

High Efficiency motors for the Refrigeration Industry



ECM-IP SERIES Electronically Commuted Motor

ELCO Motors is proud to present its second generation of ECM high efficiency motor with enhanced features to satisfy the commercial refrigeration industry most severe technical requirements.

Reduce your carbon foot print and electricity bill at the same time. Become more environmentally friendly! The ECM series allows efficiency rates up to 70%, 4-5 times more efficient than a traditional shaded pole fan motor. Higher efficiency means cooler motor operation and reduced heat delivered to the refrigeration cycle, for a combined energy saving advantage and improved refrigeration quality. Pay back on new and retrofit applications can be as low as 6 months! *

The ECM motor is widely used in industrial and commercial refrigeration for condensing and evaporating units, food and beverage coolers, freezers, supermarket display cases, walk-ins and reach-ins.

Features

- Increased life:** Life expectancy of 60,000+ hrs. with our sealed ball bearing option.
- Moisture protection:** The ECM series offers IP65 & IP66 moisture protection grade, one of the highest in the industry.
- Wide range of CFM:** Chose among three different factory set RPM options and a wide range of fan blades from 6 to 10 inches diameter and various pitches, to satisfy all CFM needs.
- Multiple mounting:** Compatible with ELCO's standard accessories giving higher flexibility in motor mounting. Installation on a shroud, a grid or a mounting bracket.
- Drop in replacement:** This new ECM motor is a direct drop in to our shaded pole motor (NU series) for an easy and hassle-free "green" turn.
- Modular design:** Designed to mount ELCO standard (and third party) or compact fan blades, for extreme application flexibility and wide performance range requirement.
- Compact design:** The ECM compact design with its integrated plastic fan blade is ideal for reduced space depth applications.


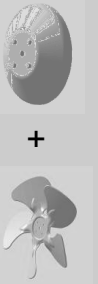
Note: * pay-back time based on 8" fan (9w) on supermarket display case and electricity cost of \$0.11/kWh

Technical specifications

	MODEL		
	ECM 12-15	ECM 15-25	ECM 20-25
Max. output (Watt)	12 W	15 W	20 W
Nominal speed	1450 rpm or 1550 rpm or 1850 rpm		
Voltage/ Frequency Hz.	115 V / 50 - 60 Hz. or 230 V / 50 - 60 Hz.		
Efficiency	over 65%		
Bearing / Life expectancy (hrs.)	Standard: Sintec Sleeve Bearing / 30,000+ h <i>Long Life</i> : Sealed Ball Bearing / 60,000+ h		
Intrusion protection class	IP65 or IP66 (for <i>Long Life</i> only)		
Insulation class / protection	Class B / impedance protected		
Standard operating temperatures	With plastic fan: -4°F to 122°F (-20°C to 50°C) With aluminum fans: -31°F to 122°F (-35°C to 50°C)		
Certification	UL,CE, VDE*		

Note: * pending

Fan blade type availability

				Diameter / Pitch (°)					
				6 in.	7 in.	8 in.	9 in.	10 in.	
				154 mm.	172 mm.	200 mm.	230 mm.	254 mm.	
		Material	Pitch						
	Compact fan blade	Plastic	19°	S			S		
			22°					S	
			25°				S		
			28°		S	S			
			31°					S	
			34°				S		
	Standard fan blade with adapter	Plastic	19°	B				B	
			22°					S	
			25°				S	B	
			28°	S		S	S		
			31°		S			S ¹	
			34°				S		
			Aluminum	22°, 28°, 34°	S & B	S & B	S & B	S & B	S & B
			19°, 25°, 31°	S & B (Available on request)					

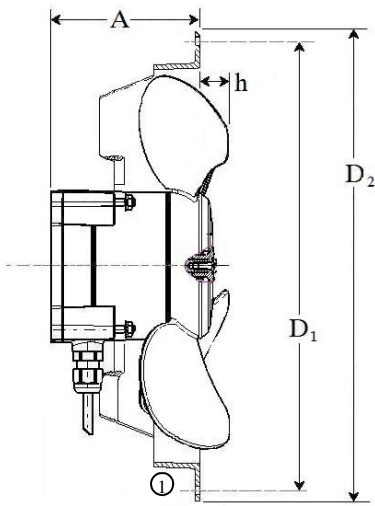
S: suction fan blade

B: blowing fan blade

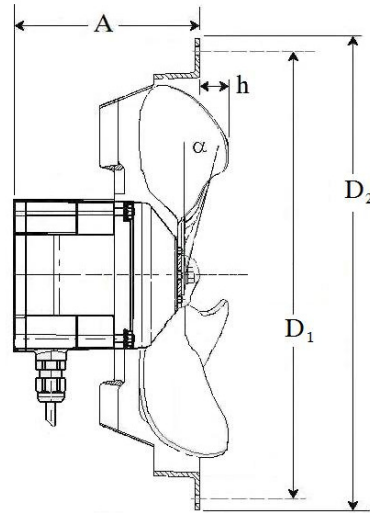
Grey area: recommended fan blade for the ECM 12-15 IP motor.

White area: recommended fan blade for the ECM 20-25 IP motor.

Note: 1: 8 3/4 in. available for 31° pitch.



Compact fan blade



Standard fan blade with adapter

Note: 1- 8 holes \varnothing 0.17 " @ 45° on BC D₁

Fan blade Ø	D ₁	D ₂	ECM 12-15						ECM 15-25* or ECM 20-25					
			Dimensions in inches						Dimensions in inches					
			Compact fan blade			Standard fan blade			Compact fan blade			Standard fan blade		
			A	α° max	h max	A	α° max	h max	A	α° max	h max	A	α° max	h max
6" (154mm)	7.48	7.87	3.31	19°	0.28	4.09	34°	0.43	N/A			N/A		
7" (172mm)	8.19	8.66	3.31	28°	0.35	4.09	34°	0.55	N/A			N/A		
8" (200mm)	9.29	9.76	3.31	34°	0.71	4.09	34°	0.71	3.70	34°	0.71	4.49	34°	0.71
9" (230mm)	10.47	11.02	3.43	25°	0.39	4.21	25°	0.31	3.82	31°	0.79	4.61	34°	0.59
10" (254mm)	11.42	11.89	N/A			N/A			3.82	28°	0.79	4.61	34°	0.71

α° max: Maximum blade pitch available for specified blade diameter.
h max: Maximum value of h with highest blade pitch available.

Notes: * ECM15-25 115V 1850RPM : max fan blade 8" (200mm) - 34° pitch

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