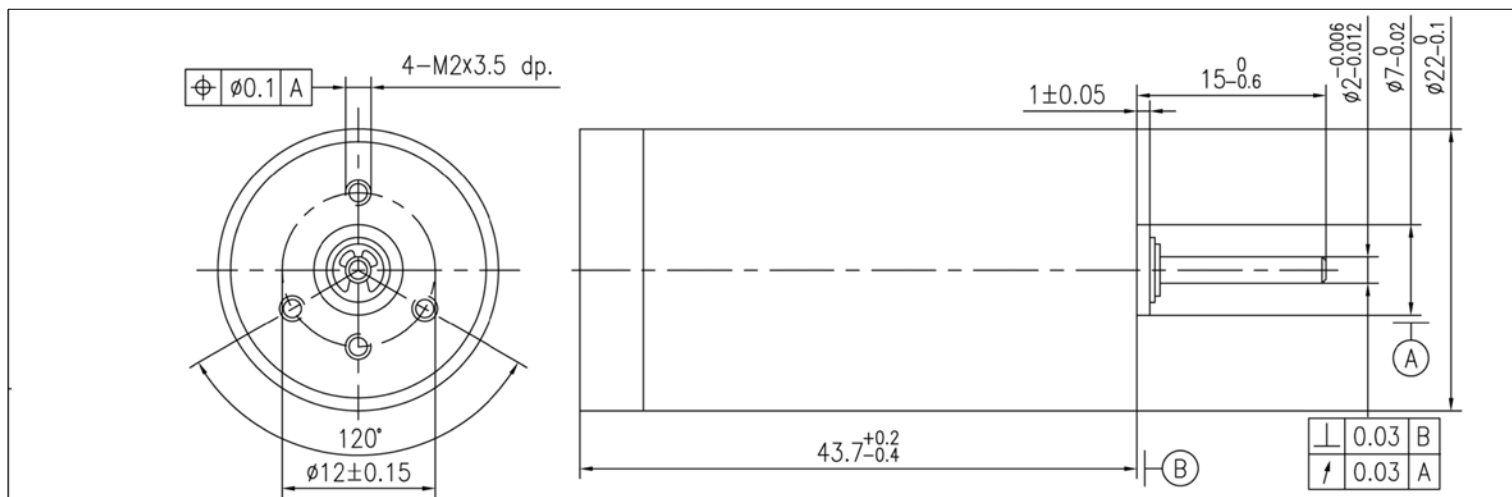


Coreless DC Motor - 22 mm Ø

C22P09SE000 15.1 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	9.0 Volts	9.0 Volts	9.0 Volts
No-Load Speed	8,040 rpm	8,040 rpm	8,040 rpm
Stall Torque	71.9 mNm	733.4 gcm	10.2 oz-in
No-Load Current	0.038 Amps	0.038 Amps	0.038 Amps
Peak Output Power	15.1 Watts	15.1 Watts	15.1 Watts
Torque Constant	10.63 mNm/A	108.39 gcm/A	1.51 oz-in/A
Terminal Resistance	1.33 Ohms	1.33 Ohms	1.33 Ohms
Back-EMF Constant	1.11 V/krpm	1.11 V/krpm	1.11 V/krpm
Mechanical Time Constant	5.4 msec	5.4 msec	5.4 msec
Rotor Inertia	4.59 kgm ² x10 ⁻⁷	4.59 gm cm ²	0.65 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	5.4 msec	5.4 msec	5.4 msec
Slope of Speed/Torque Curve	111.8 rpm/mNm	11.0 rpm/gcm	789.3 rpm/oz-in
Speed Constant	898 rpm/Volt	86 %	86 %
Motor Constant	9.22 mNm/√Watt	93.98 gcm/√Watt	1.31 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,469 rpm	4.0 Watts	4.0 Watts	4.0 Watts
Rated Torque @ 7,469 rpm	5.1 mNm	52.2 gcm	0.7 oz-in
Rated Current @ 7,469 rpm	0.481 Amps	0.481 Amps	0.481 Amps

Part Number: How to Order C22P09SE000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	2.7 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	1.00 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	70 grams
Gearbox Options	P22 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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Commutation Type:

