TYPE TEST REPORT

Report No.：IE3-160L-4 15KW 15032301

Product Type Name	IE3-160L-4 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	15 kW	Rated Voltage	415 V	Rated Current	27.3 A
Rated Speed	1470 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℃	Ω			0.2993	
2. No load current	A			10.50	
3. No load current deviation	%			1.7	
4. No load input power	W			568.1	
5. Locked rotor current	A			205.45	
6. Locked current/Rated current				7.50	
7. Locked torque	N.m			179.05	
8. Locked torque/Rated torque				1.84	
9. Full load current	A			27.40	
10. Rated torque	N.m			97.20	
11. Max. torque	N.m			313.79	
12. Max. torque/Rated torque				3.23	
13. Full load speed ratio	r/min			1473.7	
14. Iron loss(at Rated voltage)	W			387.3	
15. Mechanical loss(at Rated speed)	W			125.5	
16. Stator winding loss	W			409.2	
17. Rotor winding loss	W			278.6	
18. Other loss	W			69.7	
19. Total loss	W			1277.8	
20. Output power	W			15000	

TYPE TEST REPORT

Report No.：IE3-160L-4 15KW 15032301

Test Item		Eligibility Value		Test Value	Test Result
		Standard	Tolerance		
21. Input power	W			16277.78	
22. Full load efficiency	%			92.15	
23. Full Load power factor				0.858	
24. Stator winding temp.rise	K			48.7	
25. Bearing temperature	℃				
26. Coolant temperature	℃			15.5	
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. inpulse 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

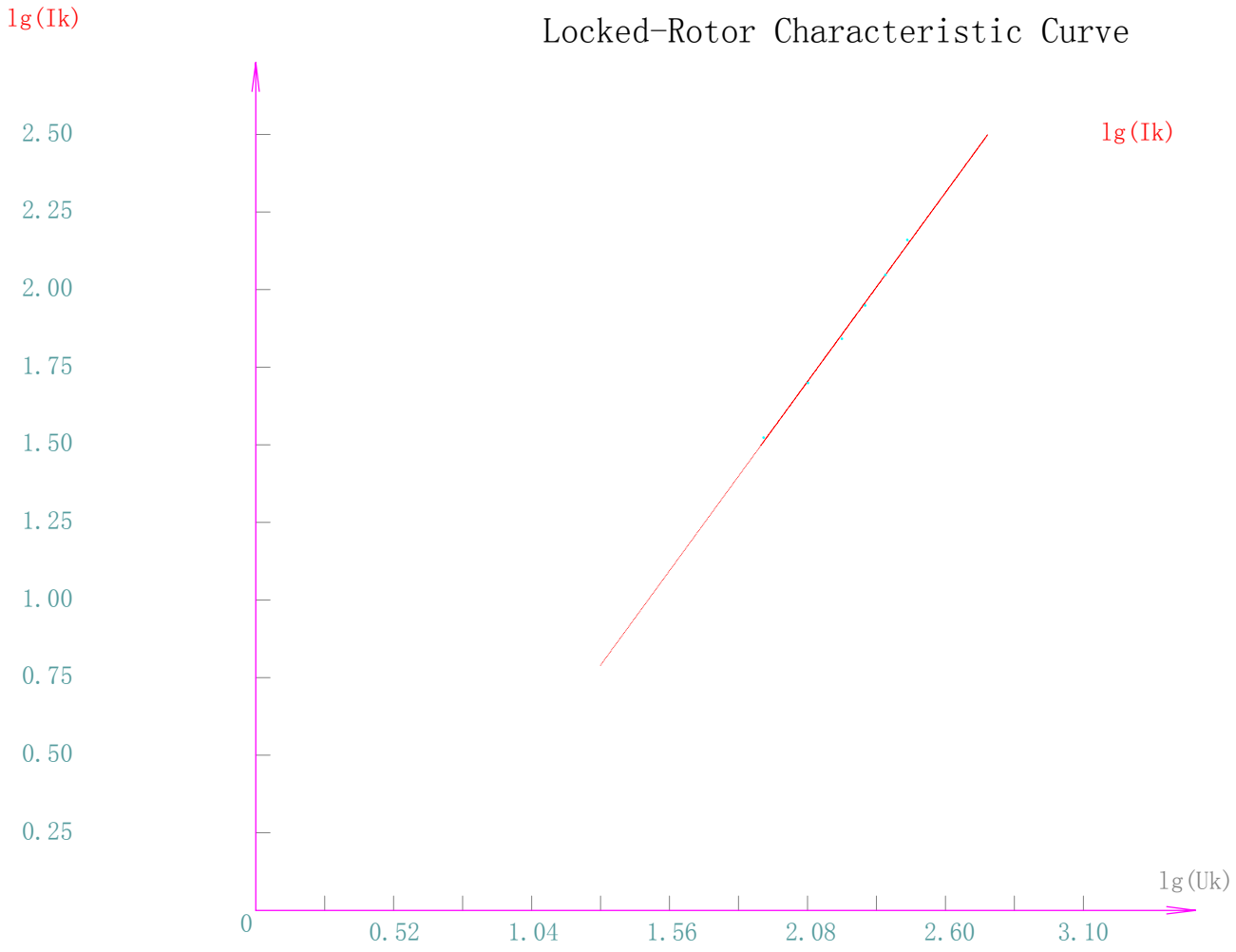
Amb Temp: 15.5℃ report NO.: IE3-160L-4 15KW 15032301 test time:

