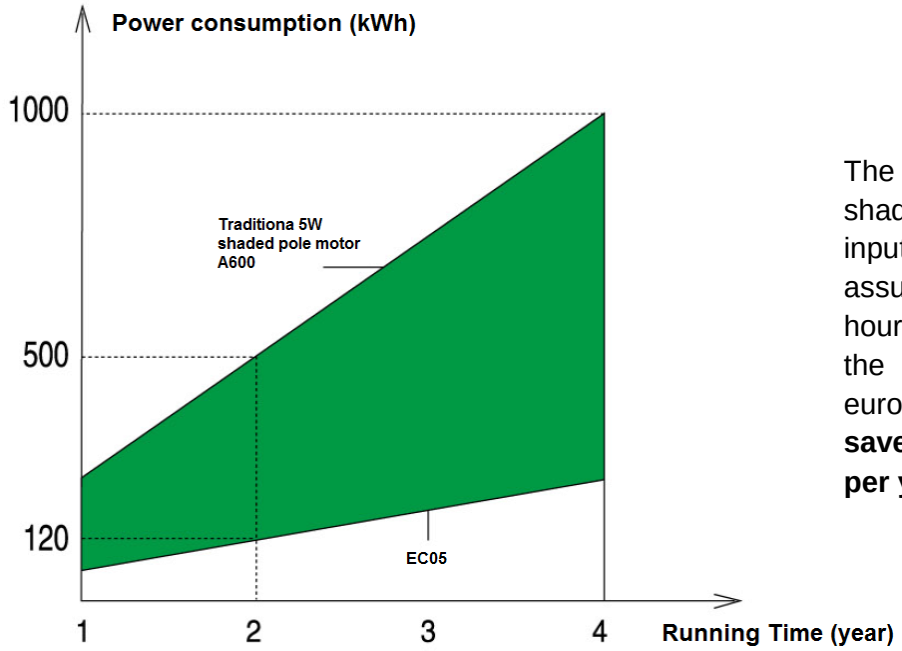
SERIES EC - ELECTRONIC MOTORS

The electronic control technology used to develop the new generation of EC motors, allow to **increase the motor efficiency** while greatly **saving the energy consumption** (up to **70%** compared to traditional motors). The external structure has been maintained similar to the ones of traditional shaded pole motors so to allow the use of all accessories used on traditional shaded pole motors such as fan blades, brackets, grids and rings.
Furthermore, the heating is very low so that, the entire refrigeration system works more efficiently and runs more stable and reliable.



The input power of a traditional shaded pole motor A600 is 29W, input power for EC05 is 5,4W; assuming the motor operates 24 hours/day and 365 days/year and the cost for electricity is 0,23 euro/kWh, thus each EC05 can **save** in electricity about **45 euro per year**

