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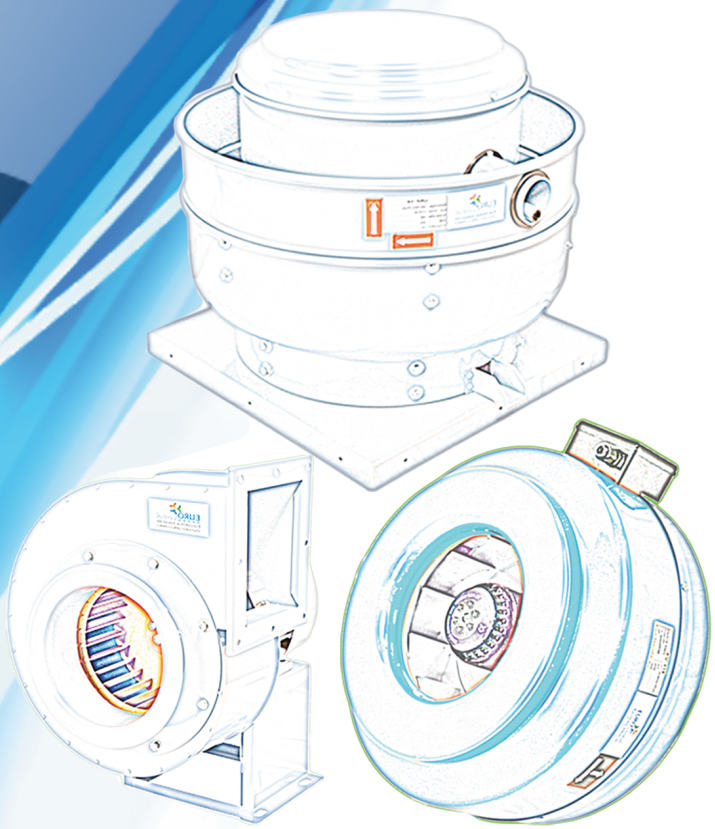
YOUR PARTNER IN AIR TECHNOLOGIES



CE TÜV Rheinland Applus laboratories CORRESPONDING MEMBER EUROVENT

Authorised Distributor in UAE

DeltA Duct®

Delta Duct Air Conditioning LLC

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FERERA ELECTROMOTOR

WALL MOUNTED AXIAL FANS

XWF: IP54, IP55, Class F, Working temperature -25°C / +60°C , Anti Corrosive finish with polyester resin & Range (1,300 cmh to 54,000 cmh) (Atex Optional)
Applications: Workshops, Electrical Rooms & Warehouse.

XWF/65: IP65, Class F, Working temperature -25°C / +60°C, Anti Corrosive finish with polyester resin & Range (1,250 cmh to 18,700 cmh) (Atex Optional)
Applications: Workshops, Electrical Rooms & Warehouse

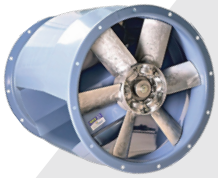
XWF/K: IP54, Class B and F, Working temperature -30°C / +60°C Anti-Corrosive finish with polyester resin & Range (2000 cmh to 38,000 cmh)

Applications: Workshops, Electrical Rooms & Warehouse

XLS: IP55, Class F, Working temperature -25°C / +50°C, Anti Corrosive galvanized sheet steel & Range (100 cmh to 43,000 cmh)

Applications: Farms & Agricultural Places.

DUCTED AXIAL FANS



XBF: IP55, Class F, Working temperature -25°C / +150°C, Anti Corrosive with heat protection paint & Range (1,600 cmh to 21,700 cmh) (Atex Optional)
Applications: Commercial Kitchen Ventilation & Industrial Spray Booths

XCF/65: IP65, Class F, Working temperature -25°C / +60°C, Anti Corrosive finish with polyester resin & Range (2,400 cmh to 18,700 cmh) (Atex Optional)
Applications: Paint spray booths Welding booths & Restaurants .

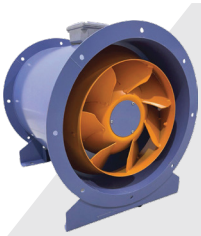
XCF/K: IP55, Class F, Working temperature -25°C / +50°C, Anti Corrosive finish with polyester resin & Range (1,000 cmh to 72,450 cmh)

Applications: Commercial Kitchen Ventilation & Industrial Spray Booths

XLX: IP55, Class F, Working temperature -25°C / +150°C, Anti -Corrosive finish with polyester resin & Range (2,500 cmh to 68,000 cmh) (Atex Optional)
Applications: Kilns, steel mills, and forges & Paper mills.

