

TYPE TEST REPORT

Report No. : IE3-100L2-4 3KW 14111001

Product Type Name	IE3-100L2-4 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	3 kW	Rated Voltage	400 V	Rated Current	6.0 A
Rated Speed	1455 r/min	Rated Frequency	50Hz	Insulation Class	F
Duty	S1	Protection Class	IP55	Connection	Y
Product Standard	IEC60034-1	Testing Standard	IEC60034-2-1	Production Date	
Test Item		Test Value		Test Result	
1. Stator resistance at 20°C	Ω	2.3514			
2. No load current	A	3.05			
3. No load current deviation	%	2.6			
4. No load input power	W	177.8			
5. Locked rotor current	A	52.27			
6. Locked current/Rated current		8.58			
7. Locked torque	N.m	53.30			
8. Locked torque/Rated torque		2.72			
9. Full load current	A	6.09			
10. Rated torque	N.m	19.62			
11. Max. torque	N.m	76.54			
12. Max. torque/Rated torque		3.90			
13. Full load speed ratio	r/min	1459.9			
14. Iron loss(at Rated voltage)	W	123.1			
15. Mechanical loss(at Rated speed)	W	19.3			
16. Stator winding loss	W	154.9			
17. Rotor winding loss	W	86.5			
18. Other loss	W	36.6			
19. Total loss	W	419.3			
20. Output power	W	3000			

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Test Item		Test Value	Test Result
21. Input power	W	3419.34	
22. Full load efficiency	%	87.74	
23. Full Load power factor		0.810	
24. Stator winding temp.rise	K	40.4	
25. Bearing temperature	°C	54	
26. Coolant temperature	°C	19.4	
27. Insulation resistance warmly to frame	MΩ	500	
28. High voltage test	V min	Pass	Passed
29. Vibration	mm/s	1.2	
30. Noise	dB(A)	57	
31. Rotation Direction		Right	Passed
32. H.V. inpulse test between winding	V	Pass	Passed
33. Over speed test 2min 1.2n		No abnormal	Passed
34. Over Torque test 15s 2.2Tn		No abnormal	Passed
35. Over current test 2min 1.5In		No abnormal	Passed
Testing Conclusion			
Remark			
Tested by		Checked by	
		Formed	

three-phase induction motor type test report

Amb Temp: 19.45°C

report NO.: IE3-100L2-4 3KW 14111001

test time:

Modle: IE3-100L2-4
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 6.0A
Rated P: 3kW

