

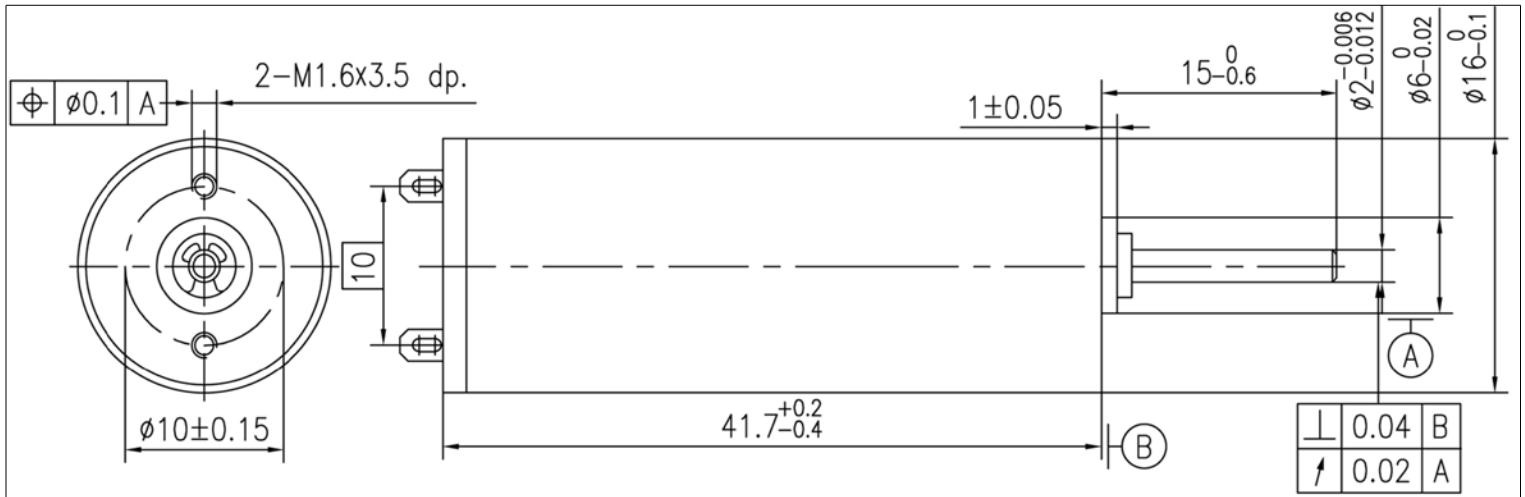
Coreless DC Motor - 16 mm Ø

C16P03SL000

3.3 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	3.0 Volts	3.0 Volts	3.0 Volts
No-Load Speed	8,400 rpm	8,400 rpm	8,400 rpm
Stall Torque	15.3 mNm	155.6 gcm	2.2 oz-in
No-Load Current	0.070 Amps	0.070 Amps	0.070 Amps
Peak Output Power	3.3 Watts	3.3 Watts	3.3 Watts

Torque Constant	3.36 mNm/A	34.24 gcm/A	0.48 oz-in/A
Terminal Resistance	0.66 Ohms	0.66 Ohms	0.66 Ohms
Back-EMF Constant	0.35 V/krpm	0.35 V/krpm	0.35 V/krpm
Mechanical Time Constant	10.9 msec	10.9 msec	10.9 msec
Rotor Inertia	1.86 kgm ² x10 ⁻⁷	1.86 gm cm ²	0.26 x10 ⁻⁴ oz-in-sec ²

Mechanical Time Constant	10.9 msec	10.9 msec	10.9 msec
Slope of Speed/Torque Curve	550.3 rpm/mNm	54.0 rpm/gcm	3,886.2 rpm/oz-in
Speed Constant	2,844 rpm/Volt	77 %	77 %
Motor Constant	4.13 mNm/√Watt	42.15 gcm/√Watt	0.59 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,328 rpm	1.5 Watts	1.5 Watts	1.5 Watts
Rated Torque @ 7,328 rpm	2.0 mNm	20.0 gcm	0.3 oz-in
Rated Current @ 7,328 rpm	0.460 Amps	0.460 Amps	0.460 Amps

Part Number: How to Order C16P03SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
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
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Quality System

RoHS Compliant

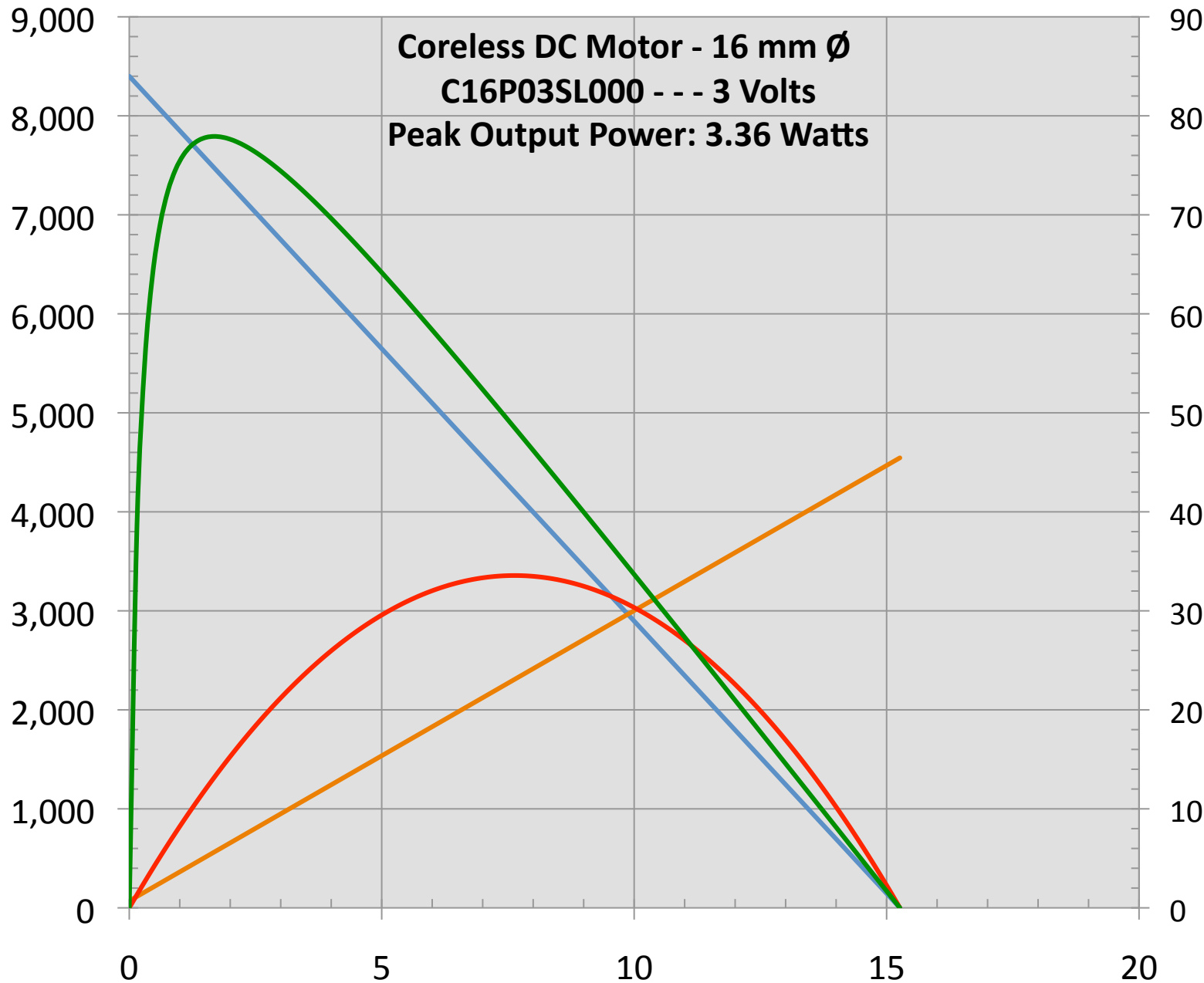
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P03SL000 - - - 3 Volts
Peak Output Power: 3.36 Watts

