

TYPE TEST REPORT

Report No. : IE3-160M1-2 11KW 14051101

Product Type Name	IE3-160M1-2 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	11 kW	Rated Voltage	400 V	Rated Current	19.6 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	0.3499			
2. No load current	A	6.19			
3. No load current deviation	%	3.2			
4. No load input power	W	474.8			
5. Locked rotor current	A	174.74			
6. Locked current/Rated current		8.92			
7. Locked torque	N.m	105.96			
8. Locked torque/Rated torque		2.99			
9. Full load current	A	19.58			
10. Rated torque	N.m	35.49			
11. Max. torque	N.m	132.87			
12. Max. torque/Rated torque		3.74			
13. Full load speed ratio	r/min	2959.5			
14. Iron loss(at Rated voltage)	W	240.7			
15. Mechanical loss(at Rated speed)	W	212.4			
16. Stator winding loss	W	241.0			
17. Rotor winding loss	W	163.2			
18. Other loss	W	183.9			
19. Total loss	W	1039.7			
20. Output power	W	11000			

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Test Item		Test Value	Test Result
21. Input power	W	12039.66	
22. Full load efficiency	%	91.36	
23. Full Load power factor		0.888	
24. Stator winding temp.rise	K	44.4	
25. Bearing temperature	°C	63	
26. Coolant temperature	°C	20.4	
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)	69	
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: 24°C

report NO.: IE3-160M1-2 11KW 14051101

test time:

Modle: IE3-160M1-2
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 19.6A
Rated P: 11kW

