

# TYPE TEST REPORT

Report No. : IE3-100L-2 3KW 15051401

Product Type Name	IE3-100L-2 Three Phase Asynchronous Motor			Ser.No.	铝
Rated Output	3 kW	Rated Voltage	415 V	Rated Current	5.7 A
Rated Speed	2895 r/min	Rated Frequency	50Hz	Insulation Class	F
Duty	S1	Protection Class	IP55	Connection	Y
Product Standard	IEC60034-1	Testing Standard	IEC60034-2-1	Production Date	
Test Item		Test Value		Test Result	
1. Stator resistance at 20°C	Ω	2.5102			
2. No load current	A	1.97			
3. No load current deviation	%	1.9			
4. No load input power	W	207.2			
5. Locked rotor current	A	54.20			
6. Locked current/Rated current		9.56			
7. Locked torque	N.m	34.68			
8. Locked torque/Rated torque		3.53			
9. Full load current	A	5.67			
10. Rated torque	N.m	9.84			
11. Max. torque	N.m	37.05			
12. Max. torque/Rated torque		3.77			
13. Full load speed ratio	r/min	2912.1			
14. Iron loss(at Rated voltage)	W	83.0			
15. Mechanical loss(at Rated speed)	W	108.8			
16. Stator winding loss	W	143.0			
17. Rotor winding loss	W	97.7			
18. Other loss	W	11.1			
19. Total loss	W	443.5			
20. Output power	W	3000			

# TYPE TEST REPORT

Report No. : IE3-100L-2 3KW 15051401

Test Item		Test Value	Test Result
21. Input power	W	3443.52	
22. Full load efficiency	%	87.12	
23. Full Load power factor		0.876	
24. Stator winding temp.rise	K	37.2	
25. Bearing temperature	℃		
26. Coolant temperature	℃	21.6	
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		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: 21.6°C

report NO.: IE3-100L-2 3KW 15051401

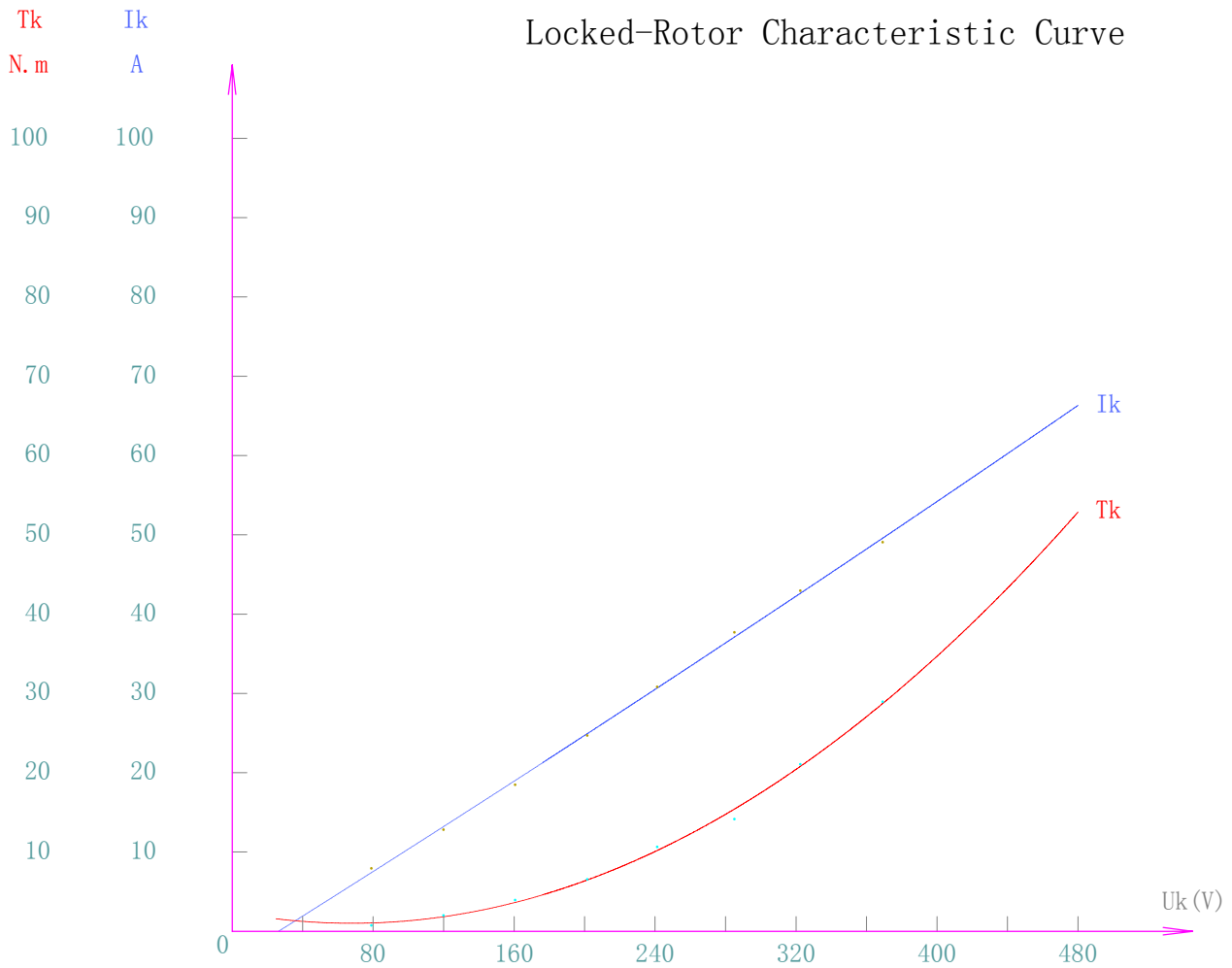
test time:

Modle: IE3-100L-2	Rated U: 415V	Rated $\eta$ : 87.10%	InsClass: F
NO.: 铝	Rated I: 5.7A	Cos $\phi$ : 0.87	Connect: Y
Rated f: 50Hz	Rated P: 3kW	Rated speed: 2895r/min	Poles: 2

## Locked-rotor Test

U (V)	I (A)	P1 (KW)	Tor (N. m)
369.2	49.07	21.3800	28.96
322.4	42.97	15.5500	21.08
285.1	37.70	11.5200	14.15
241.1	30.82	7.5900	10.65
201.5	24.70	4.7950	6.55
160.6	18.48	2.6750	3.94
119.9	12.81	1.2920	2.01
79.0	7.94	0.5000	0.75

Ik (A): 54.20	Ik/In: 9.56
Tk (N. m): 34.68	Tk/Tn: 3.53
Pk (kW): 24.65	



test:

check:

# three-phase induction motor type test report

Amb Temp: 21.6°C

report NO.: IE3-100L-2 3KW 15051401

test time:

Modle: IE3-100L-2	Rated U: 415V	Rated $\eta$ : 87.10%	InsClass: F
NO.: 铝	Rated I: 5.7A	$\cos \phi$ : 0.87	Connect: Y
Rated f: 50Hz	Rated P: 3kW	Rated speed: 2895r/min	Poles: 2

## Load Test

P1 (kW)	U (V)	I (A)	s (r/min)	Tor (N.m)	windingT(°C)
5.4080	400.4	8.68	2850.0	15.360	48.50
4.3960	401.2	7.22	2883.0	12.480	51.00
3.5860	401.8	5.81	2908.0	10.160	51.45
2.6280	402.2	4.49	2935.0	7.330	51.31
1.8600	405.9	3.43	2956.0	5.000	50.65
1.0060	399.9	2.46	2977.0	2.400	49.57
0.7530	400.5	2.25	2983.0	1.670	48.47
0.2110	400.9	2.00	0.0	0.000	43.51

P2 (kW)	Pcu (kW)	Pal (kW)	Ps (kW)	Ss (%)	$\eta$ (%)	$\cos \phi$
4.5935	0.3331	0.2621	0.0275	5.25	84.94	0.898
3.7900	0.2303	0.1657	0.0182	4.06	86.22	0.876
3.1261	0.1492	0.1069	0.0121	3.19	87.17	0.887
2.2855	0.0891	0.0553	0.0063	2.25	86.97	0.840
1.5869	0.0519	0.0264	0.0029	1.53	85.32	0.772
0.7796	0.0268	0.0072	0.0007	0.80	77.49	0.590
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; 0.946

A: 0.116

B: 26.116

$\theta_s$  (°C): 62.2

### 150% rated power:

I (A): 8.52	P1 (kW): 5.2877	Ss (%): 4.87
Pcu (kW): 0.3773	Pal (kW): 0.2349	Ps (kW): 0.0263
$\eta$ (%): 85.10	$\cos \phi$ : 0.896	P2 (kW): 4.50

