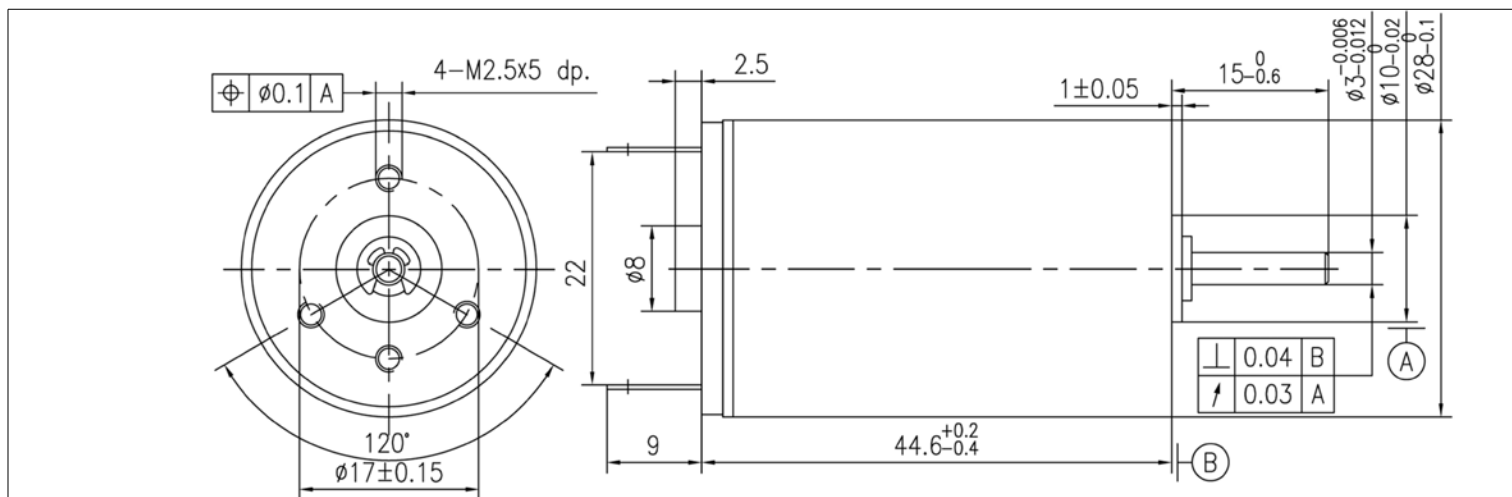


Coreless DC Motor - 28 mm Ø

C28P12SD000 21.3 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	12.0 Volts	12.0 Volts	12.0 Volts
No-Load Speed	6,020 rpm	6,020 rpm	6,020 rpm
Stall Torque	136.0 mNm	1,387.0 gcm	19.3 oz-in
No-Load Current	0.040 Amps	0.040 Amps	0.040 Amps
Peak Output Power	21.3 Watts	21.3 Watts	21.3 Watts
Torque Constant	18.93 mNm/A	193.02 gcm/A	2.68 oz-in/A
Terminal Resistance	1.67 Ohms	1.67 Ohms	1.67 Ohms
Back-EMF Constant	1.98 V/krpm	1.98 V/krpm	1.98 V/krpm
Mechanical Time Constant	5.2 msec	5.2 msec	5.2 msec
Rotor Inertia	11.20 kgm ² x10 ⁻⁷	11.20 gm cm ²	1.59 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	5.2 msec	5.2 msec	5.2 msec
Slope of Speed/Torque Curve	44.3 rpm/mNm	4.3 rpm/gcm	312.5 rpm/oz-in
Speed Constant	504 rpm/Volt	86 %	86 %
Motor Constant	14.65 mNm/√Watt	149.37 gcm/√Watt	2.07 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 5,564 rpm	6.0 Watts	6.0 Watts	6.0 Watts
Rated Torque @ 5,564 rpm	10.3 mNm	105.0 gcm	1.5 oz-in
Rated Current @ 5,564 rpm	0.481 Amps	0.481 Amps	0.481 Amps

Part Number: How to Order C28P12SD000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	5.5 N	Radial Play	0.020 mm	Max Temperature	65 °C
Radial Load Distance	4 mm	Thrust Play	0.150 mm	Min Temperature	-20 °C
Axial Load	5.50 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	124 grams
Gearbox Options	P32 & P35 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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Commutation Type:

