

TYPE TEST REPORT

Report No. : IE3-200L1-6 18.5KW 15042302

Product Type Name	IE3-200L1-6 Three Phase Asynchronous Motor			Ser.No.	
Rated Output	18.5 kW	Rated Voltage	415 V	Rated Current	36.0 A
Rated Speed	985 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		0.3071		
2. No load current	A		15.76		
3. No load current deviation	%		4.3		
4. No load input power	W		746.2		
5. Locked rotor current	A		276.13		
6. Locked current/Rated current			7.74		
7. Locked torque	N.m		407.63		
8. Locked torque/Rated torque			2.27		
9. Full load current	A		35.67		
10. Rated torque	N.m		179.35		
11. Max. torque	N.m		570.73		
12. Max. torque/Rated torque			3.18		
13. Full load speed ratio	r/min		985.0		
14. Iron loss(at Rated voltage)	W		453.1		
15. Mechanical loss(at Rated speed)	W		164.0		
16. Stator winding loss	W		711.8		
17. Rotor winding loss	W		288.9		
18. Other loss	W		47.3		
19. Total loss	W		1665.2		
20. Output power	W		18500		

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Test Item	Eligibility Value		Test Value	Test Result	
	Standard	Tolerance			
21. Input power	W		20165.16		
22. Full load efficiency	%		91.74		
23. Full Load power factor			0.816		
24. Stator winding temp.rise	K		48.7		
25. Bearing temperature	°C				
26. Coolant temperature	°C		18.6		
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: 18.6°C

report NO.: IE3-200L1-6 18.5KW 15042302

test time:

Modle: IE3-200L1-6	Rated U: 415V	Rated η : 91.70%	InsClass: F
NO.:	Rated I: 36.0A	Cos ϕ : 0.81	Connect: Δ
Rated f: 50Hz	Rated P: 18.5kW	Rated speed: 985r/min	Poles: 6

