

TYPE TEST REPORT

Report No. : IE3-160M2-2 15KW 14051701

Product Type Name	IE3-160M2-2 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	15 kW	Rated Voltage	400 V	Rated Current	26.5 A
Rated Speed	2950 r/min	Rated Frequency	50Hz	Insulation Class	F
Duty	S1	Protection Class	IP55	Connection	△
Product Standard	IEC60034-1	Testing Standard	IEC60034-2-1	Production Date	
Test Item		Test Value		Test Result	
1. Stator resistance at 20°C	Ω	0.2688			
2. No load current	A	7.63			
3. No load current deviation	%	2.2			
4. No load input power	W	481.2			
5. Locked rotor current	A	228.17			
6. Locked current/Rated current		8.65			
7. Locked torque	N.m	140.57			
8. Locked torque/Rated torque		2.90			
9. Full load current	A	26.38			
10. Rated torque	N.m	48.45			
11. Max. torque	N.m	172.91			
12. Max. torque/Rated torque		3.57			
13. Full load speed ratio	r/min	2956.8			
14. Iron loss(at Rated voltage)	W	279.8			
15. Mechanical loss(at Rated speed)	W	176.2			
16. Stator winding loss	W	345.0			
17. Rotor winding loss	W	236.9			
18. Other loss	W	271.8			
19. Total loss	W	1309.8			
20. Output power	W	15000			

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Test Item		Test Value	Test Result
21. Input power	W	16309.76	
22. Full load efficiency	%	91.97	
23. Full Load power factor		0.892	
24. Stator winding temp.rise	K	52.6	
25. Bearing temperature	°C	67	
26. Coolant temperature	°C	21.1	
27. Insulation resistance warmly to frame	MΩ	500	
28. High voltage test	V min	Pass	Passed
29. Vibration	mm/s	1.3	
30. Noise	dB(A)	72	
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: 22.7°C

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test time:

Modle: IE3-160M2-2
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 26.5A
Rated P: 15kW

Rated η : 91.9%
Cos ϕ : 0.89
Rated speed: 2950r/min

InsClass: F
Connect: Δ
Poles: 2

Resistance test

Rac(Ω): 0.2708

Rbc(Ω): 0.2704

Rab(Ω): 0.2705

Ravg(Ω): 0.2706
115°C R (Ω): 0.3698
25°C R (Ω): 0.2747

Shell Temp(°C): 21.7
Amb Temp(°C): 21.10

No load test

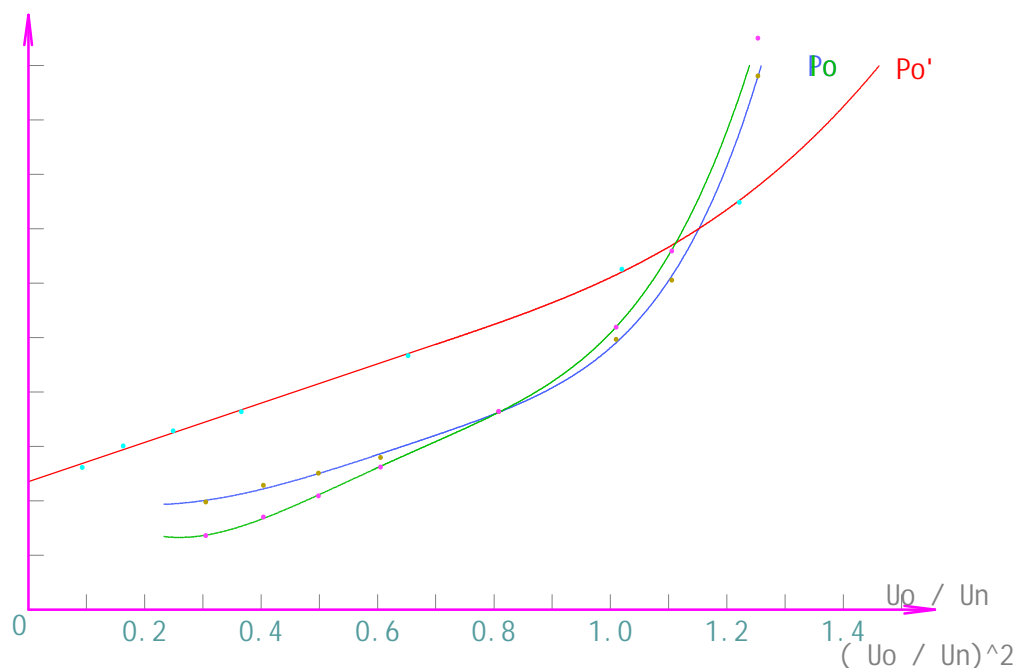
U*	U (V)	I (A)	Po(kW)	Po' (kW)	Pcu(kW)	WindingT(°C)
1.25	501.4	15.75	0.9810	0.8679	0.1131	52.64
1.11	442.1	9.89	0.6060	0.5614	0.0446	52.64
1.01	403.9	7.79	0.4970	0.4693	0.0277	52.73
0.81	323.1	5.47	0.3640	0.3504	0.0136	52.73
0.61	242.1	3.93	0.2800	0.2729	0.0071	52.67
0.50	199.5	3.14	0.2510	0.2465	0.0045	52.67
0.40	161.6	2.56	0.2290	0.2260	0.0030	52.58
0.30	121.9	2.05	0.1980	0.1961	0.0019	52.58