Precious Metal

Manufactured under a
Certified ISO 9001:2008
Quality System

RoHS Compliant

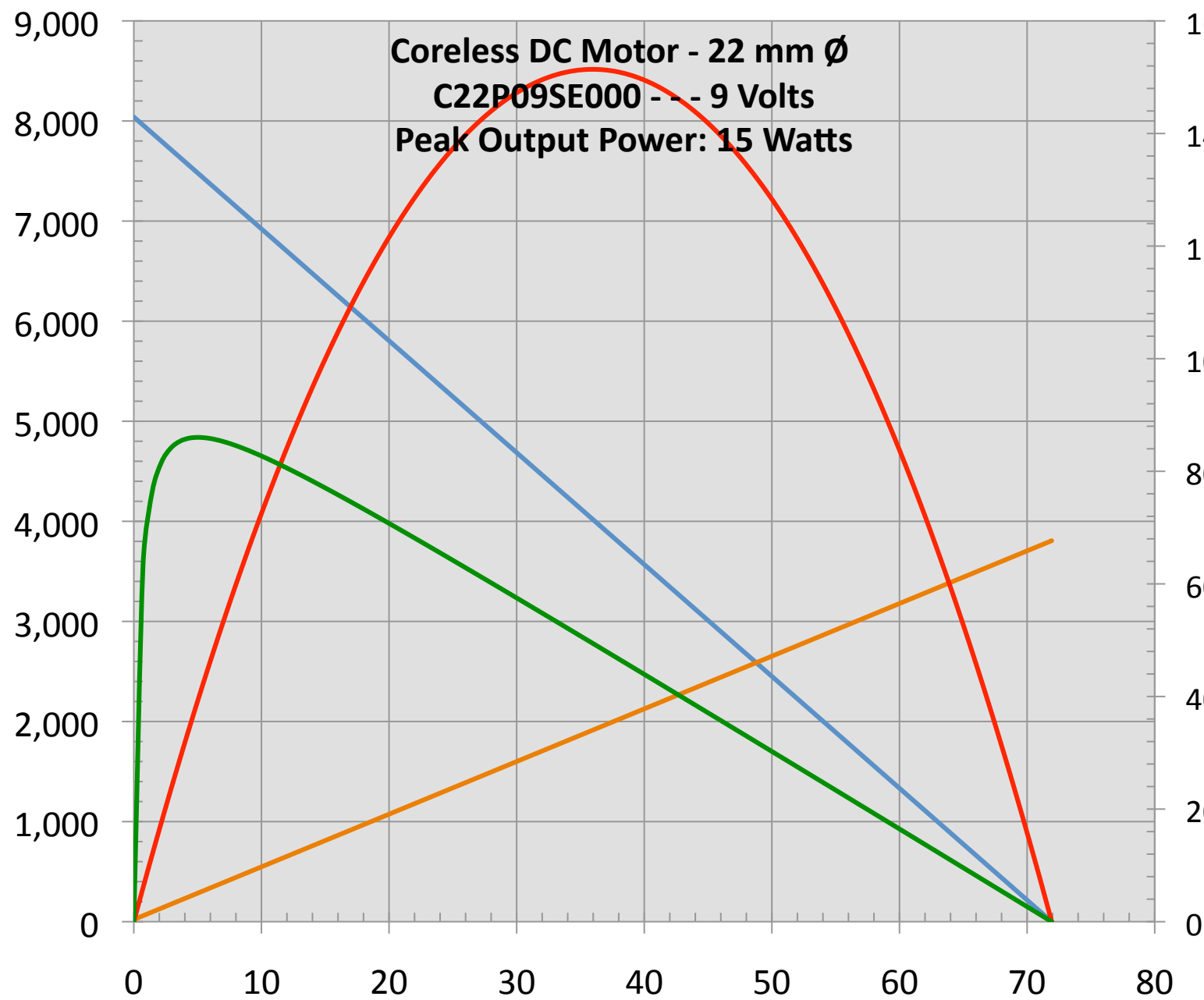
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 22 mm Ø
C22P09SE000 - - - 9 Volts
Peak Output Power: 15 Watts**

160 C22P09SE000
Voltage: 9 Volts
 No Load Speed: 8040 rpm
 No Load Current: 0.0382 Amps
 Terminal Resistance: 1.33 Ohms
 Stall Torque: 71.93 mNm
 Torque Constant: 10.63 mNm/A
 Peak Output Power: 15.1 Watts
 Peak Efficiency: 86%
 Stall Current: 6.77 Amps

