

REFRIGERATION FANS & MOTORS

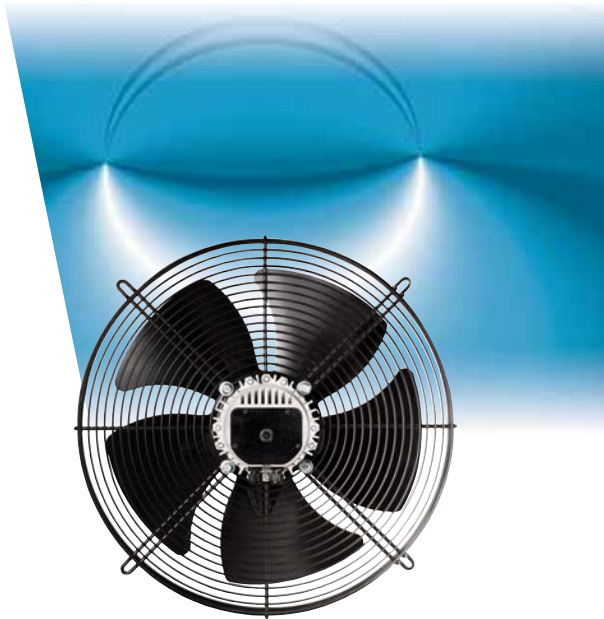




ECM C - HC - HBS
Energy Saving
Motors

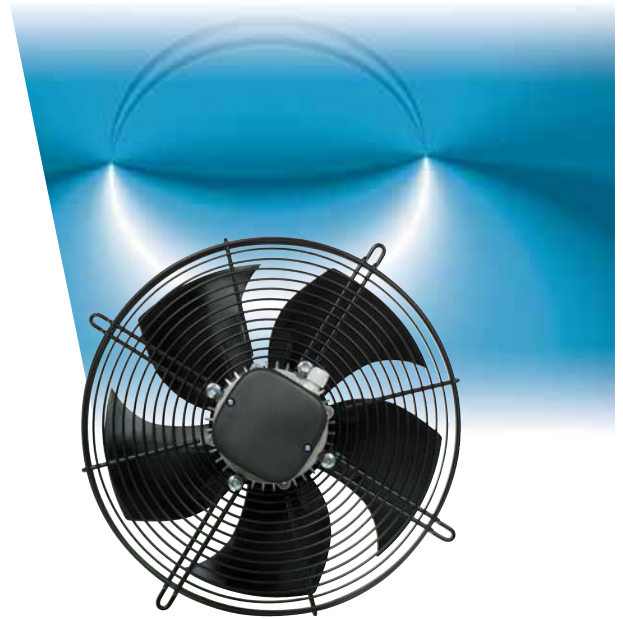


N - M58 - CN
Shaded Pole
Motors



CFe
Electronic Axial
Fans

Page 80



CF
Axial
Fans

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LA SOCIETÀ

CREATING A BETTER TOMORROW™

Regal Beloit Corporation (NYSE: RBC) è uno dei produttori di motori elettrici, driver per motori e motoriduttori per trasmissione di potenza leader di settore.

L'azienda serve mercati in tutto il mondo.

La struttura è organizzata in tre segmenti di business: Commercial and Industrial (C&I), Climate Solutions e Power Transmission Solutions.

La sede è a Beloit, Wisconsin USA, e uffici commerciali, fabbriche e centri di sviluppo in USA, Canada, America Latina, Europa e Asia.

Il Gruppo ELCO® è uno dei pochi produttori a livello mondiale che possa vantare un'esperienza di oltre 50 anni nella produzione di ventilatori per la refrigerazione ed il condizionamento. Questa posizione di riconosciuta leadership è il risultato di uno specifico know-how nella progettazione e produzione di motori elettrici frazionari, unito all'ottima padronanza delle tecniche di sviluppo dell'aeraulica, nonché di un range di prodotti in grado di soddisfare tutte le richieste del mercato.

Il recente sviluppo internazionale del Gruppo, con unità produttive dislocate su tre continenti, è la migliore premessa per offrire le "soluzioni ELCO®" ad un mercato "globale", sia per chi ricerca soluzioni articolate, sia per chi si orienta sui singoli componenti elementari.

THE COMPANY

CREATING A BETTER TOMORROW™

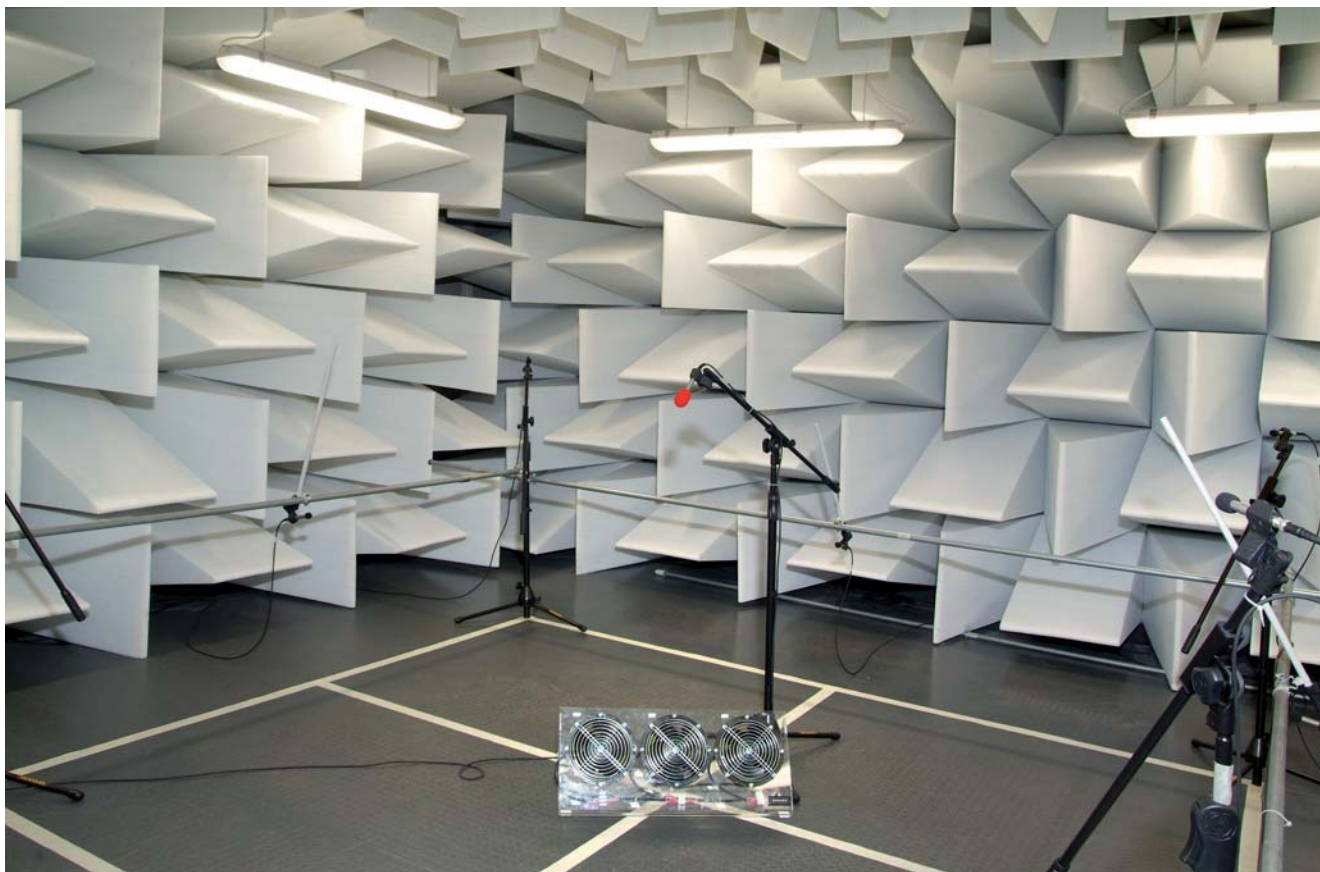
Regal Beloit Corporation (NYSE: RBC) is a leading manufacturer of electric motors, electrical motion controls, power generation and power transmission products serving markets throughout the world.

The company is comprised of three business segments: Commercial and Industrial Systems, Climate Solutions and Power Transmission Solutions. Regal is headquartered in Beloit, Wisconsin, and has manufacturing, sales and service facilities throughout the United States, Canada, Latin America, Europe and Asia.

ELCO® is one of the few world-wide manufacturers with more than 50 years of experience in the production of fans for refrigeration and air conditioning.

Its acknowledged leadership is the result of a specific know-how both in the design and in the manufacturing of fractional horsepower motors along with an excellent mastery of aeraulic techniques, as well as a range of products that satisfy all the market requirements.

The recent international development of the ELCO® Group, whose manufacturing plants are now located in three Continents, represents the best preliminary condition to offer "ELCO® solutions" onto an already "global" market, both as far as integrated solutions and single basic components are concerned.

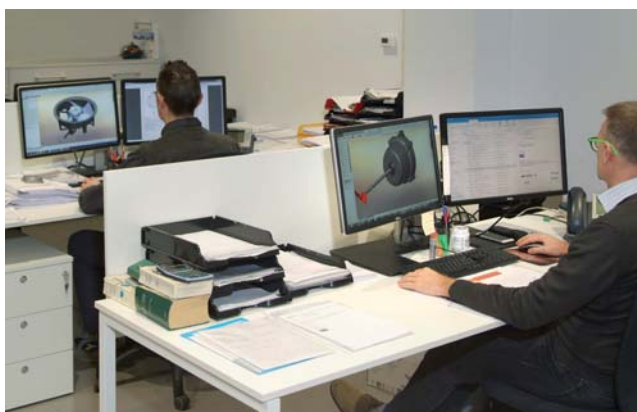


LA PROGETTAZIONE

La pluridecennale esperienza di progettazione per questi particolari ventilatori è raccolta oggi in una vastissima ed unica banca dati che permette di proporre ai clienti un ampio ventaglio di soluzioni tecniche per ottimizzare la scelta del ventilatore più idoneo per ogni singola applicazione.

Il team tecnico dispone di sistemi CAD e software adeguati allo sviluppo di disegni in 3D, di un moderno laboratorio per prove elettriche ed aerauliche in accordo alle norme AMCA 210-99, di una camera semi-anecoica per le prove di potenza sonora a norme UNI EN ISO 3744:2010, di camere climatiche "fredda" e "tropicale", adatte a simulare le condizioni ambientali reali in cui si trovano ad operare i ventilatori.

La speciale sezione "Ricerca e Sviluppo" è inoltre alla costante ricerca di soluzioni innovative che spesso anticipano le richieste del mercato, come per esempio nella regolazione del flusso d'aria, nella ottimizzazione dell'efficienza energetica, nella riduzione dei livelli di rumore, etc.



THE DESIGN

The multi-decade experience in the design of these particular fans is stored in a huge and unique database that allows us to offer to our customers a wide range of technical solutions which optimize the selection of the most suitable fan for any single application.

The technical team is provided with CAD and software systems complete with 3D, an advanced laboratory for electric and aeraulic tests, in compliance with AMCA 210-99 rules, a sound-proof room for the noise power test to UNI EN ISO 3744:2010 norms, "cold" and "tropical" climatic chambers, suitable for the simulation of the real working environmental conditions of the fans.

The "Research and Development" department is engaged in a never ending quest for innovative solutions such as air volumes regulation, energy efficiency improvement, noise level reduction and so on, solutions that are often ahead of the market requirements.





LA PRODUZIONE

Per rispondere alla domanda del mercato ELCO® ha realizzato importanti investimenti nei processi produttivi, che oggi sono disegnati ed ingegnerizzati applicando metodologie conformi ai sistemi "SIX SIGMA" e "LEAN PRODUCTION". L'automazione della produzione, la gestione dei lotti minimi, il controllo e la formazione continua del personale hanno consentito il raggiungimento dei più alti standard qualitativi di mercato e di massimizzare la capacità e la flessibilità produttiva.

Nella filosofia ELCO® la produzione è un processo che va sottoposto a miglioramento continuo per offrire un prodotto di maggior valore ai nostri clienti. Tutte le operazioni sono quindi sottoposte a monitoraggi in tempo reale, che permettono di verificare costantemente i processi e renderli più efficienti. Questo controllo consente inoltre un utilizzo ottimale delle risorse finalizzato alla riduzione degli sprechi.



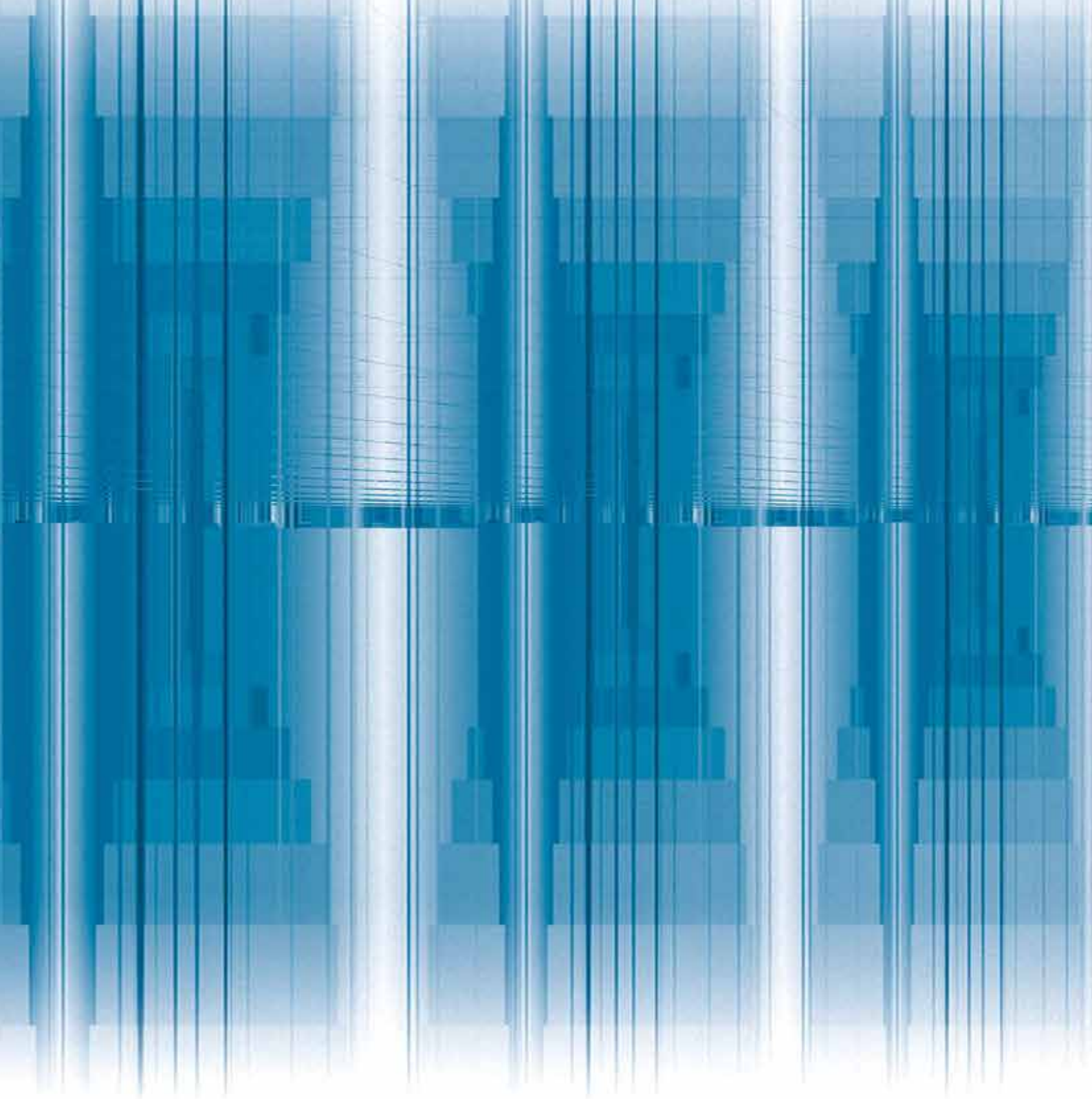
THE PRODUCTION

To satisfy the request from the market, ELCO® heavily invested in the production systems that are designed and engineered applying "SIX SIGMA" and "LEAN PRODUCTION" methodologies.

The automation of the systems, the handling of minimum lots, the control and training of the staff permit to reach the highest quality standard in the market and to maximize the capability and flexibility of the production.

ELCO's philosophy is to consider the production as a continuous improvement process in order to guarantee the highest quality for the customer. All procedures are submitted to real time checking allowing a constant control of the processes, making them more efficient. This control enables an optimal employment of the available resources, focusing on the reduction of wastefulness.







ECM C - HC - HBS Energy Saving Motors



IL PRODOTTO

ECM C - HC - HBS ENERGY SAVING MOTORS

I motori tipo ECM (Electronic Commutated Motors) a magneti permanenti sono appositamente progettati da ELCO® per le applicazioni nel campo della refrigerazione commerciale.

Hanno un'elevata efficienza rispetto ai motori tradizionali, garantendo risparmi fino all'80% nel consumo di energia e riducendo in maniera significativa le emissioni di CO₂.

Limitate dissipazioni di calore consentono inoltre un'importante riduzione dei consumi associati al ciclo frigorifero.

I motori ECM sviluppano potenze elevate in rapporto alla massa complessiva, permettendo quindi di mantenere dimensioni più contenute.

CARATTERISTICHE PRINCIPALI

- Motore chiuso, grado di protezione IP65 (a richiesta IP66).
- Corpo motore in materiale termoplastico dal design compatto.
- Doppio isolamento classe B (eliminazione del cavo di messa a terra).
- Tensione di alimentazione 230V / 115V - 50/60 Hz.
- Accoppiamento possibile con ventole assiali da 154 a 300 mm di diametro.
- Velocità di rotazione disponibili in varie opzioni:
 - Da 1 a 4 velocità pre-programmate da ELCO®
 - Diverse modalità di reverse, via software e hardware
 - Velocità programmabili dal cliente via NFC standard
 - Velocità controllabile via segnale 0-10 Vdc o 0-24 Vdc.
- Temperatura di esercizio tra -30°C e +60°C.
- Classe isolamento B.

La scheda di controllo è stata progettata e realizzata da ELCO® per funzionare correttamente anche nelle condizioni ambientali più severe. È inoltre equipaggiata con un sistema di protezione che salvaguarda il motore da sollecitazioni esterne del tipo sovratensione e/o sovracorrente.

I prodotti ELCO® sono progettati per fornire una prestazione qualitativa e duratura nel tempo. Applicando questa filosofia alla progettazione ed alla realizzazione dei motori ECM, siamo in grado di garantire un'aspettativa di vita di oltre 90.000 ore di funzionamento continuativo. Questo risponde alla crescente richiesta di prodotti duraturi e sostenibili.

THE PRODUCT

ECM C - HC - HBS ENERGY SAVING MOTORS

Electronic Commutated Motors, with permanent magnet, are specially designed by ELCO® for commercial refrigeration applications.

These motors efficiency is higher than the traditional motors assuring an energy saving up to 80% of power consumption with consequent CO₂ emission reduction.

Limited heat dissipation brings to significant reduction of consumptions associated to the refrigeration cycle.

A highest power output in respect of the total motor mass is developed, hence smaller dimensions are possible.

MAIN FEATURES

- Closed motor, protection degree IP65 (IP66 on request).
- Thermoplastic body compact design.
- Double insulation class B (earth cable eliminated).
- Supply 230V / 115V - 50/60 Hz.
- Possible coupling with axial fans with diameter from 154 to 300 mm.
- Rotation speeds available with different options:
 - From 1 to 4 ELCO® pre-set speeds
 - Different reverse modes via SW and HW
 - Speed set by the customer via NFC standard
 - Full speed control with 0-10 Vdc or 0-24 Vdc signal.
- Working temperature between -30°C and +60°C.
- Insulation class B.

ELCO® designed and realized a control card suitable to work properly even in the most severe environments.

Additionally, it is equipped with a protection system that limits the motor damages due to external surge: overcurrent or overvoltage.

All ELCO® products are designed to give high level quality performances and long durability. Applying this philosophy to the ECM motor design and production, we achieve a life expectancy of over 90.000 hours in continuous working conditions. This is ELCO® response to the growing request of durable and sustainable products.





IL PRODOTTO

Gli anelli, le reti, le ventole ed i supporti tradizionali di produzione ELCO® sono compatibili con questa gamma di motori.

È altresì disponibile una nuova gamma di accessori specifici per gli ECM.

L'efficienza energetica del ventilatore è in buona parte legata all'efficienza aeraulica. ELCO® ha quindi appositamente progettato una nuova serie di ventole assiali, che ne migliora l'efficienza complessiva.

Tutti i motori ELCO® sono progettati e costruiti in ottemperanza alle Direttive di Bassa Tensione 2006/95/EC e di Compatibilità Elettromagnetica 2004/108/EC con riferimento alla EN 55014-1, EN 61000-3-2, EN 61000-3-3, così come alla Direttiva Macchine 2006/42/EC, ed in accordo con le Norme Standard CENELEC EN 60335-1, EN 60335-2-24, EN 60335-2-89, EN 60529, EN 60034-1.

THE PRODUCT

The ELCO® traditional rings, grids, fan blades and supports are suitable to be used also with these ECM motors.

In addition, a new range of specific accessories for the ECM motors is available.

The energetic efficiency of the fans is linked in majority to the aeraulic efficiency. Hence ELCO® designed a new axial fan series that improves the total efficiency.

All ELCO® motors are designed and manufactured in compliance with the Low Voltage 2006/95/EC and Electromagnetic Compatibility 2004/108/EC Directives with reference to EN 55014-1, EN 61000-3-2, EN 61000-3-3 as well as the Machinery Directive 2006/42/EC and in accordance with the Standards CENELEC EN 60335-1, EN 60335-2-24, EN 60335-2-89, EN 60529, EN 60034-1.

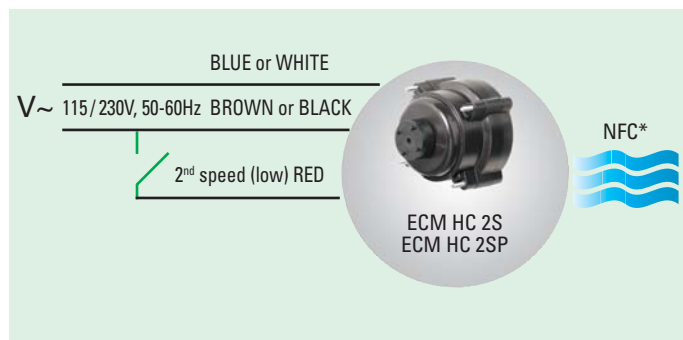
MOTOR SOLUTIONS

	DESCRIZIONE	DESCRIPTION
ECM C	1 Velocità pre-settata	1 Speed pre set
ECM HC 2S	2 Velocità pre-settate	2 Speeds pre set
ECM HC 2SP	2 Velocità settate dal cliente tramite programmazione NFC*	2 Speeds set by the customer through NFC*
ECM HC R2S	2 Velocità pre-settate + diverse tipologie di reversibilità	2 Speeds pre set + several types of reversibility
ECM HC R2SP	2 Velocità settate dal cliente + diverse tipologie di reversibilità	2 Speeds set by the customer + several types of reversibility
ECM HC R	1 Velocità reversibile	1 Reversible speed
ECM HC VS	Full control 0-10 Vdc 0-24 Vdc	Full control 0-10 Vdc 0-24 Vdc
ECM HBS 2S/3S/4S	2/3/4 Velocità pre-settate	2/3/4 Speeds pre set
ECM HBS R2S	2 Velocità pre-settate + diverse tipologie di reversibilità	2 Speeds pre set + several types of reversibility
ECM HBS R	1 Velocità reversibile	1 Reversible speed

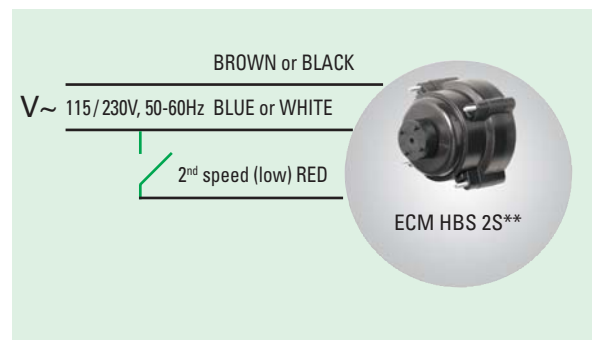
*NFC (RFID Secure Protocol)

CONNECTION DIAGRAM

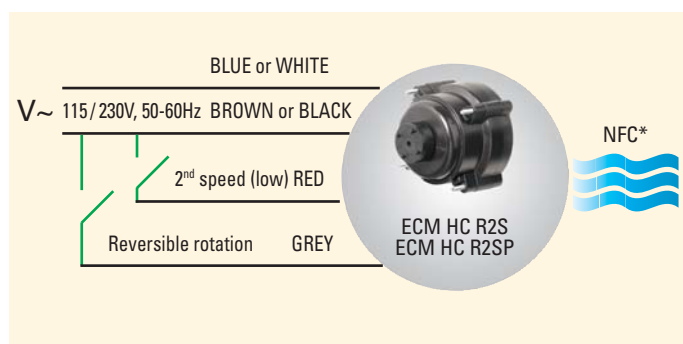
ECM HC 2S - ECM HC 2SP



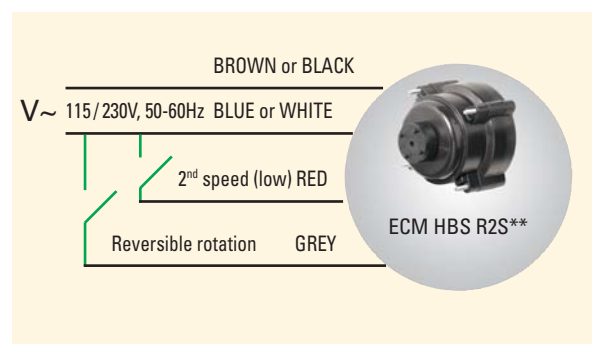
ECM HBS 2S



ECM HC R2S - ECM HC R2SP



ECM HBS R2S



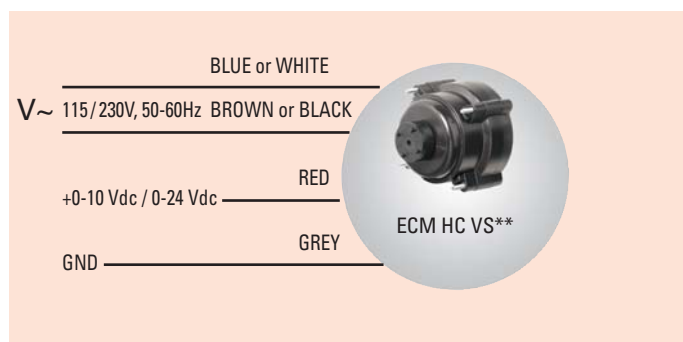
ECM HC R



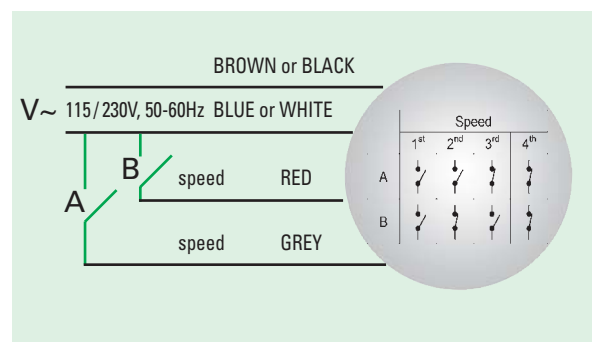
ECM HBS R



ECM HC VS



ECM HBS 2S/3S/4S



*NFC (RFID Secure Protocol)

**Third parties' approval may be pending

MATCHING MOTOR-FAN

ECM C-HC-HBS 230V - 50Hz - High speed

		Fan Ø / α					
		154	172	200	230	254	300
1300 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1400 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1600 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1850 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
2200 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						

ECM C-HC-HBS 12-10

ECM C-HC-HBS 20-25

ECM C-HC-HBS 12-10 with Ø 254x22 integrated only

ECM C-HC-HBS 25-25

ECM C-HC-HBS 30-25

MATCHING MOTOR-FAN

ECM C-HC-HBS 115V - 60Hz - High speed

		Fan Ø / α					
		154	172	200	230	254	300
1300 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1400 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1600 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
1850 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						
2200 RPM	19°						
	22°						
	25°						
	28°						
	30°						
	31°						
	34°						

ECM C-HC-HBS 12-10

ECM C-HC-HBS 20-25

ECM C-HC-HBS 12-10 with Ø 254x22 integrated only

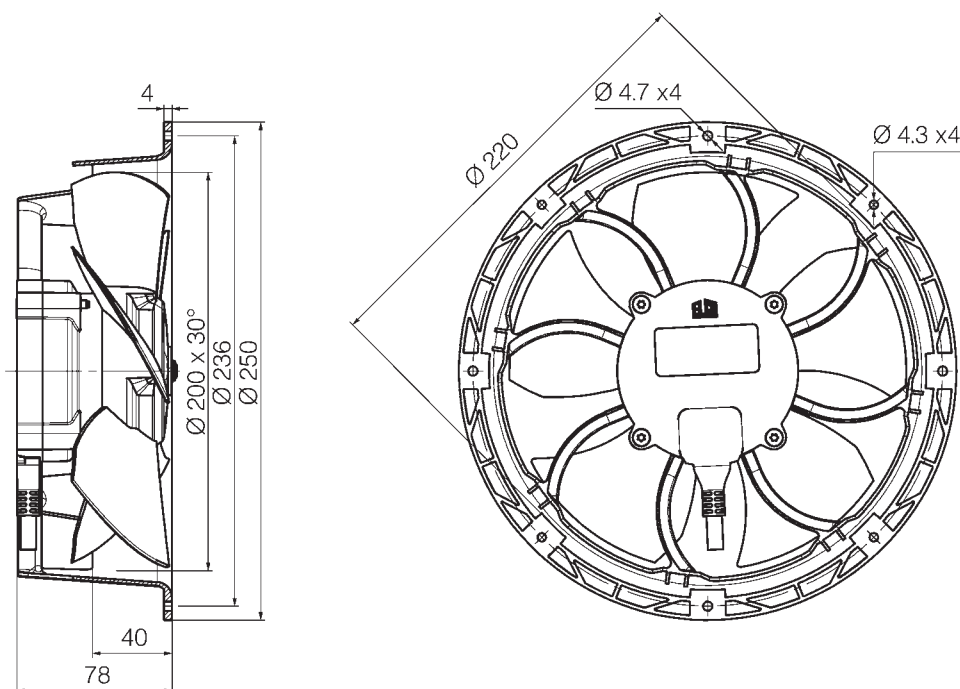
ECM C-HC-HBS 25-25

ECM C-HC-HBS 30-25

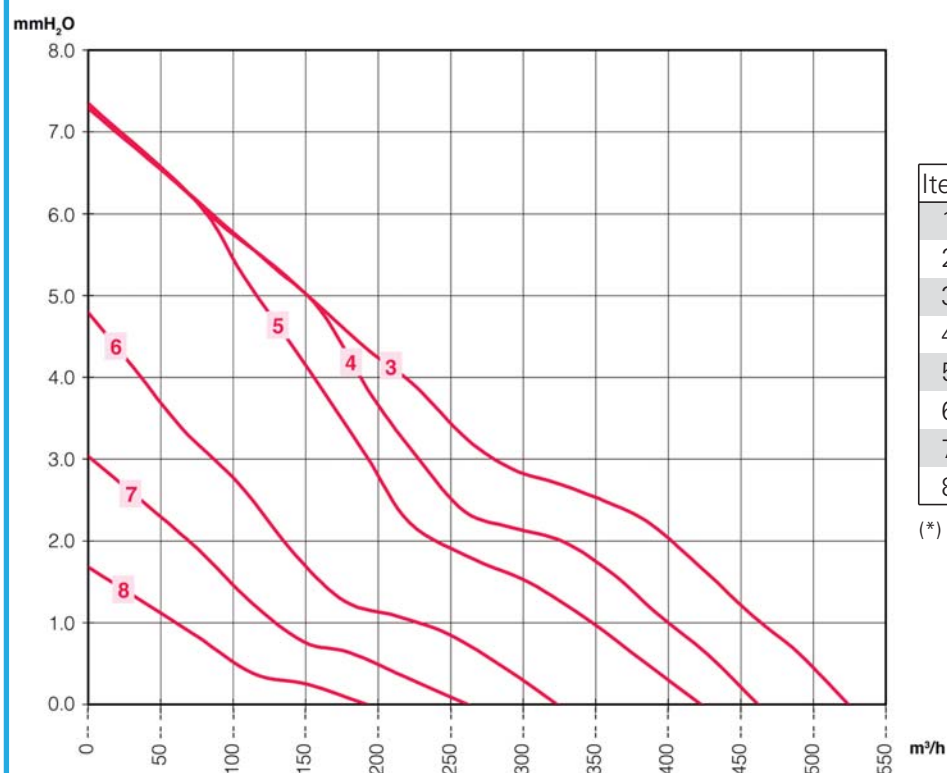
COMPACT FAN MOTOR 200

Fan motor dimensions

ECM C-HC-HBS 12-10



Compact fan motor air performance curves Ø 200x30°



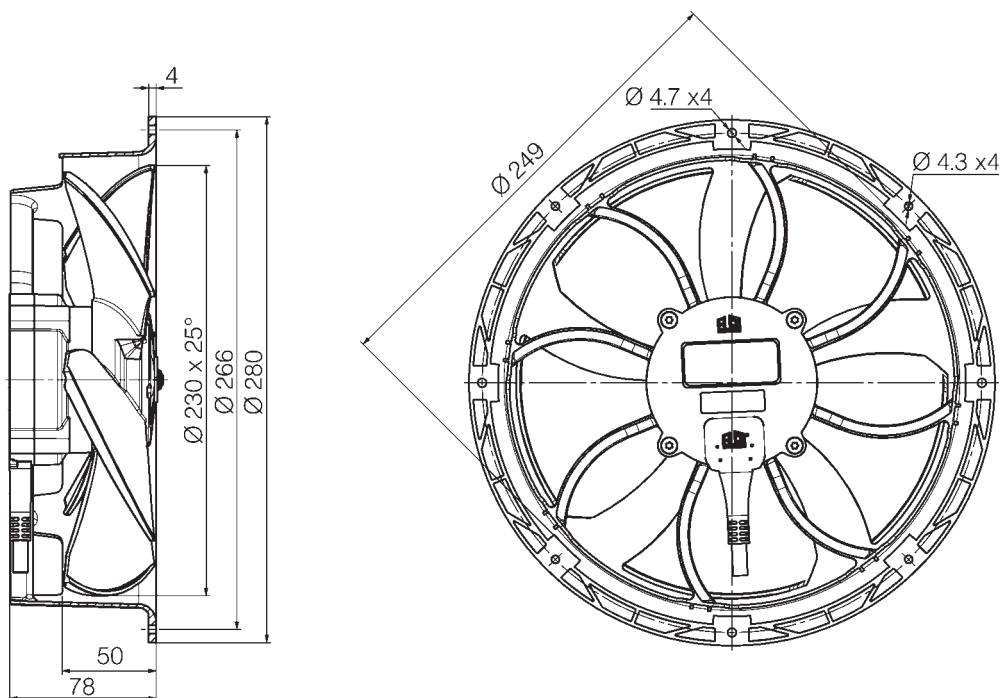
ECM C-HC-HBS			
		12-10	20-25
		PM-D087_5P	
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600	12.4	
4	1400	9.7	
5	1300	8.3	
6	1000	5.0	
7	800	3.0	
8	600	2.4	

(*) @ 0 mmH₂O

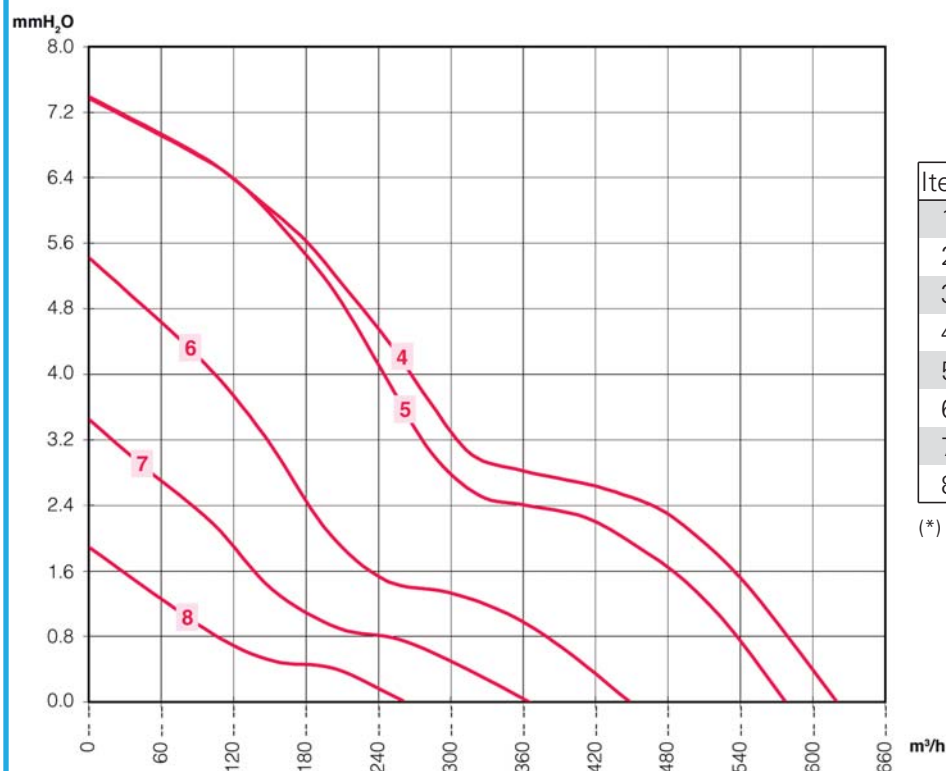
COMPACT FAN MOTOR 230

Fan motor dimensions

ECM C-HC-HBS 12-10



Compact fan motor air performance curves Ø 230x25°

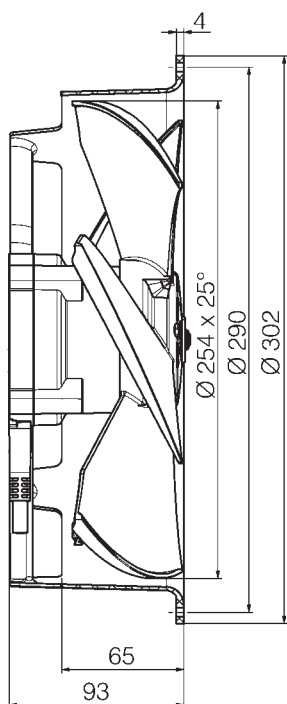


ECM C-HC-HBS			
		12-10	20-25
Test		PM-F043_3P	
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400	9.9	
5	1300	8.9	
6	1000	5.7	
7	800	4.0	
8	600	2.8	

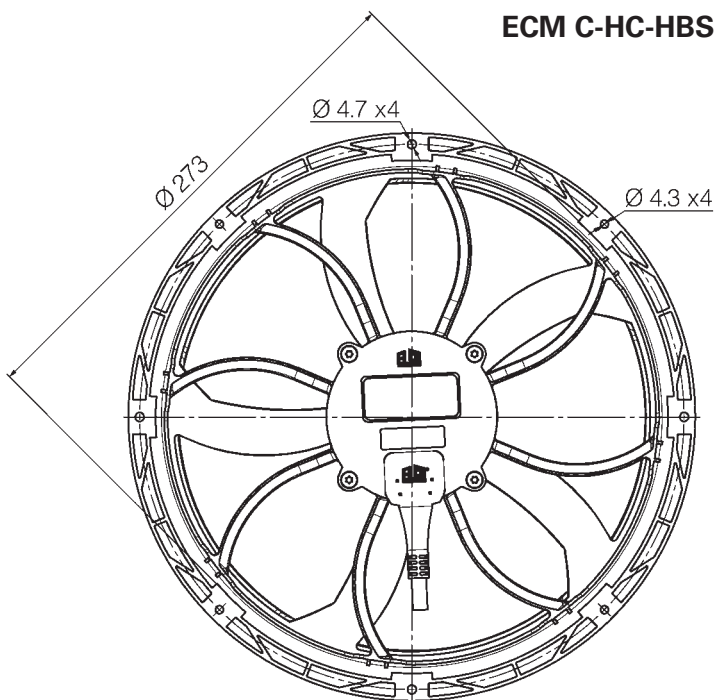
(*) @ 0 mmH₂O

COMPACT FAN MOTOR 254

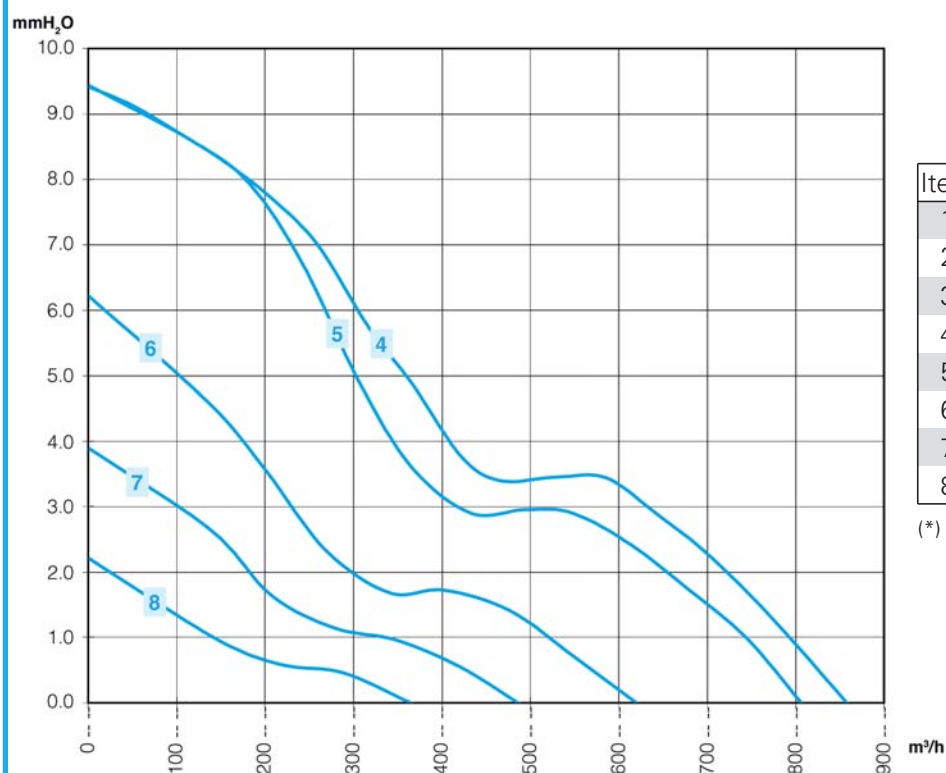
Fan motor dimensions



ECM C-HC-HBS 20-25



Compact fan motor air performance curves Ø 254x25°



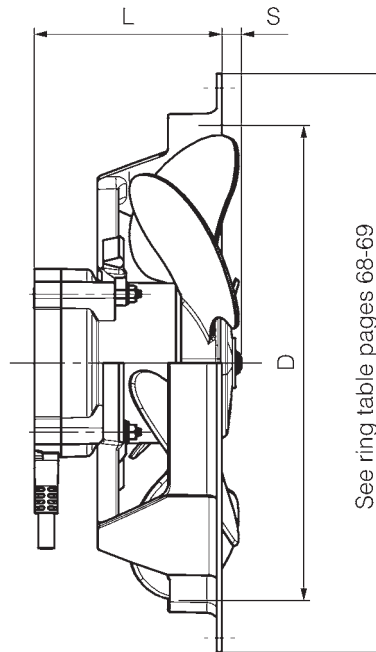
ECM C-HC-HBS			
		12-10	20-25
			PM-H062_3P
Item	Test	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400		12.0
5	1300		9.9
6	1000		6.6
7	800		4.5
8	600		3.0