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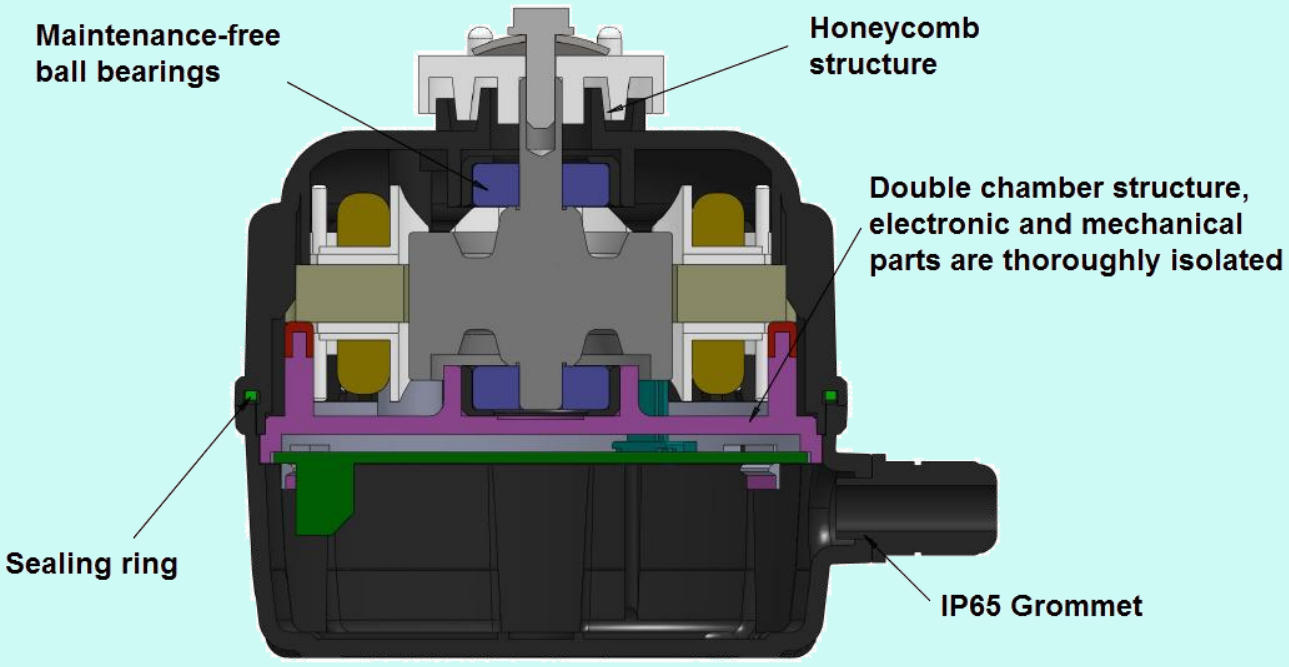
Main characteristics

- Our EC motors have been realized so to reach an **IP65** protection making them suitable for working in the high humidity and dust environment.
- The dual chamber design 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.
- Their thermoplastic housing and protection level has achieved **class II**, therefore the earth conductor will be unnecessary and the cost will be reduced.
- Constant speed control allows the motor to maintain a constant speed across a wide range of voltages and fan blades.

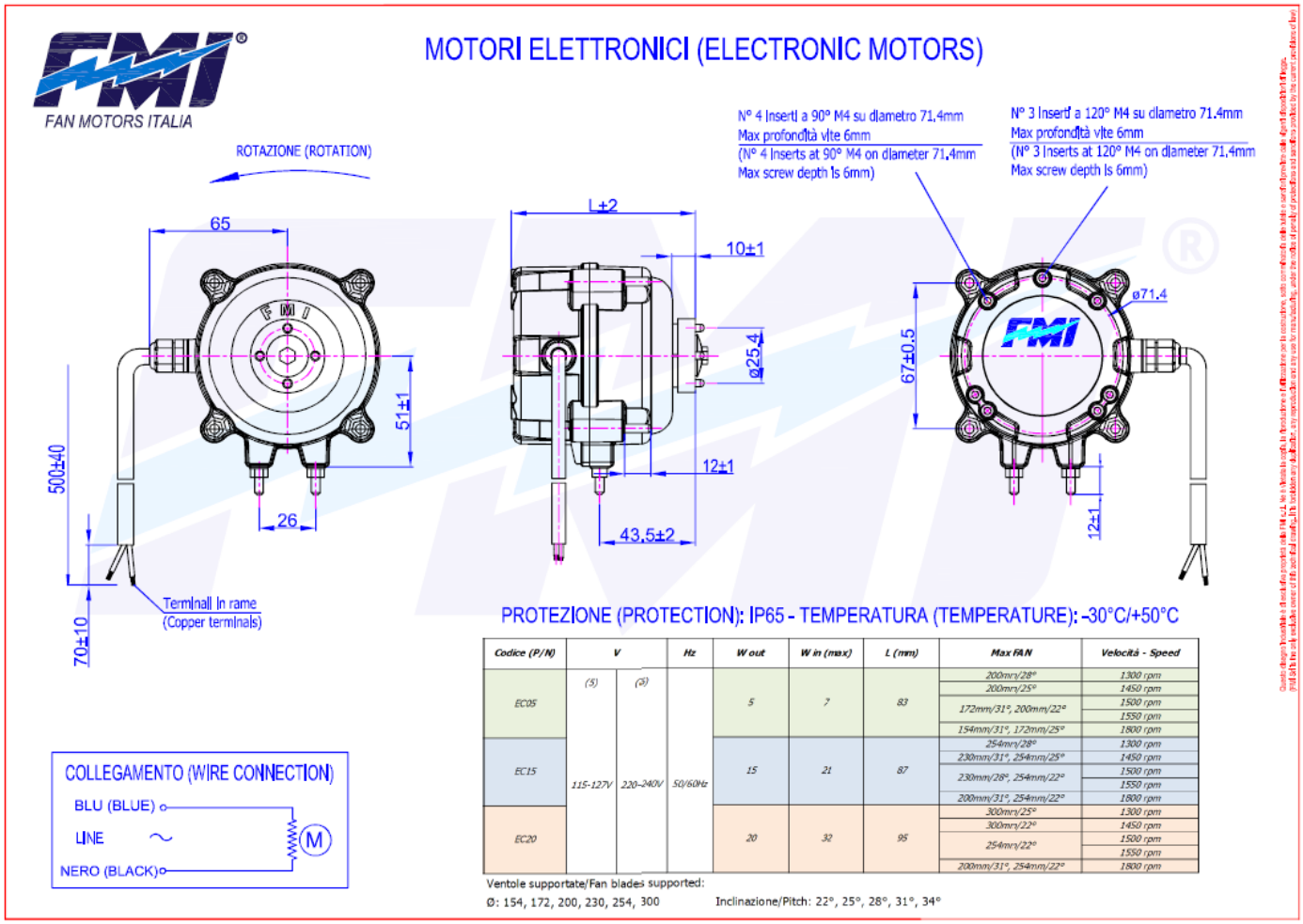
Installation dimension	Totally same as traditional shaded-pole motors
Voltage	AC220-240V, AC-100V-120V, DC24V
Output power	5W, 15W, 20W
Rotation direction	Single rotation CCW Reverse on start Reverse on demand
Insulation class	B
Working ambient temperature	-30°C~+50°C
Protection Class	Class II
Mounting position	Any
Operating mode	Continuous operating (S1)
Type of protection	IP65
Bearing	Maintenance-free ball bearing
ECM/EMI	EN60335, EN61000, EN55014
Motor protection	Via electronics
Service life	50,000 hours
Certifications	ATEX (certification no. ITS15ATEX48182), VDE, CE