C16P03SL000
Voltage: 3 Volts
 No Load Speed: 8400 rpm
 No Load Current: 0.07 Amps
 Terminal Resistance: 0.66 Ohms
 Stall Torque: 15.26 mNm
 Torque Constant: 3.36 mNm/A
 Peak Output Power: 3.36 Watts
 Peak Efficiency: 77.9%
 Stall Current: 4.55 Amps

Speed - rpm



90
80
70
60
50
40
30
20
10
0

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

Torque - mNm

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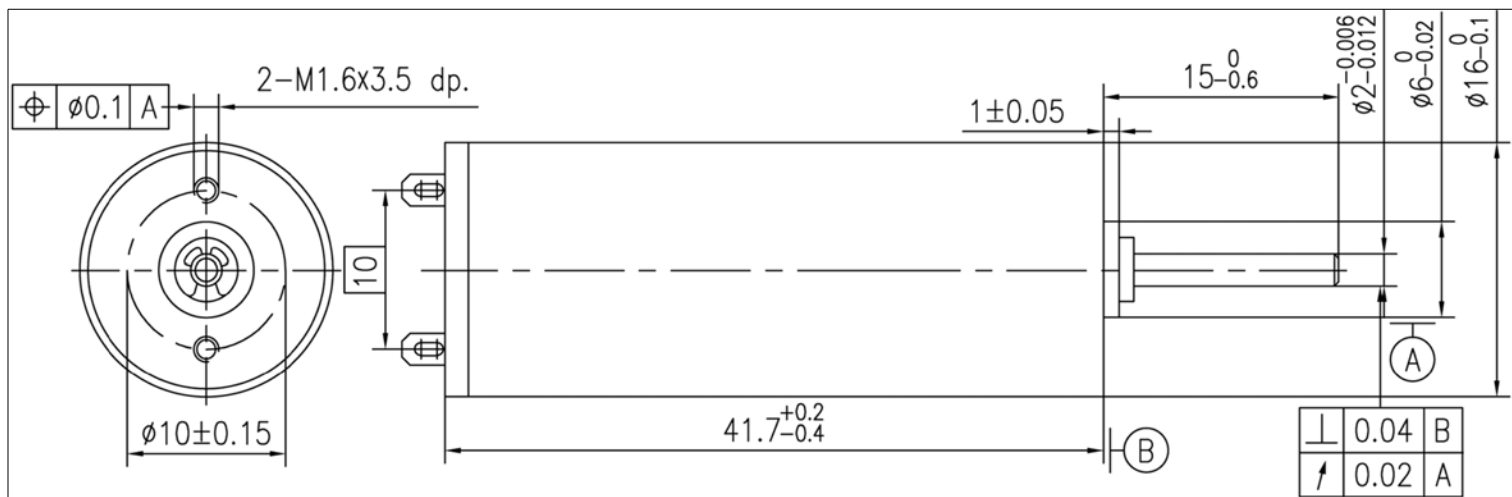
Coreless DC Motor - 16 mm Ø

C16P05SL000

4.2 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	4.5 Volts	4.5 Volts	4.5 Volts
No-Load Speed	8,450 rpm	8,450 rpm	8,450 rpm
Stall Torque	19.3 mNm	196.6 gcm	2.7 oz-in
No-Load Current	0.056 Amps	0.056 Amps	0.056 Amps
Peak Output Power	4.2 Watts	4.2 Watts	4.2 Watts
Torque Constant	5.01 mNm/A	51.10 gcm/A	0.71 oz-in/A
Terminal Resistance	1.17 Ohms	1.17 Ohms	1.17 Ohms
Back-EMF Constant	0.52 V/krpm	0.52 V/krpm	0.52 V/krpm
Mechanical Time Constant	7.9 msec	7.9 msec	7.9 msec
Rotor Inertia	1.69 kgm ² x10 ⁻⁷	1.69 gm cm ²	0.24 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	7.9 msec	7.9 msec	7.9 msec
Slope of Speed/Torque Curve	438.4 rpm/mNm	43.0 rpm/gcm	3,095.6 rpm/oz-in
Speed Constant	1,905 rpm/Volt	77 %	77 %
Motor Constant	4.63 mNm/√Watt	47.25 gcm/√Watt	0.66 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,439 rpm	1.8 Watts	1.8 Watts	1.8 Watts
Rated Torque @ 7,439 rpm	2.3 mNm	23.6 gcm	0.3 oz-in
Rated Current @ 7,439 rpm	0.460 Amps	0.460 Amps	0.460 Amps

Part Number: How to Order C16P05SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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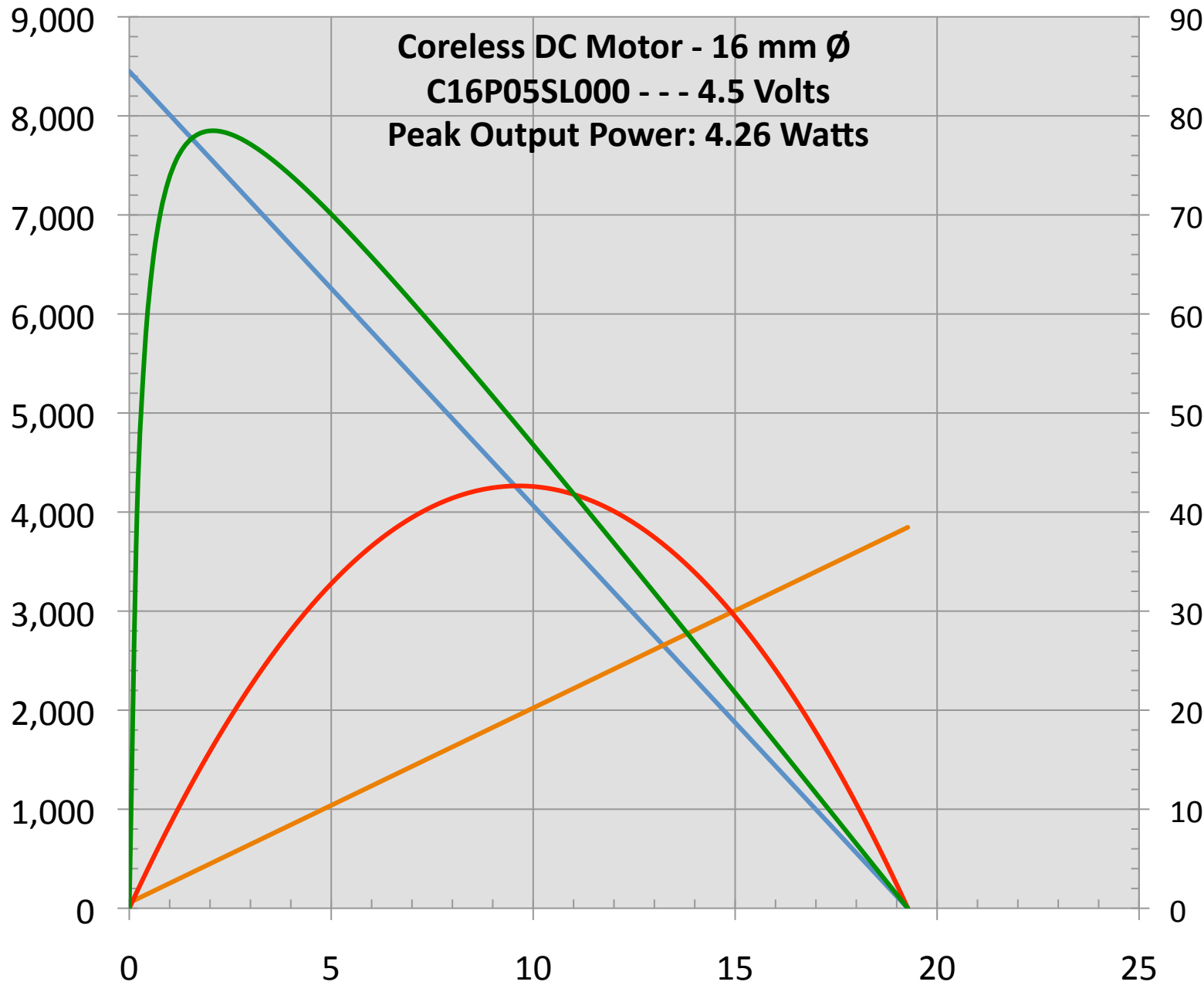
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P05SL000 - - - 4.5 Volts
Peak Output Power: 4.26 Watts