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Manufactured under a
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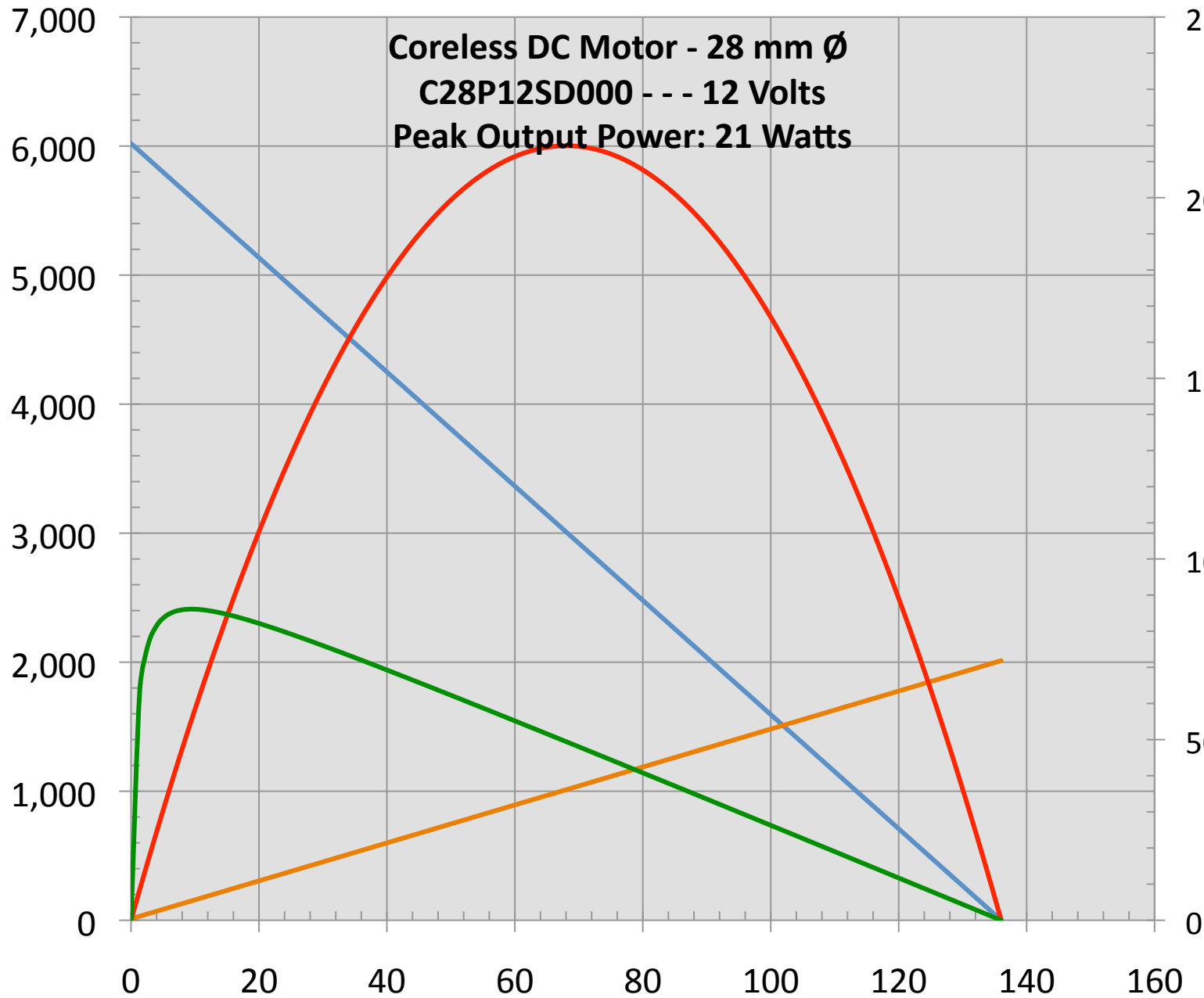
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 28 mm Ø
C28P12SD000 - - - 12 Volts
Peak Output Power: 21 Watts**

250 C28P12SD000
Voltage: 12 Volts
 No Load Speed: 6020 rpm
 No Load Current: 0.04 Amps
 Terminal Resistance: 1.67 Ohms
 Stall Torque: 136.02 mNm
200 Torque Constant: 18.93 mNm/A
 Peak Output Power: 21.4 Watts
 Peak Efficiency: 86.1%
 Stall Current: 7.19 Amps

