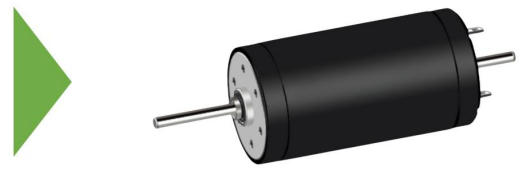


# BDCB Series

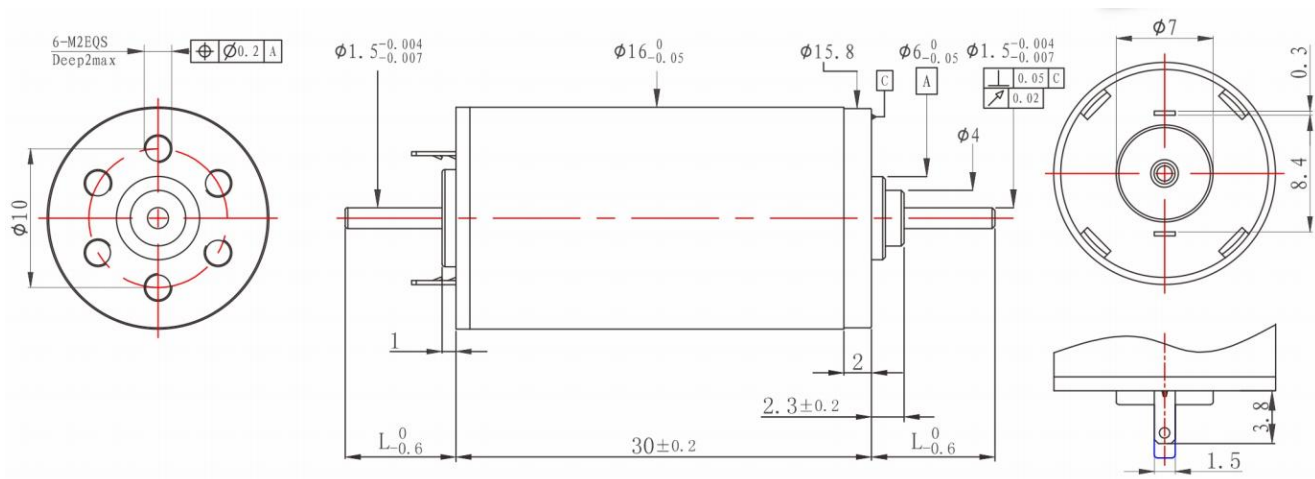
## Coreless Graphite Brushed DC Motor



### BDCB1630 Motor Data

2-4.5W

| Motor Model                   | Unit             | BDCB1630-01 | BDCB1630-02 | BDCB1630-03 |
|-------------------------------|------------------|-------------|-------------|-------------|
| <b>Value at Rated voltage</b> |                  |             |             |             |
| <b>At Nominal</b>             |                  |             |             |             |
| 1. Nominal voltage            | V/DC             | 6           | 12          | 24          |
| 2. Nominal speed              | rpm              | 8850        | 10880       | 10240       |
| 3. Nominal current            | A                | 0.8         | 0.5         | 0.3         |
| 4. Nominal torque             | mNm              | 3.5         | 3.5         | 4.2         |
| <b>Free Load</b>              |                  |             |             |             |
| 5. No-load speed              | rpm              | 11800       | 13600       | 12800       |
| 6. No-load current            | mA               | 80          | 60          | 35          |
| <b>At Max. Efficiency</b>     |                  |             |             |             |
| 7. Max. efficiency            | %                | 70.0        | 69.7        | 69.3        |
| 8. Speed                      | rpm              | 10148       | 12376       | 11648       |
| 9. Current                    | A                | 0.5         | 0.3         | 0.1         |
| 10. Torque                    | mNm              | 1.9         | 1.6         | 1.9         |
| <b>At Max. Output power</b>   |                  |             |             |             |
| 11. Max.output power          | W                | 4.3         | 6.2         | 7.1         |
| 12. Speed                     | rpm              | 5900        | 6800        | 6400        |
| 13. Current                   | A                | 1.5         | 1.1         | 0.6         |
| 14. Torque                    | mNm              | 6.9         | 8.8         | 10.6        |
| <b>At Stall</b>               |                  |             |             |             |
| 15. Stall current             | A                | 3.0         | 2.2         | 1.3         |
| 16. Stall torque              | mNm              | 13.8        | 17.5        | 21.1        |
| <b>Motor Constants</b>        |                  |             |             |             |
| 17. Terminal resistance       | $\Omega$         | 2.00        | 5.45        | 19.20       |
| 18. Terminal inductance       | mH               | 0.05        | 0.22        | 0.96        |
| 19. Torque constant           | mNm/A            | 4.73        | 8.20        | 17.40       |
| 20. Speed constant            | rpm/V            | 1966.7      | 1133.3      | 533.3       |
| 21. Speed/torque constant     | rpm/mNm          | 855.1       | 775.4       | 605.3       |
| 22. Mechanical time constant  | ms               | 12.0        | 10.9        | 8.9         |
| 23. Rotor inertia             | gcm <sup>2</sup> | 1.34        | 1.34        | 1.40        |
| 24. Number of pole pairs      |                  | 1           |             |             |
| 25. Number of phase           |                  | 5           |             |             |
| 26. Weight of motor           | g                | 31          |             |             |
| 27. Typical noise level       | dB               | ≤42         |             |             |

**Motor Drawing (mm)****Φ16\*L30mm****Technical Specifications**

1. Axial play: 0–0.1 mm
2. Sintered metal bearing load limits:
  - Max. axial load (dynamic): 0.5 N
  - Max. radial load (5 mm from flange): 5 N
3. Radial play: ≤0.03 mm
4. Ball bearing radial play: ≤0.015 mm
5. Ambient temperature range: -20 to +80°C
6. Relative humidity: <90% RH (25°C)
7. Highest rotor temperature: 125°C

**Motor terminal definition**

1. + Vcc
2. - GND

**Optional Parts**

1. Planetary gearbox