(*) @ 0 mmH₂O

PLASTIC INTEGRATED FAN MOTORS

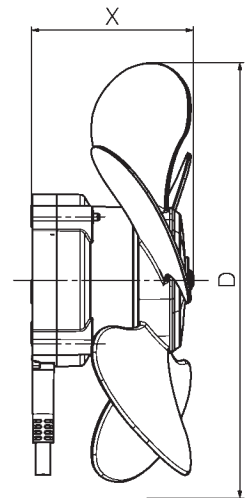
Fan motor dimensions

ECM C-HC-HBS 12-10				
D		L	S	X
Ø154	19°	80	6	86
Ø172	28°	80	6	86
Ø200	28°	80	9	89
	34°	80	11	91
Ø230	19°	84	3	87
	25°	84	3	87
	31°	84	3	87
Ø254	22°	84	8	92



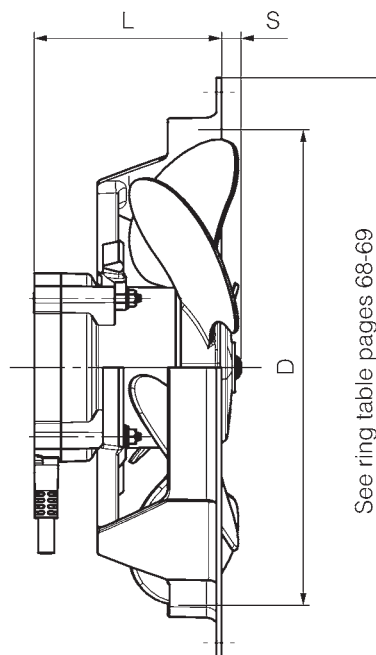
See ring table pages 68-69

ECM C-HC-HBS 12-10



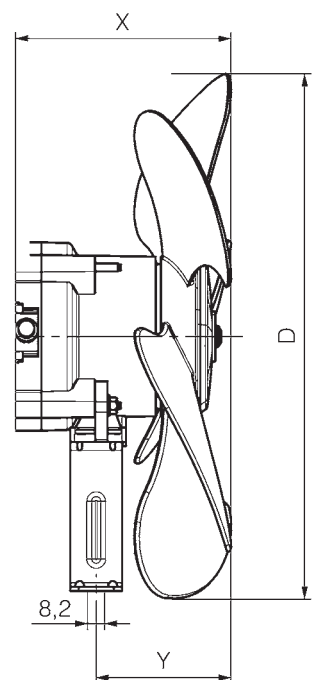
Fan motor dimensions

ECM C-HC-HBS 20-25					
D		L	S	X	Y
Ø154	19°	87	13	100	49
Ø172	28°	87	13	100	60
Ø200	28°	87	16	103	63
	34°	87	18	105	77
Ø230	19°	91	10	101	61
	25°	91	10	101	73
	31°	91	10	101	73
Ø254	22°	91	15	106	66

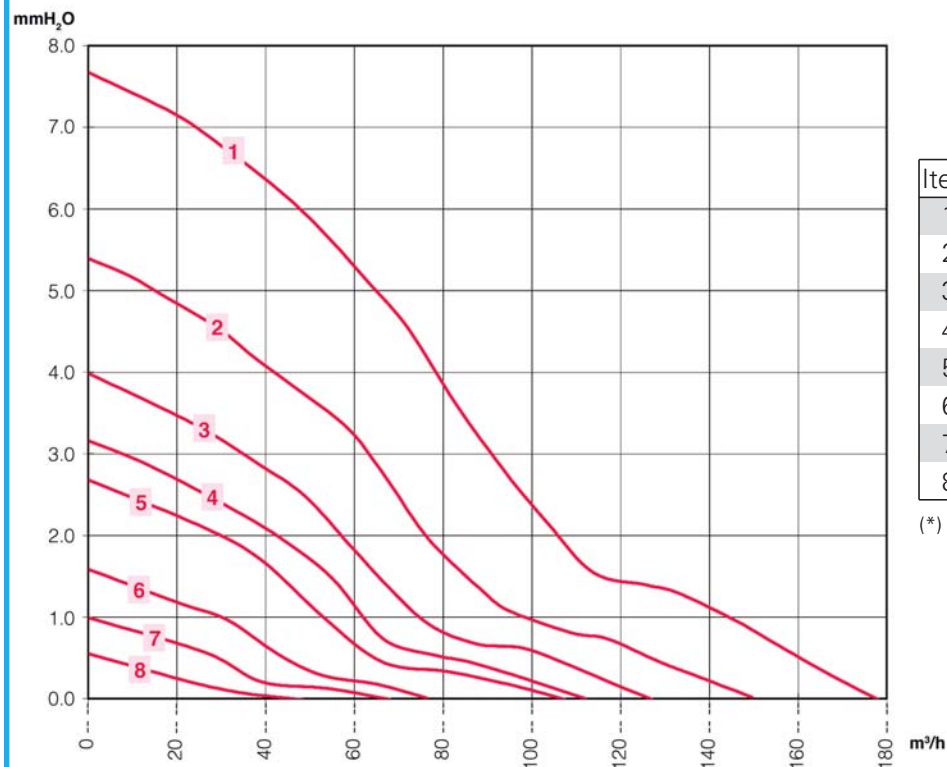


See ring table pages 68-69

ECM C-HC-HBS 20-25



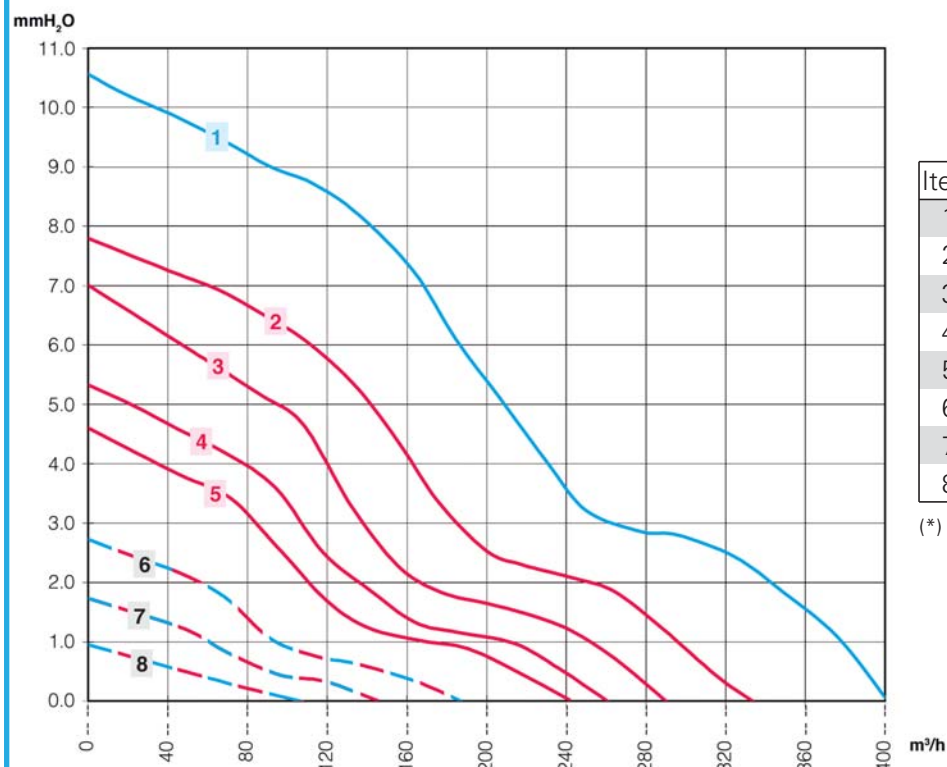
Integrated fan blade air performance curves Ø 154x19°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-L015_1P	
Item	RPM	W in (*)	W in (*)
1	2200	3.9	
2	1850	3.0	
3	1600	2.4	
4	1400	1.9	
5	1300	1.7	
6	1000	1.5	
7	800	1.2	
8	600	0.9	

(*) @ 0 mmH₂O

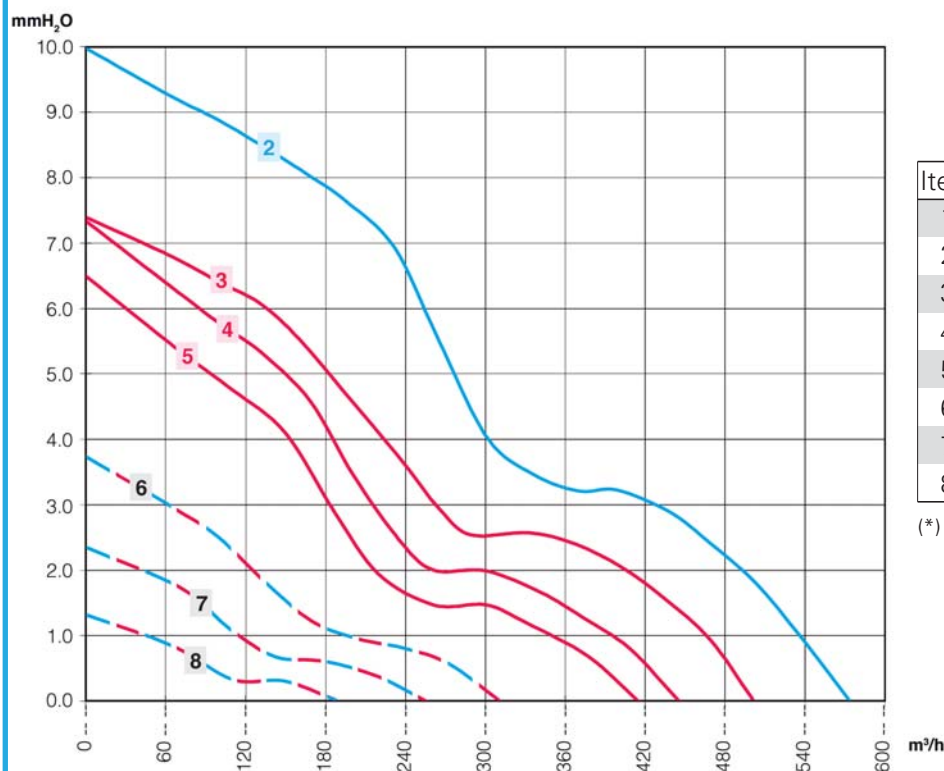
Integrated fan blade air performance curves Ø 172x28°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-M019_4P	PM-M020_4P
Item	RPM	W in (*)	W in (*)
1	2200		10.3
2	1850	7.4	
3	1600	5.9	
4	1400	4.7	
5	1300	3.9	
6	1000	2.7	2.4
7	800	1.8	1.8
8	600	1.5	1.2

(*) @ 0 mmH₂O

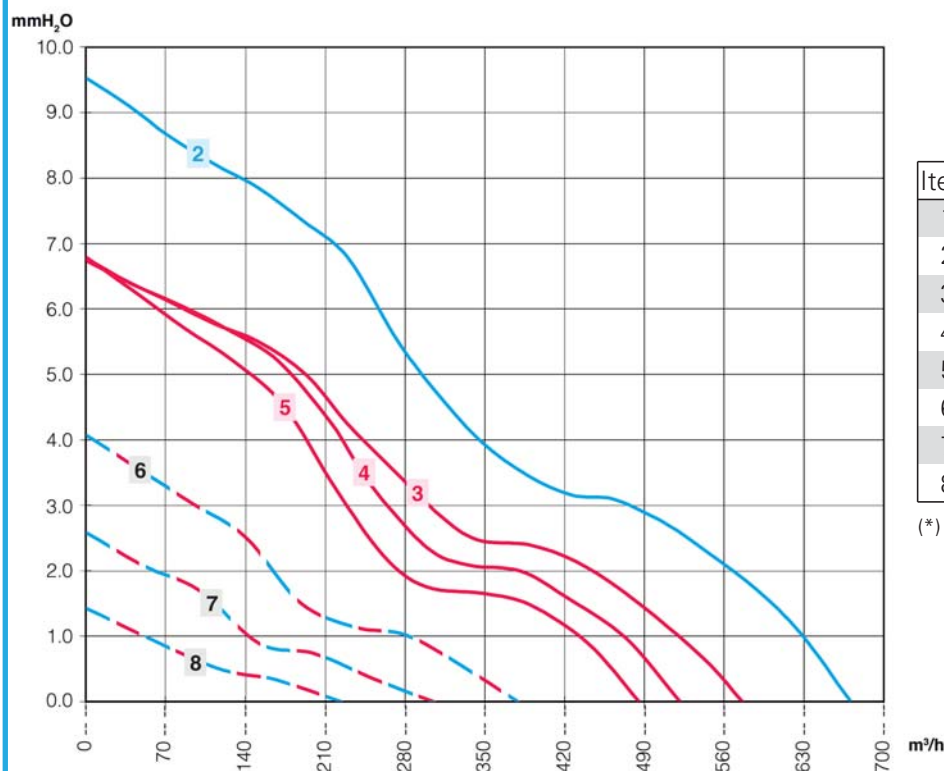
Integrated fan blade air performance curves Ø 200x28°



		ECM C-HC-HBS	
		12-10	20-25
		PM-D085_4P	PM-D084_4P
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		11.5
3	1600	10.6	
4	1400	8.3	
5	1300	6.8	
6	1000	4.2	3.9
7	800	3.0	2.4
8	600	1.8	1.8

(*) @ 0 mmH₂O

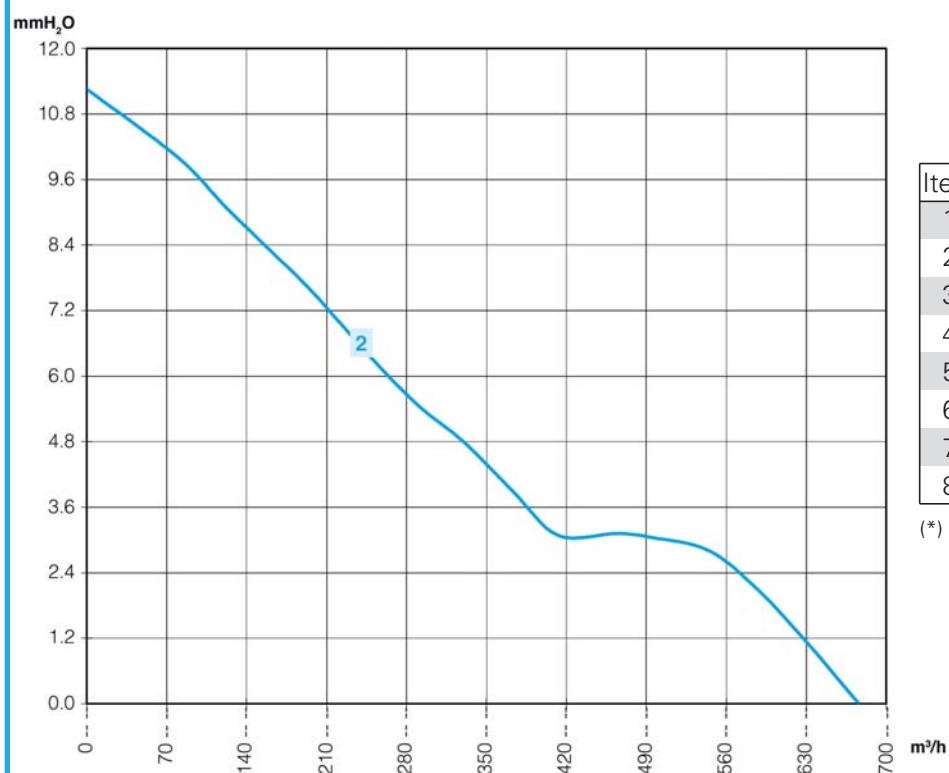
Integrated fan blade air performance curves Ø 200x34°



		ECM C-HC-HBS	
		12-10	20-25
		PM-D085_7P	PM-D084_7P
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		17.6
3	1600	16.5	
4	1400	12.6	
5	1300	11.2	
6	1000	6.5	4.7
7	800	4.4	3.3
8	600	2.4	2.1

(*) @ 0 mmH₂O

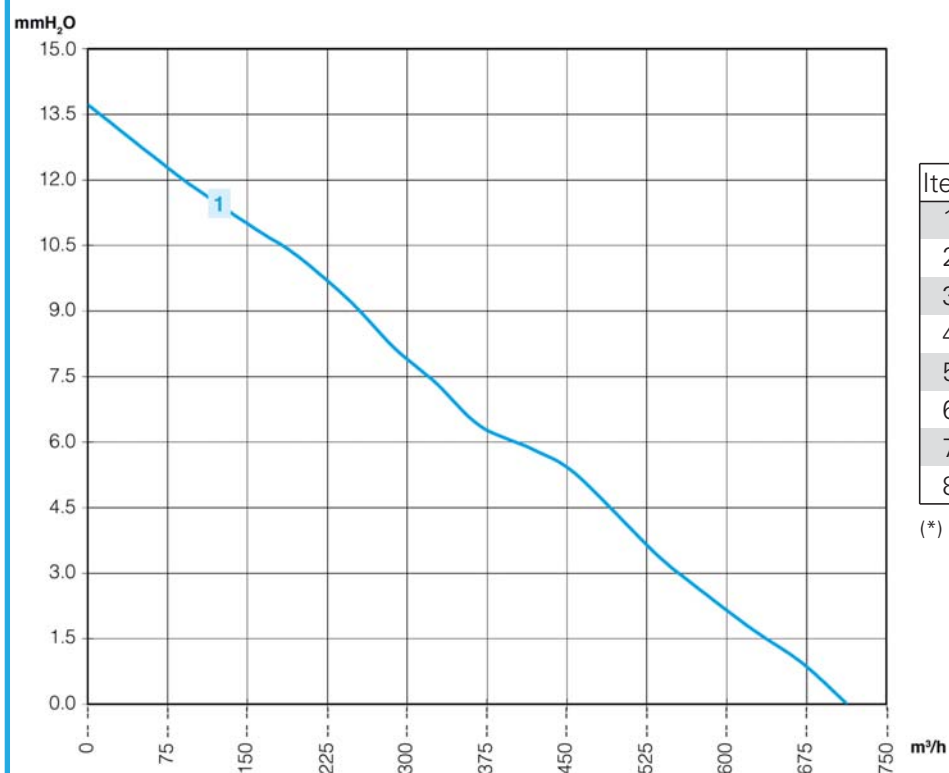
Integrated fan blade air performance curves Ø 200x30°



ECM C-HC-HBS			
		12-10	25-25
		Test	PM-D109_5P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		16.0
3	1600		
4	1400		
5	1300		
6	1000		
7	800		
8	600		

(*) @ 0 mmH₂O

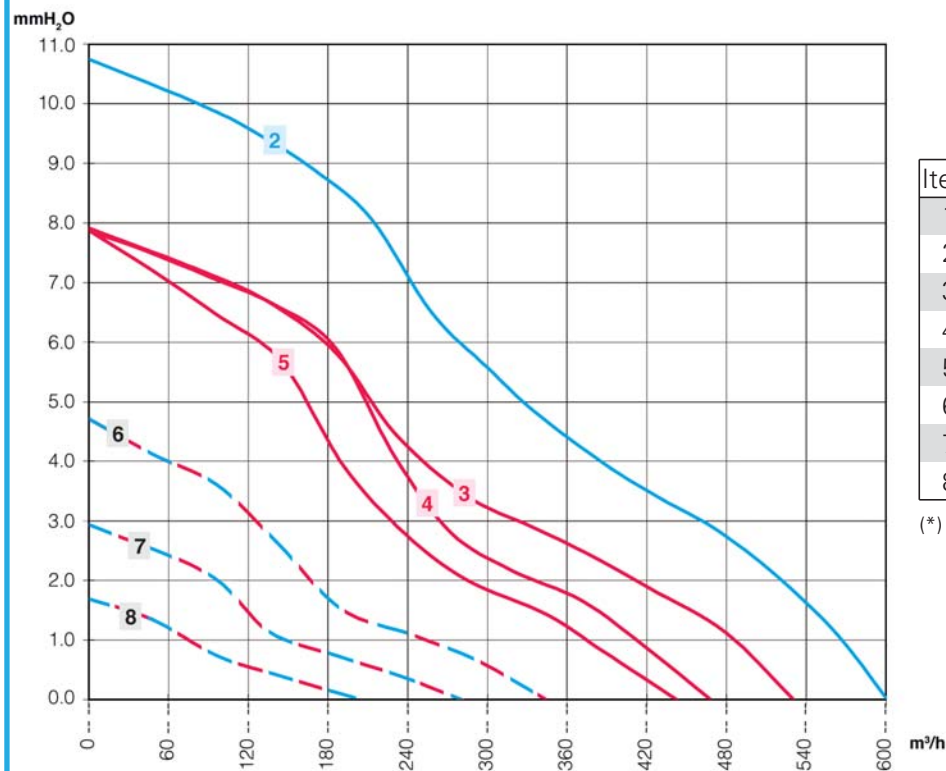
Integrated fan blade air performance curves Ø 200x30°



ECM C-HC-HBS			
		12-10	30-25
		Test	PM-D106_5P
Item	RPM	W in (*)	W in (*)
1	2200		24.8
2	1850		
3	1600		
4	1400		
5	1300		
6	1000		
7	800		
8	600		

(*) @ 0 mmH₂O

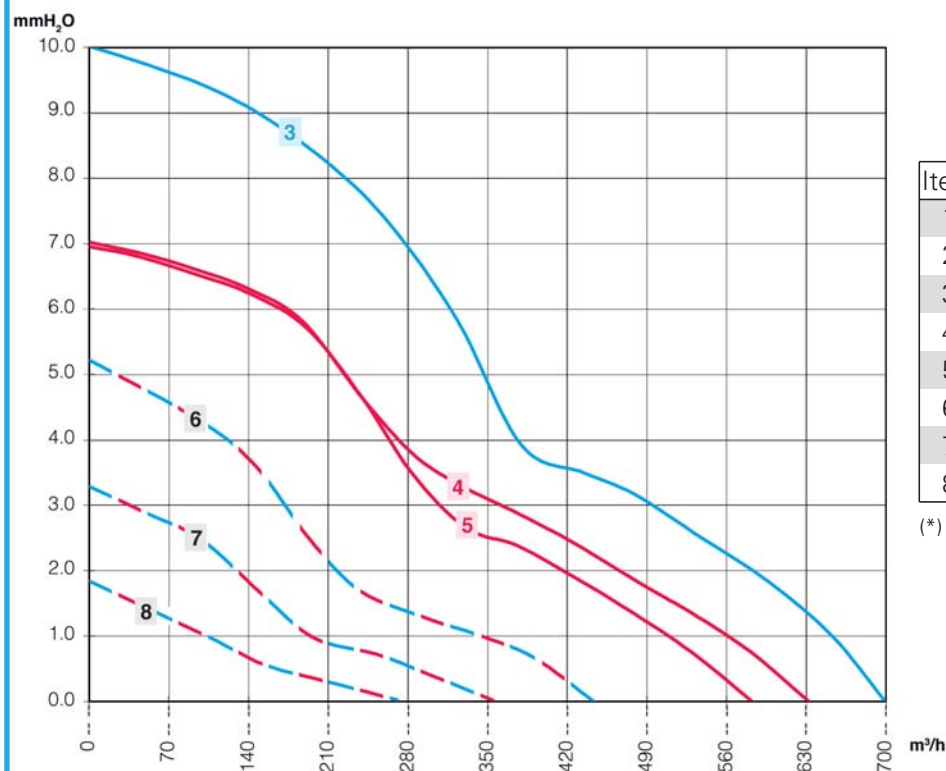
Integrated fan blade air performance curves Ø 230x19°



ECM C-HC-HBS			
		12-10	20-25
		PM-F033_1P	PM-F032_1P
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		12.9
3	1600	12.4	
4	1400	9.1	
5	1300	7.7	
6	1000	4.7	3.9
7	800	3.0	2.4
8	600	2.1	1.5

(*) @ 0 mmH₂O

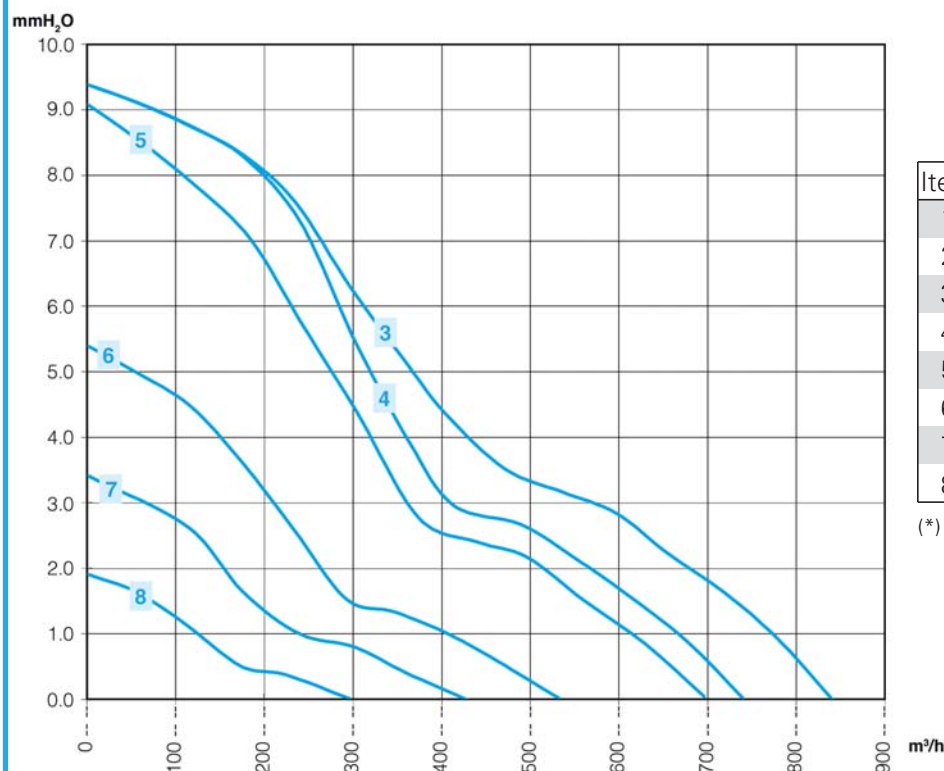
Integrated fan blade air performance curves Ø 230x25°



ECM C-HC-HBS			
		12-10	20-25
		PM-F033_3P	PM-F032_3P
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		14.4
4	1400	13.2	
5	1300	12.6	
6	1000	7.1	5.0
7	800	5.0	3.3
8	600	2.7	2.1

(*) @ 0 mmH₂O

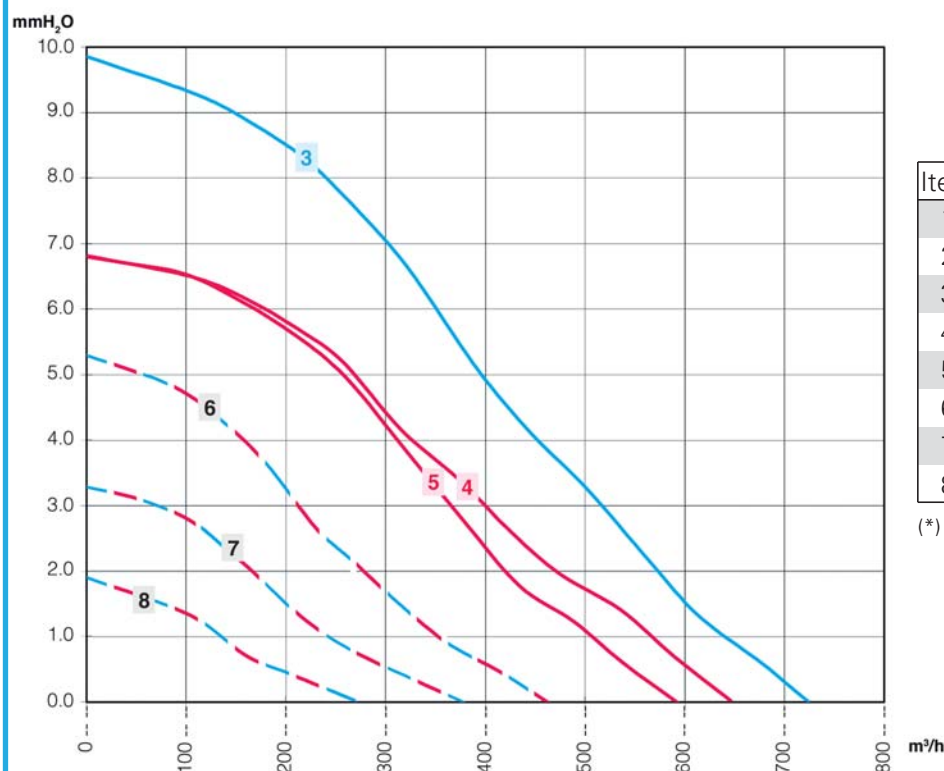
Integrated fan blade air performance curves Ø 230x31°



ECM C-HC-HBS			
		12-10	20-25
		Test	PM-F032_6P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		20.9
4	1400		15.0
5	1300		13.2
6	1000		7.4
7	800		4.4
8	600		2.7

(*) @ 0 mmH₂O

Integrated fan blade air performance curves Ø 254x22°



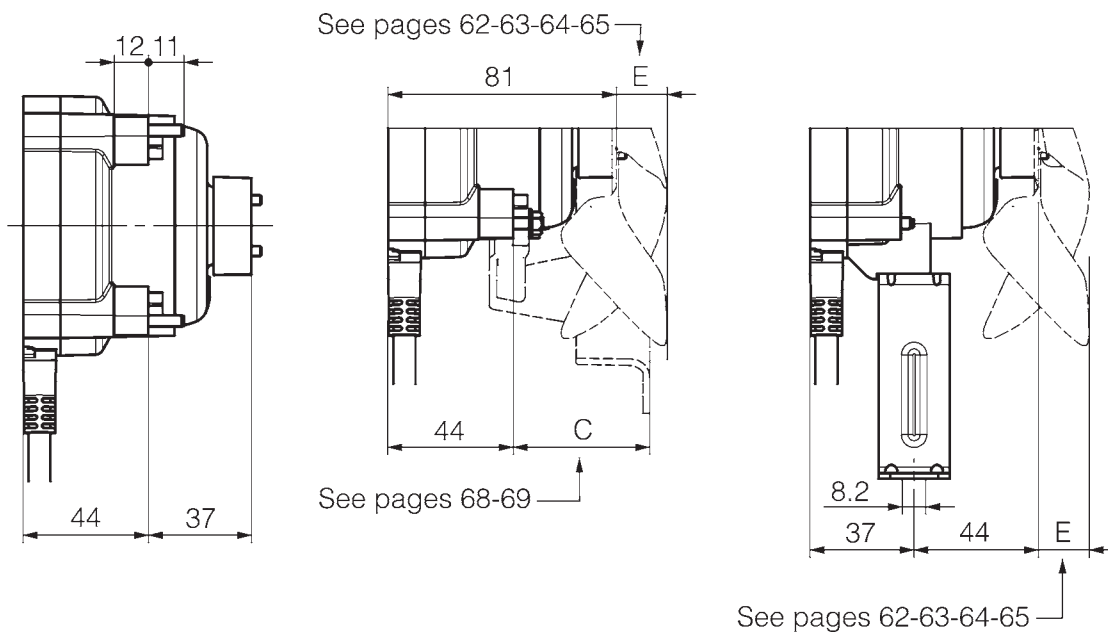
ECM C-HC-HBS			
		12-10	20-25
		Test	PM-H054_2P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		15.9
4	1400	15.6	
5	1300	13.8	
6	1000	8.0	5.9
7	800	5.0	3.6
8	600	3.3	2.4

(*) @ 0 mmH₂O

PLASTIC OR ALUMINIUM FAN MOTORS

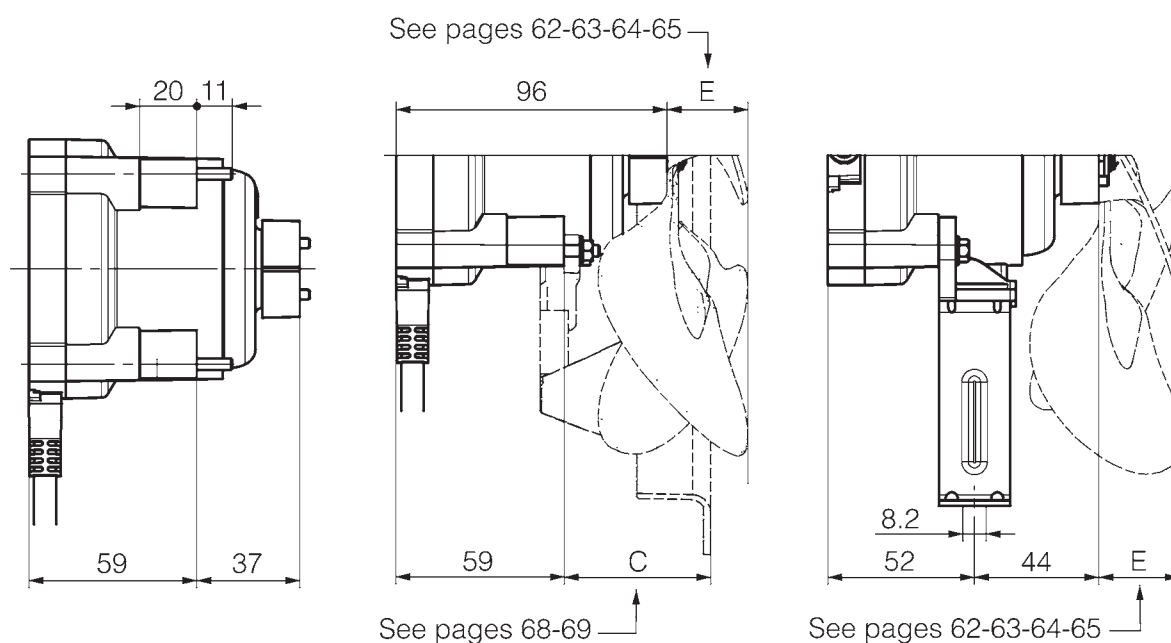
Fan motor dimensions

ECM C-HC-HBS
12-10

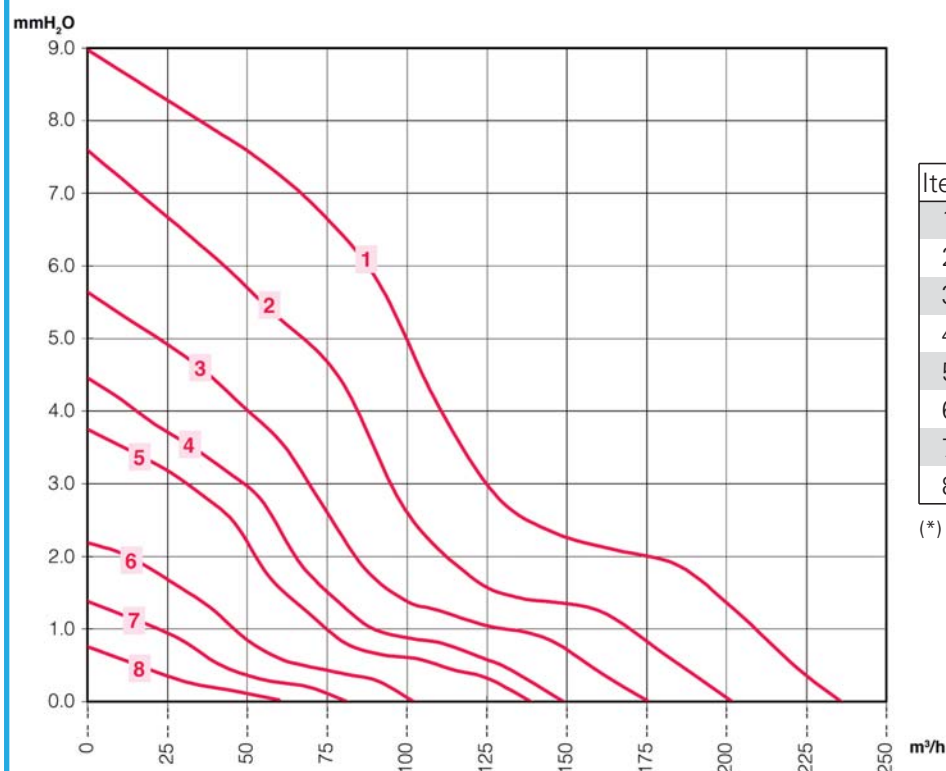


Fan motor dimensions

ECM C-HC-HBS
20-25
25-25
30-25



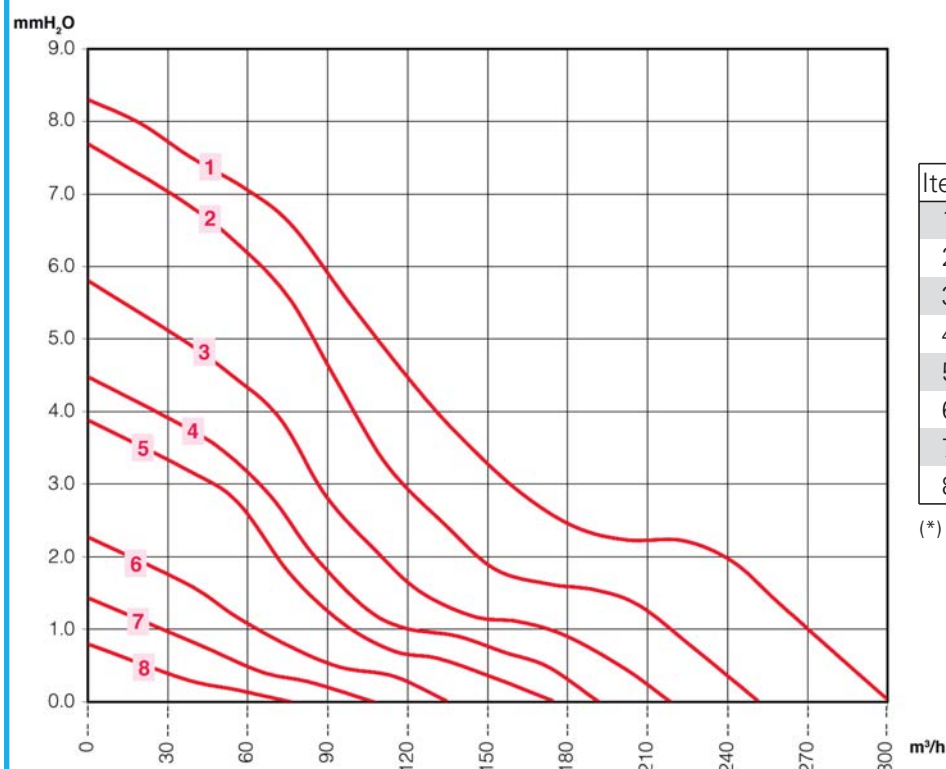
Fan blade air performance curves Ø 154x22°



ECM C-HC-HBS			
		12-10	20-25
		Test PM-A016_2A	
Item	RPM	W in (*)	W in (*)
1	2200	4.7	
2	1850	3.2	
3	1600	2.6	
4	1400	2.1	
5	1300	1.9	
6	1000	1.5	
7	800	1.2	
8	600	0.9	

(*) @ 0 mmH₂O

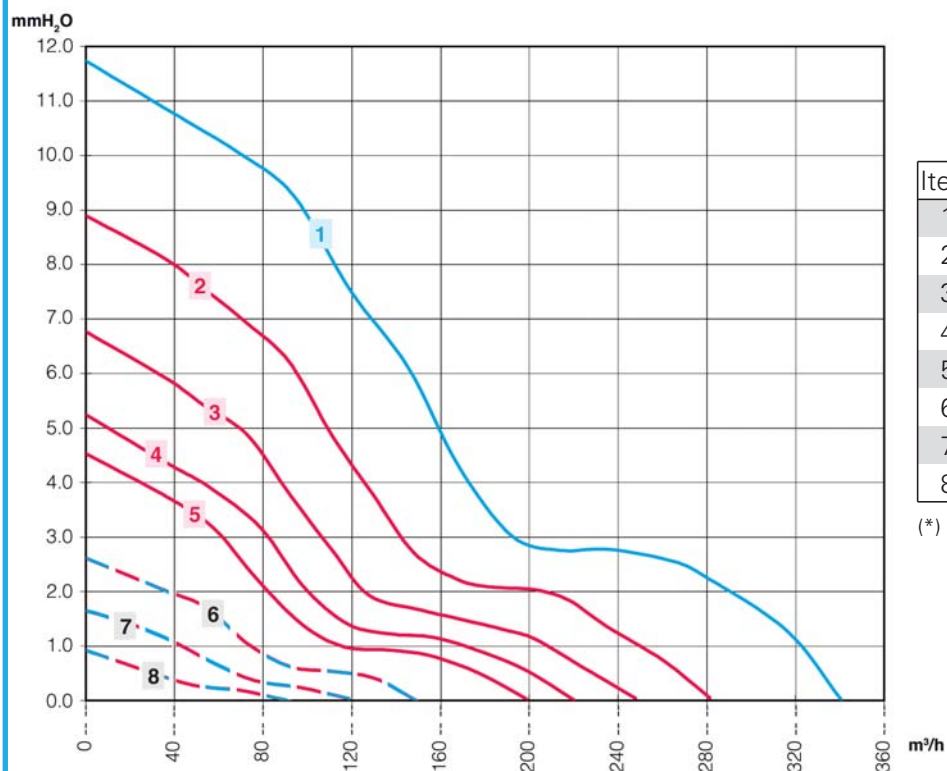
Fan blade air performance curves Ø 154x28°