Speed - rpm



150
 A - Speed - rpm
 A - Current - Amps / 10
 A - Power Out - Watts / 10
 A - Efficiency - %

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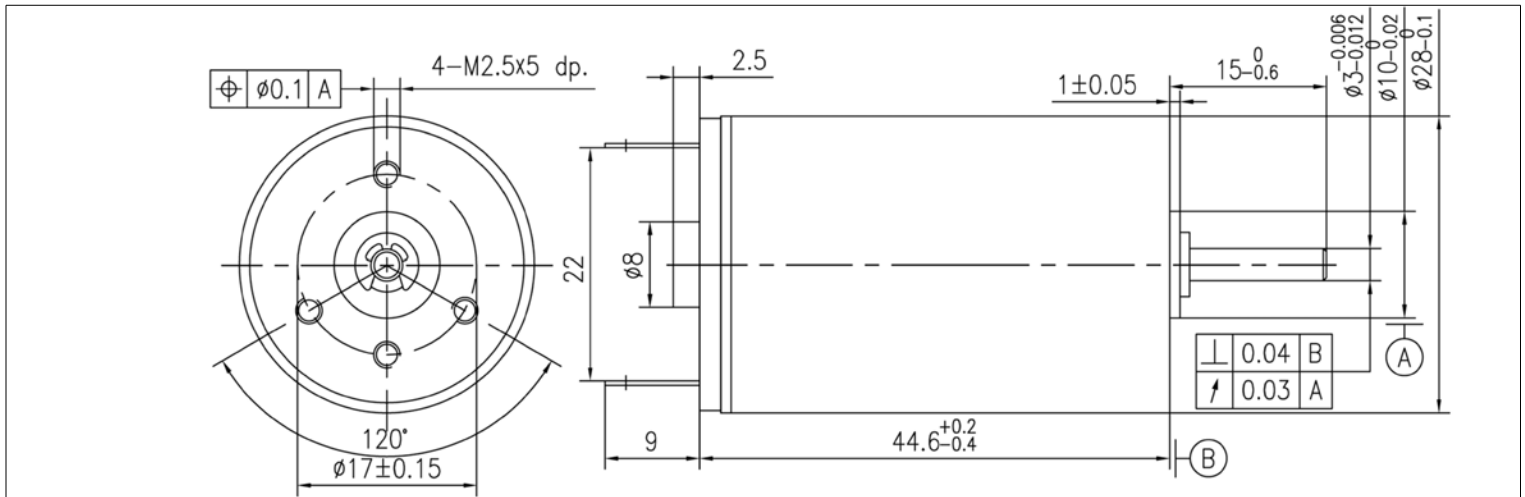
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 28 mm Ø

C28P18SD000 19.5 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	18.0 Volts	18.0 Volts	18.0 Volts
No-Load Speed	6,040 rpm	6,040 rpm	6,040 rpm
Stall Torque	123.8 mNm	1,262.0 gcm	17.5 oz-in
No-Load Current	0.020 Amps	0.020 Amps	0.020 Amps
Peak Output Power	19.5 Watts	19.5 Watts	19.5 Watts

Torque Constant	28.33 mNm/A	288.86 gcm/A	4.01 oz-in/A
Terminal Resistance	4.12 Ohms	4.12 Ohms	4.12 Ohms
Back-EMF Constant	2.97 V/krpm	2.97 V/krpm	2.97 V/krpm
Mechanical Time Constant	9.4 msec	9.4 msec	9.4 msec
Rotor Inertia	18.40 kgm ² x10 ⁻⁷	18.40 gm cm ²	2.61 x10 ⁻⁴ oz-in-sec ²

Mechanical Time Constant	9.4 msec	9.4 msec	9.4 msec
Slope of Speed/Torque Curve	48.8 rpm/mNm	4.8 rpm/gcm	344.6 rpm/oz-in
Speed Constant	337 rpm/Volt	87 %	87 %
Motor Constant	13.96 mNm/√Watt	142.31 gcm/√Watt	1.98 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal

Rated Power @ 5,284 rpm	8.6 Watts	8.6 Watts	8.6 Watts
Rated Torque @ 5,284 rpm	15.5 mNm	158.1 gcm	2.2 oz-in
Rated Current @ 5,284 rpm	0.547 Amps	0.547 Amps	0.547 Amps

Part Number: How to Order C28P18SD000 Ratings are at 25°C Ambient Temperature.

