

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	415 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: 20.4°C

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

test time:

Modle: IE3-160M1-2	Rated U: 415V	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

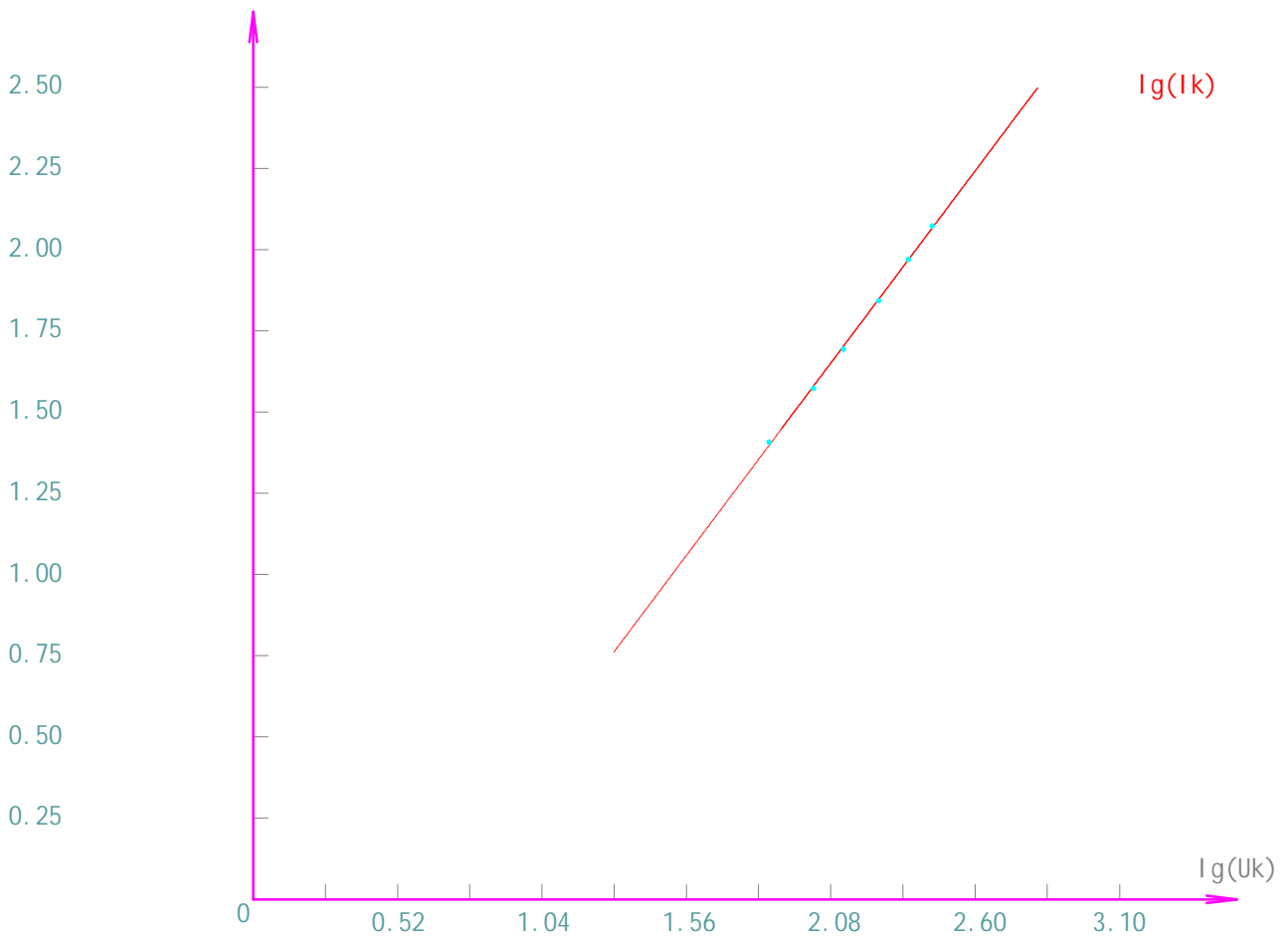
Locked-rotor Test

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℃

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

test time:

Modle: IE3-160M1-2	Rated U: 415V	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(℃)
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(℃): 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

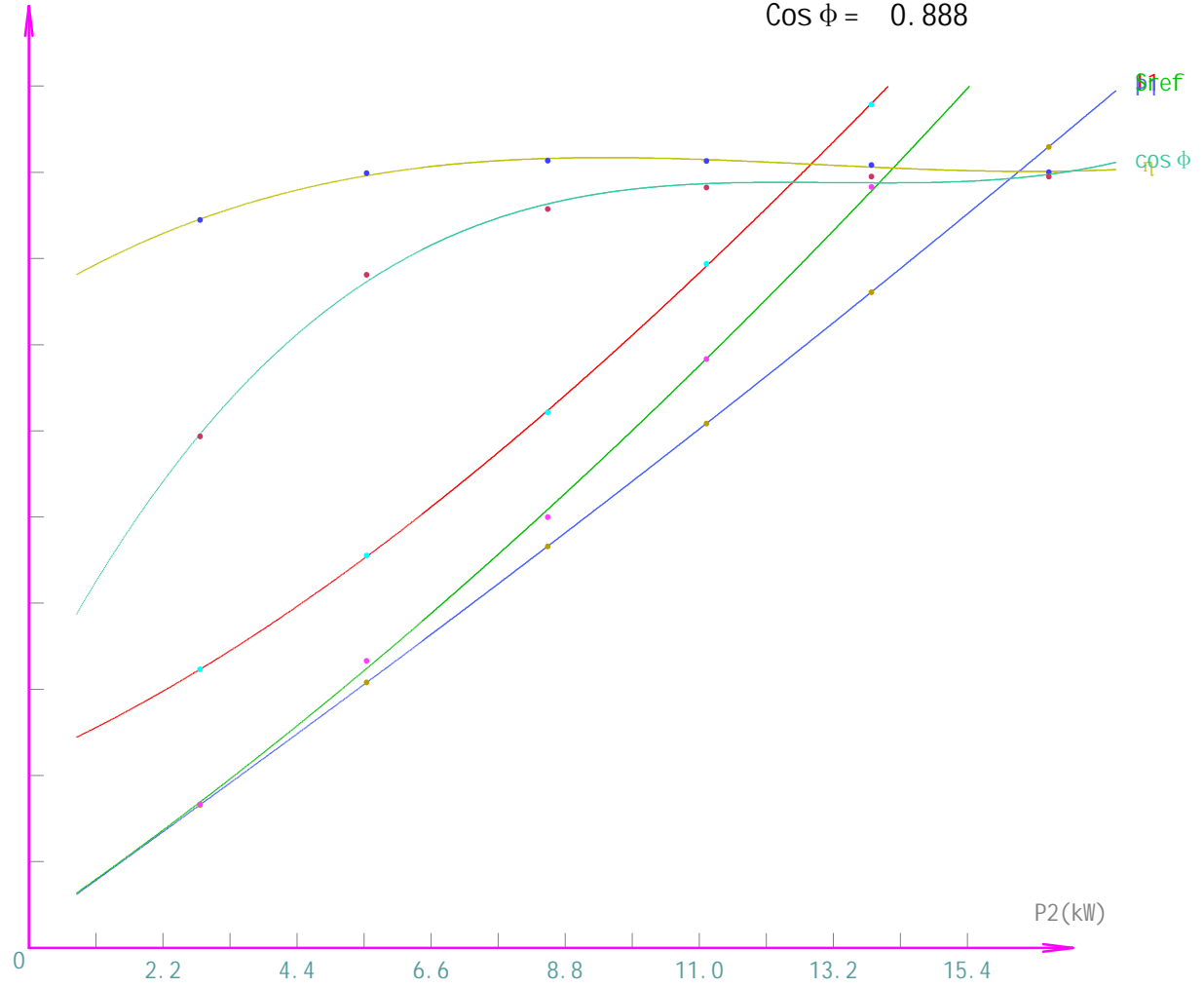
Ss (%): 0.33
Ps(kW): 0.0113
P2(kW): 2.75

Load Characteristic Curve

Report No. : IE3-160M1-2 11KW 14051101
 Model : IE3-160M1-2
 Rated Output: 11 kW
 Ser.No. :

