Axial Flux Permanent Magnet Generator

Hiest

垂直轴无铁芯风力发电机

Cleaner Future

- Series for small wind turbines -

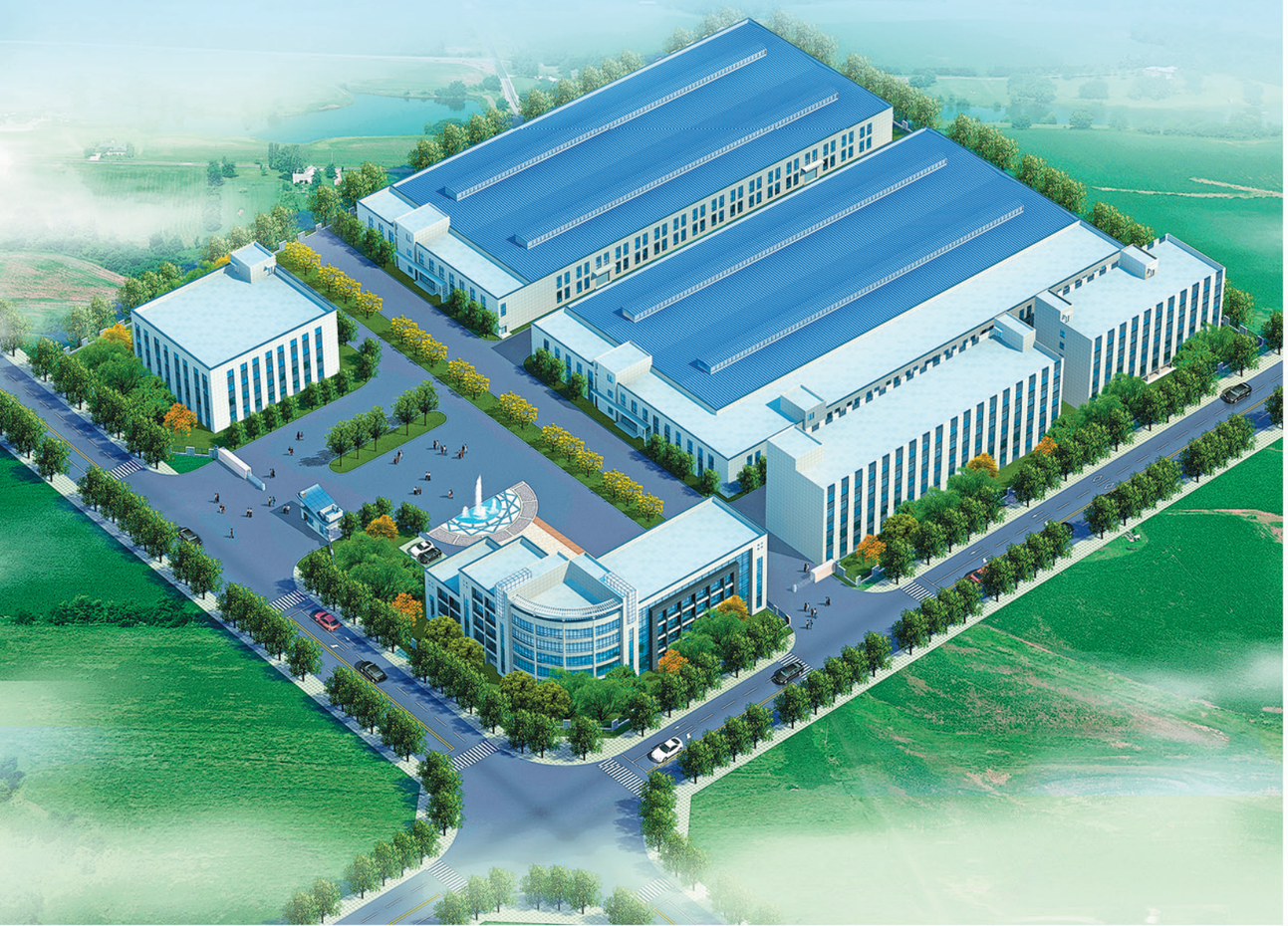
诸暨和创电机科技有限公司
ZHUJI HIEST MOTOR CO.,LTD

Introduction 企业简介

诸暨和创电机科技有限公司是一家专业研发和生产稀土、高效、节能永磁电机的科技型企业。本公司依托国内知名大专院校和科研单位开发的稀土永磁同步电机、垂直轴无铁芯风力发电机组、稀土永磁无铁芯智能电机和机床用电主轴电机等系列产品，具有完全的自主知识产权，代表着电机行业未来的发展方向。 本公司生产的系列产品具有结构简单、体积小、效率高、调幅宽、噪音低的特点，可用于工业拖动、数控高速加工机床、风力发电、电动车辆、高速电动工具等行业。本公司系列产品配合自主研发的电子智能变频器，可大大提高电机的系统效率，经过工业应用实测，综合节能可达30%。本公司地处人杰地灵的西施故里——浙江省诸暨市。这里景色秀丽、气候怡人，欢迎阁下光临！

ZHUJI HIEST MOTOR CO., LTD specializes in researching and manufacturing high-efficiency, energy-saving permanent magnet motors. As a high-tech enterprise, we cooperate with distinguished domestic universities and colleges, as well as scientific research institutions to develop permanent magnet synchronous motors, coreless vertical wind driven generator, coreless permanent magnet intelligent motors and spindle motors applied to machine tool. In addition, our company firmly holds the completely independent intellectual property rights, and pioneers the development of this industry. We successfully produce a range of motors with simple structure, small size, high efficiency, wide amplitude modulation and low noise. They are widely employed in industrial drag, high-speed CNC machine, wind driven generator, electric vehicle, high-speed electric tools and other fields. Thanks to the application of intelligent electronic converter invented by ourselves, it significantly improves the system efficiency of the motors. Proved by industrial application cases, the comprehensive energy saving of our motors can reach 30%.

Our company is located in Zhuji City , Zhejiang Province. With picturesque scenery and pleasant climate, we warmly welcome your presence.



Corporate culture 企业文化

公司愿景

发展节能电机，发展绿色能源；为客户增值，为人类造福

Vision

To develop energy-saving motors and green energy.
To add value for customers and benefit mankind.

公司使命

组建一个技术领先于国内、外，专门从事稀土永磁电机及其控制系统研发和设计的团队；建立一家以稀土永磁电机及其控制系统为主导产品，以提倡节能、环保和服务为理念的生产企业。

Mission

We dedicate ourselves to building an outstanding team specializing in researching and developing permanent magnet motors.We are committed to cultivating our company with permanent magnet motors and control system as our main products. Besides, we advocate energy conservation environmental protection and high-quality service.

核心价值观

诚实守信、团队合作、科技创新、以人为本

Core values

Integrity, Teamwork, Scientific and Technical innovation,Human Oriented

经营理念

客户满意、员工满意、股东满意

Operation Principle

Customer satisfaction, employee satisfaction,stockholder satisfaction.

质量方针

尊重设计理念、不偷工减料　不降低精度，铸就和创品牌

Quality policy

Respect design philosophy, guarantee quality and quantity,
Ensure the accuracy, Cast Hiest Brand.

管理理念

贴近客户，贴近员工；贴近现场，效率优先

Management Principle

Work close with clients, care for employee
Pour attention to scene. Give priority to efficiency .

自身法宝

过硬的质量、优质的服务、诚信的文化

Competitive strengths

Creditable quality,high-quality service,Integrity.

Enterprise honor and patents

企业荣誉及专利

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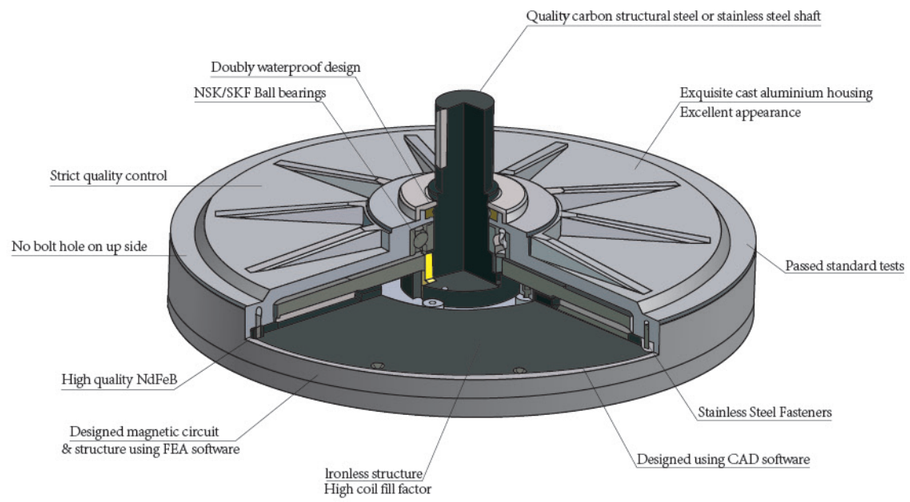
AFPMG for Small Wind Turbines & Hydro Power

垂直轴无铁芯风力发电机是我司新开发的一款永磁发电机。由于结构简单，设计合理，特别是对风场的风速要求低，可以全天候高效工作，最大限度地利用风能。已为世界上不少国家和地区所认可，产品已远销欧洲、美国及东南亚地区。

AFPMG(Axial Flux Permanent Magnet Generator) is newly invented by Zhuji Hiest Motor Co., Ltd.
The simple- structured, scientific- designed generator can make the most of the wind power and efficiently generate electricity 24hours a day without high wind speed. Moreover, its performance and quality has not only received recognition in many countries and regions, but also successfully taken a share in foreign markets, UE, US, SE Asia Market, for instance.

