

TYPE TEST REPORT

Report No. : IE3-160M-6 7.5KW 15042001

Product Type Name	IE3-160M-6 Three Phase Asynchronous Motor			Ser.No.	101728
Rated Output	7.5 kW	Rated Voltage	400 V	Rated Current	15.4 A
Rated Speed	980 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	Eligibility Value		Test Value	Test Result	
	Standard	Tolerance			
1. Stator resistance at 20°C	Ω		0.6893		
2. No load current	A		7.68		
3. No load current deviation	%		0.0		
4. No load input power	W		317.7		
5. Locked rotor current	A		105.66		
6. Locked current/Rated current			6.71		
7. Locked torque	N.m		173.31		
8. Locked torque/Rated torque			2.36		
9. Full load current	A		15.74		
10. Rated torque	N.m		73.43		
11. Max. torque	N.m		249.79		
12. Max. torque/Rated torque			3.40		
13. Full load speed ratio	r/min		975.4		
14. Iron loss(at Rated voltage)	W		164.7		
15. Mechanical loss(at Rated speed)	W		85.9		
16. Stator winding loss	W		310.0		
17. Rotor winding loss	W		202.9		
18. Other loss	W		141.0		
19. Total loss	W		904.5		
20. Output power	W		7500		

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Test Item	Eligibility Value		Test Value	Test Result	
	Standard	Tolerance			
21. Input power	W		8404.50		
22. Full load efficiency	%		89.24		
23. Full Load power factor			0.771		
24. Stator winding temp.rise	K		47.2		
25. Bearing temperature	°C				
26. Coolant temperature	°C		19.2		
27. Insulation resistance warmly to frame	MΩ				
28. High voltage test	V min	1760	Pass	Passed	
29. Vibration	mm/s				
30. Noise	dB(A)				
31. Rotation Direction		Clockwise	Right	Passed	
32. H.V. impulse test between winding	V	2600	Pass	Passed	
33. Over speed test 2min 1.2n		No abnormal	No abnormal	Passed	
34. Over Torque test 15s 2.2Tn		No abnormal	No abnormal	Passed	
35. Over current test 2min 1.5In		No abnormal	No abnormal	Passed	
Testing Conclusion					
Remark					
Tested by		Checked by		Formed	

three-phase induction motor type test report

Amb Temp: 20.41°C report NO.: IE3-160M-6 7.5KW 15042001 test time:

Modle: IE3-160M-6	Rated U: 400V	Rated η : 89.10%	InsClass: F
NO.: 101728	Rated I: 15.4A	$\cos \phi$: 0.79	Connect: Δ
Rated f: 50Hz	Rated P: 7.5kW	Rated speed: 980r/min	Poles: 6