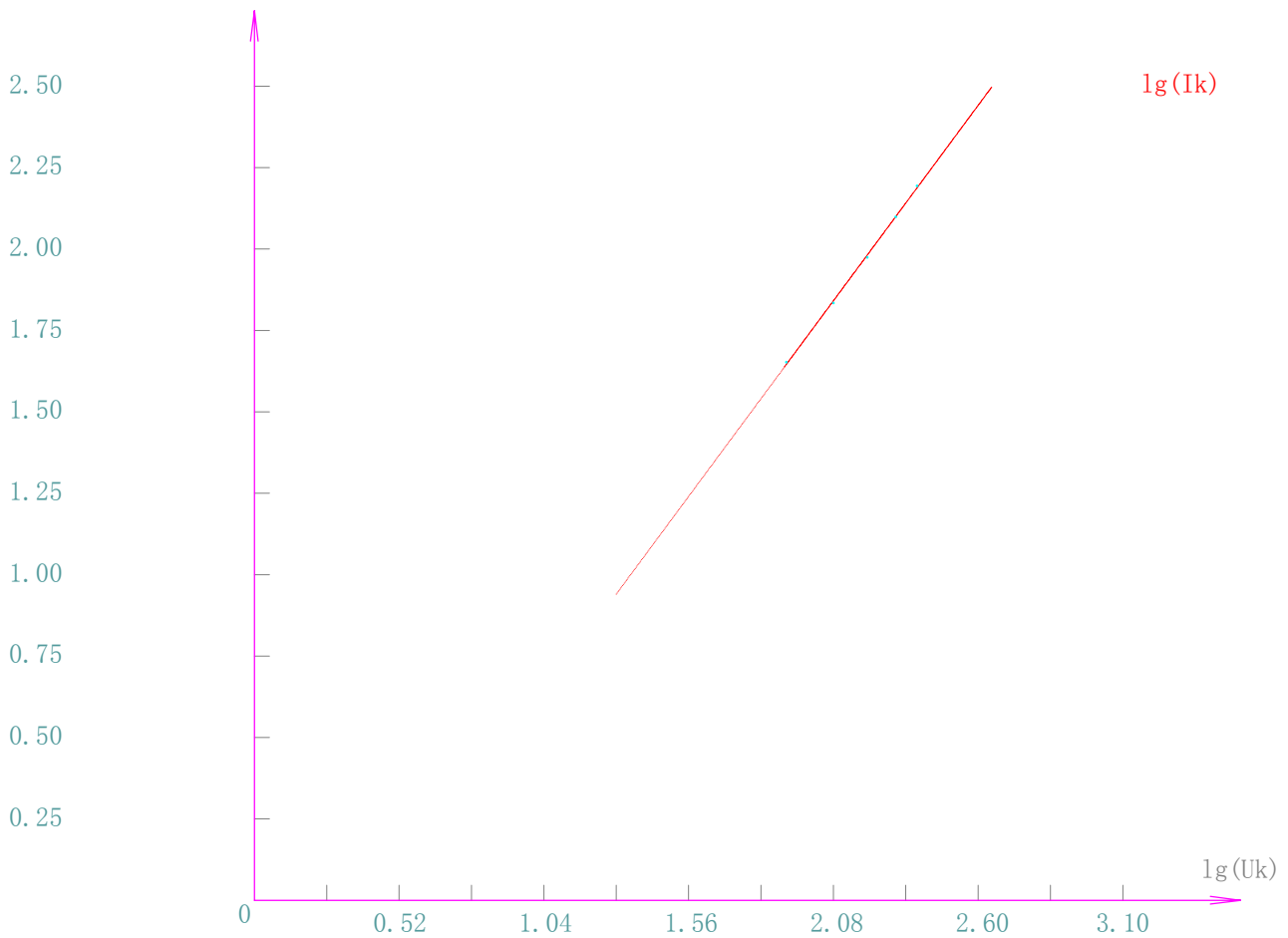
Locked-rotor Test

U (V)	I (A)	P1 (KW)	Tor (N. m)
241.2	156.30	27.7500	130.60
202.2	125.67	17.8700	87.60
159.6	94.35	10.0480	50.70
120.7	68.31	5.2700	27.00
81.8	44.93	2.2750	11.90

Ik (A): 276.13	Ik/In: 7.74
Tk (N. m): 407.63	Tk/Tn: 2.27
Pk (kW): 77.64	

lg(Ik)

Locked-Rotor Characteristic Curve



test:

check:



three-phase induction motor type test report

Amb Temp: 18.6°C

report NO.: IE3-200L1-6 18.5KW 15042302

test time:

Modle: IE3-200L1-6	Rated U: 415V	Rated η : 91.70%	InsClass: F
NO.:	Rated I: 36.0A	Cos ϕ : 0.81	Connect: Δ
Rated f: 50Hz	Rated P: 18.5kW	Rated speed: 985r/min	Poles: 6

Load Test

P1 (kW)	U (V)	I (A)	s (r/min)	Tor (N.m)	windingT(°C)
30.9700	400.1	52.84	975.0	272.300	65.44
25.5900	401.3	43.79	980.0	225.400	68.62
20.3800	401.6	36.28	985.0	179.400	68.40
15.3200	398.0	28.75	989.0	133.900	67.44
10.4900	405.8	22.56	993.0	89.300	64.14
5.6790	400.9	17.91	996.0	44.900	61.71
0.7930	400.3	15.81	1000.0	0.400	60.00
0.7780	400.2	15.86	0.0	0.000	55.85

P2 (kW)	Pcu (kW)	Pal (kW)	Ps (kW)	Ss (%)	η (%)	Cos ϕ
27.9336	1.5633	0.7444	0.1115	2.57	90.20	0.846
23.3335	1.0734	0.4896	0.0764	2.03	91.18	0.841
18.6847	0.7368	0.2931	0.0484	1.53	91.68	0.808
14.0515	0.4626	0.1618	0.0269	1.12	91.72	0.773
9.5056	0.2849	0.0705	0.0119	0.72	90.62	0.662
4.8582	0.1796	0.0210	0.0030	0.42	85.55	0.457
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; 0.904

A: 0.002

B: 229.828

θ_s (°C): 73.7

150% rated power:

I (A): 52.40	P1 (kW): 30.7483	Ss (%): 2.48
Pcu (kW): 1.7427	Pal (kW): 0.7082	Ps (kW): 0.1099
η (%): 90.25	Cos ϕ : 0.847	P2 (kW): 27.75

125% rated power:

I (A): 43.71	P1 (kW): 25.3628	Ss (%): 1.97
Pcu (kW): 1.2128	Pal (kW): 0.4672	Ps (kW): 0.0751
η (%): 91.18	Cos ϕ : 0.838	P2 (kW): 23.13

100% rated power:

I (A): 35.67	P1 (kW): 20.1652	Ss (%): 1.50
Pcu (kW): 0.8075	Pal (kW): 0.2830	Ps (kW): 0.0473
η (%): 91.74	Cos ϕ : 0.816	P2 (kW): 18.50

75% rated power:

I (A): 28.49	P1 (kW): 15.1291	Ss (%): 1.07
Pcu (kW): 0.5152	Pal (kW): 0.1510	Ps (kW): 0.0262
η (%): 91.71	Cos ϕ : 0.767	P2 (kW): 13.88

50% rated power:

I (A): 22.41	P1 (kW): 10.2286	Ss (%): 0.69
Pcu (kW): 0.3187	Pal (kW): 0.0654	Ps (kW): 0.0114
η (%): 90.43	Cos ϕ : 0.659	P2 (kW): 9.25

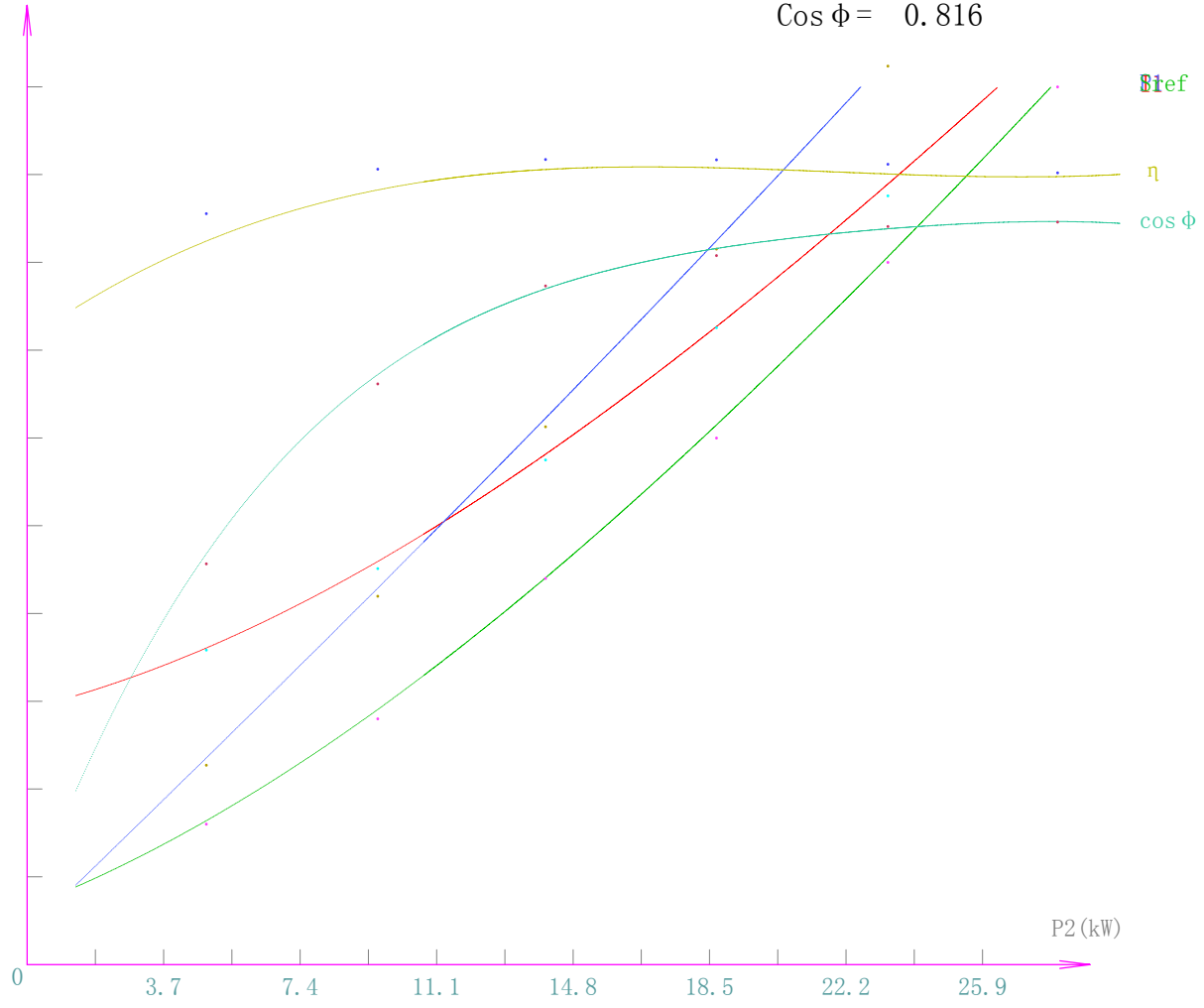
25% rated power:

I (A): 17.65	P1 (kW): 5.4373	Ss (%): 0.38
Pcu (kW): 0.1977	Pal (kW): 0.0184	Ps (kW): 0.0027
η (%): 85.06	Cos ϕ : 0.445	P2 (kW): 4.63