Modle: IE3-160L-4	Rated U: 415V	Rated η: 92.10%	InsClass: F
NO.:	Rated I: 27.3A	Cos Φ: 0.86	Connect: △
Rated f: 50Hz	Rated P: 15kW	Rated speed: 1470r/min	Poles: 4

Locked-rotor Test

U(V)	I(A)	P1(KW)	Tor(N.m)
287.2	144.60	25.6400	88.70
237.3	111.68	15.5000	56.40
199.1	88.91	9.8880	36.30
162.7	69.44	6.0760	22.70
121.3	50.02	3.1700	11.80
82.4	33.41	1.4170	5.30

Ik (A): 205.45 Ik/In: 7.50
Tk(N.m): 179.05 Tk/Tn: 1.84
Pk(kW): 49.40



test: check:

three-phase induction motor type test report

Amb Temp: 15.5℃ report NO.: IE3-160L-4 15KW 15032301 test time:

Modle: IE3-160L-4	Rated U: 415V	Rated η: 92.10%	InsClass: F
NO.:	Rated I: 27.3A	Cosφ: 0.86	Connect: △
Rated f: 50Hz	Rated P: 15kW	Rated speed: 1470r/min	Poles: 4

Load Test

P1(kW)	U(V)	I(A)	s(r/min)	Tor (N.m)	windingT(℃)
24.9500	400.5	41.87	1457.0	148.000	63.69
20.5900	401.3	34.35	1466.0	122.400	64.82
16.4400	404.1	27.79	1473.0	97.500	64.97
12.2500	401.2	21.32	1481.0	72.600	64.52
8.3600	403.3	16.18	1487.0	48.300	63.69
4.4900	400.7	12.22	1493.0	24.100	62.58
0.5930	400.2	10.52	1499.0	0.300	59.80
0.5780	400.4	10.58	0.0	0.000	58.00

P2(kW)	Pcu(kW)	Pal(kW)	Ps(kW)	Ss(%)	η(%)	Cosφ
22.6181	0.9550	0.7002	0.1639	2.97	90.65	0.859
18.8657	0.6425	0.4569	0.1120	2.34	91.63	0.862
15.1457	0.4206	0.2898	0.0710	1.85	92.13	0.845
11.2985	0.2476	0.1518	0.0393	1.31	92.23	0.827
7.6171	0.1425	0.0702	0.0174	0.90	91.11	0.740
3.8720	0.0814	0.0195	0.0043	0.48	86.24	0.529
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; 0.922 A: 0.008 B: 127.873 θs(℃): 73.7

150% rated power:

I(A): 41.60	P1(kW): 24.7999	Ss (%): 2.84
Pcu(kW): 1.0693	Pal(kW): 0.6636	Ps(kW): 0.1620
η(%): 90.73	Cosφ: 0.861	P2(kW): 22.50