Resistance test

Rac (Ω): 0.6865 Rbc (Ω): 0.6896 Rab (Ω): 0.6895

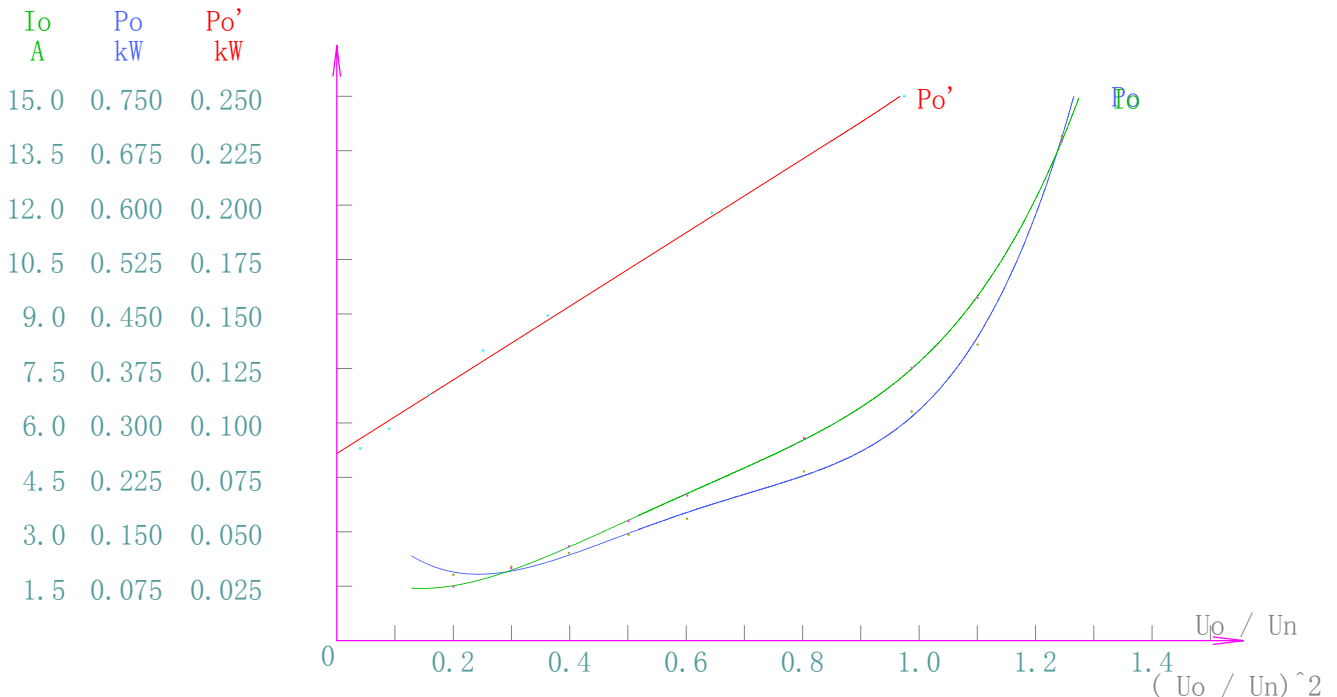
Ravg (Ω): 0.6885	Shell Temp ($^{\circ}\text{C}$): 19.7
115 $^{\circ}\text{C}$ R (Ω): 0.9481	Amb Temp ($^{\circ}\text{C}$): 19.17
25 $^{\circ}\text{C}$ R (Ω): 0.7043	

Noload test

U*	U (V)	I (A)	Po (kW)	Po' (kW)	Pcu (kW)	WindingT ($^{\circ}\text{C}$)
1.24	497.8	13.76	0.6950	0.4746	0.2204	51.37
1.10	440.2	9.44	0.4080	0.3042	0.1038	51.37
0.99	394.8	7.52	0.3160	0.2501	0.0659	51.88
0.80	320.9	5.59	0.2330	0.1966	0.0364	51.88
0.60	240.7	4.00	0.1680	0.1494	0.0186	51.97
0.50	200.6	3.30	0.1460	0.1333	0.0127	51.97
0.40	159.5	2.60	0.1210	0.1131	0.0079	51.91
0.30	119.9	2.00	0.1020	0.0973	0.0047	51.91
0.20	80.0	1.49	0.0910	0.0884	0.0026	51.51

Thermal R (Ω): 0.7837	Shell Temp ($^{\circ}\text{C}$): 41.1
Io (A): 7.68	Io (kW): 0.3177
Pm (kW): 0.0859	Pfe (kW): 0.1647

No Load Characteristic Curve



test:

check:

three-phase induction motor type test report

Amb Temp: 19.2°C

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test time:

Modle: IE3-160M-6
 NO.: 101728
 Rated f: 50Hz

Rated U: 400V
 Rated I: 15.4A
 Rated P: 7.5kW

Rated η : 89.10%
 Cos ϕ : 0.79
 Rated speed: 980r/min

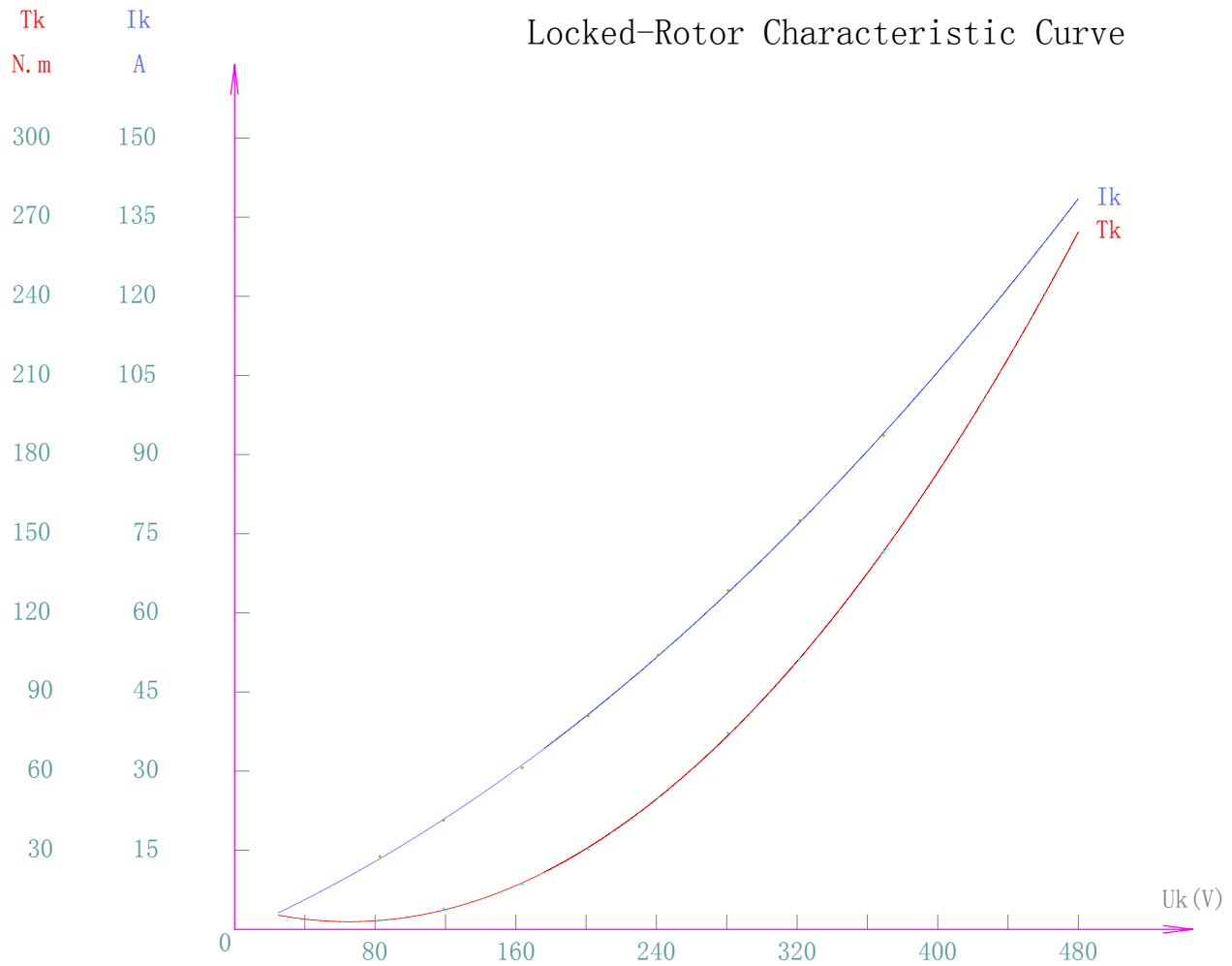
InsClass: F
 Connect: Δ
 Poles: 6

Locked-rotor Test

U (V)	I (A)	P1 (KW)	Tor (N. m)
369.2	93.63	27.1260	143.20
321.4	77.50	18.7780	102.60
280.7	64.31	13.0380	74.50
241.0	52.02	8.6400	49.90
201.2	40.49	5.2830	30.50
163.6	30.64	3.0350	17.20
118.9	20.67	1.3800	7.80
82.6	13.83	0.6160	3.40