Rated η : 87.70%
Cos ϕ : 0.82
Rated speed: 1455r/min

InsClass: F
Connect: Y
Poles: 4

Resistance test

Rac(Ω): 2.3480

Rbc(Ω): 2.3520

Rab(Ω): 2.3460

Ravg(Ω): 2.3487
75°C R (Ω): 2.8624
25°C R (Ω): 2.4007

Shell Temp(°C): 19.7
Amb Temp(°C): 19.36

No load test

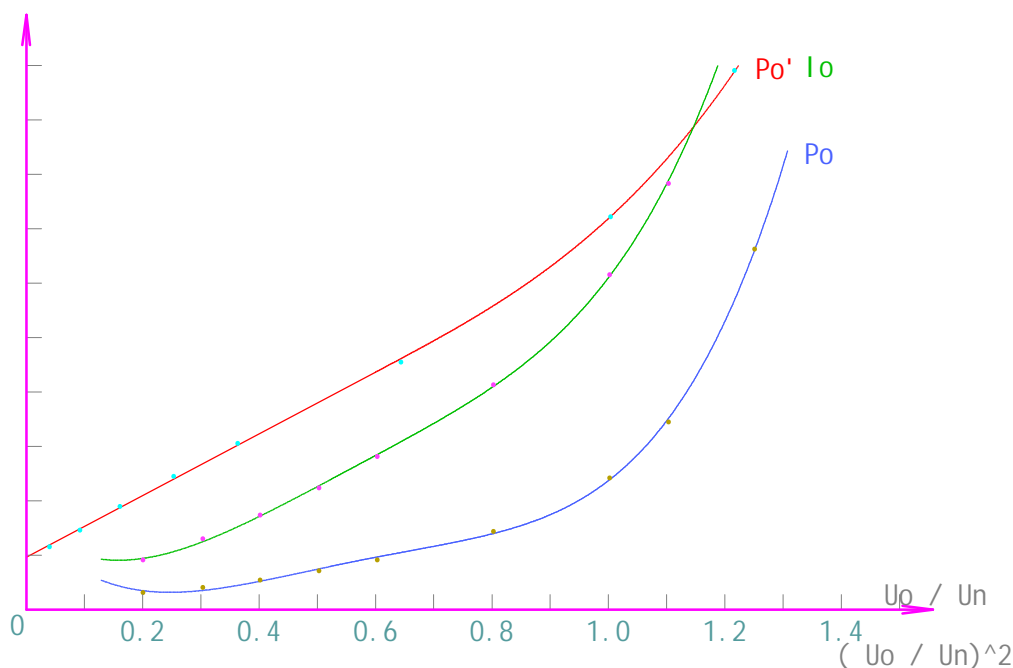
U*	U (V)	I (A)	Po(kW)	Po' (kW)	Pcu(kW)	WindingT(°C)
1.25	500.5	6.04	0.4970	0.3524	0.1446	50.79
1.10	441.2	3.92	0.2590	0.1982	0.0608	50.79
1.00	400.7	3.08	0.1820	0.1445	0.0375	51.03
0.80	320.9	2.07	0.1080	0.0911	0.0169	51.03
0.60	241.1	1.41	0.0690	0.0611	0.0079	50.96
0.50	201.2	1.12	0.0540	0.0490	0.0050	50.96
0.40	160.6	0.87	0.0410	0.0380	0.0030	50.56
0.30	121.3	0.65	0.0310	0.0293	0.0017	50.56
0.20	80.2	0.46	0.0240	0.0232	0.0008	49.84

Thermal R(Ω): 2.6000
Io(A): 3.05
Pm(kW): 0.0193

Shell Temp(°C): 42.2
Io(kW): 0.1778
Pfe(kW): 0.1231

No Load Characteristic Curve

Io	Po	Po'
A	kW	kW
5.0	0.750	0.20
4.5	0.675	0.18
4.0	0.600	0.16
3.5	0.525	0.14
3.0	0.450	0.12
2.5	0.375	0.10
2.0	0.300	0.08
1.5	0.225	0.06
1.0	0.150	0.04
0.5	0.075	0.02



test:

check:

three-phase induction motor type test report

Amb Temp: 19.4°C

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test time:

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NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 6.0A
Rated P: 3kW

Rated η : 87.70%
Cos ϕ : 0.82
Rated speed: 1455r/min

InsClass: F
Connect: Y
Poles: 4

Locked-rotor Test

U(V)	I(A)	P1(KW)	Tor(N.m)
366.9	46.05	16.3900	42.93
341.0	42.27	13.5900	37.60
300.5	36.00	9.7500	26.77
257.6	29.28	6.5120	18.47
214.4	22.86	3.9990	11.29
168.0	16.49	2.1090	6.03
117.0	10.41	0.8550	2.84
68.4	5.69	0.2580	0.87