Speed - rpm



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

Torque - mNm

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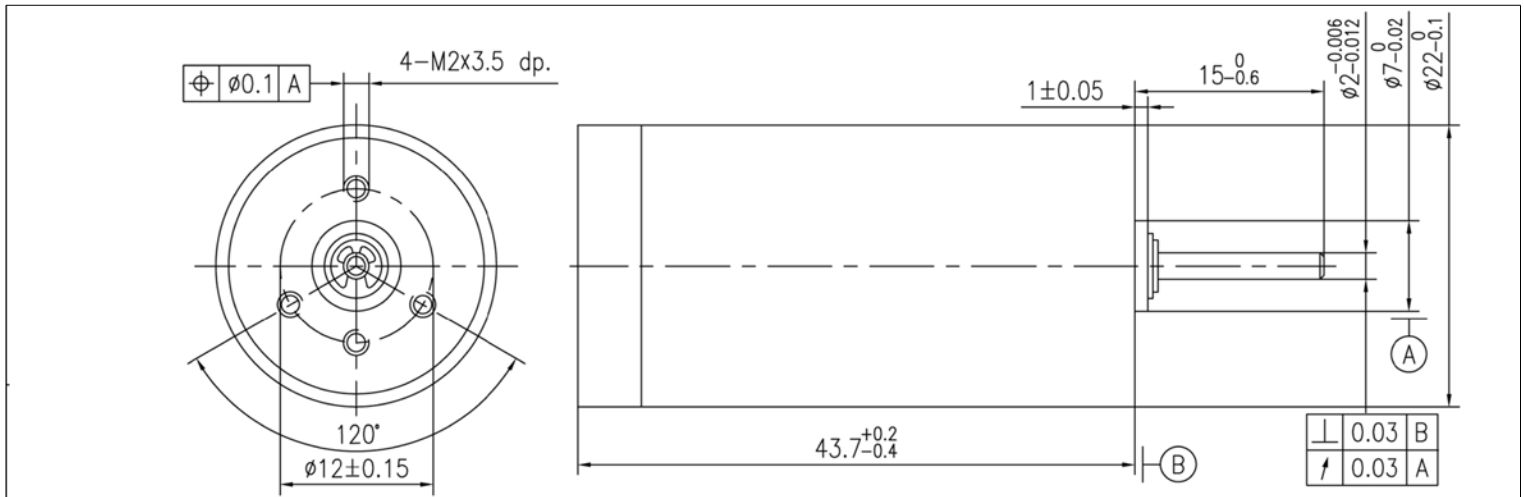
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 22 mm Ø

C22P12SE000 16.2 Watts Peak Power



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Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	12.0 Volts	12.0 Volts	12.0 Volts
No-Load Speed	8,080 rpm	8,080 rpm	8,080 rpm
Stall Torque	77.0 mNm	785.5 gcm	10.9 oz-in
No-Load Current	0.023 Amps	0.023 Amps	0.023 Amps
Peak Output Power	16.2 Watts	16.2 Watts	16.2 Watts
Torque Constant	14.12 mNm/A	144.02 gcm/A	2.00 oz-in/A
Terminal Resistance	2.20 Ohms	2.20 Ohms	2.20 Ohms
Back-EMF Constant	1.48 V/krpm	1.48 V/krpm	1.48 V/krpm
Mechanical Time Constant	9.0 msec	9.0 msec	9.0 msec
Rotor Inertia	8.19 kgm ² x10 ⁻⁷	8.19 gm cm ²	1.16 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	9.0 msec	9.0 msec	9.0 msec
Slope of Speed/Torque Curve	104.9 rpm/mNm	10.3 rpm/gcm	740.7 rpm/oz-in
Speed Constant	676 rpm/Volt	88 %	88 %
Motor Constant	9.52 mNm/√Watt	97.10 gcm/√Watt	1.35 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,550 rpm	4.0 Watts	4.0 Watts	4.0 Watts
Rated Torque @ 7,550 rpm	5.1 mNm	51.6 gcm	0.7 oz-in
Rated Current @ 7,550 rpm	0.358 Amps	0.358 Amps	0.358 Amps