Radial Load Rating	5.5 N	Radial Play	0.020 mm	Max Temperature	65 °C
Radial Load Distance	4 mm	Thrust Play	0.150 mm	Min Temperature	-20 °C
Axial Load	5.50 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	124 grams
Gearbox Options	P32 & P35 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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Commutation Type:

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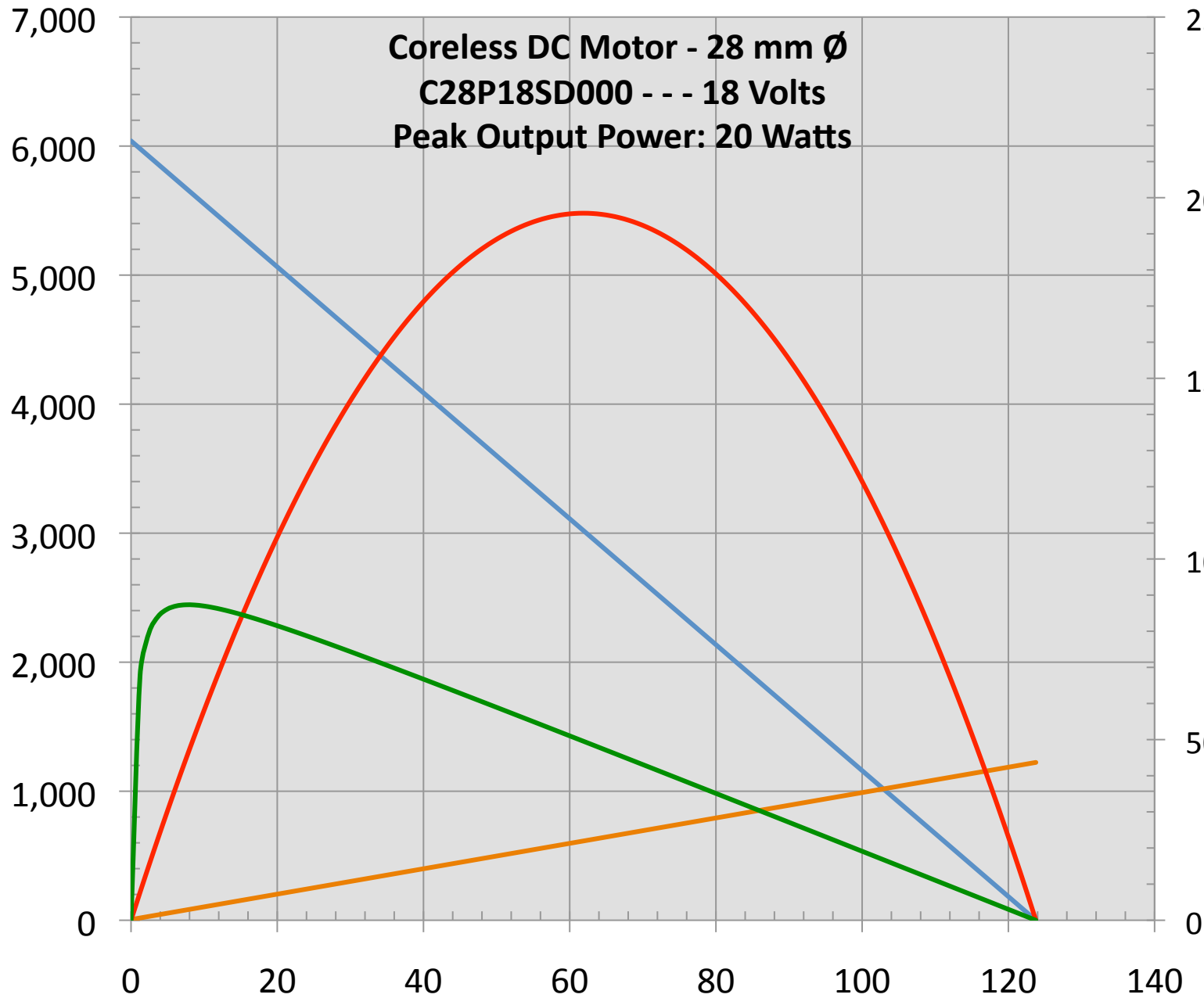
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 28 mm Ø
C28P18SD000 - - - 18 Volts
Peak Output Power: 20 Watts

250 C28P18SD000
Voltage: 18 Volts
 No Load Speed: 6040 rpm
 No Load Current: 0.02 Amps
 Terminal Resistance: 4.12 Ohms
 Stall Torque: 123.76 mNm
200 Torque Constant: 28.33 mNm/A
 Peak Output Power: 19.6 Watts
 Peak Efficiency: 87.3%
 Stall Current: 4.37 Amps