Load Characteristic Curve

Report No. : IE3-200L1-6 18.5KW 15042302 When P2 = 18.5 kW ,
 Model : IE3-200L1-6 I1 = 35.67 A
 Rated Output: 18.5 kW P1 = 20.1652 kW
 Ser. No. : Sref = 1.50 %
 η = 91.74 %
 Cos φ = 0.816

cos φ	η	Sref	P1	I1
	%	%	kW	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: 21.48°C report NO.: IE3-200L1-6 18.5KW 15042302 test time:

Modle: IE3-200L1-6	Rated U: 415V	Rated η : 91.70%	InsClass: F
NO.:	Rated I: 36.0A	Cos ϕ : 0.81	Connect: Δ
Rated f: 50Hz	Rated P: 18.5kW	Rated speed: 985r/min	Poles: 6

Resistance test

Rac (Ω): 0.3072	Rbc (Ω): 0.3066	Rab (Ω): 0.3061
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Ravg (Ω): 0.3066	Shell Temp ($^{\circ}$ C): 19.6
115 $^{\circ}$ C R (Ω): 0.4232	Amb Temp ($^{\circ}$ C): 18.61
25 $^{\circ}$ C R (Ω): 0.3144	

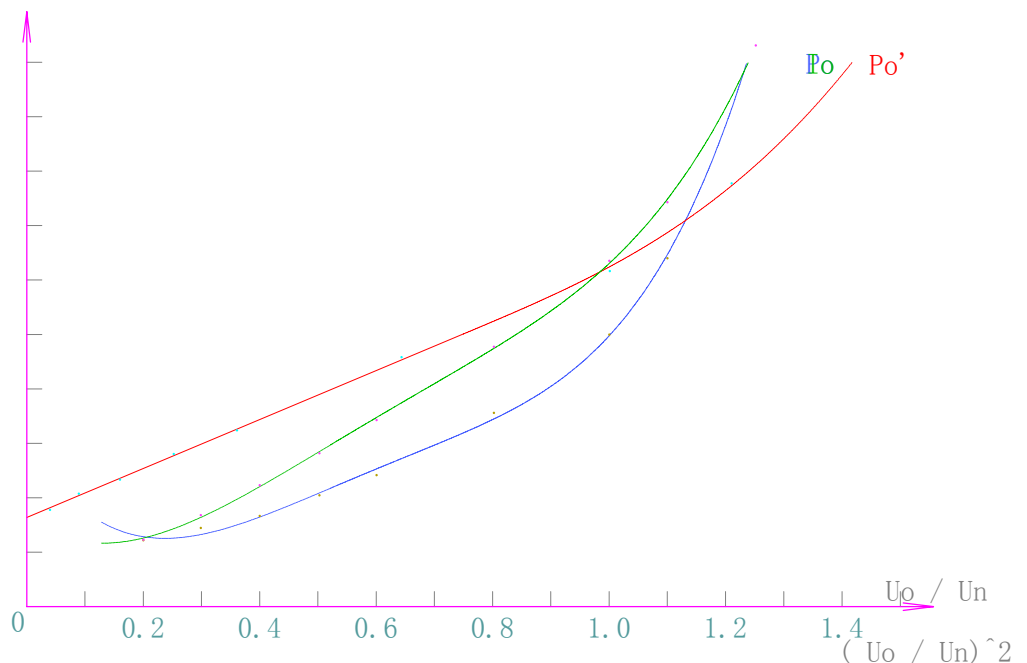
No-load test

U*	U (V)	I (A)	Po (kW)	Po' (kW)	Pcu (kW)	WindingT ($^{\circ}$ C)
1.25	500.8	25.78	1.5840	1.2331	0.3509	56.17
1.10	440.1	18.57	0.9600	0.7776	0.1824	56.54
1.00	400.2	15.88	0.7500	0.6166	0.1334	56.54
0.80	320.9	11.94	0.5340	0.4586	0.0754	56.54
0.60	240.3	8.57	0.3630	0.3241	0.0389	56.54
0.50	201.0	7.05	0.3070	0.2807	0.0263	56.31
0.40	160.0	5.59	0.2500	0.2335	0.0165	56.31
0.30	119.6	4.21	0.2170	0.2076	0.0094	56.08
0.20	80.1	3.08	0.1830	0.1780	0.0050	55.50

Thermal R (Ω): 0.3504	Shell Temp ($^{\circ}$ C): 45.0
Io (A): 15.76	Io (kW): 0.7462
Pm (kW): 0.1640	Pfe (kW): 0.4531

No Load Characteristic Curve

Io	Po	Po'
A	kW	kW
25.0	1.50	1.0
22.5	1.35	0.9
20.0	1.20	0.8
17.5	1.05	0.7
15.0	0.90	0.6
12.5	0.75	0.5
10.0	0.60	0.4
7.5	0.45	0.3
5.0	0.30	0.2
2.5	0.15	0.1



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	/	/