XMF: IP55, Class F, Working temperature -25°C / +50°C, Anti Corrosive finish with polyester resin & Range (3,100 cmh to 17,000 cmh)

Applications: Commercial Kitchen Ventilation & Industrial Spray Booths



EMX/K: IP55, Class F, Working temperature -25°C / +50°C, Anti-Corrosive finish with polyester resin & Range (3,400 cmh to 56,500 cmh)

Applications: Commercial Kitchen Ventilation & Industrial Spray Booths

CABINET / BOX FANS

KBF: IPX4, Class F, Working temperature -25°C / +80°C & Range (1,500 cmh to 4,390 cmh)

Applications: Commercial Kitchen Ventilation

KBF-ISO: IPX4, Class F, Working temperature -25°C / +120°C & Range (1,650 cmh to 9,420 cmh)

Applications: Commercial Kitchen Ventilation

KVC: IPX4, Class F, Working temperature -25°C / +80°C & Range (275 cmh to 3,300 cmh)

Applications: Offices, public buildings, factories, retail stores and schools.

UTF/K: IPX4, Class F, Working temperature -25°C / +120°C & Range (3,000 cmh to 8,500 cmh)

Applications: Commercial Buildings

ROOF FANS

KRF: IPX4, Class F, Working temperature -25°C / +120°C , Weather proof aluminium & Range (1,430 cmh to 15,300 cmh)

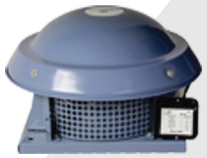
Applications: Kitchen Hoods & Restaurant & Workshops.

URF: IPX4, Class F, Working temperature -25°C / +120°C , Weather proof aluminium & Range (4,800 cmh to 13,300 cmh)

Applications: Kitchen Hoods & Restaurant & Workshops.

KRF-ISO: IPX4, Class F, Working temperature -25°C / +120°C Weather proof aluminium & Range (1,430 cmh to 15,300 cmh)

Applications: Kitchen Hoods & Restaurant & Workshops.



SRF: IPX4, Class F, Working temperature -25°C / +80°C , Weather proof aluminium & Range (460 cmh to 9,600 cmh)

Applications: Kitchen Hoods & Restaurant & Workshops.

KVR/A: IPX4, Class F, Working temperature -25°C / +80°C , Weather proof aluminium & Range (275 cmh to 3,300 cmh)

Applications: Kitchen Hoods & Restaurant & Workshops.

KVR/B: IP54, Class F, Working temperature -30°C / +60°C , Weather proof aluminium & Range (560 cmh to 1,700 cmh)

Applications: Kitchen Hoods & Restaurant & Workshops.

DOMESTIC INLINE FANS

EM: IPX5, Class F, Working temperature -25°C / +60°C, Anti Corrosive and weather resistant plastic housing & Range (125 cmh to 3,300 cmh)

Applications: Commercial Public Toilets

EL-EC: IPX4, Class F, Working temperature -25°C / +80°C & Range (7,120 cmh to 20,200cmh)

Applications: Commercial Public Toilets & Fresh Air

EL/K: IP54, Class F, Working temperature -25°C / +80°C & Range (920 cmh to 13,940 cmh)

Applications: Commercial Public Toilets, Kitchens & Fresh Air

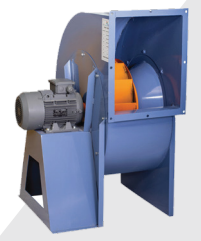
KV: IPX4, Class F, Working temperature -25°C / +80°C & Range (275cmh to 3,300 cmh)

Applications: Commercial Public Toilets, Kitchens & Fresh Air

CENTRIFUGAL FANS

CFI: IP55, Class F, Working temperature -20°C / +120°C , Anti Corrosive finish with polyester resin & Range (135 cmh to 21,000 cmh) (Atex Optional)

Applications: Commercial Central Kitchens,Dust and gas extractor fans



CBI/K: IP55, Class F, Working temperature -20°C / +120°C, Anti Corrosive finish with polyester resin & Range (8200 cmh to 17,200 cmh) (Atex Optional)