Speed - rpm



250
200
150
100
50
0

— A - Speed - rpm
 — A - Current - Amps / 10
 — A - Power Out - Watts / 10
 — A - Efficiency - %

Torque - mNm

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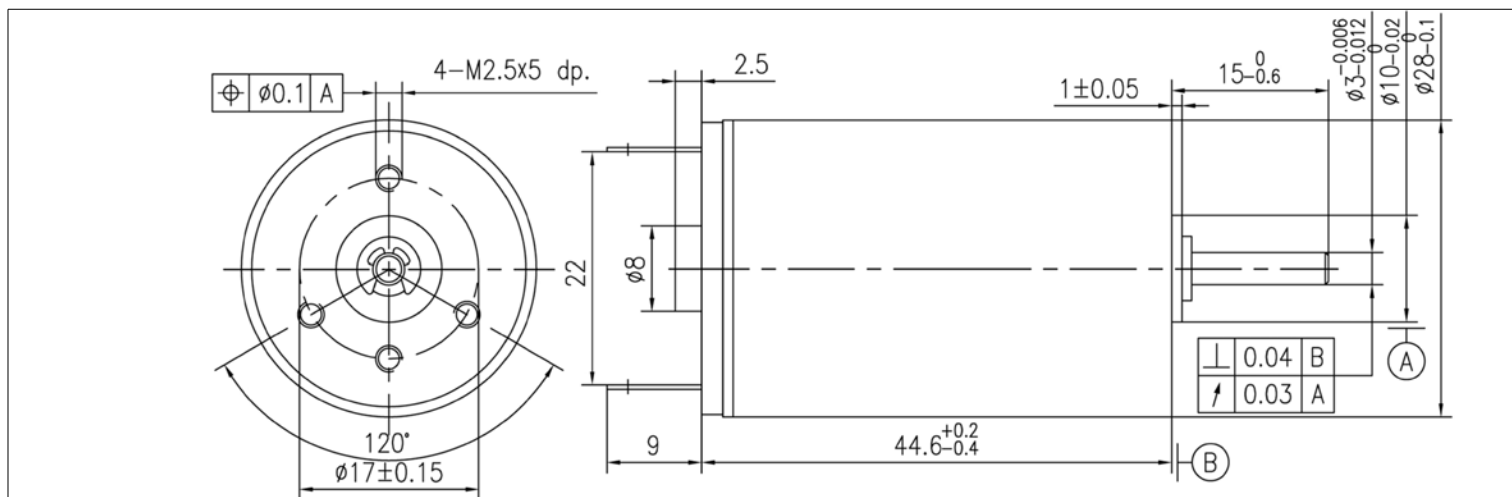
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 28 mm Ø

C28P24SD000 21.4 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	24.0 Volts	24.0 Volts	24.0 Volts
No-Load Speed	6,040 rpm	6,040 rpm	6,040 rpm
Stall Torque	135.7 mNm	1,383.5 gcm	19.2 oz-in
No-Load Current	0.017 Amps	0.017 Amps	0.017 Amps
Peak Output Power	21.4 Watts	21.4 Watts	21.4 Watts
Torque Constant	37.76 mNm/A	385.08 gcm/A	5.35 oz-in/A
Terminal Resistance	6.68 Ohms	6.68 Ohms	6.68 Ohms
Back-EMF Constant	3.95 V/krpm	3.95 V/krpm	3.95 V/krpm
Mechanical Time Constant	8.2 msec	8.2 msec	8.2 msec
Rotor Inertia	17.60 kgm ² x10 ⁻⁷	17.60 gm cm ²	2.49 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	8.2 msec	8.2 msec	8.2 msec
Slope of Speed/Torque Curve	44.5 rpm/mNm	4.4 rpm/gcm	314.4 rpm/oz-in
Speed Constant	253 rpm/Volt	87 %	87 %
Motor Constant	14.61 mNm/√Watt	148.99 gcm/√Watt	2.07 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 5,127 rpm	11.0 Watts	11.0 Watts	11.0 Watts
Rated Torque @ 5,127 rpm	20.5 mNm	209.2 gcm	2.9 oz-in
Rated Current @ 5,127 rpm	0.543 Amps	0.543 Amps	0.543 Amps