125% rated power:

I(A): 34.26	P1(kW): 20.4801	Ss (%): 2.27
Pcu(kW): 0.7251	Pal(kW): 0.4397	Ps(kW): 0.1106
η(%): 91.55	Cosφ: 0.863	P2(kW): 18.75

100% rated power:

I(A): 27.40	P1(kW): 16.2778	Ss (%): 1.75
Pcu(kW): 0.4639	Pal(kW): 0.2702	Ps(kW): 0.0697
η(%): 92.15	Cosφ: 0.858	P2(kW): 15.00

75% rated power:

I(A): 21.26	P1(kW): 12.1929	Ss (%): 1.28
Pcu(kW): 0.2794	Pal(kW): 0.1475	Ps(kW): 0.0387
η(%): 92.27	Cosφ: 0.828	P2(kW): 11.25

50% rated power:

I(A): 16.08	P1(kW): 8.2255	Ss (%): 0.85
Pcu(kW): 0.1598	Pal(kW): 0.0652	Ps(kW): 0.0170
η(%): 91.18	Cosφ: 0.738	P2(kW): 7.50

25% rated power:

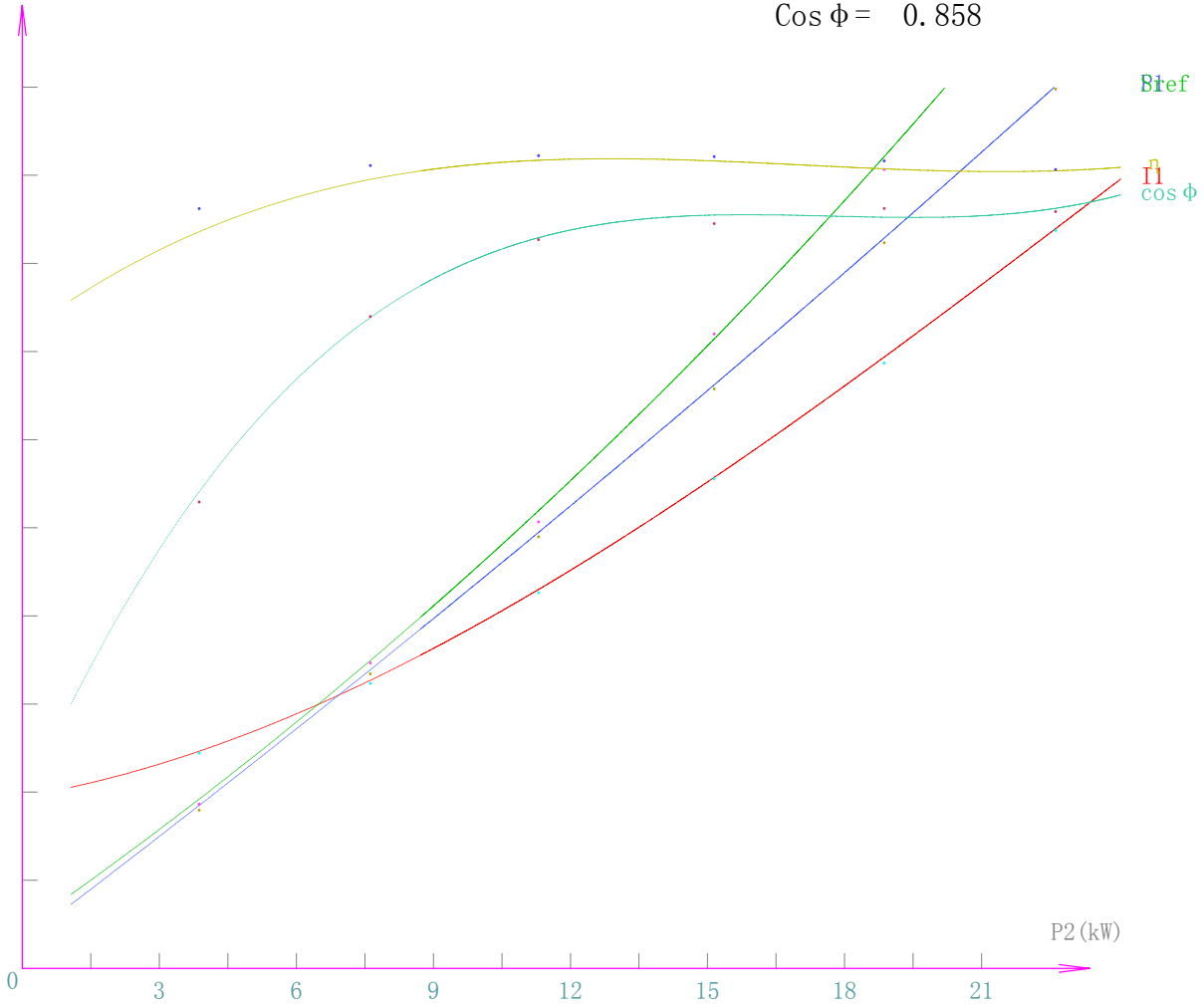
I(A): 12.09	P1(kW): 4.3756	Ss (%): 0.45
Pcu(kW): 0.0904	Pal(kW): 0.0177	Ps(kW): 0.0039
η(%): 85.70	Cosφ: 0.522	P2(kW): 3.75

