

 AIR COMFORT

AIR TREATMENT

CVEQ AHU

» OFFERING HIGH PERFORMANCE KITCHEN EXTRACT AIR PURIFICATION





The CVEQ is designed for kitchen extraction
filtering contaminated air,
removing dirt, grease and odours to discharge clean air

INTRODUCTION

The CVEQ unit has been developed specifically for commercial kitchen extraction and is suitable for installation within built up towns and cities.

The CVEQ is available in six standard sizes covering a flow range from 1.8 m³/s to 4.5 m³/s. The CVEQ kitchen extract is suitable for internal mounting as standard with the option for pre-filters, bag filters, HEPA filters and carbon filters. The length of the unit is determined by the selected components. The unit is very simple to select, install and commission.

CVEQ - UNIT SPECIFICATION

The CVEQ is our new, highly adaptable air purification air handling unit offering a number of unique features. The intelligent casing design with energy efficient components makes the CVEQ a cost-effective solution. The modular construction helps to ease installation on site.

The units are based on our long experience of air handling. Flakt Woods has been developing and producing air handling units for more than 100 years, and the majority of eQ's main components, such as fans, recovery units, dampers and silencers are manufactured by Flakt Woods. The components have been selected to be as energy saving as possible.

The modern air handling unit is designed to meet all conceivable air handling requirements and standards in Europe. eQ meets the requirements according to the classification in the CEN standard for air handling units and is manufactured in a certified workshop with regard both to quality (ISO 9001) and to the environment (ISO 14001).

CVEQ HIGHLIGHTS

- Energy efficient
- High performance
- Hygienic design
- Modularity / Common cross sections
- Corrosion class C4
- Service friendly
- Fast commissioning
- Short delivery times
- Lift off doors with access both sides



CVEQ UNIT COMPONENT - CENTRIFLOW 3D PLUG FAN

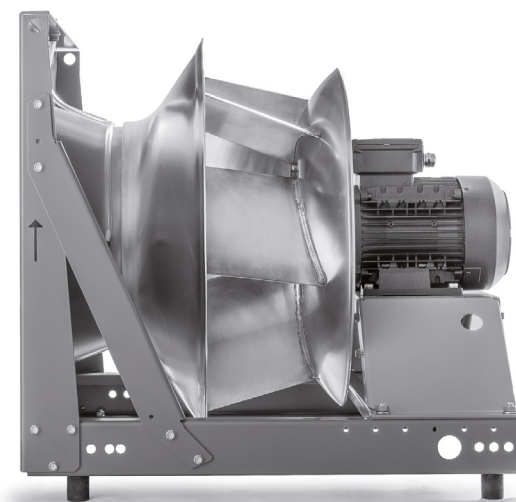
QUALITY AND ENVIRONMENT

All components are designed and manufactured in accordance with applicable standards including the quality assurance system ISO 9001, the environmental management system ISO 14001 and the Energy Directive 2009/125/EC and all Directives related to CE-marking.

AVAILABLE VERSIONS

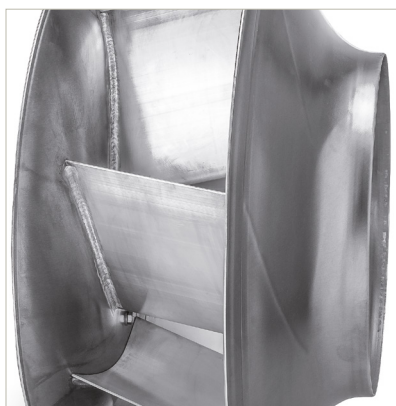
In CentriFlow 3D GMEB the same impeller is available with a standard AC motor (IE2 or IE3 class) with different drive arrangements.

IE2 efficient motors as standard.



