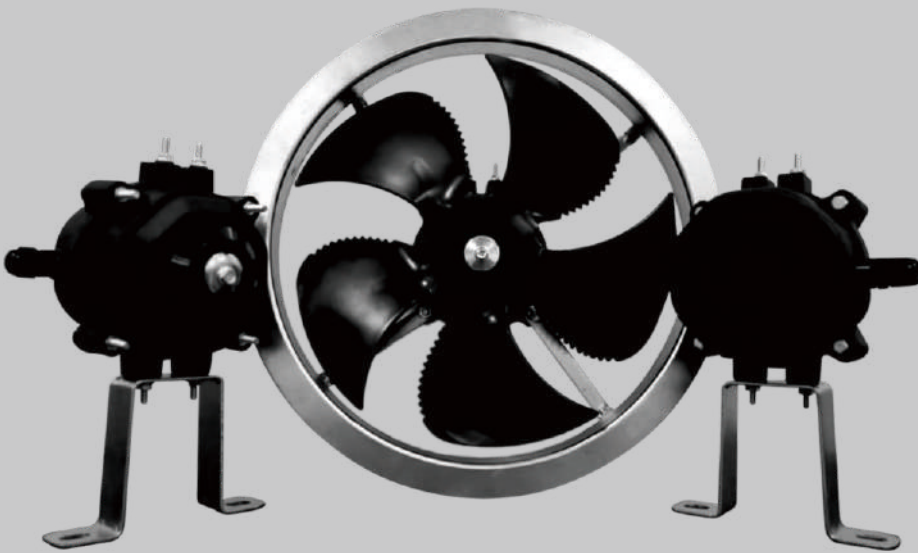


EQM 高效节能电机
Electronically Commutated Motor



杭州金久电器有限公司

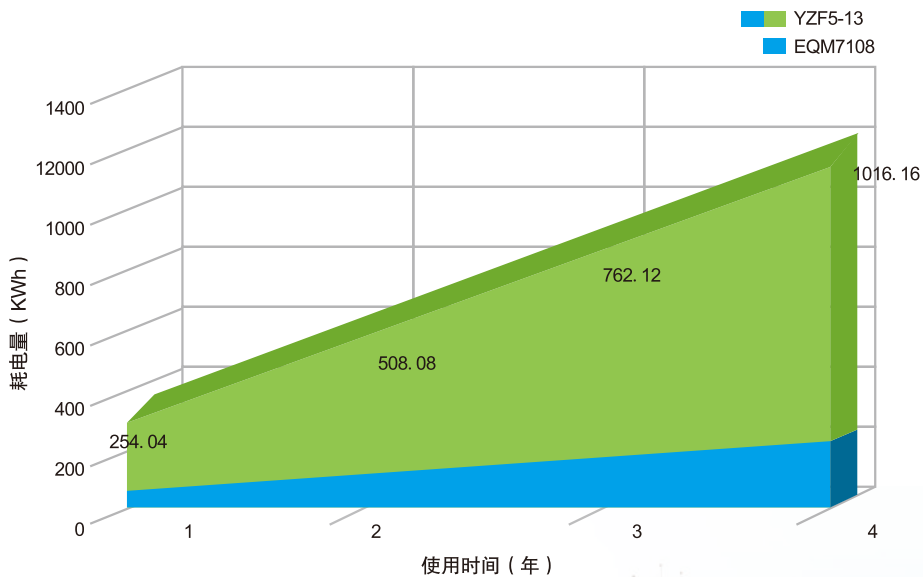
HANGZHOU JINJIU ELECTRIC APPLIANCE CO.,LTD

EQM系列电机的设计采用了先进的电子控制技术，使电机的能效得到大幅度提高，EQM系列电机的外部结构设计与YZF系列电机的外部结构基本保持一致，电机的附件如风叶，风圈，网罩，支架等均可通用，可以实现YZF系列电机与EQM系列电机的无差异替换。与YZF系列电机相比EQM系列电机的节能优势非常明显，EQM系列电机节能可高达70%，大幅度减少了需要支付电机运行的电费和二氧化碳的排放，不仅如此，由于EQM系列电机本身的发热非常小从而使整个制冷系统更加高效和电机运行更加稳定可靠。