Load Characteristic Curve

Report No. : IE3-160L-4 15KW 15032301
Model : IE3-160L-4
Rated Output: 15 kW
Ser.No. :

When P2 = 15 kW ,
I1 = 27.40 A
P1 = 16.2778 kW
Sref = 1.75 %
η = 92.15 %
Cos Φ = 0.858

cos Φ	η %	Sref %	P1 kW	I1 A
1.0	100	2.50	25.0	50
0.9	90	2.25	22.5	45
0.8	80	2.00	20.0	40
0.7	70	1.75	17.5	35
0.6	60	1.50	15.0	30
0.5	50	1.25	12.5	25
0.4	40	1.00	10.0	20
0.3	30	0.75	7.5	15
0.2	20	0.50	5.0	10
0.1	10	0.25	2.5	5



three-phase induction motor type test report

Amb Temp: ℃ report NO.: IE3-160L-4 15KW 15032301 test time:

Modle: IE3-160L-4	Rated U: 415V	Rated η: 92.10%	InsClass: F
NO.:	Rated I: 27.3A	Cos Φ: 0.86	Connect: △
Rated f: 50Hz	Rated P: 15kW	Rated speed: 1470r/min	Poles: 4

Resistance test

Rac(Ω): 0.2950 Rbc(Ω): 0.2947 Rab(Ω): 0.2949

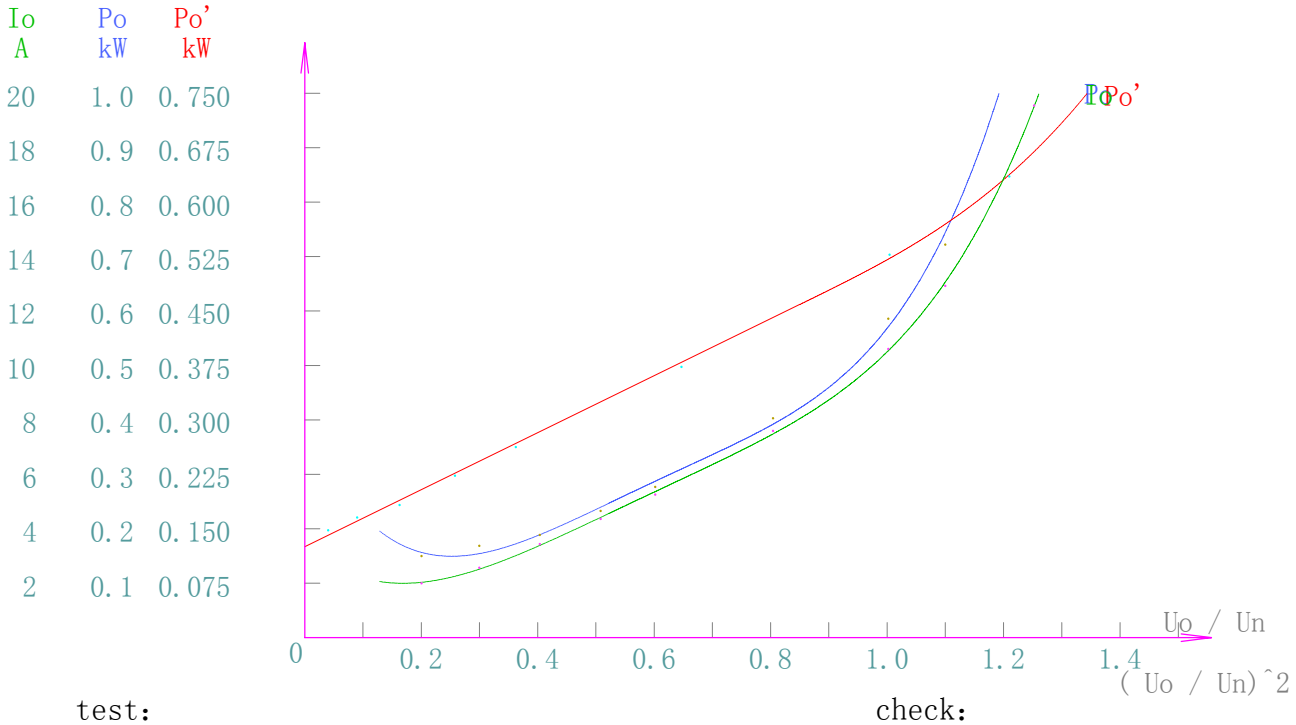
Ravg(Ω): 0.2949 Shell Temp(℃): 16.2
115℃ R (Ω): 0.4120 Amb Temp(℃): 15.52
25℃ R (Ω): 0.3060

Noload test

U*	U (V)	I (A)	Po(kW)	Po'(kW)	Pcu(kW)	WindingT(℃)
1.25	501.0	19.55	1.2390	1.0413	0.1977	57.97
1.10	440.0	12.93	0.7220	0.6355	0.0865	58.05
1.00	400.8	10.61	0.5860	0.5277	0.0583	58.05
0.80	321.7	7.60	0.4030	0.3732	0.0298	57.97
0.60	240.7	5.26	0.2770	0.2627	0.0143	57.88
0.51	203.2	4.37	0.2330	0.2231	0.0099	57.88
0.40	161.4	3.44	0.1890	0.1829	0.0061	57.60
0.30	119.9	2.58	0.1690	0.1656	0.0034	57.60
0.20	80.2	2.00	0.1500	0.1479	0.0021	57.22