Part Number: How to Order C22P12SE000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	2.7 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	1.00 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	70 grams
Gearbox Options	P22 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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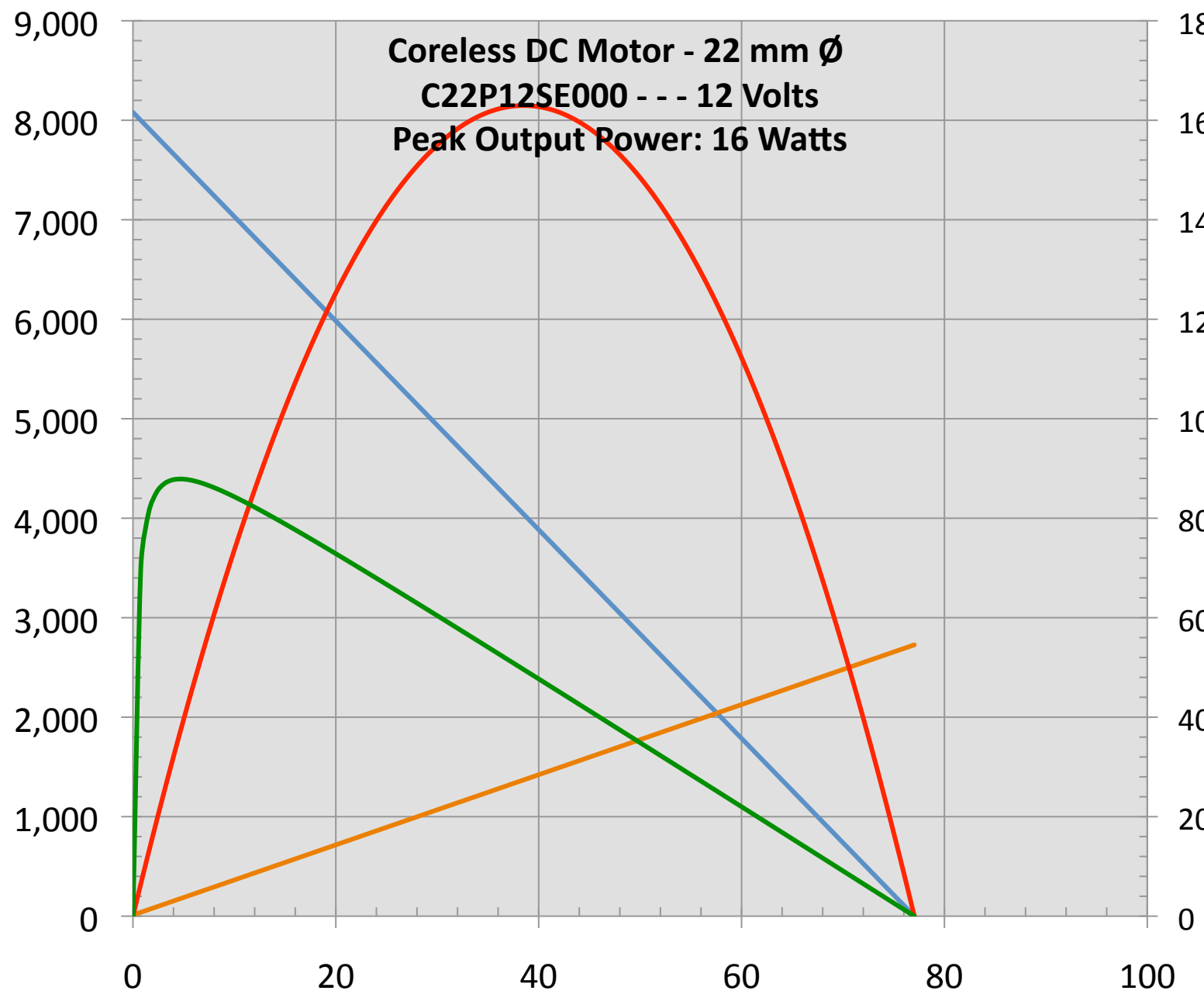
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 22 mm Ø
C22P12SE000 - - - 12 Volts
Peak Output Power: 16 Watts**

180 C22P12SE000
Voltage: 12 Volts
 No Load Speed: 8080 rpm
 No Load Current: 0.0227 Amps
 Terminal Resistance: 2.2 Ohms
 Stall Torque: 77.04 mNm
 Torque Constant: 14.12 mNm/A
 Peak Output Power: 16.3 Watts
 Peak Efficiency: 87.9%
 Stall Current: 5.45 Amps