Thermal R(Ω): 0.3042
Io(A): 7.63
Pm(kW): 0.1762

Shell Temp(°C): 42.0
Io(kW): 0.4812
Pfe(kW): 0.2798

No Load Characteristic Curve

Io A	Po kW	Po' kW
15.0	1.0	0.750
13.5	0.9	0.675
12.0	0.8	0.600
10.5	0.7	0.525
9.0	0.6	0.450
7.5	0.5	0.375
6.0	0.4	0.300
4.5	0.3	0.225
3.0	0.2	0.150
1.5	0.1	0.075



test:

check:

three-phase induction motor type test report

Amb Temp: 21.1°C

report NO.: IE3-160M2-2 15KW 14051701

test time:

Modle: IE3-160M2-2	Rated U: 400V	Rated η : 91.9%	InsClass: F
NO.:	Rated I: 26.5A	Cos ϕ : 0.89	Connect: Δ
Rated f: 50Hz	Rated P: 15kW	Rated speed: 2950r/min	Pol es: 2

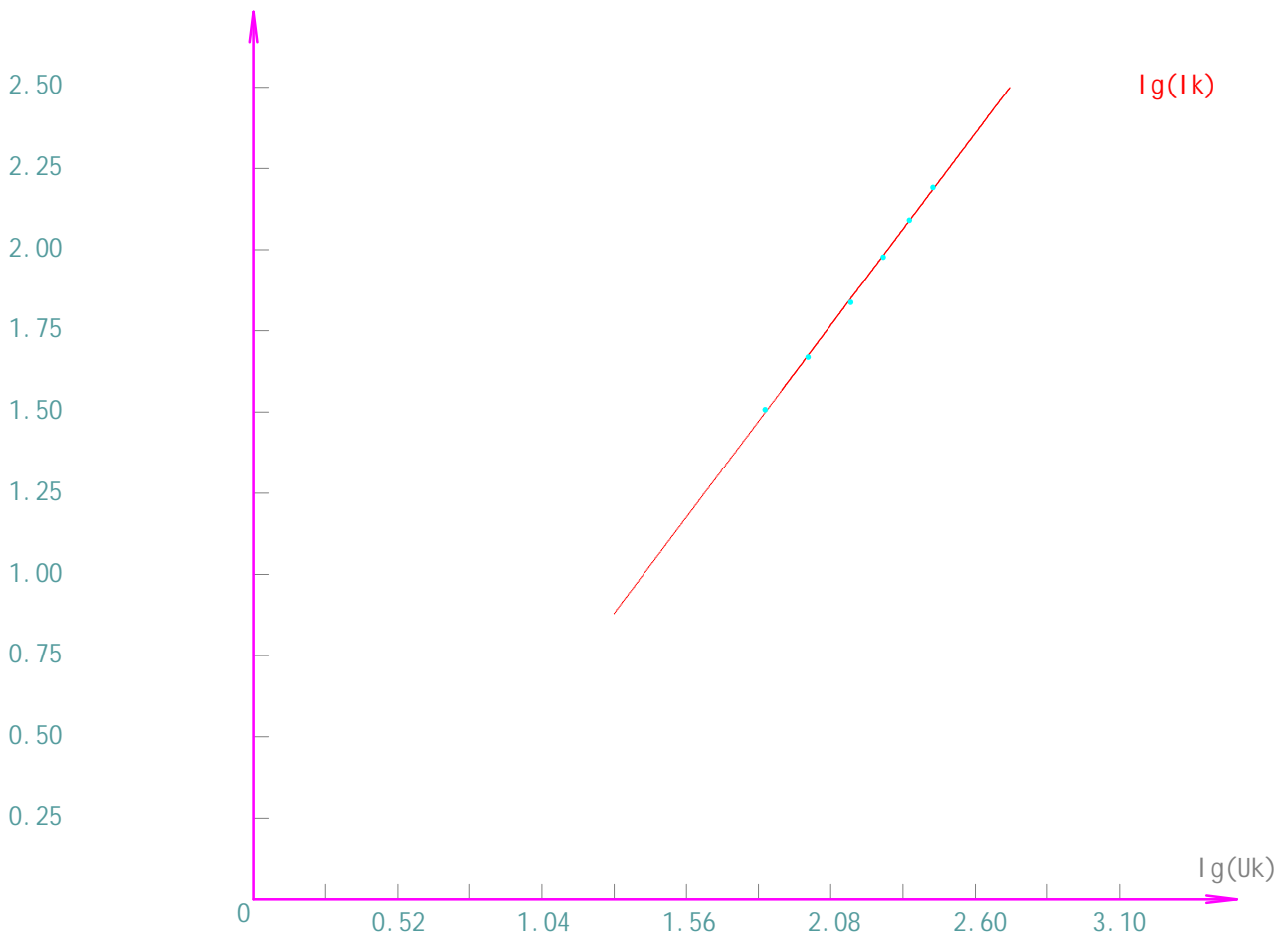
Locked-rotor Test

U(V)	I (A)	P1(KW)	Tor(N.m)
281.6	155.63	34.1600	65.40
231.7	123.42	21.4750	41.00
186.2	94.95	12.7220	25.10
142.3	68.97	6.7360	13.60
99.9	46.74	3.0970	6.40
70.0	32.22	1.4740	3.00

I _k (A): 228.17	I _k /I _n : 8.65
T _k (N.m): 140.57	T _k /T _n : 2.90
P _k (kW): 68.86	

I_g(I_k)

Locked-Rotor Characteristic Curve



test:

check:

three-phase induction motor type test report

Amb Temp: 21.1°C

report NO.: IE3-160M2-2 15KW 14051701

test time:

Modle: IE3-160M2-2	Rated U: 400V	Rated η : 91.9%	InsClass: F
NO.:	Rated I: 26.5A	Cos ϕ : 0.89	Connect: Δ
Rated f: 50Hz	Rated P: 15kW	Rated speed: 2950r/min	Pol es: 2

Load Test

P1(kW)	U(V)	I (A)	s(r/min)	Tor (N.m)	wi ndi ngT(°C)
25.3400	399.2	41.18	2928.0	74.000	63.02
20.6700	399.8	33.48	2943.0	60.900	63.47
16.5800	401.2	26.69	2956.0	48.600	63.97
12.5300	400.6	20.72	2968.0	36.800	64.38