C16P05SL000
Voltage: 4.5 Volts
 No Load Speed: 8450 rpm
 No Load Current: 0.0558 Amps
 Terminal Resistance: 1.17 Ohms
 Stall Torque: 19.28 mNm
 Torque Constant: 5.01 mNm/A
 Peak Output Power: 4.26 Watts
 Peak Efficiency: 78.5%
 Stall Current: 3.85 Amps

Speed - rpm



90
80
70
60
50
40
30
20
10
0

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

Torque - mNm

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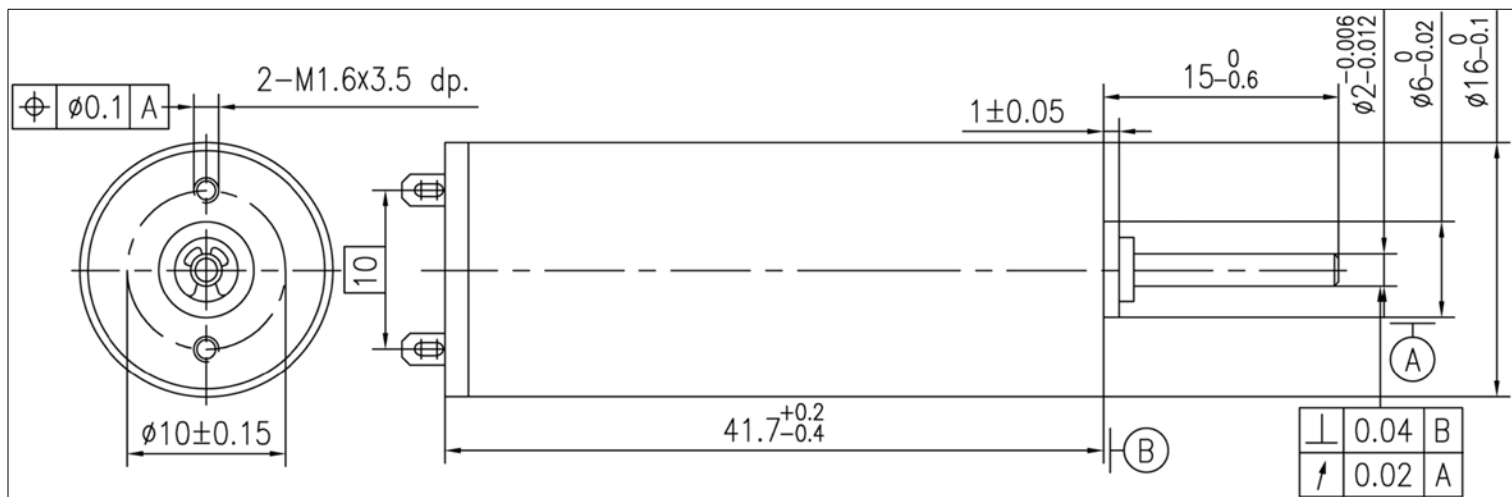
Coreless DC Motor - 16 mm Ø

C16P06SL000

3.6 Watts Peak Power



Global Motion Products



Not to Scale - Dimensions in millimeters (mm)

Nominal Voltage	6.0 Volts	6.0 Volts	6.0 Volts
No-Load Speed	8,700 rpm	8,700 rpm	8,700 rpm
Stall Torque	15.9 mNm	162.0 gcm	2.2 oz-in
No-Load Current	0.037 Amps	0.037 Amps	0.037 Amps
Peak Output Power	3.6 Watts	3.6 Watts	3.6 Watts
Torque Constant	6.49 mNm/A	66.15 gcm/A	0.92 oz-in/A
Terminal Resistance	2.45 Ohms	2.45 Ohms	2.45 Ohms
Back-EMF Constant	0.68 V/krpm	0.68 V/krpm	0.68 V/krpm
Mechanical Time Constant	8.0 msec	8.0 msec	8.0 msec
Rotor Inertia	1.37 kgm ² x10 ⁻⁷	1.37 gm cm ²	0.19 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	8.0 msec	8.0 msec	8.0 msec
Slope of Speed/Torque Curve	547.6 rpm/mNm	53.7 rpm/gcm	3,867.1 rpm/oz-in
Speed Constant	1,472 rpm/Volt	77 %	77 %
Motor Constant	4.14 mNm/√Watt	42.26 gcm/√Watt	0.59 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,346 rpm	1.9 Watts	1.9 Watts	1.9 Watts
Rated Torque @ 7,346 rpm	2.5 mNm	25.2 gcm	0.3 oz-in
Rated Current @ 7,346 rpm	0.381 Amps	0.381 Amps	0.381 Amps