Technical specifications

Nominal data		Voltage	Frequency	Speed	Output capacity	Perm.amb. temperature
Type	Features	V	Hz	r/min	W	°C
EC05	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300~1800	5	-30°~+50°
EC15	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300~1800	15	-30°~+50°
	Vari-speed	DC24	---	1300~1800	15	-30°~+50°
EC20	Standard CW&CCW 2 Speeds Vari-speed	AC115/230	50/60	1300~1800	20	-30°~+50°
	Vari-speed	DC24	---	1300~1800	20	-30°~+50°

Overall dimensions



Codice (P/N)	V		Hz	W out	W in (max)	L (mm)	Max FAN	Velocità - Speed
EC05	(5)	(5)	50/60Hz	5	7	83	200mm/28°	1300 rpm
							200mm/25°	1450 rpm
							172mm/31°, 200mm/22°	1500 rpm
								1550 rpm
							154mm/31°, 172mm/25°	1800 rpm
EC15	115-127V	220-240V		15	21	87	254mm/28°	1300 rpm
							230mm/31°, 254mm/25°	1450 rpm
							230mm/28°, 254mm/22°	1500 rpm
								1550 rpm
							200mm/31°, 254mm/22°	1800 rpm
EC20				20	32	95	300mm/25°	1300 rpm
							300mm/22°	1450 rpm
							254mm/22°	1500 rpm
								1550 rpm
							200mm/31°, 254mm/22°	1800 rpm

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Comparative table input power with sucking fan blades