ECM C-HC-HBS			
		12-10	20-25
		Test PM-L014_4P	
Item	RPM	W in (*)	W in (*)
1	2200	7.0	
2	1850	5.7	
3	1600	3.8	
4	1400	3.0	
5	1300	2.7	
6	1000	1.8	
7	800	1.5	
8	600	1.2	

(*) @ 0 mmH₂O

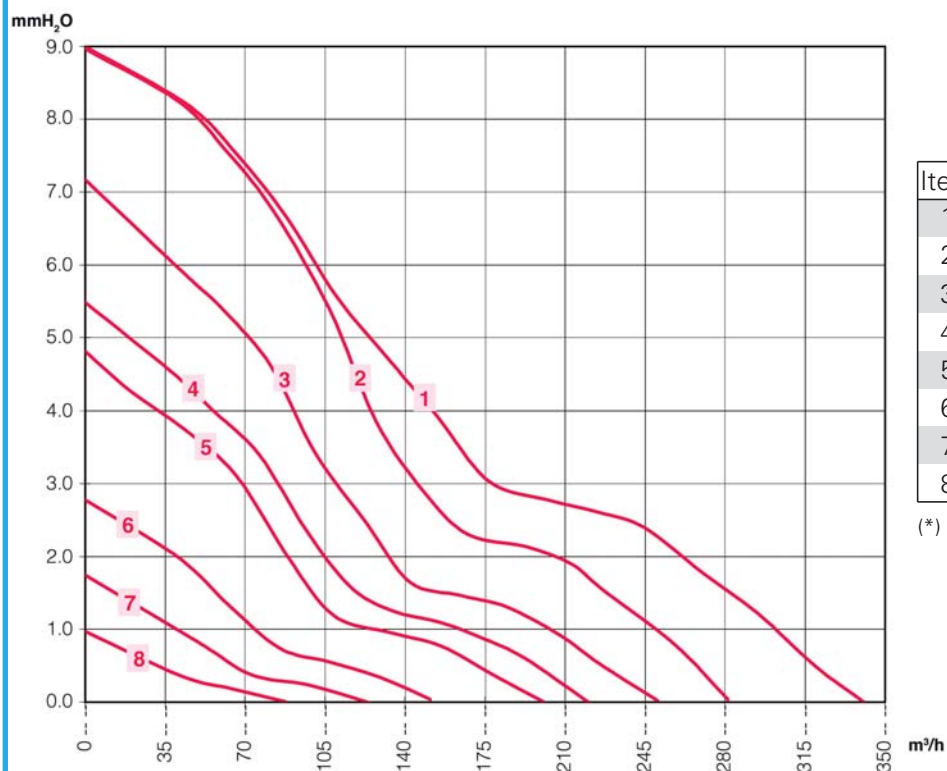
Fan blade air performance curves Ø 154x34°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-A016_7A	PM-A017_7A
Item	RPM	W in (*)	W in (*)
1	2200		8.8
2	1850	6.5	
3	1600	5.0	
4	1400	3.6	
5	1300	3.3	
6	1000	2.1	2.1
7	800	1.5	1.5
8	600	1.0	1.2

(*) @ 0 mmH₂O

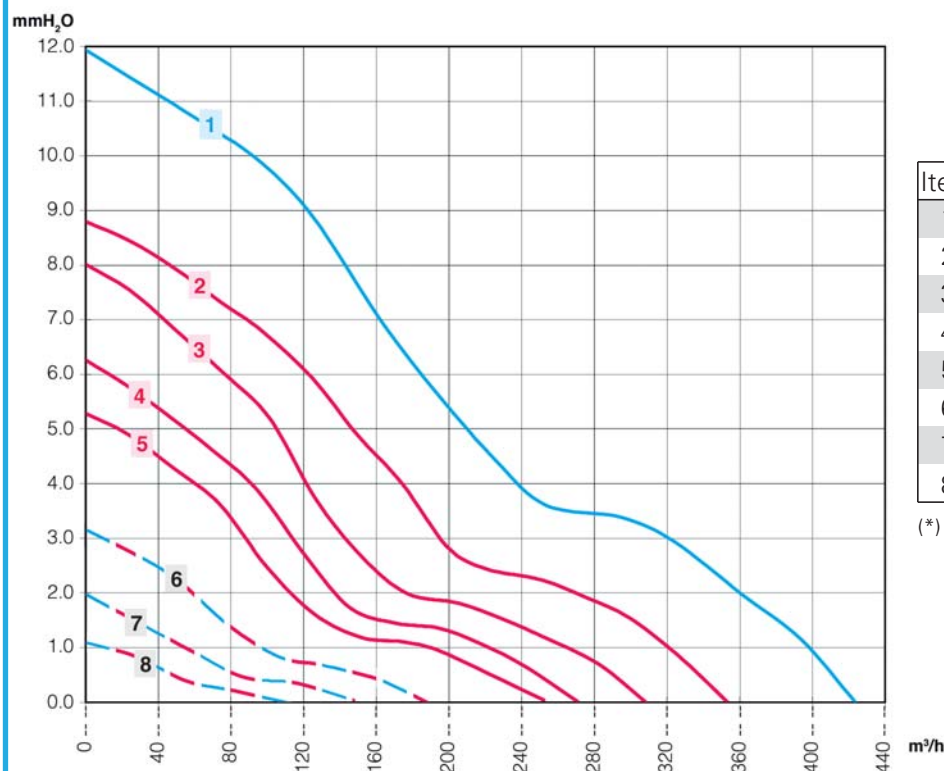
Fan blade air performance curves Ø 172x22°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-B006_2A	
Item	RPM	W in (*)	W in (*)
1	2200	6.8	
2	1850	4.7	
3	1600	3.9	
4	1400	3.0	
5	1300	2.7	
6	1000	1.8	
7	800	1.5	
8	600	1.2	

(*) @ 0 mmH₂O

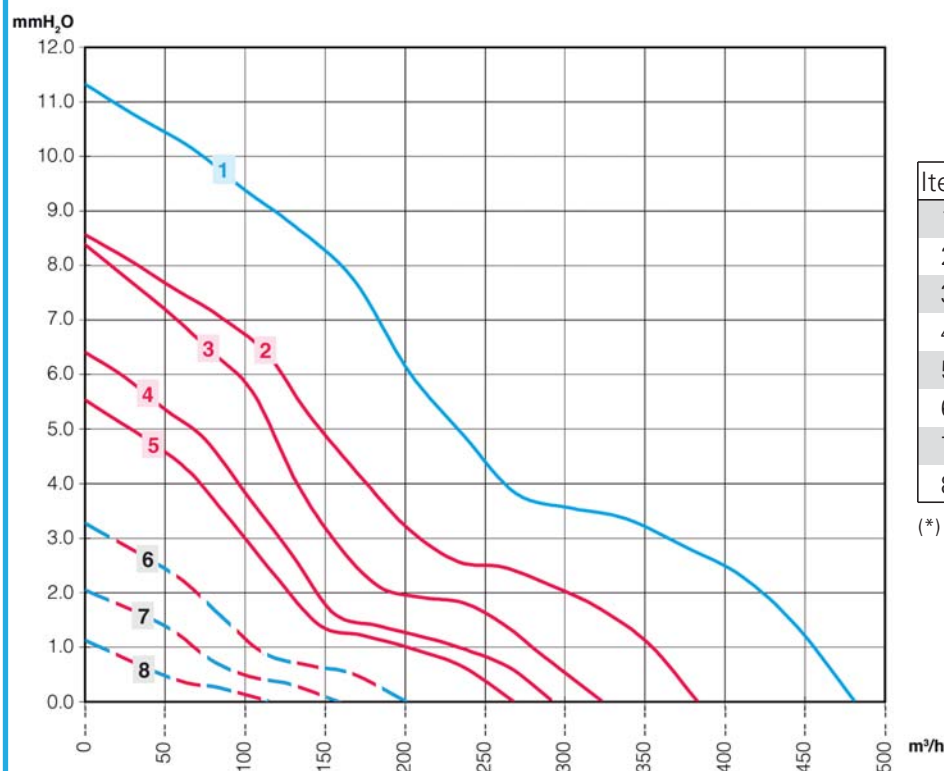
Fan blade air performance curves Ø 172x28°



ECM C-HC-HBS			
		12-10	20-25
		PM-B006_4A	PM-B007_4A
Item	RPM	W in (*)	W in (*)
1	2200		9.7
2	1850	6.8	
3	1600	5.3	
4	1400	4.2	
5	1300	3.9	
6	1000	2.4	2.4
7	800	1.8	1.8
8	600	1.2	1.5

(*) @ 0 mmH₂O

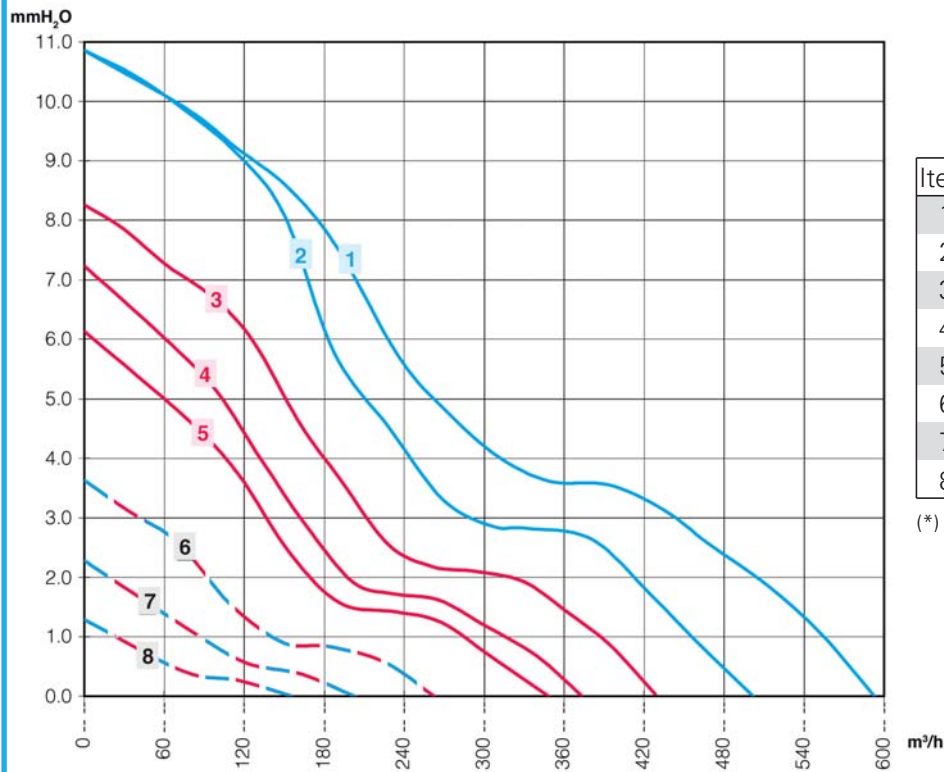
Fan blade air performance curves Ø 172x34°



ECM C-HC-HBS			
		12-10	20-25
		PM-B006_7A	PM-B007_7A
Item	RPM	W in (*)	W in (*)
1	2200		9.7
2	1850	6.8	
3	1600	5.3	
4	1400	4.1	
5	1300	3.8	
6	1000	2.4	2.4
7	800	1.8	1.8
8	600	1.2	1.5

(*) @ 0 mmH₂O

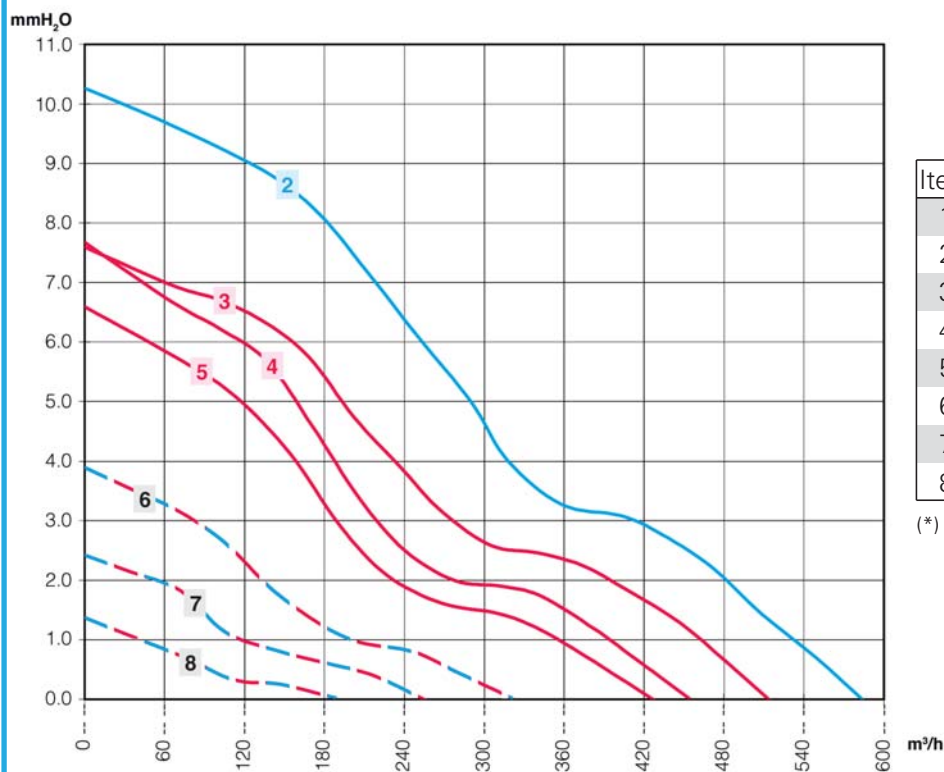
Fan blade air performance curves Ø 200x22°



ECM C-HC-HBS			
		12-10	20-25
		PM-C028_2A	PM-C029_2A
Item	Test RPM	W in (*)	W in (*)
1	2200		13.5
2	1850		8.5
3	1600	6.5	
4	1400	5.3	
5	1300	4.4	
6	1000	3.0	2.9
7	800	1.8	2.1
8	600	1.5	1.5

(*) @ 0 mmH₂O

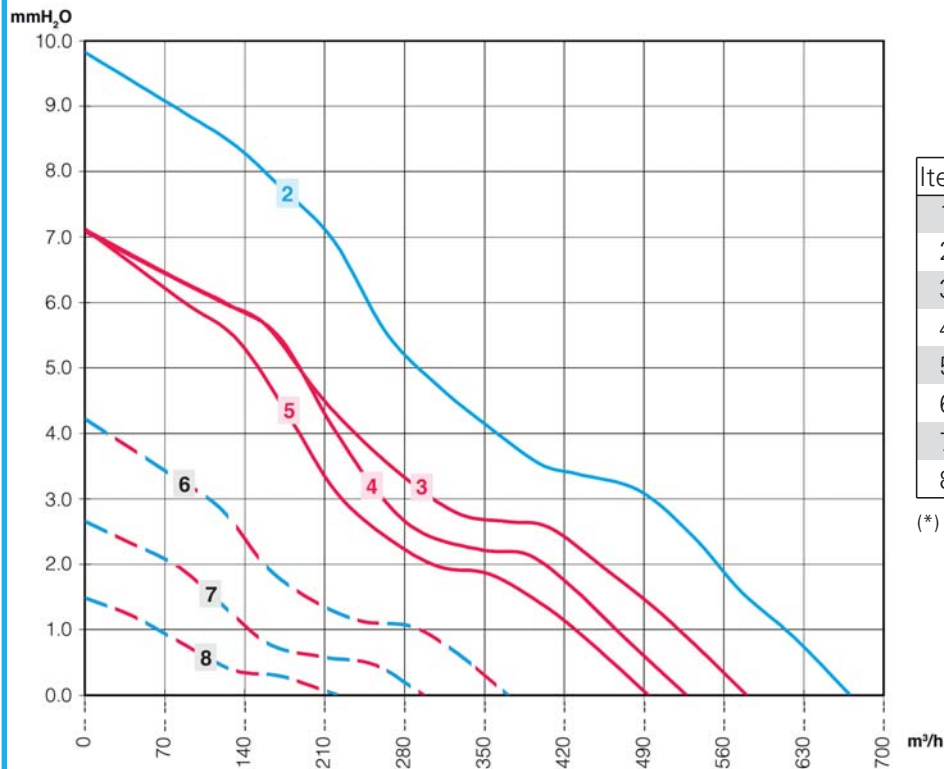
Fan blade air performance curves Ø 200x28°



ECM C-HC-HBS			
		12-10	20-25
		PM-D082_4P	PM-D083_4P
Item	Test RPM	W in (*)	W in (*)
1	2200		
2	1850		12.9
3	1600	10.9	
4	1400	8.8	
5	1300	7.3	
6	1000	4.4	3.8
7	800	3.0	2.7
8	600	2.1	1.5

(*) @ 0 mmH₂O

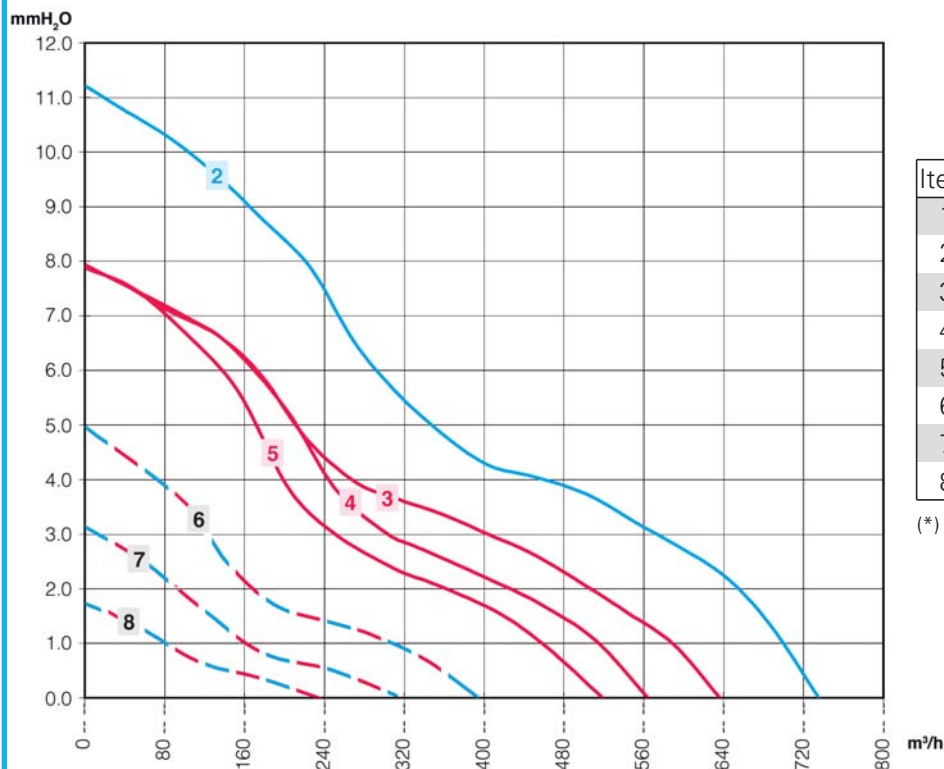
Fan blade air performance curves Ø 200x34°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-D082_7P	PM-D083_7P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		18.2
3	1600	15.9	
4	1400	13.2	
5	1300	11.2	
6	1000	6.5	6.5
7	800	4.4	4.2
8	600	2.7	2.7

(*) @ 0 mmH₂O

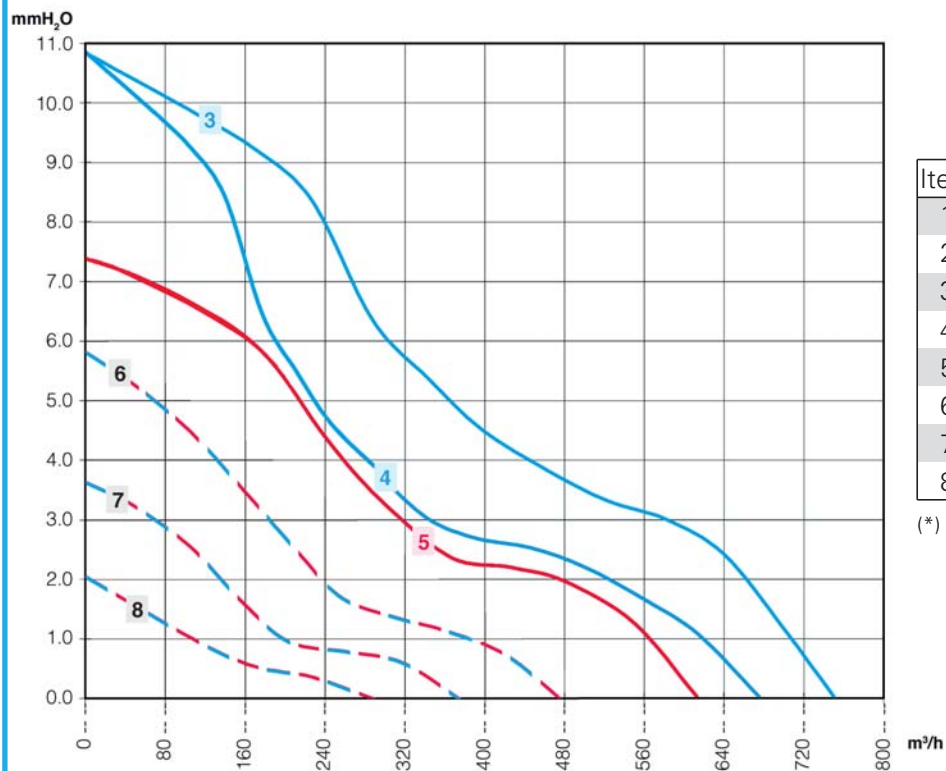
Fan blade air performance curves Ø 230x22°



ECM C-HC-HBS			
		12-10	20-25
Test		PM-E032_2A	PM-E033_2A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		13.5
3	1600	12.6	
4	1400	10.3	
5	1300	7.7	
6	1000	4.7	3.9
7	800	3.3	2.7
8	600	2.1	1.8

(*) @ 0 mmH₂O

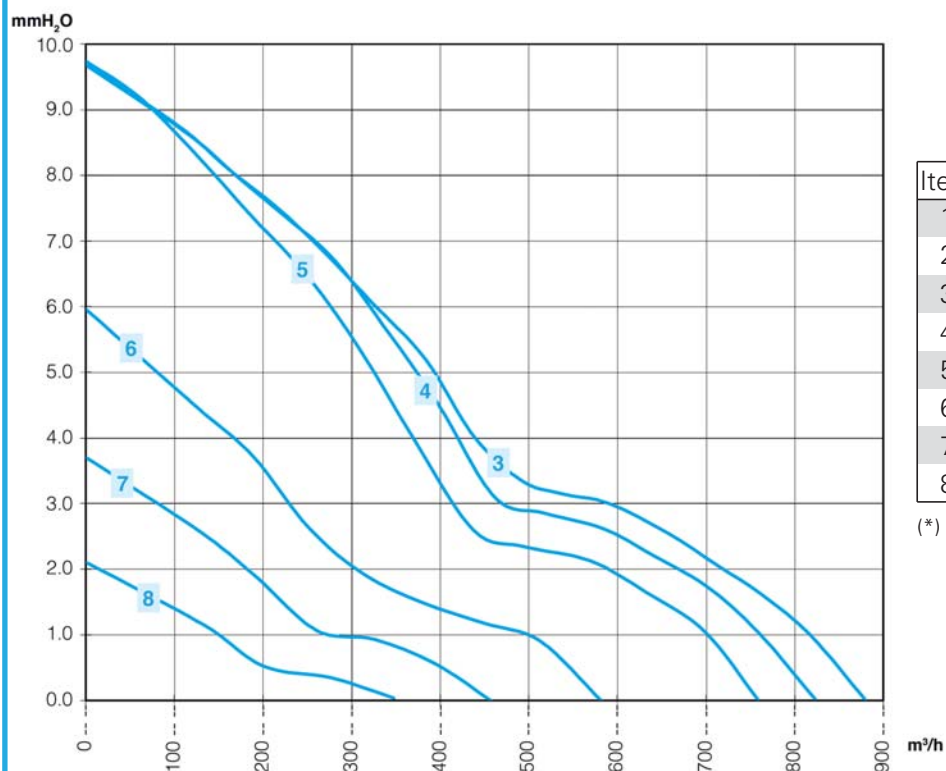
Fan blade air performance curves Ø 230x28°



ECM C-HC-HBS			
		12-10	20-25
		PM-E032_4A	PM-E033_4A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		17.3
4	1400		13.3
5	1300	15.0	
6	1000	7.7	5.9
7	800	5.6	3.9
8	600	3.0	2.4

(*) @ 0 mmH₂O

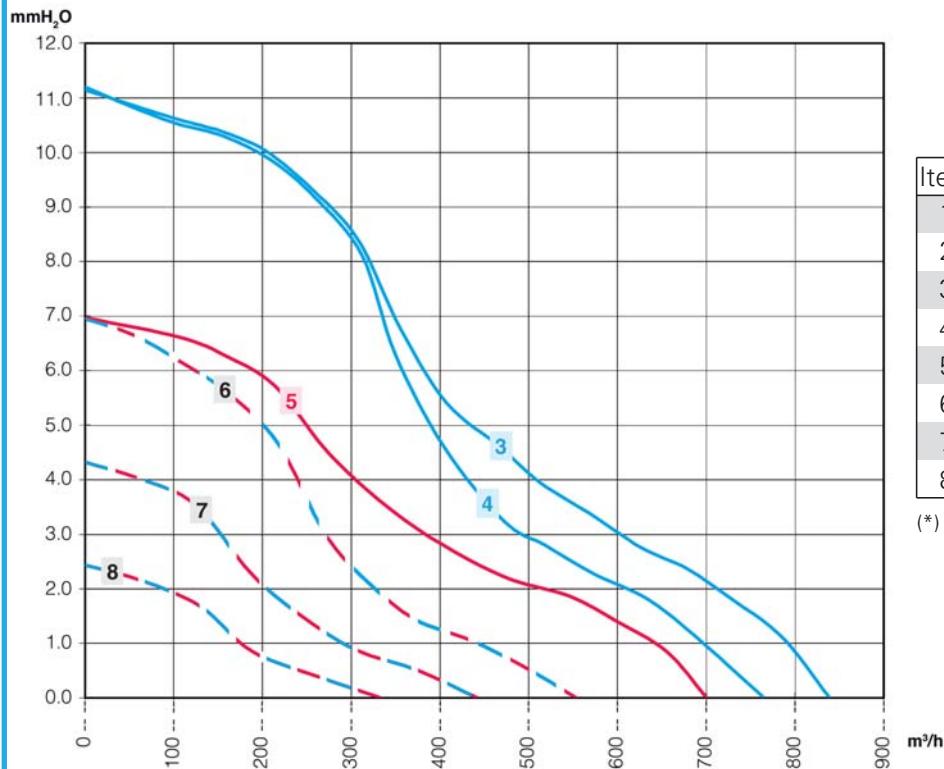
Fan blade air performance curves Ø 230x34°



ECM C-HC-HBS			
		12-10	20-25
			PM-E033_7A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		24.1
4	1400		21.4
5	1300		17.0
6	1000		9.7
7	800		6.2
8	600		3.6

(*) @ 0 mmH₂O

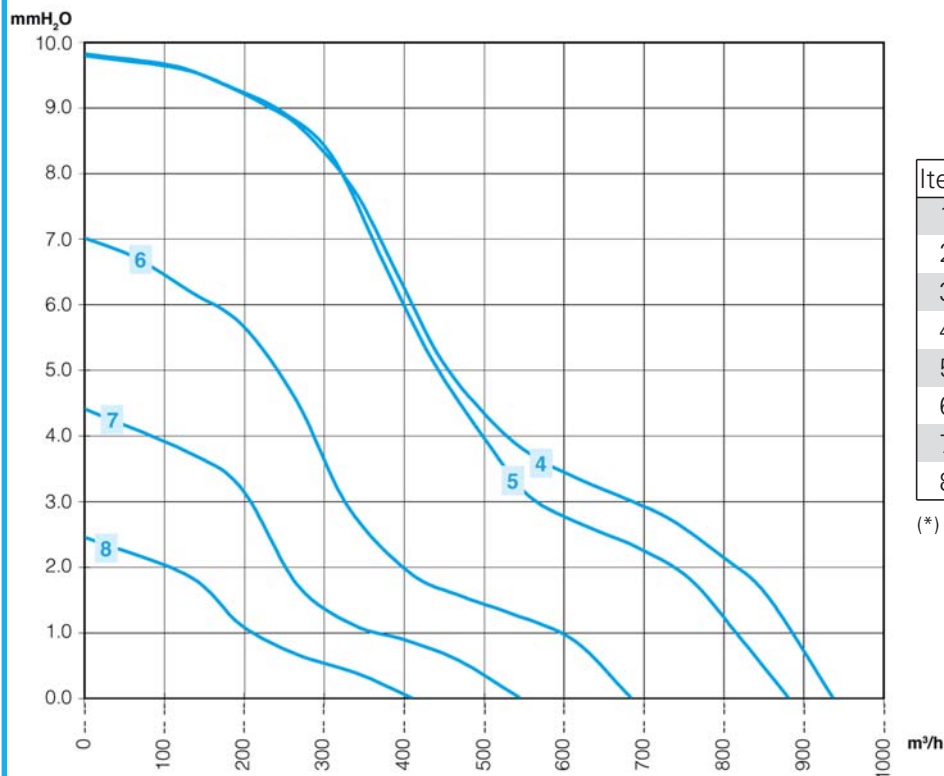
Fan blade air performance curves Ø 254x22°



ECM C-HC-HBS			
		12-10	20-25
		PM-H053_2P	PM-H052_2P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		18.8
4	1400		14.8
5	1300	18.2	
6	1000	10.6	7.1
7	800	7.1	4.5
8	600	4.2	2.7

(*) @ 0 mmH₂O

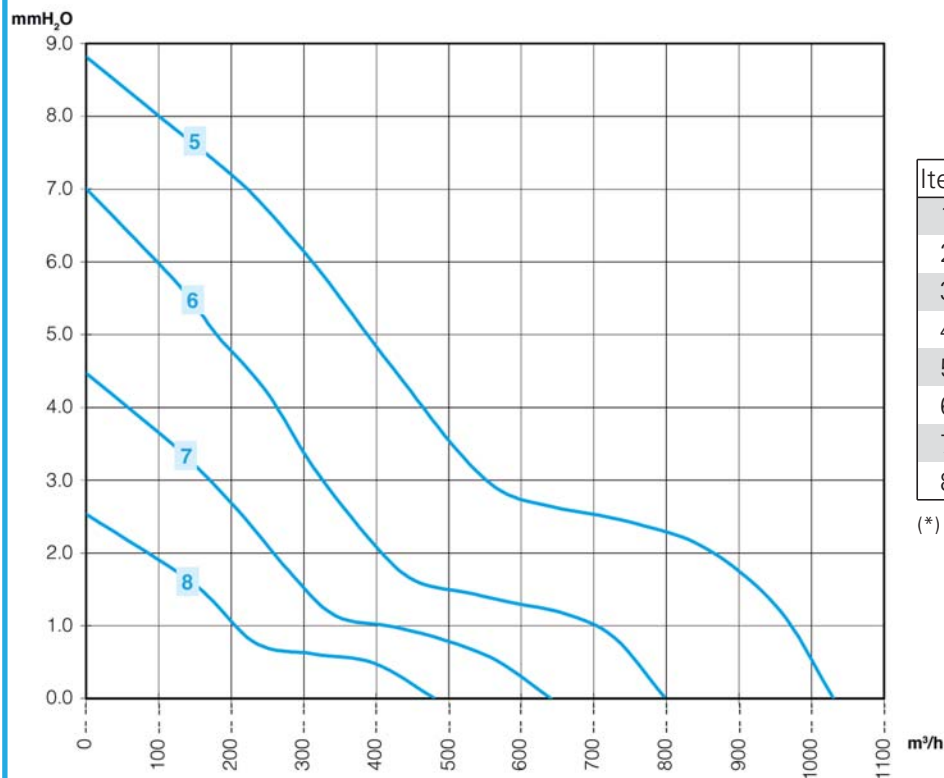
Fan blade air performance curves Ø 254x28°



ECM C-HC-HBS			
		12-10	20-25
			PM-H052_4P
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400		21.1
5	1300		17.9
6	1000		10.0
7	800		5.9
8	600		3.6

(*) @ 0 mmH₂O

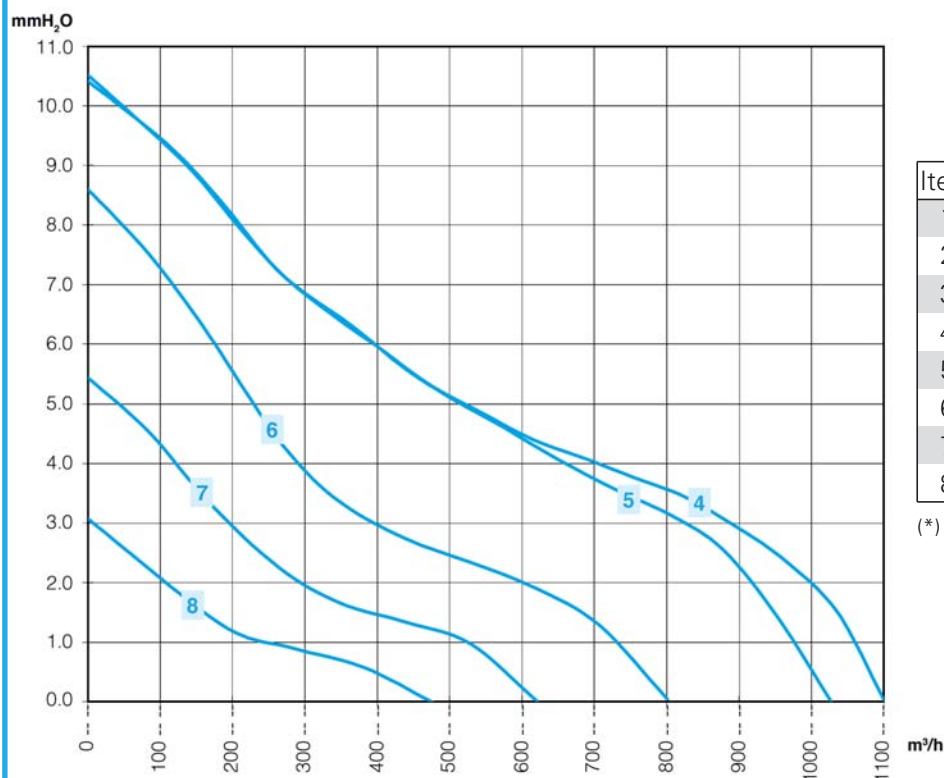
Fan blade air performance curves Ø 254x34°



ECM C-HC-HBS			
		12-10	20-25
		Test	PM-G042_7A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400		
5	1300		25.5
6	1000		13.4
7	800		8.3
8	600		5.0

(*) @ 0 mmH₂O

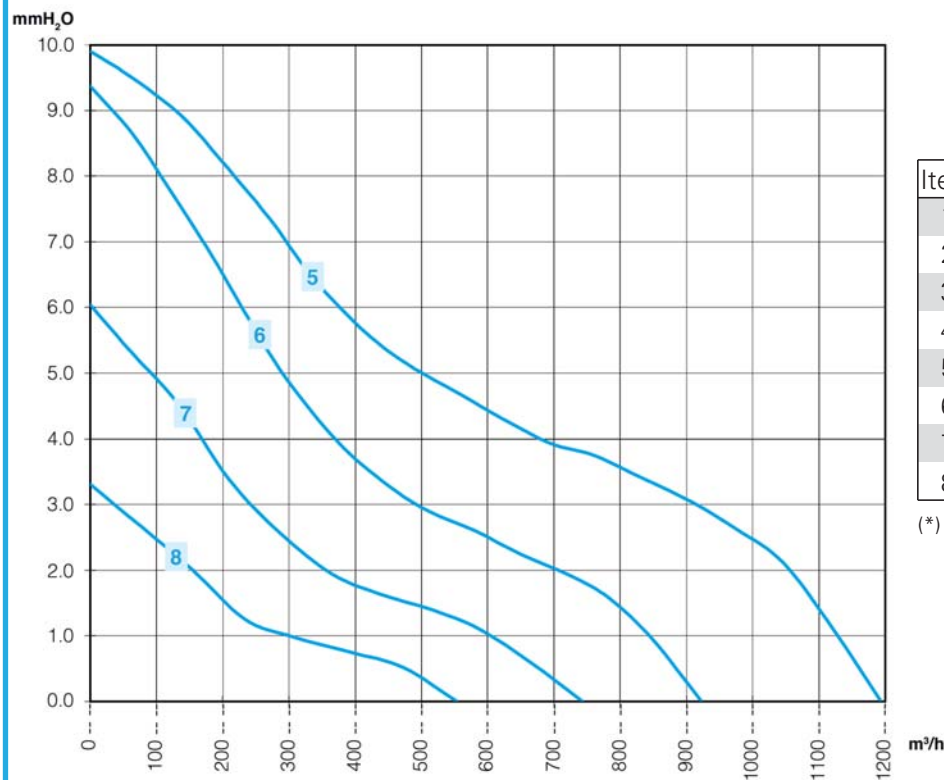
Fan blade air performance curves Ø 300x19°



ECM C-HC-HBS			
		12-10	20-25
		Test	PM-J010_1A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400		22.0
5	1300		18.0
6	1000		10.9
7	800		6.5
8	600		3.6

(*) @ 0 mmH₂O

Fan blade air performance curves Ø 300x22°



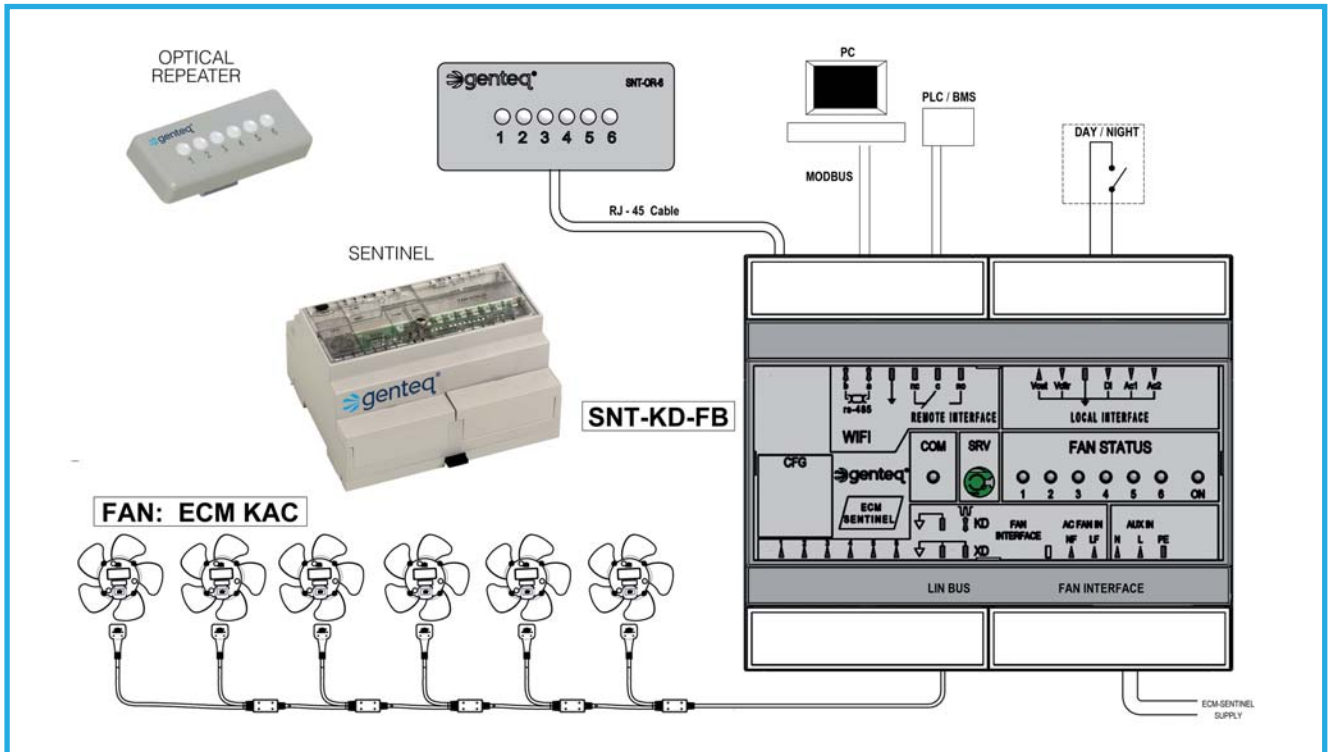
ECM C-HC-HBS			
		12-10	20-25
		Test	PM-J010_2A
Item	RPM	W in (*)	W in (*)
1	2200		
2	1850		
3	1600		
4	1400		
5	1300		23.8
6	1000		13.6
7	800		8.0
8	600		5.0

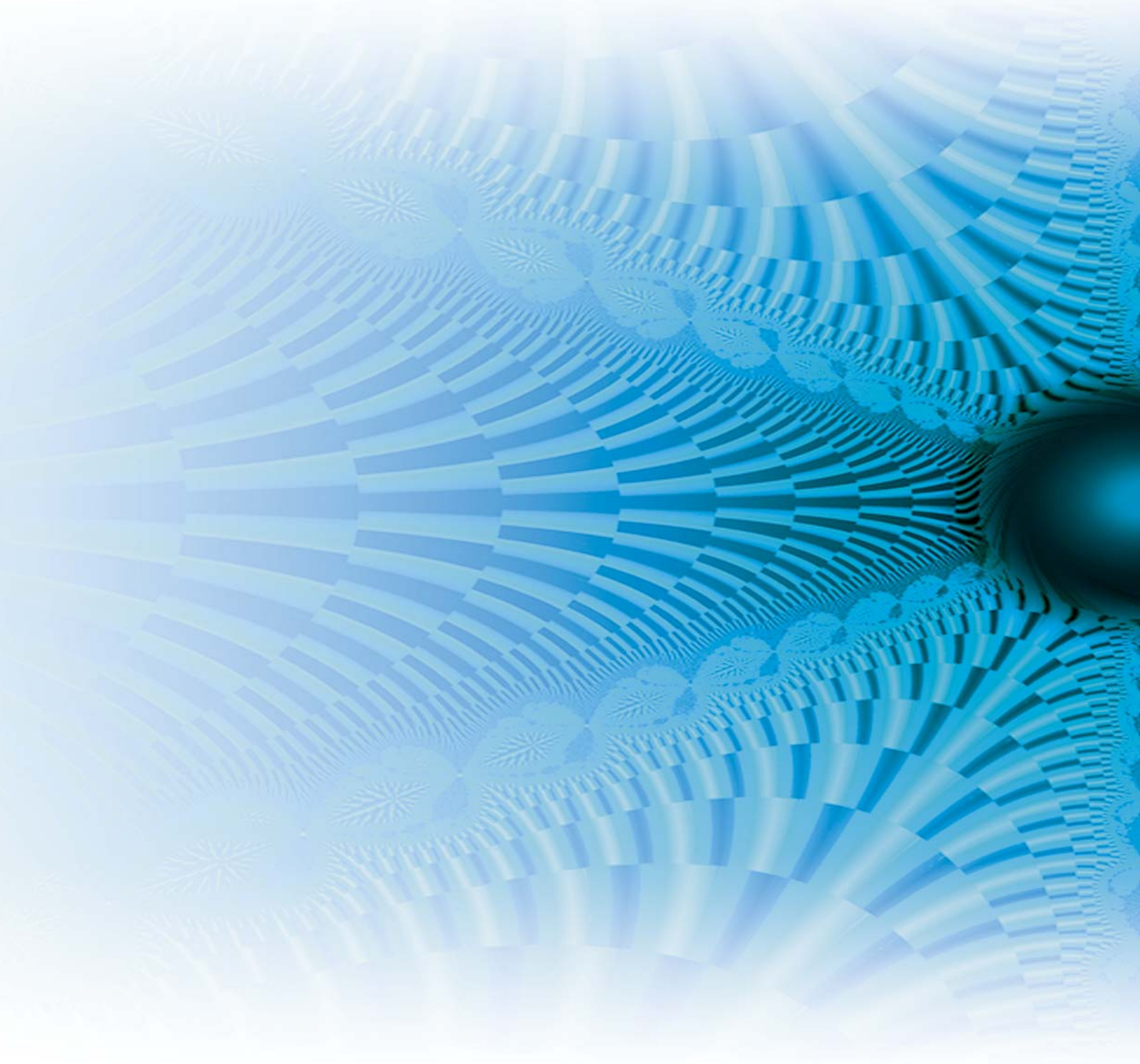
(*) @ 0 mmH₂O

SENTINEL

Deliveries

- Project developed on the existing motor design = full plenum compatibility
- Cabling simplified and standardized on existing plug = time efficient retrofitting
- RPM/T/Torque monitoring = predictive maintenance
- On-the-cabinet Andon signal = easier and on-the-store monitoring
- Full compatibility with existing monitoring systems = seamless embedding
- Precise indication of cabinet and motor within to monitoring system







N - M58 - CN
Shaded Pole Motors



IL PRODOTTO

N - M58 - CN SHADED POLE MOTORS

I motori Shaded Pole della Serie N sono diffusamente impiegati nella refrigerazione industriale, commerciale, gruppi condensanti, evaporanti e ventilazione di piccola portata. Sono motori monofase a 4 poli schermati funzionanti alla tensione nominale di 230 V, 50-60 Hz e con potenze da 5 a 34 Watt; classe di isolamento B, grado di protezione IP40.