Part Number: How to Order C16P06SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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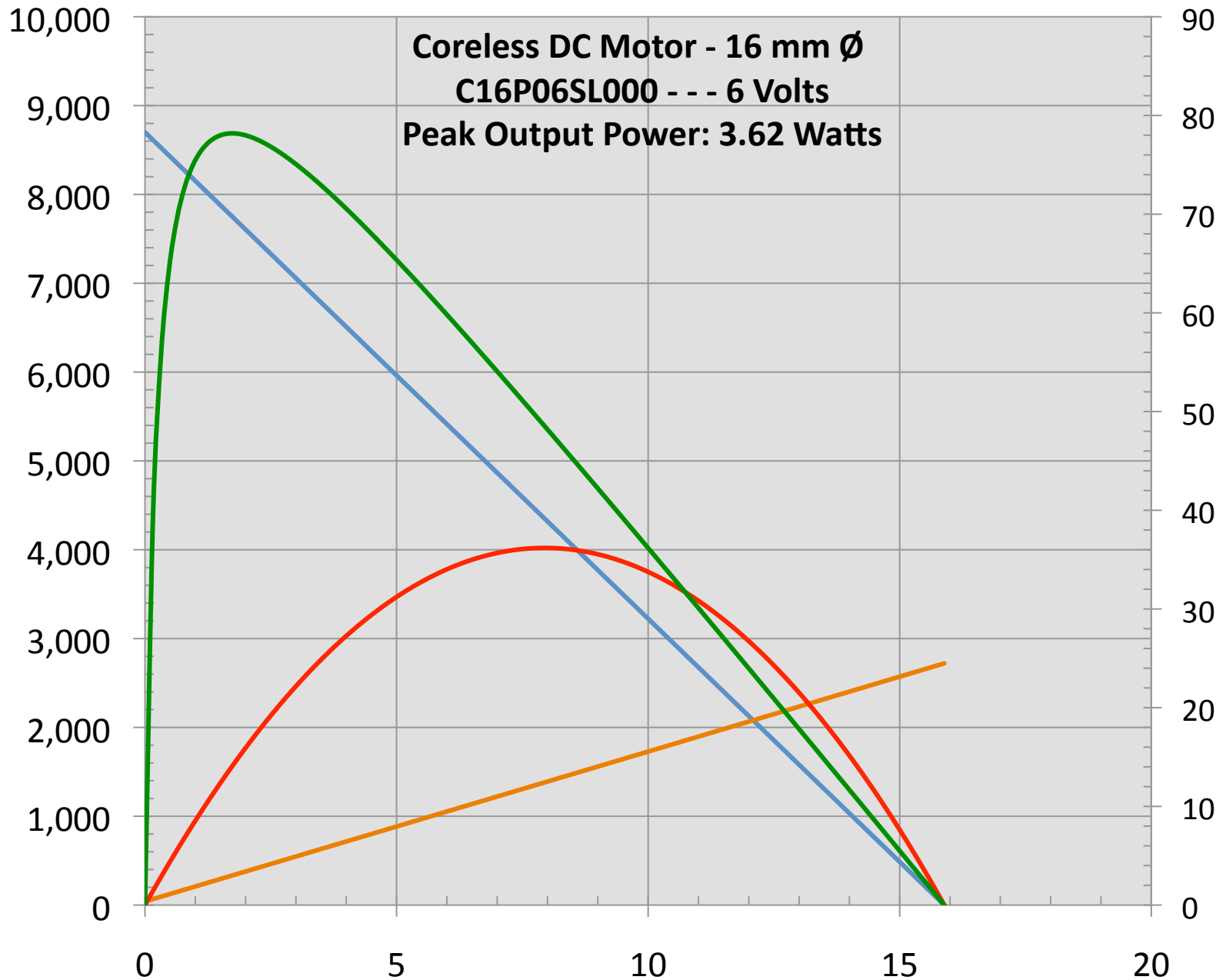
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P06SL000 - - - 6 Volts
Peak Output Power: 3.62 Watts

C16P06SL000
Voltage: 6 Volts
 No Load Speed: 8700 rpm
 No Load Current: 0.0367 Amps
 Terminal Resistance: 2.45 Ohms
 Stall Torque: 15.89 mNm
 Torque Constant: 6.49 mNm/A
 Peak Output Power: 3.62 Watts
 Peak Efficiency: 78.2%
 Stall Current: 2.45 Amps

Speed - rpm



90
80
70
60
50
40
30
20
10
0

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

Torque - mNm

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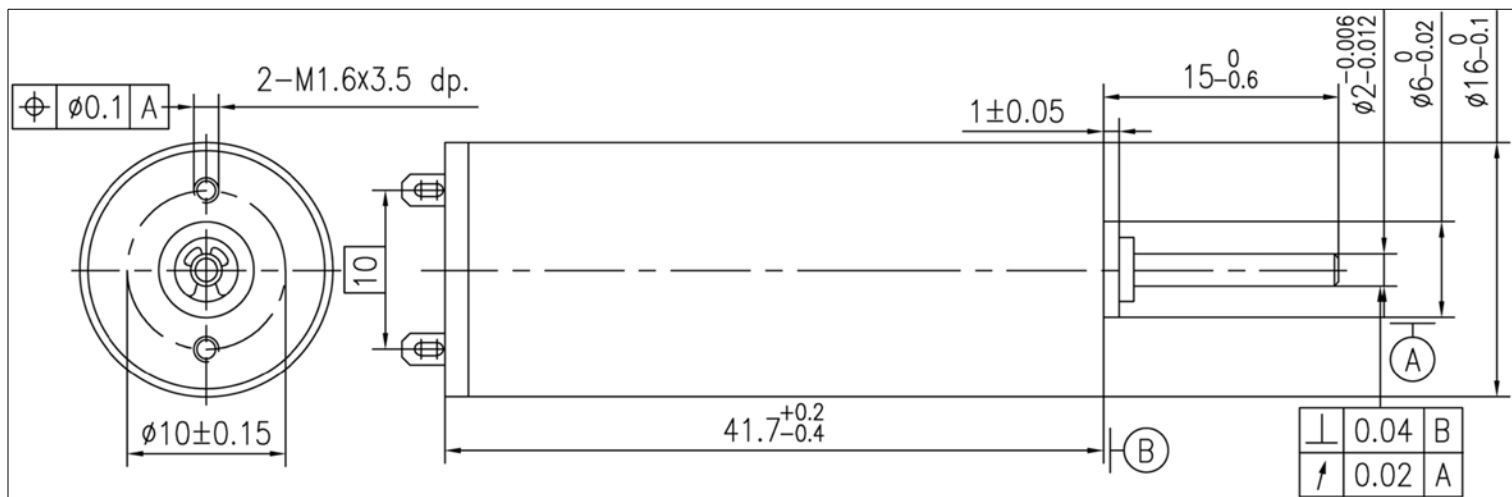
Coreless DC Motor - 16 mm Ø

C16P09SL000

3.2 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	8,580 rpm	8,580 rpm	8,580 rpm
Stall Torque	14.6 mNm	148.4 gcm	2.1 oz-in
No-Load Current	0.023 Amps	0.023 Amps	0.023 Amps
Peak Output Power	3.2 Watts	3.2 Watts	3.2 Watts
Torque Constant	9.86 mNm/A	100.56 gcm/A	1.40 oz-in/A
Terminal Resistance	6.10 Ohms	6.10 Ohms	6.10 Ohms
Back-EMF Constant	1.03 V/krpm	1.03 V/krpm	1.03 V/krpm
Mechanical Time Constant	6.8 msec	6.8 msec	6.8 msec
Rotor Inertia	1.08 kgm ² x10 ⁻⁷	1.08 gm cm ²	0.15 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	6.8 msec	6.8 msec	6.8 msec
Slope of Speed/Torque Curve	589.7 rpm/mNm	57.8 rpm/gcm	4,164.0 rpm/oz-in
Speed Constant	968 rpm/Volt	77 %	77 %
Motor Constant	3.99 mNm/√Watt	40.72 gcm/√Watt	0.57 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,068 rpm	1.9 Watts	1.9 Watts	1.9 Watts
Rated Torque @ 7,068 rpm	2.6 mNm	26.2 gcm	0.4 oz-in
Rated Current @ 7,068 rpm	0.260 Amps	0.260 Amps	0.260 Amps