Type / P in (W)	EC05	EC15	EC20	EC05	EC15	EC20	EC05	EC15	EC20	EC05	EC15	EC20	EC05	EC15	EC20
Fan blade Pitch / Ø (mm)	**22°**			**25°**			**28°**			**31°**			**34°**		
Speed 1300 r/min															
154	2,8	-	-	3,1	-	-	3,3	-	-	3,9	-	-	4,3	-	-
172	3,5	2,9	-	3,7	3,2	-	4,2	3,5	-	5,2	4,5	-	5,9	5,0	-
200	4,7	3,8	-	5,6	4,7	-	6,5	5,6	-	-	6,7	-	-	8,1	-
230	-	7,8	7,3	-	8,6	8,4	-	12,8	9,6	-	14,8	11,0	-	19,8	13,2
254	-	10,5	9,7	-	14,3	12,2	-	17,8	14,8	-	20,8	17,2	-	-	20,4
Speed 1450 r/min															
154	3,2	-	-	3,6	-	-	4,0	-	-	5,1	-	-	6,0	-	-
172	3,7	3,2	-	4,1	3,7	-	4,8	4,4	-	6,2	5,6	-	6,8	6,2	-
200	5,4	4,8	-	6,5	5,7	-	-	7,2	-	-	9,6	-	-	11,2	-
230	-	9,8	9,2	-	11,3	10,6	-	13,6	12,6	-	15,8	14,2	-	-	18,1
254	-	13,8	12,6	-	19,4	16,1	-	-	19,8	-	-	22,4	-	-	26,6
Speed 1550 r/min															
154	3,7	-	-	4,2	-	-	4,8	-	-	6,2	-	-	6,7	-	-
172	4,6	3,8	-	5,2	4,3	-	5,5	5,3	-	7,1	6,8	-	-	7,6	-
200	6,2	5,6	-	-	6,8	-	-	8,4	-	-	11,2	-	-	13,7	-
230	-	11,5	11,8	-	14,3	14,2	-	17,5	15,6	-	20,4	18,6	-	-	22,4
254	-	17,2	15,7	-	-	20,8	-	-	25,2	-	-	29	-	-	-
Speed 1800 r/min															
154	4,1	-	-	4,5	-	-	5,3	-	-	6,7	-	-	-	7,5	-
172	5,7	5,0	-	6,7	5,9	-	-	7,2	-	-	9,6	-	-	11,2	-
200	-	8,3	-	-	9,9	-	-	12,4	-	-	17,5	16,2	-	-	18,4
230	-	17,8	16,2	-	-	19,2	-	-	22,4	-	-	25,6	-	-	-
254	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Suggested combination motor – fan blade

Speed	ALUMINIUM FAN BLADE Ø (mm)/pitch					
	154	172	200	230	254	300
1300 r/min	22°	22°	22°	22°	22°	22°
	25°	25°	25°	25°	25°	25°
	28°	28°	28°	28°	28°	
	31°	31°	31°	31°	31°	
	34°	34°	34°	34°	34°	
1450 r/min	22°	22°	22°	22°	22°	22°
	25°	25°	25°	25°	25°	
	28°	28°	28°	28°	28°	
	31°	31°	31°	31°	31°	
	34°	34°	34°	34°	34°	
1500/1550 r/min	22°	22°	22°	22°	22°	
	25°	25°	25°	25°	25°	
	28°	28°	28°	28°	28°	
	31°	31°	31°	31°		
	34°	34°	34°	34°		
1800 r/min	22°	22°	22°	22°	22°	
	25°	25°	25°	25°		
	28°	28°	28°	28°		
	31°	31°	31°	31°		
	34°	34°	34°			