Rated η : 91.20%
Cos ϕ : 0.89
Rated speed: 2950r/min

InsClass: F
Connect: Δ
Poles: 2

Resistance test

Rac(Ω): 0.3512

Rbc(Ω): 0.3513

Rab(Ω): 0.3513

Ravg(Ω): 0.3513
115°C R (Ω): 0.4814
25°C R (Ω): 0.3576

Shell Temp(°C): 21.0
Amb Temp(°C): 20.40

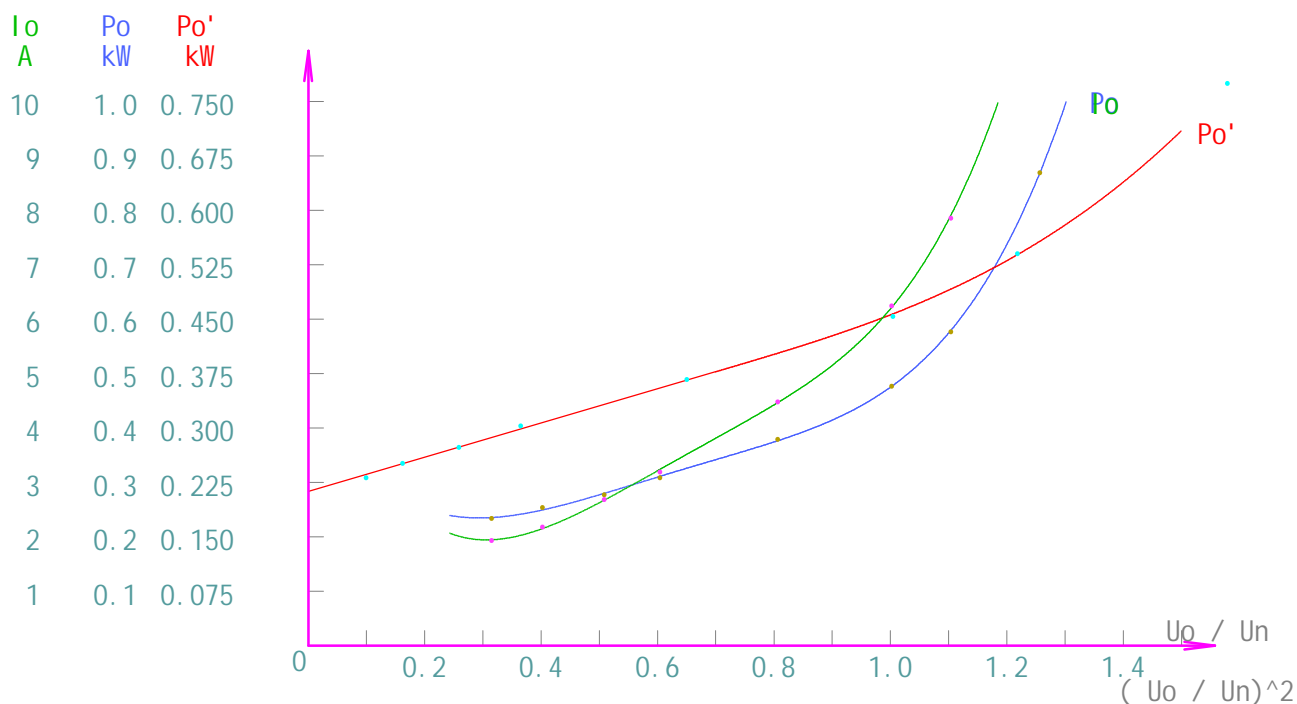
No load test

U*	U (V)	I (A)	Po(kW)	Po' (kW)	Pcu(kW)	WindingT(°C)
1.26	502.6	12.57	0.8690	0.7751	0.0939	52.94
1.10	441.5	7.86	0.5770	0.5403	0.0367	52.94
1.00	400.8	6.25	0.4770	0.4538	0.0232	52.88
0.81	322.6	4.48	0.3790	0.3671	0.0119	52.88
0.60	241.6	3.20	0.3090	0.3029	0.0061	52.85
0.51	203.4	2.69	0.2780	0.2737	0.0043	52.85
0.40	160.9	2.18	0.2540	0.2512	0.0028	52.64
0.31	125.9	1.93	0.2340	0.2318	0.0022	52.64

Thermal R(Ω): 0.3997
Io(A): 6.19
Pm(kW): 0.2124

Shell Temp(°C): 40.1
Io(kW): 0.4748
Pfe(kW): 0.2407

No Load Characteristic Curve



three-phase induction motor type test report

Amb Temp: 20.4°C

report NO.: IE3-160M1-2 11KW 14051101

test time:

Modle: IE3-160M1-2	Rated U: 400V	Rated η : 91.20%	InsClass: F
NO.:	Rated I: 19.6A	Cos ϕ : 0.89	Connect: Δ
Rated f: 50Hz	Rated P: 11kW	Rated speed: 2950r/min	Poles: 2