Part Number: How to Order C16P09SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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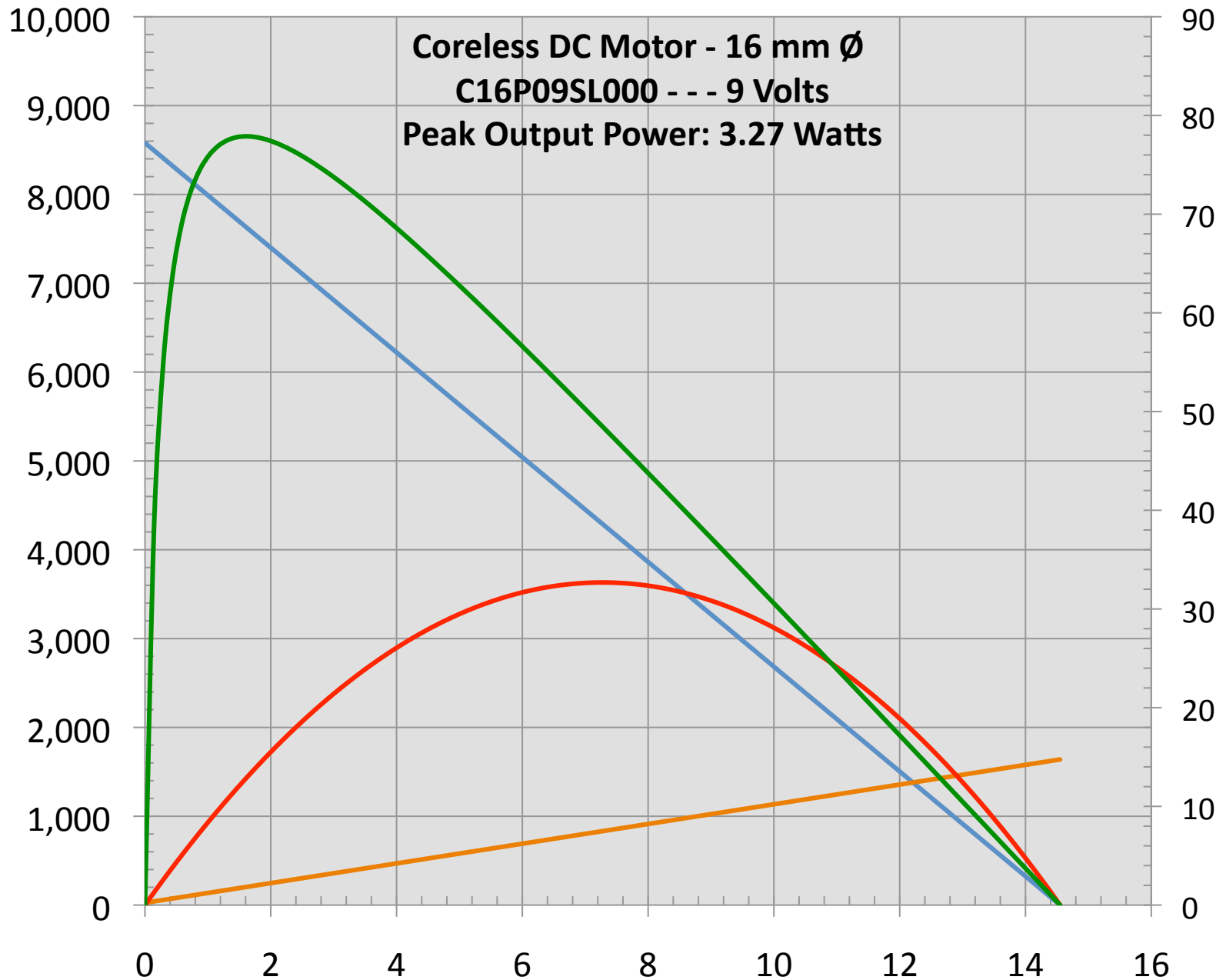
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P09SL000 - - - 9 Volts
Peak Output Power: 3.27 Watts

C16P09SL000
Voltage: 9 Volts
 No Load Speed: 8580 rpm
 No Load Current: 0.0228 Amps
 Terminal Resistance: 6.1 Ohms
 Stall Torque: 14.55 mNm
 Torque Constant: 9.86 mNm/A
 Peak Output Power: 3.27 Watts
 Peak Efficiency: 77.9%
 Stall Current: 1.48 Amps

Speed - rpm



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

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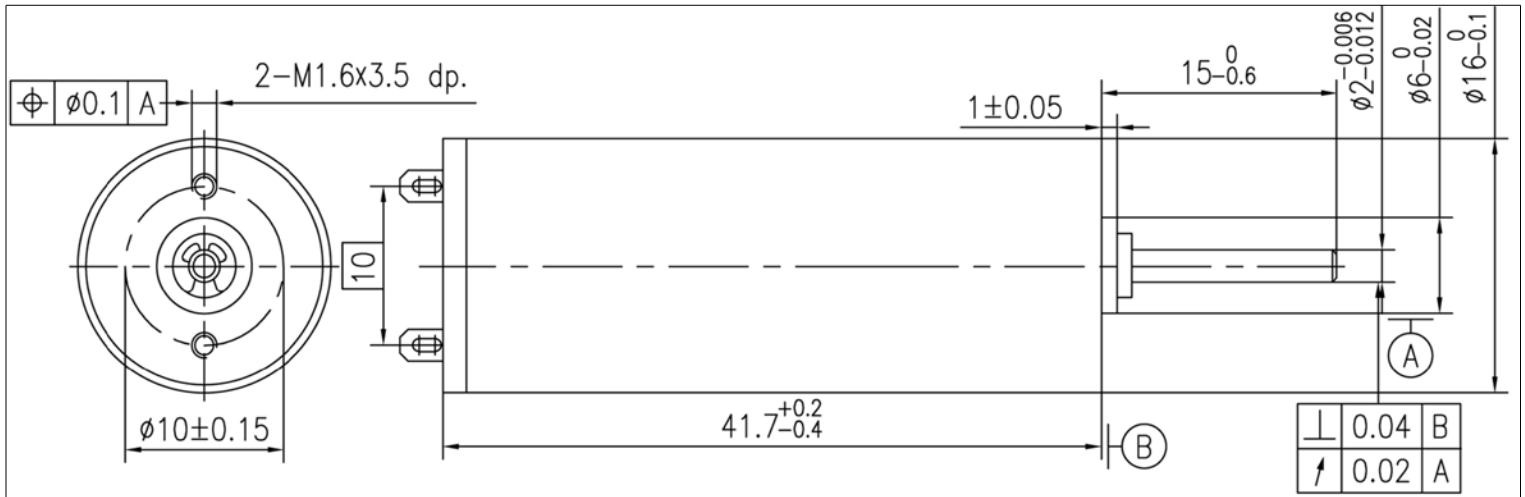
Coreless DC Motor - 16 mm Ø

C16P12SL000

2.6 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	8,570 rpm	8,570 rpm	8,570 rpm
Stall Torque	11.8 mNm	120.3 gcm	1.7 oz-in
No-Load Current	0.013 Amps	0.013 Amps	0.013 Amps
Peak Output Power	2.6 Watts	2.6 Watts	2.6 Watts
Torque Constant	13.17 mNm/A	134.31 gcm/A	1.87 oz-in/A
Terminal Resistance	13.40 Ohms	13.40 Ohms	13.40 Ohms
Back-EMF Constant	1.38 V/krpm	1.38 V/krpm	1.38 V/krpm
Mechanical Time Constant	6.8 msec	6.8 msec	6.8 msec
Rotor Inertia	0.88 kgm ² x10 ⁻⁷	0.88 gm cm ²	0.12 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	6.8 msec	6.8 msec	6.8 msec
Slope of Speed/Torque Curve	726.6 rpm/mNm	71.3 rpm/gcm	5,130.7 rpm/oz-in
Speed Constant	725 rpm/Volt	77 %	77 %
Motor Constant	3.60 mNm/√Watt	36.69 gcm/√Watt	0.51 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 7,087 rpm	1.5 Watts	1.5 Watts	1.5 Watts
Rated Torque @ 7,087 rpm	2.0 mNm	20.8 gcm	0.3 oz-in
Rated Current @ 7,087 rpm	0.155 Amps	0.155 Amps	0.155 Amps