Thermal R(Ω): 0.3427 Shell Temp(℃): 46.0
Io(A): 10.50 Io(kW): 0.5681
Pm(kW): 0.1255 Pfe(kW): 0.3873

No Load Characteristic Curve



test: check:

CERTIFICATE
of conformity with the following European Directive:

Registrier-Nr./*Registered No.:*
861631100024001

Electromagnetic Compatibility Directive 2014/30/EU

Reference of applicant	*Date of application*	*File reference*	*Test report No.*	*Date of issue*
-	08.10.2016	HZP1610001-01	TRHZP1610001-01/01	21.10.2016

It is to certify that the following product(s) comply/complies with the essential requirements (Annex I) of the above mentioned European Directive and the following standard(s):

Applicant: Guanglu Electrical Co., Ltd.
Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China

Manufacturer: Guanglu Electrical Co., Ltd.
Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China

Product: Three Phase Induction Motor

Model(s): IE3 series (Details refer to test report No.: TRHZP1610001-01/01)

Standard(s): EN 60034-1:2010

This Certificate of Conformity is based on the evaluation of samples of the product. It does not imply an assessment of the production and it does not permit the use of a mark of conformity or of a safety mark of the TÜV NORD CERT GmbH. The holder of this certificate may use this Certificate together with his EC-Declaration of Conformity.