EQM series motors are designed with advanced electronic control technology, make the motor efficiency greatly increased, the external structure design of EQM series motors will maintain the similar external structure design as YZF series motors, motor accessories such as fan blades, rings or grids, brackets for EQM motors are the same as YZF series'. therefore EQM series motors can completely replace the YZF series motors without any other changes. Comparing with YZF series motors, EQM motors display an obvious advantage in energy saving. saving up to 70%.it can greatly reduce the electricity cost for motor operation and carbon dioxide emissions. Not only that.due to the heating of EQM series motors themselves are very low, it would lead to the entire refrigeration system works more efficient and make motor running more stable and reliable.

能耗对比

Energy consumption comparison



罩极电机YZF5-13额定输入29W，EQM7108额定输入7W，假设电机每天运行24小时，一年365天，电价0.13欧元/千瓦时，那么一台EQM7108每年可以省下的电费达25欧元，4年累计达到100欧元。

The input power of shaded pole motor YZF5-13 is 29w,input power for EQM7108 is 7W assuming the motor operating 24 hours/day and

365 days a year, the cost for electricity is 0.13 euros/kWh,thus each EQM 7108 can save electricity about 25 euros per year.



主要特点

Main features

1 高安全等级

电机外壳材料采用工程塑料，电机保护等级达到Class II的高安全等级，接地线也因此不再需要，从而可以节省额外开销。

High safety class

EQM motors adopt thermoplastic for housing and the protection level has achieved classII, therefore the earth conductor will be unnecessary and the cost will be reduced.

2 高IP防护等级 IP65

电机的全密封设计获得了更好的防潮效果，可以工作在高湿度、多灰尘的环境中。

High protection class IP65

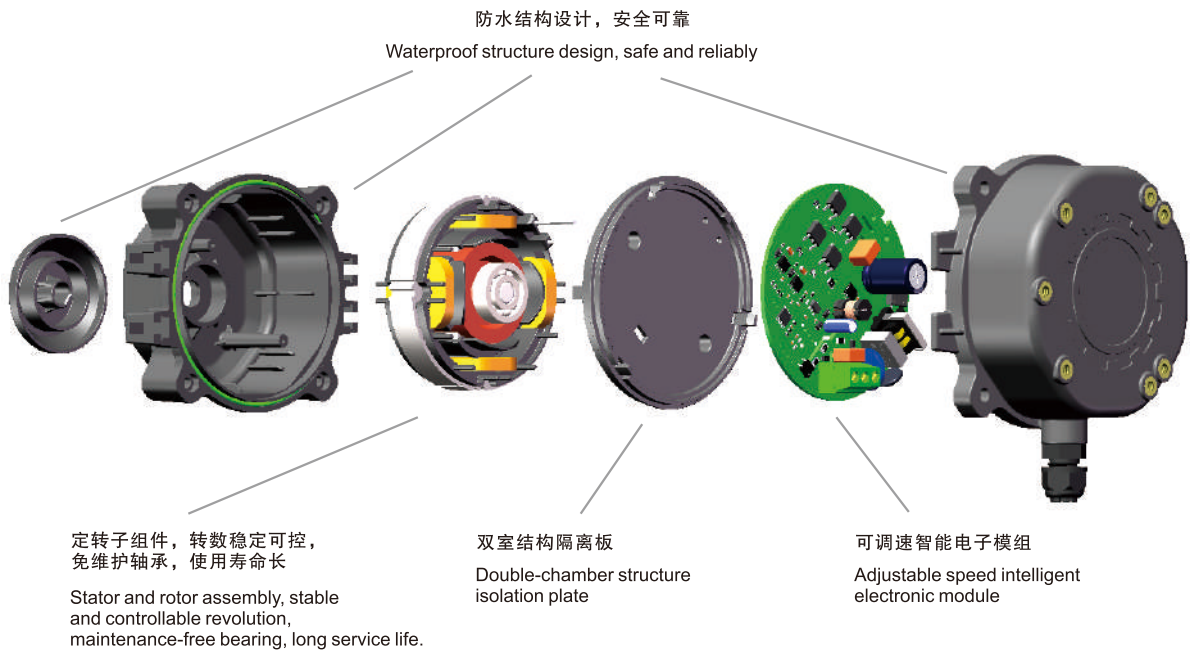
Enclosed motor design will have a better moisture-proof effect and make it possible to work in the high humidity and dust environment.