Part Number: How to Order C16P12SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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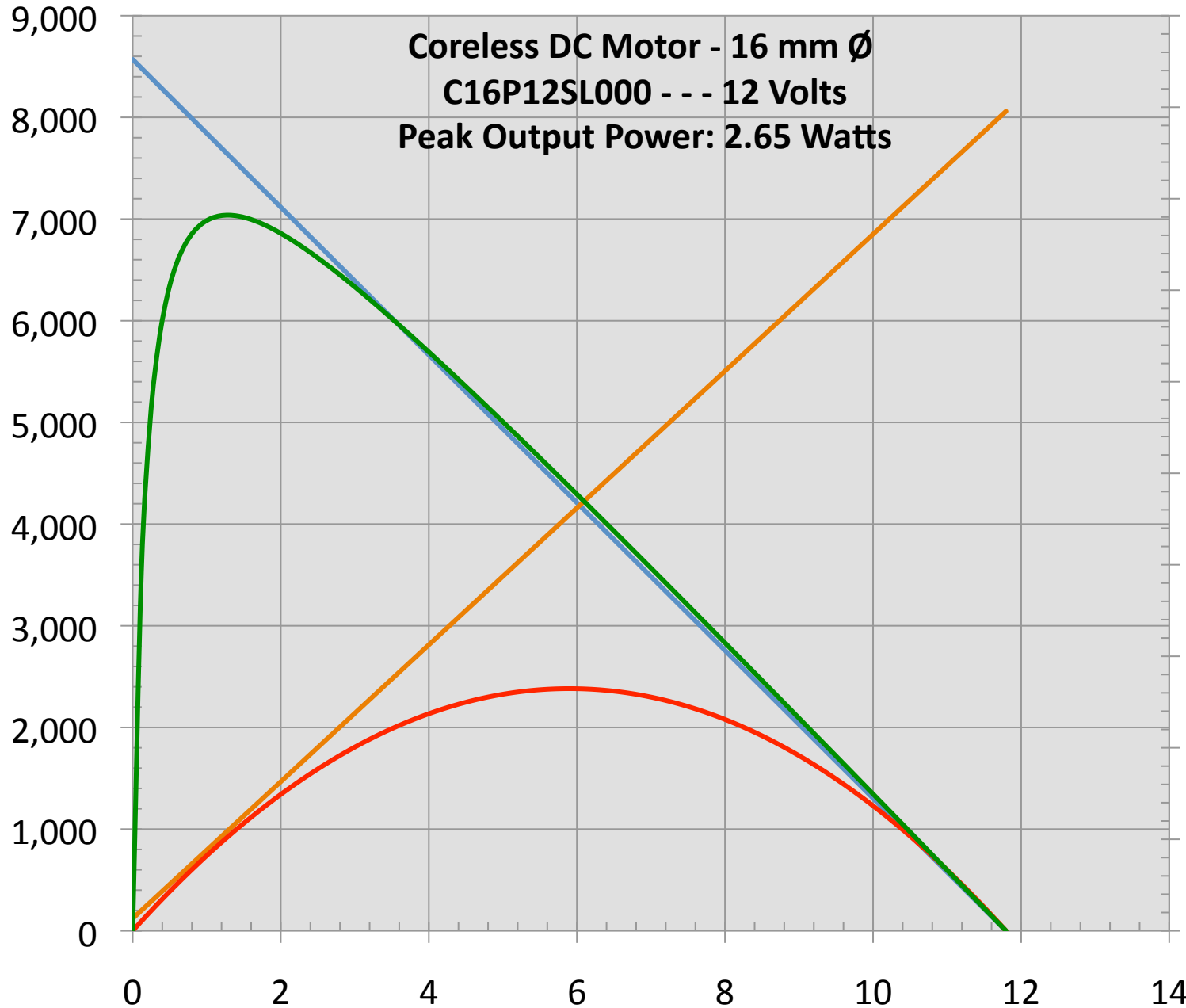
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Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P12SL000 - - - 12 Volts
Peak Output Power: 2.65 Watts

100 C16P12SL000
Voltage: 12 Volts
 No Load Speed: 8570 rpm
 No Load Current: 0.0134 Amps
 Terminal Resistance: 13.4 Ohms
 Stall Torque: 11.8 mNm
 Torque Constant: 13.17 mNm/A
 Peak Output Power: 2.65 Watts
 Peak Efficiency: 78.2%
 Stall Current: 0.9 Amps

Speed - rpm



- A - Speed - rpm
- A - Current - Amps / 100
- A - Power Out - Watts / 10
- A - Efficiency - %

Torque - mNm

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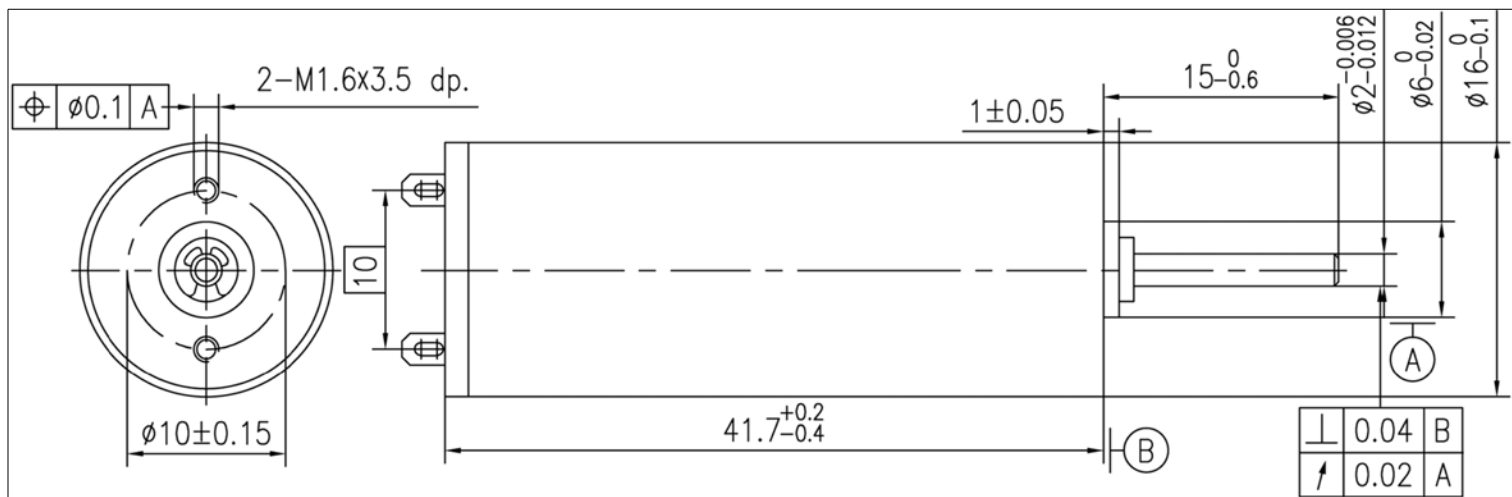
Coreless DC Motor - 16 mm Ø

