

TYPE TEST REPORT

Report No. : IE3-250M-2 55KW 15110902

Product Type Name	IE3-250M-2 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	55 kW	Rated Voltage	415 V	Rated Current	93.5 A
Rated Speed	2980 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	0.0459			
2. No load current	A	26.83			
3. No load current deviation	%	10.1			
4. No load input power	W	1859.0			
5. Locked rotor current	A	804.29			
6. Locked current/Rated current		8.59			
7. Locked torque	N.m	461.42			
8. Locked torque/Rated torque		2.61			
9. Full load current	A	93.61			
10. Rated torque	N.m	176.77			
11. Max. torque	N.m	658.41			
12. Max. torque/Rated torque		3.72			
13. Full load speed ratio	r/min	2971.1			
14. Iron loss(at Rated voltage)	W	407.9			
15. Mechanical loss(at Rated speed)	W	1395.1			
16. Stator winding loss	W	825.0			
17. Rotor winding loss	W	645.0			
18. Other loss	W	202.1			
19. Total loss	W	3310.6			
20. Output power	W	55000			

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Test Item		Test Value	Test Result
21. Input power	W	58310.59	
22. Full load efficiency	%	94.32	
23. Full Load power factor		0.899	
24. Stator winding temp.rise	K	83.7	
25. Bearing temperature	℃		
26. Coolant temperature	℃	21.5	
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			
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: 21.5°C

report NO.: IE3-250M-2 55KW 15110902

test time:

Modle: IE3-250M-2	Rated U: 415V	Rated η : 94.3%	InsClass: F
NO.:	Rated I: 93.5A	Cos ϕ : 0.90	Connect: Δ
Rated f: 50Hz	Rated P: 55kW	Rated speed: 2980r/min	Poles: 2