Without drive

DESIGN DESCRIPTION



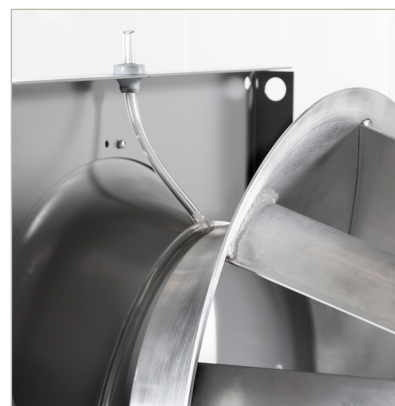
FAN IMPELLER

The impeller is made of aluminium. The hollow section airfoil blades are made of extruded aluminium profile and are welded to impeller front and back plate. The leading edges of blades are inclined and the blades are backward curved. Number of blades is six (6).



HUB

The hub is made of die casted aluminium in sizes 040 - 071. The Motor is fastened to a hub by using a keyway and fastening screws.



FAN INLET

The fan inlet is designed to optimize the air flow into the impeller. The inlet is deep-drawn in one piece and made of galvanized sheet steel.

MOTOR BRACKET AND BASE FRAME

The motor bracket and base frame are made of galvanized sheet steel (sizes 040-071).

CVEQ UNIT COMPONENT - CENTRIFLOW 3D PLUG FAN

MOTOR

CentriFlow 3D GMEB fans are supplied with IEC-standard IE2 or IE3 motors. The motors are equipped with a thermistor as standard. Motors are designed to be used with a speed controller which can be included in the delivery as loose or built-on.

MOTOR SPECIFICATION

- Admissible environmental temperature: from -15° C up to +40° C, with altitudes max 1000 m above sea level
- Mounting IM B3
- Operating voltage 400 VAC
- Insulation class F - temperature rise class B
- Degree of protection IP 54 also with speed controller
- Thermistor included as standard.

FAN SPECIFICATION

- Fan data tested in accordance with ISO 5801 and ISO 13347-2
- The complete fan is balanced to meet max vibration level 4,5 mm/s at maximum rotational frequency in accordance with ISO 14694
- Impeller made of aluminium, hub of aluminium or steel
- IEC-standard IE2 or IE3 motor
- Static construction made of galvanized sheet steel
- Number of blades: 6
- Permissible ambient temperature: -10° C - +40° C
- Inlet equipped with air flow sensor to determine the airflow
- Direction of rotation clockwise, seen from the motor.

AIR FLOW SENSOR

The inlet is equipped with an air flow sensor as standard. It is used for measuring the air flow through the impeller.

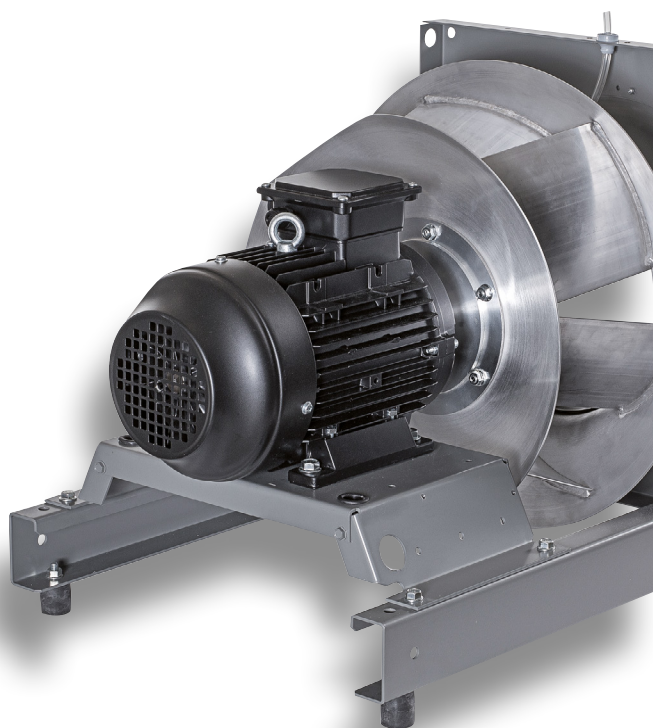
As standard there are two measurement nozzles and four measurement nozzles are available as accessory.

When a fan is inside an Air Handling Unit, the differential pressure Δp_m shall be measured between the static pressures in the suction side plenum and the air flow sensor.

