

BL3575IE

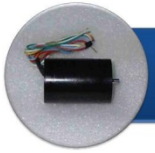
Report for Brushless Motor Testing Data Sheet

Series No: BL3575- -IE- - P 2

No.	Testing Item		Tested Values					Unit
1	Nominal voltage	U_N	12	12	18	18	24	V
2	Terminal resistance, phase to phase	R	1.8	1	2.9	1.8	2.5	Ω
3	Output power	P_{2max}	19.05	34.75	26.16	43.04	55.70	W
4	Efficiency	η_{max}	71	75	67	73	76	%
5	No-load speed	n_o	4250	6500	4670	6815	6500	rpm
6	No-load current	I_o	0.16	0.21	0.2	0.22	0.16	A
7	Stall torque	M_H	171.23	204.21	213.97	241.24	327.30	mNm
8	Friction torque	MF	4.21	3.64	7.12	5.43	5.55	mNm
9	Speed constant	k_n	362.88	551.31	268.08	387.13	275.42	rpm/V
10	Back-EMF constant	k_E	2.76	1.81	3.73	2.58	3.63	mV/rpm
11	Torque constant	k_M	26.32	17.32	35.62	24.67	34.67	mNm/A
12	Current constant	k_I	0.04	0.06	0.03	0.04	0.03	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	24.82	31.83	21.83	28.25	19.86	rpm/mNm
14	Mechanical time constant	τ_m	9.26	11.88	8.15	10.54	7.41	ms
15	Rotor inertia	J	35.64	35.64	35.64	35.64	35.64	gcm ²
16	Angular acceleration	α_{max}	48.04	57.30	60.04	67.69	91.83	10 ³ rad/s ²
17	Sensor		Hall Sensor					
18	Driver		DR3006					
19	Weight		300					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					
The Operating Data For η_{max} of Customer's Specifications								
26	Output Power	P_{2opt}	8.74	14.22	13.28	19.15	22.37	W
27	Efficiency	η_{opt}	71	75	67	73	76	%
28	Speed	n_{opt}	3111	4984	3250	5057	5016	rpm
29	Load Current	I_{opt}	1.02	1.57	1.10	1.47	1.23	A
30	Operating Torque	M_{opt}	26.85	27.25	39.04	36.18	42.61	mNm

Note:

- (1) The I_o is pure current of motor in this data sheet that means it not included the driver's current.
- (2) This type of motor can be assemble for planetary Gearbox which type of IG32 and made from Shayang Ye Co., Taiwan, and please to see Gearbox' s sheet attached if you have need it.

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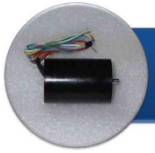
No.	Testing Item		Tested Values					Unit
1	Nominal voltage	U_N	24	24	24	24	24	V
2	Terminal resistance, phase to phase	R	1.6	6	3.1	2	1.8	Ω
3	Output power	P_{2max}	86.32	22.47	44.32	67.74	76.09	W
4	Efficiency	η_{max}	73	67	72	68	71	%
5	No-load speed	n_o	10000	4980	7460	10200	8400	rpm
6	No-load current	I_o	0.31	0.13	0.18	0.36	0.33	A
7	Stall torque	M_H	329.71	172.31	226.91	253.69	346.00	mNm
8	Friction torque	MF	6.96	5.79	5.40	7.85	8.78	mNm
9	Speed constant	k_n	425.46	214.47	318.23	438.14	358.88	rpm/V
10	Back-EMF constant	k_E	2.35	4.66	3.14	2.28	2.79	mV/rpm
11	Torque constant	k_M	22.44	44.53	30.01	21.79	26.61	mNm/A
12	Current constant	k_I	0.04	0.02	0.03	0.05	0.04	A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	30.33	28.90	32.88	40.21	24.28	rpm/mNm
14	Mechanical time constant	τ_n	11.32	10.79	12.27	15.01	9.06	ms
15	Rotor inertia	J	35.64	35.64	35.64	35.64	35.64	gcm ²
16	Angular acceleration	α_{max}	92.51	48.35	63.67	71.18	97.08	10 ³ rad/s ²
17	Sensor		Hall Sensor					
18	Driver		DR3006					
19	Weight		300					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					