Speed - rpm



180
160
140
120
100
80
60
40
20
0

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

Torque - mNm

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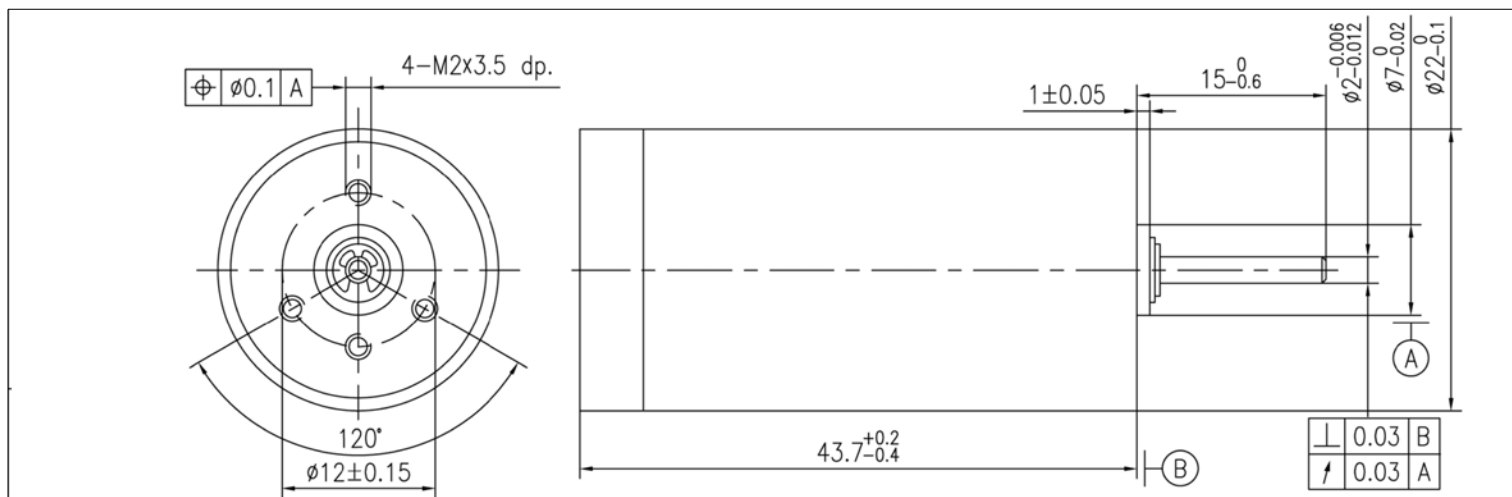
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 22 mm Ø

C22P18SE000 12.8 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	8,120 rpm	8,120 rpm	8,120 rpm
Stall Torque	60.7 mNm	619.0 gcm	8.6 oz-in
No-Load Current	0.013 Amps	0.013 Amps	0.013 Amps
Peak Output Power	12.8 Watts	12.8 Watts	12.8 Watts
Torque Constant	21.08 mNm/A	214.92 gcm/A	2.98 oz-in/A
Terminal Resistance	6.25 Ohms	6.25 Ohms	6.25 Ohms
Back-EMF Constant	2.21 V/krpm	2.21 V/krpm	2.21 V/krpm
Mechanical Time Constant	9.8 msec	9.8 msec	9.8 msec
Rotor Inertia	6.94 kgm ² x10 ⁻⁷	6.94 gm cm ²	0.98 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	9.8 msec	9.8 msec	9.8 msec
Slope of Speed/Torque Curve	133.8 rpm/mNm	13.1 rpm/gcm	944.6 rpm/oz-in
Speed Constant	453 rpm/Volt	87 %	87 %
Motor Constant	8.43 mNm/√Watt	85.97 gcm/√Watt	1.19 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,029 rpm	6.0 Watts	6.0 Watts	6.0 Watts
Rated Torque @ 7,029 rpm	8.2 mNm	83.2 gcm	1.2 oz-in
Rated Current @ 7,029 rpm	0.481 Amps	0.481 Amps	0.481 Amps