CARATTERISTICHE GENERALI

La nuova gamma dei motori serie N a poli schermati nasce dall'esperienza maturata in più di mezzo secolo di attività da ELCO®, leader mondiale per know how, ricerca e sviluppo, unica in grado di offrire motori coperti da garanzia di 3 anni. Tutti i prodotti sono estremamente innovativi, per la volontà di ELCO® di soddisfare ogni richiesta nel modo più appropriato e sfruttando tecnologie in continua evoluzione.

MATERIALI

Tutti i prodotti sono realizzati con componenti rigorosamente selezionati tra i migliori fornitori e ogni componente è sottoposto a stretti controlli come previsto dalle Normative Europee. I coperchi sono realizzati in lega di alluminio. Inoltre ELCO® ha sviluppato una gamma di ventole utilizzando materie plastiche che ne riducono la deformazione, aumentano la stabilità dimensionale garantendone nel tempo la forma e la corretta bilanciatura.

POSIZIONE DI MONTAGGIO

Espressamente studiati per essere montati sia in orizzontale che verticale.

SENSO DI ROTAZIONE

Antiorario lato albero.

PRESTAZIONI

La versione standard funziona a 230 V, 50-60 Hz, ma sono disponibili diverse tensioni e frequenze di alimentazione.

FUNZIONAMENTO CONTINUO CON TEMPERATURA AMBIENTE

-40°C +40°C grazie ad uno speciale lubrificante, che migliora le caratteristiche del motore ultima generazione.

THE PRODUCT

N - M58 - CN SHADED POLE MOTORS

The Shaded Pole motors of the N Series are widely used in the industrial and commercial refrigeration, in the condensing and evaporating units and in small ventilating units.

These motors are 4 shaded poles, single phase, running at a nominal tension of 230 V, 50-60 Hz, with an output power ranging from 5 to 34 Watt; insulation class B and protection class IP40.

GENERAL FEATURES

The new range of shaded pole motors is the result of more than 50 years' experience of ELCO® as world leader not only for the sales volumes, but also for know how, research and development. ELCO® is today the only manufacturer offering a 3 years warranty on its shaded pole motors. All products are strongly innovative as ELCO® wants to answer the request of the market asking for new technologies.

MATERIALS

All products are realised with components that are strictly selected among the best possible suppliers and every component is severely tested as requested by European standards. End-shields are in aluminium. ELCO® has also developed a fan blades range in thermoplastic material.

This material reduces the deformation of the blade and improves the dimensional stability, granting at the same time its shape and the correct balancing.

MOUNTING

The motors are suitable for horizontal and vertical mounting.

DIRECTION OF ROTATION

CCW viewed from shaft side.

PERFORMANCES

Standard version runs at 230 V, 50-60 Hz; other solutions are available on request.

AMBIENT TEMPERATURE

-40°C +40°C; we use a special lubricant whose characteristics are better than those of the previous lubricants.



IL PRODOTTO

CLASSE DI ISOLAMENTO

B

GRADO DI PROTEZIONE

IP40, su richiesta IP44.

PROTEZIONE A ROTORE BLOCCATO

per impedenza o con protettore termico.

SUPPORTO PER ALBERO MOTORE

con bronzine autolubrificanti e autoallineanti
a richiesta con cuscinetti a sfera.

VENTOLE ASSIALI

Le ventole assiali a 5 pale in alluminio sono state studiate con forma e inclinazione tali da fornire un buon rendimento aeraulico. Sono disponibili nei diametri da 154 a 300 mm con inclinazioni comprese tra 19° e 34° sia nella versione aspirante che premente. La gamma delle ventole è stata ampliata con una serie in materiale termoplastico, il cui obiettivo peculiare è di ridurre la rumorosità. Queste ventole sono disponibili nei diametri e nelle inclinazioni più comunemente utilizzate.

ACCESSORI

A integrazione dei motori serie N è disponibile una vasta gamma di accessori che vanno dagli anelli, alle griglie, ai supporti, per finire con i cavi con connettore.

IMBALLO

I motori sono imballati in scatole di cartone, impilati in pallet e protetti da una pellicola di termoretraibile.

OMOLOGAZIONI

Tutti i prodotti sono sviluppati, progettati e costruiti in conformità alla Direttiva Bassa Tensione 2006/95/EC, alla Direttiva EMC 93/68/EC, alla Direttiva macchine 2006/42/EC e seguendo la normativa standard CENELEC EN 60335-1. I motori qui presentati sono approvati VDE, UL/CSA, GOST, CCC, SASO e sono provvisti dei marchi sotto riportati.

THE PRODUCT

INSULATION CLASS

B

PROTECTION GRADE

IP40, upon request IP44.

LOCKED ROTOR PROTECTION

impedance or thermal protector.

SHAFT SUPPORT

self-lubricating and self-aligning sleeve bearings; ball bearings on request.

AXIAL FAN BLADES

The 5-bladed aluminium range shape and inclinations have been studied to optimise the airflow. The range of diameters available is from 154 mm up to 300 mm, with pitches varying from 19° to 34°; this is valid both for the sucking and the blowing version. The fan blades range has been increased by designing a new thermoplastic series whose main target is the reduction of the noise level. These plastic fan blades are available in the most popular diameters and pitches.

ACCESSORIES

A wide range of accessories is available: rings, grids, brackets and cables complete of connectors.

PACKAGING

Motors are packed in carton boxes, piled into pallets and shrink-wrapped.

CERTIFICATIONS

All the products are developed, designed and manufactured in compliance with the low tension directive 2006/95/EC, with the EMC directive 93/68/EC, with the machinery directive 2006/42/EC and in accordance with the EN 60335-1 CENELEC standards. The motors illustrated here are VDE, UL/CSA, GOST, CCC, SASO recognised and are supplied with the attached marks impressed.

MOTORI N FISSAGGI

I motori della serie N sono stati sviluppati per essere fissati attraverso diverse soluzioni riassunte in questa tabella:
utilizzando le viti sporgenti per il montaggio con anello o rete, i fori filettati sul coperchio posteriore o ancora i piedini per montaggio con supporto 26 mm o 18 mm.
Ogni versione sarà illustrata nel dettaglio nelle pagine successive.

N MOTORS FIXING

The motors of the N series have been designed to be fixed through different solutions that are shown in the following table:
motors can be fixed by using the protruding screws for ring or grid,
by the 3 threaded holes on back shield,
or using the bottom screws for bracket mounting.

Coperchi in alluminio - Aluminium end-shields

	T1 Pag. 47	T2 Pag. 48	T3 Pag. 49	T4 Pag. 50	T5 Pag. 51
4xM4 viti anteriori x 10/12 4xM4 x 10/12 screws Drive End	●	●	●	●	●
3xM4 fori posteriori interasse Ø 72 3xM4 holes on 72 PCD non Drive End	●			●	●
3xM4 fori anteriori interasse Ø 72 3xM4 holes on 72 PCD Drive End					●
Piede 26 mm 2xM4 screws stud mounting, 26 mm spaced			●	●	●
Piede 18 mm 2xM4 screws stud mounting, 18 mm spaced			A RICHIESTA ON DEMAND	A RICHIESTA ON DEMAND	●
	T1 Pag. 52	T2 Pag. 53	T3 Pag. 54	T4 Pag. 55	
Connessione Plug-in Plug-in connection	●	●	●	●	

MOTORI N T1

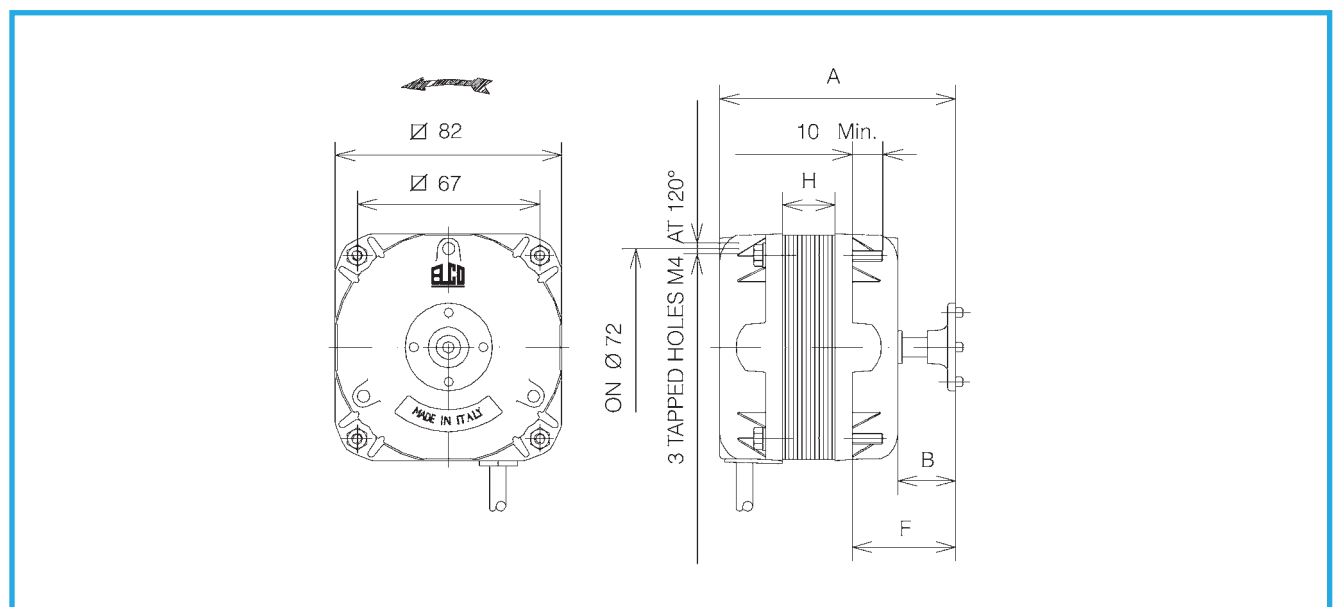
Due differenti tipi di fissaggio possibili:

- 3 fori filettati M4 a 120° su Ø 72 mm sul coperchio posteriore
- viti sporgenti M4 lato uscita albero per anello/rete.

N MOTORS T1

Two different types of fixation:

- 3 x M4 tapped holes on 72 mm PCD at 120°
- M4 protruding screws Drive End for ring/grid.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET1T05ZVN001	230	5	32	0,20	1300/1550	500	20 Pcs
NET1T10ZVN002	230	10	38	0,23	1300/1550	500	20 Pcs
NET1T16PVN001	230	16	65	0,45	1300/1550	500	15 Pcs
NET1T25PVN001	230	25	95	0,68	1300/1550	500	10 Pcs
NET1T34PVN001	230	34	120	0,87	1300/1550	500	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET1T05ZVN001	13	80	21	-	-	-	38
NET1T10ZVN002	20	87	22	-	-	-	38
NET1T16PVN001	25	92	21	-	-	-	38
NET1T25PVN001	40	107	21	-	-	-	37
NET1T34PVN001	45	119	28	-	-	-	45

MOTORI N T2

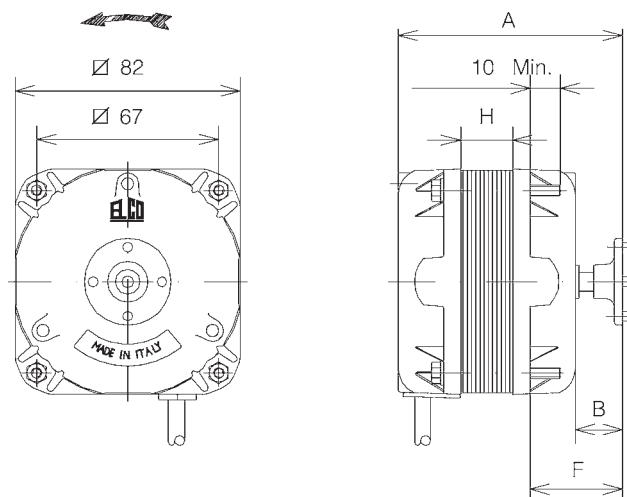
Un tipo di fissaggio possibile:

- viti sporgenti M4 lato uscita albero per anello/rete.

N MOTORS T2

One type of fixation:

- M4 protruding screws Drive End for ring/grid.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET2T05ZVN001	230	5	32	0,20	1300/1550	500	20 Pcs
NET2T10ZVN002	230	10	38	0,23	1300/1550	500	20 Pcs
NET2T16PVN001	230	16	65	0,45	1300/1550	500	15 Pcs
NET2T25PVN001	230	25	95	0,68	1300/1550	500	10 Pcs
NET2T34PVN002	230	34	120	0,87	1300/1550	500	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET2T05ZVN001	13	76	17	-	-	-	34
NET2T10ZVN002	20	83	18	-	-	-	34
NET2T16PVN001	25	87	16	-	-	-	33
NET2T25PVN001	40	107	21	-	-	-	37
NET2T34PVN002	45	119	28	-	-	-	40

MOTORI N T3

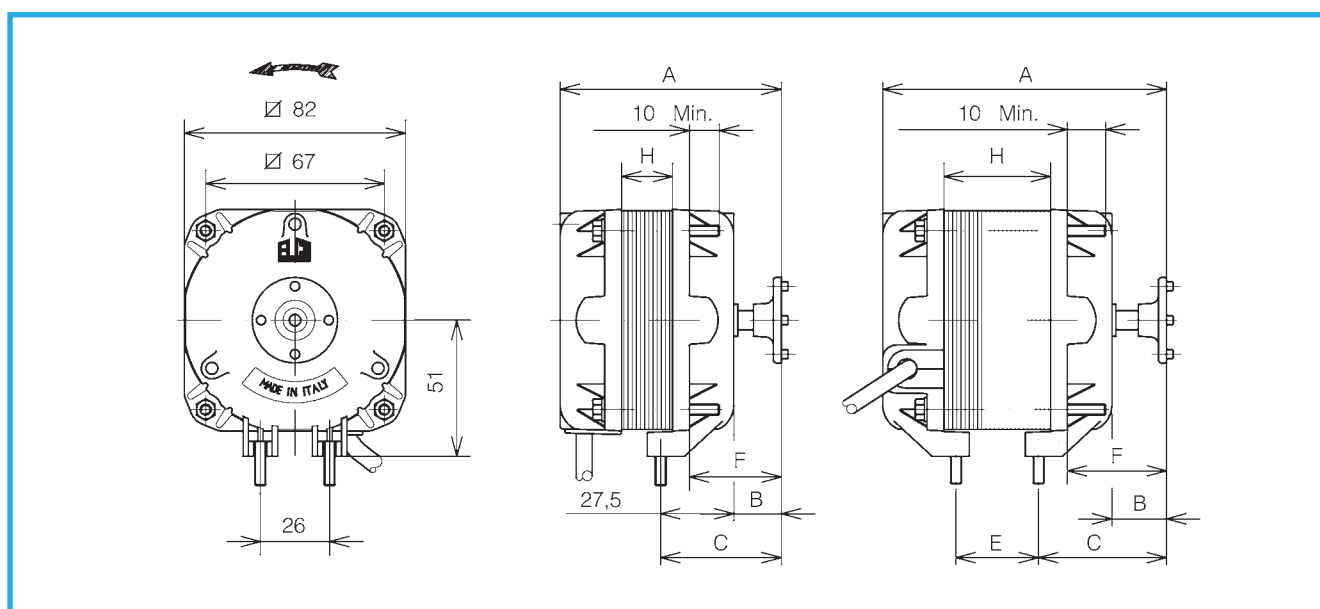
Due differenti tipi di fissaggio possibili:

- viti sporgenti M4 lato uscita albero per anello/rete
- 2 viti M4 in basso per fissaggio con staffa.

N MOTORS T3

Two different types of fixation:

- M4 protruding screws Drive End for ring/grid
- 2 x M4 bottom screws for stud mounting.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET3T05ZVN004	230	5	32	0,20	1300/1550	500	20 Pcs
NET3T10ZVN001	230	10	38	0,23	1300/1550	500	20 Pcs
NET3T16PVN001	230	16	65	0,45	1300/1550	500	15 Pcs
NET3T25PVN004	230	25	95	0,68	1300/1550	500	10 Pcs
NET3T34PVN002	230	34	120	0,87	1300/1550	1000	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET3T05ZVN004	13	76	17	44	-	-	34
NET3T10ZVN001	20	83	18	45	-	-	34
NET3T16PVN001	25	87	16	43	-	-	33
NET3T25PVN004	40	102	16	43	-	31	32
NET3T34PVN002	45	119	28	56	-	36	45

MOTORI N T4

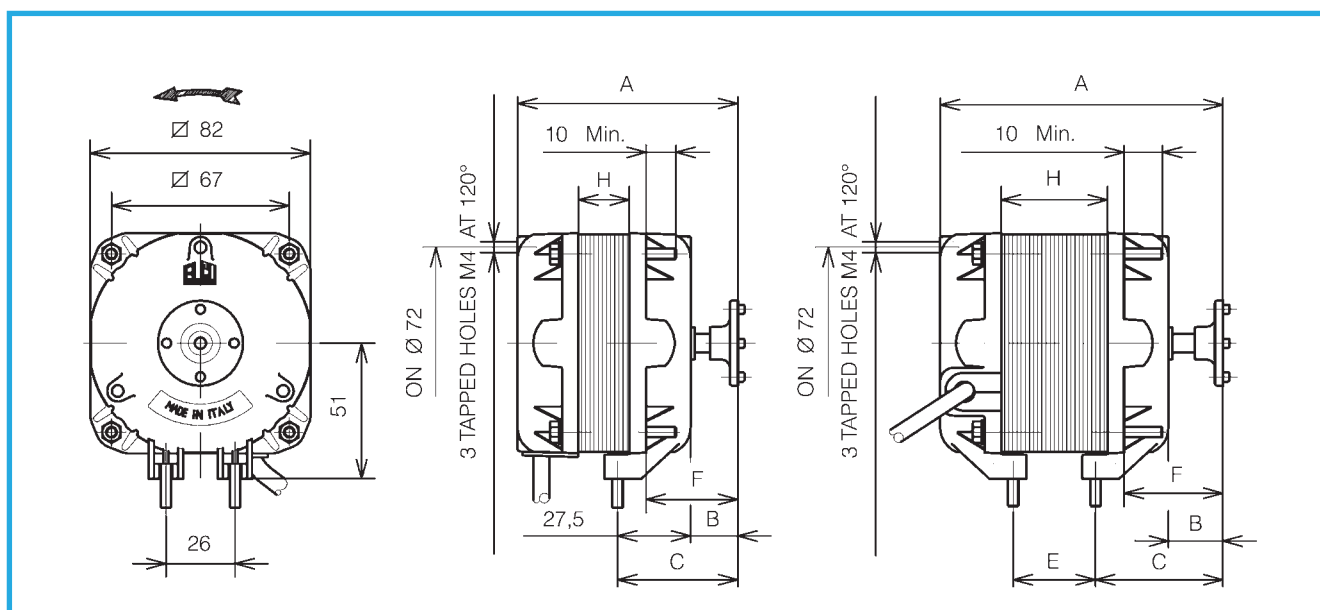
Tre differenti tipi di fissaggio possibili:

- 3 fori filettati M4 a 120°
su Ø 72 mm sul coperchio posteriore
- viti sporgenti M4 lato uscita
albero per anello/rete
- 2 viti M4 in basso
per fissaggio con staffa.

N MOTORS T4

Three different types of fixation:

- 3 x M4 tapped holes
on 72 mm PCD at 120°
- M4 protruding screws
Drive End for ring/grid
- 2 x M4 bottom screws
for stud mounting.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET4T05ZVN001	230	5	32	0,20	1300/1550	500	20 Pcs
NET4T10ZVN001	230	10	38	0,23	1300/1550	500	20 Pcs
NET4T16PVN001	230	16	65	0,45	1300/1550	500	15 Pcs
NET4T25PVN001	230	25	95	0,68	1300/1550	500	10 Pcs
NET4T34PVN001	230	34	120	0,87	1300/1550	500	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET4T05ZVN001	13	80	21	48	-	-	38
NET4T10ZVN001	20	87	22	49	-	-	38
NET4T16PVN001	25	92	21	48	-	-	38
NET4T25PVN001	40	112	26	53	-	31	42
NET4T34PVN001	45	119	28	56	-	36	45

MOTORI N T5

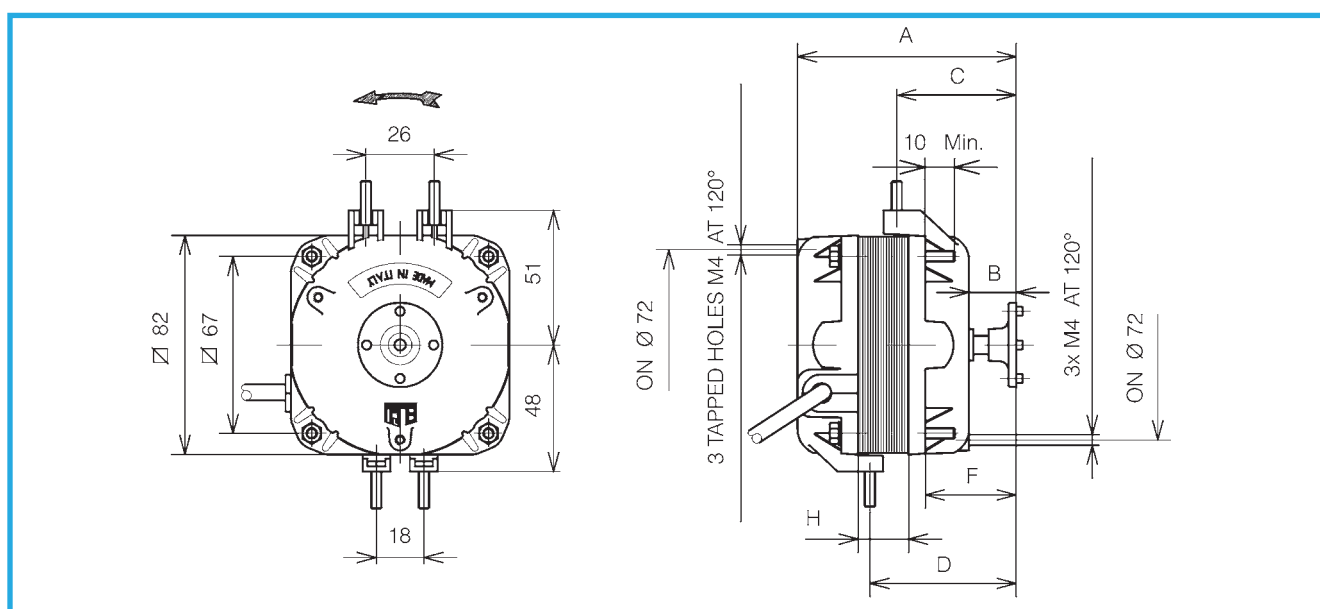
Motore universale con cinque differenti tipi di fissaggio possibili:

- 3 fori filettati M4 a 120°
su Ø 72 mm sul coperchio posteriore
- 3 fori filettati M4 a 120°
su Ø 72 mm sul coperchio anteriore
- viti sporgenti M4 lato uscita albero per anello/rete
- 2 viti M4 in basso per fissaggio
con staffa, interasse 26 mm
- 2 viti M4 in alto per fissaggio con staffa,
interasse 18 mm.

N MOTORS T5

Universal motor with five different types of fixation:

- 3 x M4 tapped holes on 72 mm
PCD at 120°, non Drive End
- 3 x M4 tapped holes on 72 mm
PCD at 120°, Drive End
- M4 protruding screws Drive End for ring/grid
- 2 x M4 bottom screws
for stud mounting, 26 mm spaced
- 2 x M4 top screws
for stud mounting, 18 mm spaced.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET5T05ZVN001	230	5	32	0,20	1300/1550	500	15 Pcs
NET5T10ZVN001	230	10	38	0,23	1300/1550	500	15 Pcs
NET5T16PVN001	230	16	65	0,45	1300/1550	500	15 Pcs
NET5T25PVN001	230	25	95	0,68	1300/1550	500	10 Pcs
NET5T34PVN001	230	34	120	0,87	1300/1550	500	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET5T05ZVN001	13	80	21	48	52	-	38
NET5T10ZVN001	20	87	22	49	59	-	38
NET5T16PVN001	25	92	21	48	64	-	38
NET5T25PVN001	40	112	26	53	84	-	42
NET5T34PVN001	45	119	28	56	92	-	45

MOTORI N T1 PLUG-IN

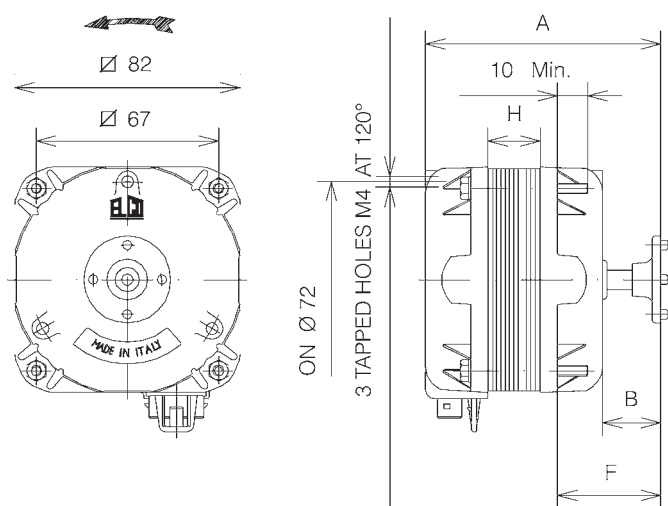
Motore con connettore speciale, vedi pagina 71
(Brevetto Elco® Nr. 0765024)
per collegamento mobile a cavo di alimentazione.
Due differenti tipi di fissaggio possibili:

- 3 fori filettati M4
a 120° su Ø 72 mm sul coperchio posteriore
- viti sporgenti M4
lato uscita albero per anello/rete.

N MOTORS T1 PLUG-IN

Motor with special flat pin terminal, refer to page 71
(Elco® Patent No. 0765024)
for connection to the supply cable.
Two different types of fixation:

- 3 x M4 tapped holes
on 72 mm PCD at 120°
- M4 protruding screws
Drive End for ring/grid.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET1C05ZVN001	230	5	32	0,20	1300/1550	-	20 Pcs
NET1C10ZVN001	230	10	38	0,23	1300/1550	-	20 Pcs
NET1C16PVN001	230	16	65	0,45	1300/1550	-	15 Pcs
NET1C25PVN001	230	25	95	0,68	1300/1550	-	10 Pcs
NET1C34PVN001	230	34	120	0,87	1300/1550	-	10 Pcs

Dimensioni - Dimensions

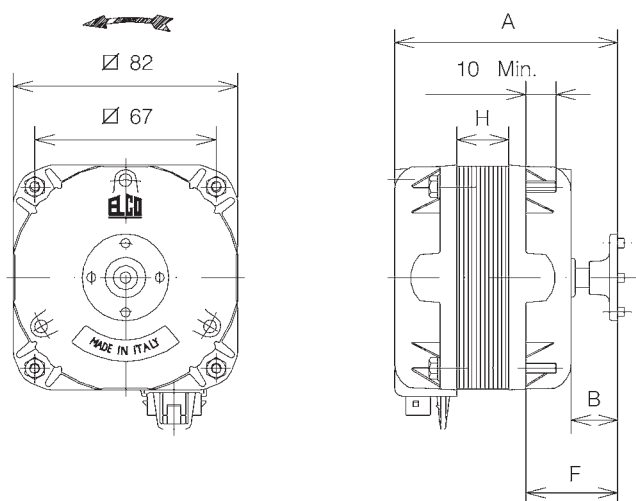
Codice Part Number	H	A	B	C	D	E	F
NET1C05ZVN001	13	80	21	-	-	-	38
NET1C10ZVN001	20	87	22	-	-	-	38
NET1C16PVN001	25	92	21	-	-	-	38
NET1C25PVN001	40	107	21	-	-	-	37
NET1C34PVN001	45	119	28	-	-	-	45

MOTORI N T2 PLUG-IN

Motore con connettore speciale, vedi pagina 71
(Brevetto Elco® Nr. 0765024)
per collegamento mobile a cavo di alimentazione.
Un tipo di fissaggio possibile:
• viti sporgenti M4
lato uscita albero per anello/rete.

N MOTORS T2 PLUG-IN

Motor with special flat pin terminal, refer to page 71
(Elco® Patent No. 0765024)
for connection to the supply cable.
One type of fixation:
• M4 protruding screws
Drive End for ring/grid.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET2C05ZVN001	230	5	32	0,20	1300/1550	-	20 Pcs
NET2C10ZVN001	230	10	38	0,23	1300/1550	-	20 Pcs
NET2C16PVN001	230	16	65	0,45	1300/1550	-	15 Pcs
NET2C25PVN001	230	25	95	0,68	1300/1550	-	10 Pcs
NET2C34PVN001	230	34	120	0,87	1300/1550	-	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET2C05ZVN001	13	76	17	-	-	-	34
NET2C10ZVN001	20	83	18	-	-	-	34
NET2C16PVN001	25	87	16	-	-	-	33
NET2C25PVN001	40	107	21	-	-	-	37
NET2C34PVN001	45	114	23	-	-	-	40

MOTORI N T3 PLUG-IN

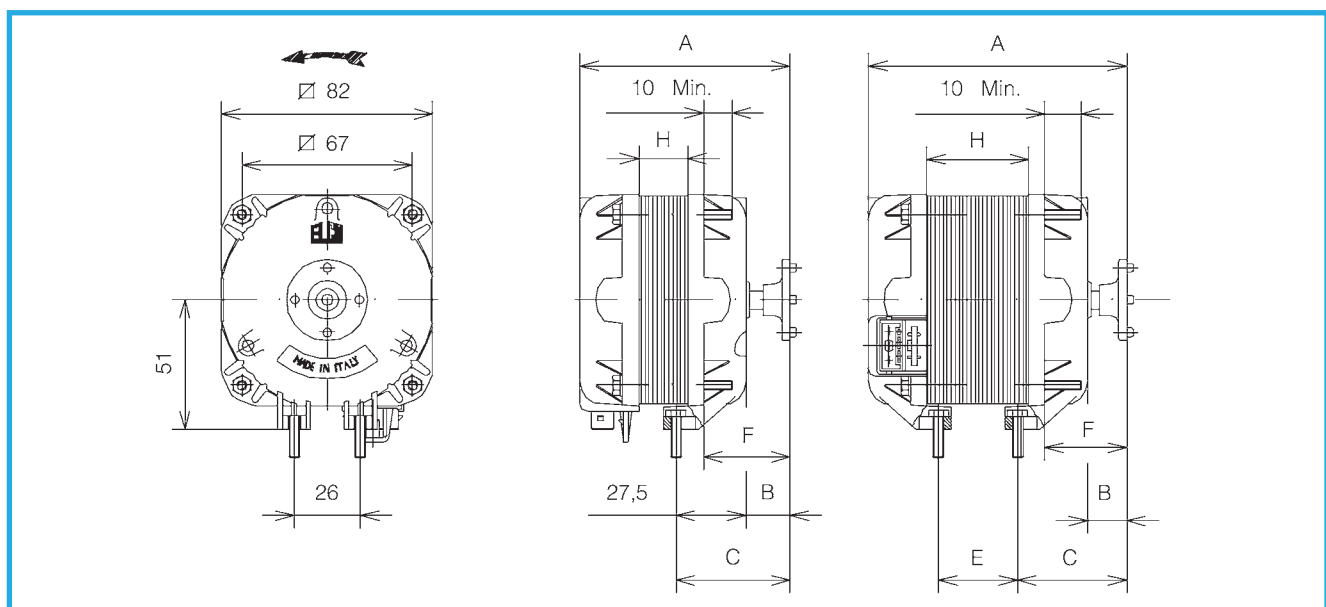
Motore con connettore speciale, vedi pagina 71
(Brevetto Elco® Nr. 0765024)
per collegamento mobile a cavo di alimentazione.
Due differenti tipi di fissaggio possibili:

- viti sporgenti M4
lato uscita albero per anello/rete
- 2 viti M4 in basso
per fissaggio con staffa.

N MOTORS T3 PLUG-IN

Motor with special flat pin terminal, refer to page 71
(Elco® Patent No. 0765024)
for connection to the supply cable.
Two different types of fixation:

- M4 protruding screws
Drive End for ring/grid
- 2 x M4 bottom screws
for stud mounting.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET3C05ZVN001	230	5	32	0,20	1300/1550	-	20 Pcs
NET3C10ZVN001	230	10	38	0,23	1300/1550	-	20 Pcs
NET3C16PVN001	230	16	65	0,45	1300/1550	-	15 Pcs
NET3C25PVN002	230	25	95	0,68	1300/1550	-	10 Pcs
NET3C34PVN001	230	34	120	0,87	1300/1550	-	10 Pcs

Dimensioni - Dimensions

Codice Part Number	H	A	B	C	D	E	F
NET3C05ZVN001	13	76	17	44	-	-	34
NET3C10ZVN001	20	83	18	45	-	-	34
NET3C16PVN001	25	87	16	43	-	-	33
NET3C25PVN002	40	102	16	43	-	31	32
NET3C34PVN001	45	119	28	56	-	36	45

MOTORI N T4 PLUG-IN

Motore con connettore speciale, vedi pagina 71
(Brevetto Elco® Nr. 0765024)
per collegamento mobile a cavo di alimentazione.

Tre differenti tipi di fissaggio possibili:

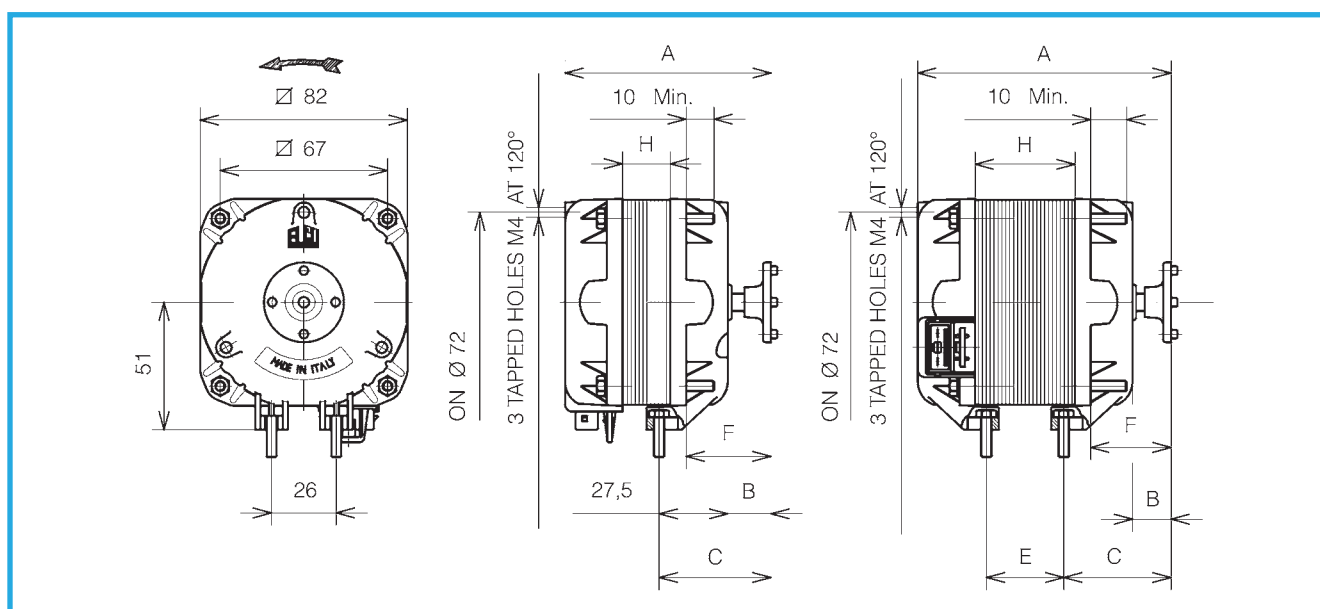
- 3 fori filettati M4 a 120°
su Ø 72 mm sul coperchio posteriore
- viti sporgenti M4
lato uscita albero per anello/rete
- 2 viti M4 in basso
per fissaggio con staffa.

N MOTORS T4 PLUG-IN

Motor with special flat pin terminal, refer to page 71
(Elco® Patent No. 0765024)
for connection to the supply cable.

Three different types of fixation:

- 3 x M4 tapped holes
on 72 mm PCD at 120°
- M4 protruding screws
Drive End for ring/grid
- 2 x M4 bottom screws
for stud mounting.