3 高可靠性

专利保护的双室绝缘设计使电子控制部分和电机有效隔离，防止水汽和灰尘进入电子控制部分。

High reliability

The dual-chamber design(Patented) leads the motor can be effectively separated from electronic control area in order to avoid dust and humidity enter into the cavity of control board.



器件的选型上，我们与世界领先的供应商紧密合作，严格保证产品的品质。

我们的研发人员，模拟电机真实的工况，做了各种测试，如温度、振动、寿命测试等，这使我们的设计更加可靠。

每一个器件，每一种结构，每一个细节，我们都精心考虑。这样，电机和控制板实现了最佳的匹配，在实际工况下，我们得到的寿命远高于50,000小时。

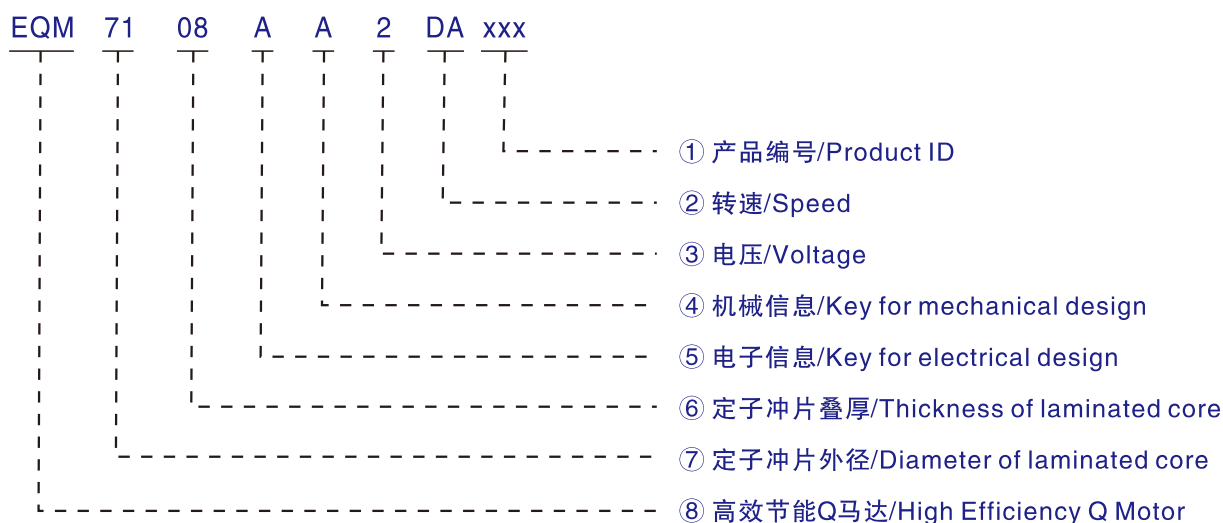
Regarding components selection, we cooperate with the world's leading suppliers in order to offer the best quality.

Our R&D department has done various of tests to simulate the real working conditions of the fans (such as temperature, vibration, lifetime, etc.) in order to make the design more reliable.

All of our products are designed with high quality and long lifetime. We work over every part of our ECM motor, carefully choose devices and materials, together with suitable control board and intelligent protection system, our motors had achieved a life expectancy over 50,000 hours in continuous working conditions.