### 125% rated power:

I (A): 7.06	P1 (kW): 4.3421	Ss (%): 3.84
Pcu (kW): 0.2597	Pal (kW): 0.1537	Ps (kW): 0.0178
$\eta$ (%): 86.36	$\cos \phi$ : 0.887	P2 (kW): 3.75

### 100% rated power:

I (A): 5.67	P1 (kW): 3.4435	Ss (%): 2.93
Pcu (kW): 0.1675	Pal (kW): 0.0936	Ps (kW): 0.0111
$\eta$ (%): 87.12	$\cos \phi$ : 0.876	P2 (kW): 3.00

### 75% rated power:

I (A): 4.40	P1 (kW): 2.5866	Ss (%): 2.12
Pcu (kW): 0.1008	Pal (kW): 0.0509	Ps (kW): 0.0061
$\eta$ (%): 86.99	$\cos \phi$ : 0.848	P2 (kW): 2.25

### 50% rated power:

I (A): 3.30	P1 (kW): 1.7658	Ss (%): 1.39
Pcu (kW): 0.0568	Pal (kW): 0.0226	Ps (kW): 0.0026
$\eta$ (%): 84.95	$\cos \phi$ : 0.772	P2 (kW): 1.50

### 25% rated power:

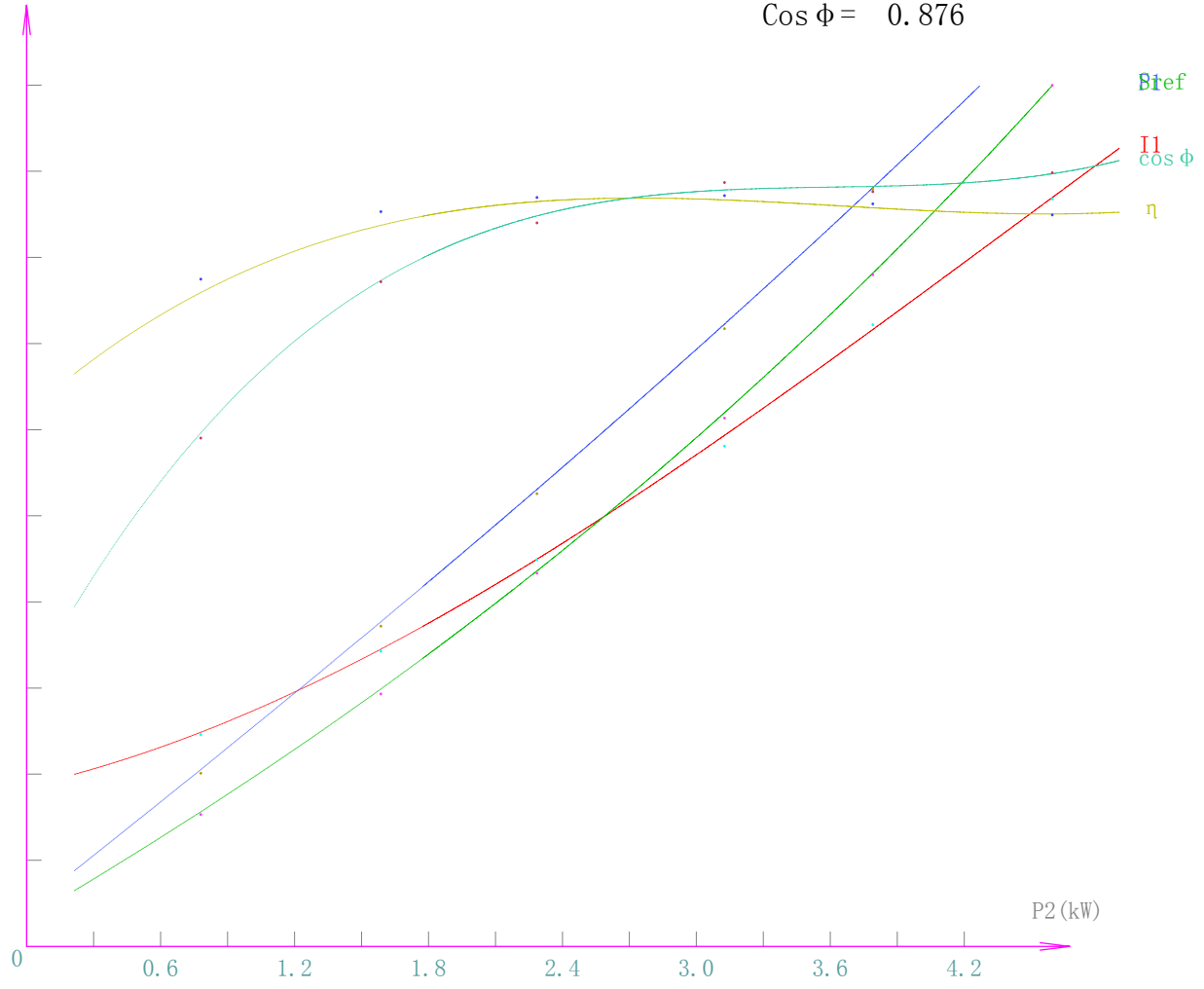
I (A): 2.44	P1 (kW): 0.9758	Ss (%): 0.74
Pcu (kW): 0.0309	Pal (kW): 0.0064	Ps (kW): 0.0006
$\eta$ (%): 76.86	$\cos \phi$ : 0.578	P2 (kW): 0.75