Prestazioni - Performances

Codice Part Number	Volt	W Out	W In	Amp	RPM	Cavo-Cable mm	Imballo Packing
NET4C05ZVN001	230	5	32	0,20	1300/1550	-	20 Pcs
NET4C10ZVN001	230	10	38	0,23	1300/1550	-	20 Pcs
NET4C16PVN001	230	16	65	0,45	1300/1550	-	15 Pcs
NET4C25PVN001	230	25	95	0,68	1300/1550	-	10 Pcs
NET4C34PVN001	230	34	120	0,87	1300/1550	-	10 Pcs

Dimensioni - Dimensions

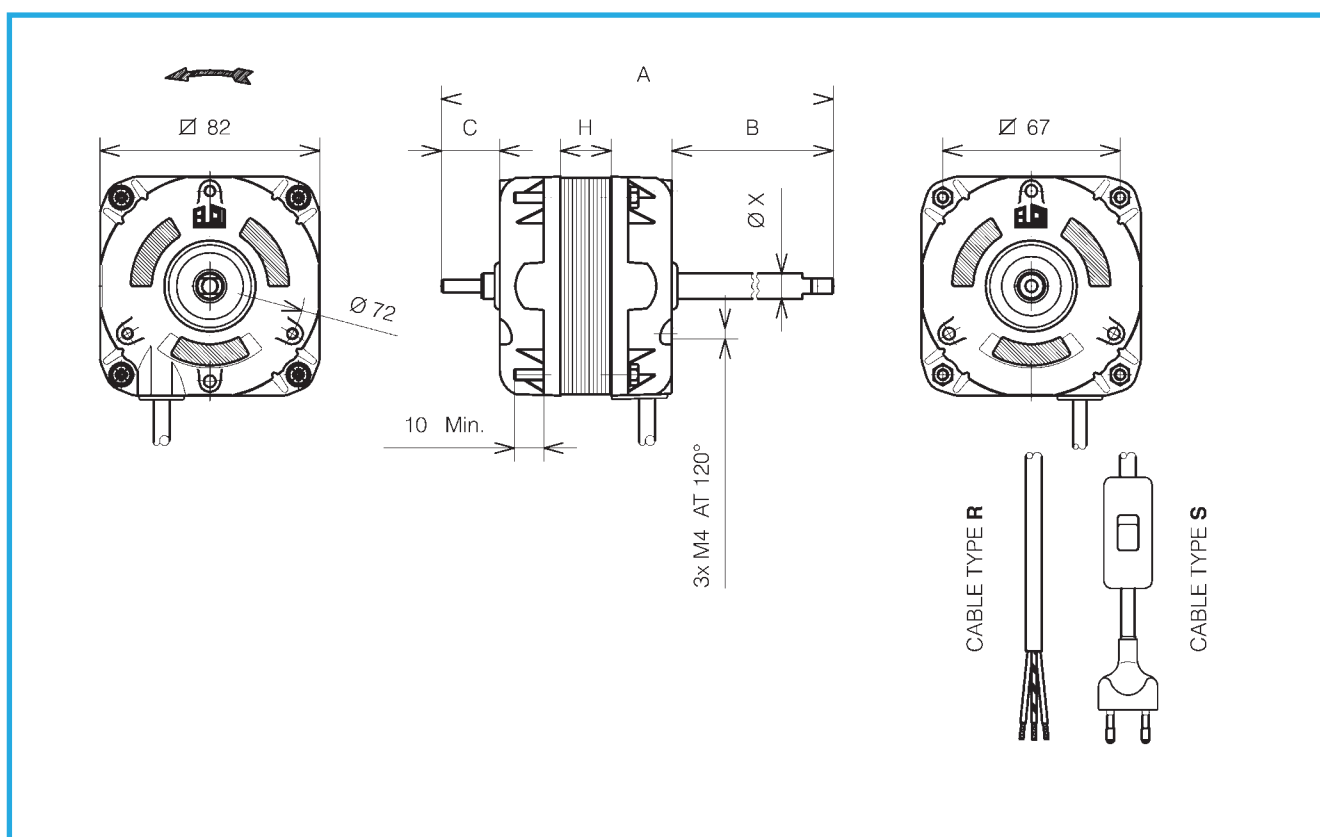
Codice Part Number	H	A	B	C	D	E	F
NET4C05ZVN001	13	80	21	48	-	-	38
NET4C10ZVN001	20	87	22	49	-	-	38
NET4C16PVN001	25	92	21	48	-	-	38
NET4C25PVN001	40	112	26	53	-	31	42
NET4C34PVN001	45	119	28	56	-	36	45

MOTORI N MIXER

Motori speciali con doppia sporgenza albero per collegamento ventolina agitatrice liquido e ventola di raffreddamento motore (non comprese nella fornitura).

N MOTORS MIXER

Special double shaft motors for the coupling of the mixer fan and of the cooling fan (not included).



Prestazioni e Dimensioni - Performances and Dimensions

Codice Part Number	Volt-Hz	W Out	W In	H	A	B	C	$\varnothing X$	Cavo-Cable mm
NET7B08NNN501	127-60	8	43	20	275	188	22	9,52	S 2040
NET7B08NNN801	220-60	8	39	20	275	188	22	9,52	S 2040
NET7T07PNN201	230-50/60	7	30	30	334	251	-	7,00	R 1030
NET7B28NNN501	127-60	28	98	45	413	300	22	9,52	S 2015
NET7B28NNN502	127-60	28	98	45	363	250	22	9,52	S 2015
NET7B20NNN801	220-60	20	90	45	363	250	22	9,52	S 2015
NET7B20NNN802	220-60	20	90	45	413	300	22	9,52	S 2015
NET7B20NNN803	220-60	20	90	45	453	340	22	9,52	S 2015

ETICHETTA

LABEL

Etichetta olografica
identificativa
prodotto originale



Original product
holographic
identification label

Sigla motore
Motor description

Settimana - anno di produzione
Week - year of production

Omologazioni
Certifications

VN 10-20 /303 12-02
230/240V ~ 50/60Hz
10/38W 0,23A CL.B
PROT.IMP. 1300/1550RPM


REG. - Nr. xxxx
14537565
NET1T10ZVN004

Dati elettrici
Rated data

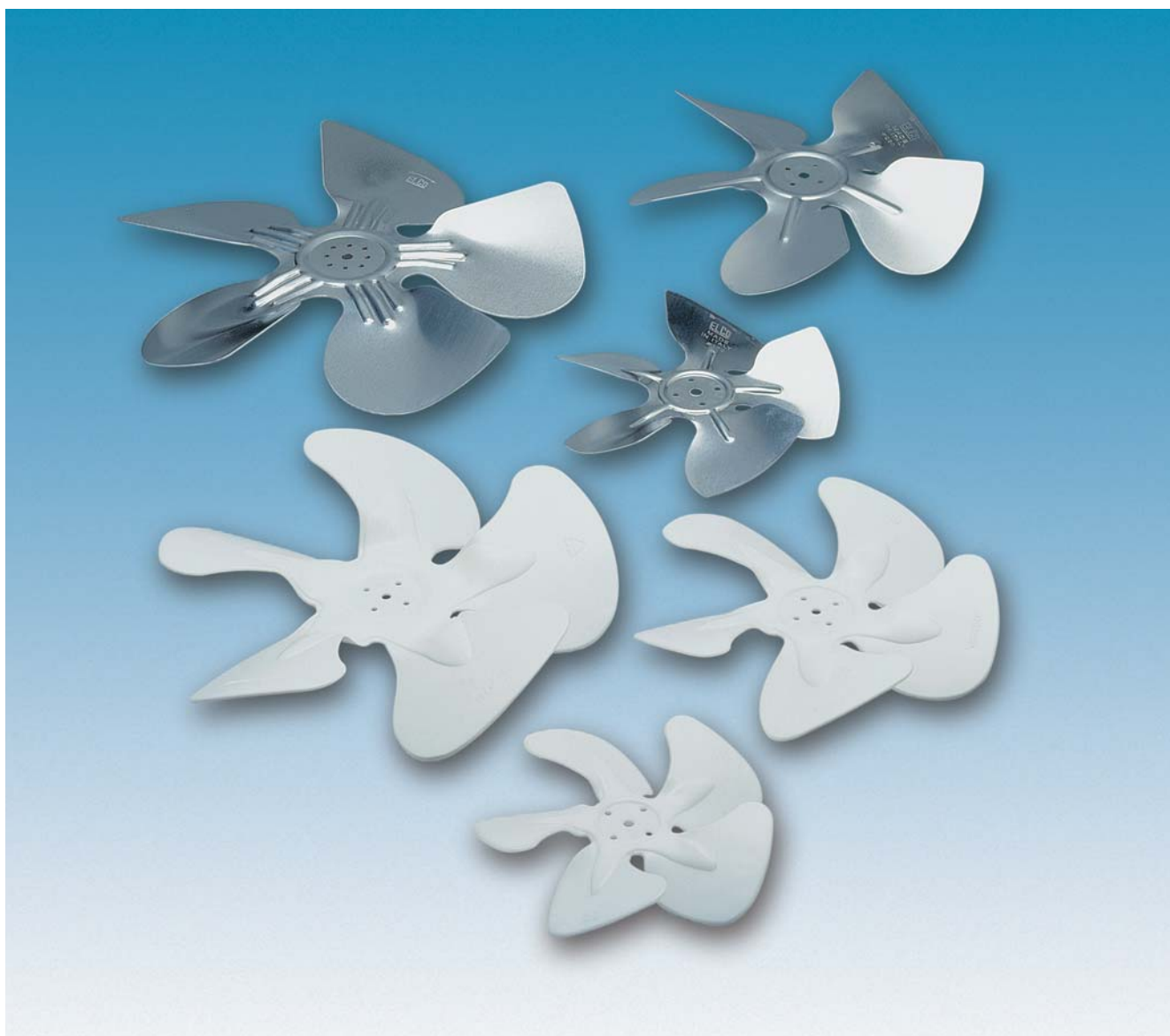
Codice prodotto
Product part number
Codice cliente (facoltativo)
Customer part number (optional)

VENTOLE

La gamma di ventole assiali a 5 pale comprende le versioni in alluminio (aspiranti e prementi) nei Ø 154, 172, 200, 230, 254, 275, 300 con inclinazioni comprese tra 19° e 34°, e in materiale termoplastico nei Ø 154, 172, 200, 230, 254 e con inclinazioni definite.

FAN BLADES

The range of 5 bladed axial fans includes aluminium models, sucking and blowing, in the following Ø 154, 172, 200, 230, 254, 275, 300, pitches available from 19° up to 34° and thermoplastic models, Ø 154, 172, 200, 230, 254 and specific pitches are available.



VENTOLE

In questa tabella sono indicati i limiti per l'accoppiamento ottimale fra motori e ventole.

N.B.:

Per ogni diametro di ventola è indicata l'inclinazione massima sopportabile dal motore, per non superare i limiti di temperatura imposti dalla classe di isolamento "B" ad un valore di prevalenza di 2 mmH₂O.

FAN BLADES

In this table you have the limits for the motor / fan blade couplings.

P.D.:

For each fan blade diameter the maximum motor inclination is indicated, not to exceed the temperature limits imposed by "B" insulation class to a 2 mmH₂O value.

Ventole in plastica - Limite di accoppiamento motore/ventola Plastic fan blades - Motor/fan coupling limits

Motore Motor	VN 5-13		VN 10-20		VNT 16-25		VNT 25-40		VNT 34-45		Ø Ventola Ø Fan blade
Freq. Hz	50	60	50	60	50	60	50	60	50	60	
α (°) max	28	28									154
	31	31									172
	34	34	34	34							200
			31	31	31	31					230
					28	28	28	28			254

Ventole in alluminio - Limite di accoppiamento motore/ventola Aluminium fan blades - Motor/fan coupling limits

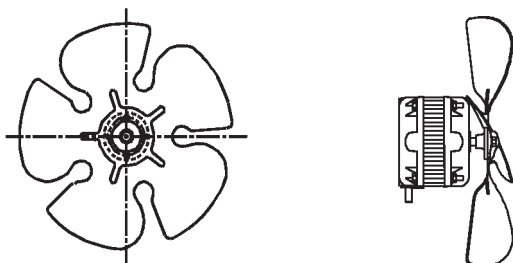
Motore Motor	VN 5-13		VN 10-20		VNT 16-25		VNT 25-40		VNT 34-45		Ø Ventola Ø Fan blade
Freq. Hz	50	60	50	60	50	60	50	60	50	60	
α (°) max	34	34									154
	34	34	34	34							172
	34	34	34	34							200
	25	22	34	28	34	34					230
			28	22	34	28	34	34			254
					25	22	31	31	34	28	300

CURVE DI PORTATA MOTORE CON VENTOLA IN PLASTICA

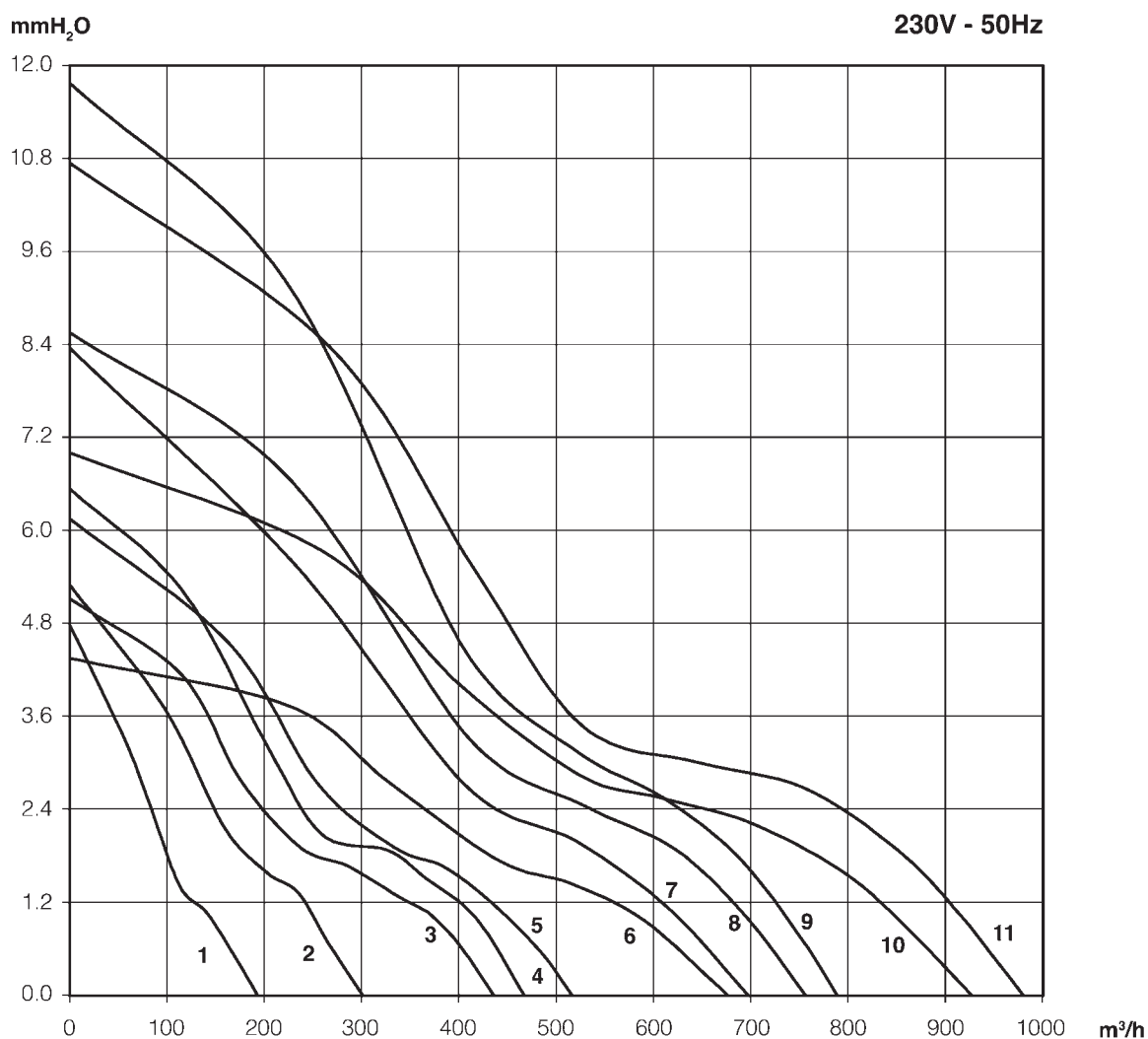
Le curve sotto riportate indicano le prestazioni aerauliche per i più comuni accoppiamenti motore/ventola in plastica.

AIR FLOW PERFORMANCE MOTOR WITH PLASTIC FAN BLADE

The under-drawn curves show the airflow performances for the most common motor/plastic blade couplings.



- 1** = VN 5-13 + Ø 154x28°
- 2** = VN 5-13 + Ø 172x31°
- 3** = VN 5-13 + Ø 200x28°
- 4** = VN 10-20 + Ø 200x28°
- 5** = VN 10-20 + Ø 200x34°
- 6** = VN 10-20 + Ø 230x31°
- 7** = VNT 16-25 + Ø 230x31°
- 8** = VNT 16-25 + Ø 254x22°
- 9** = VNT 25-40 + Ø 254x22°
- 10** = VNT 16-25 + Ø 254x28°
- 11** = VNT 25-40 + Ø 254x28°

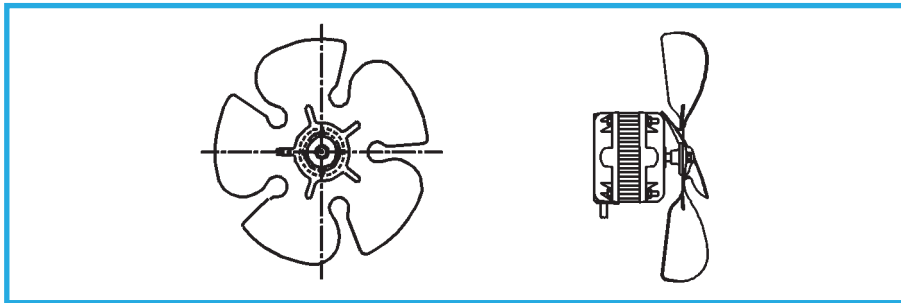


CURVE DI PORTATA MOTORE CON VENTOLA IN ALLUMINIO

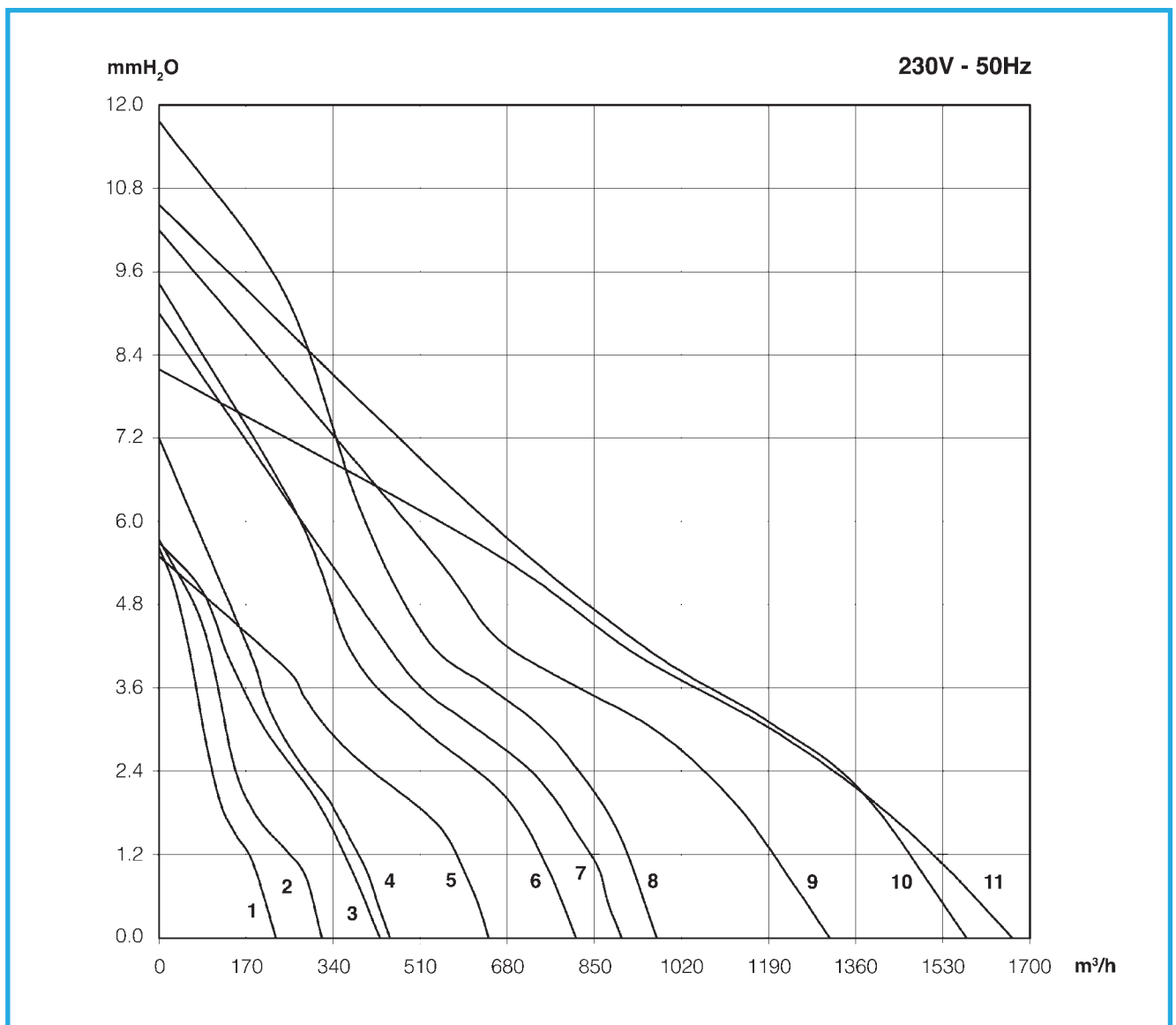
Le curve sotto riportate indicano le prestazioni aerauliche per i più comuni accoppiamenti motore/ventola in alluminio.

AIR FLOW PERFORMANCE MOTOR WITH ALUMINIUM FAN BLADE

The under-drawn curves show the airflow performances for the most common motor/aluminium blade couplings.



- 1** = VN 5-13 + Ø 154x34°
- 2** = VN 5-13 + Ø 172x34°
- 3** = VN 5-13 + Ø 200x28°
- 4** = VN 10-20 + Ø 200x28°
- 5** = VN 10-20 + Ø 230x28°
- 6** = VNT 16-25 + Ø 230x34°
- 7** = VNT 16-25 + Ø 254x28°
- 8** = VNT 25-40 + Ø 254x28°
- 9** = VNT 25-40 + Ø 300x22°
- 10** = VNT 34-45 + Ø 300x28°
- 11** = VNT 34-45 + Ø 300x34°

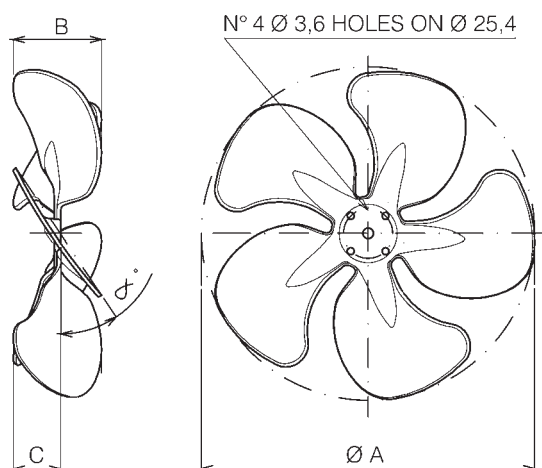


VENTOLE PLASTICA ASPIRANTI

Tavola di identificazione delle ventole in plastica
Campo di impiego -30°C +60°C.

PLASTIC FAN BLADES SUCKING

Selection table for plastic fan blades
Temperature range -30°C +60°C.



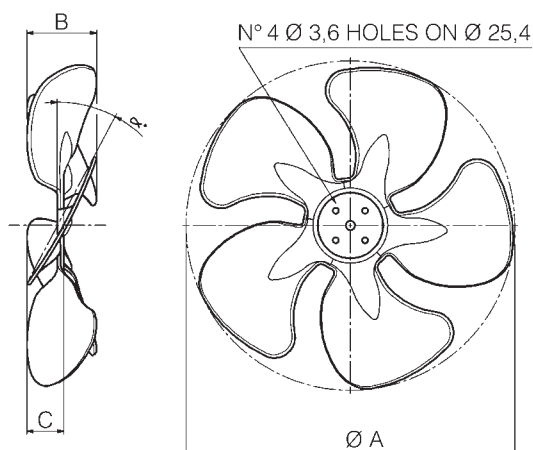
Ø A		154	172	200	230	254
22°	Part Number					4VEA008
	B					47
	C					25
	Packing					170
25°	Part Number				4VEA013	
	B				46	
	C				23	
	Packing				180	
28°	Part Number	4VEA012		4VEA009	4VEA018	4VEA007
	B	34		44	49	56
	C	19		27	23,5	32
	Packing	226		180	160	140
31°	Part Number		4VEA011		4VEA006	
	B		40		52	
	C		24		28	
	Packing		220		170	
34°	Part Number			4VEA010		
	B			51		
	C			29		
	Packing			170		

VENTOLE PLASTICA PREMENTI

Tavola di identificazione delle ventole in plastica
Campo di impiego -30°C +60°C.

PLASTIC FAN BLADES BLOWING

Selection table for plastic fan blades
Temperature range -30°C +60°C.



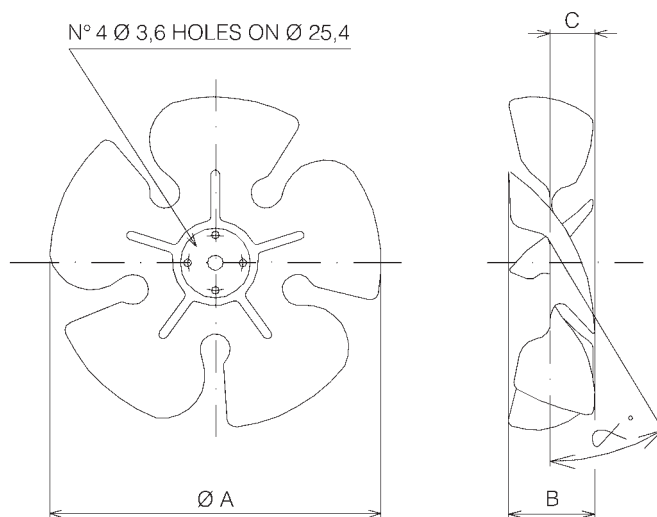
Ø A		154	172	200	230	254
19°	Part Number	4VEP001				4VEP007
	B	26				39
	C	14				25
	Packing	26				160
22°	Part Number					
	B					
	C					
	Packing					
25°	Part Number					4VEP006
	B					46
	C					21
	Packing					130
28°	Part Number					
	B					
	C					
	Packing					
31°	Part Number			4VEP003		
	B			47,5		
	C			28		
	Packing			175		

VENTOLE ALLUMINIO ASPIRANTI

Tavola di identificazione delle ventole in alluminio
versione aspirante.

ALUMINIUM FAN BLADES SUCKING

Selection table for aluminium fan blades
sucking version.



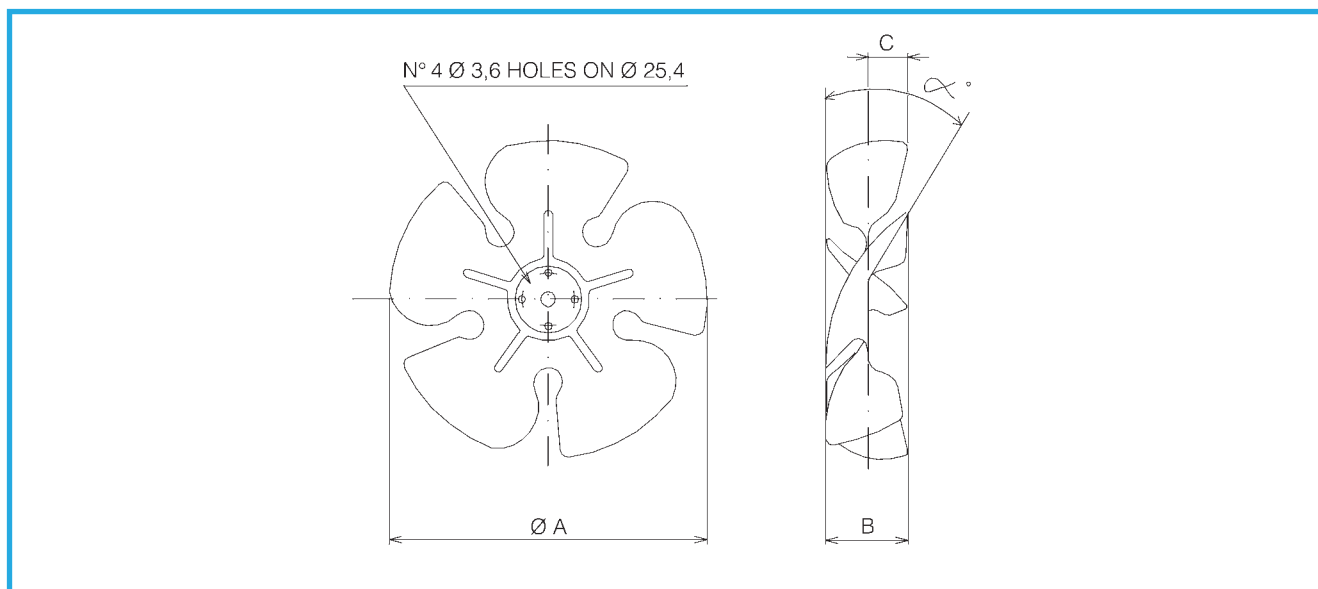
$\varnothing A$		154	172	200	230	254	300
19°	Part Number	4012309	4012298	4012200	4012148	4012259	4012258
	B	24	25	26	28	29	35
	C	13	15	15	16	16	23
	Packing	50	50	50	50	45	30
22°	Part Number	4012002	4012005	4012009	4012013	4012015	4012018
	B	27	28	30	33	34	41
	C	15	15	15	20	20	25
	Packing	50	50	50	50	45	30
25°	Part Number	4012256	4012257	4012220	4012149	4012255	4012262
	B	31	31	33	37	38	45
	C	17	16	16	22	22	28
	Packing	50	50	50	50	50	20
28°	Part Number	4012003	4012006	4012010	4012038	4012132	4012019
	B	34	35	37	41	42	54
	C	17	17	18	24	24	29
	Packing	50	50	50	50	50	20
31°	Part Number	4012004	4012299	4012011	4012014	4012016	4012020
	B	37	39	41	46	46	55
	C	18	18	20	26	27	31
	Packing	50	50	50	40	40	20
34°	Part Number	4012310	4012300	4012201	4012150	4012261	4012263
	B	40	42	44	50	51	63
	C	21	21	23	29	30	33
	Packing	50	50	50	40	40	20

VENTOLE ALLUMINIO PREMENTI

Tavola di identificazione delle ventole in alluminio versione premente.

ALUMINIUM FAN BLADES BLOWING

Selection table for aluminium fan blades blowing version.



Ø A		154	172	200	230	254	300
19°	Part Number	4012530	4012540	4012510	4012344	4012342	50121001
	B	24	25	26	28	29	37
	C	13	15	15	16	16	22
	Packing	50	50	50	40	40	30
22°	Part Number	4012531	4012541	4012511	4012321	4012322	50121002
	B	27	28	30	34	35	40
	C	15	15	15	20	20	23
	Packing	50	50	50	40	30	20
25°	Part Number	4012532	4012542	4012512	4012345	4012347	50121009
	B	31	31	33	39	40	49
	C	15	16	16	22	22	29
	Packing	50	50	50	25	25	20
28°	Part Number	4012533	4012543	4012513	4012324	4012325	50121003
	B	34	35	37	43	44	57
	C	17	17	18	24	24	34
	Packing	50	50	50	25	25	20
31°	Part Number	4012534	4012544	4012514	4012346	4012323	
	B	37	39	41	47	48	
	C	18	18	20	26	27	
	Packing	40	40	40	20	20	
34°	Part Number	4012535	4012545	4012515	4012329	4012328	50121005
	B	40	42	44	52	53	65
	C	21	21	23	29	30	35
	Packing	40	40	40	20	20	15

ACCESSORI

GRIGLIE, ANELLI, CAVI, STAFFE

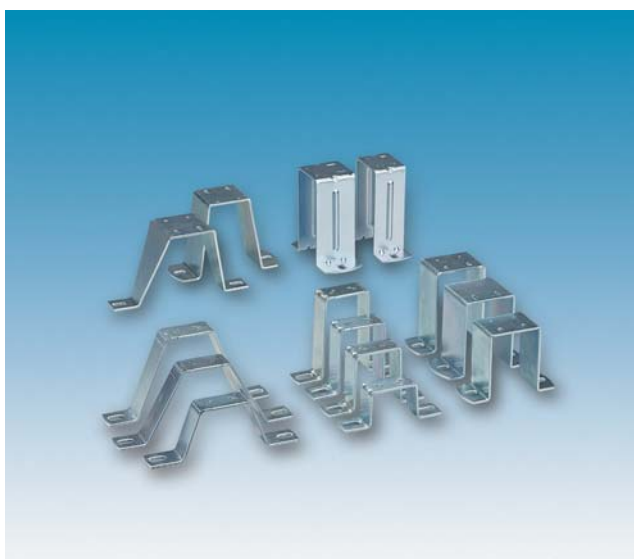
Le tipologie di accessori descritti nelle pagine successive sono quelle standard. Su richiesta, possono essere prodotti componenti specifici secondo disegno del cliente.



ACCESSORI

GRIDS, RINGS, CABLES, BRACKETS

The accessories illustrated in the following pages are the standard ones. Special components can be manufactured on request.

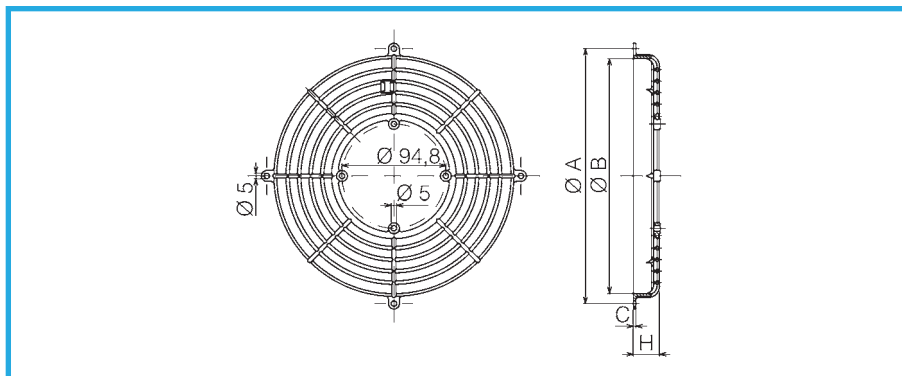


GRIGLIE

GRIDS

Griglie in materiale
termoplastico

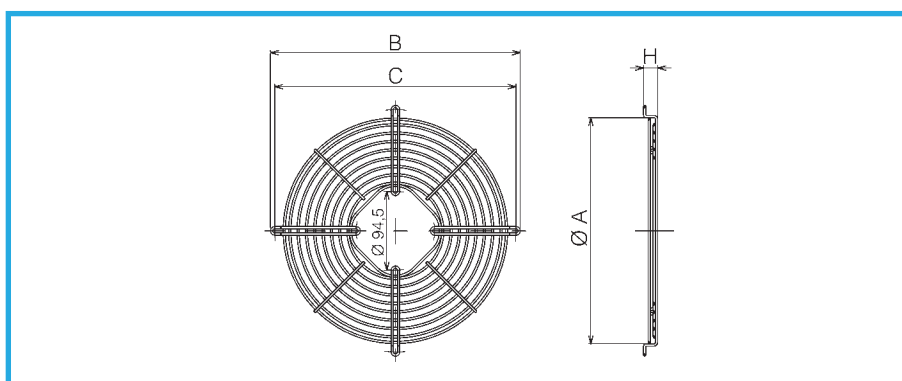
Thermoplastic
grids



Ø Ventola Ø Fan Blade			200	230	254	
A			232	264	288	
B			214	240	264	
C			2,5	4,0	4,0	
H			24	27	24	
Codice - Part Number			1055223	1055594	1055224	

Griglie in acciaio
galvanizzato

Galvanized steel
grids



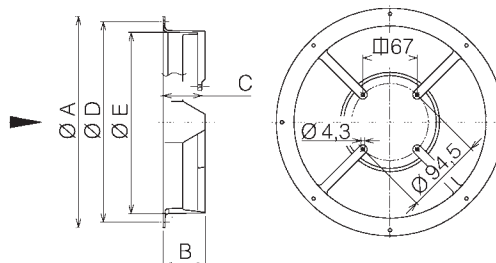
Ø Ventola Ø Fan Blade	154	172	200	230	254	300
A	170	188	214	246	270	324
B	202	220	248	278	300	354
C	190	208	236	266	290	344
H	11	11	25	27	17	17
Codice - Part Number	1055299	1055300	1055317	1055318	1055303	1055304

Anelli in materiale
termoplastico

Thermoplastic
rings

ASPIRANTI

SUCKING



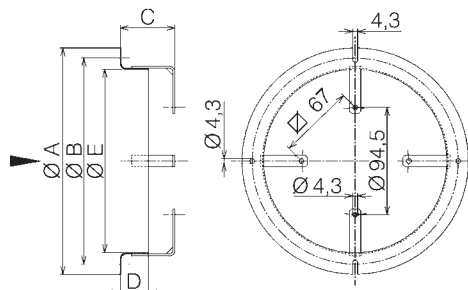
Ø Ventola Ø Fan Blade	154	172	200	230	254	
A	200	220	248	280	302	
B	57	57	57	61	61	
C	48	48	48	51,5	51,5	
D	190	208	236	266	290	
E	162	180	208	238	264	
Codice - Part Number	1072943	1072944	1072946	1072891	1072892	

Anelli in acciaio
verniciato

Steel rings
painted

ASPIRANTI

SUCKING



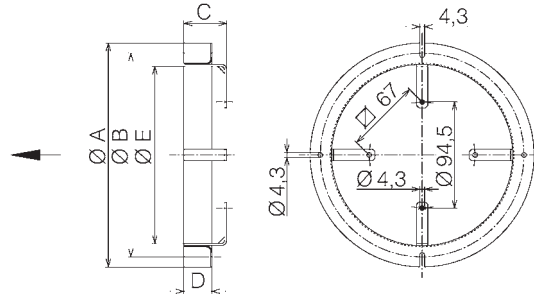
Ø Ventola Ø Fan Blade	154	172	200	230	254	300
A	200	220	248	278	302	350
B	190	208	236	266	290	344
C	49	49	49	49	49	49
D	25	26	26	26	26	26
E	162	180	208	238	262	308
Codice - Part Number	3255003	3255002	3255004	3255009	3255006	3255008

Anelli in acciaio
verniciato

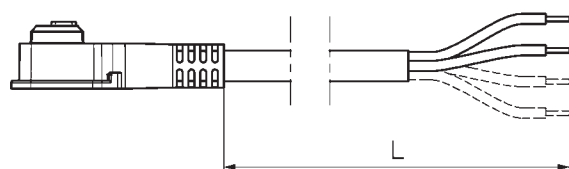
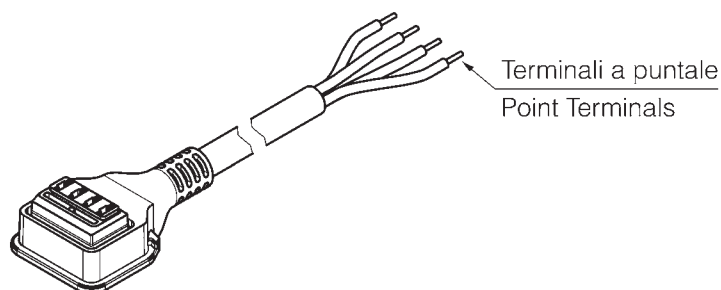
Steel rings
painted

PREMENTI

BLOWING



Ø Ventola Ø Fan Blade	154	172	200	230	254	300
A	200	220	248	278	302	356
B	190	208	236	266	290	344
C	36	36	36	36	36	36
D	25	26	26	26	26	26
E	162	180	208	238	262	308
Codice - Part Number	3255010	3255011	3255012	3255013	3255014	3255078



V~

2^a Velocità Reverse
2^o Speed Revers

CE

BLU
MARRONE
ROSSO
GRIGIO

CE

BLUE
BROWN
RED
GREY

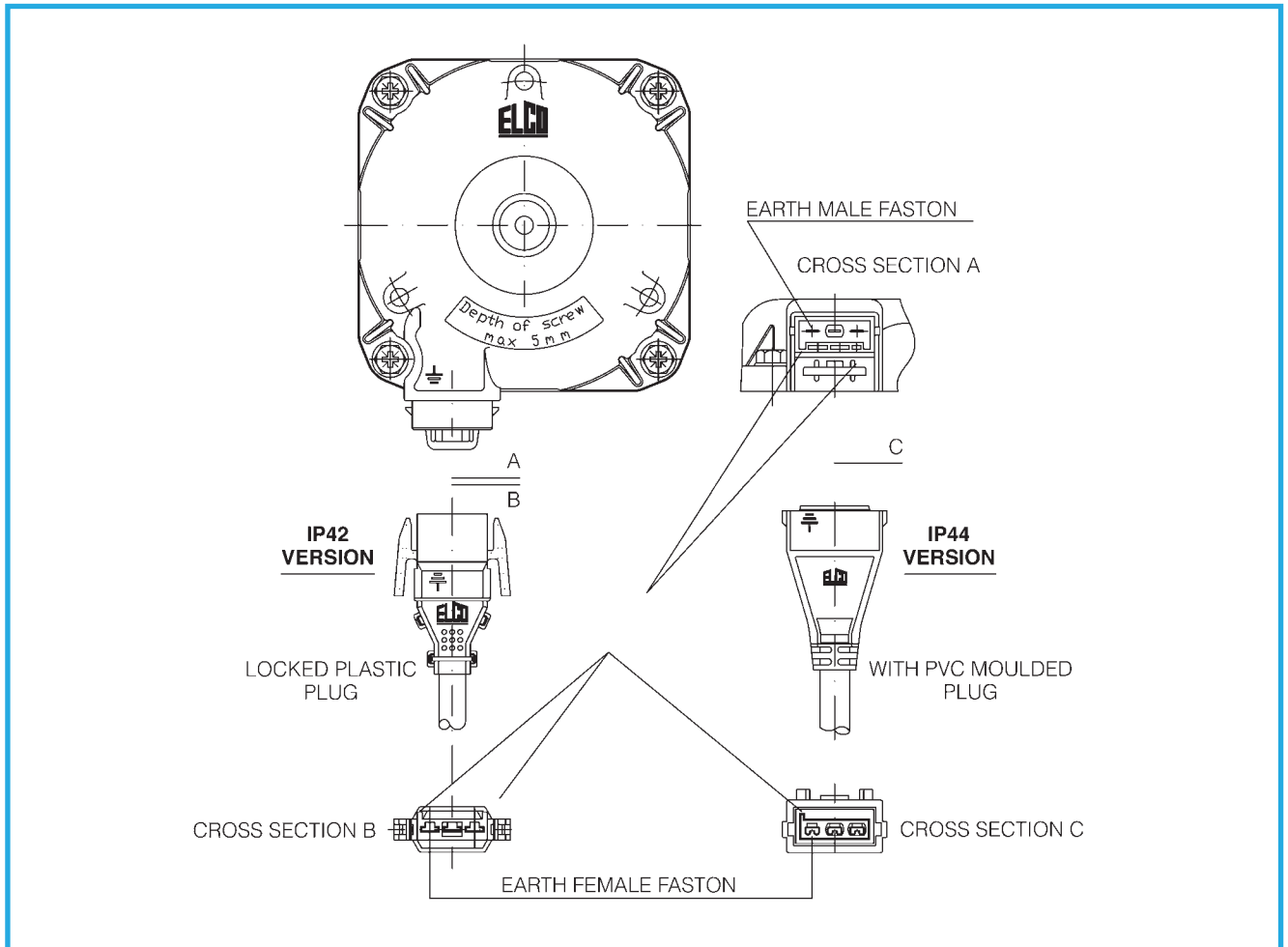
UL

BIANCO
NERO
ROSSO
GRIGIO

UL

WHITE
BLACK
RED
GREY

		Motore Tipo C Cavo Bipolare Motor Type C Two Core Cable	Motore Tipo R Cavo Tripolare Motor Type R Three Core Cable	Motore Tipo 2S Cavo Tripolare Motor Type 2S Three Core Cable	Motore Tipo R2S Cavo Quadripolare Motor Type R2S Four Core Cable
L = mm		Codice Part Number	Codice Part Number	Codice Part Number	Codice Part Number
500	CE	3-452-001	3-412-001	3-413-001	3-409-001
	UL	3-464-001	3-414-001	3-415-001	3-411-001
1000	CE	3-452-002	3-412-002	3-413-002	3-409-002
	UL	3-464-002	3-414-002	3-415-002	3-411-002
2000	CE	3-452-003	3-412-003	3-413-003	3-409-003
	UL	3-464-003	3-414-003	3-415-003	3-411-003



Lunghezza - Length mm	Sezione - Section mm ²	IP42 Codice - Part Number	IP44 Codice - Part Number
500	0,75	3-334-116/IMB	3-334-007/IMB
1000	0,75	3-334-117/IMB	3-334-008/IMB
1500	0,75	3-334-118/IMB	3-334-009/IMB
2000	0,75	3-334-120/IMB	3-334-010/IMB
2500	0,75	3-334-121/IMB	3-334-011/IMB
3000	0,75	3-334-122/IMB	3-334-012/IMB
3500	1,00	3-209-033/IMB	3-209-017/IMB
4000	1,00	3-209-034/IMB	3-209-018/IMB
4500	1,00	3-209-035/IMB	3-209-019/IMB
5000	1,00	3-209-036/IMB	3-209-020/IMB

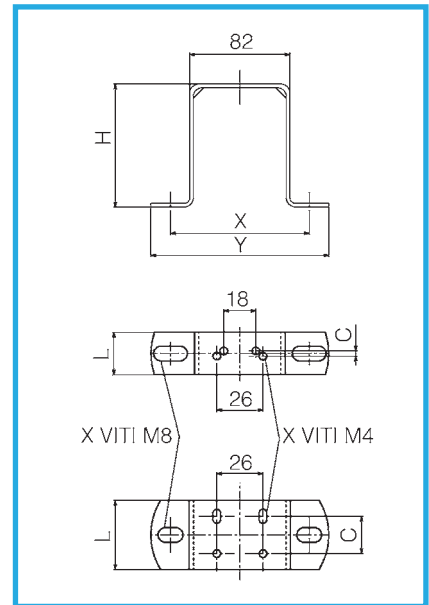
STAFFE

BRACKETS

Staffe dritte

Straight brackets

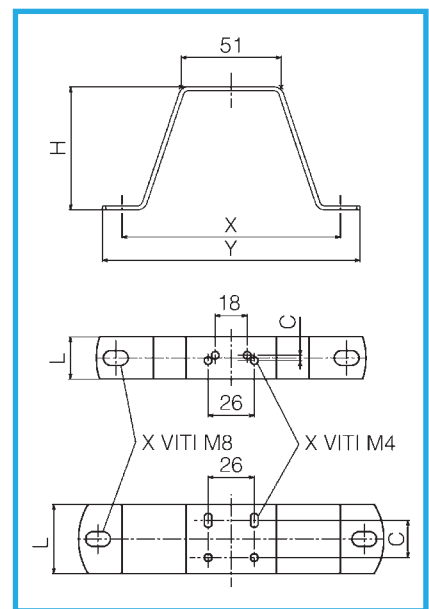
Codice Part Number	H	X	Y	C	L
1038101	39	81	106	3,0	24
1038103	52	81	106	3,0	24
1038110	72	81	106	3,0	24
1038113	84	81	106	3,0	24
1038007	73	78	100	21,0	39
1038049	84	78	100	21,0	39
1038003	109	78	100	21,0	39
1038002	109	78	100	34,5	49



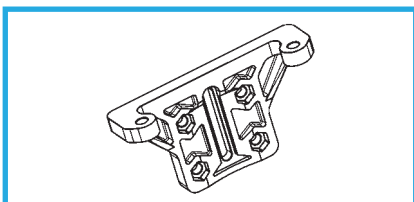
Staffe a V

V-form brackets

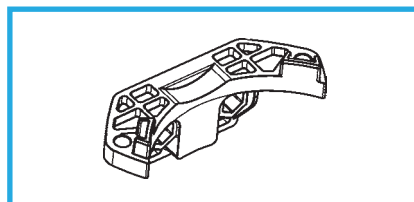
Codice Part Number	H	X	Y	C	L
1038152	52	130	152	3,0	24
1038162	72	159	181	3,0	24
1038157	84	142	164	3,0	24
1038061	90	110	132	34,5	49
1038009	112	150	172	21,0	39



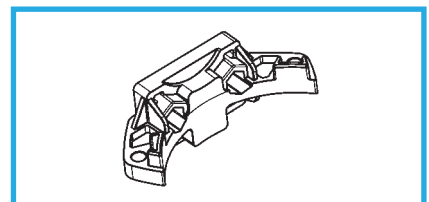
Plastic support for
ECM C-HC-HBS
Part Number 1-072-1386



Plastic support for
ECM C-HC-HBS XX-25 only
Part Number 1-072-1251



Plastic support for
ECM C-HC-HBS XX-25 only
Part Number 1-072-1279





MOTORI M58

I motori shaded pole della Serie M58 sono specificatamente studiati per applicazioni nel settore refrigerazione industriale, commerciale e piccole unità condensanti.

