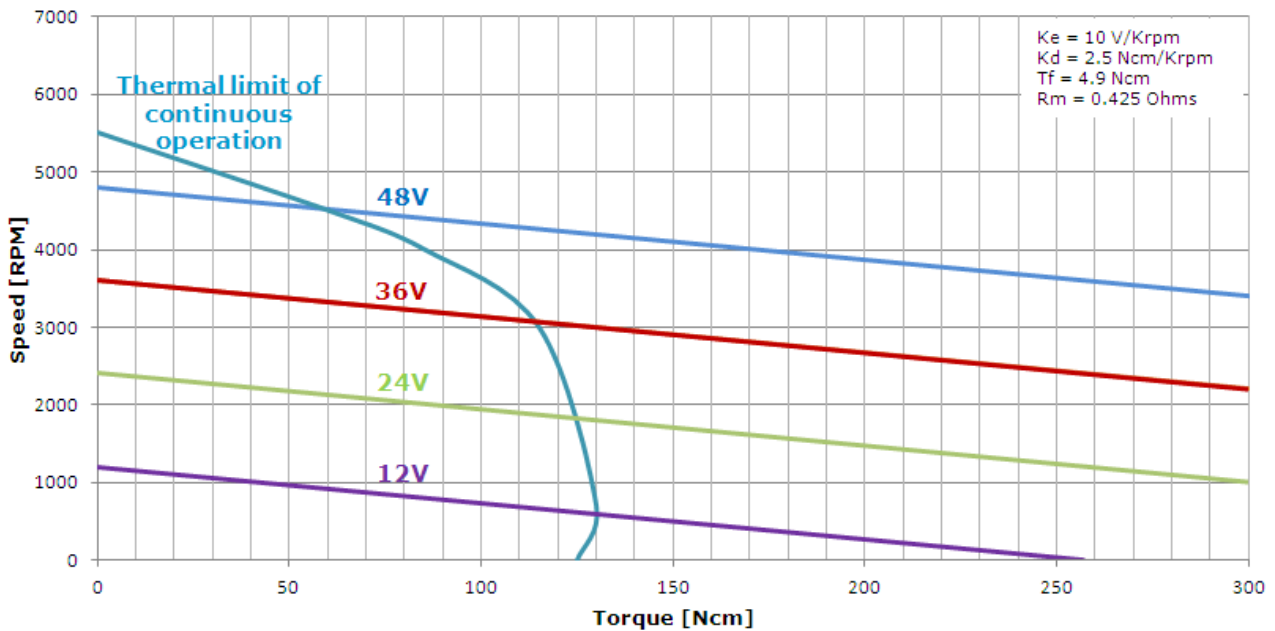
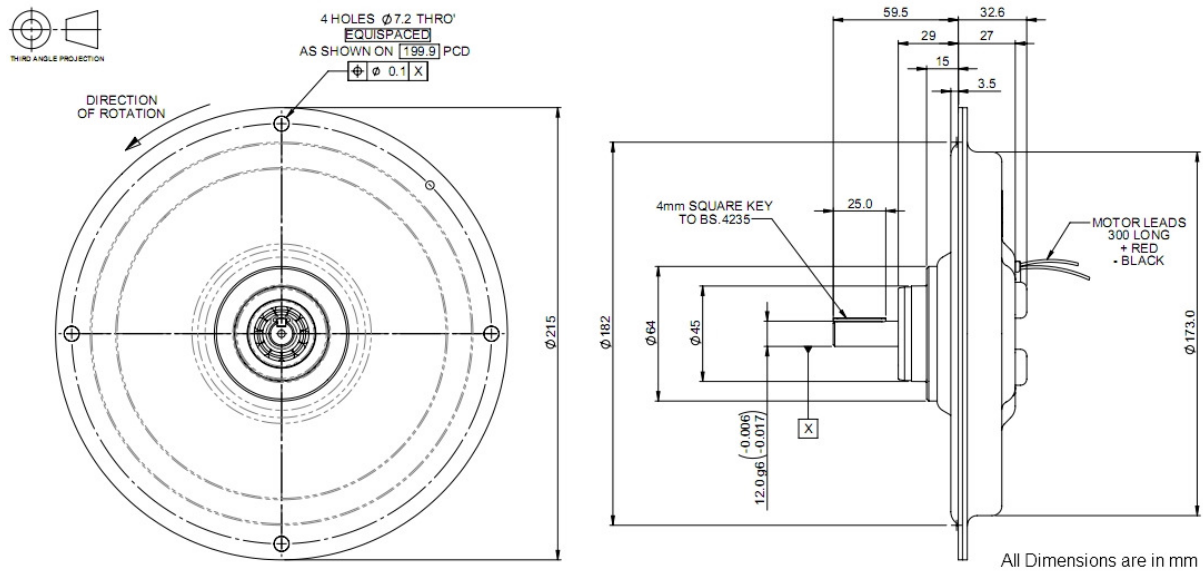
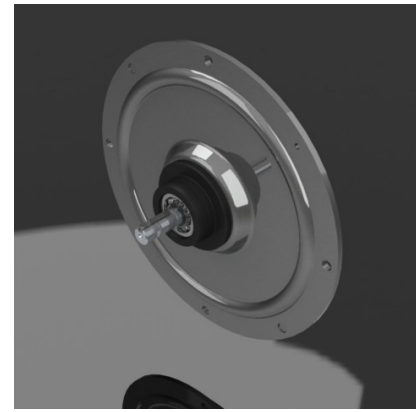