Ik (A): 105.66
 Tk (N. m): 173.31
 Pk (kW): 30.63

Ik/In: 6.71
 Tk/Tn: 2.36



test:

check:

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Amb Temp: 19.2°C

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test time:

Modle: IE3-160M-6	Rated U: 400V	Rated η : 89.10%	InsClass: F
NO.: 101728	Rated I: 15.4A	$\cos \phi$: 0.79	Connect: Δ
Rated f: 50Hz	Rated P: 7.5kW	Rated speed: 980r/min	Poles: 6

Load Test

P1 (kW)	U (V)	I (A)	s (r/min)	Tor (N.m)	windingT(°C)
13.0250	401.2	23.17	957.0	112.500	57.20
10.7050	401.3	19.25	967.0	92.500	58.91
8.4800	400.4	15.95	975.0	73.600	59.60
6.3500	400.7	12.87	982.0	55.000	59.40
4.2600	400.2	10.24	988.0	36.300	58.25
2.2240	400.4	8.36	994.0	18.000	57.42
0.3650	400.5	7.67	1000.0	0.400	55.97
0.3300	400.0	7.68	0.0	0.000	53.17

P2 (kW)	Pcu (kW)	Pal (kW)	Ps (kW)	Ss (%)	η (%)	$\cos \phi$
11.2140	0.6710	0.5520	0.3374	4.53	86.10	0.809
9.4151	0.4631	0.3481	0.2280	3.45	87.95	0.800
7.5584	0.3179	0.2088	0.1443	2.61	89.13	0.767
5.6995	0.2069	0.1125	0.0805	1.88	89.76	0.711
3.7934	0.1310	0.0499	0.0350	1.26	89.05	0.600
1.8650	0.0874	0.0125	0.0086	0.63	83.86	0.384
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; 0.961

A: 0.027

B: 48.004

θ_s (°C): 72.2

150% rated power:

I (A): 23.24	P1 (kW): 13.0702	Ss (%): 4.32
Pcu (kW): 0.7682	Pal (kW): 0.5243	Ps (kW): 0.3394
η (%): 86.07	$\cos \phi$: 0.812	P2 (kW): 11.25

125% rated power:

I (A): 19.23	P1 (kW): 10.6631	Ss (%): 3.29
Pcu (kW): 0.5261	Pal (kW): 0.3280	Ps (kW): 0.2271
η (%): 87.92	$\cos \phi$: 0.800	P2 (kW): 9.38

100% rated power:

I (A): 15.74	P1 (kW): 8.4045	Ss (%): 2.46
Pcu (kW): 0.3522	Pal (kW): 0.1944	Ps (kW): 0.1410
η (%): 89.24	$\cos \phi$: 0.771	P2 (kW): 7.50

75% rated power:

I (A): 12.75	P1 (kW): 6.2657	Ss (%): 1.78
Pcu (kW): 0.2313	Pal (kW): 0.1047	Ps (kW): 0.0781
η (%): 89.77	$\cos \phi$: 0.709	P2 (kW): 5.63

50% rated power:

I (A): 10.28	P1 (kW): 4.2180	Ss (%): 1.18
Pcu (kW): 0.1504	Pal (kW): 0.0462	Ps (kW): 0.0350
η (%): 88.90	$\cos \phi$: 0.592	P2 (kW): 3.75

25% rated power:

I (A): 8.32	P1 (kW): 2.2328	Ss (%): 0.60
Pcu (kW): 0.0985	Pal (kW): 0.0119	Ps (kW): 0.0084
η (%): 83.98	$\cos \phi$: 0.387	P2 (kW): 1.88