MOTORS M58

The motors of the M58 Series are designed for industrial refrigeration, commercial refrigeration and small condensing units.



MOTORI M58

I motori della serie M58 sono monofase a 2 poli schermati con corpo in materiale termoplastico, grado di protezione IP42, classe di isolamento B, funzionanti alla tensione nominale di 230 V, 50-60 Hz, potenza di 1-2 Watt.

Supporti con bronzine autolubrificanti e autoallineanti, albero Ø 4 mm, rotazione antioraria vista lato albero, protezione a rotore bloccato per impedenza, conformi alle norme CENELEC EN 60335-1.

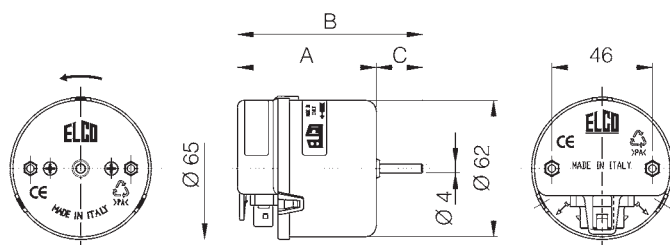
Posizioni di fissaggio verticale e orizzontale, limiti di temperatura -30°C +40°C.

MOTORS M58

The M58 series motors are shaded pole motors, 2 poles, with plastic body, protection class IP42, insulation class B, designed for a nominal tension of 230 V, 50-60 Hz, output power 1-2 W.

Self-lubricating and self-aligning sleeve bearings, 4 mm shaft diameter, CCW rotation shaft view, impedance locked rotor protection, complying with EN 60335-1 CENELEC standards.

Suitable for horizontal and vertical mounting, within an ambient temperature range of -30°C +40°C.



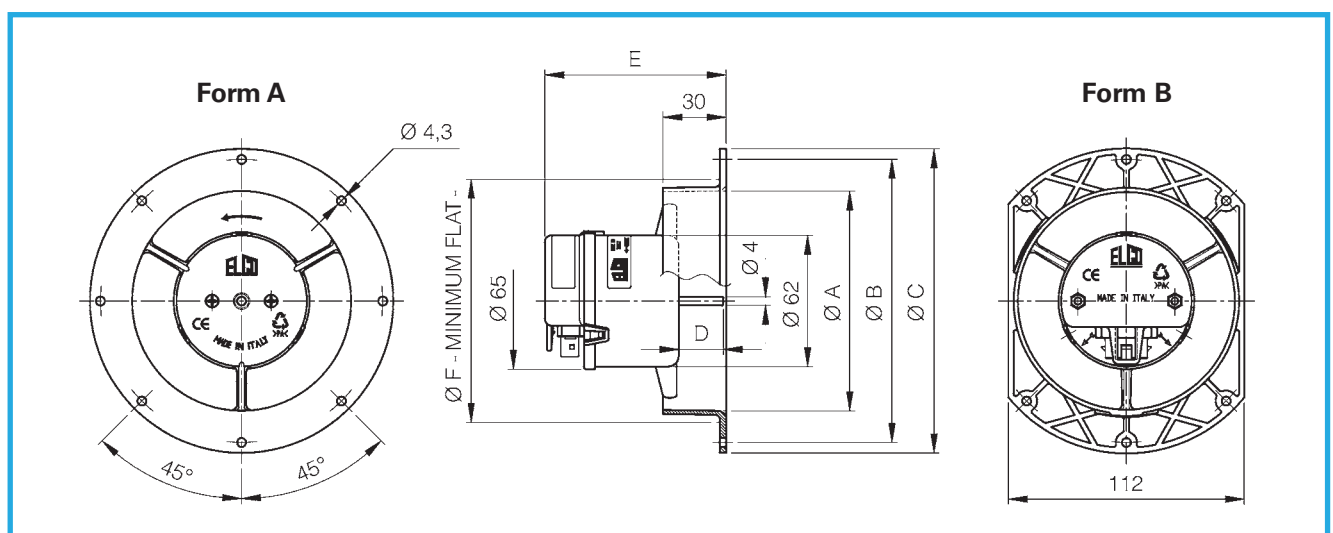
Codice Part Number	Descrizione Description	Volt	Hz	W out	W in	Amp	RPM	Veloc. Speed	A	B	C
4-032-001	M58 1-12	230	50/60	1,0	10	0,07	2500	1	63,5	84,7	21
4-032-007	M58 1-20	230	50	1,0	15	0,10	1300	1	73,5	91,7	18
4-032-008	M58 1,5-30	230	50	1,5	18	0,12	1600	1	73,5	91,7	18
4-032-009	M58 1-30	127	60	1,0	22	0,27	1800	1	73,5	91,7	18

VENTILATORI MA58

Ventilatori costruiti interamente in materiale termoplastico equipaggiati di motore M58, come descritto alla pagina 73 e di anello. Le ventole sono fornite separatamente e illustrate alle pagine 76 e 77.

FANS MA58

Fans entirely made of thermoplastic material, equipped with M58 motor, as described on page 73, and ring. Fan blades are supplied separately and are illustrated on pages 76 and 77.



Prestazioni - Performances

Codice Part Number	Descrizione Description	Volt	Hz	W Out	W In	Amp	RPM	Vel. Speed	Form
4-032-002	MA58 1-12-100	230	50/60	1,0	10	0,07	2500	1	A
4-032-003	MA58 1-12-100-S	230	50/60	1,0	10	0,07	2500	1	B
4-032-004	MA58 1-20-154	230	50	1,0	15	0,10	1300	1	A
4-032-005	MA58 1,5-30-154	230	50	1,5	18	0,12	1600	1	A
4-032-006	MA58 1-30-154	127	60	1,0	22	0,27	1800	1	A

Dimensioni - Dimensions

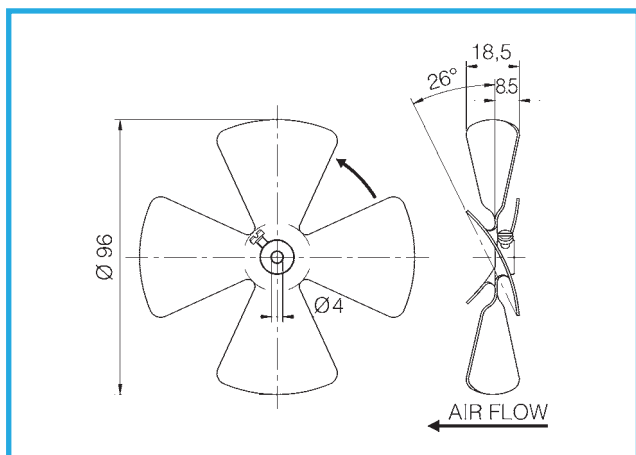
Codice Part Number	Descrizione Description	A	B	C	D	E	F
4-032-002	MA58 1-12-100	104	134	144	21	86	115
4-032-003	MA58 1-12-100-S	104	134	144	21	86	115
4-032-004	MA58 1-20-154	160	190	200	18	86	168
4-032-005	MA58 1,5-30-154	160	190	200	18	96	168
4-032-006	MA58 1-30-154	160	190	200	18	96	168

VENTOLE ALLUMINIO MA58

Questa serie di ventole in alluminio, disponibile sia nella versione aspirante che premente Ø 96 mm, è stata studiata per essere impiegata nei ventilatori M58.

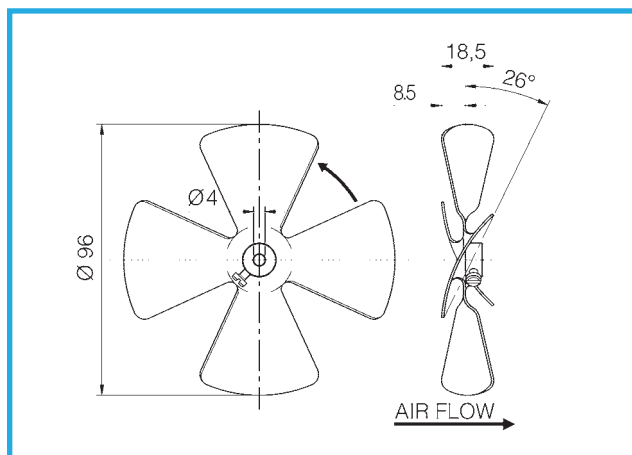
ALUMINIUM FAN BLADES MA58

This aluminium fan blades range is available with 96 mm diameter, sucking and blowing version. Specifically designed to be fitted to M58 fans.



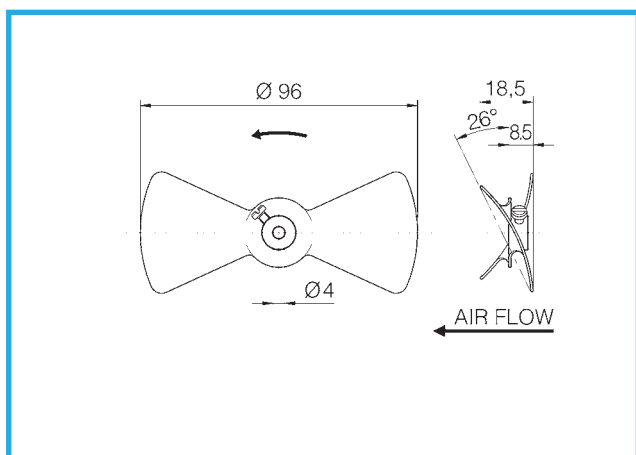
Ventola aspirante - Sucking Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
40121003/IMB	Ø 96 mm - 26°	60 Pcs



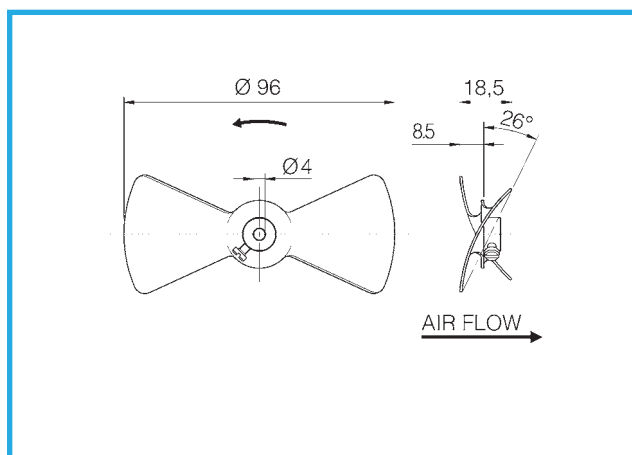
Ventola premente - Blowing Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
40121002/IMB	Ø 96 mm - 26°	60 Pcs



Ventola aspirante - Sucking Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
40121006/IMB	Ø 96 mm - 26°	60 Pcs



Ventola premente - Blowing Fan Blade

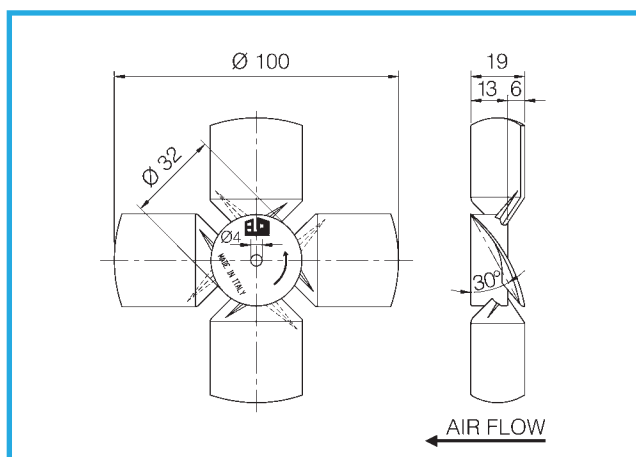
Codice Part Number	Descrizione Description	Imballo Packing
40121005/IMB	Ø 96 mm - 26°	60 Pcs

VENTOLE PLASTICA MA58

Questa serie di ventole in plastica, disponibile sia nella versione aspirante che premente $\varnothing$ 100 e 154 mm, è stata studiata per essere impiegata nei ventilatori M58.

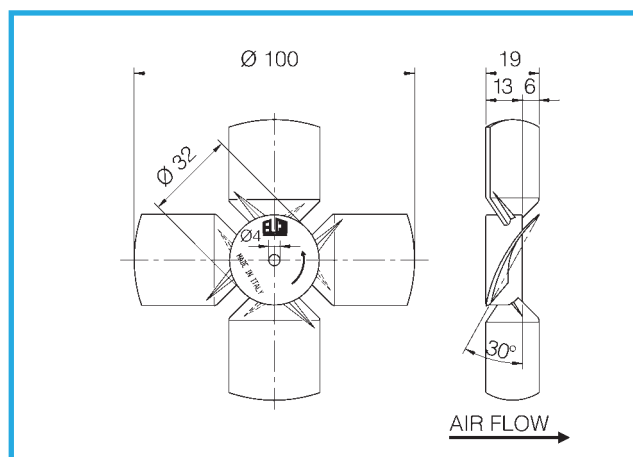
PLASTIC FAN BLADES MA58

This plastic fan blades range is available with 100 and 154 mm diameters, sucking and blowing version. Specifically designed to be fitted to M58 fan motors.



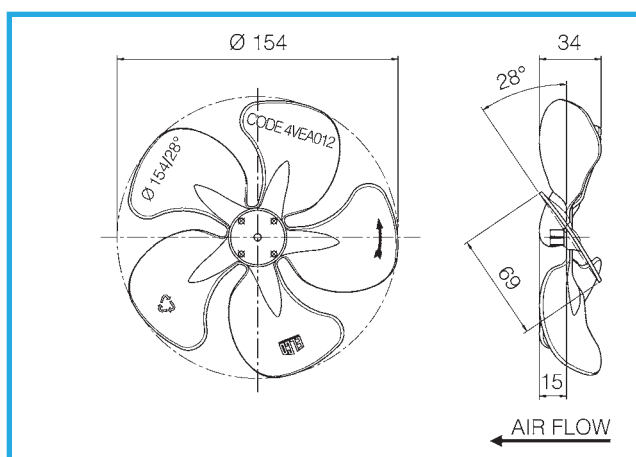
Ventola aspirante - Sucking Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
40121004/IMB	$\varnothing$ 100 mm - 30°	60 Pcs



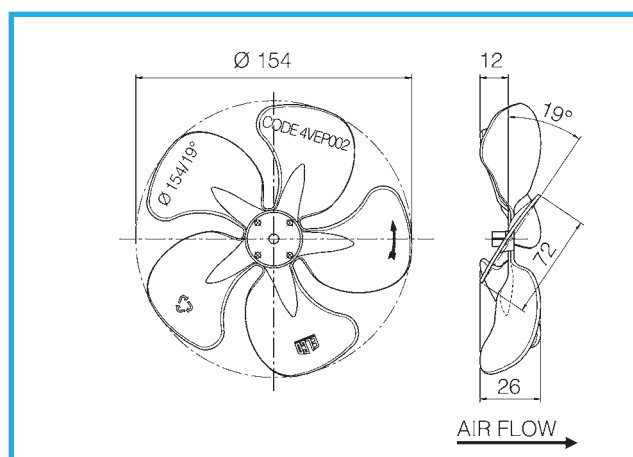
Ventola premente - Blowing Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
40121001/IMB	$\varnothing$ 100 mm - 30°	60 Pcs



Ventola aspirante - Sucking Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
4VEA012/1	$\varnothing$ 154 mm - 28°	226 Pcs



Ventola premente - Blowing Fan Blade

Codice Part Number	Descrizione Description	Imballo Packing
4VEP002/IMB	$\varnothing$ 154 mm - 19°	226 Pcs

MOTORI CN

I motori a poli schermati della Serie CN sono progettati per impiego in unità evaporanti, condensanti, vetrine e banchi frigoriferi. Sono disponibili nella versione monofase a 2 poli, con pacco lamellare a vista, grado di protezione IP20, classe di isolamento B, funzionanti alla tensione nominale di 220 V, 50 Hz e con potenze da 1 a 8 Watt.

MOTORS CN

CN Series shaded pole motors are designed for use in evaporating and condensing units, display cases and freezing cases. They are available in single phase version, 2 poles, with stack uncovered, protection class IP20, insulation class B. These motors are designed for a nominal tension of 230 V, 50 Hz, with an output power ranging from 1 to 8 Watt.



MOTORI CN

I motori della serie CN sono disponibili sia montati su staffa che nella versione con anello e ventola in materiale termoplastico.

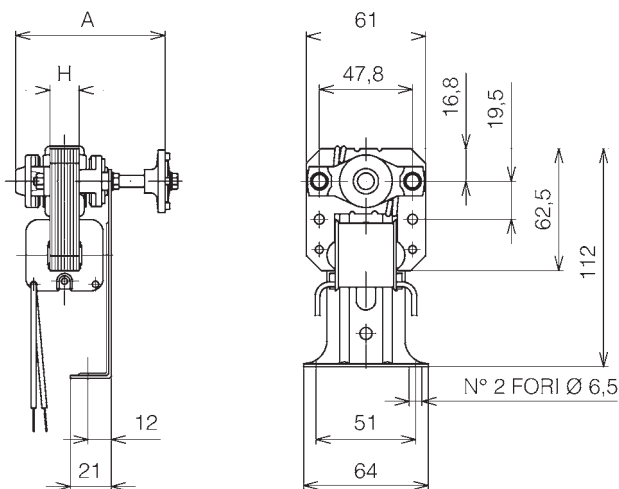
MOTORS CN

CN series motors are available either with bracket mounting or with thermoplastic ring and fan blade.

Form A

**Motore CN
con staffa**

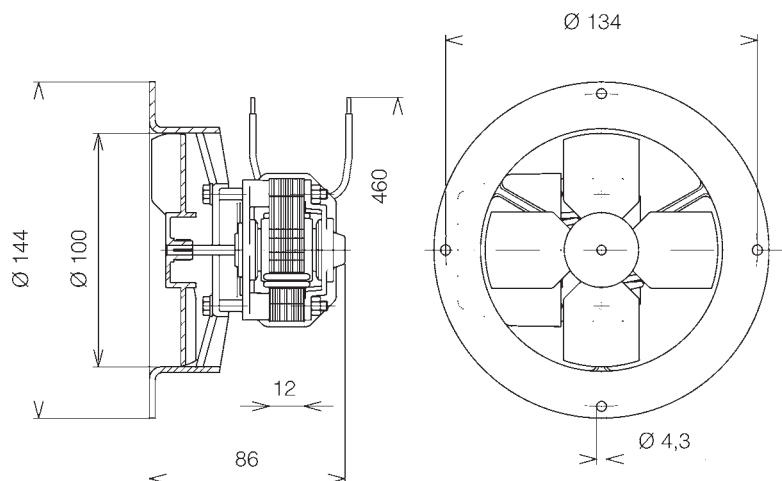
**CN Motor
with bracket**

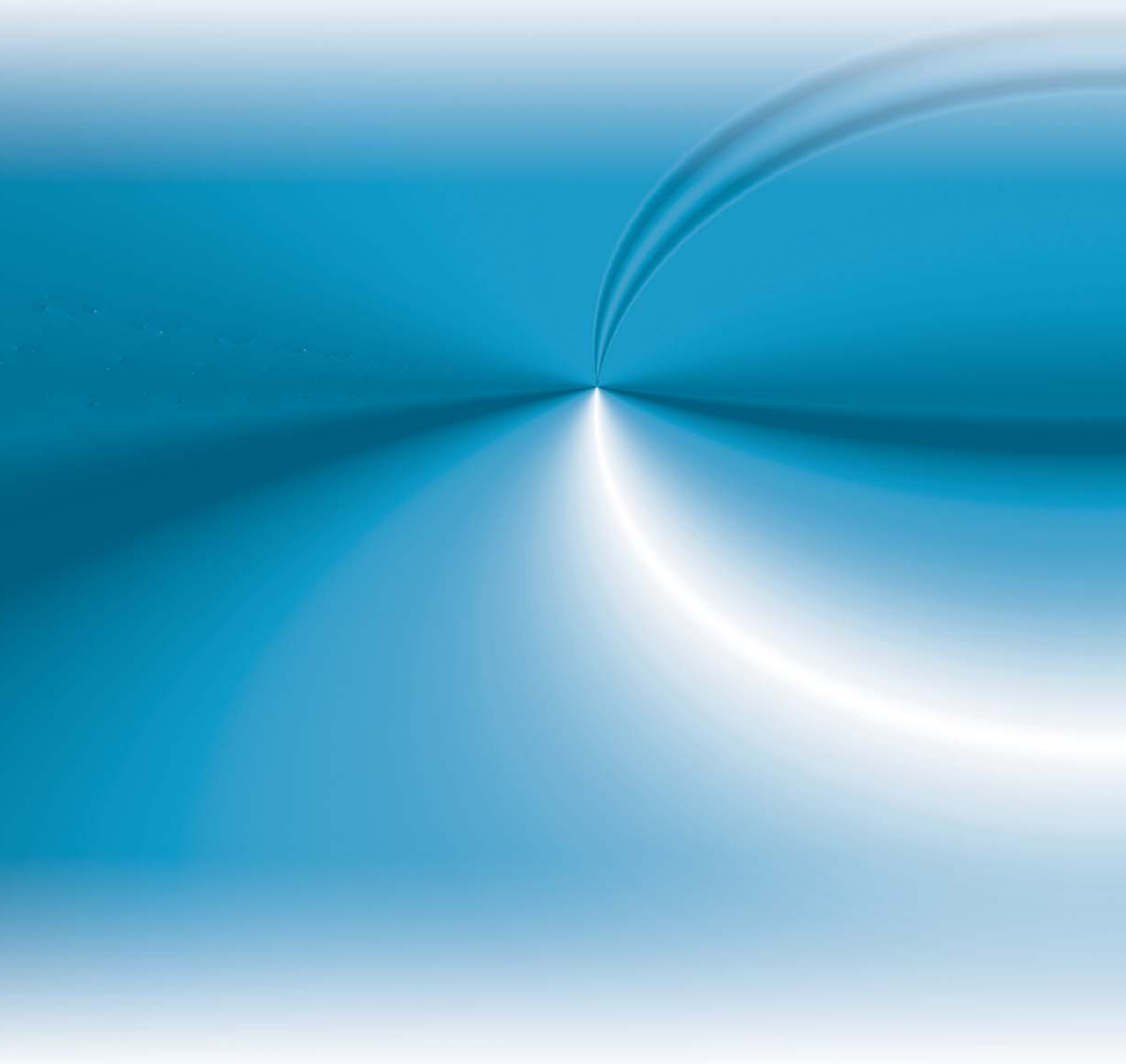


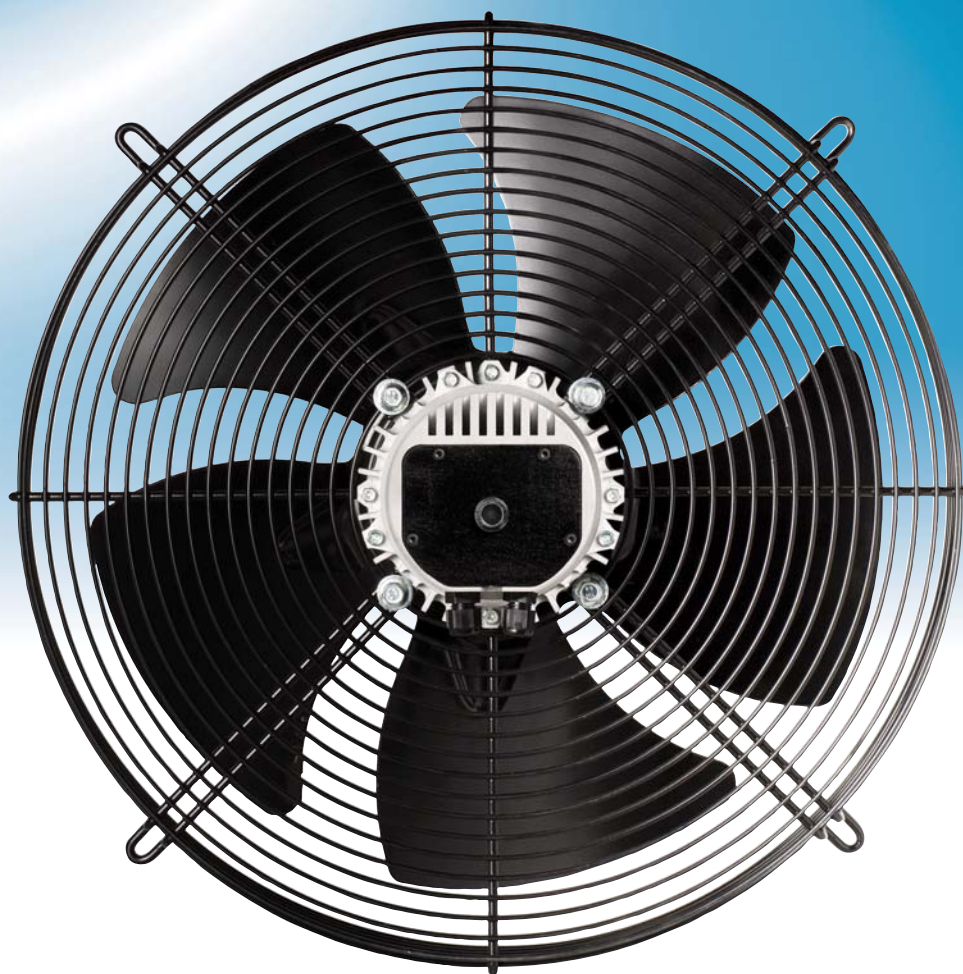
Form B

**Motore CN
con anello
e ventola**

**CN Motor
with ring and
fan blade**







CFe
Electronic Axial Fans



IL PRODOTTO

CFe

ELECTRONIC AXIAL FANS

I ventilatori assiali compatti tipo CFe (Electronic Compact Fan) sono disegnati per un utilizzo nelle applicazioni della refrigerazione commerciale ed industriale e nel controllo del clima. Questi ventilatori, pilotati da motori a magneti permanenti, presentano un'elevata efficienza rispetto ai motori tradizionali, garantendo un risparmio fino al 50% nel consumo di energia.

Il particolare design della ventola, associata al motore tipo ECM, fornisce un elevato rendimento globale nel rispetto della Direttiva Europea 327/2011.

Il motore, con elettronica montata a bordo, è chiuso in una carcassa di alluminio pressofuso, particolarmente adatto all'uso in ambienti aggressivi. Il grado di protezione IP65 garantisce un elevato grado di isolamento contro la penetrazione di corpi solidi e liquidi. Il cavo di potenza ed il cavo di segnale, 0-10 Vdc, sono connessi alla scheda elettronica attraverso due PG a tenuta stagna.

Le ventole, in materiale termoplastico o in acciaio, sono state disegnate con lo scopo di ottenere una soluzione di ventilatore compatto, altamente efficiente e con un ridotto livello sonoro.

Il ventilatore, grazie alla sua elettronica, è in grado di sviluppare tramite il segnale di ingresso 0-10 Vdc una velocità variabile. Questo consente di massimizzare i risparmi energetici in funzione delle condizioni ambientali puntuali. Il risultato è un ventilatore a velocità variabile particolarmente efficiente in grado di operare in condizioni ambientali difficili, ottimizzando le sue prestazioni.

CARATTERISTICHE PRINCIPALI

- Motore chiuso, grado di protezione IP65.
- Motore compatto con corpo in alluminio pressofuso e guarnizione di chiusura coperchio e box collegamenti.
- Scheda di controllo montata a bordo e protetta contro l'umidità.
- Tensione di alimentazione 230V - 50/60 Hz.
- Avviamento con rampa lenta.
- Protezione contro sovracorrente, sovratensione e sovratemperatura.
- Velocità variabile attraverso il segnale di ingresso 0-10 Vdc.
- Temperatura di esercizio tra -30°C e +60°C.
- Classe di isolamento B.
- Range ventole da diametro 300 mm a 400 mm.

THE PRODUCT

CFe

ELECTRONIC AXIAL FANS

The compact axial fans type CFe (Electronic Compact Fan) are designed for the use in the industrial and commercial refrigeration and for the climate control.

These fans, controlled by permanent magnet motors, present a higher efficiency compared with the traditional motors assuring an energy saving up to 50%.

The special design of the fan blade, associated to the motor type ECM, supply a global high efficiency in compliance with the European Directive 327/2011.

The motor, with electronics on board, is closed into a die-cast aluminum body, especially suitable to work in the most severe environments.

The protection IP65 assures a high insulation degree against the penetration of solids and liquids.

The power and the signal cables, 0-10 Vdc, are connected to the electronic board with two waterproof PG.

The fan blades, in thermoplastic material or steel, have been designed with the purpose to obtain a compact high efficiency fan with a reduced sound level.

The fan, thanks to its electronics, can develop a variable speed through the signal 0-10 Vdc, allowing energy savings as a function of environmental conditions.

The result is a variable speed fan very efficient able to operate in severe conditions optimizing its performances.

MAIN FEATURES

- Closed motor, protection degree IP65.
- Compact motor with die-cast aluminum housing, cover closure gaskets and connection box.
- On board control card protected against humidity.
- Supply 230V - 50/60 Hz.
- Starting up with slow ramp.
- Protection against over current, overvoltage and overheating.
- Variable speed through input signal 0-10 Vdc.
- Working temperature between -30°C and +60°C.
- Insulation class B.
- Fan blades range from 300 mm to 400 mm diameter.



IL PRODOTTO

La scheda di controllo è stata progettata e realizzata da ELCO® per funzionare correttamente anche nelle condizioni ambientali più severe.

È inoltre equipaggiata con sistemi di controllo e protezione che salvaguardano il corretto funzionamento del ventilatore anche in condizioni estreme: elevati carichi aeraulici, picchi di tensione, disturbi elettromagnetici, scariche d'energia e sovratemperature mediante un sistema che riduce la potenza del motore nel caso di temperature eccessive sulla scheda di controllo.

I prodotti ELCO® sono progettati per fornire una prestazione qualitativa e duratura nel tempo. Applicando questa filosofia ai motori EC, siamo in grado di garantire un'aspettativa di vita oltre le 90.000 ore di funzionamento continuo.

Tutti i motori ELCO® sono progettati e costruiti in ottemperanza alle
Direttive di Bassa Tensione 2006/95/EC
e di Compatibilità Elettromagnetica 2004/108/EC
con riferimento alla
EN 55014-1,
EN 61000-3-2,
EN 61000-3-3,
così come alla Direttiva Macchine 2006/42/EC,
ed in accordo con le Norme Standard CENELEC
EN 60335-1,
EN 60335-2-24,
EN 60335-2-80,
EN 60335-2-89,
EN 60529,
EN 60034-1.

THE PRODUCT

The control card has been designed and realized to properly operate also in the most severe environmental conditions.

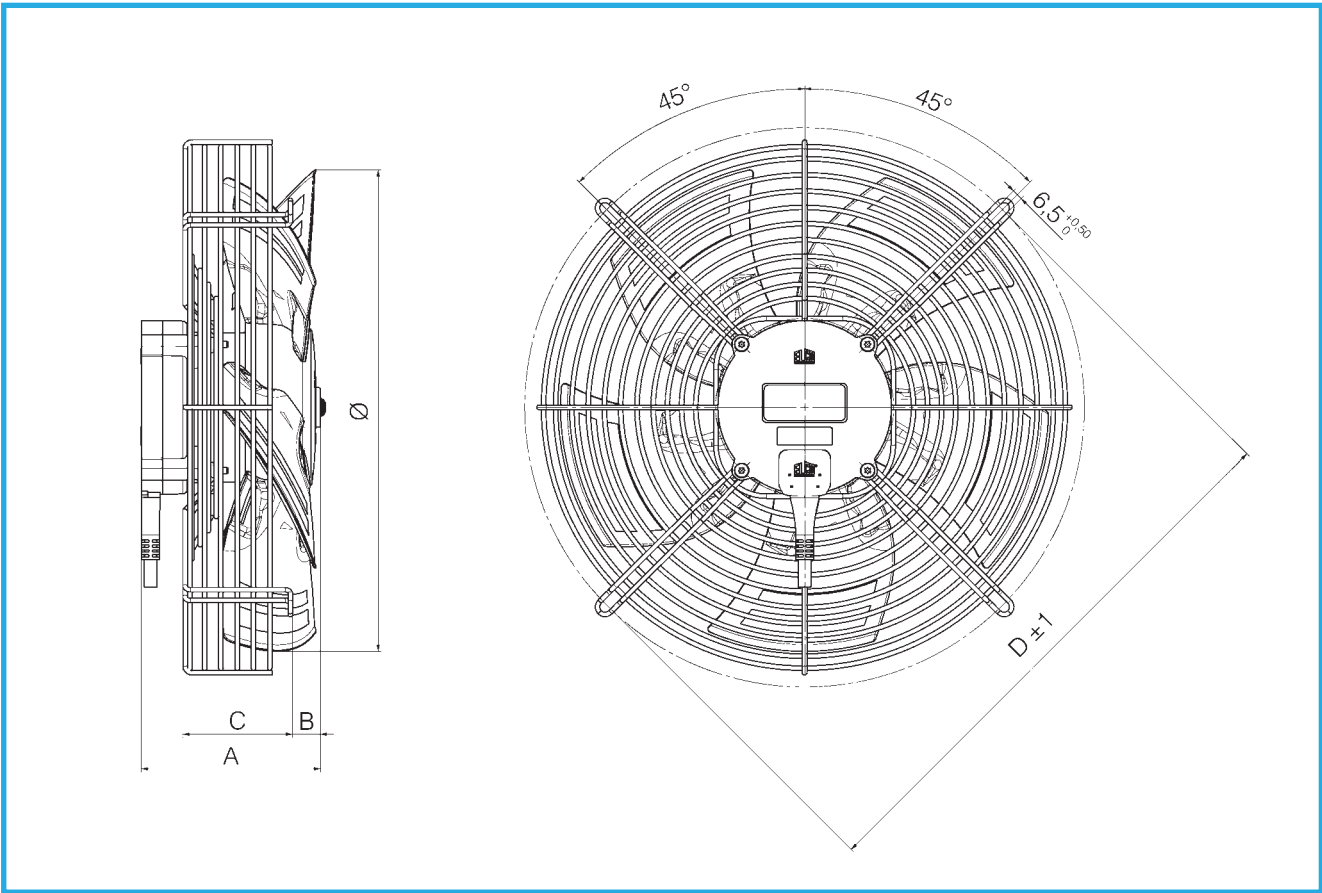
It is equipped with control and protection system that preserve the correct operation of the fan also in extreme conditions: voltage surges, electromagnetic troubles, bursts and overheating with a system that can reduce the motor power in case of high temperature on the control card.

All ELCO® products are designed to give high level quality performances and long durability. Applying this philosophy to our EC motors we can achieve a life expectancy of more than 90.000 hours in continuous operation.

All ELCO® motors are designed and manufactured in compliance with the Low Voltage 2006/95/EC and Electromagnetic Compatibility 2004/108/EC Directives with reference to
EN 55014-1,
EN 61000-3-2,
EN 61000-3-3
as well as the Machinery Directive 2006/42/EC and in accordance with the Standards CENELEC
EN 60335-1,
EN 60335-2-24,
EN 60335-2-80,
EN 60335-2-89,
EN 60529,
EN 60034-1.