EQM电机命名规则

EQM motor naming rules



① 产品编号/Product ID

用于内部生产编号

② 转速/Speed

A~J 表示数字0~9，表示转速的百位和十位，千位和个位固定为1和0，例DA代表1300RPM

③ 电压/Voltage

2: 220Vac, 1: 110Vac

④ 机械信息/Key for mechanical design

与安装结构相关的信息

⑤ 电子信息/Key for electrical design

控制相关信息，A: 标准（单速单转向）；B: 正反转；C: 上电反转；D: 双速；E: 无级调速

⑥ 定子冲片叠厚/Thickness of laminated core

08: 定子叠厚8mm；12: 定子叠厚12mm；20: 定子叠厚20mm

⑦ 定子冲片外径/Diameter of laminated core

71: 定子冲片外径71mm

⑧ 高效节能Q马达/High Efficiency Q Motor

电机系列号

4 恒速控制

由于采用了恒转速控制技术，即使在电网电压频繁波动和负载叶片变换的情况下，电机转速基本保持不变，确保制冷系统正常工作，避免了由于转速波动产生的噪声。

5 上电反转

通过工厂设定的程序实现每次电机通电工作时先反转程序预设的时间，然后再进入正常运转，这一重要的功能可以保持冷藏器更干净，减少积灰，使制冷系统更高效。并且，实现该功能不需要额外的信号控制。

6 可控制反转

通过此特性，您可以自己决定反转的时机和持续时间。比如，在压缩机停止或者除霜期间，您可以启动电机反转进行除尘。重要的是，不需要额外的继电器，可以节省更多成本。

7 两档转速

通过工厂设定的程序可以使ECM电机分别在高速和低速两种状态下工作，这种功能通常在具有白天和夜间模式的制冷系统应用中非常有用，为此可以节省更多能源和降低噪声。

8 0-10V 无级调速

0-10V无级调速电机包括交流供电和直流24Vdc供电两种，可以通过0-10Vdc控制信号进行无级调速，从而实现了对控制系统的智能控制，达到更好的节能效果。

Constant speed control

Constant speed control means the motor maintains a constant speed across a wide range of voltages and fan blades, it will help the cooling system work properly and avoid the noise generated by the fluctuation of motor speed.

Reverse on start

EQM motors can run backwards automatically when start-up through pre-set of the programme. This important function can help to blow away dust from the heat exchanger of the condenser in order to make the refrigeration system more efficient. Further more, there is no extra signal control needed to achieve this function.

Reverse on demand

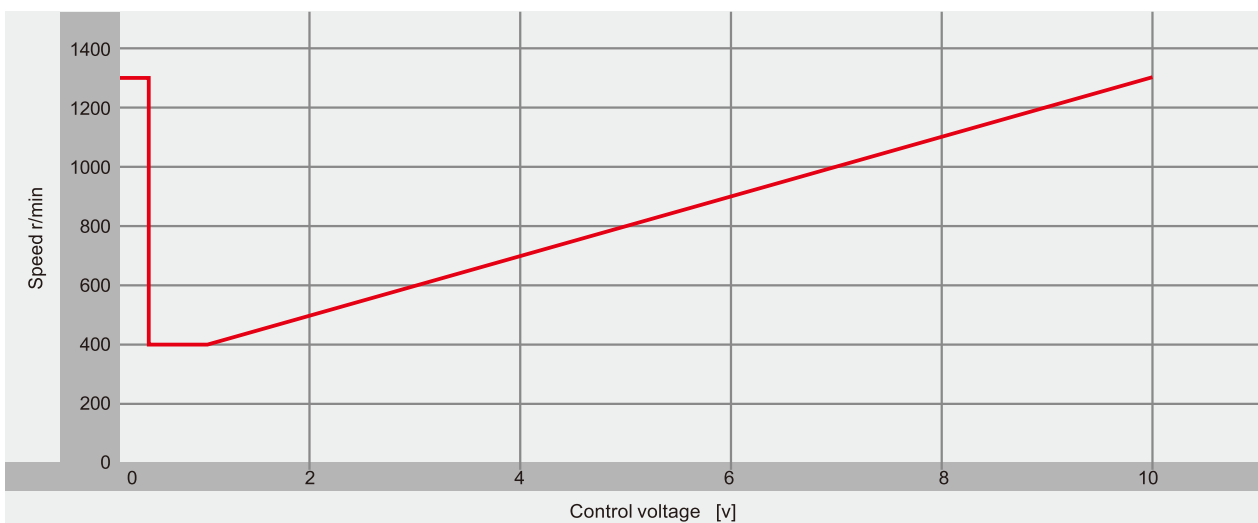
With this feature, you can determine the time and duration of reverse running. For example, during the compressor "off" period or the defrost cycle, you can start reverse running to blow away dust. Moreover, without needs of extra relays can save more cost.