Applications: Commercial Central Kitchens,Dust and gas extractor fans

CBI: IP55, Class F, Working temperature -20°C / +120°C , Anti Corrosive finish with polyester resin & Range (1,040 cmh to 75,000 cmh) (Atex Optional)

Applications: Commercial Central Kitchens,Dust and gas extractor fans

CFI/K: IP55, Class F, Working temperature -20°C / +120°C, Anti Corrosive finish with polyester resin & Range (600 cmh to 20,100 cmh) (Atex Optional)

Applications: Commercial Central Kitchens,Dust and gas extractor fans

SMOKE FANS

XCT: IP55, Class H, Fire Rated Temperature (200°C, 300°C & 400°C) / 2 hours, Anti-Corrosive finish with polyester resin & Range (3,150 cmh to 192,300 cmh)

Applications: shopping centres, airports, industrial buildings, cinemas, theatres or similar buildings.

DEHUMIDIFIER

Portable Dehumidifier:

Designed for commercial and industrial applications. With a high capacity of 60-138Ltr/24Hr, it efficiently removes excess moisture.

Applications:
Storage, preservation and archives

Household Ceiling Dehumidifier:

Designed ultra thin and silent body, Protection functions and precise humidity control. 26-96Ltr/24Hr, it efficiently removes excess moisture

Applications:
Homes, Hotels & Seaside resorts

Floor Standing Dehumidifier:

Equipped with an intelligent control system, it automatically adjusts the dehumidification process, ensuring hassle-free operation. 288-960Ltr/24Hr

Applications:
Swimming Pools, Food and Beverage

Commercial Ceiling Dehumidifier:

Designed specifically for commercial environments, Its precise humidity control system allows users to set the irdesired humidity level. 26-960Ltr/24Hr

Applications:
Agriculture & Data centres and telecoms

ERV & HRV

LE SERIES: Energy Recovery Unit, Double filters, Three speed & Range (115 cmh to 2,000 cmh)

Applications: Home & Hotels

HP SERIES: Heat or Energy Recovery Unit, Double filter Intelligent control & Range (150 cmh to 1,300 cmh)

Applications: Home & Hotels

HE SERIES: Heat or Energy Recovery Unit, Double filter, Intelligent control & Range (150 cmh to 1,300 cmh)

Applications: Home & Hotels

MA SERIES: Heat or Energy Recovery Unit & Range (1,500 cmh to 6,000 cmh)

Applications: Home & Hotels

FNH SERIES: Heat or Energy Recovery Unit, F9 Filter, Intelligent control & Range (150 cmh to 600 cmh)

Applications: Home & Hotels

HOODS

Side Suction Hood :

Matt Black Material with no filters & Touch sensor + Motion sensor Air flow Range (300 cmh to 1200 cmh)

Applications: Home & Restaurant

Pyramid Hood:

Stainless steel 304/430/201 with aluminium filters. Air folw Range (300 cmh to 700 cmh)

Applications: Home & Restaurant

ESP Hood :

Stainless steel special hood with electrostatic filters & air curtain technology .

Applications: Home & Restaurant

AIR PURIFIER

AIRP-06:

Small Air Purifier Unit
Able to cover 50-70 m2

Applications: Reception, Offices & Living rooms.

AIRP-15:

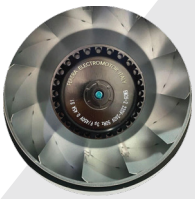
Large Air Purifier Unit
Able to cover 90-120 m2

Applications: Reception, Offices & Living rooms.

MOTORS

Internal Rotor Motor:

Used for large ventilation system fans, Extraction systems & Medical device technology. Range (0.55 KW to 60 KW)



External Rotor Motor:

Used for inline fans and ventilation systems,Refrigeration technology & Process cooling.