ELECTRONIC AXIAL FANS CFeR

ECM 086 MOTOR

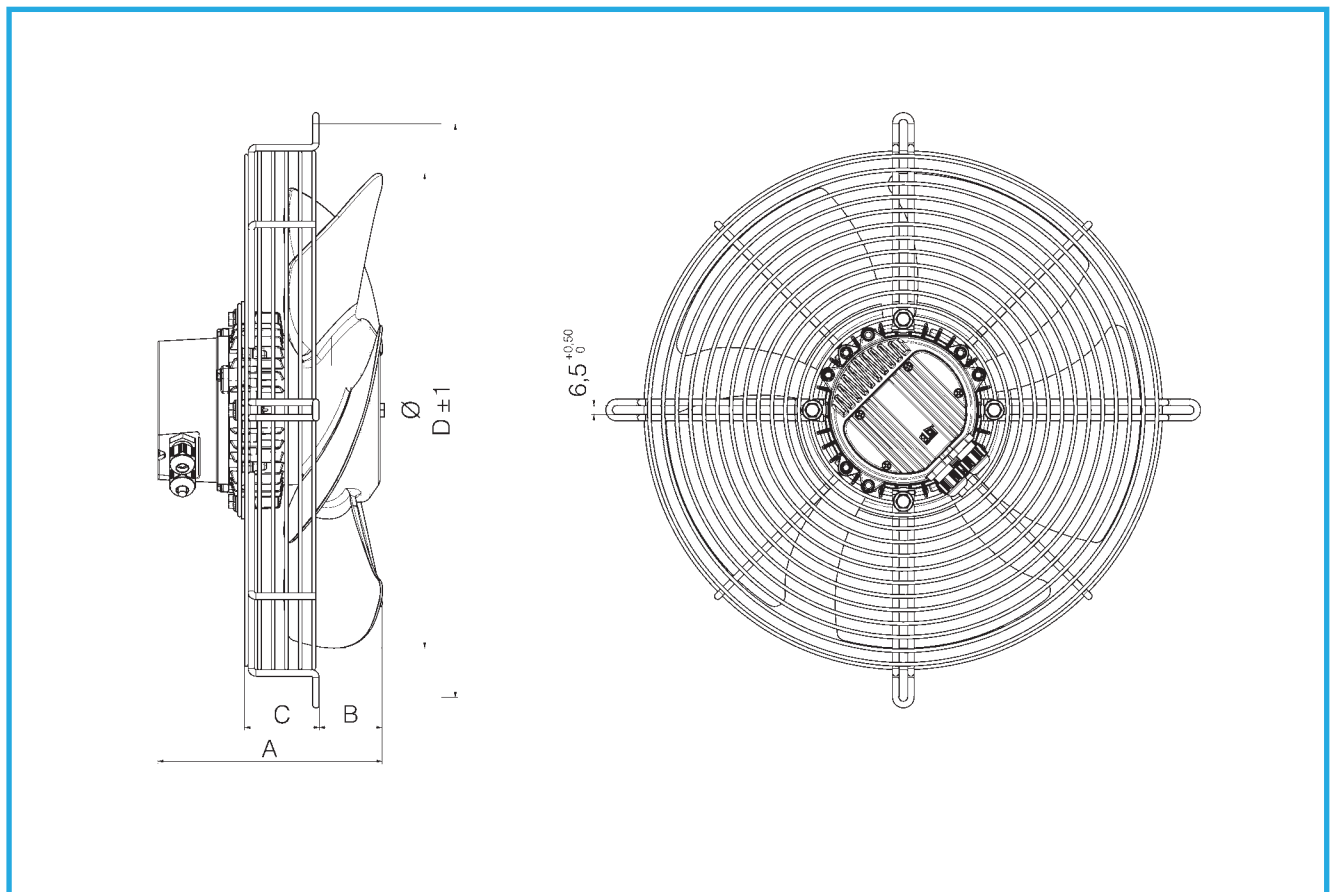


CFeR Fan Motor Dimensions - ECM 086 Motor

Ø	Description	A	B	C	D
300 PL	CFeR 086A 60-30-300	112	27	57	344

ELECTRONIC AXIAL FANS CFer

ECM 102 MOTOR



CFer Fan Motor Dimensions - ECM 102 Motor

Ø	Description	A	B	C	D
350 PL	CFer 102A 100-40-350	171	25	75	422
400 PL	CFer 102A 120-40-400	171	21	79	478



PERFORMANCE CURVES

CFeR 086A 60-30-300

ErP Free

Fan Type:

Fan Material:

Ø 300x28°

Plastic

Motor Type:

Nominal Voltage:

Frequency:

Nominal Watts:

Range Power:

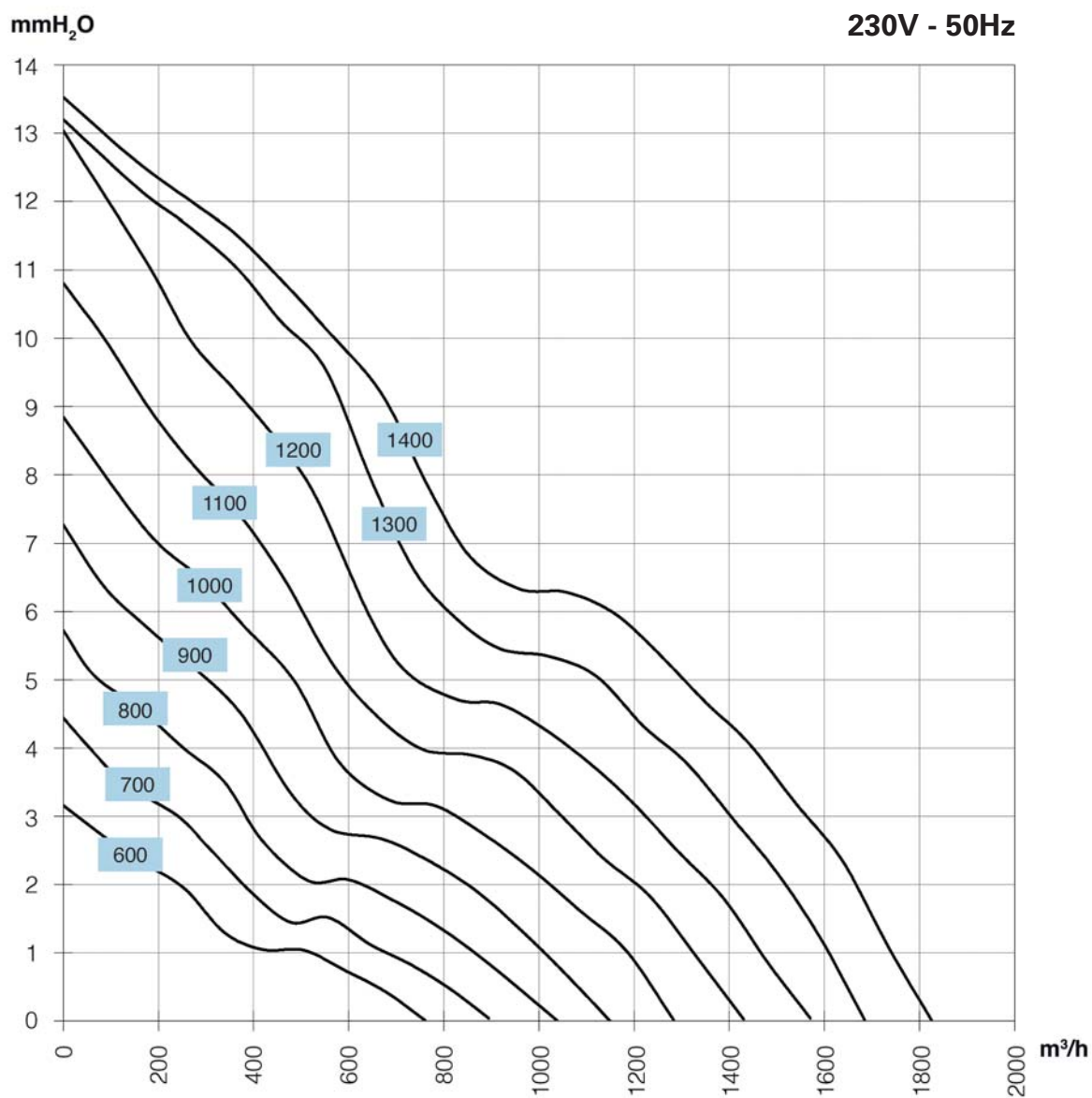
ECM 086

230V

50-60 Hz

60

200-254V



Test: PM-5015_4P Web: 429

Measurement Category - A -

Free Inlet - Free Outlet

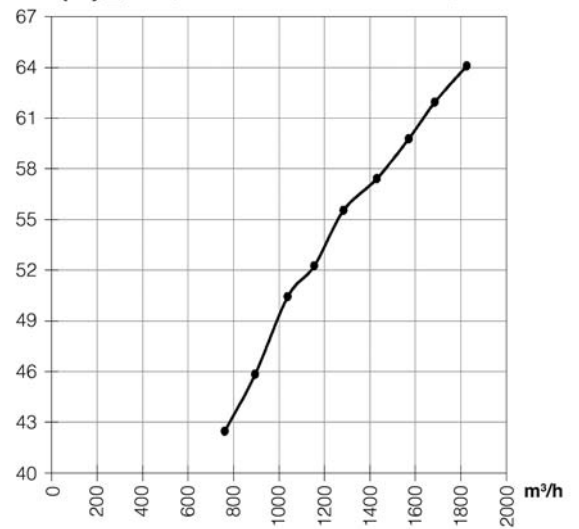
Value @ max. efficiency (1300 rpm 50 Hz)

Air Flow: 1121 (m³/h)
 Static Pressure: 5.0 (mmH₂O)
 Rpm: 1313 (min-1)
 Power Input: 51 (W)

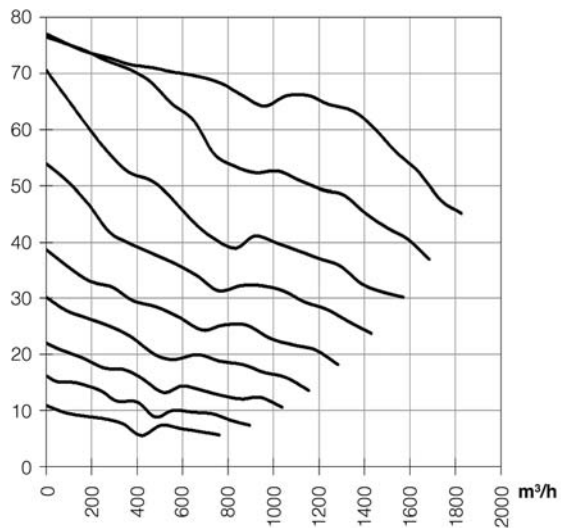
Overall efficiency (η): 30.3

Grade efficiency (N): 44.8

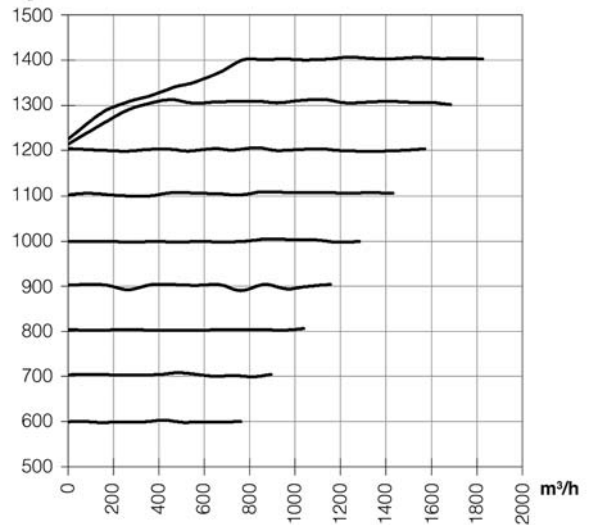
dB(A)_LW (Sound Level Power @ Free Air)



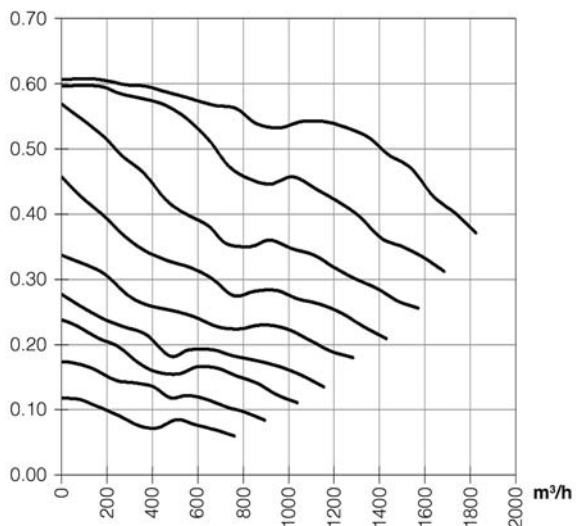
W in



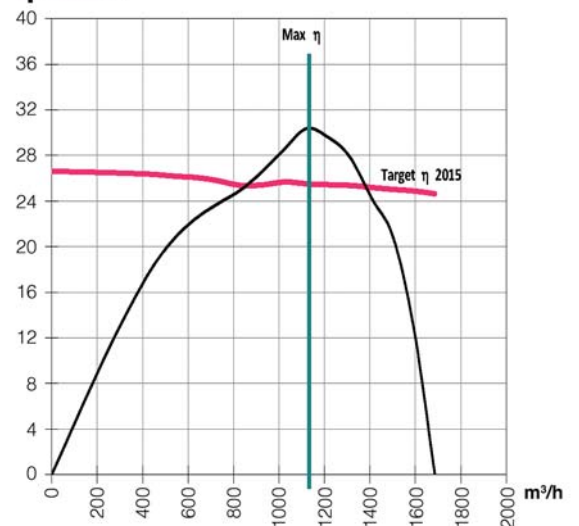
rpm



A



η static

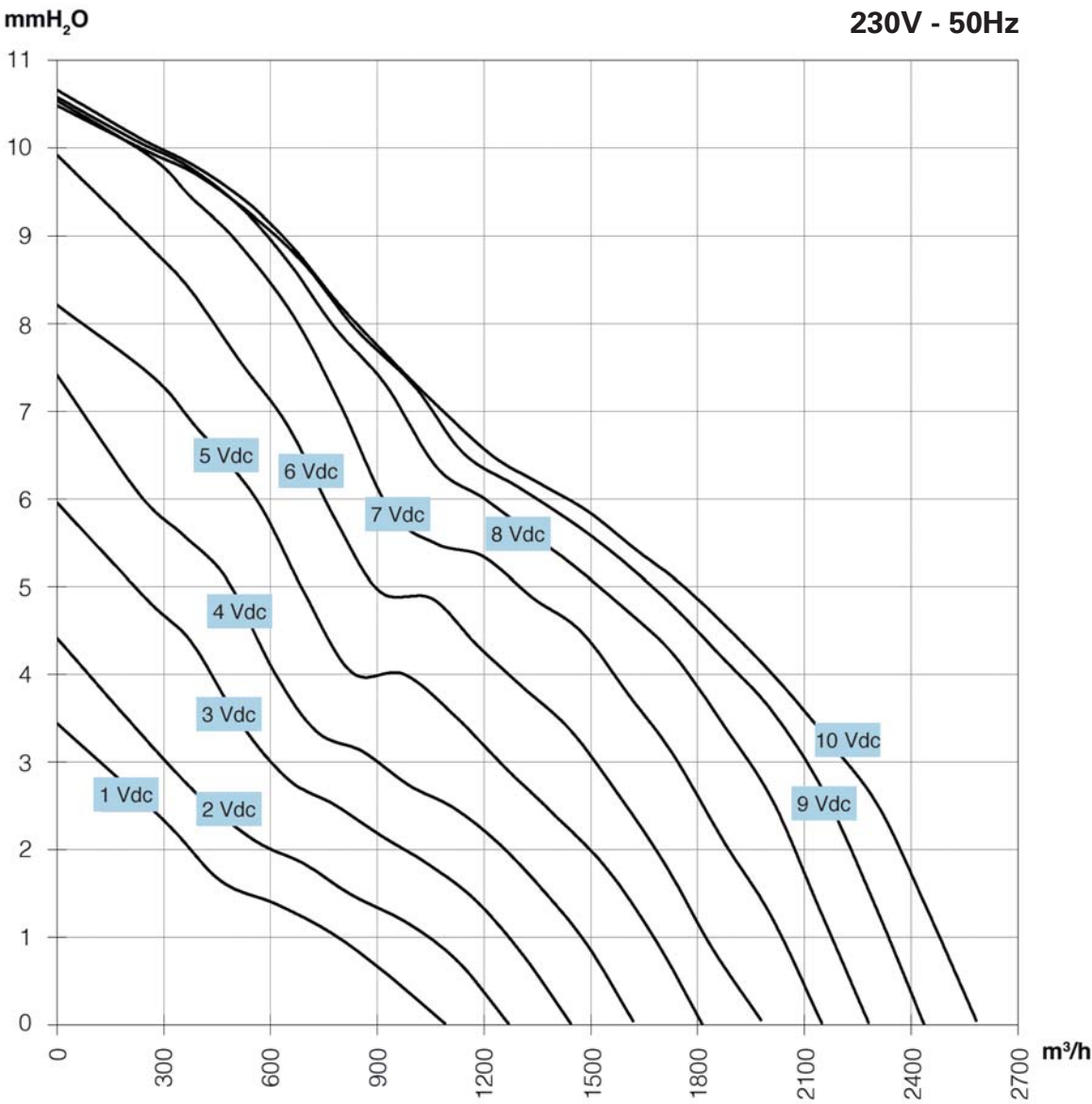




PERFORMANCE CURVES
CFeR 102A 100-40-350

ErP Free

Fan Type:	Ø 350x23°
Fan Material:	Plastic
Motor Type:	ECM 102
Nominal Voltage:	230V
Frequency:	50-60 Hz
Nominal Watts:	100
Range Power:	200-254V



Test: PEE-0037 Web: 454

Measurement Category - A -

Free Inlet - Free Outlet

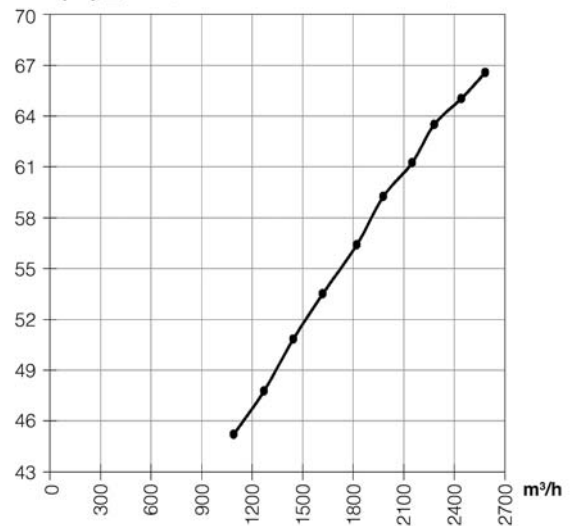
Value @ max. efficiency (10Vdc 50 Hz)

Air Flow: 1491 (m³/h)
 Static Pressure: 5.9 (mmH₂O)
 Rpm: 1185 (min⁻¹)
 Power Input: 71 (W)

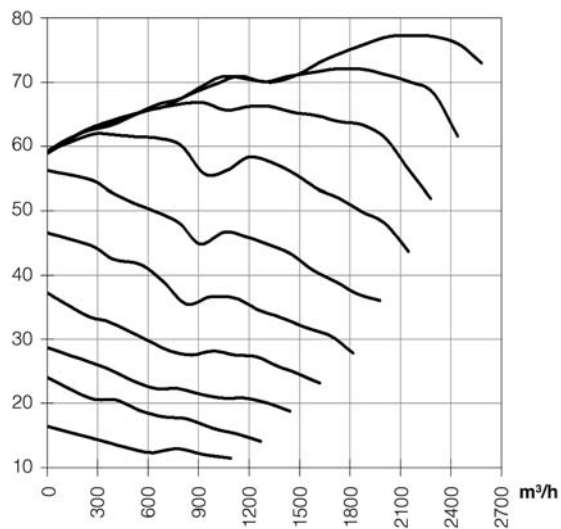
Overall efficiency (η): 33.4

Grade efficiency (N): 47.0

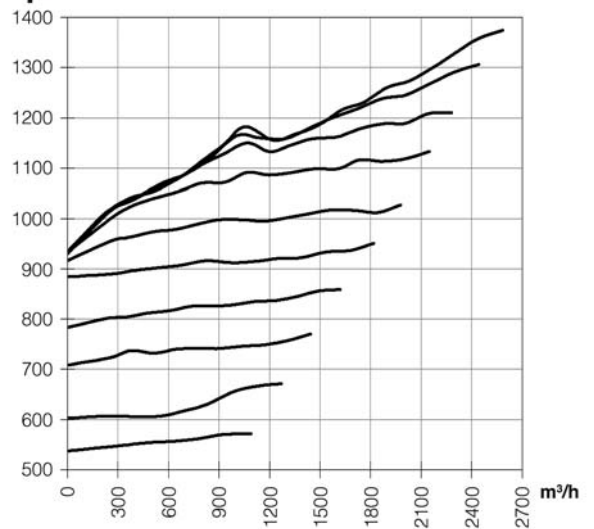
dB(A)_Lw (Sound Level Power @ Free Air)



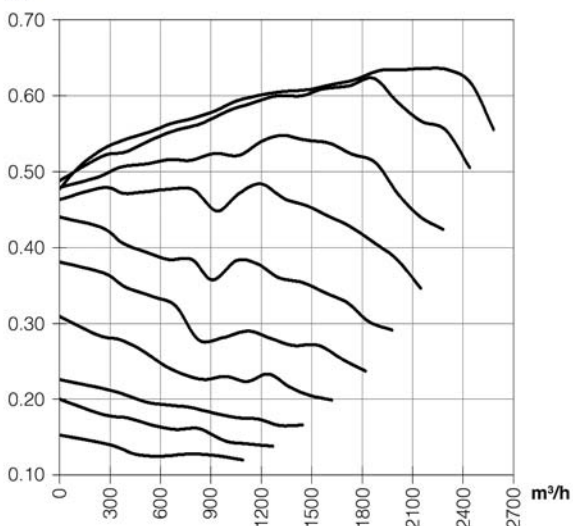
W in



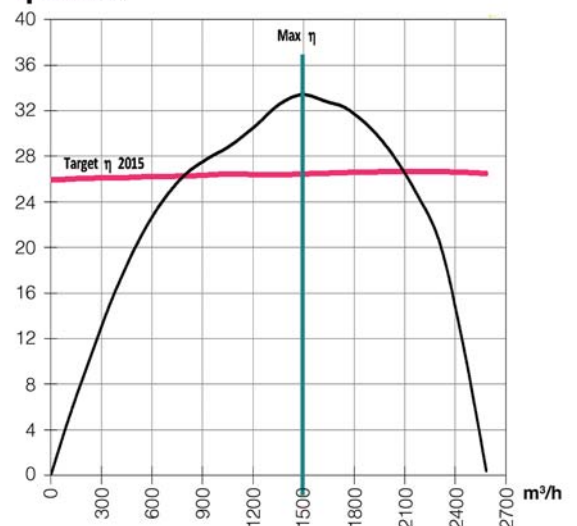
rpm



A



η static

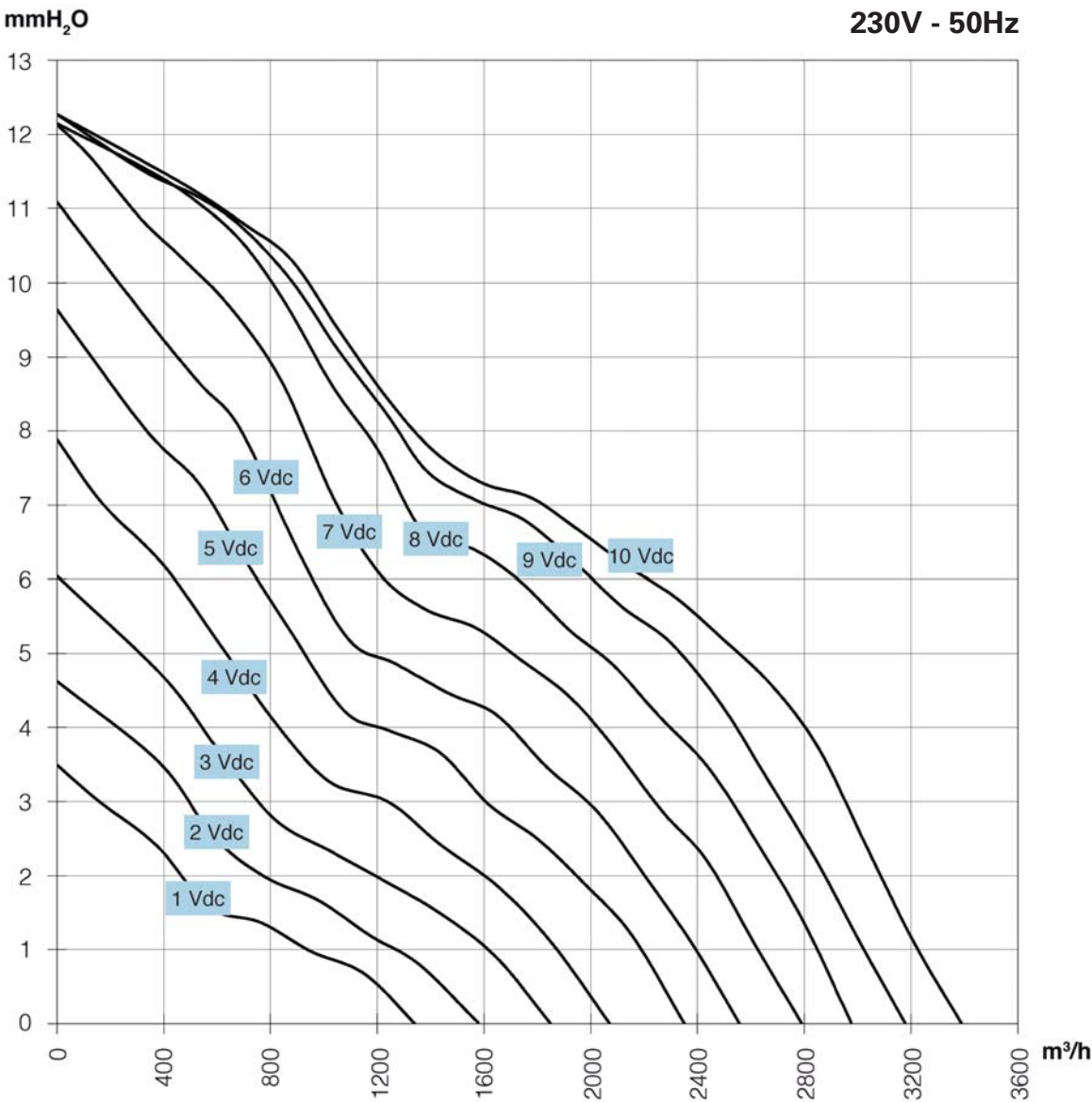




PERFORMANCE CURVES
CFeR 102A 120-40-400

ErP Free

Fan Type:	Ø 400x21°
Fan Material:	Plastic
Motor Type:	ECM 102
Nominal Voltage:	230V
Frequency:	50-60 Hz
Nominal Watts:	120
Range Power:	200-254V



Test: PEE-0039 Web: 456

Measurement Category - A -

Free Inlet - Free Outlet

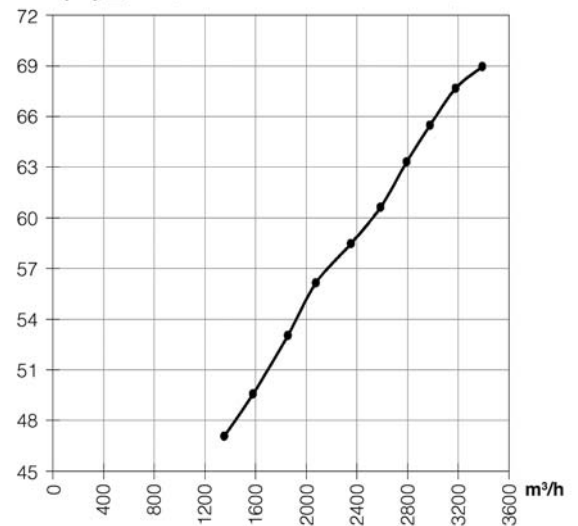
Value @ max. efficiency (10Vdc 50 Hz)

Air Flow: 2315 (m³/h)
 Static Pressure: 5.8 (mmH₂O)
 Rpm: 1185 (min-1)
 Power Input: 114 (W)

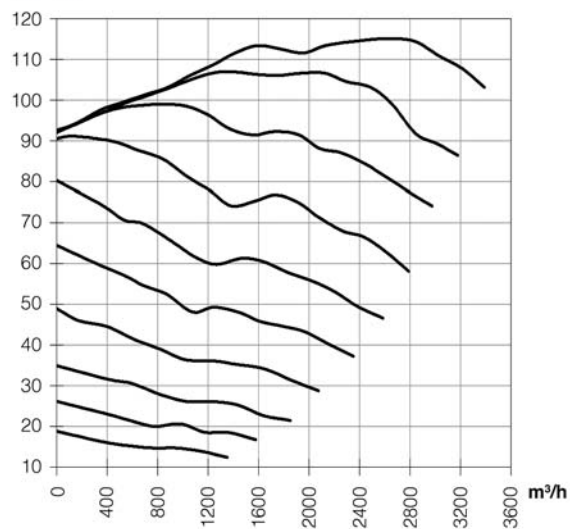
Overall efficiency (η): 31.8

Grade efficiency (N): 44.1

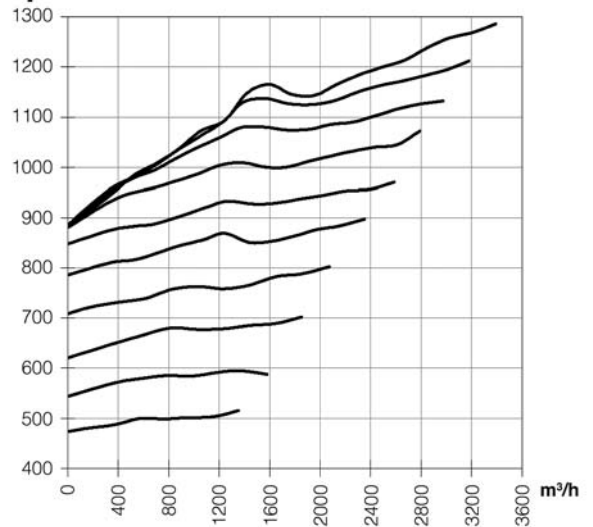
dB(A)_Lw (Sound Level Power @ Free Air)



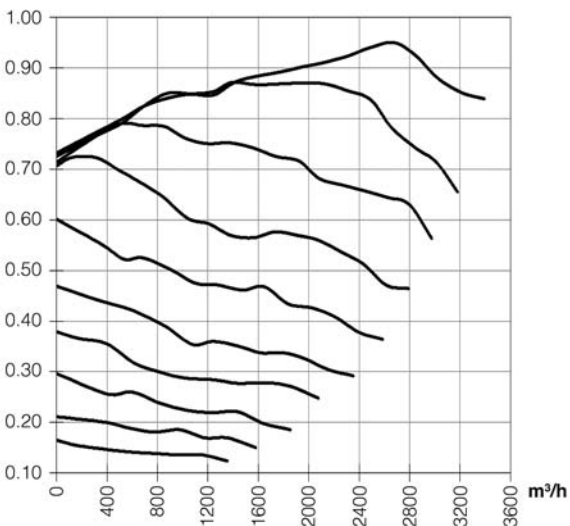
W in



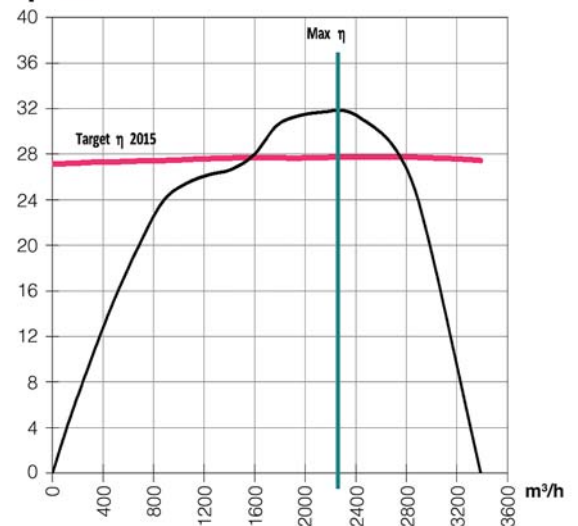
rpm



A



η static







CF Axial Fans



IL PRODOTTO

CF

AXIAL FANS

I ventilatori assiali compatti tipo CF sono disegnati per un utilizzo nelle applicazioni della refrigerazione commerciale ed industriale e nel controllo del clima.

Questi ventilatori, pilotati da motori PSC monofasi e trifasi, presentano una maggiore efficienza rispetto ai motori di prima generazione garantendo un risparmio fino al 20%, nel consumo di energia. Il particolare design della ventola, associata al motore tipo PSC, fornisce un elevato rendimento globale nel rispetto della Direttiva Europea 327/2011.

Il motore, è chiuso in una carcassa di alluminio pressofuso, particolarmente adatto all'uso in ambienti aggressivi.

Il grado di protezione IP65 garantisce un elevato grado di isolamento contro la penetrazione di corpi solidi e liquidi.

Le ventole, in materiale termoplastico o in acciaio, sono state disegnate con lo scopo di ottenere una soluzione di ventilatore compatto, altamente efficiente e con un ridotto livello sonoro.

CARATTERISTICHE PRINCIPALI

- Motore chiuso, grado di protezione IP65.
- Motore compatto con corpo in alluminio pressofuso e guarnizione di chiusura coperchio e box collegamenti.
- Tensione di alimentazione 230V - 50/60 Hz o 400V - 50/60 Hz.
- Temperatura di esercizio tra -30°C e +60°C.
- Classe di isolamento B.
- Range ventole da diametro 300 mm a 400 mm.

THE PRODUCT

CF

AXIAL FANS

The compact axial fans type CF are designed for the use in the industrial and commercial refrigeration and for the climate control.

These fans, controlled by PSC single & triphase motors, present a higher efficiency compared with the first generation motors, assuring an energy saving up to 20%.

The special design of the fan blade, associated with the PSC type motor, offers a global high efficiency in compliance with the European Directive 327/2011.

The motor is closed into a die-cast aluminum body, especially suitable to work in the most severe environments.

The protection IP65 assures a high insulation degree against the penetration of solids and liquids.

The fan blades, in thermoplastic material or steel, have been designed with the purpose to obtain a compact high efficiency fan with a reduced sound level.

MAIN FEATURES

- Closed motor, protection degree IP65.
- Compact motor with die-cast aluminum housing, cover closure gaskets and connection box.
- Supply 230V - 50/60 Hz or 400V - 50/60 Hz.
- Working temperature between -30°C and +60°C.
- Insulation class B.
- Fan blades range from 300 mm to 400 mm diameter.





IL PRODOTTO

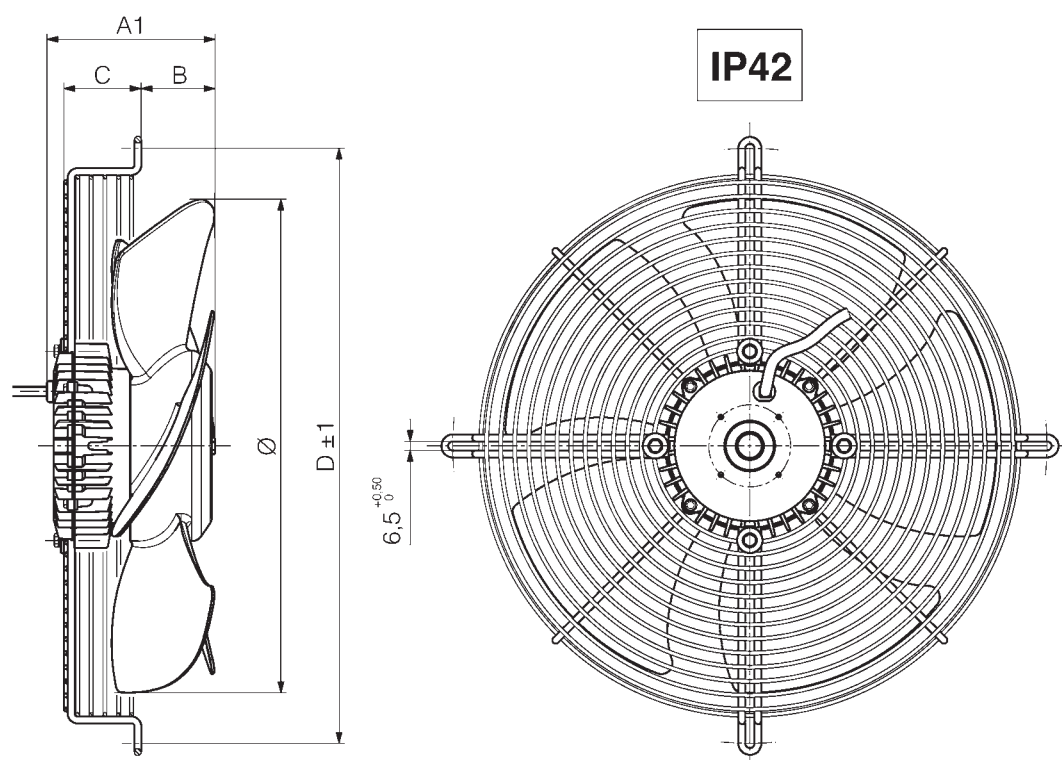
Tutti i motori ELCO® sono progettati e costruiti in ottemperanza alle Direttive di Bassa Tensione 2006/95/EC e di Compatibilità Elettromagnetica 2004/108/EC con riferimento alla EN 55014-1, EN 61000-3-2, EN 61000-3-3, così come alla Direttiva Macchine 2006/42/EC, ed in accordo con le Norme Standard CENELEC EN 60335-1, EN 60335-2-24, EN 60335-2-80, EN 60335-2-89, EN 60529, EN 60034-1.

THE PRODUCT

All ELCO® motors are designed and manufactured in compliance with the Low Voltage 2006/95/EC and Electromagnetic Compatibility 2004/108/EC Directives with reference to EN 55014-1, EN 61000-3-2, EN 61000-3-3 as well as the Machinery Directive 2006/42/EC and in accordance with the Standards CENELEC EN 60335-1, EN 60335-2-24, EN 60335-2-80, EN 60335-2-89, EN 60529, EN 60034-1.