# GPN16LR

The Printed Motor Works GPN16LR is a totally enclosed dc motor in an ultra slim pancake profile. This pancake motor can provide a cost effective servo capability either direct drive or combined with a timing pulley/gearbox.

## Features & Benefits

- Ultra slim profile
- Minimum torque ripple
- Very low inertia
- High peak torques
- Zero cogging
- Ultra slow/creep capability
- Low inductance
- EMC compatible



NOTE: The above voltages are examples, not a predefined maximum or minimum. Due to ongoing product improvements data is subject to change without notice.

**Applications:** Servo mechanisms, motion control, industrial robots, CNC machining, printing machinery, logistics solutions, medical mobility, medical scanners, flight simulators, marine autopilots and high ambient temperature ventilation.

**Markets:** Industrial automation, automotive, medical, life sciences, aerospace, printing, logistics, instrumentation, test and measurement, oil & gas and offshore marine.

### Design Modifications

- Encoders
- Timing pulleys
- Long leads
- Tri-rated cable
- Open/kit option
- Customised shafts
- EMC suppression
- Connectors
- Rated for operation in 150°C ambient
- Mounting customisation

Performance Specifications	Symbol	Units	GPN16LR
Peak Torque	T <sub>p</sub>	N-cm (oz-in)	1000 (1416)
Rated Speed	N	RPM	3000
Rated Continuous Torque @ 25°C	T <sub>25</sub>	N-cm (oz-in)	130 (184.1)
Rated Power Output	P	Watts	324
Maximum Recommended Speed	N <sub>max</sub>	RPM	6000
Continuous Stall Torque	T <sub>s</sub>	N-cm (oz-in)	71.9 (101.8)
Cogging Torque	T <sub>c</sub>	N-cm (oz-in)	0 (0)
Electrical Specifications			
Rated Terminal Voltage	E	Volts	36
Rated Continuous Current	I	Amps	11.7
Peak Current	I <sub>p</sub>	Amps	104.68
Continuous Stall Current	I <sub>s</sub>	Amps	8.0
Winding Specifications			
Terminal Resistance ± 10%	R <sub>m</sub>	Ohms	0.425
Armature Resistance ± 10%	R <sub>a</sub>	Ohms	0.35
Back EMF Constant ± 5%	K <sub>e</sub>	V/kRPM	10
Torque Constant ± 5%	K <sub>t</sub>	N-cm/Amp (oz-in/Amp)	9.6 (13.59)
Viscous Damping Constant	K <sub>d</sub>	N-cm/KRPM (oz-in/KRPM)	2.5 (3.54)
Armature Inductance	L	µH	<0.03
Temperature Coefficient of KE	C	%/°C Rise	-0.19
Number of Commutation Bars	Z		165
Mechanical Specifications			
Moment of Inertia	J <sub>m</sub>	Kg-cm <sup>2</sup> (oz-in-sec <sup>2</sup> )	6.284 (0.089)
Average Friction Torque	T <sub>f</sub>	N-cm (oz-in)	4.9 (6.939)
Weight	W	kg (Ibs)	3.2 (7.055)
Diameter	D	mm (In)	215 (8.465)
Length	LG	mm (In)	32.6 (1.283)
Permitted Radial Load		Kg (Ibs)	6 (13.23)
Permitted Axial Load		Kg (Ibs)	6 (13.23)
Figure of Merit			
Mechanical Time Constant	T <sub>m</sub>	ms	29.1
Electrical Time Constant	T <sub>e</sub>	ms	<0.23
Thermal Specifications			
Thermal Resistance at Rated Speed	RAAR	°C/Watt	1.25
Thermal Resistance at Stall	RAAS	°C/Watt	1.7