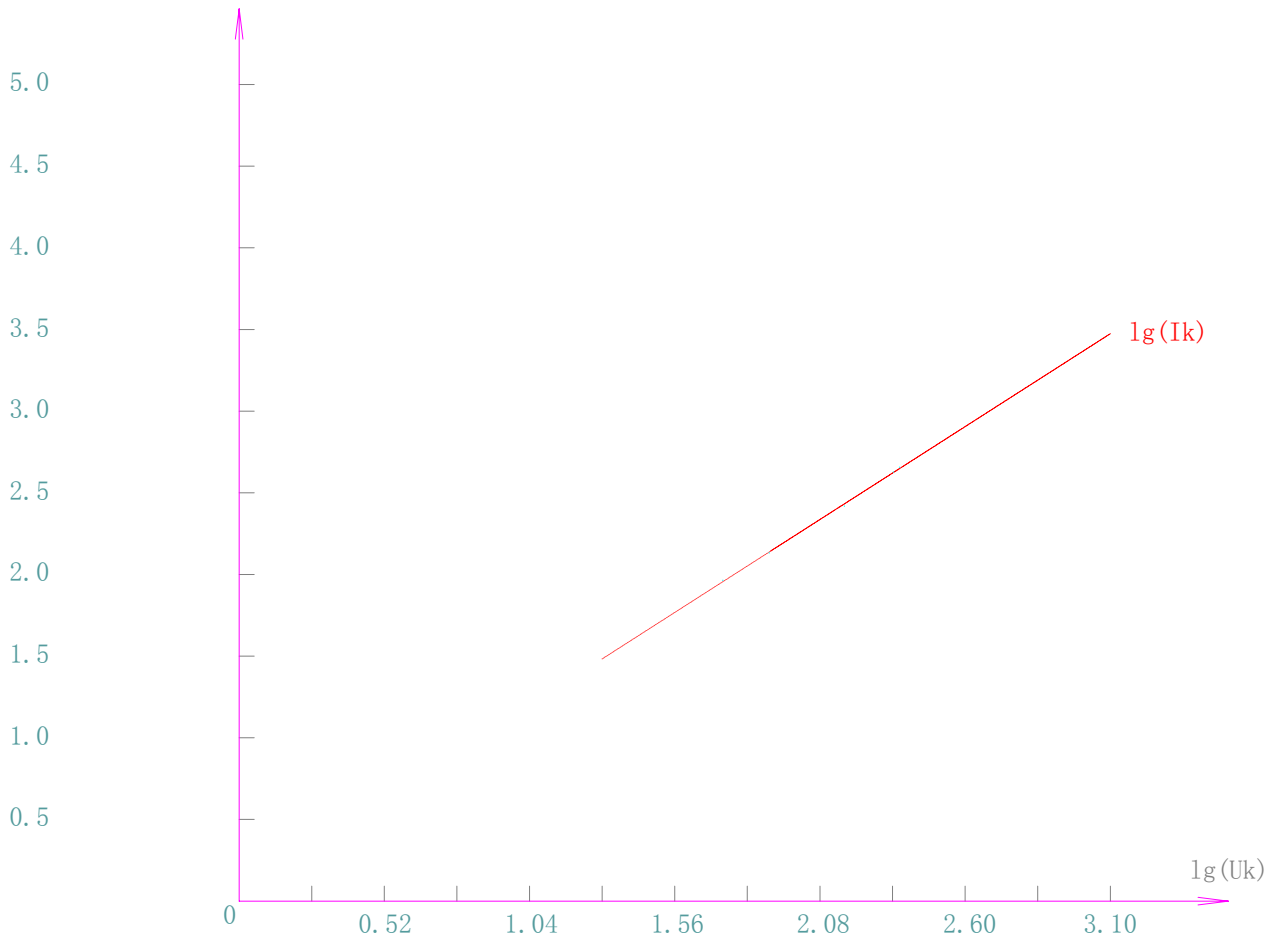
Locked-rotor Test

U (V)	I (A)	P1 (KW)	Tor (N. m)
232.9	453.97	65.0100	147.00
221.4	424.07	57.5400	129.00
147.7	262.00	22.5100	51.00
79.5	135.82	6.0950	14.00
54.2	92.16	2.8220	6.00

Ik (A): 804.29	Ik/In: 8.59
Tk (N. m): 461.42	Tk/Tn: 2.61
Pk (kW): 192.64	

lg(Ik)

Locked-Rotor Characteristic Curve



test:

check:



three-phase induction motor type test report

Amb Temp: 21.5°C

report NO.: IE3-250M-2 55KW 15110902

test time:

Modle: IE3-250M-2	Rated U: 415V	Rated η : 94.3%	InsClass: F
NO.:	Rated I: 93.5A	Cos ϕ : 0.90	Connect: Δ
Rated f: 50Hz	Rated P: 55kW	Rated speed: 2980r/min	Poles: 2

Load Test

P1 (kW)	U (V)	I (A)	s (r/min)	Tor (N.m)	windingT(°C)
91.8500	401.6	147.27	2953.0	269.000	59.48
76.2000	400.7	128.20	2961.0	221.000	60.82
61.7000	400.4	93.73	2970.0	177.000	61.31
47.5500	400.4	77.37	2976.0	133.000	61.25
33.2500	402.2	56.38	2985.0	89.000	60.22
18.5000	400.7	40.60	2990.0	42.000	59.65
6.1540	400.4	28.13	2997.0	2.000	69.20
2.0480	401.2	26.86	0.0	0.000	57.94

P2 (kW)	Pcu (kW)	Pal (kW)	Ps (kW)	Ss (%)	η (%)	Cos ϕ
85.8969	2.0058	1.6436	0.5007	1.84	93.52	0.897
71.4059	1.5201	1.1273	0.3438	1.52	93.71	0.856
58.1538	0.8126	0.7049	0.2257	1.17	94.25	0.949
44.6265	0.5536	0.4345	0.1325	0.93	93.85	0.886
30.8987	0.2940	0.1904	0.0639	0.58	92.93	0.847
16.4565	0.1525	0.0701	0.0180	0.39	88.95	0.657
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; 0.932

A: 0.006

B: -178.577

θ_s (°C): 108.7

150% rated power:

I (A): 142.95	P1 (kW): 88.4860	Ss (%): 1.51
Pcu (kW): 1.9383	Pal (kW): 1.2967	Ps (kW): 0.4611
η (%): 93.24	Cos ϕ : 0.893	P2 (kW): 82.50

125% rated power:

I (A): 118.76	P1 (kW): 73.2445	Ss (%): 1.24
Pcu (kW): 1.3378	Pal (kW): 0.8863	Ps (kW): 0.3177
η (%): 93.86	Cos ϕ : 0.890	P2 (kW): 68.75

100% rated power:

I (A): 93.61	P1 (kW): 58.3106	Ss (%): 0.96
Pcu (kW): 0.8311	Pal (kW): 0.5500	Ps (kW): 0.2021
η (%): 94.32	Cos ϕ : 0.899	P2 (kW): 55.00

75% rated power:

I (A): 70.21	P1 (kW): 44.1006	Ss (%): 0.70
Pcu (kW): 0.4675	Pal (kW): 0.3027	Ps (kW): 0.1132
η (%): 93.54	Cos ϕ : 0.907	P2 (kW): 41.25

50% rated power:

I (A): 51.27	P1 (kW): 29.6486	Ss (%): 0.47
Pcu (kW): 0.2494	Pal (kW): 0.1367	Ps (kW): 0.0504
η (%): 92.75	Cos ϕ : 0.835	P2 (kW): 27.50