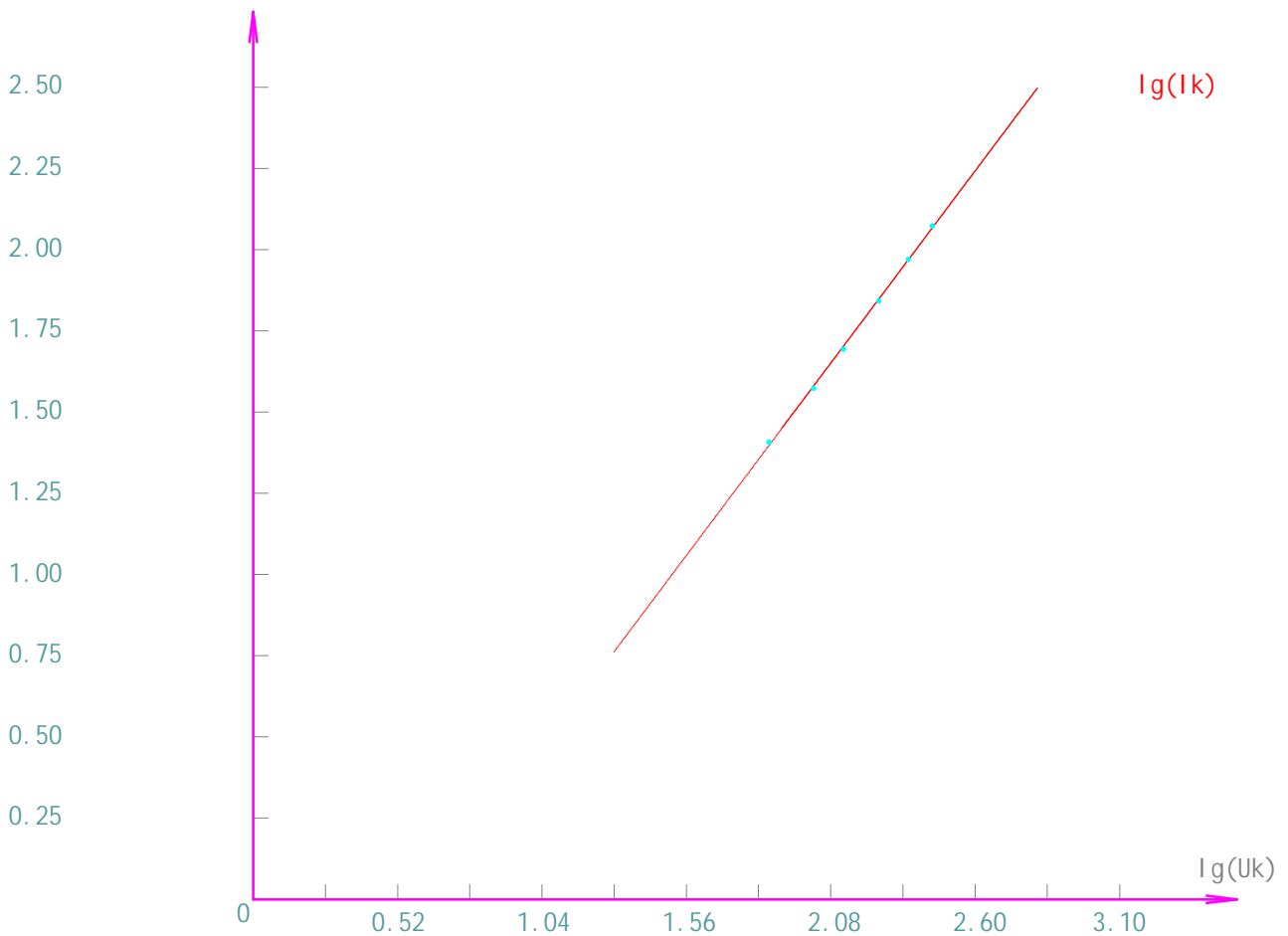
Locked-rotor Test

U(V)	I (A)	P1(KW)	Tor(N.m)
280.3	118.47	25.5550	48.70
229.6	93.49	15.9460	31.20
179.8	69.58	8.8720	18.00
134.1	49.39	4.4960	9.10
104.5	37.47	2.5990	5.20
72.2	25.56	1.2140	2.40

I _k (A): 174.74	I _k /I _n : 8.92
T _k (N.m): 105.96	T _k /T _n : 2.99
P _k (kW): 52.14	

I_g(I_k)

Locked-Rotor Characteristic Curve



test:

check:

three-phase induction motor type test report

Amb Temp: 20.4°C

report NO.: IE3-160M1-2 11KW 14051101

test time:

Modle: IE3-160M1-2	Rated U: 400V	Rated η : 91.20%	InsClass: F
NO.:	Rated I: 19.6A	Cos ϕ : 0.89	Connect: Δ
Rated f: 50Hz	Rated P: 11kW	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)
18.5950	401.5	29.87	2934.0	54.400	55.52
15.2200	401.2	24.47	2947.0	44.900	56.62
12.1750	401.5	19.84	2959.0	35.800	56.94
9.3200	403.9	15.54	2970.0	27.200	57.14
6.1650	400.3	11.38	2980.0	17.700	56.85
3.3250	400.0	8.08	2990.0	8.800	56.54
0.6050	400.0	6.23	2999.0	0.300	55.61
0.4930	400.1	6.17	0.0	0.000	53.20

P2(kW)	Pcu(kW)	Pal (kW)	Ps(kW)	Ss(%)	η (%)	Cos ϕ
16.7388	0.5605	0.4108	0.4319	2.31	90.02	0.895
13.8269	0.3760	0.2697	0.2943	1.85	90.85	0.895
11.1207	0.2472	0.1668	0.1872	1.43	91.34	0.882
8.5139	0.1516	0.0932	0.1082	1.04	91.35	0.857
5.5439	0.0814	0.0407	0.0459	0.70	89.93	0.781
2.8088	0.0410	0.0106	0.0114	0.35	84.48	0.594
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: 0.986

A: 0.146

B: 25.404

θ s(°C): 69.4

150% rated power:

I (A): 29.42
Pcu(kW): 0.6249
 η (%): 90.09

P1(kW): 18.3148
Pal (kW): 0.3779
Cos ϕ : 0.899

Ss (%): 2.17
Ps(kW): 0.4198
P2(kW): 16.50

125% rated power:

I (A): 24.36
Pcu(kW): 0.4285
 η (%): 90.86

P1(kW): 15.1329
Pal (kW): 0.2524
Cos ϕ : 0.897

Ss (%): 1.75
Ps(kW): 0.2899
P2(kW): 13.75

100% rated power:

I (A): 19.58
Pcu(kW): 0.2768
 η (%): 91.36

P1(kW): 12.0397
Pal (kW): 0.1556
Cos ϕ : 0.888

Ss (%): 1.35
Ps(kW): 0.1839
P2(kW): 11.00

75% rated power:

I (A): 15.19
Pcu(kW): 0.1666
 η (%): 91.29

P1(kW): 9.0373
Pal (kW): 0.0849
Cos ϕ : 0.859

Ss (%): 0.98
Ps(kW): 0.1019
P2(kW): 8.25

50% rated power:

I (A): 11.30
Pcu(kW): 0.0922
 η (%): 89.90

P1(kW): 6.1181
Pal (kW): 0.0372
Cos ϕ : 0.781

Ss (%): 0.64
Ps(kW): 0.0443
P2(kW): 5.50

25% rated power:

I (A): 8.02
Pcu(kW): 0.0465
 η (%): 84.24

P1(kW): 3.2647
Pal (kW): 0.0099
Cos ϕ : 0.587

Ss (%): 0.33
Ps(kW): 0.0113
P2(kW): 2.75