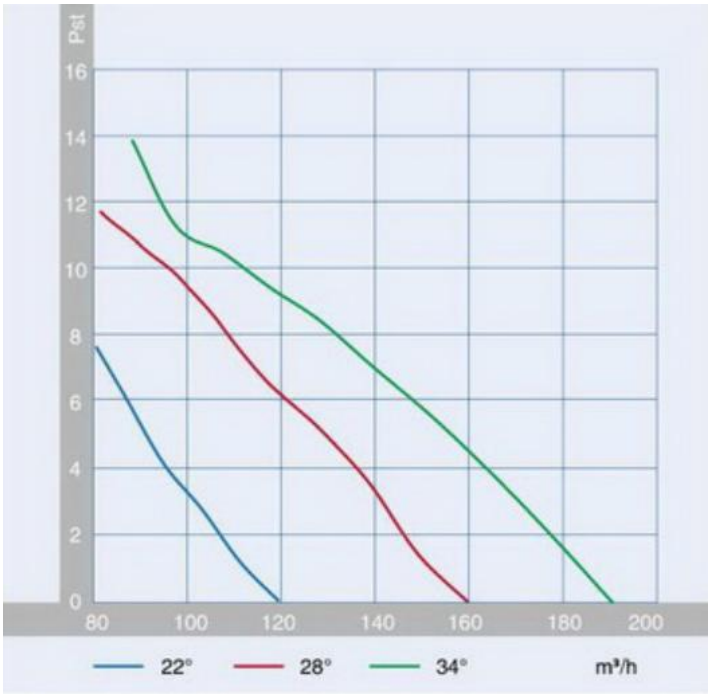
EC05

EC15

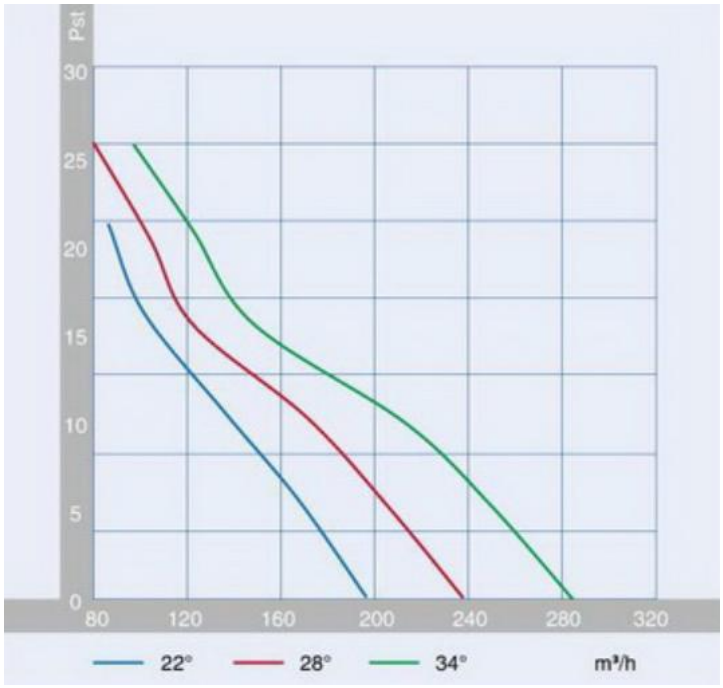
EC20

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

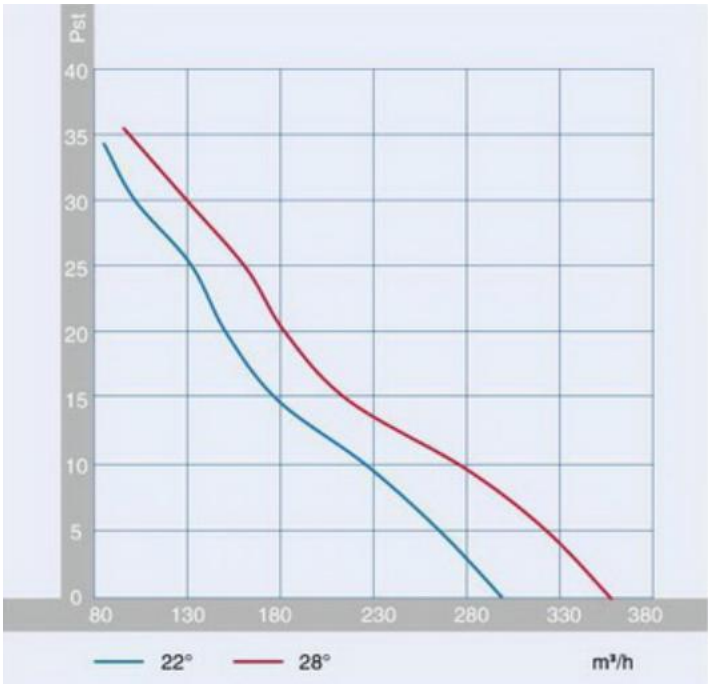
EC05 Ø 154