PLASTIC FANS

EVW: Working temperature
-25°C / +50°C & Range
(88 cmh to 330 cmh)

Applications: Toilets & Living Rooms

EVWS/E: Working temperature
-25°C / +50°C & Range
(100 cmh to 300 cmh)

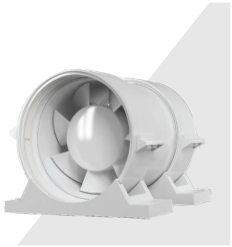
Applications: Toilets & Living Rooms

CDEF: Working temperature
-25°C / +50°C & Range
(100 cmh to 400 cmh)

Applications: Toilets & Living Rooms

QuietX: Working temperature
-25°C / +40°C & Range
(90 cmh to 250 cmh)

Applications: Toilets & Living Rooms



EMC: IP24, Working temperature
-25°C / +50°C & Range
(115 cmh to 320 cmh)

Applications: Toilets & Living Rooms

AIR TREATMENT UNIT

EvEsp: Electrostatic Precipitator, Purification Efficiency (Single Pass: >= 90% & Double Pass: >= 98.7%) & Range (3,000 cmh to 14,000 cmh)

Applications: Filtration Restaurant Smoke

EV-ECU:
Designed for the removal of smoke, oil, and grease particles from kitchen ventilation system to eliminate or reduce odor to anacceptable level.

Applications: removal of smoke, oil, and grease particles from the kitchen ventilation system

HYGIENIC FILTRATION

G2-G4 Pre Air Filter :

Used as first stage filters in air condition systems & pre filtration in multi filtration systems.

Types:
Pleat

F5-F9 Medium Efficiency Filter :

Suitable for commercial buildings, Spray paint car room & Factories. Used before high efficiency filter.

Types:
Bag - Pleat - Vcel

Carbon Filter :

The canisters come in one standard size, differentiated by materials and lengths for different airflow rates.

Types:
Carbon Canister

H11-H14 High Efficiency HEPA Filter:

Used for high efficient cleaning of air and sterilizing filtration in medical institutions & clean rooms.

Types:
Pleat - Vcell

AIR CURTAIN

FM-H/Y:

Efficient motor, continuous operation for more than 5000 hours without failure, strong air flow, superior function. Range (1,400 cmh to 3600 cmh)

Applications: Restaurant, Shops, Markets & Warehouses.

FLEXIBLE DUCTS

ALUMINIUM DUCT

INSULATED DUCT

ACOUSTIC DUCT

HIGH TEMPERATURE DUCT

DOUBLE LAYER DUCT

COPPER PLATING DUCT

SEMI-RIGID ALUMINIUM DUCT

SILENCER

ACCESSORIES

MOUNTING BRACKETS

BACK DRAUGHT SHUTTER

FLEXIBLE DUCT COLLARS

PROTECTION GRILLE

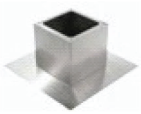
MOUNTING BRACKETS

PLASTIC SHUTTER

INLET FLANGE

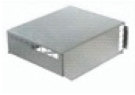
INLET COLLAR

AUTOMATIC SHUTTER



FLAT ROOF SOCKET

SOCKET SILENCER



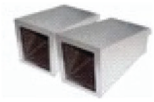
WEATHER PROTECTION HOOD

MOTOR PROTECTION SHIELD

BASE FRAME

RAIN COVER

PANEL



SOUND DIFFUSER

RIGID DUCT SILENCER

FLEXIBLE DUCT SILENCER

ISOLATOR SWITCH

ACCESSORIES

POTENTIOMETER

STEP SWITCH-3

ELECTRONIC CONTROLLER

STEP-5 TRANSFORMER

TRANSFORMER

STEP-5 TRANSFORMER

TRANSFORMER

CONSTANT PRESSURE CONTROL

CO2 CONTROL

EC-CONTROLLER

FREQUENCY CONTROLLER

A/SP

A/MS

A/HS

A/DV

Rules & Formulas Related to Fans

Airflow (Q)
Volume of air to be exhausted or introduced in a place in a period of given time. It is usually expressed in m3/h or m3/s.
In Italy to calculate the airflow there are some different ways:

1) According to the volume of the place and the number of the required air exchanges per hour in relation with the use in the room:

INDUSTRIAL ENVIRONMENT	EXCHANGES / h
Harmful environments	30 - 60
Stock House	3 - 6
Foundry	20 - 30
Industrial laundry	15 - 30
Machines room	20 - 30
Workshop (in general)	8 - 10
Workshop with ovens	30 - 60
Mechanization workshop	5 - 10
Painting workshop	30 - 60
Welding workshop	15 - 30
Dry-cleaners	20 - 30

COMMERCIAL ENVIRONMENT	EXCHANGES / h
Classroom	2 - 4
Bank	3 - 4
Café	10 - 12
Library	3 - 5
Cine-theatre	10 - 15
Industrial Kitchen	15 - 30
Cafeterias	5 - 10
Recording Studio	10 - 12
Garage	6 - 8
Gym	6 - 12
Hospital	4-6
Public toilet	8 - 15
Laundry	15 - 30
Offices	4 - 8
Bakery	20 - 30
Restaurant	5 - 10
Ballroom	6 - 8
Conference rooms	8 - 12
Hairdresser	10 - 15
Meeting rooms	4 - 8

These values are indicative and they never have to replace the normative figures and they can be modify according to special requirements.

