

# TYPE TEST REPORT

Report No. : IE3-100L-2 3KW 15051401

Product Type Name	IE3-100L-2 Three Phase Asynchronous Motor			Ser.No.	铝
Rated Output	3 kW	Rated Voltage	400 V	Rated Current	5.7 A
Rated Speed	2895 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	2.5102			
2. No load current	A	1.97			
3. No load current deviation	%	1.9			
4. No load input power	W	207.2			
5. Locked rotor current	A	54.20			
6. Locked current/Rated current		9.56			
7. Locked torque	N.m	34.68			
8. Locked torque/Rated torque		3.53			
9. Full load current	A	5.67			
10. Rated torque	N.m	9.84			
11. Max. torque	N.m	37.05			
12. Max. torque/Rated torque		3.77			
13. Full load speed ratio	r/min	2912.1			
14. Iron loss(at Rated voltage)	W	83.0			
15. Mechanical loss(at Rated speed)	W	108.8			
16. Stator winding loss	W	143.0			
17. Rotor winding loss	W	97.7			
18. Other loss	W	11.1			
19. Total loss	W	443.5			
20. Output power	W	3000			

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Test Item		Test Value	Test Result
21. Input power	W	3443.52	
22. Full load efficiency	%	87.12	
23. Full Load power factor		0.876	
24. Stator winding temp.rise	K	37.2	
25. Bearing temperature	℃		
26. Coolant temperature	℃	21.6	
27. Insulation resistance warmly to frame	MΩ		
28. High voltage test	V min	Pass	Passed
29. Vibration	mm/s		
30. Noise	dB(A)		
31. Rotation Direction		Right	Passed
32. H.V. impulse 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

report NO.: IE3-100L-2 3KW 15051401

test time:

Modle: IE3-100L-2  
 NO.: 铝  
 Rated f: 50Hz

Rated U: 400V  
 Rated I: 5.7A  
 Rated P: 3kW

Rated  $\eta$ : 87.10%  
 Cos  $\phi$ : 0.87  
 Rated speed: 2895r/min

InsClass: F  
 Connect: Y  
 Poles: 2

## Resistance test

Rac ( $\Omega$ ): 2.5420

Rbc ( $\Omega$ ): 2.5440

Rab ( $\Omega$ ): 2.5420

Ravg ( $\Omega$ ): 2.5427  
 115°C R ( $\Omega$ ): 3.4682  
 25°C R ( $\Omega$ ): 2.5764

Shell Temp (°C): 23.3  
 Amb Temp (°C): 21.60

## Noload test

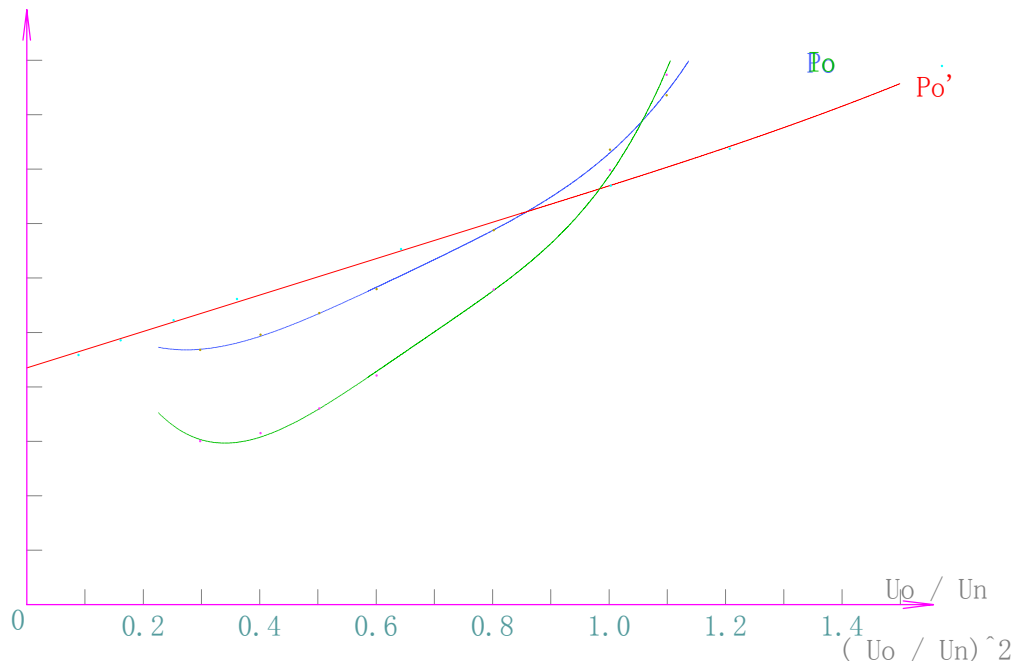
U*	U (V)	I (A)	Po (kW)	Po' (kW)	Pcu (kW)	WindingT (°C)
1.25	501.4	3.89	0.3100	0.2474	0.0626	43.91
1.10	439.5	2.43	0.2340	0.2094	0.0246	43.91
1.00	400.5	2.00	0.2090	0.1925	0.0165	43.77
0.80	320.7	1.45	0.1720	0.1633	0.0087	43.77
0.60	240.3	1.05	0.1450	0.1404	0.0046	43.34
0.50	200.9	0.90	0.1340	0.1306	0.0034	43.34
0.40	160.6	0.79	0.1240	0.1214	0.0026	42.85
0.30	119.2	0.75	0.1170	0.1147	0.0023	42.85