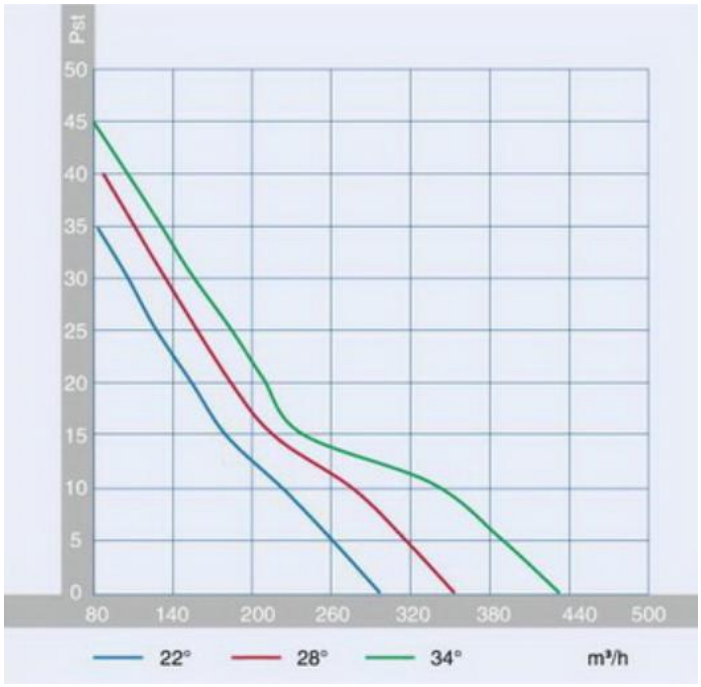
EC05 Ø 170



EC05 Ø 200

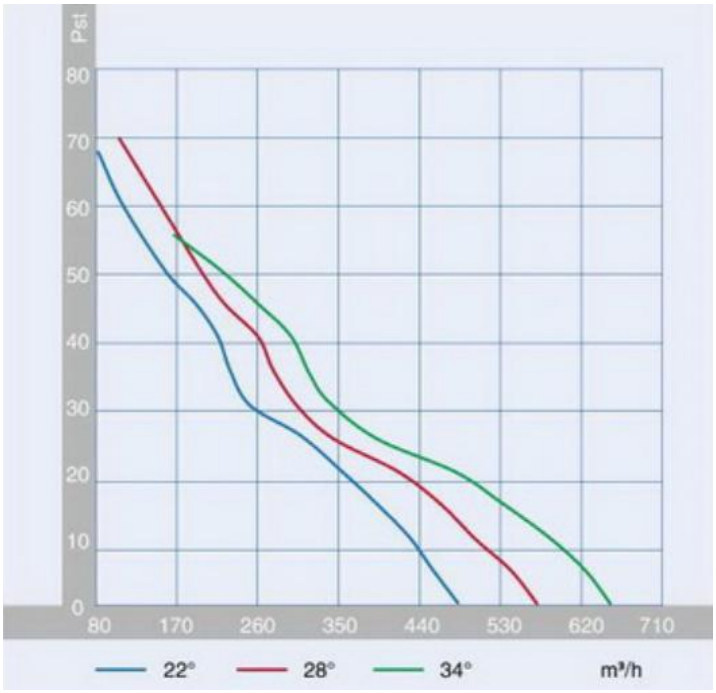


EC15 Ø 200

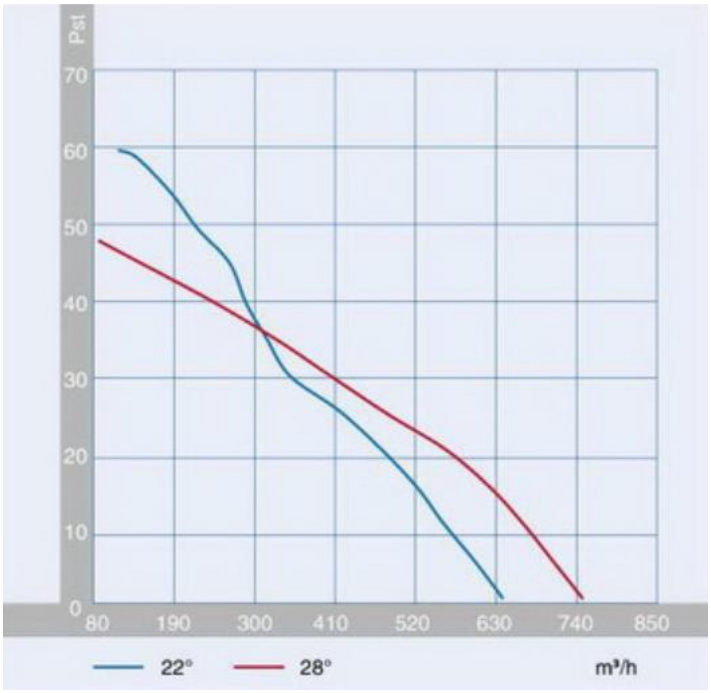


Air performance curves at a constant speed of 1300 r/min