Two speeds

EQM motors can run both in high-speed and low-speed through pre-set programme by Supplier, this function would be very useful in the refrigeration system application which has daytime and nighttime modes, thus to save more energy and reduce the noise.

0-10Vdc Full speed control

EQM 0-10V step-less speed regulation motors include AC and 24Vdc power supply, operators can control the 0-10Vdc to control the signal light to process step-less speed regulation. It will intelligently control the control system and result in better energy saving effect.



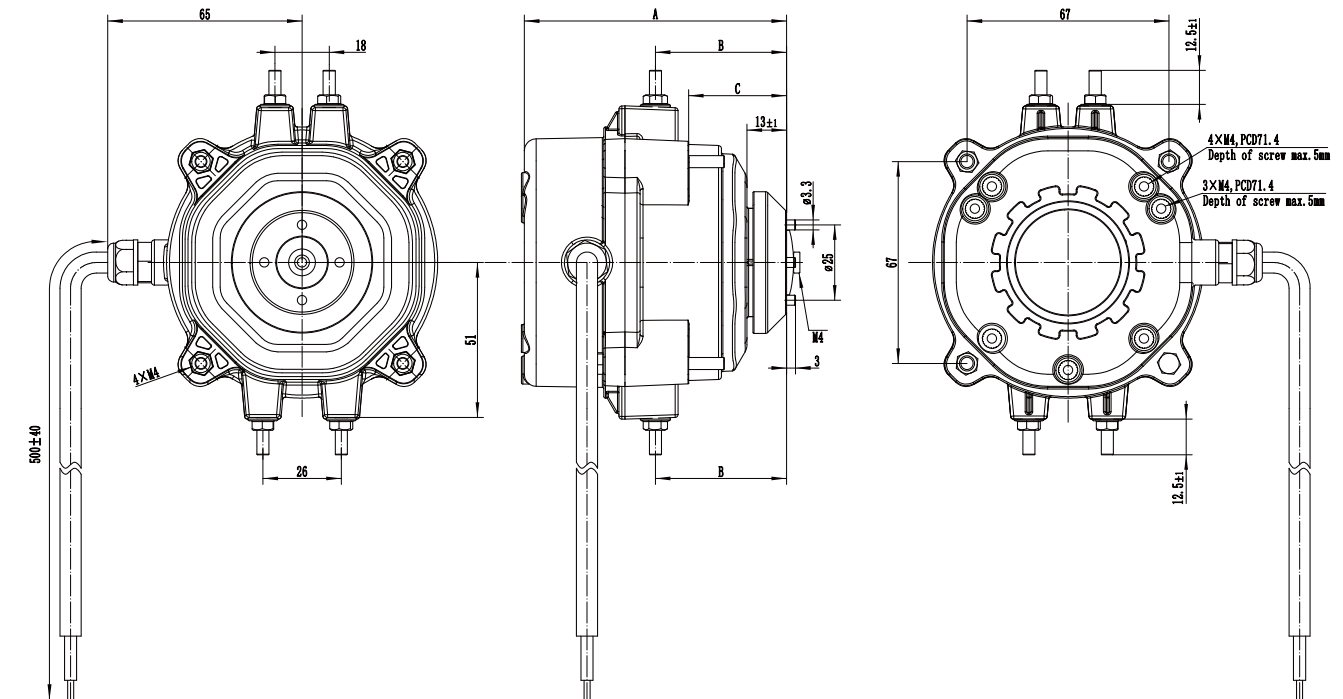
技术参数

Technical specifications

Nominal data		voltage	Frequency	Speed	Output capacity	Perm.amb.temp	Dimensions		
Type	Features	V	Hz	r/min	W	°C	a	b	c
7108	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300 ~1800	5	-40°C~5°C	83	43.5	32.5
7112	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300-1800	15	-40°C~5°C	87	43.5	32.5
	Vari-speed	DC24	—	1300-1800	15	-40°C~5°C			
7120	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300-1800	20	-40°C~5°C	95	43.5	32.5
	Vari-speed	DC24	—	1300-1800	20	-40°C~5°C			

