**BL8488DS****Report for Brushless Motor Testing Data Sheet****Series No: BL8488DS- - - P 4**

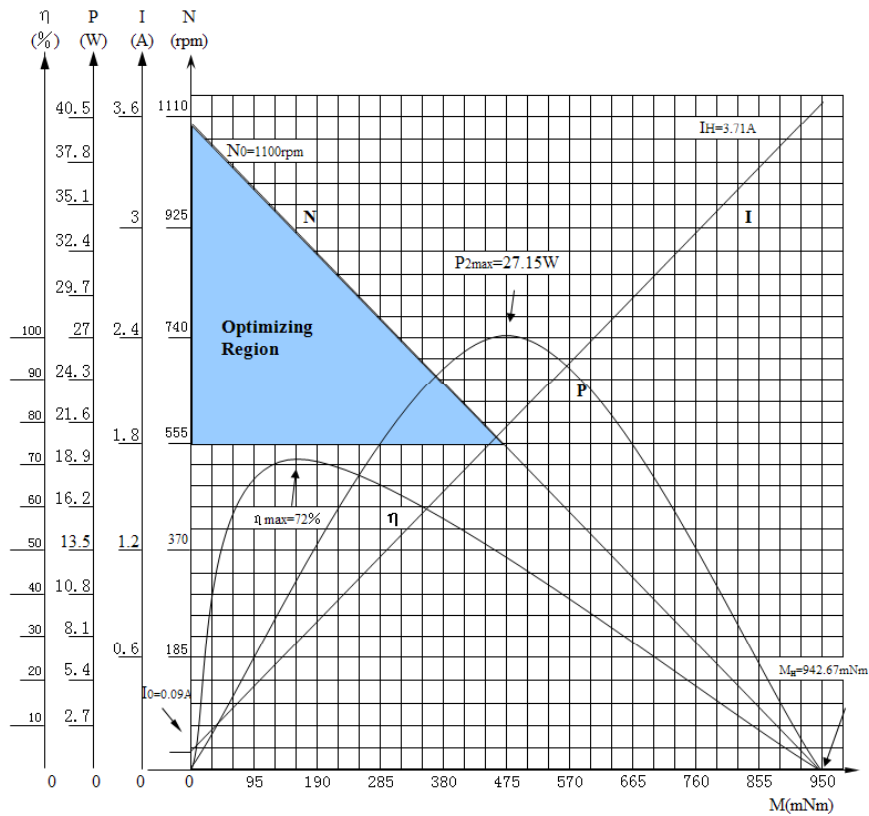
| No.  | Testing Item                        |                     | Tested Values              |             |             |  | Unit                               |
|--|-------------------------------------|---------------------|----------------------------|-------------|-------------|--|------------------------------------|
| 1  | Nominal voltage                     | $U_N$               | 30                         | 30          | 30          |  | V                                  |
| 2  | Terminal resistance, phase to phase | $R$                 | 7.9                        | 2.2         | 2.2         |  | $\Omega$                           |
| 3  | Output power                        | $P_{2max}$          | 27.15                      | 100.33      | 97.68       |  | W                                  |
| 4  | Efficiency                          | $\eta_{max}$        | 72                         | 81          | 72          |  | %                                  |
| 5  | No-load speed                       | $n_o$               | 1100                       | 2030        | 7020        |  | rpm                                |
| 6  | No-load current                     | $I_o$               | 0.09                       | 0.13        | 0.31        |  | A                                  |
| 7  | Stall torque                        | $M_H$               | 942.67                     | 1887.88     | 531.47      |  | mNm                                |
| 8  | Friction torque                     | $MF$                | 22.88                      | 18.17       | 12.36       |  | mNm                                |
| 9  | Speed constant                      | $k_n$               | 37.56                      | 68.32       | 239.44      |  | rpm/V                              |
| 10   | Back-EMF constant                   | $k_E$               | 26.63                      | 14.64       | 4.18        |  | mV/rpm                             |
| 11   | Torque constant                     | $k_M$               | 254.26                     | 139.78      | 39.88       |  | mNm/A                              |
| 12   | Current constant                    | $k_I$               | 0.00                       | 0.01        | 0.03        |  | A/mNm                              |
| 13   | Slope of n-M curve                  | $\Delta n/\Delta M$ | 1.17                       | 1.08        | 13.21       |  | rpm/mNm                            |
| 14   | Mechanical time constant            | $\tau_m$            | 6.95                       | 6.41        | 78.68       |  | ms                                 |
| 15   | Rotor inertia                       | $J$                 | 568.82                     | 568.82      | 568.82      |  | gcm <sup>2</sup>                   |
| 16   | Angular acceleration                | $\alpha_{max}$      | 16.57                      | 33.19       | 9.34        |  | 10 <sup>3</sup> rad/s <sup>2</sup> |
| 17   | Sensor                              |                     | Hall Sensor                | Hall Sensor | Hall Sensor |  |                                    |
| 18   | Driver                              |                     | DR3006                     | DR3006      | DR3006      |  |                                    |
| 19   | Weight                              |                     | 1215                       |             |             |  | g                                  |
| 20   | Operating temperature range         |                     | -30~+85                    |             |             |  |                                    |
| 21   | Commutation                         |                     | Electronically commutation |             |             |  |                                    |
| 22   | Ball Bearing                        |                     | EZO & NMB                  |             |             |  |                                    |
| 23   | Housing material                    |                     | Aluminum, black anodized   |             |             |  |                                    |
| 24   | Magnet material                     |                     | Sintered Nd-Fe-B           |             |             |  |                                    |
| 25   | Direction of rotation               |                     | Electronically reversible  |             |             |  |                                    |
| <b>The Operating Data For <math>\eta</math> max of Customer's Specifications</b> |                                     |                     |                            |             |             |  |                                    |
| 26   | Output Power                        | $P_{2opt}$          | 12.40                      | 32.37       | 43.97       |  | W                                  |
| 27   | Efficiency                          | $\eta_{opt}$        | 72                         | 81          | 72          |  | %                                  |
| 28   | Speed                               | $n_{opt}$           | 807                        | 1670        | 5183        |  | rpm                                |
| 29   | Load Current                        | $I_{opt}$           | 0.58                       | 1.33        | 2.03        |  | A                                  |
| 30   | Operating Torque                    | $M_{opt}$           | 146.87                     | 185.22      | 81.06       |  | mNm                                |

**Note:**The  $I_o$  is pure current of motor in this data sheet that means it not included the driver's current.



**BL8488DS**

## Operating Curve



Note:(1)The  $I_0$  is pure current of motor in this curve drawing that means it not included the driver's current.

(2)We have suggested there has a optimizing region for this motor's operating as hatched in drawing.

## Drawing