25% rated power:

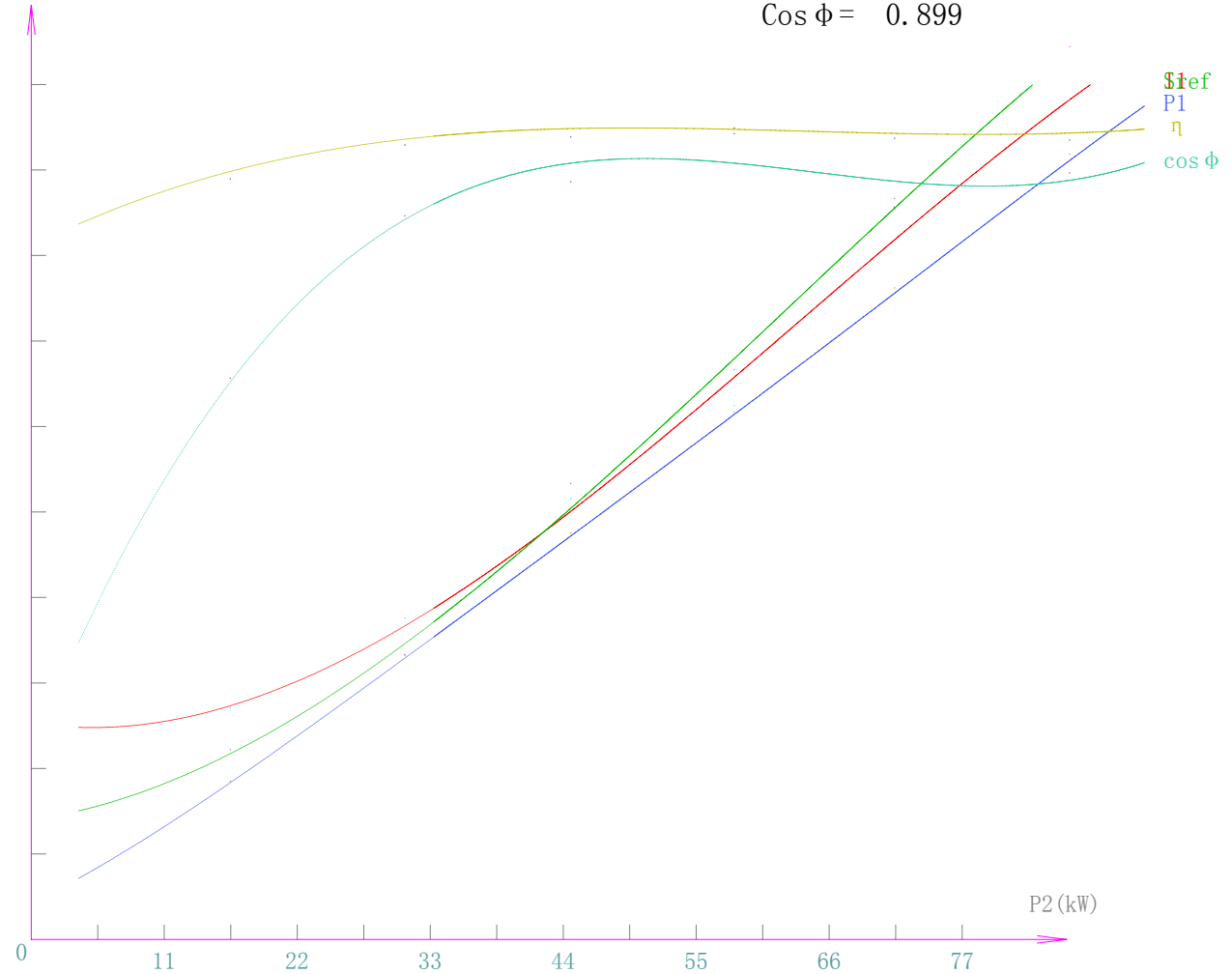
I (A): 39.52	P1 (kW): 16.1230	Ss (%): 0.30
Pcu (kW): 0.1482	Pal (kW): 0.0466	Ps (kW): 0.0126
η (%): 85.28	Cos ϕ : 0.589	P2 (kW): 13.75

Load Characteristic Curve

Report No. : IE3-250M-2 55KW 15110902
 Model : IE3-250M-2
 Rated Output: 55 kW
 Ser. No. :