Thermal R ( $\Omega$ ): 2.7250  
 Io (A): 1.97  
 Pm (kW): 0.1088

Shell Temp (°C): 34.0  
 Io (kW): 0.2072  
 Pfe (kW): 0.0830

No Load Characteristic Curve

Io	Po	Po'
A	kW	kW
2.50	0.250	0.250
2.25	0.225	0.225
2.00	0.200	0.200
1.75	0.175	0.175
1.50	0.150	0.150
1.25	0.125	0.125
1.00	0.100	0.100
0.75	0.075	0.075
0.50	0.050	0.050
0.25	0.025	0.025



test:

check:

# three-phase induction motor type test report

Amb Temp: 21.6°C

report NO.: IE3-100L-2 3KW 15051401

test time:

Modle: IE3-100L-2  
 NO.: 铝  
 Rated f: 50Hz

Rated U: 400V  
 Rated I: 5.7A  
 Rated P: 3kW

Rated  $\eta$ : 87.10%  
 Cos  $\phi$ : 0.87  
 Rated speed: 2895r/min

InsClass: F  
 Connect: Y  
 Poles: 2

## Locked-rotor Test

U (V)	I (A)	P1 (KW)	Tor (N. m)
369.2	49.07	21.3800	28.96
322.4	42.97	15.5500	21.08
285.1	37.70	11.5200	14.15
241.1	30.82	7.5900	10.65
201.5	24.70	4.7950	6.55
160.6	18.48	2.6750	3.94
119.9	12.81	1.2920	2.01
79.0	7.94	0.5000	0.75

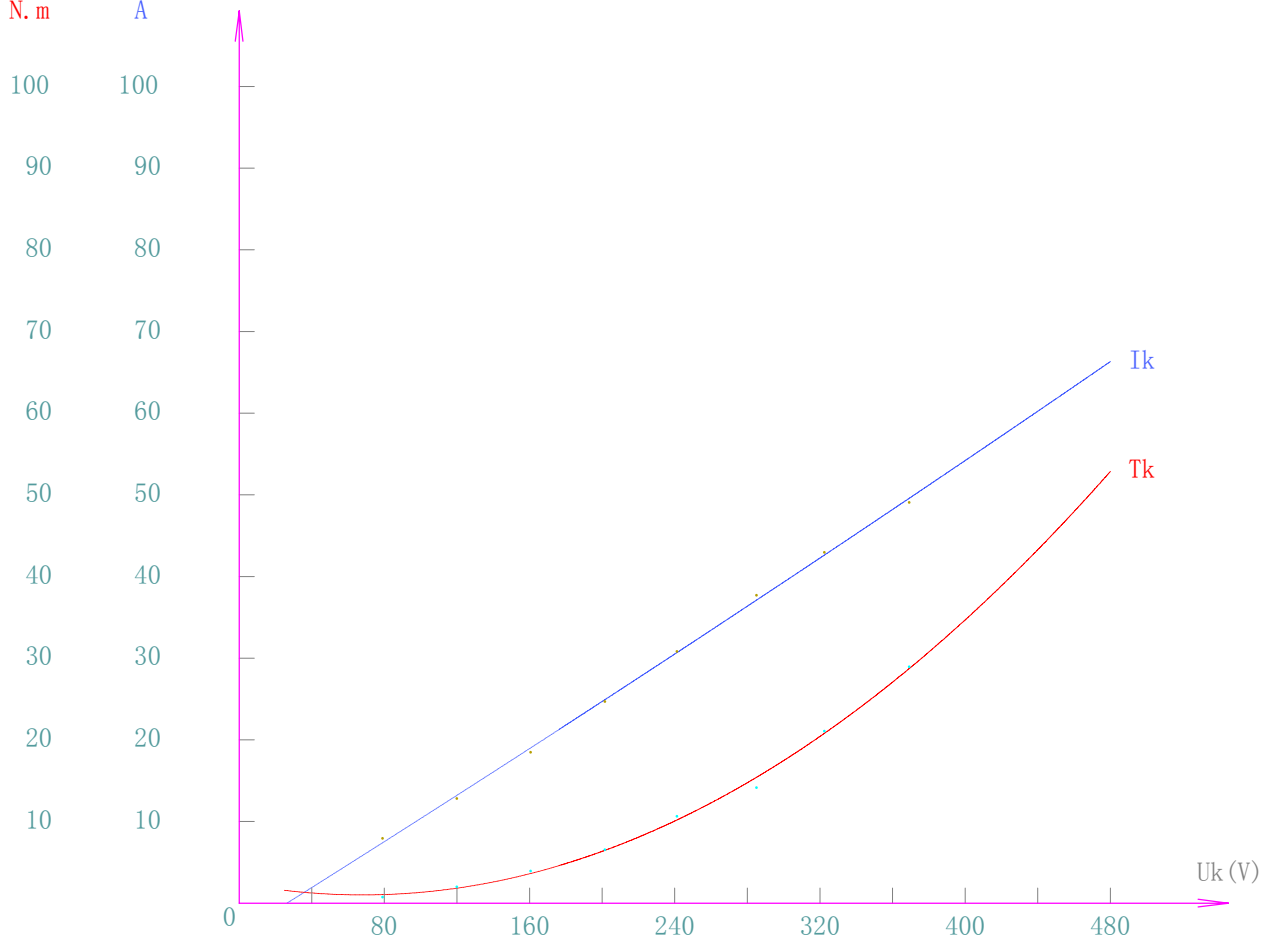
Ik (A): 54.20  
 Tk (N. m): 34.68  
 Pk (kW): 24.65