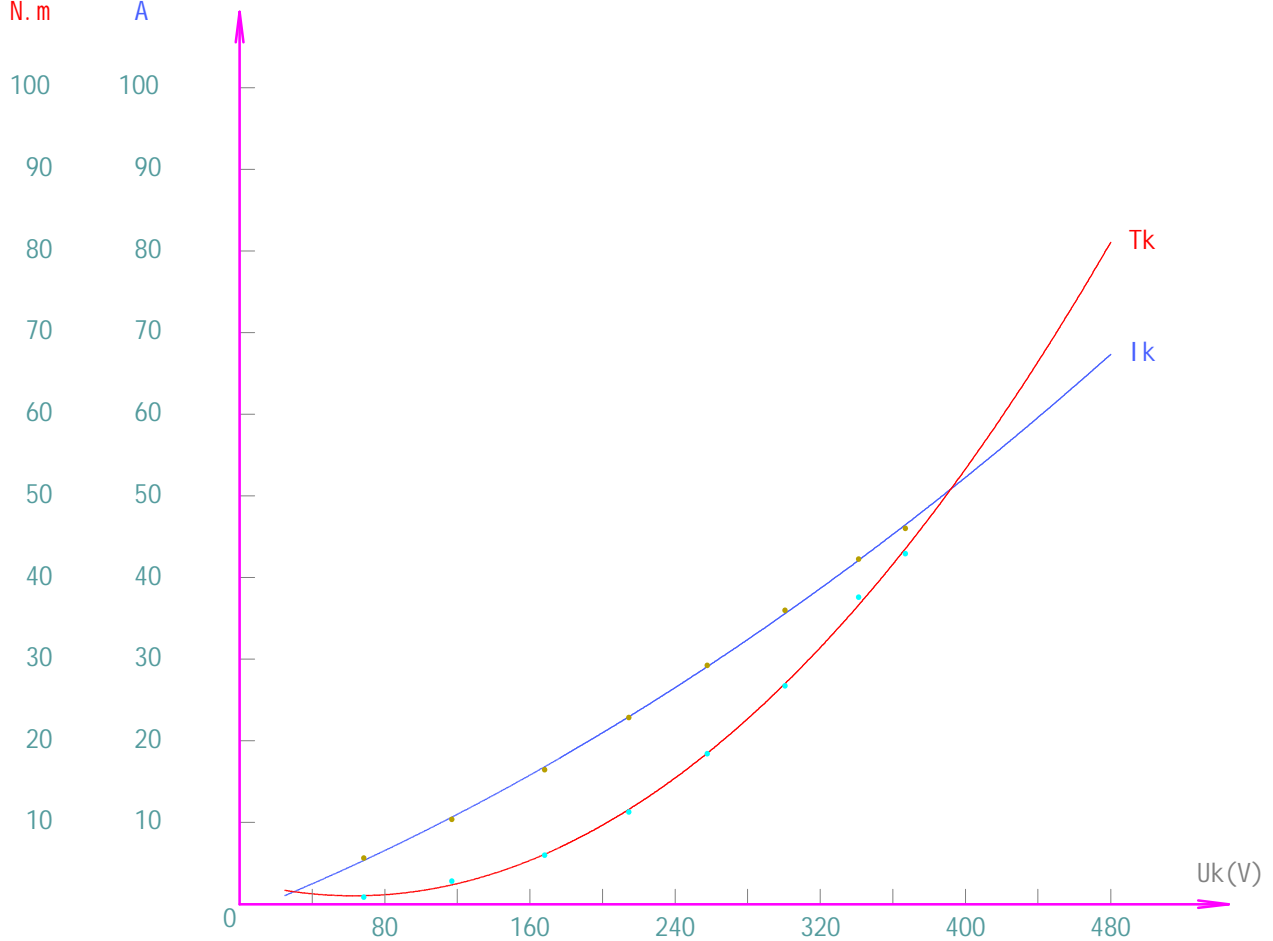
I_k (A): 52.27
T_k(N.m): 53.30
P_k(kW): 18.91

I_k/I_n: 8.58
T_k/T_n: 2.72

T_k
N.m

I_k
A

Locked-Rotor Characteristic Curve



test:

check:

three-phase induction motor type test report

Amb Temp: 19.4℃

report NO.: IE3-100L2-4 3KW 14111001

test time:

Modle: IE3-100L2-4	Rated U: 400V	Rated η : 87.70%	InsClass: F
NO.:	Rated I: 6.0A	Cos ϕ : 0.82	Connect: Y
Rated f: 50Hz	Rated P: 3kW	Rated speed: 1455r/min	Poles: 4

