

TYPE TEST REPORT

Report No. : IE3-90L-4 1.5KW 14102101

Product Type Name	IE3-90L-4 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	1.5 kW	Rated Voltage	400 V	Rated Current	3.30 A
Rated Speed	1440 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	5.3007			
2. No load current	A	1.91			
3. No load current deviation	%	4.3			
4. No load input power	W	100.9			
5. Locked rotor current	A	24.13			
6. Locked current/Rated current		7.38			
7. Locked torque	N.m	33.50			
8. Locked torque/Rated torque		3.37			
9. Full load current	A	3.27			
10. Rated torque	N.m	9.94			
11. Max. torque	N.m	33.94			
12. Max. torque/Rated torque		3.42			
13. Full load speed ratio	r/min	1441.8			
14. Iron loss(at Rated voltage)	W	56.9			
15. Mechanical loss(at Rated speed)	W	13.2			
16. Stator winding loss	W	95.6			
17. Rotor winding loss	W	64.2			
18. Other loss	W	18.8			
19. Total loss	W	250.9			
20. Output power	W	1500			

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Test Item	Test Value	Test Result				
21. Input power	W	1750.93				
22. Full load efficiency	%	85.67				
23. Full Load power factor		0.773				
24. Stator winding temp.rise	K	27.3				
25. Bearing temperature	°C	45				
26. Coolant temperature	°C	23.8				
27. Insulation resistance warmly to frame	MΩ	500				
28. High voltage test	V min	Pass	Passed			
29. Vibration	mm/s	1.1				
30. Noise	dB(A)	53				
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: 24.03°C

report NO.: IE3-90L-4 1.5KW 14102101

test time:

Modle: IE3-90L-4
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 3.30A
Rated P: 1.5kW

Rated η : 85.30%
Cos ϕ : 0.77
Rated speed: 1440r/min

InsClass: F
Connect: Y
Poles: 4

Resistance test

Rac(Ω): 5.4000

Rbc(Ω): 5.3800

Rab(Ω): 5.3840

Ravg(Ω): 5.3880
115°C R (Ω): 7.2878
25°C R (Ω): 5.4138

Shell Temp(°C): 24.2
Amb Temp(°C): 23.76

No load test

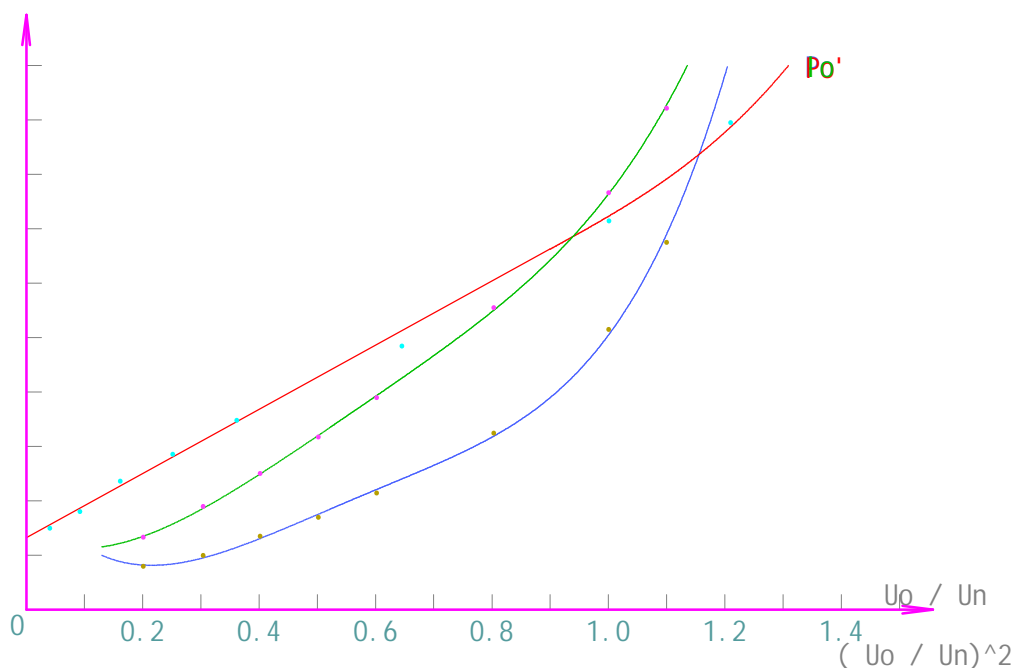
U*	U (V)	I (A)	Po(kW)	Po' (kW)	Pcu(kW)	WindingT(°C)
1.25	500.9	3.27	0.2390	0.1473	0.0917	39.63
1.10	439.9	2.30	0.1350	0.0895	0.0455	39.63
1.00	400.2	1.92	0.1030	0.0715	0.0315	39.90
0.80	321.3	1.39	0.0650	0.0485	0.0165	39.90
0.60	240.6	0.97	0.0430	0.0348	0.0082	39.98
0.50	200.7	0.79	0.0340	0.0286	0.0054	39.98
0.40	160.8	0.63	0.0270	0.0236	0.0034	40.04
0.30	121.6	0.47	0.0200	0.0181	0.0019	40.04
0.20	80.5	0.33	0.0160	0.0150	0.0010	39.74