Part Number: How to Order C22P18SE000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	2.7 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	1.00 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	70 grams
Gearbox Options	P22 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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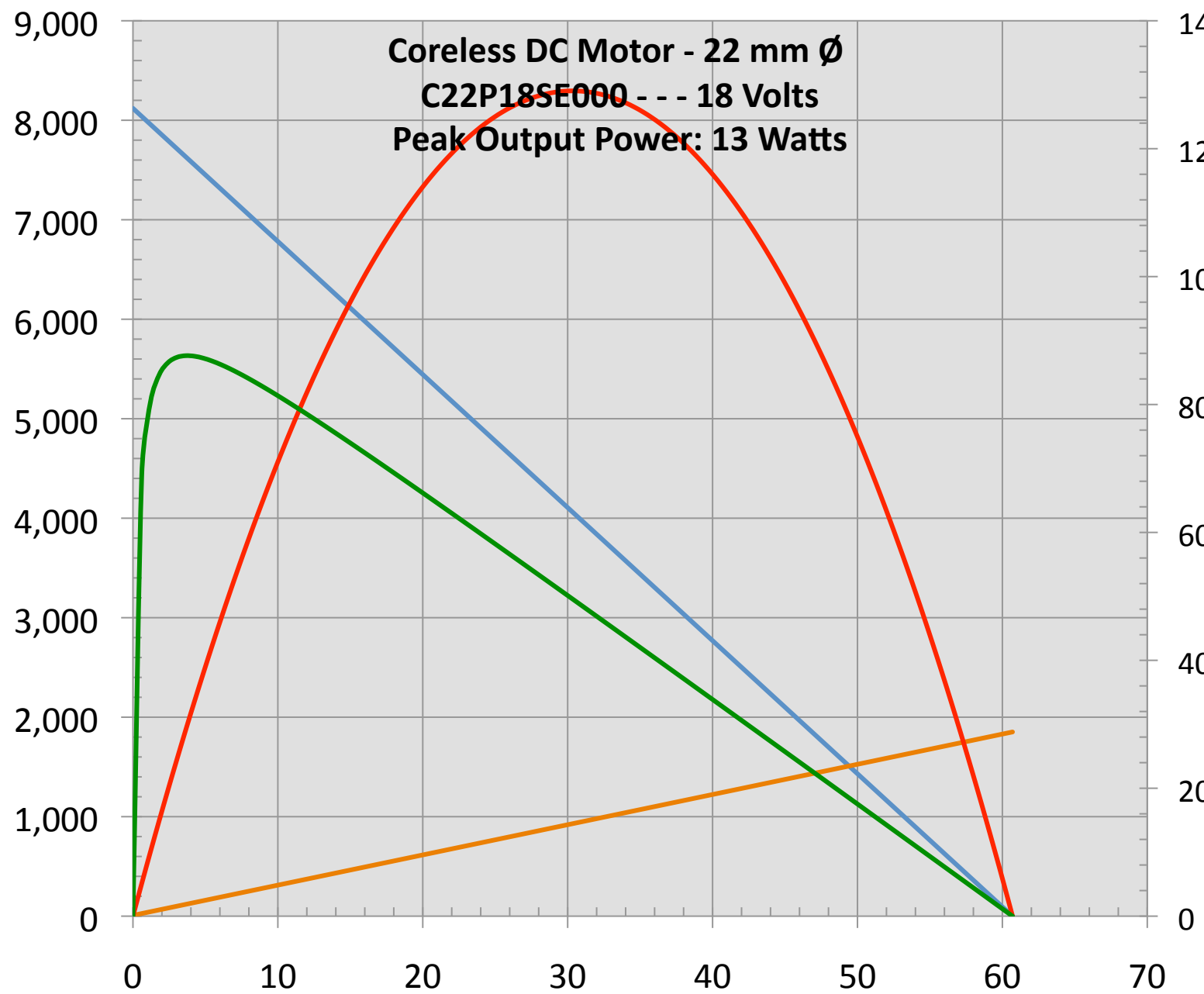
B - August 2011

Specifications Subject to change without notice

**Coreless DC Motor - 22 mm Ø
C22P18SE000 - - - 18 Volts
Peak Output Power: 13 Watts**

140 C22P18SE000
Voltage: 18 Volts
 No Load Speed: 8120 rpm
 No Load Current: 0.0125 Amps
 Terminal Resistance: 6.25 Ohms
 Stall Torque: 60.7 mNm
 Torque Constant: 21.08 mNm/A
 Peak Output Power: 12.9 Watts
 Peak Efficiency: 87.6%
 Stall Current: 2.88 Amps