Part Number: How to Order C28P24SD000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	5.5 N	Radial Play	0.020 mm	Max Temperature	65 °C
Radial Load Distance	4 mm	Thrust Play	0.150 mm	Min Temperature	-20 °C
Axial Load	5.50 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	124 grams
Gearbox Options	P32 & P35 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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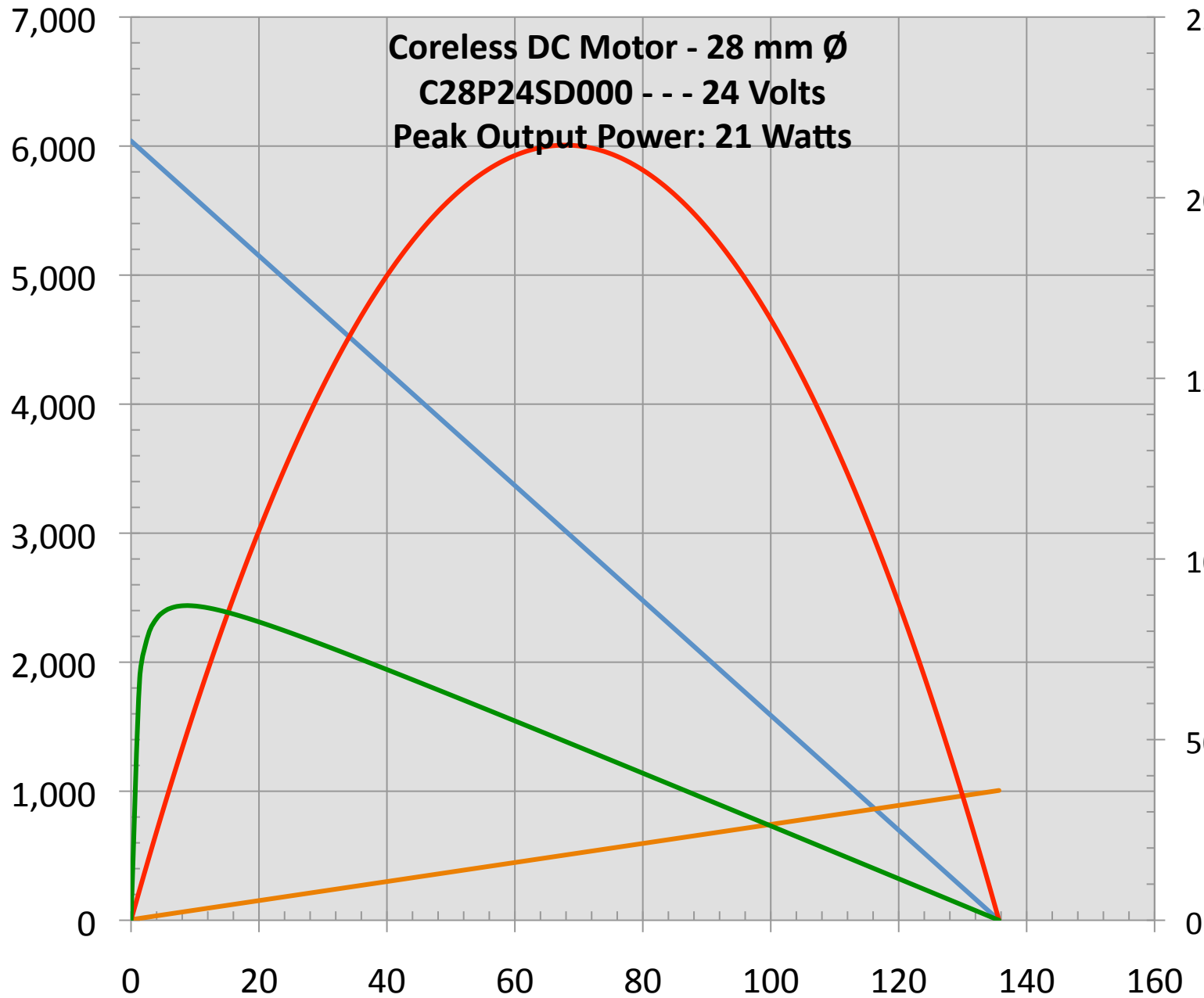
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 28 mm Ø
C28P24SD000 - - - 24 Volts
Peak Output Power: 21 Watts**

250 C28P24SD000
Voltage: 24 Volts
 No Load Speed: 6040 rpm
 No Load Current: 0.0171 Amps
 Terminal Resistance: 6.68 Ohms
 Stall Torque: 135.68 mNm
200 Torque Constant: 37.76 mNm/A
 Peak Output Power: 21.5 Watts
 Peak Efficiency: 87.1%
 Stall Current: 3.59 Amps

Speed - rpm



— A - Speed - rpm
 — A - Current - Amps / 10
 — A - Power Out - Watts / 10
 — A - Efficiency - %