Thermal R(Ω): 5.6890
Io(A): 1.91
Pm(kW): 0.0132

Shell Temp(°C): 33.9
Io(kW): 0.1009
Pfe(kW): 0.0569

No Load Characteristic Curve

Io A	Po kW	Po' kW
2.50	0.20	0.10
2.25	0.18	0.09
2.00	0.16	0.08
1.75	0.14	0.07
1.50	0.12	0.06
1.25	0.10	0.05
1.00	0.08	0.04
0.75	0.06	0.03
0.50	0.04	0.02
0.25	0.02	0.01



test:

check:

three-phase induction motor type test report

Amb Temp: 23.8°C

report NO.: IE3-90L-4 1.5KW 14102101

test time:

Modle: IE3-90L-4
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 3.30A
Rated P: 1.5kW

Rated η : 85.30%
Cos ϕ : 0.77
Rated speed: 1440r/min

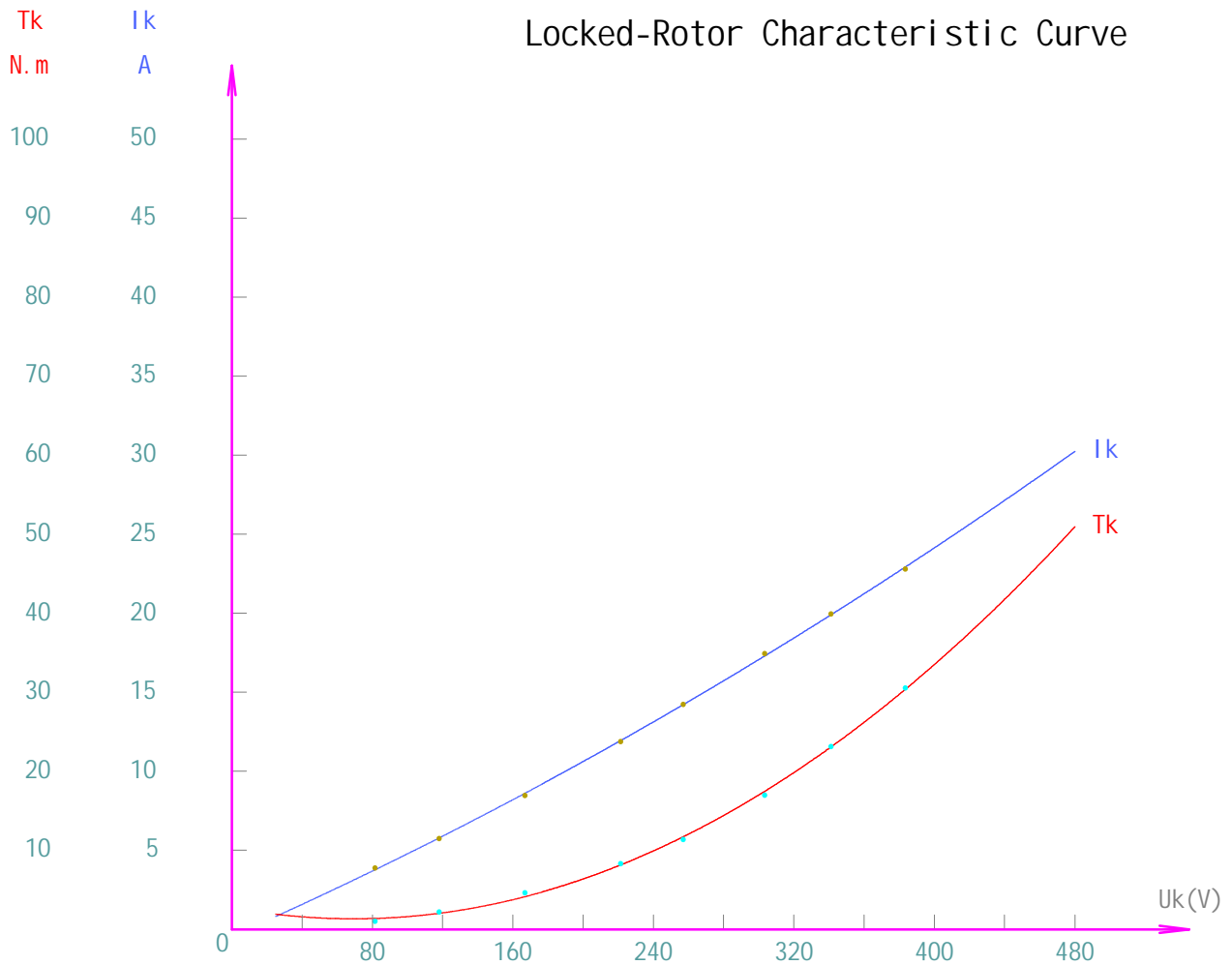
InsClass: F
Connect: Y
Poles: 4

Locked-rotor Test

U(V)	I(A)	P1(KW)	Tor(N.m)
383.4	22.80	9.8700	30.56
341.1	19.96	7.4500	23.16
303.3	17.45	5.6300	17.02
257.1	14.24	3.7400	11.38
221.4	11.89	2.5920	8.32
166.8	8.48	1.3260	4.64
117.9	5.75	0.6120	2.22
81.6	3.88	0.2790	1.06