Ik/In: 9.56  
 Tk/Tn: 3.53

Tk  
 N. m

Ik  
 A

Locked-Rotor Characteristic Curve



test:

check:

# three-phase induction motor type test report

Amb Temp: 21.6°C

report NO.: IE3-100L-2 3KW 15051401

test time:

Modle: IE3-100L-2	Rated U: 400V	Rated $\eta$ : 87.10%	InsClass: F
NO.: 铝	Rated I: 5.7A	$\cos \phi$ : 0.87	Connect: Y
Rated f: 50Hz	Rated P: 3kW	Rated speed: 2895r/min	Poles: 2

## Load Test

P1 (kW)	U (V)	I (A)	s (r/min)	Tor (N.m)	windingT(°C)
5.4080	400.4	8.68	2850.0	15.360	48.50
4.3960	401.2	7.22	2883.0	12.480	51.00
3.5860	401.8	5.81	2908.0	10.160	51.45
2.6280	402.2	4.49	2935.0	7.330	51.31
1.8600	405.9	3.43	2956.0	5.000	50.65
1.0060	399.9	2.46	2977.0	2.400	49.57
0.7530	400.5	2.25	2983.0	1.670	48.47
0.2110	400.9	2.00	0.0	0.000	43.51

P2 (kW)	Pcu (kW)	Pal (kW)	Ps (kW)	Ss (%)	$\eta$ (%)	$\cos \phi$
4.5935	0.3331	0.2621	0.0275	5.25	84.94	0.898
3.7900	0.2303	0.1657	0.0182	4.06	86.22	0.876
3.1261	0.1492	0.1069	0.0121	3.19	87.17	0.887
2.2855	0.0891	0.0553	0.0063	2.25	86.97	0.840
1.5869	0.0519	0.0264	0.0029	1.53	85.32	0.772
0.7796	0.0268	0.0072	0.0007	0.80	77.49	0.590
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; 0.946

A: 0.116

B: 26.116

$\theta_s$  (°C): 62.2

### 150% rated power:

I (A): 8.52	P1 (kW): 5.2877	Ss (%): 4.87
Pcu (kW): 0.3773	Pal (kW): 0.2349	Ps (kW): 0.0263
$\eta$ (%): 85.10	$\cos \phi$ : 0.896	P2 (kW): 4.50

### 125% rated power:

I (A): 7.06	P1 (kW): 4.3421	Ss (%): 3.84
Pcu (kW): 0.2597	Pal (kW): 0.1537	Ps (kW): 0.0178
$\eta$ (%): 86.36	$\cos \phi$ : 0.887	P2 (kW): 3.75

### 100% rated power:

I (A): 5.67	P1 (kW): 3.4435	Ss (%): 2.93
Pcu (kW): 0.1675	Pal (kW): 0.0936	Ps (kW): 0.0111
$\eta$ (%): 87.12	$\cos \phi$ : 0.876	P2 (kW): 3.00

### 75% rated power:

I (A): 4.40	P1 (kW): 2.5866	Ss (%): 2.12
Pcu (kW): 0.1008	Pal (kW): 0.0509	Ps (kW): 0.0061
$\eta$ (%): 86.99	$\cos \phi$ : 0.848	P2 (kW): 2.25

### 50% rated power:

I (A): 3.30	P1 (kW): 1.7658	Ss (%): 1.39
Pcu (kW): 0.0568	Pal (kW): 0.0226	Ps (kW): 0.0026
$\eta$ (%): 84.95	$\cos \phi$ : 0.772	P2 (kW): 1.50

### 25% rated power:

I (A): 2.44	P1 (kW): 0.9758	Ss (%): 0.74
Pcu (kW): 0.0309	Pal (kW): 0.0064	Ps (kW): 0.0006
$\eta$ (%): 76.86	$\cos \phi$ : 0.578	P2 (kW): 0.75

# Load Characteristic Curve

Report No. : IE3-100L-2 3KW 15051401  
 Model : IE3-100L-2  
 Rated Output: 3 kW  
 Ser. No. : 铝

When P2 = 3 kW ,  
 I1 = 5.67 A  
 P1 = 3.4435 kW  
 Sref = 2.93 %  
 η = 87.12 %  
 Cos φ = 0.876

cos φ	η	Sref	P1	I1
	%	%	kW	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