When P2 = 11 kW ,
 I1 = 19.58 A
 P1 = 12.0397 kW
 Sref = 1.35 %
 η = 91.36 %
 Cos ϕ = 0.888

cos ϕ	η %	Sref %	P1 kW	I1 A
1.0	100	2.0	20	25.0
0.9	90	1.8	18	22.5
0.8	80	1.6	16	20.0
0.7	70	1.4	14	17.5
0.6	60	1.2	12	15.0
0.5	50	1.0	10	12.5
0.4	40	0.8	8	10.0
0.3	30	0.6	6	7.5
0.2	20	0.4	4	5.0
0.1	10	0.2	2	2.5



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: 415V
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

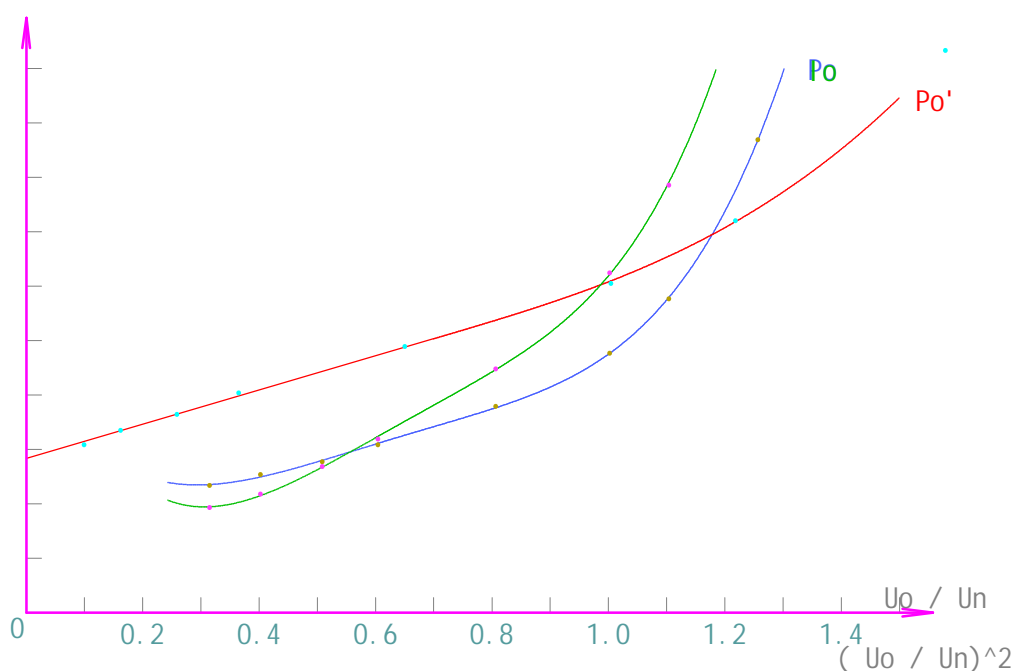
U*	U (V)	I (A)	Po(kW)	Po' (kW)	Pcu(kW)	WindingT(°C)
1.26	502.6	12.57	0.8690	0.7751	0.0939	52.94
1.10	441.5	7.86	0.5770	0.5403	0.0367	52.94
1.00	400.8	6.25	0.4770	0.4538	0.0232	52.88
0.81	322.6	4.48	0.3790	0.3671	0.0119	52.88
0.60	241.6	3.20	0.3090	0.3029	0.0061	52.85
0.51	203.4	2.69	0.2780	0.2737	0.0043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

Io	Po	Po'
A	kW	kW
10	1.0	0.750
9	0.9	0.675
8	0.8	0.600
7	0.7	0.525
6	0.6	0.450
5	0.5	0.375
4	0.4	0.300
3	0.3	0.225
2	0.2	0.150
1	0.1	0.075



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	TRHWP1610001-01/01	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.: TRHWP1610001-01/01)

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
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Technical report
No. TRHWP1610001/01
about the test of a technical equipment

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

Order No.: QTHWP10001/16-01

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:	<p>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.</p> <p>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.</p>

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	/	/