Speed - rpm



140
120
100
80
60
40
20
0

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

Torque - mNm

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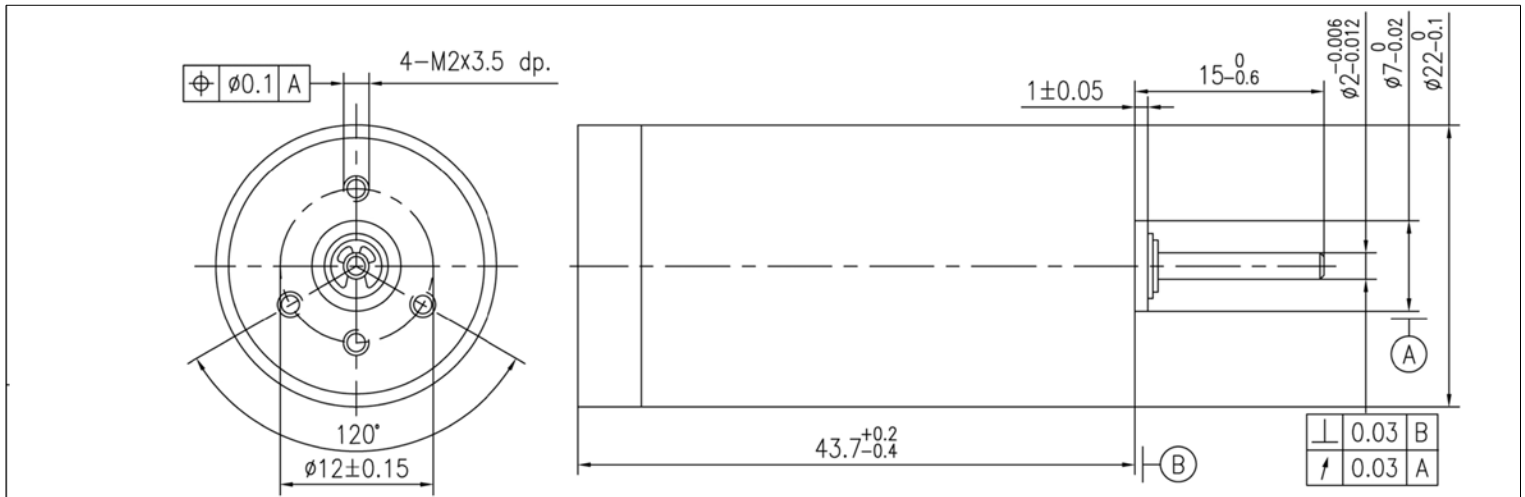
CAUTION: Peak Output Power is NOT a RATING. This is merely a calculated value and does not address Thermal Issues.

Coreless DC Motor - 22 mm Ø

C22P24SE000 15.8 Watts Peak Power



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Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	24.0 Volts	24.0 Volts	24.0 Volts
No-Load Speed	8,180 rpm	8,180 rpm	8,180 rpm
Stall Torque	73.9 mNm	753.9 gcm	10.5 oz-in
No-Load Current	0.013 Amps	0.013 Amps	0.013 Amps
Peak Output Power	15.8 Watts	15.8 Watts	15.8 Watts

Torque Constant	27.88 mNm/A	284.27 gcm/A	3.95 oz-in/A
Terminal Resistance	9.05 Ohms	9.05 Ohms	9.05 Ohms
Back-EMF Constant	2.92 V/krpm	2.92 V/krpm	2.92 V/krpm
Mechanical Time Constant	7.4 msec	7.4 msec	7.4 msec
Rotor Inertia	6.34 kgm ² x10 ⁻⁷	6.34 gm cm ²	0.90 x10 ⁻⁴ oz-in-sec ²

Mechanical Time Constant	7.4 msec	7.4 msec	7.4 msec
Slope of Speed/Torque Curve	110.6 rpm/mNm	10.9 rpm/gcm	781.3 rpm/oz-in
Speed Constant	343 rpm/Volt	86 %	86 %
Motor Constant	9.27 mNm/√Watt	94.49 gcm/√Watt	1.31 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal

Rated Power @ 6,965 rpm	8.0 Watts	8.0 Watts	8.0 Watts
Rated Torque @ 6,965 rpm	11.0 mNm	112.1 gcm	1.6 oz-in
Rated Current @ 6,965 rpm	0.481 Amps	0.481 Amps	0.481 Amps