8.3700	401.0	14.79	2980.0	24.100	64.47
4.4900	400.7	10.14	2989.0	12.200	64.35
0.6510	402.4	7.71	2999.0	0.300	63.58
0.5260	400.8	7.68	0.0	0.000	60.11

P2(kW)	Pcu(kW)	Pal (kW)	Ps(kW)	Ss(%)	η (%)	Cos ϕ
22.7890	0.8396	0.6107	0.6447	2.52	89.93	0.890
18.8268	0.5550	0.3953	0.4369	1.99	91.08	0.892
15.2479	0.3528	0.2449	0.2785	1.54	91.97	0.894
11.5673	0.2126	0.1343	0.1599	1.12	92.32	0.871
7.6813	0.1083	0.0556	0.0688	0.70	91.77	0.815
3.9494	0.0509	0.0159	0.0178	0.38	87.96	0.638
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: 0.984

A: 0.117

B: 126.501

θ s(°C): 77.6

150% rated power:

I (A): 40.61	P1(kW): 24.9941	Ss (%): 2.36
Pcu(kW): 0.9148	Pal (kW): 0.5623	Ps(kW): 0.6284
η (%): 90.02	Cos ϕ : 0.888	P2(kW): 22.50

125% rated power:

I (A): 33.26	P1(kW): 20.5756	Ss (%): 1.89
Pcu(kW): 0.6135	Pal (kW): 0.3723	Ps(kW): 0.4310
η (%): 91.13	Cos ϕ : 0.893	P2(kW): 18.75

100% rated power:

I (A): 26.38	P1(kW): 16.3098	Ss (%): 1.44
Pcu(kW): 0.3861	Pal (kW): 0.2254	Ps(kW): 0.2718
η (%): 91.97	Cos ϕ : 0.892	P2(kW): 15.00

75% rated power:

I (A): 20.12	P1(kW): 12.1823	Ss (%): 1.02
Pcu(kW): 0.2244	Pal (kW): 0.1197	Ps(kW): 0.1500
η (%): 92.35	Cos ϕ : 0.874	P2(kW): 11.25

50% rated power:

I (A): 14.58	P1(kW): 8.1791	Ss (%): 0.66
Pcu(kW): 0.1179	Pal (kW): 0.0511	Ps(kW): 0.0651
η (%): 91.70	Cos ϕ : 0.810	P2(kW): 7.50

25% rated power:

I (A): 9.91	P1(kW): 4.2859	Ss (%): 0.35
Pcu(kW): 0.0545	Pal (kW): 0.0138	Ps(kW): 0.0163
η (%): 87.50	Cos ϕ : 0.624	P2(kW): 3.75