Constructions and Materials



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Hiest®

主要特点 Main Feature

- 发电机无铁芯，启动转矩 0.5N•M 左右，启动风速只需 1.5m/s 左右。
- 发电机采用无刷，无磁阻尼，稀土永磁技术，系统效率高，可以达到 90% 以上。
- 可靠性好，可以 360 度吸收风能，极大地提高了风能的利用率。

- Iron coreless, 0.5 N.M starting torque and 1.5 m/s staring wind speed.
- Brushless, non-magnetic damping, permanent magnetic technology, high efficiency up to 90%
- Stability, this type of motor can absorb the wind power 360 degrees which make the most use of the wind power

主要应用 Main Applications

- 小型风力发电机
- 小型汽油发电机或柴油发电机
- 电驱动机器，如电动机和发电机
- 水力发电

总之，AFPMG 的应用在发电机或电动机领域提供了一个可选择的解决方案。
它的圆盘形结构和优越的电力特性在电能生产和高效的电力传动系统中呈现出它的主要特点。

- Small wind generators(SWT)
- Small electrical generators driven by gasoline or diesel engines
- Electric vehicle drive machines, as motor and generator.
- Hydro Power

Application of AFPMG offers an alternative solution in the sphere of electrical generators or electrical machines in general. Their disc-shaped construction and advantageous electromechanical characteristics represent the main features in alternative electrical energy production and in high efficient electric drive systems.

选择项 Options

- 额定功率 Rated power: 0.1KW-15KW
- 额定转速 Rated speed: 100RPM-1200RPM
- 额定电压 Rated voltage: 14VDC-400VAC
- 发电机外径 Generator outer diameter: 110mm-770mm

我们可以根据客户的需求设计，我们可以为客户做原始设备制造商。
We can customize products according to customer requirements.
We can do OEM (Original equipment manufacturer) for customers.

保修 Warranty: 1 years

永磁风力发电机的工作范围
Operating Range of Permanent Magnet Generator (PMG)

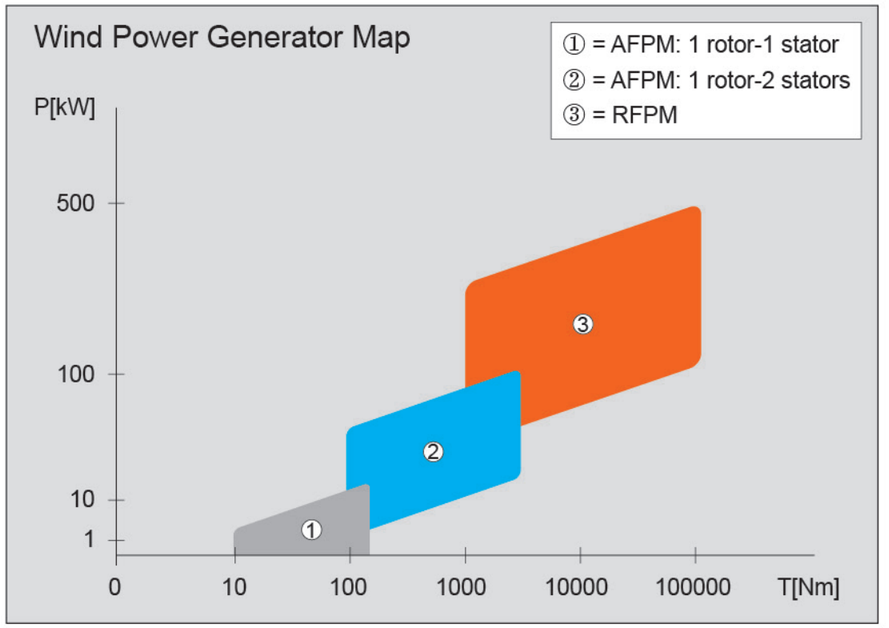
- 永磁风力发电机的结构和性能使它成为应用于小型风力发电机组的理想选择。

- Construction and technical performance make Permanent Magnet Generators (PMG) is a perfect choice for small wind turbine (SWT) applications.

- 永磁发电机适用于各种小型风力发电机组。单定子单转子单盘的垂直轴永磁发电机可应用于 1-5KW 的风力发电机组。功率为 5KW-50KW 的涡轮机需安装单转子、双定子双盘的垂直轴风力发电机。

- Operating range of PMG covers the needs of small wind turbine (SWT). For 1-5KW wind turbines, can use a single rotor-single stator of AFPMG, for 5KW-50KW turbines, can use AFPMG with a construction of single rotor-double stators,

The power rating above 50KW are covered by Radial Flux Permanent magnet Generator (RFPMG).



检测项目 Checklist Category

- 尺寸和公差
- 输出功率，电压，转速，输入扭矩效率
- 绝缘电阻测试
- 起动转矩
- 引出线（红线，白线，黑线，接地线）

- Dimension and tolerances
- Output power, voltage RPM. Input power and input torque.
- Insulation resistance examination
- Starting torque
- Output wire (Red, white, black, green/earth)

使用操作指南 Operating Instructions

- 工作环境：请在海拔 1000m 以下，气温为 -30 ° C to +50 ° C 的条件下使用。
- 安装前，请轻轻转动主轴或者机壳，确认转动顺畅，无噪音。
- 永磁发电机使用三相交流电线输出电流。安装前，请用 500MΩ 的绝缘测量器测量引出线和机壳间的电阻。电阻值应高于 5MΩ。若使用内转子的永磁发电机，在安装过程中，请确保固定螺母安装准确。

- Working condition: under an altitude of 1,000 meters, -30 ° C to +50 ° C
- Before installation, gently turning the shaft or housing to confirm rotation flexibility, no abnormal sound.
- AFPMG output is three-phase, three-wire output, before installation, use 500MΩ Megger to check the insulation resistance between the output wire and case, should not be less than 5 MΩ
- If AFPMG is inner rotor generator, in the installation process, should ensure that the locking screw in place, it is very important

CONTENTS

Hiest-AFPMG Inner Rotor

Model	Rated output power (KW)	Rated speed (RPM)	Rated output voltage	Weight (Kg)
AFPMG710	10	250	380VAC	145
	7.5	200	380VAC	
	5	150	220VAC/380VAC	
	4	100	96VAC/240VAC	
	3	100	220VAC/380VAC	
AFPMG560	15	400	300VAC	135
	10	250	380VAC	
	7.5	200	220VAC/380VAC	
	5	180	220VAC/380VAC	
	4	200	220VAC/380VAC	90
	3	180	220VAC/380VAC	
	2	130	112VDC/220VAC/380VAC	
	1.5	100	112VDC/220VAC/380VAC	
	1	100	56VDC/112VDC/220VAC/380VAC	
AFPMG520	3	200	112VDC/220VAC/380VAC	65
	2	150	112VDC/220VAC/380VAC	
	1	90	56VDC/112VDC/220VAC	
AFPMG460	2	180	112VDC/220VAC/380VAC	52
	1.5	150	220VAC/380VAC	
	1	130	56VDC/112VDC/220VAC	
AFPMG380	2	350	112VDC/220VAC/380VAC	34
	1	180	56VDC/112VDC/220VAC	
	0.5	130	56VDC/112VDC	
AFPMG330	1	350	56VDC/112VDC/220VAC	22
	0.5	200	56VDC/112VDC	
	0.3	150	28VDC/56VDC	
	0.2	100	28VDC/56VDC	
AFPMG270	0.5	350	28VDC/56VDC	11
	0.3	300	28VDC	
	0.2	200	28VDC/56VDC	
	0.1	130	14VDC/28VDC	
AFPMG230	0.2	350	14VDC/28VDC	8.5
	0.1	200	14VDC/28VDC	
AFPMG210	0.1	350	14VDC/28VDC	6
	0.05	200	14VDC	
AFPMG165	0.3	850	14VDC/28VDC	4
	0.15	500	14VDC/28VDC	
	0.05	250	14VDC	