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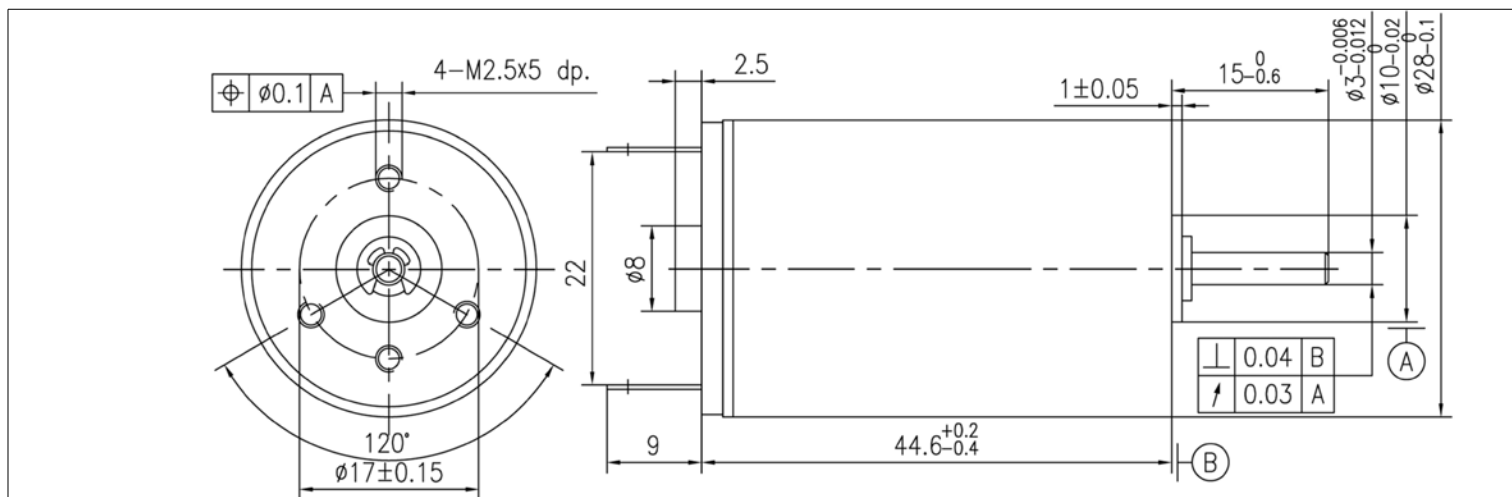
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 28 mm Ø

C28P36SD000 21.0 Watts Peak Power



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Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	36.0 Volts	36.0 Volts	36.0 Volts
No-Load Speed	5,870 rpm	5,870 rpm	5,870 rpm
Stall Torque	137.1 mNm	1,398.4 gcm	19.4 oz-in
No-Load Current	0.011 Amps	0.011 Amps	0.011 Amps
Peak Output Power	21.0 Watts	21.0 Watts	21.0 Watts
Torque Constant	58.28 mNm/A	594.33 gcm/A	8.25 oz-in/A
Terminal Resistance	15.30 Ohms	15.30 Ohms	15.30 Ohms
Back-EMF Constant	6.10 V/krpm	6.10 V/krpm	6.10 V/krpm
Mechanical Time Constant	5.9 msec	5.9 msec	5.9 msec
Rotor Inertia	13.20 kgm ² x10 ⁻⁷	13.20 gm cm ²	1.87 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	5.9 msec	5.9 msec	5.9 msec
Slope of Speed/Torque Curve	42.8 rpm/mNm	4.2 rpm/gcm	302.3 rpm/oz-in
Speed Constant	164 rpm/Volt	87 %	87 %
Motor Constant	14.90 mNm/√Watt	151.94 gcm/√Watt	2.11 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 4,962 rpm	11.0 Watts	11.0 Watts	11.0 Watts
Rated Torque @ 4,962 rpm	21.2 mNm	216.5 gcm	3.0 oz-in
Rated Current @ 4,962 rpm	0.544 Amps	0.544 Amps	0.544 Amps