I_k (A): 24.13
T_k(N.m): 33.50
P_k(kW): 10.45

I_k/I_n: 7.38
T_k/T_n: 3.37



test:

check:

three-phase induction motor type test report

Amb Temp: 23.8°C

report NO.: IE3-90L-4 1.5KW 14102101

test time:

Modle: IE3-90L-4
NO.:
Rated f: 50Hz

Rated U: 400V
Rated I: 3.30A
Rated P: 1.5kW

Rated η : 85.30%
Cos ϕ : 0.77
Rated speed: 1440r/min

InsClass: F
Connect: Y
Poles: 4

Load Test

P1(kW)	U(V)	I (A)	s(r/min)	Tor (N.m)	windingT(°C)
2.7050	400.0	4.61	1405.0	15.340	41.38
2.2440	400.7	3.94	1423.0	12.790	41.93
1.7700	403.0	3.30	1441.0	10.160	42.31
1.2510	401.9	2.67	1460.0	7.100	42.47
0.8890	401.8	2.32	1472.0	4.920	42.47
0.4830	400.4	2.03	1486.0	2.420	42.34
0.2560	400.6	1.94	1494.0	0.950	41.68
0.1020	400.4	1.91	0.0	0.000	40.32

P2(kW)	Pcu(kW)	Pal (kW)	Ps(kW)	Ss(%)	η (%)	Cos ϕ
2.2380	0.1907	0.1620	0.0442	6.59	82.74	0.846
1.8948	0.1392	0.1092	0.0307	5.33	84.44	0.820
1.5172	0.0973	0.0659	0.0194	4.08	85.72	0.769
1.0762	0.0640	0.0312	0.0095	2.76	86.02	0.672
0.7510	0.0481	0.0152	0.0046	1.94	84.48	0.551
0.3712	0.0369	0.0038	0.0011	0.97	76.84	0.343
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: 0.987

A: 0.187

B: -9.408

θ s(°C): 52.3

150% rated power:

I (A): 4.64
Pcu(kW): 0.2352
 η (%): 82.77

P1(kW): 2.7185
Pal (kW): 0.1548
Cos ϕ : 0.846

Ss (%): 6.38
Ps(kW): 0.0446
P2(kW): 2.25

125% rated power:

I (A): 3.91
Pcu(kW): 0.1668
 η (%): 84.38

P1(kW): 2.2221
Pal (kW): 0.1011
Cos ϕ : 0.821

Ss (%): 5.06
Ps(kW): 0.0301
P2(kW): 1.88

100% rated power:

I (A): 3.27
Pcu(kW): 0.1167
 η (%): 85.67

P1(kW): 1.7509
Pal (kW): 0.0612
Cos ϕ : 0.773

Ss (%): 3.88
Ps(kW): 0.0188
P2(kW): 1.50

75% rated power:

I (A): 2.73
Pcu(kW): 0.0817
 η (%): 86.20

P1(kW): 1.3051
Pal (kW): 0.0328
Cos ϕ : 0.689

Ss (%): 2.82
Ps(kW): 0.0104
P2(kW): 1.13

50% rated power:

I (A): 2.32
Pcu(kW): 0.0587
 η (%): 84.79

P1(kW): 0.8846
Pal (kW): 0.0142
Cos ϕ : 0.551

Ss (%): 1.85
Ps(kW): 0.0046
P2(kW): 0.75

25% rated power:

I (A): 2.03
Pcu(kW): 0.0451
 η (%): 76.63

P1(kW): 0.4894
Pal (kW): 0.0037
Cos ϕ : 0.348

Ss (%): 0.95
Ps(kW): 0.0011
P2(kW): 0.38

Load Characteristic Curve

Report No. : IE3-90L-4 1.5KW 14102101
 Model : IE3-90L-4
 Rated Output: 1.5 kW
 Ser.No. :

When P2 = 1.5 kW ,
 I1 = 3.27 A
 P1 = 1.7509 kW
 Sref = 3.88 %
 η = 85.67 %
 Cos ϕ = 0.773

cos ϕ	η	Sref	P1	I1
	%	%	kW	A
1.0	100	5.0	2.50	5.0
0.9	90	4.5	2.25	4.5
0.8	80	4.0	2.00	4.0
0.7	70	3.5	1.75	3.5
0.6	60	3.0	1.50	3.0
0.5	50	2.5	1.25	2.5
0.4	40	2.0	1.00	2.0
0.3	30	1.5	0.75	1.5
0.2	20	1.0	0.50	1.0
0.1	10	0.5	0.25	0.5