Hiest-AFPMG Outer Rotor

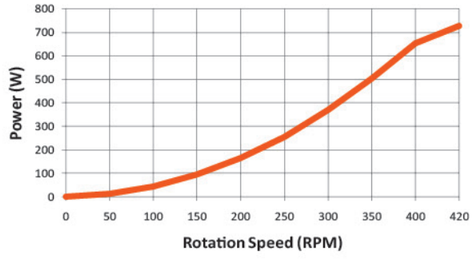
Model	Rated output power (KW)	Rated speed (RPM)	Rated output voltage	Weight (Kg)
AFPMG770	15	260	380VAC	165
	10	180	220VAC/380VAC	
	7.5	150	220VAC/380VAC	
	5	100	220VAC/380VAC	
AFPMG700	10	250	380VAC	135
	7.5	200	380VAC	
	5	150	220VAC/380VAC	
	4	100	96VAC/240VAC	
	3	100	220VAC/380VAC	
AFPMG550	4	200	220VAC/380VAC	80
	3	180	220VAC/380VAC	
	2	130	112VDC/220VAC/380VAC	
	1.5	100	112VDC/220VAC/380VAC	
	1	100	56VDC/112VDC/220VAC/380VAC	
AFPMG510	3	200	112VDC/220VAC/380VAC	57
	2	150	112VDC/220VAC/380VAC	
	1	90	56VDC/112VDC/220VAC	
AFPMG450	2	180	112VDC/220VAC/380VAC	48
	1.5	150	220VAC/380VAC	
	1	130	56VDC/112VDC/220VAC	
AFPMG380	2	350	112VDC/220VAC/380VAC	32
	1	180	56VDC/112VDC/220VAC	
	0.5	130	56VDC/112VDC	
AFPMG320	1	350	56VDC/112VDC/220VAC	20
	0.5	200	56VDC/112VDC	
	0.3	150	28VDC/56VDC	
	0.2	100	28VDC/56VDC	
AFPMG260	0.5	350	28VDC/56VDC	11
	0.3	300	28VDC	
	0.2	200	28VDC/56VDC	
	0.1	130	14VDC/28VDC	
AFPMG220	0.2	350	14VDC/28VDC	8.5
	0.1	200	14VDC/28VDC	
AFPMG200	0.1	350	14VDC/28VDC	6
	0.05	200	14VDC	
AFPMG150	0.3	850	14VDC/28VDC	4
	0.15	500	14VDC/28VDC	
		250	14VDC	

AFPMG260-0.5KW/350RPM

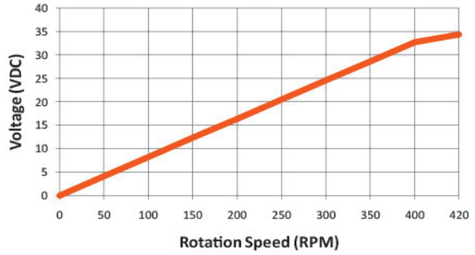
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	0.5
2	Rated speed	RPM	350
3	Rated output voltage	VDC	28
4	Rated current	A	17.9
5	Phase Resistance	Ω	0.13
6	Output wire square section	mm^2	2-4mm^2
7	Efficiency		>82%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	260
16	Shaft diameter	mm	30
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	11
21	Design lifetime	Year	>20

Speed-Power Curve



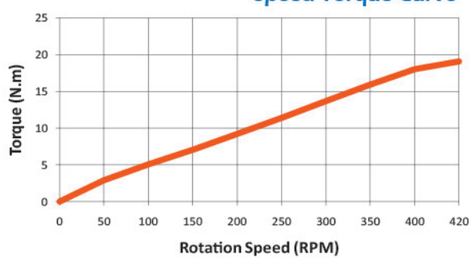
Speed-Voltage Curve

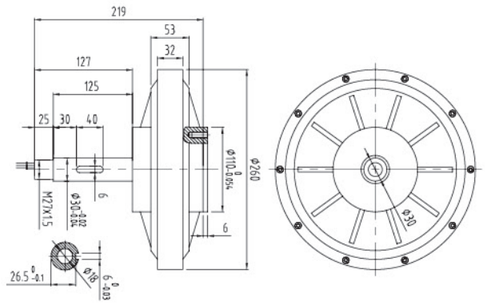


Testing Data

Speed (RPM)	Load voltage (VDC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
420	34.3	21.2	727.2	19.0	86.8
400	32.7	20	654.0	18.0	86.7
350	28.6	17.6	503.4	15.9	86.5
300	24.5	15.1	370.0	13.7	86.2
250	20.4	12.5	255.0	11.4	85.7
200	16.3	10.1	164.6	9.2	85.4
150	12.3	7.6	93.5	7.0	84.6
100	8.2	5.3	43.5	5.0	82.5
50	4.1	2.9	11.9	2.9	78.5

Speed-Torque Curve



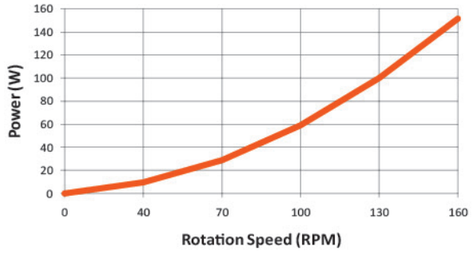


AFPMG270-0.1KW/130RPM

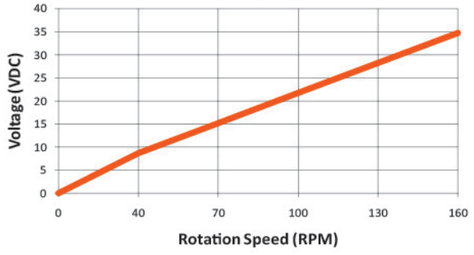
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	0.1
2	Rated speed	RPM	130
3	Rated output voltage	VDC	28
4	Rated current	A	3.6
5	Phase Resistance	Ω	1.2
6	Output wire square section	mm^2	2
7	Efficiency		>76%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	270
16	Shaft diameter	mm	30
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	11
21	Design lifetime	Year	>20

Speed-Power Curve



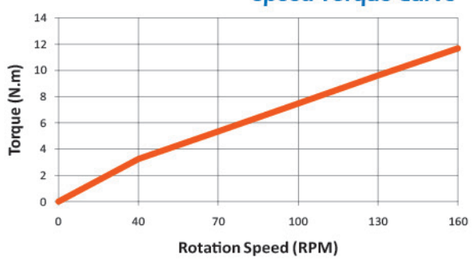
Speed-Voltage Curve

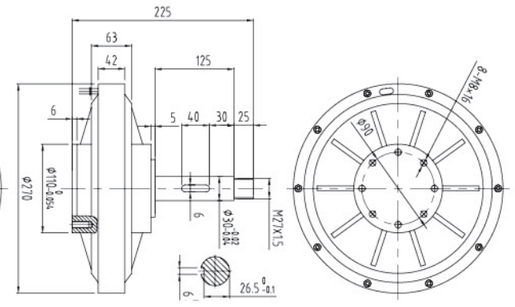


Testing Data

Speed (RPM)	Load voltage (VDC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
160	34.7	4.37	151.6	11.7	77.5
130	28.2	3.55	100.1	9.6	76.5
100	21.7	2.73	59.2	7.5	75.6
70	15.2	1.91	29.0	5.3	74.2
40	8.7	1.1	9.5	3.3	70.1

Speed-Torque Curve



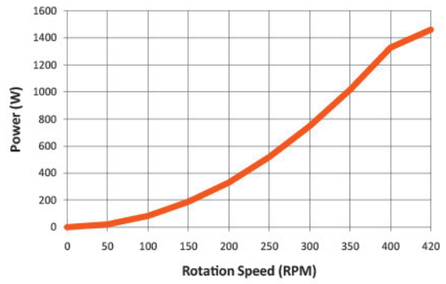


AFPMG320-1.0KW/350RPM

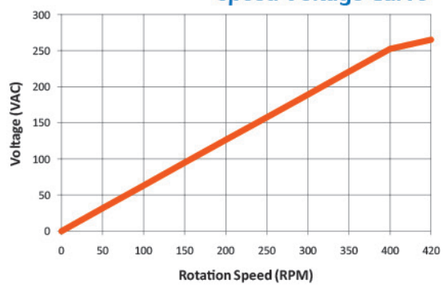
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	1.0
2	Rated speed	RPM	350
3	Rated output voltage	VAC	220
4	Rated current	A	2.62
5	Phase Resistance	Ω	4.4
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.3
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	320
16	Shaft diameter	mm	45
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	20
21	Design lifetime	Year	>20

Speed-Power Curve



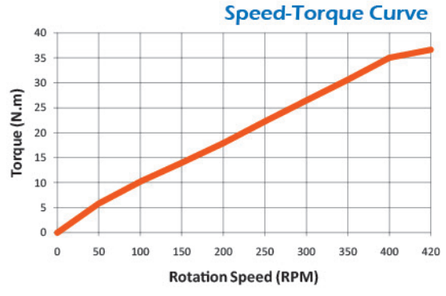
Speed-Voltage Curve

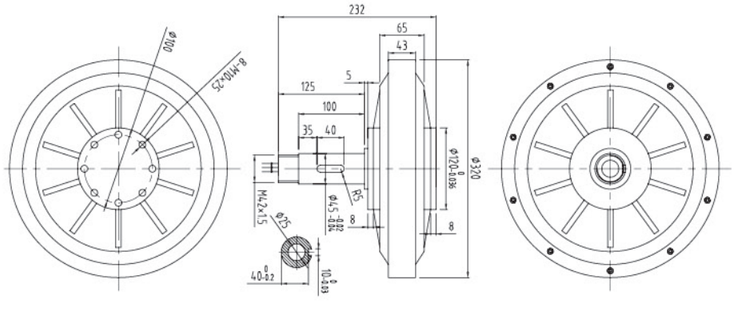


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
420	265.2	3.18	1460.7	36.6	90.8
400	252.6	3.04	1329.9	35.0	90.7
350	221.0	2.65	1014.3	30.6	90.4
300	189.4	2.28	748.0	26.5	89.9
250	157.9	1.9	519.5	22.2	89.2
200	126.3	1.51	330.3	17.9	88.0
150	94.7	1.14	187.0	14.0	85.3
100	63.1	0.77	84.2	10.2	78.7
50	31.6	0.38	20.8	5.9	67.7

