



# GM8724S019

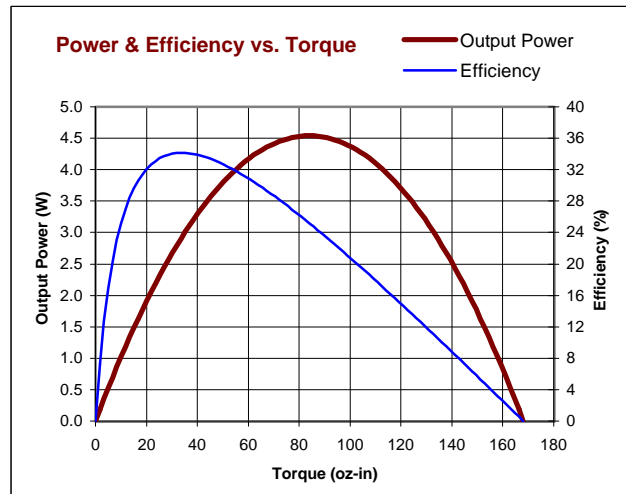
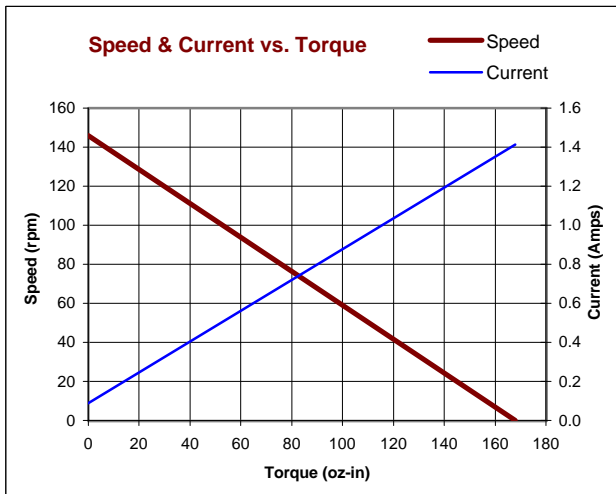
Lo-Cog® DC Gearmotor

| Assembly Data                         | Symbol           | Units                                     | Value   |            |
|---------------------------------------|------------------|---|---------|------------|
| Reference Voltage                     | E                | V   | 24      |            |
| No-Load Speed                         | S <sub>NL</sub>  | rpm (rad/s)                               | 146     | (15.3)     |
| Continuous Torque (Max.) <sup>1</sup> | T <sub>C</sub>   | oz-in (N-m)                               | 61      | (4.3E-01)  |
| Peak Torque (Stall) <sup>2</sup>      | T <sub>PK</sub>  | oz-in (N-m)                               | 168     | (1.2E+00)  |
| Weight                                | W <sub>M</sub>   | oz (g)                                    | 8.4     | (239)      |
| Motor Data                            |                  |   |         |            |
| Torque Constant                       | K <sub>T</sub>   | oz-in/A (N-m/A)                           | 6.18    | (4.36E-02) |
| Back-EMF Constant                     | K <sub>E</sub>   | V/krpm (V/rad/s)                          | 4.57    | (4.36E-02) |
| Resistance                            | R <sub>T</sub>   | Ω   | 17.0    |            |
| Inductance                            | L                | mH  | 9.35    |            |
| No-Load Current                       | I <sub>NL</sub>  | A   | 0.09    |            |
| Peak Current (Stall) <sup>2</sup>     | I <sub>P</sub>   | A   | 1.41    |            |
| Motor Constant                        | K <sub>M</sub>   | oz-in/√W (N-m/√W)                         | 1.49    | (1.05E-02) |
| Friction Torque                       | T <sub>F</sub>   | oz-in (N-m)                               | 0.35    | (2.5E-03)  |
| Rotor Inertia                         | J <sub>M</sub>   | oz-in-s <sup>2</sup> (kg-m <sup>2</sup> ) | 2.3E-04 | (1.6E-06)  |
| Electrical Time Constant              | τ <sub>E</sub>   | ms  | 0.54    |            |
| Mechanical Time Constant              | τ <sub>M</sub>   | ms  | 14.7    |            |
| Viscous Damping                       | D                | oz-in/krpm (N-m-s)                        | 0.020   | (1.4E-06)  |
| Damping Constant                      | K <sub>D</sub>   | oz-in/krpm (N-m-s)                        | 1.6     | (1.1E-04)  |
| Maximum Winding Temperature           | θ <sub>MAX</sub> | °F (°C)                                   | 311     | (155)      |
| Thermal Impedance                     | R <sub>TH</sub>  | °F/watt (°C/watt)                         | 70.5    | (21.4)     |
| Thermal Time Constant                 | τ <sub>TH</sub>  | min                                       | 10.7    |            |
| Gearbox Data                          |                  |   |         |            |
| Reduction Ratio                       |                  |   | 30.9    |            |
| Efficiency <sup>3</sup>               |                  |   | 0.80    |            |
| Maximum Allowable Torque              |                  | oz-in (N-m)                               | 175     | (1.24)     |
| Encoder Data                          |                  |   |         |            |
|                                       |                  |   |         |            |
|                                       |                  |   |         |            |

1 - Specified at max. winding temperature at 25°C ambient without heat sink. 2 - Theoretical values supplied for reference only.  
 3 - Effective gearbox efficiency for this unit improved by use of ball bearings.

- ### Included Features
- 2-Pole Stator
  - Ceramic Magnets
  - Heavy-Gauge Steel Housing
  - 7-Slot Armature
  - Silicon Steel Laminations
  - Stainless Steel Shaft
  - Copper-Graphite Brushes
  - Diamond Turned Commutator
  - Motor Ball Bearings
  - Output Ball Bearing
  - Wide Face Gears

- ### Customization Options
- Alternate Winding
  - Sleeve or Ball Bearings
  - Modified Output Shaft
  - Custom Cable Assembly
  - Special Brushes
  - EMI/RFI Suppression
  - Alternate Gear Material
  - Special Lubricant
  - Optional Encoder
  - Fail-Safe Brake



All values are nominal. Specifications subject to change without notice. Graphs are shown for reference only.

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