# Load Characteristic Curve

Report No. : IE3-100L-2 3KW 15051401  
 Model : IE3-100L-2  
 Rated Output: 3 kW  
 Ser. No. : 铝

When P2 = 3 kW ,  
 I1 = 5.67 A  
 P1 = 3.4435 kW  
 Sref = 2.93 %  
 η = 87.12 %  
 Cos φ = 0.876

cos φ	η	Sref	P1	I1
	%	%	kW	A
1.0	100	5.0	5.0	10
0.9	90	4.5	4.5	9
0.8	80	4.0	4.0	8
0.7	70	3.5	3.5	7
0.6	60	3.0	3.0	6
0.5	50	2.5	2.5	5
0.4	40	2.0	2.0	4
0.3	30	1.5	1.5	3
0.2	20	1.0	1.0	2
0.1	10	0.5	0.5	1



# three-phase induction motor type test report

Amb Temp: 22.7°C

report NO.: IE3-100L-2 3KW 15051401

test time:

Modle: IE3-100L-2  
NO.: 铝  
Rated f: 50Hz

Rated U: 415V  
Rated I: 5.7A  
Rated P: 3kW

Rated  $\eta$ : 87.10%  
Cos  $\phi$ : 0.87  
Rated speed: 2895r/min

InsClass: F  
Connect: Y  
Poles: 2

## Resistance test

Rac ( $\Omega$ ): 2.5420

Rbc ( $\Omega$ ): 2.5440

Rab ( $\Omega$ ): 2.5420

Ravg ( $\Omega$ ): 2.5427  
115°C R ( $\Omega$ ): 3.4682  
25°C R ( $\Omega$ ): 2.5764

Shell Temp (°C): 23.3  
Amb Temp (°C): 21.60

## Noload test

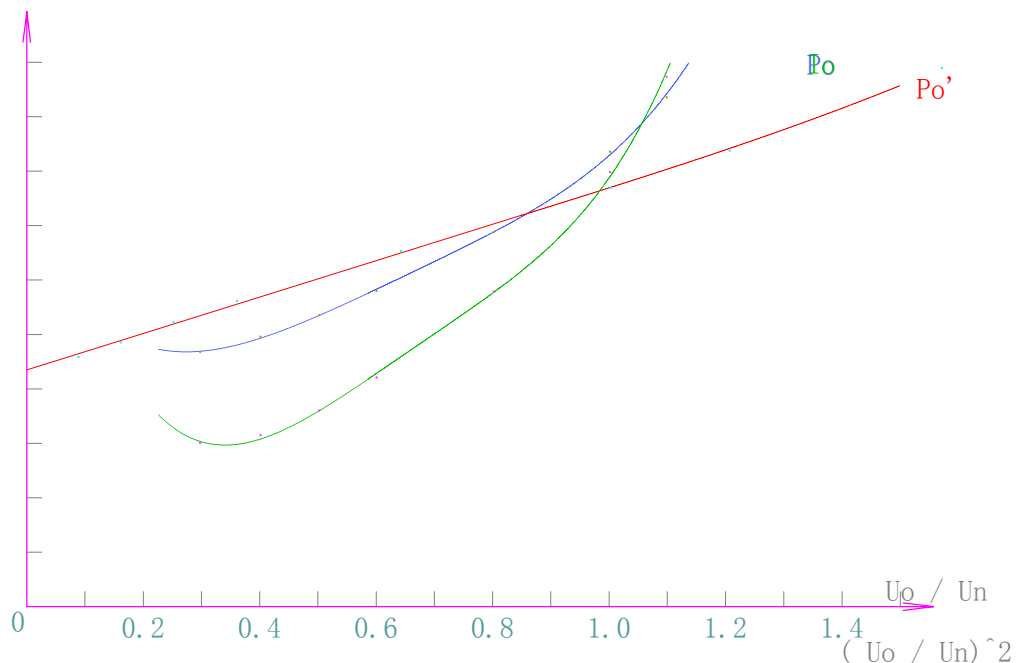
U*	U (V)	I (A)	Po (kW)	Po' (kW)	Pcu (kW)	WindingT (°C)
1.25	501.4	3.89	0.3100	0.2474	0.0626	43.91
1.10	439.5	2.43	0.2340	0.2094	0.0246	43.91
1.00	400.5	2.00	0.2090	0.1925	0.0165	43.77
0.80	320.7	1.45	0.1720	0.1633	0.0087	43.77
0.60	240.3	1.05	0.1450	0.1404	0.0046	43.34
0.50	200.9	0.90	0.1340	0.1306	0.0034	43.34
0.40	160.6	0.79	0.1240	0.1214	0.0026	42.85
0.30	119.2	0.75	0.1170	0.1147	0.0023	42.85