Speed-Torque Curve



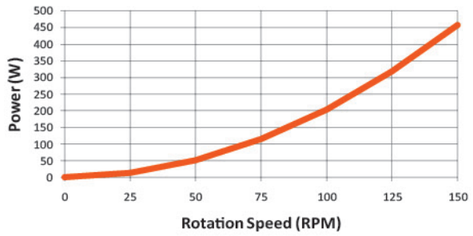


AFPMG330-0.2KW/100RPM

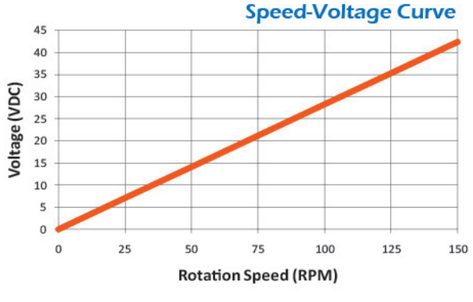
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	0.2
2	Rated speed	RPM	100
3	Rated output voltage	VDC	28
4	Rated current	A	7.2
5	Phase Resistance	Ω	0.53
6	Output wire square section	mm^2	2
7	Efficiency		>74%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.3
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	330
16	Shaft diameter	mm	45
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	22
21	Design lifetime	Year	>20

Speed-Power Curve



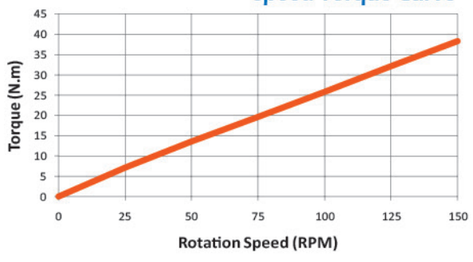
Speed-Voltage Curve

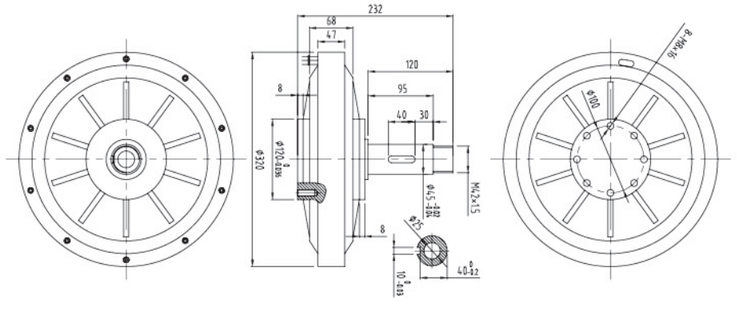


Testing Data

Speed (RPM)	Load voltage (VDC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
125	35.3	9	318.0	32.1	75.6
100	28.3	7.2	203.5	25.8	75.2
75	21.2	5.4	114.5	19.7	74.1
50	14.1	3.6	50.9	13.5	71.8
25	7.1	1.8	12.7	7.1	68.2

Speed-Torque Curve



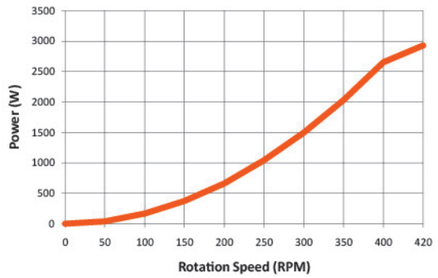


AFPMG380-2.0KW/350RPM

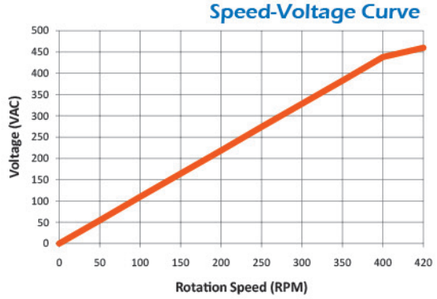
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	2.0
2	Rated speed	RPM	350
3	Rated output voltage	VAC	380
4	Rated current	A	3.0
5	Phase Resistance	Ω	6.3
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	380
16	Shaft diameter	mm	50
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	32
21	Design lifetime	Year	>20

Speed-Power Curve



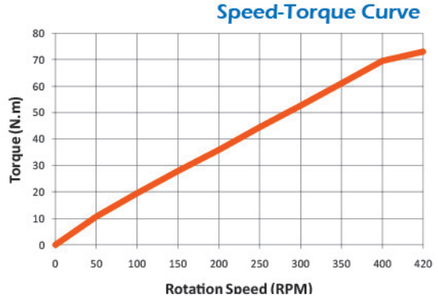
Speed-Voltage Curve

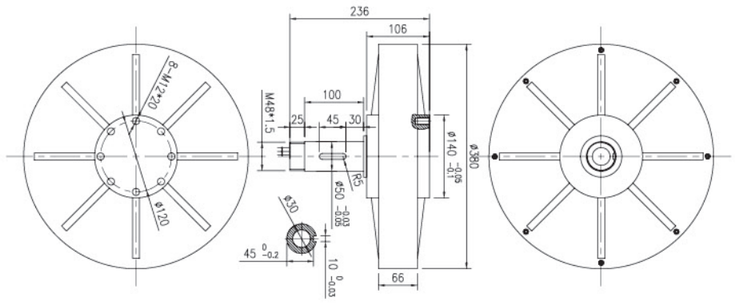


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
420	459.5	3.68	2928.7	73.1	91.1
400	437.6	3.5	2652.8	69.6	91.0
350	382.9	3.06	2029.4	61.0	90.7
300	328.2	2.63	1495.1	52.7	90.3
250	273.5	2.2	1042.2	44.5	89.6
200	218.8	1.75	663.2	35.9	88.3
150	164.1	1.32	375.2	27.9	85.6
100	109.4	0.87	164.9	19.5	80.7
50	54.7	0.44	41.7	10.6	75.3

Speed-Torque Curve



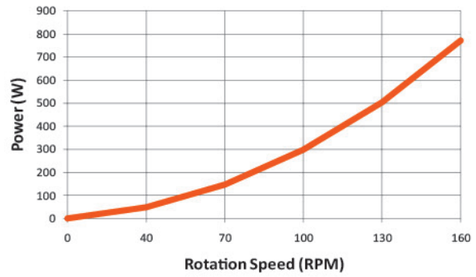


AFPMG380-0.5KW/130RPM

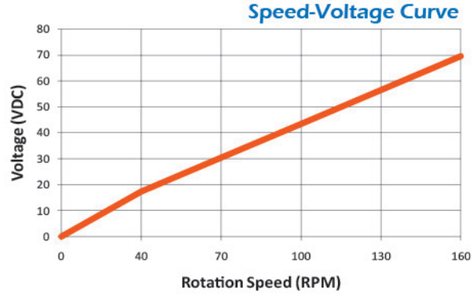
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	0.5
2	Rated speed	RPM	130
3	Rated output voltage	VDC	56
4	Rated current	A	8.9
5	Phase Resistance	Ω	0.7
6	Output wire square section	mm^2	4
7	Efficiency		>81%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.3
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	380
16	Shaft diameter	mm	50
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	34
21	Design lifetime	Year	>20

Speed-Power Curve



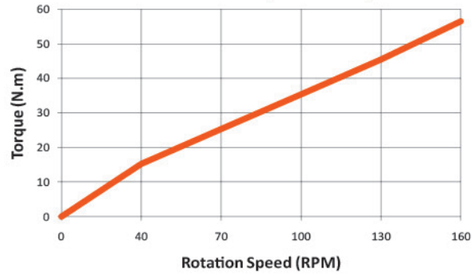
Speed-Voltage Curve

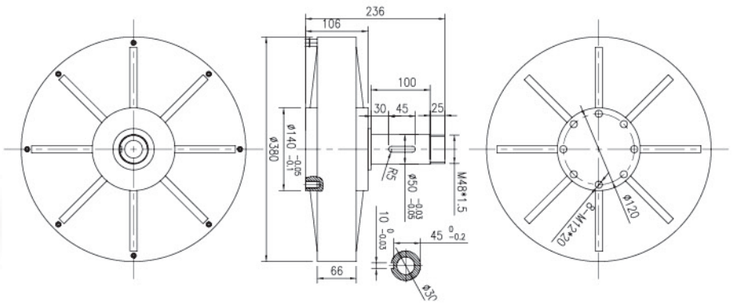


Testing Data

Speed (RPM)	Load voltage (VDC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
160	69.5	11.10	771.5	56.5	81.5
130	56.5	8.91	502.6	45.5	81.2
100	43.4	6.87	298.4	35.4	80.6
70	30.4	4.81	146.0	25.3	78.7
40	17.4	2.75	47.8	15.2	75.1