安装尺寸

Installation dimensions



EQM电机不同风叶功率数据表

Data sheet of different blade power of EQM motor

型号	转速	铝风叶					
		角度	Φ154mm	Φ172mm	Φ200mm	Φ230mm	Φ254mm
EQM7108	1300RPM	22°	2.8W	3.5W	4.7W	-	-
		25°	3.1W	3.7W	5.8W	-	-
		28°	3.3W	4.2W	6.5W	-	-
		31°	3.9W	5.2W	-	-	-
		34°	4.3W	5.9W	-	-	-
	1450RPM	22°	3.2W	3.7W	5.4W	-	-
		25°	3.6W	4.1W	6.5W	-	-
		28°	4.0W	4.8W	-	-	-
		31°	5.1W	6.2W	-	-	-
		34°	6.0W	6.8W	-	-	-
	1550RPM	22°	3.7W	4.6W	6.2W	-	-
		25°	4.2W	5.2W	-	-	-
		28°	4.8W	5.5W	-	-	-
		31°	6.2W	7.1W	-	-	-
		34°	6.7W	-	-	-	-
	1800RPM	22°	4.1W	5.7W	-	-	-
		25°	4.5W	6.7W	-	-	-
		28°	5.3W	-	-	-	-
		31°	6.7W	-	-	-	-
		34°	-	-	-	-	-
EQM7112	1300RPM	22°	-	2.9W	3.8W	7.8W	10.5W
		25°	-	3.2W	4.7W	8.6W	14.3W
		28°	-	3.5W	5.6W	12.8W	17.8W
		31°	-	4.5W	6.7W	14.8W	20.8W
		34°	-	5.0W	8.1W	19.8W	-
	1450RPM	22°	-	3.2W	4.8W	9.8W	13.8W
		25°	-	3.7W	5.7W	11.3W	19.45W
		28°	-	4.4W	7.2W	13.6W	-
		31°	-	5.6W	9.6W	15.8W	-
		34°	-	6.2W	11.2W	-	-
	1550RPM	22°	-	3.8W	5.6W	11.5W	17.2W
		25°	-	4.3W	6.8W	14.3W	-
		28°	-	5.3W	8.4W	17.5W	-
		31°	-	6.8W	11.2W	20.4W	-
		34°	-	7.6W	13.7W	-	-
	1800RPM	22°	-	5.0W	8.3W	17.8W	-
		25°	-	5.9W	9.9W	-	-
		28°	-	7.2W	12.4W	-	-
		31°	-	9.6W	17.5W	-	-
		34°	7.5W	11.2W	-	-	-

型号	转速	铝风叶					
		角度	Φ154mm	Φ172mm	Φ200mm	Φ230mm	Φ254mm
EQM7120	1300RPM	22°	-	-	-	7.3W	9.7W
		25°	-	-	-	8.4W	12.2W
		28°	-	-	-	9.6W	14.8W
		31°	-	-	-	11.0W	17.2W
		34°	-	-	-	13.2W	20.4W
	1450RPM	22°	-	-	-	9.2W	12.6W
		25°	-	-	-	10.6W	16.1W
		28°	-	-	-	12.6W	19.8W
		31°	-	-	-	14.2W	22.4W
		34°	-	-	-	18.1W	26.6W
	1550RPM	22°	-	-	-	11.8W	15.7W
		25°	-	-	-	14.2W	20.8W
		28°	-	-	-	15.6W	25.2W
		31°	-	-	-	18.6W	29.0W
		34°	-	-	-	22.4W	-
	1800RPM	22°	-	-	-	16.2W	-
		25°	-	-	-	19.2W	-
		28°	-	-	-	22.4W	-
		31°	-	-	-	25.6W	-
		34°	-	-	-	-	-