Load Test

P1(kW)	U(V)	I (A)	s(r/min)	Tor (N.m)	windingT(℃)
5.3600	401.2	9.08	1433.0	30.370	54.06
4.3260	400.8	7.46	1447.0	24.840	56.46
3.5140	402.3	6.19	1459.0	20.170	56.56
2.5960	402.5	5.03	1471.0	14.840	56.36
1.7800	402.1	4.09	1481.0	9.900	55.73
0.9680	400.8	3.36	1490.0	4.760	55.12
0.2910	400.4	3.08	1498.0	0.700	53.20
0.1830	400.4	3.07	0.0	0.000	50.62

P2(kW)	Pcu(kW)	Pal (kW)	Ps(kW)	Ss(%)	η (%)	Cos ϕ
4.5596	0.3434	0.2275	0.0872	4.65	85.07	0.850
3.7488	0.2317	0.1448	0.0583	3.65	86.66	0.836
3.0823	0.1598	0.0911	0.0384	2.82	87.71	0.814
2.2801	0.1054	0.0472	0.0208	2.00	87.83	0.740
1.5379	0.0697	0.0208	0.0092	1.31	86.40	0.625
0.7708	0.0472	0.0055	0.0021	0.69	79.63	0.414
0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.000
0.0000	0.0000	0.0000	0.0000	0.00	0.00	0.000

r: 0.921

A: 0.095

B: 12.477

θ s(℃): 65.4

150% rated power:

I (A): 8.96	P1(kW): 5.2823	Ss (%): 4.40
Pcu(kW): 0.3445	Pal (kW): 0.2119	Ps(kW): 0.0849
η (%): 85.19	Cos ϕ : 0.851	P2(kW): 4.50

125% rated power:

I (A): 7.42	P1(kW): 4.3262	Ss (%): 3.51
Pcu(kW): 0.2366	Pal (kW): 0.1392	Ps(kW): 0.0581
η (%): 86.68	Cos ϕ : 0.841	P2(kW): 3.75

100% rated power:

I (A): 6.09	P1(kW): 3.4193	Ss (%): 2.67
Pcu(kW): 0.1595	Pal (kW): 0.0838	Ps(kW): 0.0366
η (%): 87.74	Cos ϕ : 0.810	P2(kW): 3.00

75% rated power:

I (A): 4.97	P1(kW): 2.5601	Ss (%): 1.90
Pcu(kW): 0.1062	Pal (kW): 0.0443	Ps(kW): 0.0202
η (%): 87.89	Cos ϕ : 0.743	P2(kW): 2.25

50% rated power:

I (A): 4.06	P1(kW): 1.7405	Ss (%): 1.22
Pcu(kW): 0.0706	Pal (kW): 0.0189	Ps(kW): 0.0087
η (%): 86.18	Cos ϕ : 0.619	P2(kW): 1.50

25% rated power:

I (A): 3.34	P1(kW): 0.9459	Ss (%): 0.66
Pcu(kW): 0.0480	Pal (kW): 0.0051	Ps(kW): 0.0020
η (%): 79.29	Cos ϕ : 0.408	P2(kW): 0.75

Load Characteristic Curve

Report No. : IE3-100L2-4 3KW 14111001
 Model : IE3-100L2-4
 Rated Output: 3 kW
 Ser.No. :

When P2 = 3 kW ,
 I1 = 6.09 A
 P1 = 3.4193 kW
 Sref = 2.67 %
 η = 87.74 %
 Cos ϕ = 0.810

cos ϕ	η %	Sref %	P1 kW	I1 A
1.0	100	5.0	5.0	10
0.9	90	4.5	4.5	9
0.8	80	4.0	4.0	8
0.7	70	3.5	3.5	7
0.6	60	3.0	3.0	6
0.5	50	2.5	2.5	5
0.4	40	2.0	2.0	4
0.3	30	1.5	1.5	3
0.2	20	1.0	1.0	2
0.1	10	0.5	0.5	1