Speed-Torque Curve



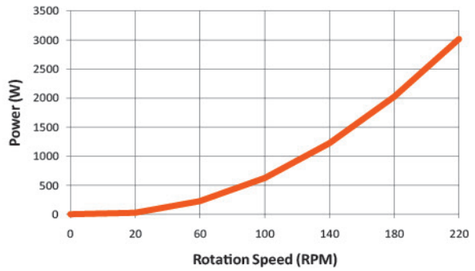


AFPMG450-2.0KW/180RPM

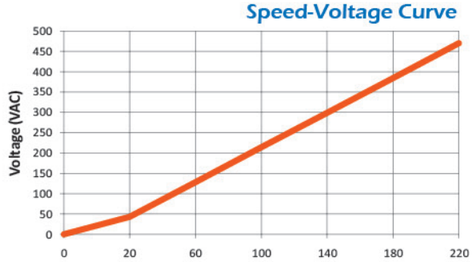
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	2
2	Rated speed	RPM	180
3	Rated output voltage	VAC	380
4	Rated current	A	3.0
5	Phase Resistance	Ω	9.8
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	450
16	Shaft diameter	mm	59
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	48
21	Design lifetime	Year	>20

Speed-Power Curve



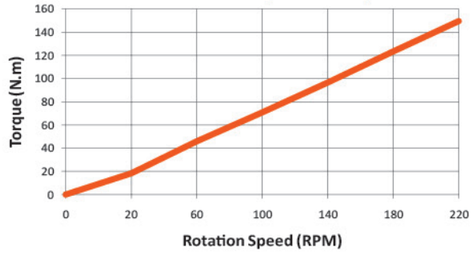
Speed-Voltage Curve

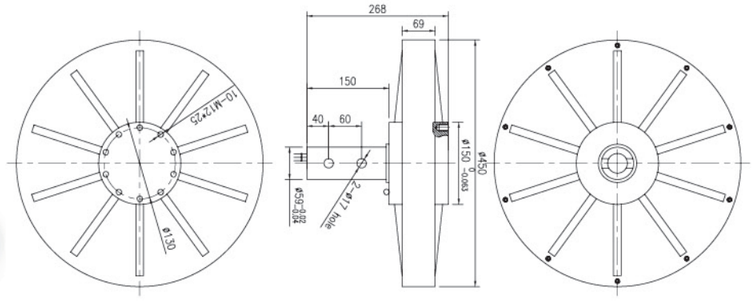


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
220	470.0	3.7	3011.9	149.5	87.4
180	384.5	3.04	2024.7	123.4	87.0
140	299.1	2.36	1222.5	96.6	86.3
100	213.6	1.69	625.3	70.6	84.6
60	128.2	1.02	226.5	45.7	78.9
20	42.7	0.34	25.2	18.4	65.3

Speed-Torque Curve



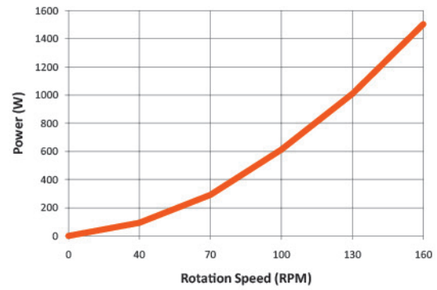


AFPMG460-1.0KW/130RPM

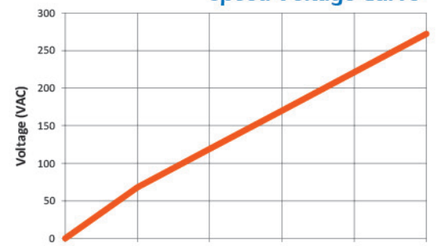
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	1.0
2	Rated speed	RPM	130
3	Rated output voltage	VAC	220
4	Rated current	A	2.6
5	Phase Resistance	Ω	5.4
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	460
16	Shaft diameter	mm	45
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	52
21	Design lifetime	Year	>20

Speed-Power Curve



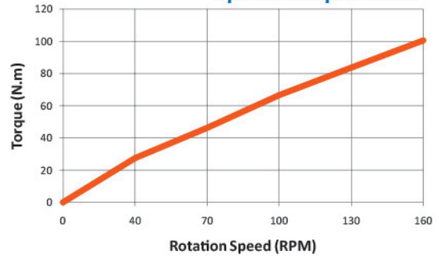
Speed-Voltage Curve

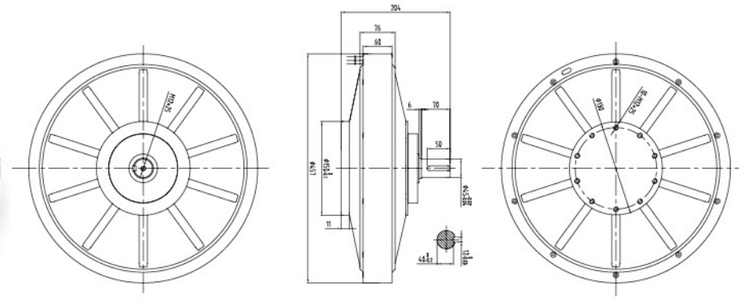


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
160	272.0	3.19	1502.8	100.4	89.3
130	221.0	2.64	1010.5	83.6	88.8
100	170.0	2.08	612.4	66.6	87.8
70	119.0	1.41	290.6	46.1	86.0
40	68.0	0.8	94.2	27.4	82.2

Speed-Torque Curve



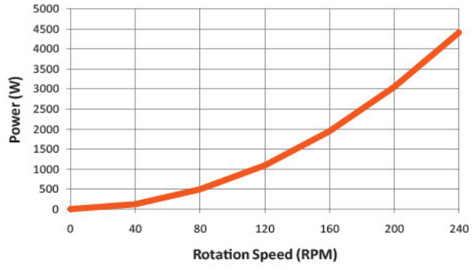


AFPMG510-3.0KW/200RPM

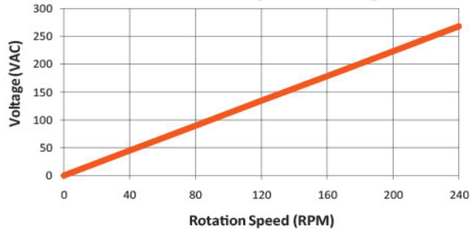
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	3
2	Rated speed	RPM	200
3	Rated output voltage	VAC	220
4	Rated current	A	7.9
5	Phase Resistance	Ω	1.36
6	Output wire square section	mm^2	$2mm^2$
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	510
16	Shaft diameter	mm	50
17	Housing material		Aluminium Alloy
18	Shaft material		Stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	57
21	Design lifetime	Year	>20

Speed-Power Curve



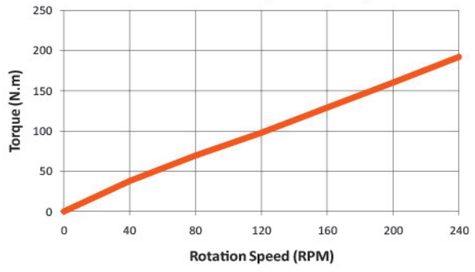
Speed-Voltage Curve

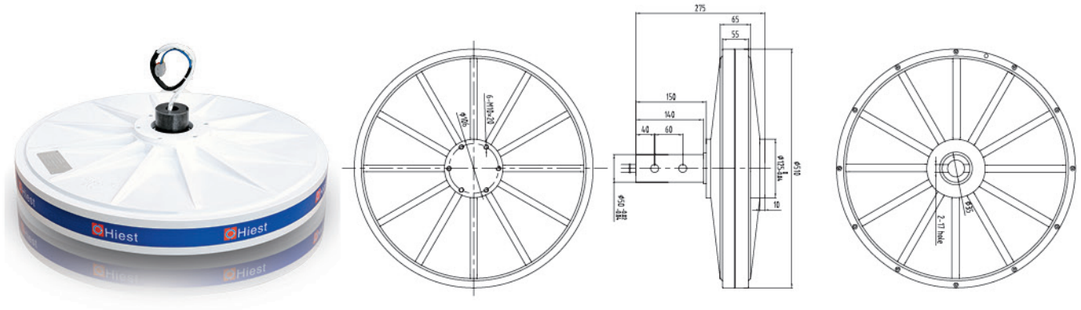


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
240	268.0	9.5	4409.7	191.9	91.4
200	223.3	7.9	3055.8	160.2	91.1
160	178.7	6.3	1949.5	128.7	90.4
120	134.0	4.7	1090.8	97.6	89.0
80	89.3	3.2	495.1	69.5	85.1
40	44.7	1.6	123.8	38.0	77.7