When P2 = 55 kW ,
 I1 = 93.61 A
 P1 = 58.3106 kW
 Sref = 0.96 %
 η = 94.32 %
 Cos φ = 0.899

cos φ	η	Sref	P1	I1
	%	%	kW	A
1.0	100	1.50	100	150
0.9	90	1.35	90	135
0.8	80	1.20	80	120
0.7	70	1.05	70	105
0.6	60	0.90	60	90
0.5	50	0.75	50	75
0.4	40	0.60	40	60
0.3	30	0.45	30	45
0.2	20	0.30	20	30
0.1	10	0.15	10	15





three-phase induction motor type test report

Amb Temp: 24.61°C report NO.: IE3-250M-2 55KW 15110902 test time:

Modle: IE3-250M-2	Rated U: 415V	Rated η : 94.3%	InsClass: F
NO.:	Rated I: 93.5A	Cos ϕ : 0.90	Connect: Δ
Rated f: 50Hz	Rated P: 55kW	Rated speed: 2980r/min	Poles: 2

Resistance test

Rac (Ω): 0.0460 Rbc (Ω): 0.0460 Rab (Ω): 0.0470

Ravg (Ω): 0.0463 Shell Temp ($^{\circ}\text{C}$): 22.6
 115 $^{\circ}\text{C}$ R (Ω): 0.0632 Amb Temp ($^{\circ}\text{C}$): 21.45
 25 $^{\circ}\text{C}$ R (Ω): 0.0470

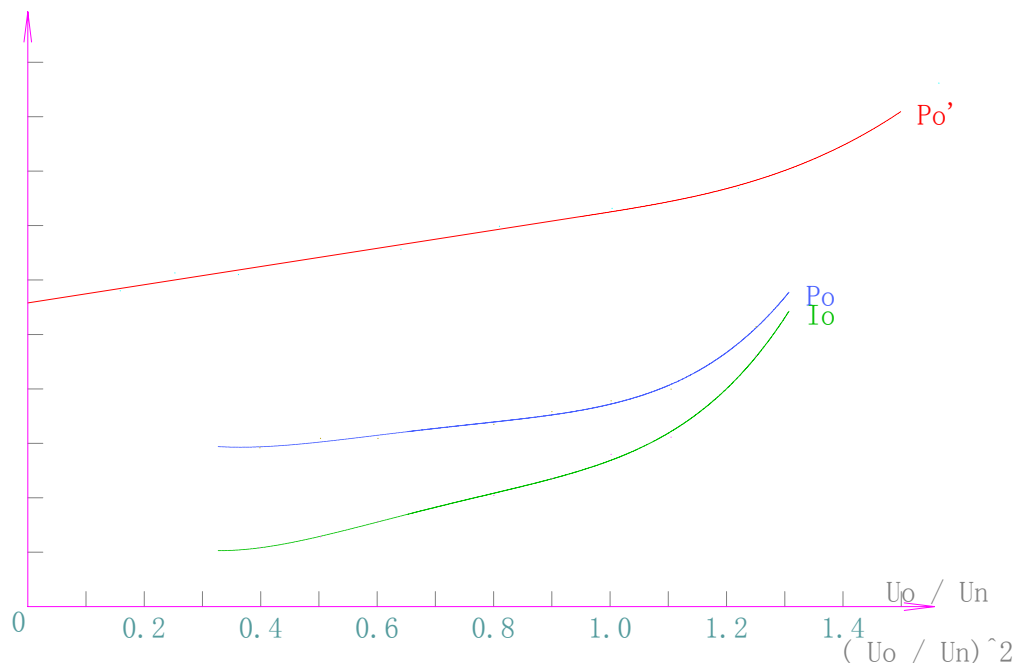
Noload test

U*	U (V)	I (A)	Po (kW)	Po' (kW)	Pcu (kW)	WindingT ($^{\circ}\text{C}$)
1.25	500.4	46.15	2.5730	2.4039	0.1691	57.94
1.10	441.9	31.16	1.9980	1.9209	0.0771	58.00
1.00	400.7	27.99	1.8910	1.8288	0.0622	58.00
0.90	360.0	23.55	1.7910	1.7470	0.0440	57.77
0.80	320.2	20.44	1.6750	1.6419	0.0331	57.77
0.60	240.6	15.66	1.5450	1.5256	0.0194	57.65
0.50	201.1	12.86	1.5460	1.5329	0.0131	57.65
0.40	159.4	10.87	1.4600	1.4506	0.0094	57.42

Thermal R (Ω): 0.0584 Shell Temp ($^{\circ}\text{C}$): 49.1
 Io (A): 26.83 Io (kW): 1.8590
 Pm (kW): 1.3951 Pfe (kW): 0.4079

No Load Characteristic Curve

Io	Po	Po'
A	kW	kW
100	5.0	2.50
90	4.5	2.25
80	4.0	2.00
70	3.5	1.75
60	3.0	1.50
50	2.5	1.25
40	2.0	1.00
30	1.5	0.75
20	1.0	0.50
10	0.5	0.25



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	/	/