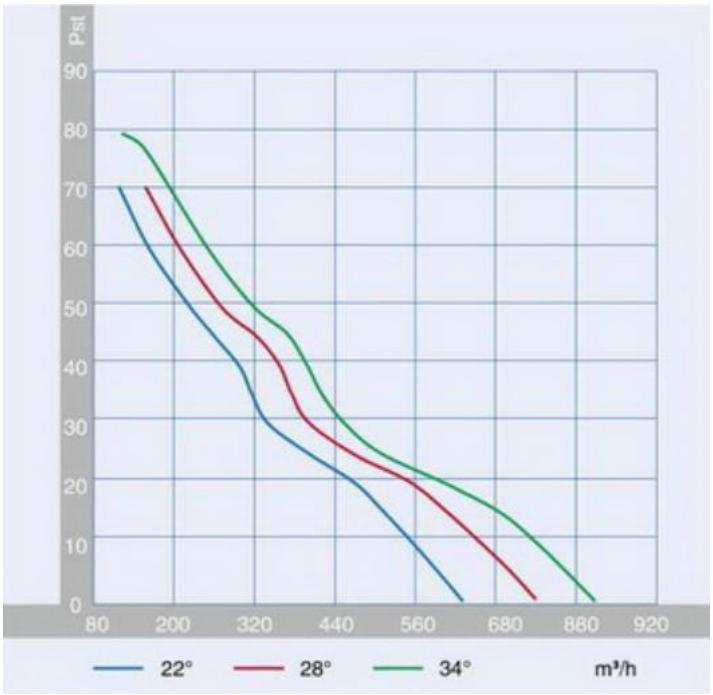
EC15 Ø 230



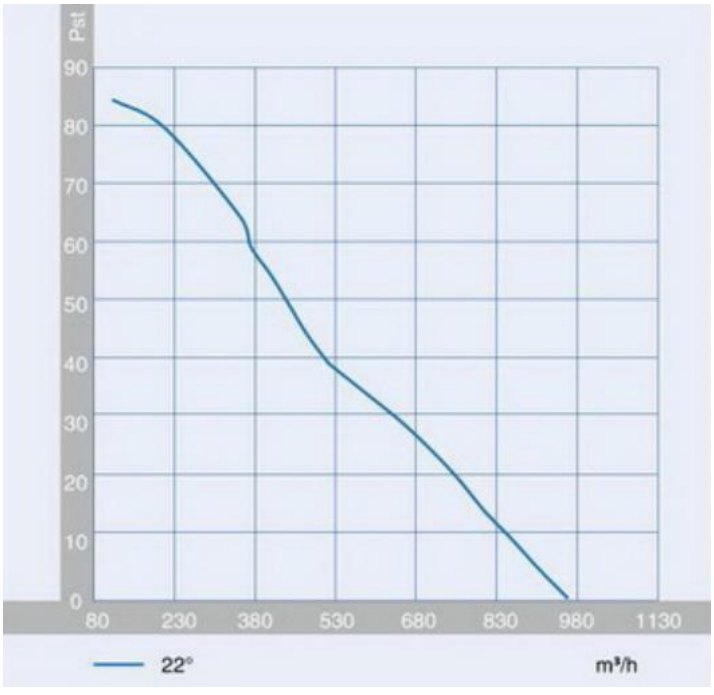
EC15 Ø 254



EC20 Ø 254



EC20 Ø 300



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