Speed-Torque Curve



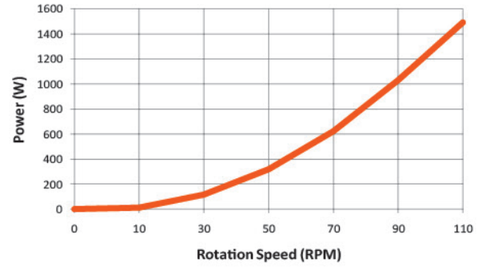


AFPMG520-1.0KW/90RPM

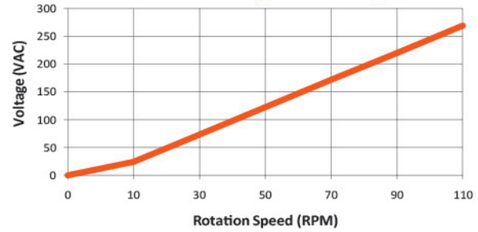
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	1
2	Rated speed	RPM	90
3	Rated output voltage	VAC	220
4	Rated current	A	2.62
5	Phase Resistance	Ω	9.5
6	Output wire square section	mm^2	$2mm^2$
7	Efficiency		>81%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	520
16	Shaft diameter	mm	45
17	Housing material		Aluminium Alloy
18	Shaft material		Stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	65
21	Design lifetime	Year	>20

Speed-Power Curve



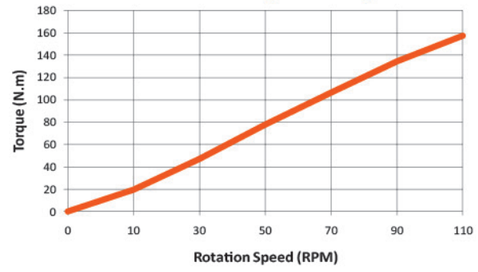
Speed-Voltage Curve

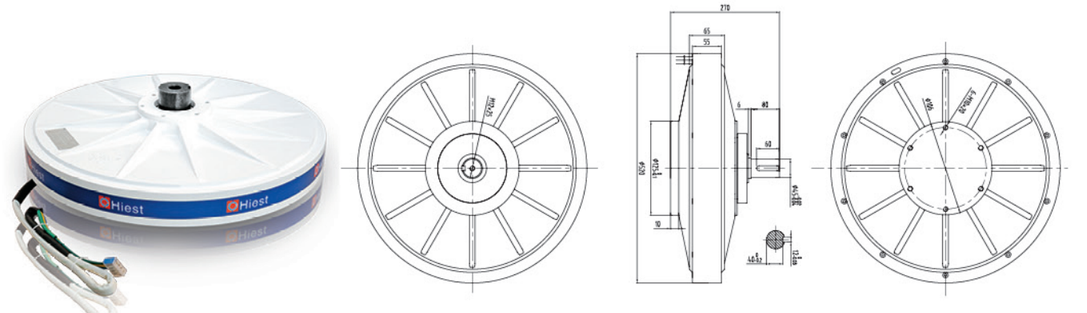


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
110	269.0	3.2	1490.9	157.4	82.2
90	220.1	2.7	1029.2	134.4	81.2
70	171.2	2.1	622.6	106.2	80.0
50	122.3	1.5	317.7	77.7	78.1
30	73.4	0.9	114.4	46.9	77.6
10	24.5	0.3	12.7	19.4	62.7

Speed-Torque Curve



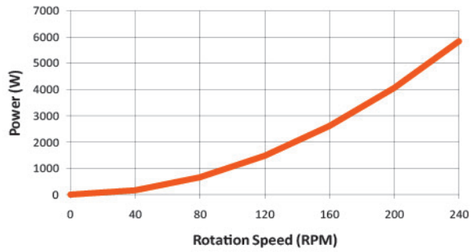


AFPMG550-4.0KW/200RPM

Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	4.0
2	Rated speed	RPM	200
3	Rated output voltage	VAC	380
4	Rated current	A	6.1
5	Phase Resistance	Ω	3.7
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	550
16	Shaft diameter	mm	78
17	Housing material		Aluminium Alloy
18	Shaft material		Steel
19	Bearing		NSK or SKF
20	Weight	Kg	80
21	Design lifetime	Year	>20

Speed-Power Curve

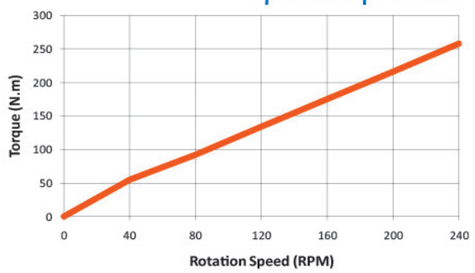


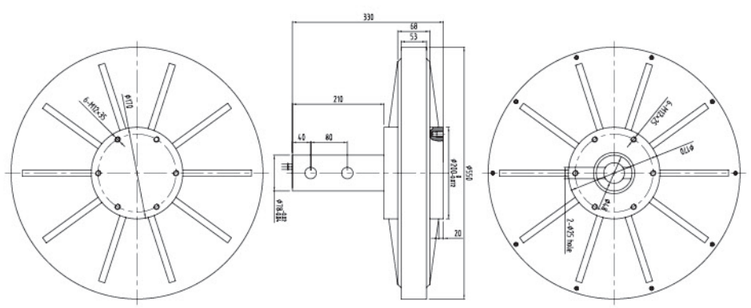
Speed-Voltage Curve

Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
240	462	7.3	5841.3	258.0	90.1
200	385	6.1	4067.6	216.3	89.8
160	308	4.9	2613.9	174.9	89.2
120	231	3.7	1480.3	133.9	88.0
80	154	2.5	653.5	91.9	84.9
40	77	1.2	162.7	54.7	71.0

Speed-Torque Curve



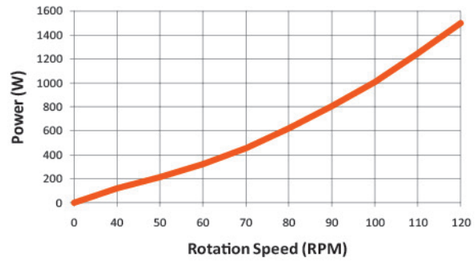


AFPMG560-1.0KW/100RPM

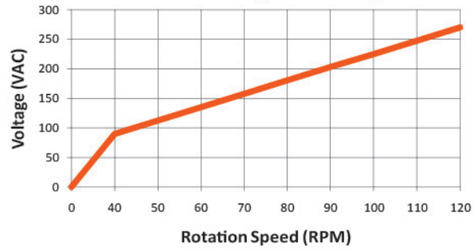
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	1
2	Rated speed	RPM	100
3	Rated output voltage	VAC	220
4	Rated current	A	2.65
5	Phase Resistance	Ω	5.9
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	560
16	Shaft diameter	mm	45
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	90
21	Design lifetime	Year	>20

Speed-Power Curve



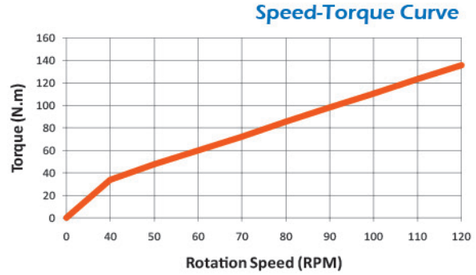
Speed-Voltage Curve

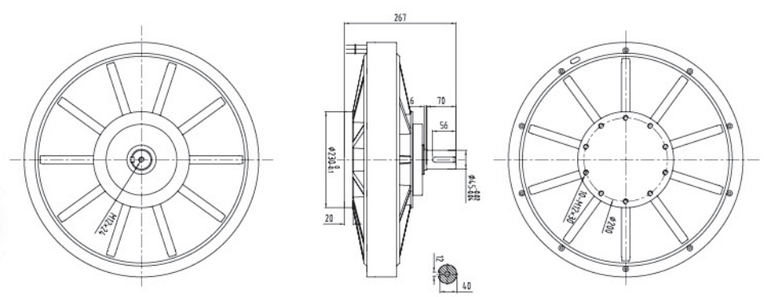


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
120	270.0	3.2	1496	135.6	87.8
110	247.5	2.9	1243	123.3	87.5
100	225	2.6	1006	110.2	87.2
90	202.5	2.3	804	98.2	86.9
80	180	2	619	85.4	86.5
70	157.5	1.7	456	72.1	86.3
60	135	1.4	322	59.7	85.8
50	112.5	1.1	213	47.6	85.4
40	90	0.8	119	33.7	84.1

Speed-Torque Curve



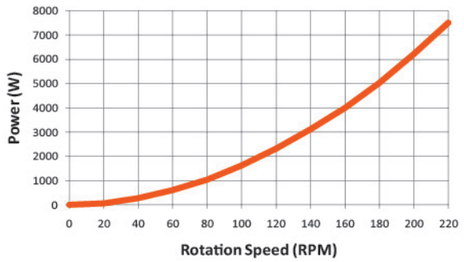


AFPMG560-5KW/180RPM (Double-disk)

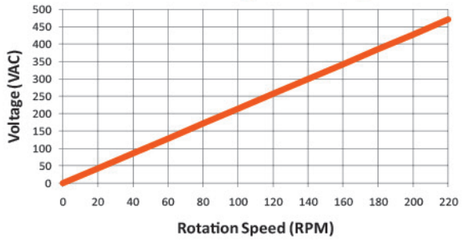
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	5
2	Rated speed	RPM	180
3	Rated output voltage	VAC	380
4	Rated current	A	7.6
5	Phase Resistance	Ω	3.1
6	Output wire square section	mm^2	2-2mm²
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	560
16	Shaft diameter	mm	55
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	135
21	Design lifetime	Year	>20