C16P18SL000

3.9 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	8,530 rpm	8,530 rpm	8,530 rpm
Stall Torque	17.7 mNm	180.6 gcm	2.5 oz-in
No-Load Current	0.012 Amps	0.012 Amps	0.012 Amps
Peak Output Power	3.9 Watts	3.9 Watts	3.9 Watts
Torque Constant	19.88 mNm/A	202.69 gcm/A	2.81 oz-in/A
Terminal Resistance	20.20 Ohms	20.20 Ohms	20.20 Ohms
Back-EMF Constant	2.08 V/krpm	2.08 V/krpm	2.08 V/krpm
Mechanical Time Constant	6.9 msec	6.9 msec	6.9 msec
Rotor Inertia	1.35 kgm ² x10 ⁻⁷	1.35 gm cm ²	0.19 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	6.9 msec	6.9 msec	6.9 msec
Slope of Speed/Torque Curve	481.6 rpm/mNm	47.2 rpm/gcm	3,400.7 rpm/oz-in
Speed Constant	480 rpm/Volt	78 %	78 %
Motor Constant	4.42 mNm/√Watt	45.10 gcm/√Watt	0.63 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 6,826 rpm	2.5 Watts	2.5 Watts	2.5 Watts
Rated Torque @ 6,826 rpm	3.5 mNm	36.1 gcm	0.5 oz-in
Rated Current @ 6,826 rpm	0.178 Amps	0.178 Amps	0.178 Amps

Part Number: How to Order C16P18SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

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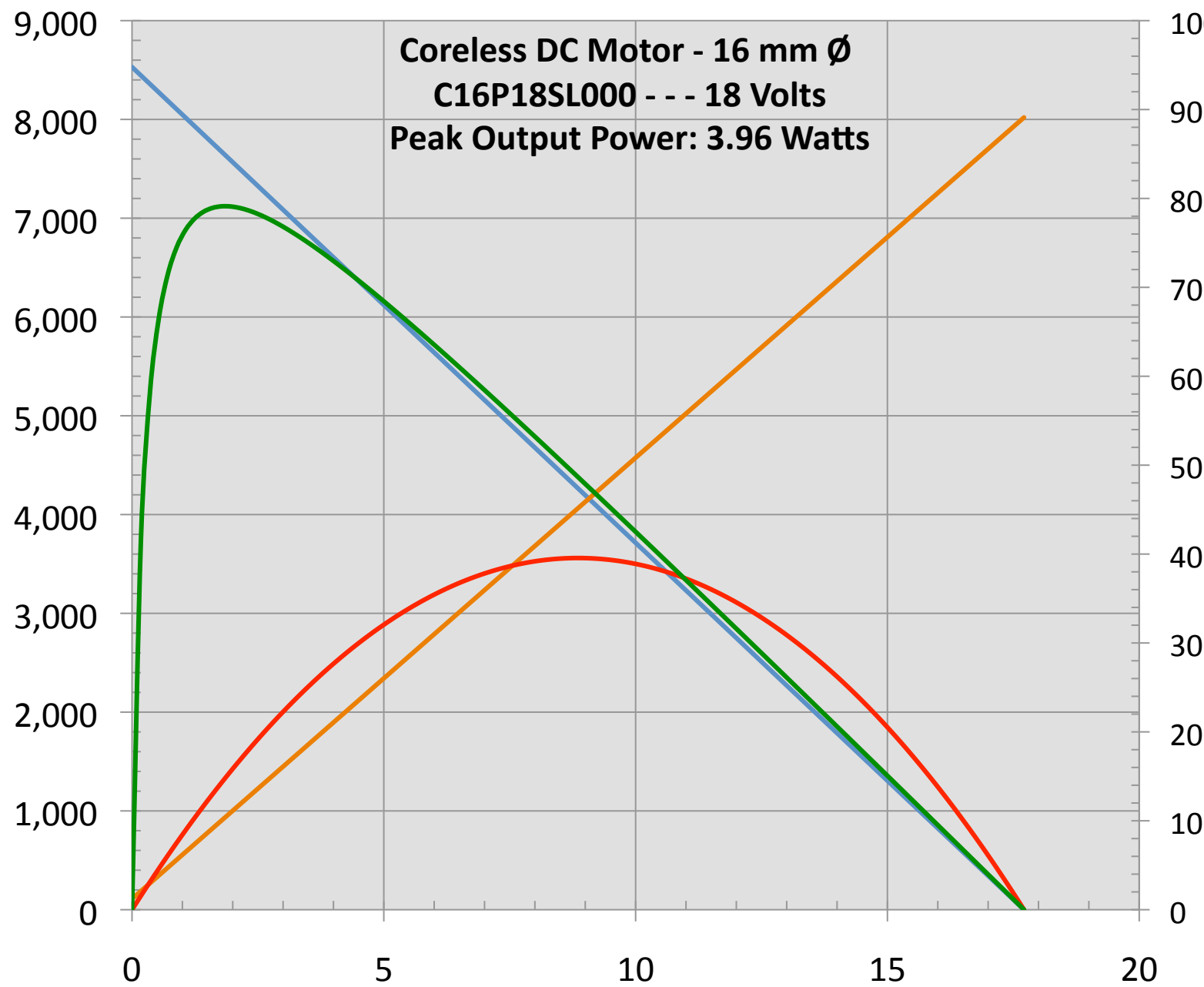
B - August 2011

Specifications Subject to change without notice

Coreless DC Motor - 16 mm Ø
C16P18SL000 - - - 18 Volts
Peak Output Power: 3.96 Watts

100 C16P18SL000
Voltage: 18 Volts
 No Load Speed: 8530 rpm
 No Load Current: 0.0121 Amps
 Terminal Resistance: 20.2 Ohms
 Stall Torque: 17.71 mNm
 Torque Constant: 19.88 mNm/A
 Peak Output Power: 3.96 Watts
 Peak Efficiency: 79.1%
 Stall Current: 0.89 Amps

Speed - rpm



— A - Speed - rpm
 — A - Current - Amps / 100
 — A - Power Out - Watts / 10
 — A - Efficiency - %

Torque - mNm

Global Motion Products
 Distributed by Precision Motion Distributors
 (760) 451-2723, (925) 803-9565
<http://www.gmpwebsite.com>
 Email: info@gmpwebsite.com