AXIAL FANS CF

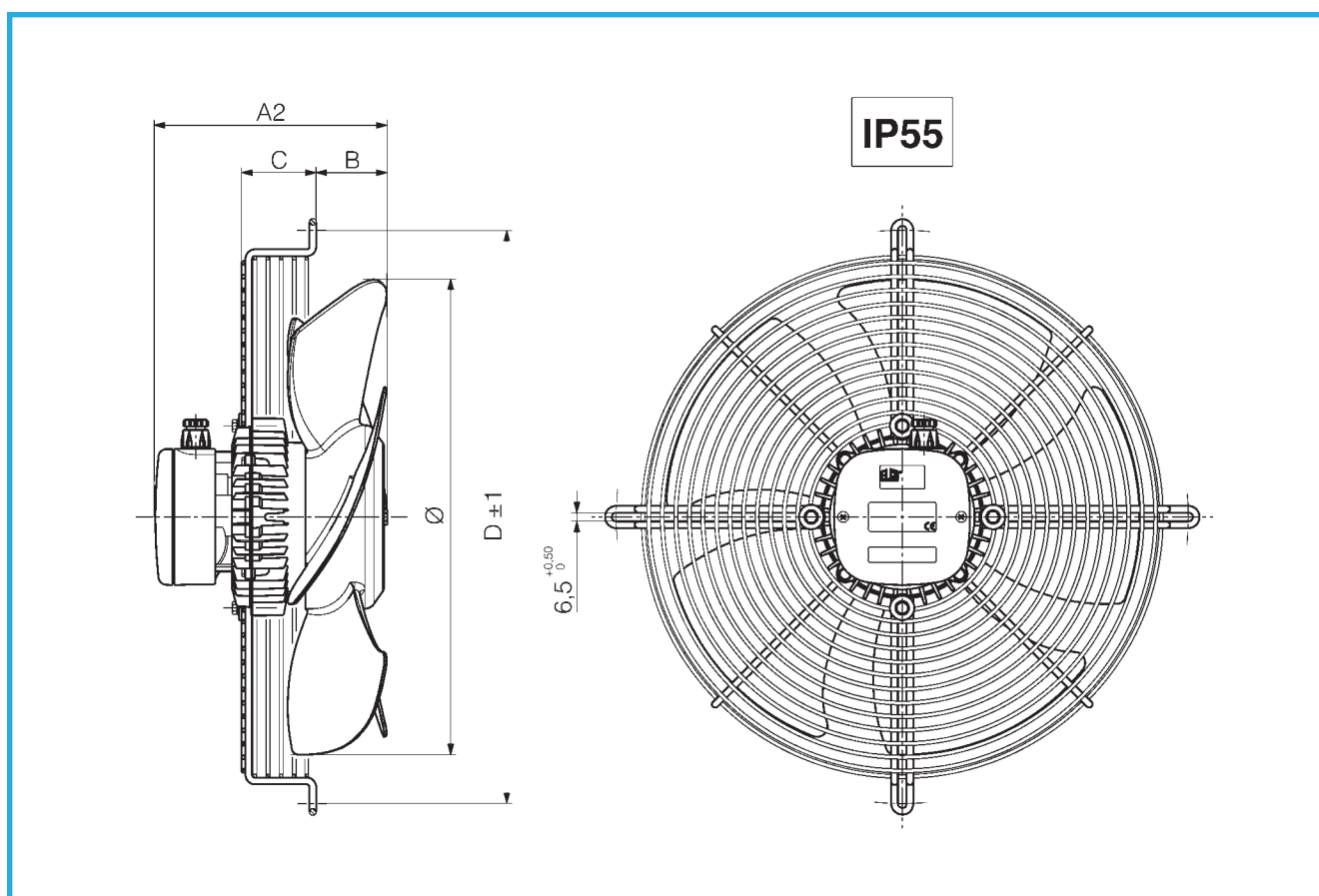
CFR MOTOR



CFR Fan Motor Dimensions

Ø	Description	A1	A2	B	C	D
300 PL	3CFR 60-20-4-300-28-0	115	165	26	75	360
315 PL	3CFR 60-20-4-315-28-0	115	165	27	75	390
350 PL	3CFR 90-45-4-350-23	125	175	25	75	422
400 PL	3CFR 120-60-4-400-21	145	195	20	79	478

AXIAL FANS CF CFR MOTOR





PERFORMANCE CURVES

3CFR 60-20-4-300-28-0

ErP Free

Fan Type:

Fan Material:

Ø 300x28°

Plastic

Motor Type:

Nominal Voltage:

Frequency:

Nominal Watts:

Range Power:

Capacitor:

3CF

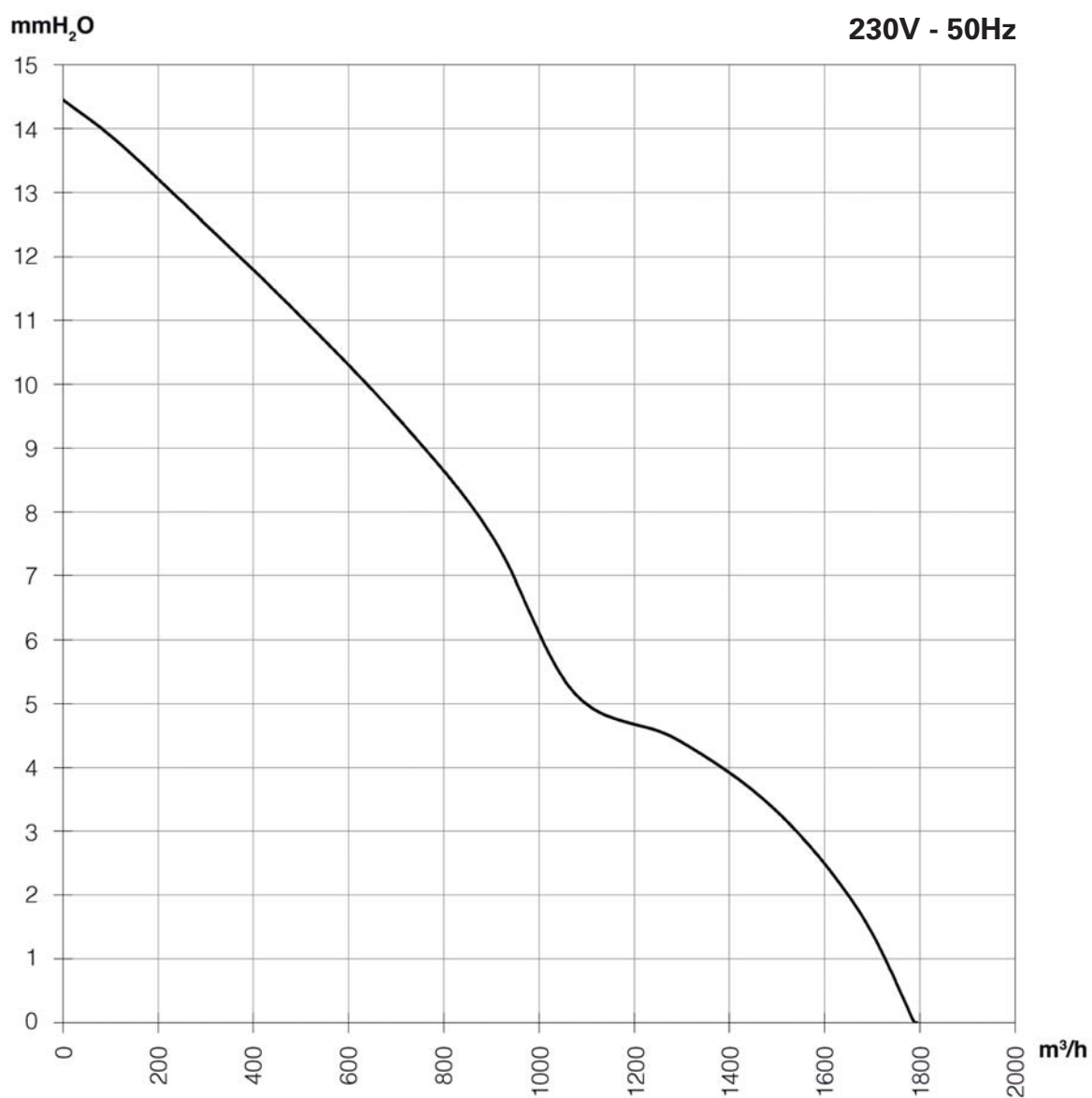
230V

50-60 Hz

60

200-254V

2.5µF



Test: PCF - 110 Web: 451

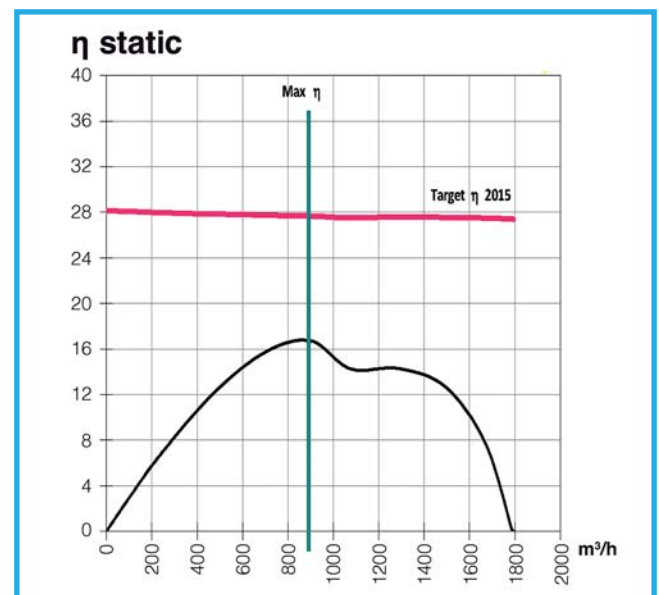
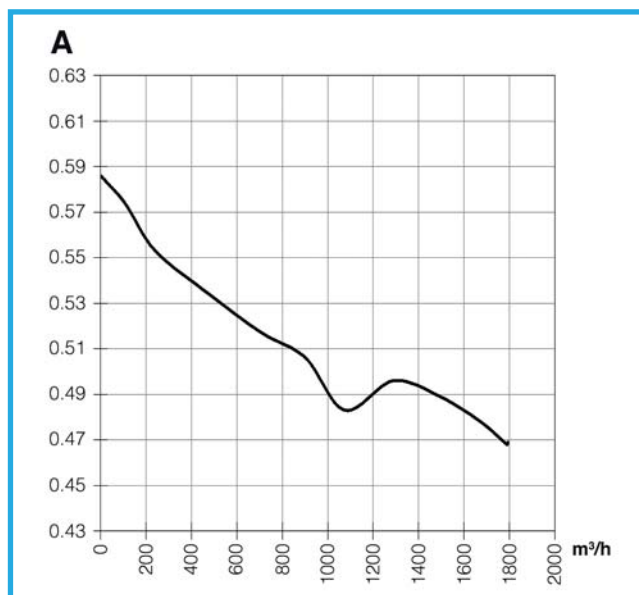
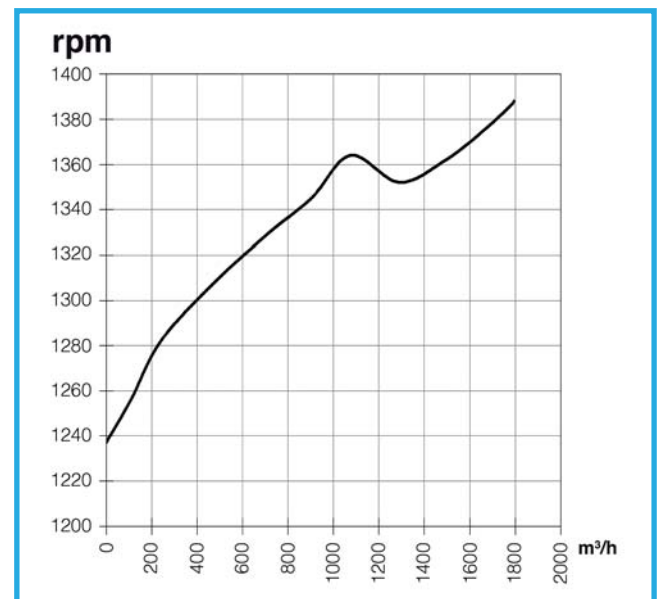
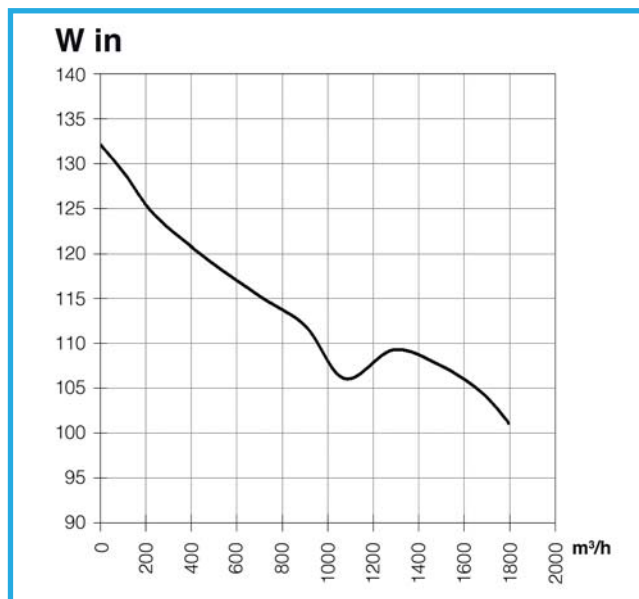
Measurement Category - A -

Free Inlet - Free Outlet

Value @ max. efficiency (50 Hz)

Air Flow: 902 (m³/h)
 Static Pressure: 7.6 (mmH₂O)
 Rpm: 1345 (min-1)
 Power Input: **112 (W)**
 dB(A)_Lw@ o Pa 64.8

Overall efficiency (η): 16.7
 Grade efficiency (N): 29.0





PERFORMANCE CURVES

3CFR 60-20-4-315-28-0

Fan Type:

Fan Material:

Ø 315x28°

Plastic

Motor Type:**3CF**

Nominal Voltage:

230V

Frequency:

50-60 Hz

Nominal Watts:

60

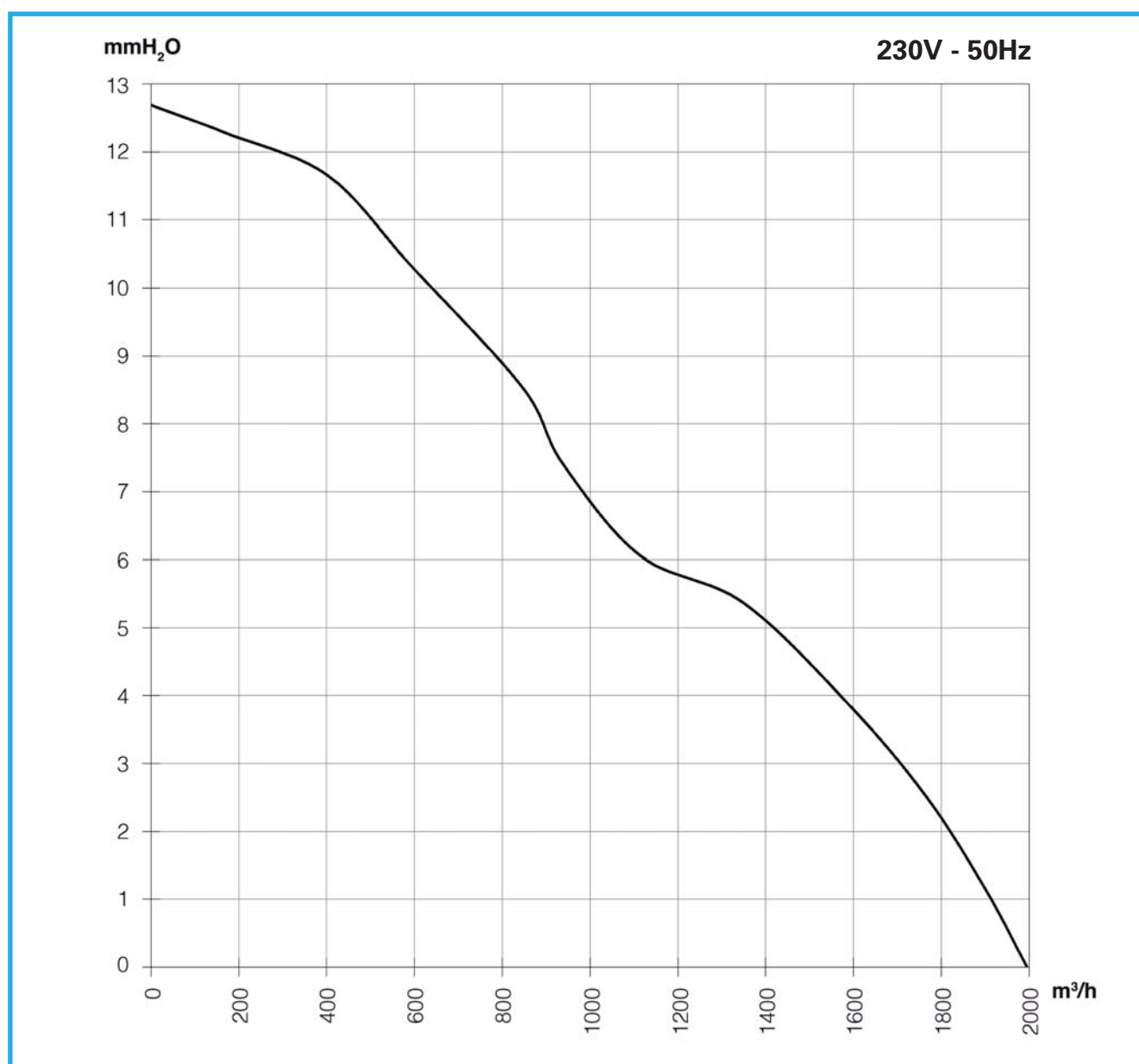
Range Power:

200-254V

Capacitor:

2.5µF

ErP Free



Test: PCF - 29 Web: 458

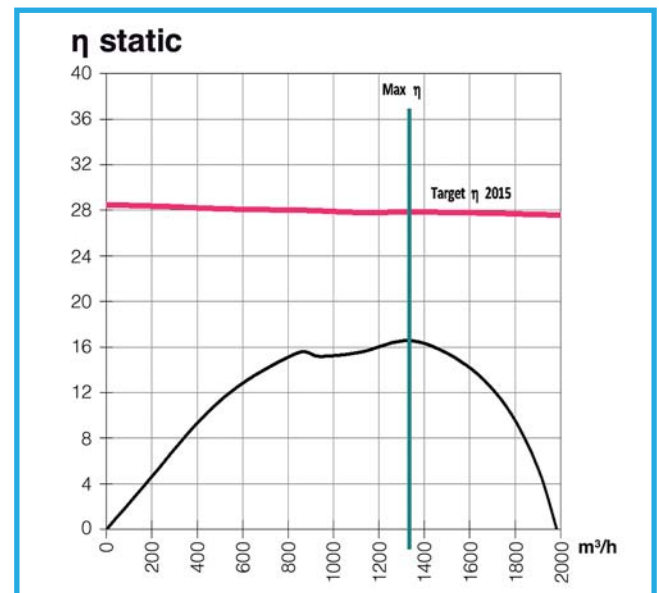
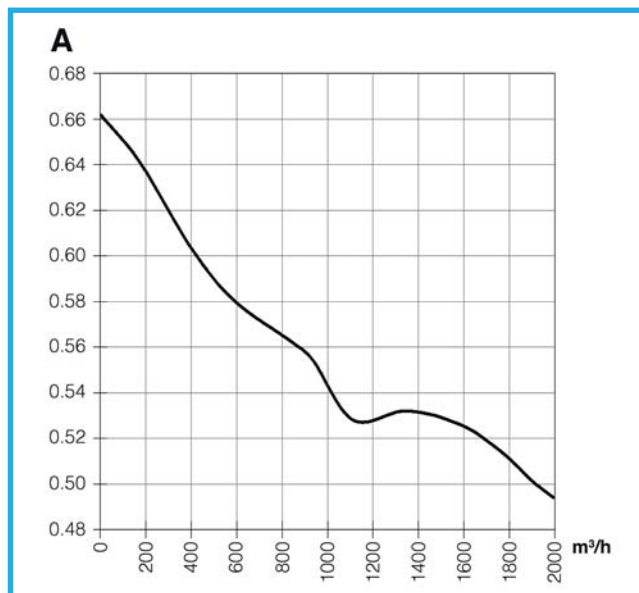
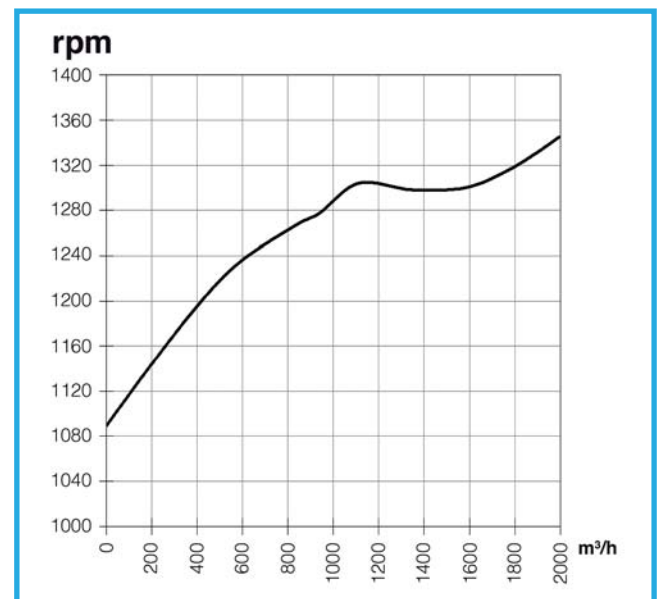
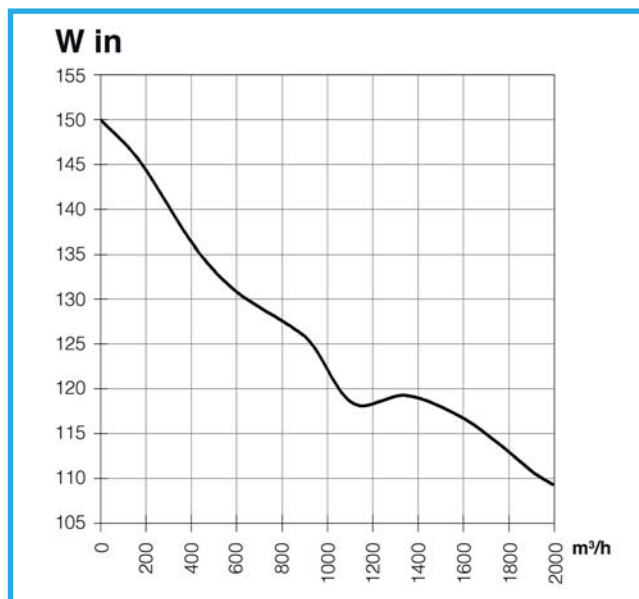
Measurement Category - A -

Free Inlet - Free Outlet

Value @ max. efficiency (50 Hz)

Air Flow: 1348 (m³/h)
 Static Pressure: 5.4 (mmH₂O)
 Rpm: 1298 (min-1)
 Power Input: **119 (W)**
 dB(A)_Lw@ o Pa 65.1

Overall efficiency (η): 16.5
 Grade efficiency (N): 28.7





PERFORMANCE CURVES

3CFR 90-45-4-350-23

ErP Free

Fan Type:

Fan Material:

Ø 350x23°

Plastic

Motor Type:

3CF

Nominal Voltage:

230V

Frequency:

50-60 Hz

Nominal Watts:

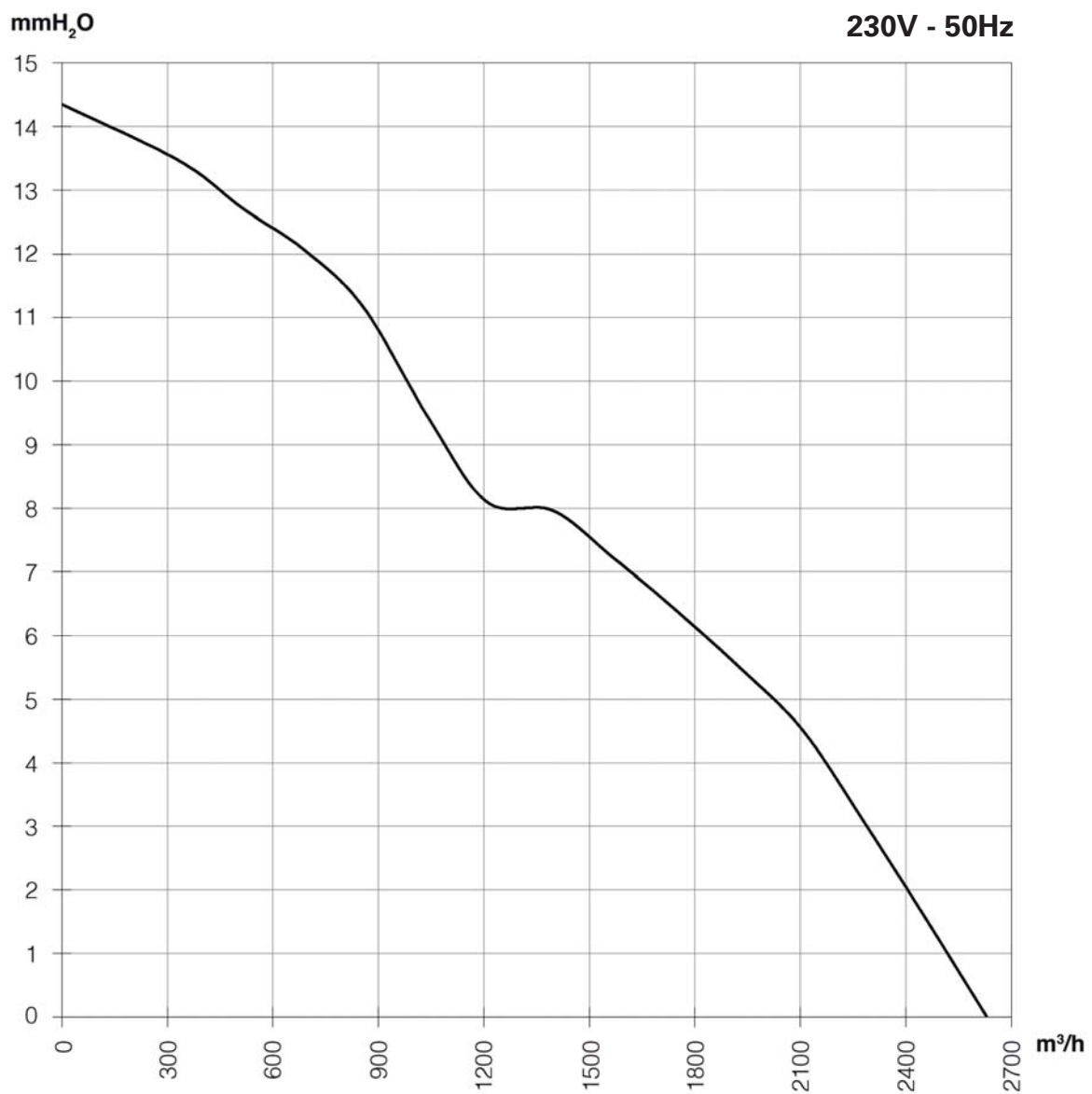
80

Range Power:

200-254V

Capacitor:

6.3µF



Test: PCF - 471 Web: 407

Measurement Category - A -

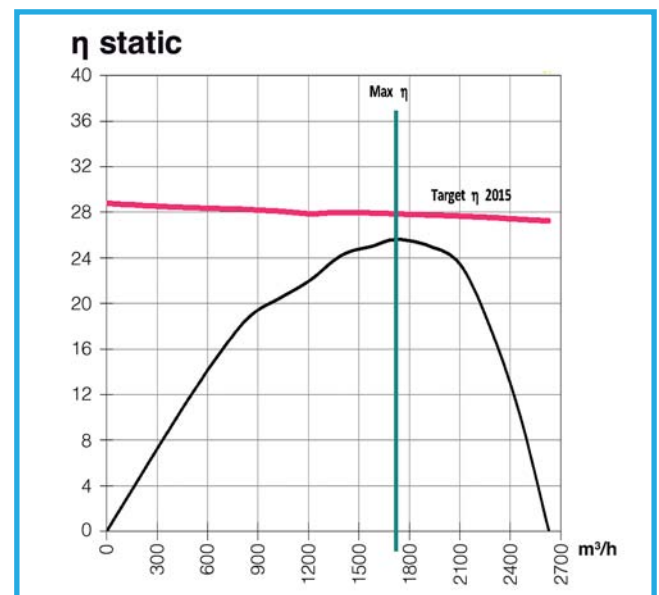
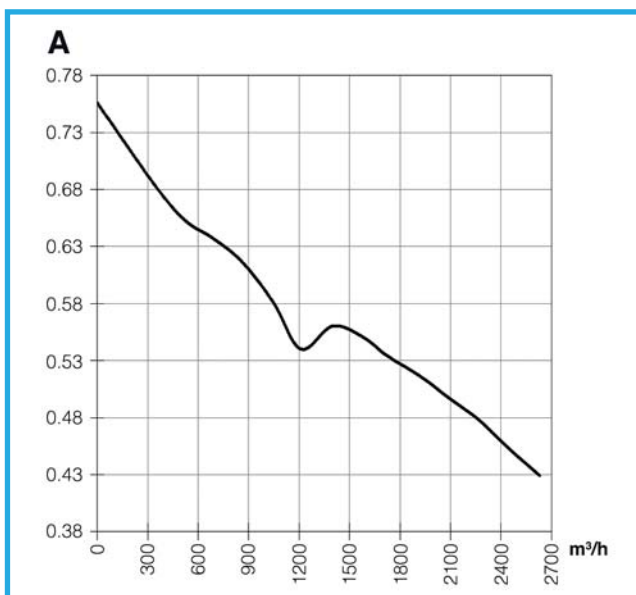
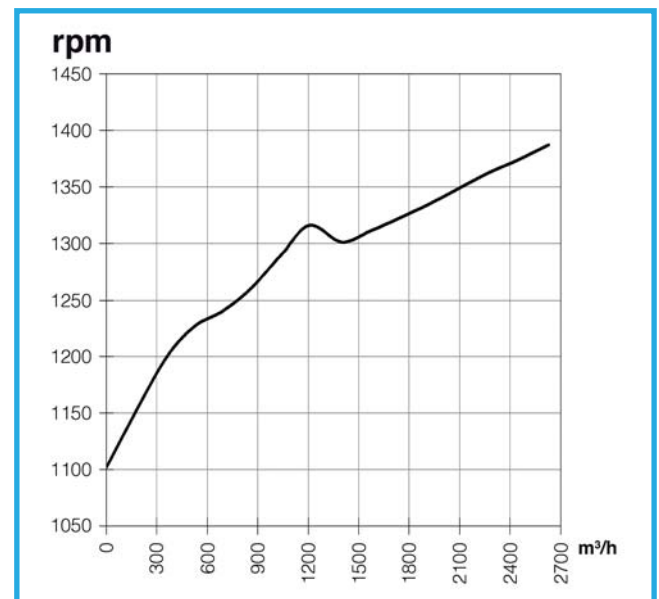
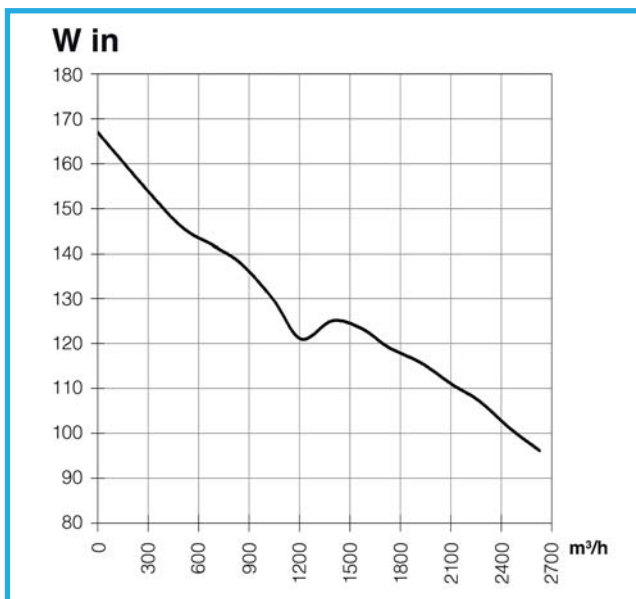
Free Inlet - Free Outlet

Value @ max. efficiency (50 Hz)

Air Flow: 1726 (m³/h)
 Static Pressure: 6.5 (mmH₂O)
 Rpm: 1321 (min-1)
 Power Input: **119 (W)**
 dB(A)_Lw@ o Pa 67.7

Overall efficiency (η): 25.6

Grade efficiency (N): 37.8





PERFORMANCE CURVES

3CFR 120-60-4-400-21

ErP 2015

Fan Type:

Fan Material:

Ø 400x21°

Plastic

Motor Type:

3CF

Nominal Voltage:

230V

Frequency:

50 Hz

Nominal Watts:

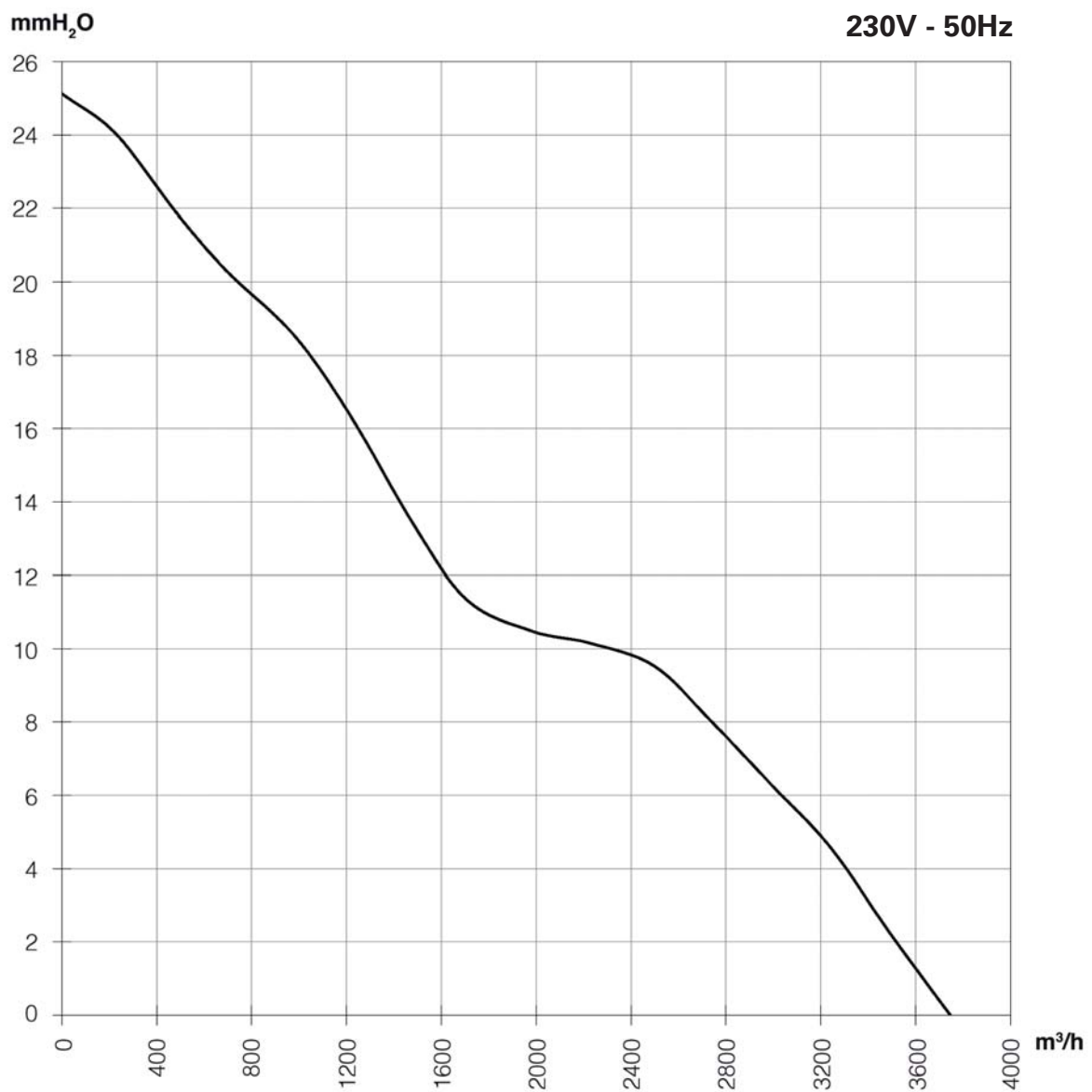
120

Range Power:

200-254V

Capacitor:

12.5µF



Test: PCF - 548 Web: 413

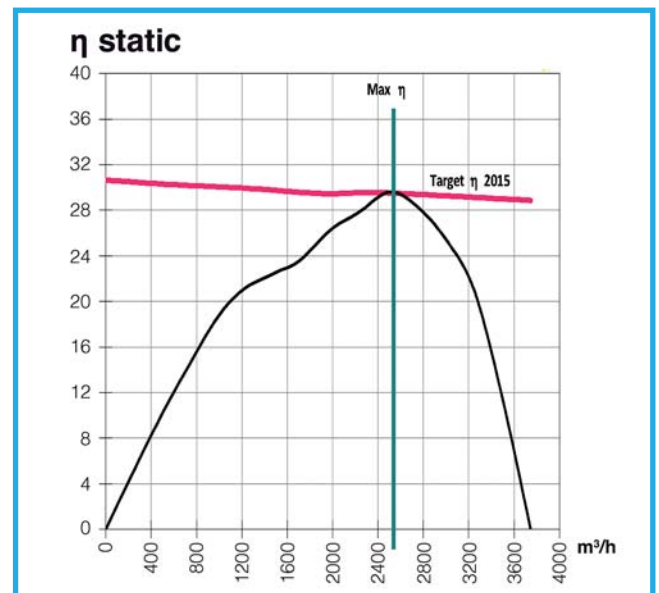
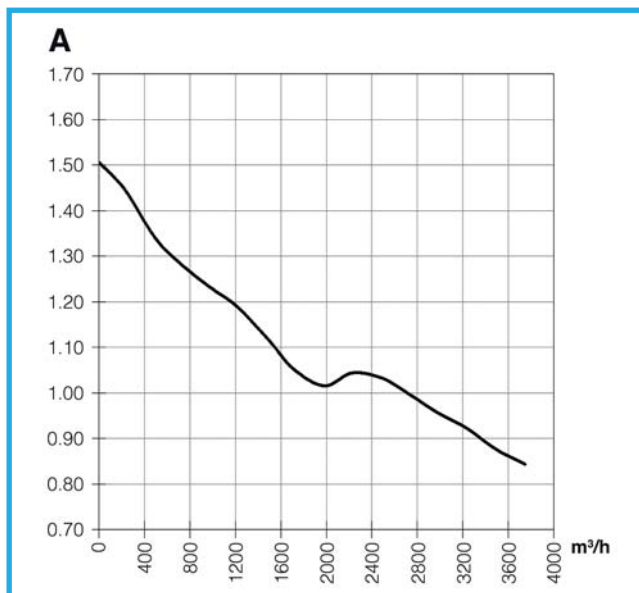
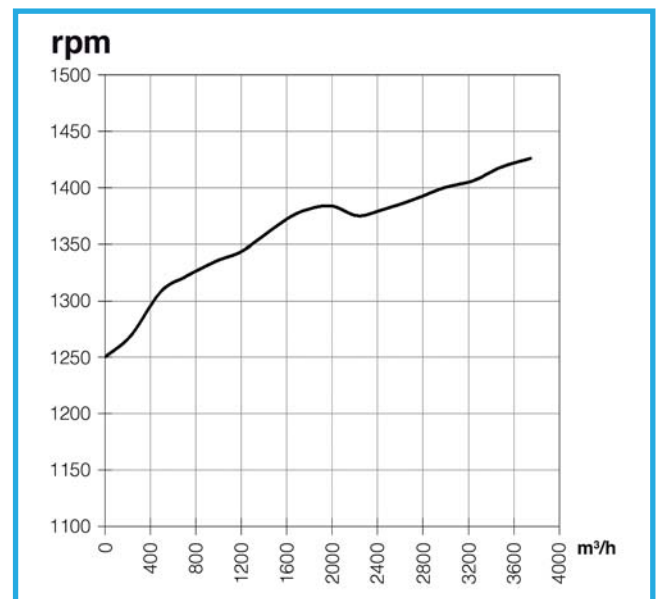
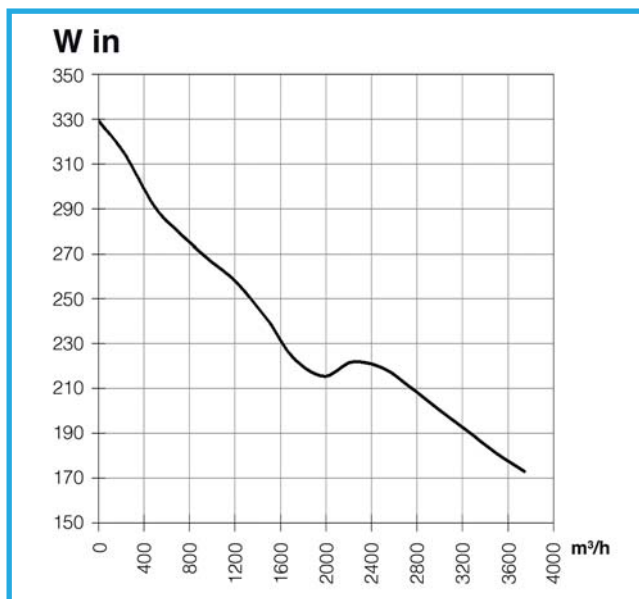
Measurement Category - A -

Free Inlet - Free Outlet

Value @ max. efficiency (50 Hz)

Air Flow: 2498 (m³/h)
 Static Pressure: 9.5 (mmH₂O)
 Rpm: 1382 (min-1)
 Power Input: 219 (W)
 dB(A)_Lw@ o Pa 73.1

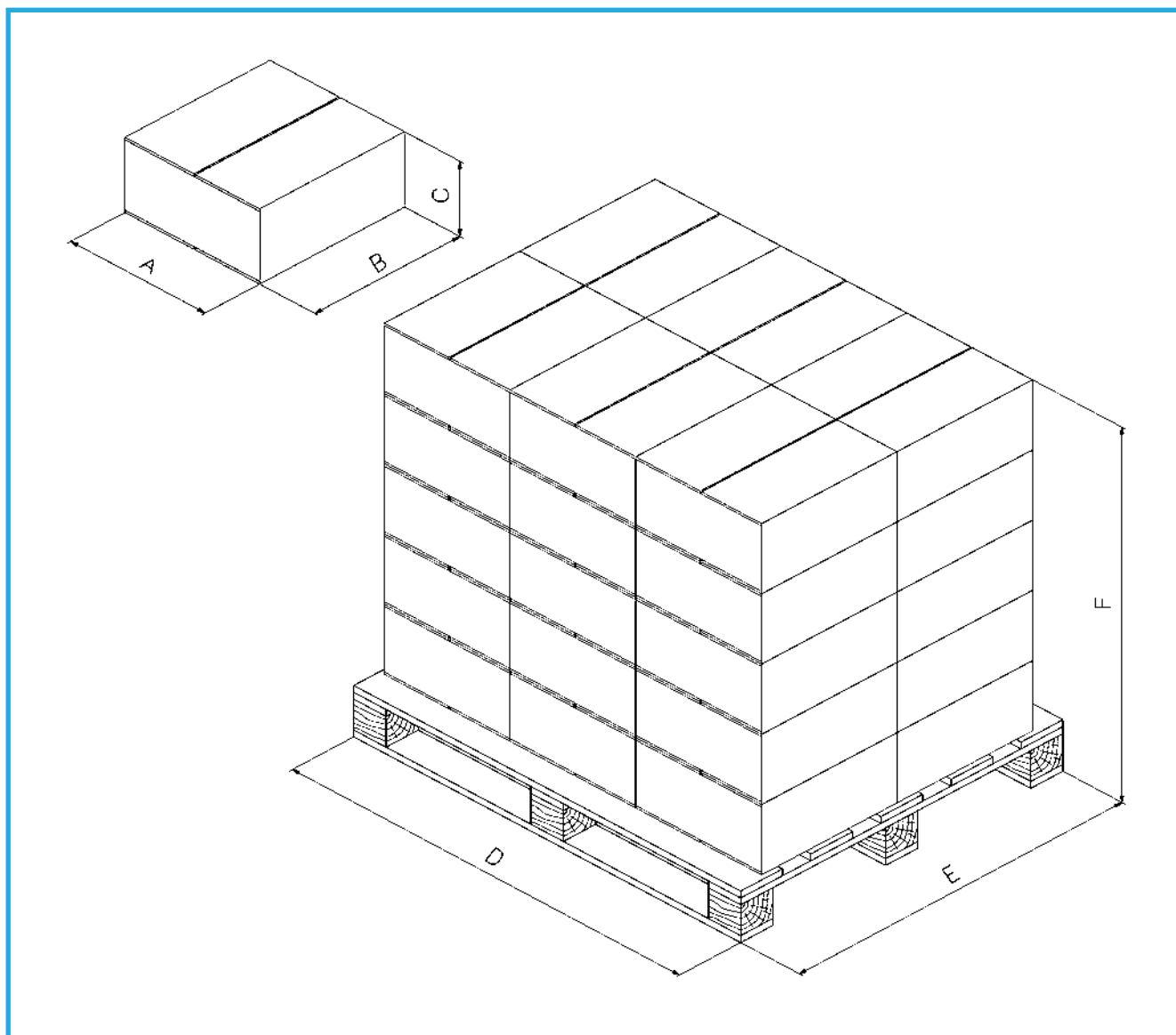
Overall efficiency (η): 29.6
 Grade efficiency (N): 40.1



STANDARD PACKING

		SINGLE BOX				PALLET				
		Dimensions (*)			Weight kg	Dimensions			Box per Level	Total Boxes
		A	B	C		D	E	F max		
CFeR - CFR	300	370	370	210	4,0	1200	800	1200	6	30
	315	370	370	210	4,0	1200	800	1200	6	30
	350	405	405	230	4,5	1200	800	1300	6	30
	400	480	480	230	4,5	1200	1000	1300	4	24

(*) One only fan each box





SOFTWARE DI SELEZIONE ONLINE

www.elco-spa.com

SELECTION SOFTWARE

www.elco-spa.com

The screenshot shows the ELCO online selection software interface. The browser address bar displays 'www.elco-spa.com/prodotti/ricerca?lang='.

The interface includes the ELCO logo, a navigation menu (ABOUT US, PRODUCTS, CATALOGUES, NEWS, CONTACTS, RESERVED AREA), and a language selection bar with flags for Italy, UK, France, Germany, and China.

The main form contains the following fields and controls:

- Product**: Dropdown menu.
- Web code MO 00**: Text input field.
- Elco code**: Text input field.
- ErP**: Dropdown menu.
- N° files**: Displayed as 0.
- Blowers n°**: Text input field.
- ø**: Text input field.
- L**: Text input field.
- Type**: Dropdown menu.
- Housing type**: Dropdown menu.
- Test type**: Text input field.
- Test n°**: Text input field.
- Speed**: Text input field.
- Whom**: Text input field with a dropdown for percentage (± 5 %).
- M3/h FreeLoad**: Text input field with a dropdown for percentage (± 5 %).
- mmH2O MaxLoad**: Text input field with a dropdown for percentage (± 5 %).

Buttons: **SEARCH** and **NEW**.

Below the form is a table with the following columns:

Elco code	Web code	Test Type	n°	n°	Blowers ø	L	Type	Housing Type	m3/h FreeLoad	mmH2o MaxLoad	Speed	Whom	ErP
-----------	----------	-----------	----	----	-----------	---	------	--------------	---------------	---------------	-------	------	-----

Attention: you must select one filter to perform the search

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ELCO-E-TRADE Srl reserves itself the right to modify also without prior notice
all indicated technical information.

The user is responsible for the correct installation of components listed in the catalogue
in compliance with existing regulations of each Country and the restrictions imposed.
Performances in this catalogue are for reference only.
IP rating granted with supplying cable facing down.

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