EQM电机风叶选型表

EQM motor blade selection table

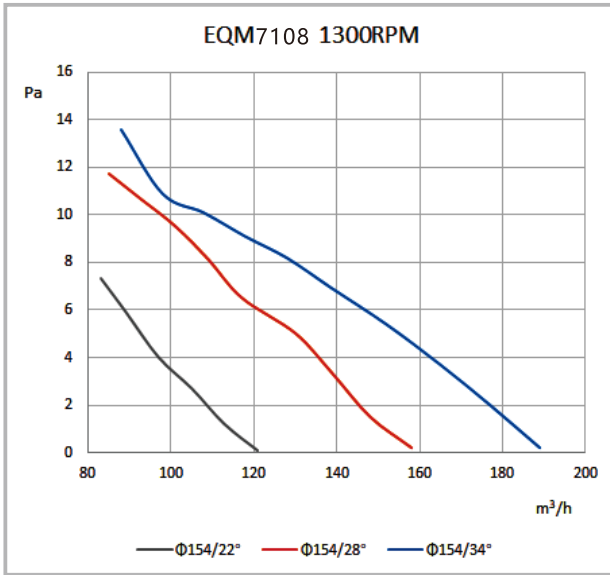
EQM7108: △
 EQM7112: □
 EQM7120: ○

转速	铝风叶						
	角度	Φ154mm	Φ172mm	Φ200mm	Φ230mm	Φ254mm	Φ300mm
1300RPM	22°	△	△	△	□	□	○
	25°	△	△	△	□	□	○
	28°	△	△	△	□	□	-
	31°	△	△	□	□	○	-
	34°	△	△	□	□	○	-
1450RPM	22°	△	△	△	□	□	○
	25°	△	△	△	□	□	-
	28°	△	△	□	□	○	-
	31°	△	△	□	□	○	-
	34°	△	△	□	○	○	-
1550RPM	22°	△	△	△	□	□	-
	25°	△	△	□	□	○	-
	28°	△	△	□	□	○	-
	31°	△	△	□	○	-	-
	34°	△	□	□	○	-	-
1800RPM	22°	△	△	□	□	○	-
	25°	△	△	□	○	-	-
	28°	△	□	□	○	-	-
	31°	△	□	□	○	-	-
	34°	□	□	○	-	-	-