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January 18, 2011

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

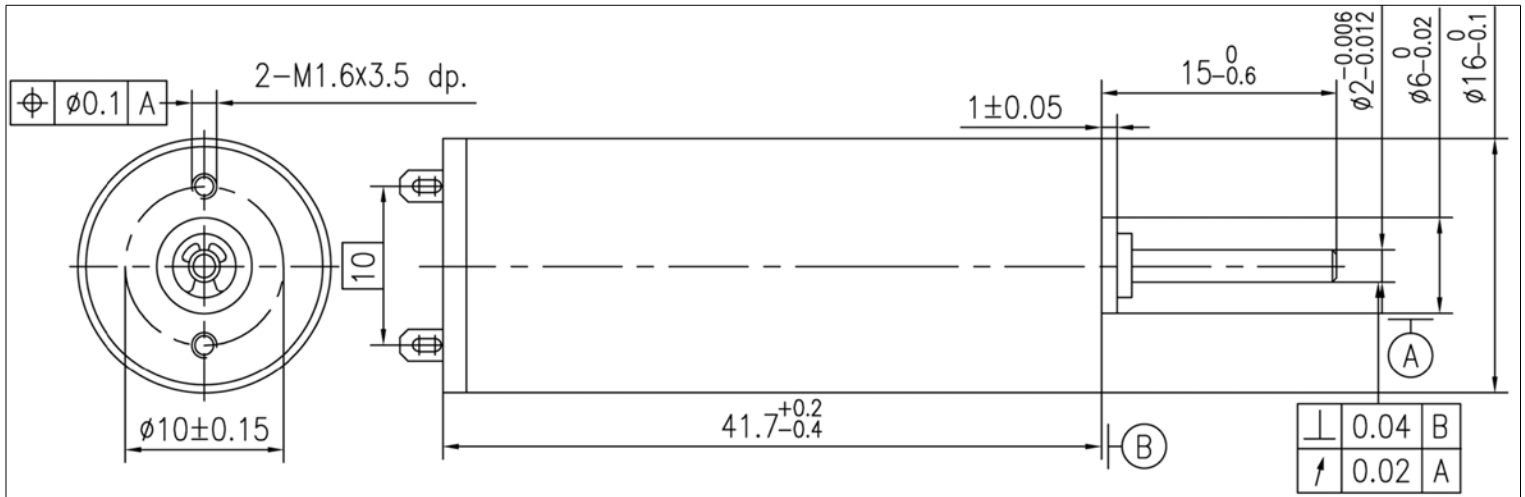
Coreless DC Motor - 16 mm Ø



C16P24SL000

2.7 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	8,640 rpm	8,640 rpm	8,640 rpm
Stall Torque	12.4 mNm	126.1 gcm	1.8 oz-in
No-Load Current	0.009 Amps	0.009 Amps	0.009 Amps
Peak Output Power	2.7 Watts	2.7 Watts	2.7 Watts
Torque Constant	26.03 mNm/A	265.42 gcm/A	3.69 oz-in/A
Terminal Resistance	50.50 Ohms	50.50 Ohms	50.50 Ohms
Back-EMF Constant	2.73 V/krpm	2.73 V/krpm	2.73 V/krpm
Mechanical Time Constant	7.7 msec	7.7 msec	7.7 msec
Rotor Inertia	1.03 kgm ² x10 ⁻⁷	1.03 gm cm ²	0.15 x10 ⁻⁴ oz-in-sec ²
Mechanical Time Constant	7.7 msec	7.7 msec	7.7 msec
Slope of Speed/Torque Curve	698.4 rpm/mNm	68.5 rpm/gcm	4,932.1 rpm/oz-in
Speed Constant	367 rpm/Volt	75 %	75 %
Motor Constant	3.66 mNm/√Watt	37.35 gcm/√Watt	0.52 oz-in/√Watt
Commutation Type	Precious Metal	Precious Metal	Precious Metal
Rated Power @ 6,913 rpm	1.8 Watts	1.8 Watts	1.8 Watts
Rated Torque @ 6,913 rpm	2.5 mNm	25.2 gcm	0.3 oz-in
Rated Current @ 6,913 rpm	0.095 Amps	0.095 Amps	0.095 Amps

Part Number: How to Order C16P24SL000

Ratings are at 25°C Ambient Temperature.

Radial Load Rating	1.4 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	0.80 N	Magnet Type	NdFeB	Max Winding Temp	85 °C
Press Fit Force - Max	15.00 N	Bearing Type	Sleeve Bearings	Mass	35 grams
Gearbox Options	P16 Planetary Gearbox				
Encoder Options	N/A				
Options - Other	Ball Bearings. Shaft length. Lubricants. Leads. Solder Tabs. Connectors.				

Global Motion Products

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Technical Support: (760) 451-2723

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Commutation Type:

Precious Metal

Manufactured under a
Certified ISO 9001:2008
Quality System

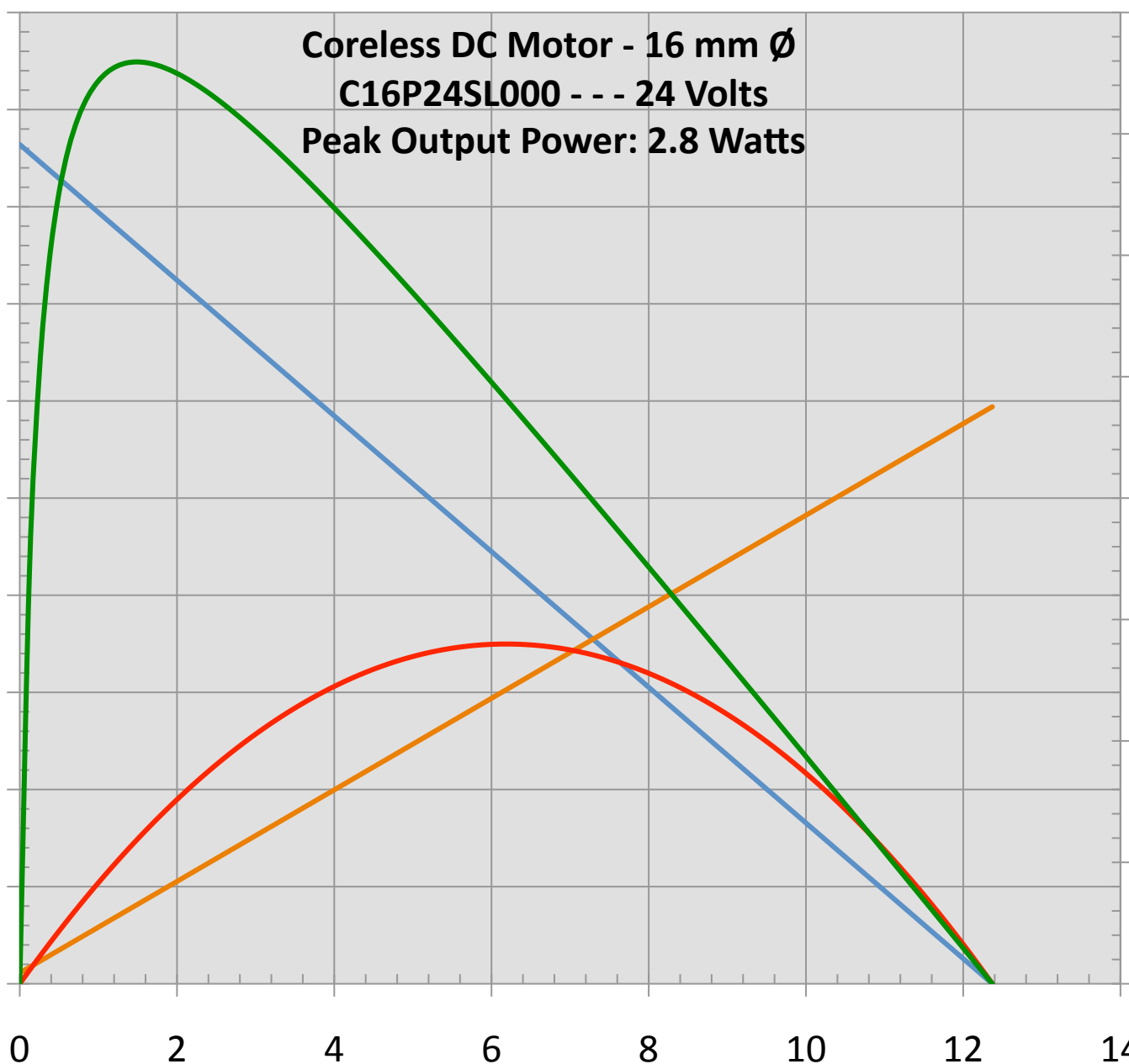
RoHS Compliant

B - August 2011

Specifications Subject to change without notice

Speed - rpm

10,000
9,000
8,000
7,000
6,000
5,000
4,000
3,000
2,000
1,000
0



Coreless DC Motor - 16 mm Ø
C16P24SL000 - - - 24 Volts
Peak Output Power: 2.8 Watts

C16P24SL000
Voltage: 24 Volts
No Load Speed: 8640 rpm
No Load Current: 0.0089 Amps
Terminal Resistance: 50.5 Ohms
Stall Torque: 12.37 mNm
Torque Constant: 26.03 mNm/A
Peak Output Power: 2.8 Watts
Peak Efficiency: 75.9%
Stall Current: 0.48 Amps

— A - Speed - rpm
— A - Current - Amps / 100
— A - Power Out - Watts / 10
— A - Efficiency - %

Torque - mNm

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