Thermal R ( $\Omega$ ): 2.7250  
Io (A): 1.97  
Pm (kW): 0.1088

Shell Temp (°C): 34.0  
Io (kW): 0.2072  
Pfe (kW): 0.0830

No Load Characteristic Curve

Io	Po	Po'
A	kW	kW
2.50	0.250	0.250
2.25	0.225	0.225
2.00	0.200	0.200
1.75	0.175	0.175
1.50	0.150	0.150
1.25	0.125	0.125
1.00	0.100	0.100
0.75	0.075	0.075
0.50	0.050	0.050
0.25	0.025	0.025



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

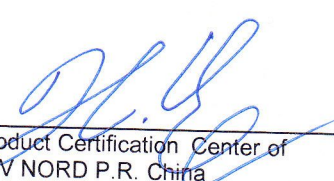
**Manufacturer:** Guanglu Electrical Co., Ltd.  
Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China

**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.  
Member of TÜV NORD Group  
Tel.: +86-571-85386989  
Fax: +86-571-85386986  
[www.tuv-nord.com.cn](http://www.tuv-nord.com.cn)  
China

390

Technical report No. TRHZP1610001-01/01  
File-No.: HZP1610001-01



TÜV NORD (Hangzhou)  
Co.,Ltd.

No.50, Jiu Huan Road,  
5<sup>th</sup> floor, Jiang Gan District,  
310019 Hangzhou,  
P.R. China

Phone: +86 (0) 571 8538 6989  
Fax: +86 (0) 571 8538 6986

DL-HZPCERT@tuv-nord.com  
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



All copyright and joint copyrights with respect to studies, assessments, test results, calculations, presentations, etc., shall remain the property of TÜV NORD (Hangzhou) Co, Ltd.. It is not permissible to pass on to third parties the reports, assessments, test results, calculations, presentations, etc., drawn up by TÜV NORD (Hangzhou) Co, Ltd. or to publish them in abridged form, unless the parties to the contract have concluded a written agreement on the passing on, presentation or publication of extracts from them.



<b>Applicant:</b>	Guanglu Electrical Co., Ltd. Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China
<b>Manufacturer:</b>	Guanglu Electrical Co., Ltd. Shanshi Industrial Area, Daxi Town, Wenling City, Zhejiang, China
<b>Equipment under test:</b>	Three Phase Induction Motor Model No.: IE3 series(Detailed refer to next page)
<b>Ratings:</b>	Rated Voltage: 400 V Rated Frequency: 50 Hz Rated Output Power: Refer to next page
<b>Type of examination:</b>	Conformity testing to EMC Directive
<b>Test regulations:</b>	EN 60034-1:2010
<b>Test location:</b>	TÜV NORD (Hangzhou) Co., Ltd. No.50, Jiu Huan Road, 5th floor, Jiang Gan District, Hangzhou, China
<b>Test result:</b>	The referenced units are in compliance with above requirements.
<b>Remark:</b>	<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	/	/