Product Certification Center of
TÜV NORD P.R. China

TÜV NORD (Hangzhou) Co., Ltd.
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China

CE **The CE marking may be affixed on the product if all relevant and effective Directives are complied with.** CE

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www.tuv-nord.com/cn

Technical report

No. TRHZP1610001/01

about the test of a technical equipment

Applicant: Guanglu Electrical Co., Ltd.
Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China

Order No.: QTHZP10001/16-01

This report contains 3 text pages

Evaluated: 21.10.2016 by: Yuan Chao

Technic certified: 21.10.2016 by: Carol Zheng

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Applicant:	Guanglu Electrical Co., Ltd. Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China
Manufacturer:	Guanglu Electrical Co., Ltd. Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China
Equipment under test:	Three Phase Induction Motor Model No.: IE3 series(Detailed refer to next page)
Ratings:	Rated Voltage: 400 V Rated Frequency: 50 Hz Rated Output Power: Refer to next page
Type of examination:	Conformity testing to EMC Directive
Test regulations:	EN 60034-1:2010
Test location:	TÜV NORD (Hangzhou) Co., Ltd. No.50, Jiu Huan Road, 5th floor, Jiang Gan District, Hangzhou, China
Test result:	The referenced units are in compliance with above requirements.
Remark:	After a careful examination of the circuit diagram, mode of operation and physical characteristics of the approving three phase induction motors showing that these motors do not have any EMC active electronic components. These motors are squirrel cage induction motors (motor without brushes), where the emission are always so low that emission testing is not needed according to the requirement of clause 13.5.1 of EN 60034-1:2010. Therefore it is concluded that the emission levels of the above mentioned three phase induction motors are far below the limits of the relevant EMC standards and relevant emission tests can be omitted.

Remark to be continued:

The approving three phase induction motors do not have any electronic control circuitry or EMC sensitive components. Motors not incorporating electronic circuits are not sensitive to electromagnetic emissions under normal service conditions and therefore no immunity tests are required according to the requirement of clause 13.2.1 of EN 60034-1:2010.

Model No. and parameters:

Model No.	Rated output power (kW)	Model No.	Rated output power (kW)	Model No.	Rated output power (kW)
IE3-80M1-2	0.75	IE3-80M2-4	0.75	IE3-90S-6	0.75
IE3-80M2-2	1.1	IE3-90S-4	1.1	IE3-90L-6	1.1
IE3-90S-2	1.5	IE3-90L-4	1.5	IE3-100L1-6	1.5
IE3-90L-2	2.2	IE3-100L1-4	2.2	IE3-112M-6	2.2
IE3-100L1-2	3	IE3-100L2-4	3	IE3-132S-6	3
IE3-112M-2	4	IE3-112M-4	4	IE3-132M1-6	4
IE3-132S1-2	5.5	IE3-132S-4	5.5	IE3-132M2-6	5.5
IE3-132S2-2	7.5	IE3-132M-4	7.5	IE3-160M-6	7.5
IE3-160M1-2	11	IE3-160M-4	11	IE3-160L-6	11
IE3-160M2-2	15	IE3-160L-4	15	IE3-180L-6	15
IE3-160L-2	18.5	IE3-180M-4	18.5	IE3-200L1-6	18.5
IE3-180M-2	22	IE3-180L-4	22	IE3-200L2-6	22
IE3-200L1-2	30	IE3-200L-4	30	IE3-225M-6	30
IE3-200L2-2	37	IE3-225S-4	37	IE3-250M-6	37
IE3-225M-2	45	IE3-225M-4	45	IE3-280S-6	45
IE3-250M-2	55	IE3-250M-4	55	IE3-280M-6	55
IE3-280S-2	75	IE3-280S-4	75	IE3-315S-6	75
IE3-280M-2	90	IE3-280M-4	90	IE3-315M-6	90
IE3-315S-2	110	IE3-315S-4	110	IE3-315L1-6	110
IE3-315M-2	132	IE3-315M-4	132	IE3-315L2-6	132
IE3-315L1-2	160	IE3-315L1-4	160	IE3-355M1-6	160
IE3-315L2-2	200	IE3-315L2-4	200	IE3-355M2-6	200
IE3-355M-2	250	IE3-355M-4	250	IE3-355L-6	250
IE3-355L-2	315	IE3-355L1-4	280	/	/
/	/	IE3-355L2-4	315	/	/
/	/	IE3-355L3-4	355	/	/