The Operating Data For η_{max} of Customer's Specifications

26	Output Power	P_{2opt}	37.55	11.44	20.11	33.58	35.30	W
27	Efficiency	η_{opt}	73	67	72	68	71	%
28	Speed	n_{opt}	7490	3460	5489	7192	6119	rpm
29	Load Current	I_{opt}	2.13	0.71	1.17	2.05	2.07	A
30	Operating Torque	M_{opt}	47.90	31.58	35.01	44.62	55.12	mNm

Note:

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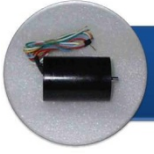
No.	Testing Item		Tested Values				Unit
1	Nominal voltage	U_N	24	30			V
2	Terminal resistance, phase to phase	R	0.7	1			Ω
3	Output power	P_{2max}	198.93	218.30			W
4	Efficiency	η_{max}	76	77			%
5	No-load speed	n_o	14580	16400			rpm
6	No-load current	I_o	0.57	0.45			A
7	Stall torque	M_H	521.17	508.44			mNm
8	Friction torque	MF	8.81	7.74			mNm
9	Speed constant	k_n	617.77	554.99			rpm/V
10	Back-EMF constant	k_E	1.62	1.80			mV/rpm
11	Torque constant	k_M	15.46	17.21			mNm/A
12	Current constant	k_I	0.06	0.06			A/mNm
13	Slope of n-M curve	$\Delta n/\Delta M$	27.98	32.26			rpm/mNm
14	Mechanical time constant	τ_n	10.44	12.04			ms
15	Rotor inertia	J	35.64	35.64			gcm ²
16	Angular acceleration	α_{max}	146.23	142.66			10 ³ rad/s ²
17	Sensor		Hall Sensor				
18	Driver		DR3006				
19	Weight		300				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				

The Operating Data For η_{max} of Customer's Specifications

26	Output Power	P_{2opt}	79.83	84.24			W
27	Efficiency	η_{opt}	76	77			%
28	Speed	n_{opt}	11255	12828			rpm
29	Load Current	I_{opt}	4.38	3.65			A
30	Operating Torque	M_{opt}	67.76	62.74			mNm

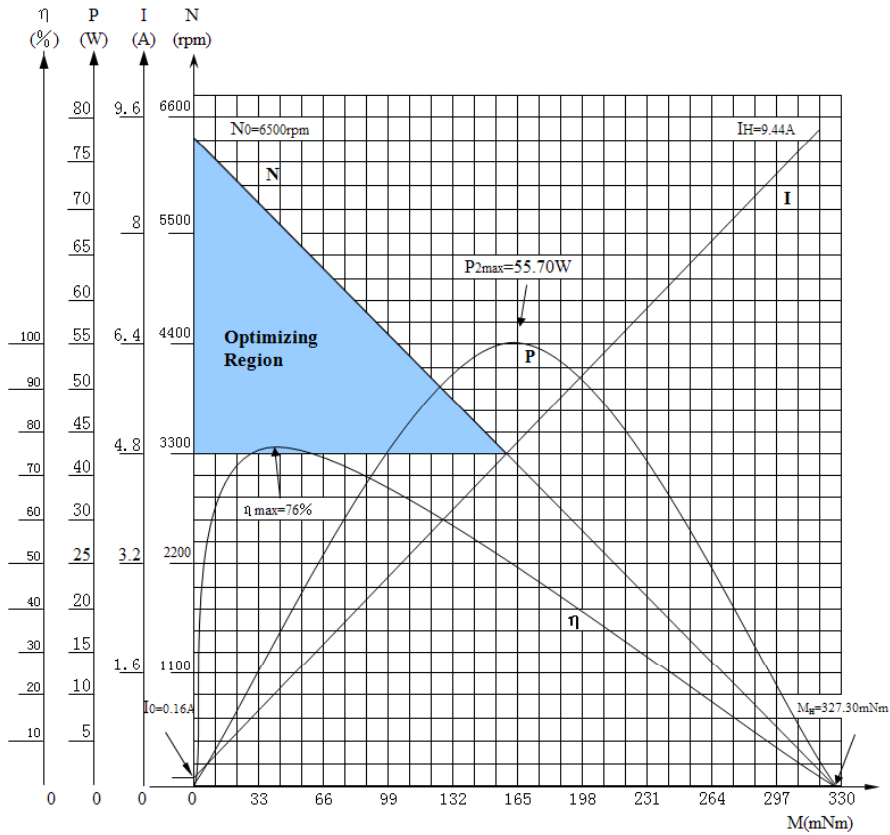
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Operating Curve



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