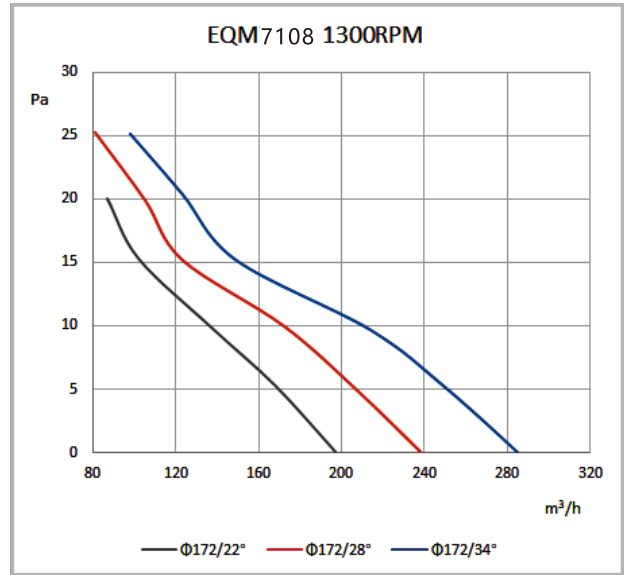
EQM电机风量曲线

Air performance curves at a constant speed of 1300 r/min

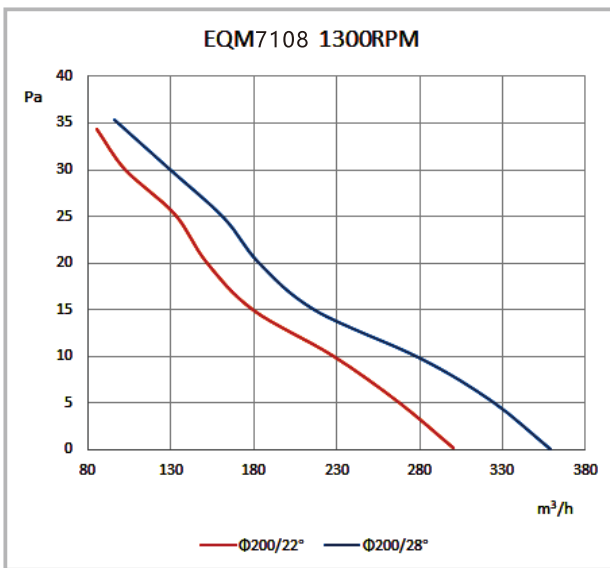
EQM 7108



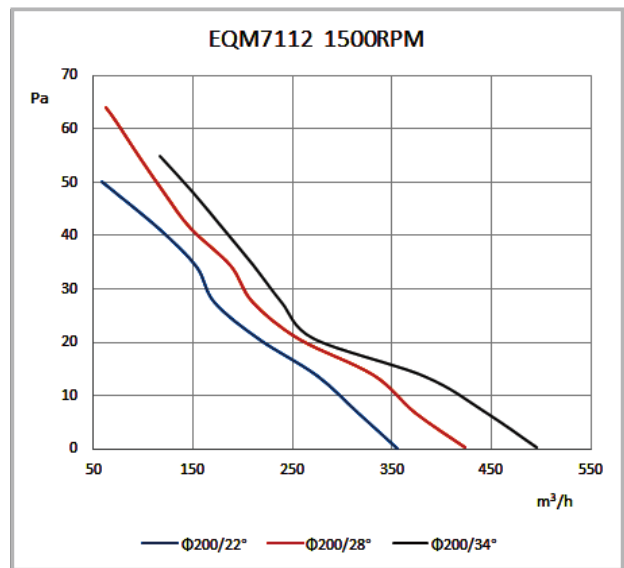
EQM 7108



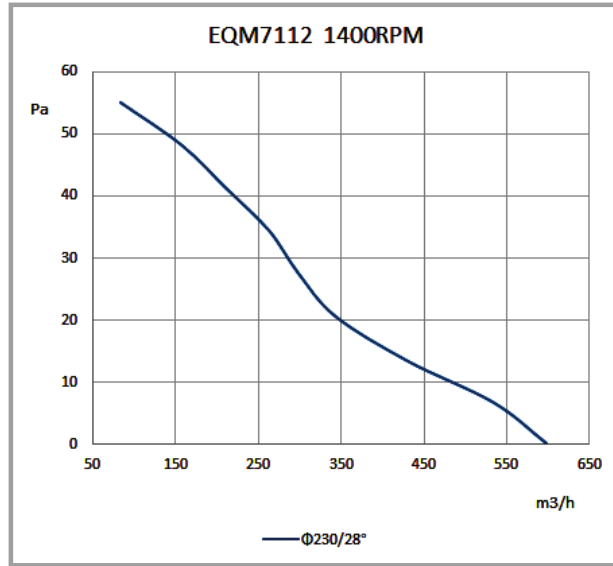
EQM 7108



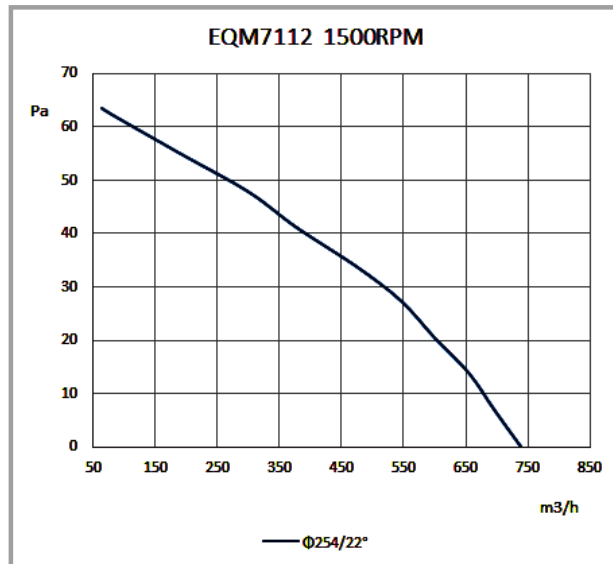
EQM 7112



EQM 7112 Φ 230



EQM 7112 Φ 254



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