Part Number: How to Order C22P24SE000

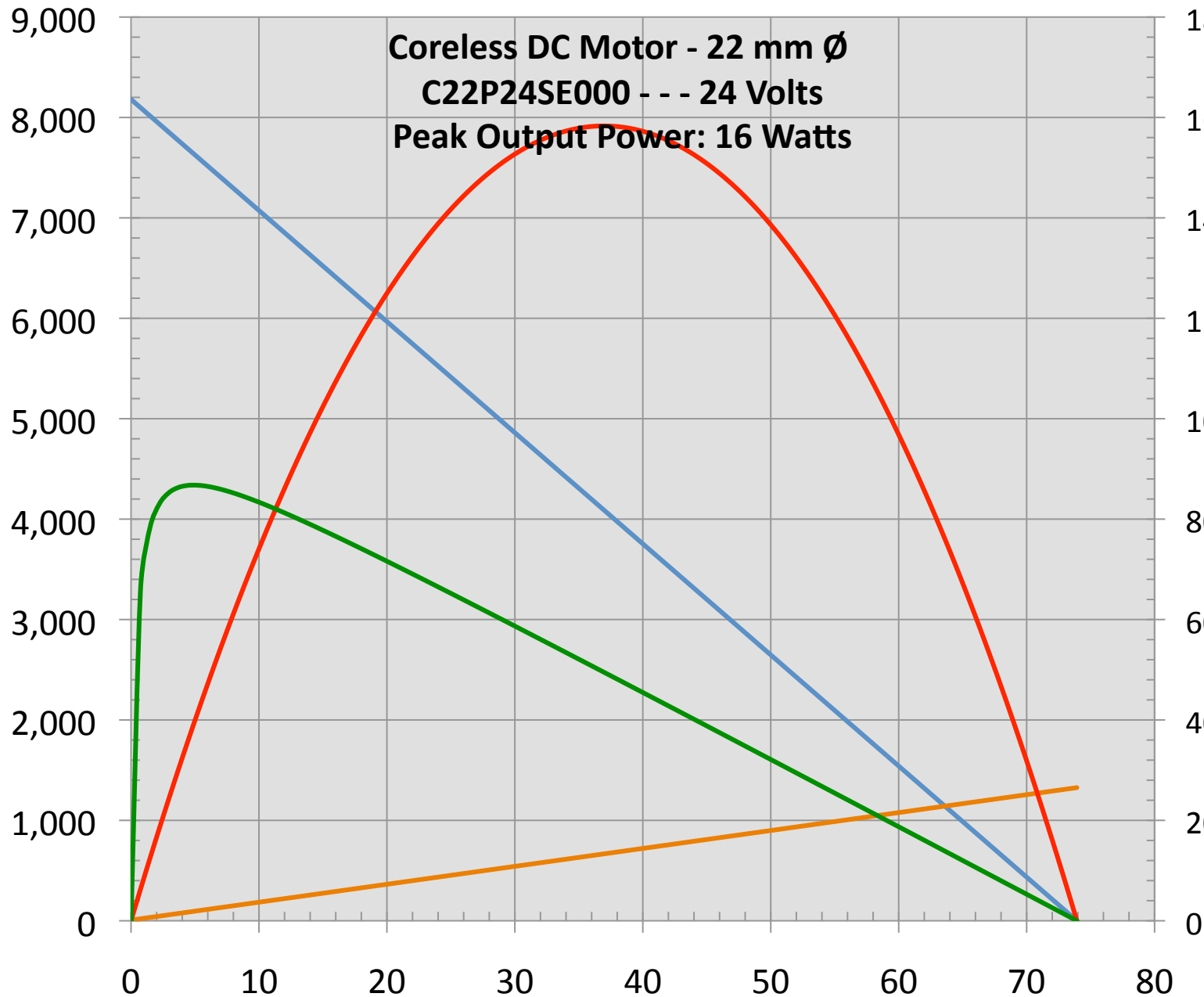
Ratings are at 25°C Ambient Temperature.

Radial Load Rating	2.7 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	1.00 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	80.00 N	Bearing Type	Sleeve Bearings	Mass	70 grams
Gearbox Options	P22 Series Planetary Gearboxes				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

**Coreless DC Motor - 22 mm Ø
C22P24SE000 - - - 24 Volts
Peak Output Power: 16 Watts**

180 C22P24SE000
Voltage: 24 Volts
 No Load Speed: 8180 rpm
 No Load Current: 0.0133 Amps
 Terminal Resistance: 9.05 Ohms
 Stall Torque: 73.93 mNm
 Torque Constant: 27.88 mNm/A
 Peak Output Power: 15.8 Watts
 Peak Efficiency: 86.8%
 Stall Current: 2.65 Amps

Speed - rpm



180
160
140
120
100
80
60
40
20
0

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

Torque - mNm

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