Part Number: How to Order C28P36SD000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	5.5 N	Radial Play	0.020 mm	Max Temperature	65 °C
Radial Load Distance	4 mm	Thrust Play	0.150 mm	Min Temperature	-20 °C
Axial Load	5.50 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	124 grams
Gearbox Options	P32 & P35 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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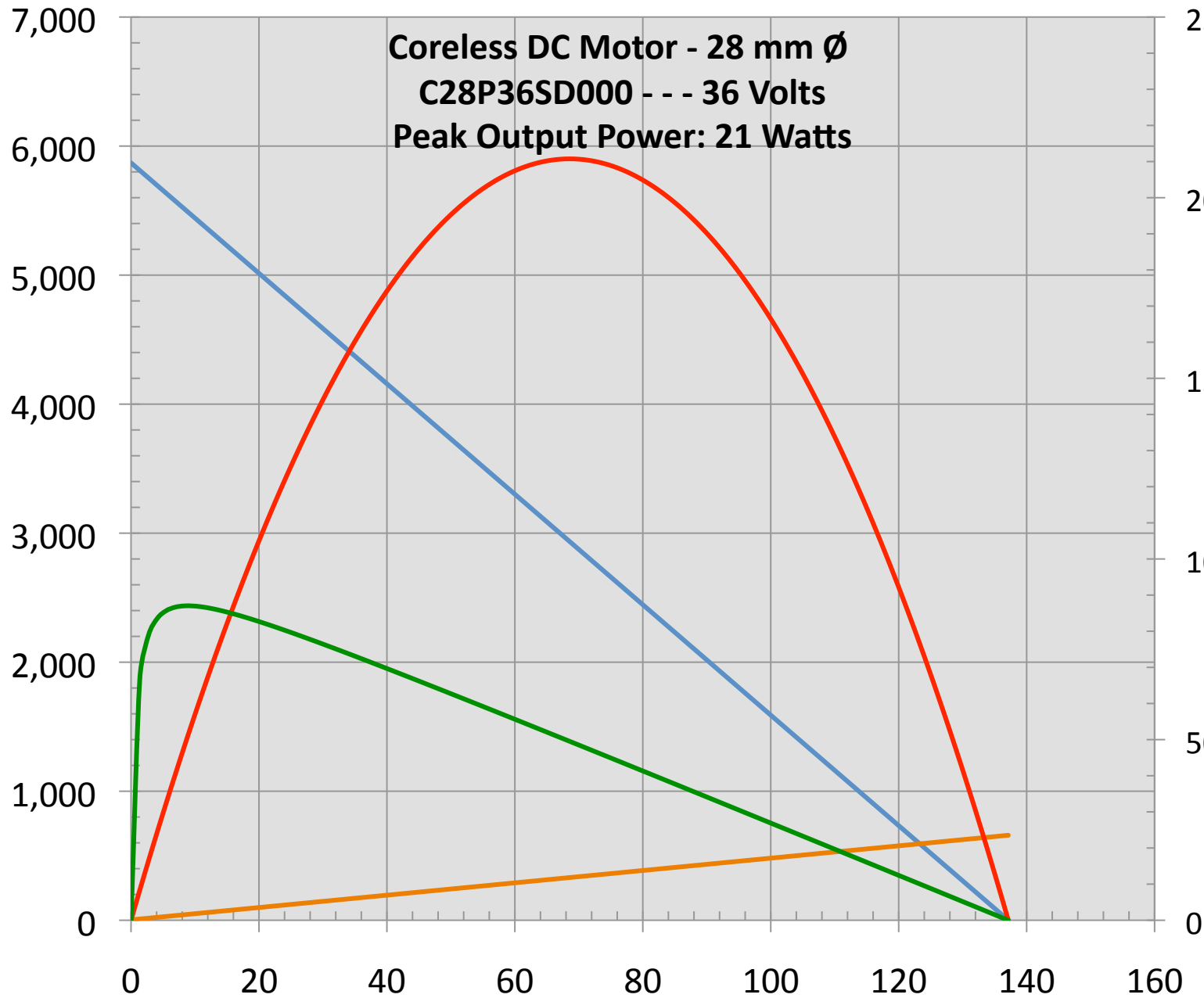
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 28 mm Ø
C28P36SD000 - - - 36 Volts
Peak Output Power: 21 Watts**

250 C28P36SD000
Voltage: 36 Volts
 No Load Speed: 5870 rpm
 No Load Current: 0.0113 Amps
 Terminal Resistance: 15.3 Ohms
 Stall Torque: 137.14 mNm
200 Torque Constant: 58.28 mNm/A
 Peak Output Power: 21.1 Watts
 Peak Efficiency: 87%
 Stall Current: 2.35 Amps

Speed - rpm



- A - Speed - rpm
- A - Current - Amps / 10
- A - Power Out - Watts / 10
- A - Efficiency - %

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