Speed-Power Curve



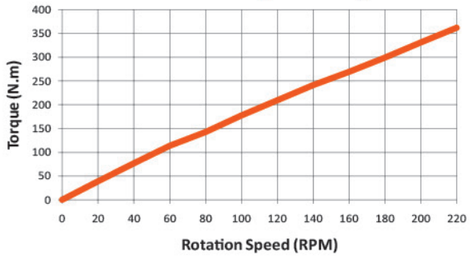
Speed-Voltage Curve

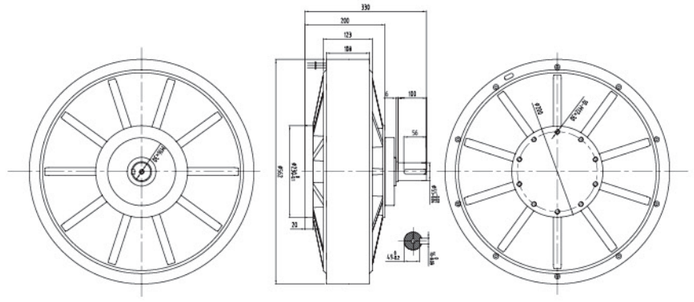


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
220	471.0	9.2	7505.1	362.1	90.0
200	428.0	8.4	6226.9	331.1	89.8
180	385	7.6	5035	299.5	89.6
160	342.2	6.8	4001	269.2	89.3
140	299.4	6	3115	241.2	89.0
120	256.7	5.2	2315	209.6	88.5
100	213.9	4.4	1621	177.5	87.6
80	171.1	3.5	1035	143	86.3
60	128.3	2.7	611	113.7	83.8
40	85.6	1.8	265	76.6	76.8

Speed-Torque Curve



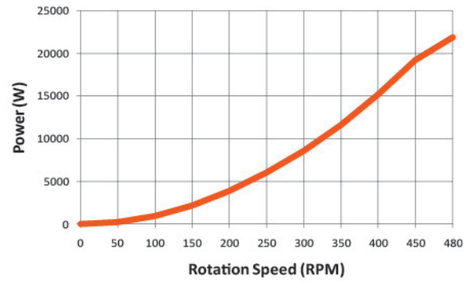


AFPMG560-15KW/400RPM (Double-disk)

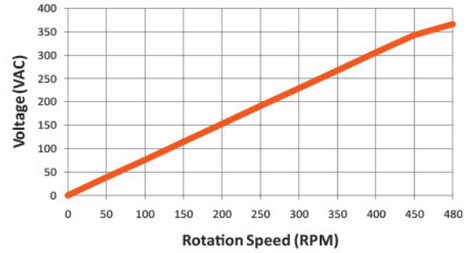
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	15
2	Rated speed	RPM	400
3	Rated output voltage	VAC	300
4	Rated current	A	28.9
5	Phase Resistance	Ω	0.3
6	Output wire square section	mm^2	2-4mm²
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<0.5
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	560
16	Shaft diameter	mm	55
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	135
21	Design lifetime	Year	>20

Speed-Power Curve



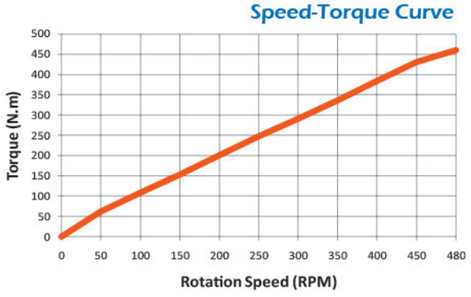
Speed-Voltage Curve

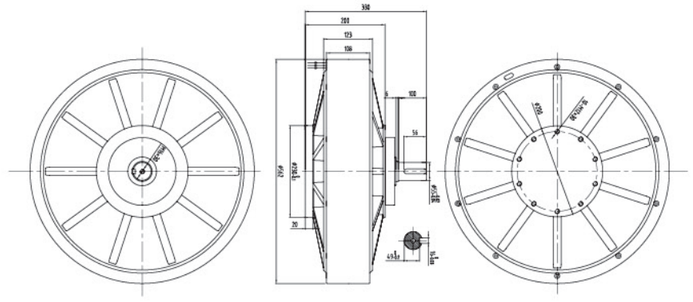


Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
480	366.0	34.5	21870.0	459.4	94.7
450	343	32.3	19188.7	430.3	94.6
400	305	28.7	15161.1	383.3	94.4
350	266.9	25.1	11603.0	336.2	94.2
300	228.8	21.6	8559.7	290.6	93.8
250	190.6	18.2	6008.2	246.6	93.1
200	152.5	14.6	3856.3	200.5	91.9
150	114.4	10.8	2139.9	152.5	89.4
100	76.3	7.1	938.3	108.3	82.8
50	38.1	3.6	237.6	61.9	73.3

Speed-Torque Curve



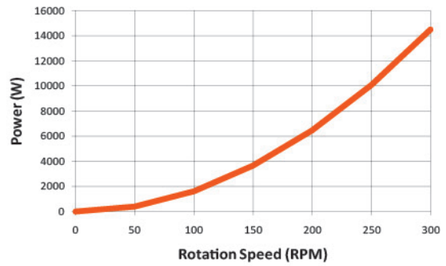


AFPMG700-10KW/250RPM

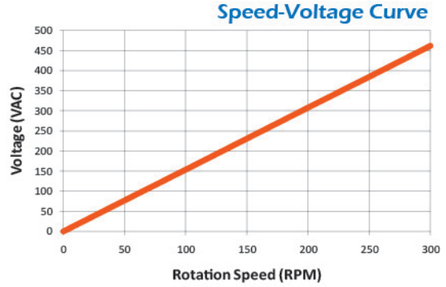
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	10
2	Rated speed	RPM	250
3	Rated output voltage	VAC	380
4	Rated current	A	15.2
5	Phase Resistance	Ω	0.9
6	Output wire square section	mm^2	4
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	700
16	Shaft diameter	mm	98
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK
20	Weight	Kg	135
21	Design lifetime	Year	>20

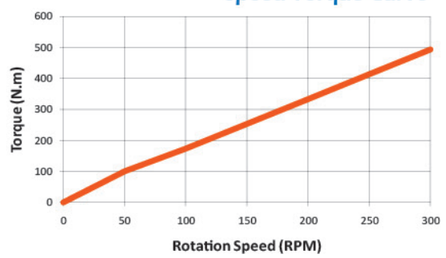
Speed-Power Curve



Speed-Voltage Curve

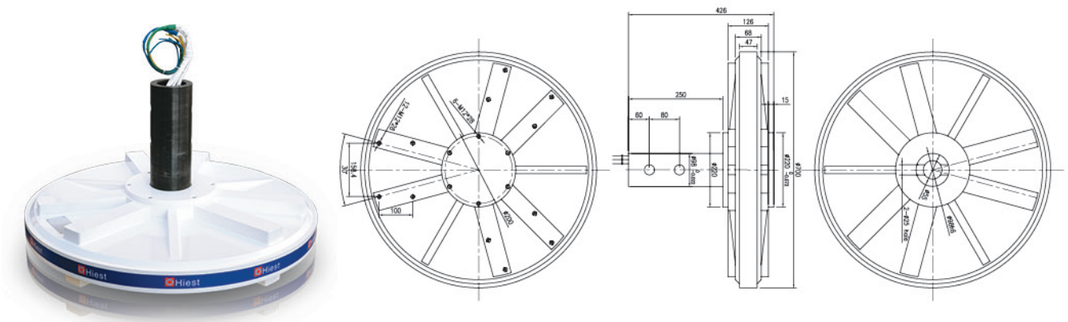


Speed-Torque Curve



Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
300	462.0	18.1	14483.3	493.0	93.5
250	385.0	15.1	10069.0	412.7	93.2
200	308.0	12.1	6454.8	332.8	92.6
150	231.0	9.1	3640.8	253.7	91.4
100	154.0	6	1600.4	173.6	88.0
50	77.0	3	400.1	100.2	76.3

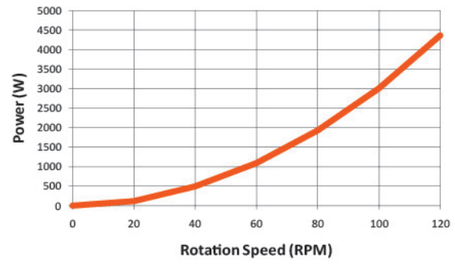


AFPMG710-3.0KW/100RPM

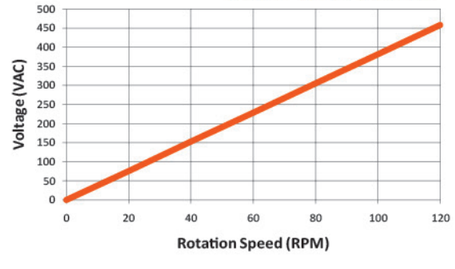
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	3
2	Rated speed	RPM	100
3	Rated output voltage	VAC	380
4	Rated current	A	4.6
5	Phase Resistance	Ω	5.6
6	Output wire square section	mm^2	2
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	710
16	Shaft diameter	mm	55
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	135
21	Design lifetime	Year	>20