2) According to the quantity of people habitually present in the place and their activities:

20 -40 m3/h per person in case of normal activity.
108 m3/h per person in case that smoke is allowed.
45 m3/h per person in case of light physical activity.
60 m3/h per person in workshops and other rooms.

3) According to the air velocities required for the capture of particles or the velocity of transport of the same in the ducts.

VELOCITY OF CAPTATION	m/s
Kitchen hoods:	
- domestic application	0,2 to 0,3
- commercial application	0,2 to 0,5
Evaporation vats:	0,25 to 0,5
Degreasing:	0,25 to 0,5
Welding, pickling	0,50 to 2
Galvanization	0,50 to 1
Painting boot	0,40 to 1
Grinding , rectification	2,50 to 10

VELOCITY OF TRANSPORT	m/s
Dust:	10
Flour:	15
Sawdust:	15
Thin metallic dust:	15
Wooden shavings:	18
Metallic shavings:	20 to 25

To calculate the airflow multiply this speed (v) for the air crossing section (S):
Q (m3/h) = v (m/s) x S (m2) x 3600

4) In function of the quantity of exceeding heat to be removed:

In general for the refreshing of environments the airflow to be exhaust is given by the following formula:

$$Q\ (m3/h) = \frac{\text{Number kcal/h (*)}}{0{,}3\ (Ta - Te)}$$

Where 1000 watt = 1 kW = 860 kcal

Ta = Ambient temperature (°C)
Te = External temperature (°C)
(*) = Quantity of heat to be removed (see table 1)

Table 1 Efficiency electrical machines

Efficiency	Heat dispersion
Electric Motors 70-95%	5 to 30%
Transformers 90-95%	5 to 10%
Rectifiers 80-97%	3 to 20%
Alternators 87-98%	2 to 23%

Fan laws

The characteristic curves of fans respond to certain laws, denominated "fan laws", that allow to determine the variation of airflow (Q), pressure (H) and the absorbed power by the impeller (N), in presence of the variation of the working conditions, RPM (n) or density of the handled air (y) or dimensions (Diameter of the impeller D).

Variation of RPM for the same fan at constant density:

$$Q_2 = Q_1 \times \left(\frac{n_2}{n_1}\right)$$

$$H_2 = H_1 \times \left(\frac{n_2}{n_1}\right)^2$$

$$N_2 = N_1 \times \left(\frac{n_2}{n_1}\right)^3$$

Variation of fan diameters (similar) at constant speed:

$$Q_2 = Q_1 \times \left(\frac{D_2}{D_1}\right)^3$$

$$H_2 = H_1 \times \left(\frac{D_2}{D_1}\right)^2$$

$$N_2 = N_1 \times \left(\frac{D_2}{D_1}\right)^5$$

Variation of density at constant RPM:

$$H_2 = H_1 \times \left(\frac{y_2}{y_1}\right)$$

$$N_2 = N_1 \times \left(\frac{y_2}{y_1}\right)$$

Other formulas:

Hst = Ht - Hd
Hst= Static pressure
Ht= Total pressure
Hd= Dynamic pressure

$$Hd\ (mmH2o) = \frac{\left(\frac{Q\ (m3/h)}{S\ (m2) \times 3600}\right)^2}{16{,}08}$$

$$N\ (kW) = \frac{Q\ (m3/h) \times Ht\ (mmH2o)}{102 \times 3600 \times \eta}$$

η= efficency

$$m3/h = Nm3/h \times \left(\frac{(273+t}{273} \times \frac{760)}{Pb}\right)$$

Pb = Barometric pressure
Nm3/h = Normal cubic meters

$$n\ (RPM) = \frac{120 \times \text{frequency (Hz)}}{\text{number of poles motor}}$$

Authorised Distributor in UAE

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