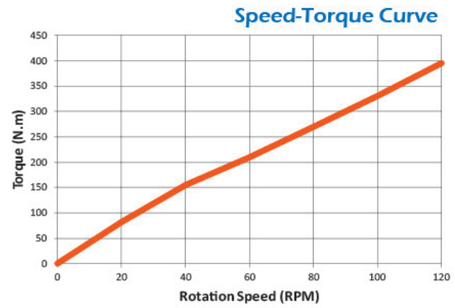
Speed-Power Curve



Speed-Voltage Curve

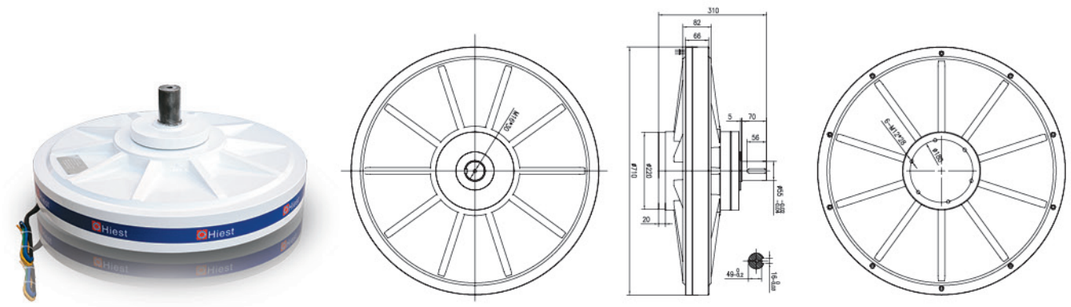


Speed-Torque Curve



Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
120	458.0	5.5	4362.9	395.6	87.8
100	381.7	4.56	3014.4	330.8	87.0
80	305.3	3.65	1930.3	269.1	85.6
60	229.0	2.75	1090.7	209.7	82.8
40	152.7	1.85	489.2	154.4	75.6
20	76.3	0.91	120.3	80.8	71.1

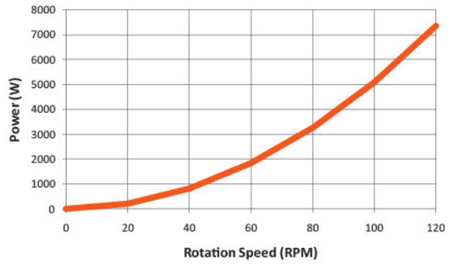


AFPMG770-5.0KW/100RPM

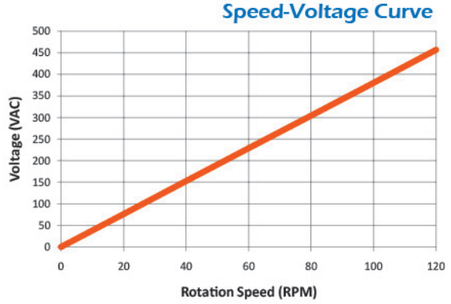
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	5.0
2	Rated speed	RPM	100
3	Rated output voltage	VAC	380
4	Rated current	A	7.7
5	Phase Resistance	Ω	3.5
6	Output wire square section	mm^2	4
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500VDC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	770
16	Shaft diameter	mm	98
17	Housing material		Aluminium Alloy
18	Shaft material		Steel or stainless steel
19	Bearing		NSK or SKF
20	Weight	Kg	165
21	Design lifetime	Year	>20

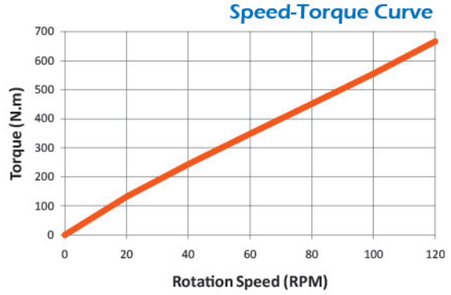
Speed-Power Curve



Speed-Voltage Curve

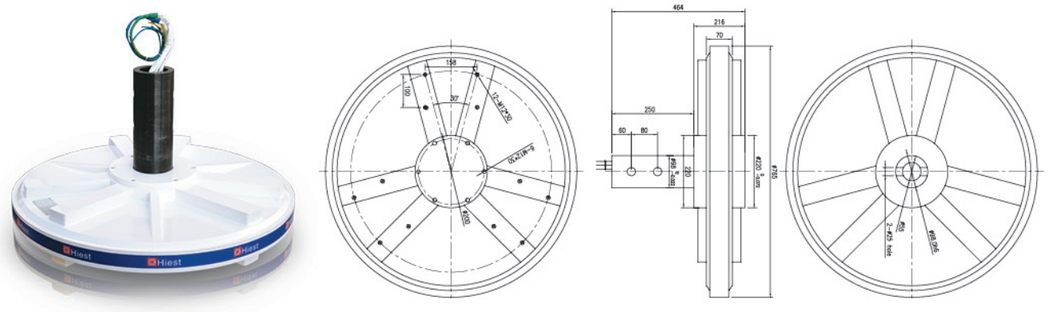


Speed-Torque Curve



Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
120	456.0	9.3	7345.1	666.4	87.7
100	380.0	7.7	5067.8	554.9	87.2
80	304.0	6.2	3264.5	452.2	86.2
60	228.0	4.7	1836.3	347.5	84.1
40	152.0	3.1	816.1	242.8	80.2
20	76.0	1.5	202.7	132.6	73.0

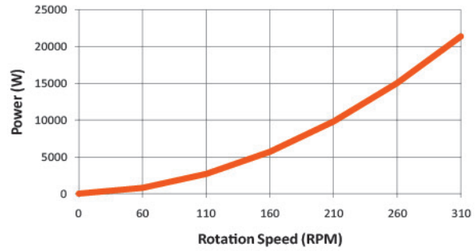


AFPMG770-15KW/260RPM

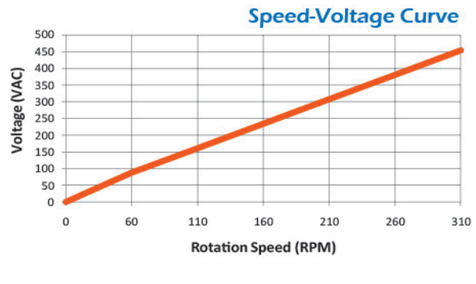
Technical Parameters

No.	parameter	Units	Data
1	Rated output power	KW	15
2	Rated speed	RPM	260
3	Rated output voltage	VAC	380
4	Rated current	A	23
5	Phase Resistance	Ω	0.5
6	Output wire square section	mm^2	2-4mm²
7	Efficiency		>85%
8	Winding type		Y
9	Insulation resistance		100Mohm Min(500V DC)
10	Voltage withstand	ma	<5 ma
11	Insulation		H class
12	Start torque	Nm	<1
13	Temperature rise	℃	<80
14	Max. working temperature	℃	<120
15	Generator diameter	mm	770
16	Shaft diameter	mm	98
17	Housing material		Aluminium Alloy
18	Shaft material		Steel
19	Bearing		NSK or SKF
20	Weight	Kg	165
21	Design lifetime	Year	>20

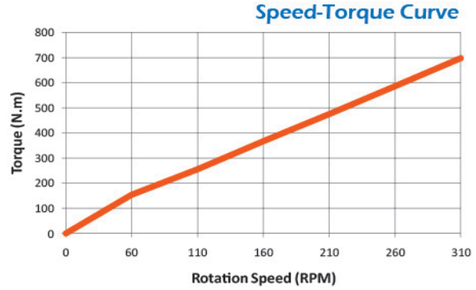
Speed-Power Curve



Speed-Voltage Curve

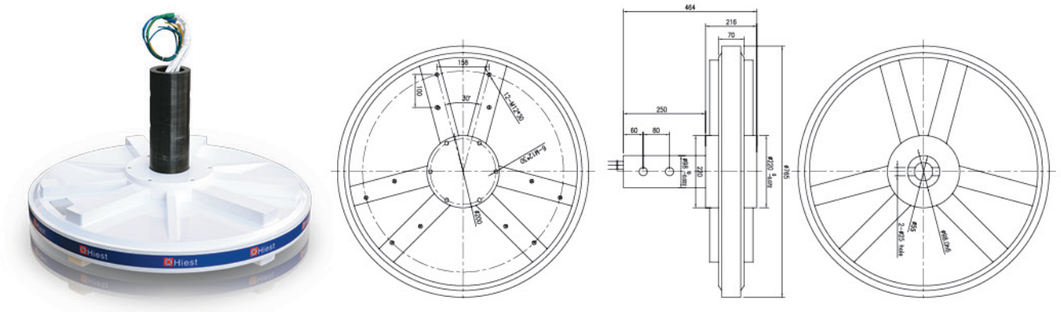


Speed-Torque Curve



Testing Data

Speed (RPM)	Load voltage (VAC)	Load current (A)	Load power (W)	Torque (N.m)	Efficiency (%)
310	454.0	27.2	21388.1	696.8	94.6
260	380.8	22.8	15036.6	585.4	94.4
210	307.5	18.4	9801.2	474.3	94.0
160	234.3	14.1	5722.4	366.5	93.2
110	161.1	9.6	2678.6	255.0	91.2
60	87.9	5.3	806.6	154.2	83.3



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