The air flow is calculated as a function of the measurement pressure difference Δp_m with the coefficient k as a parameter by using the following formula:

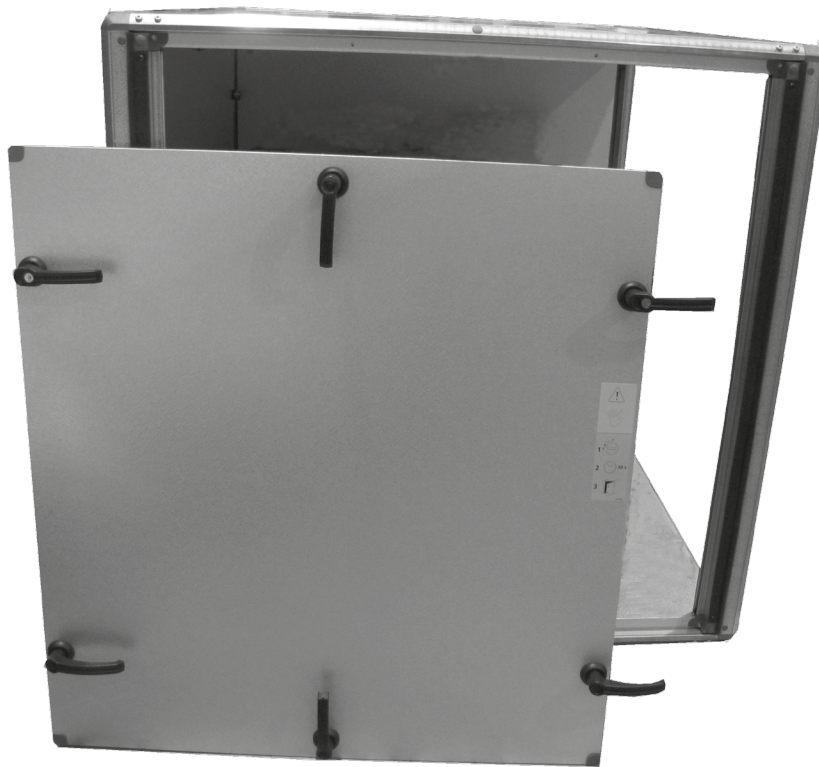
$$q_v = \frac{1}{k} \cdot \sqrt{\Delta p_m}$$

q_v air flow (m³/s)
 k coefficient of the fan
 Δp_m measurement pressure difference



k-VALUES

Unit	Fan size	k-value
018	040	29.62
027	050	18.89
036	063	11.63
045	063	11.63
054	071	9.07



CASING

The unit casing consists of closed frame profiles made of aluminium zinc coated sheet steel, which are joined together with strong corner pieces. Taken all together, this forms a strong and stable frame.

The casing and inspection lift off doors are manufactured using a double plate construction with a 50mm sandwich layer of mineral wool insulation. The inspection doors are lift off for easy access in all stocked units and equipped with mechanically secured sealing strips.

The inspection doors can also be obtained with door locks. The double-wall construction of the casing gives the unit a smooth inside and outside, which facilitates cleaning and reduces the risk of accumulations of dirt. The fact that the inside of the unit is fully covered with sheet metal eliminates the risk of fibres being carried along by the air flow.

The stocked CVEQ units are supplied as standard with lift off inspection doors on both sides for easy access and flexibility on site. Each lift off door comes complete with four handles for easy access.

To facilitate maintenance and service, the casing for many functional parts can be supplied with inspection windows on request.

The unit casing is mechanical designed for:

- 2500 Pa negative or positive pressure
- max 70°C air temperature
- min -30°C air temperature

The unit casing is electric designed for:

- max 40°C air temperature

FRAME

The frame is manufactured from closed profiles using 1.5mm galvanized sheet steel or aluminium zinc coated sheet steel. Joining of blocks is done using internal or external screwed joints.



SEALING STRIP

Sealing strips made of cellular rubber (EPDM) with closed pores are used for sealing the unit casing. The sealing strip is attached by mechanical means to the inspection door.

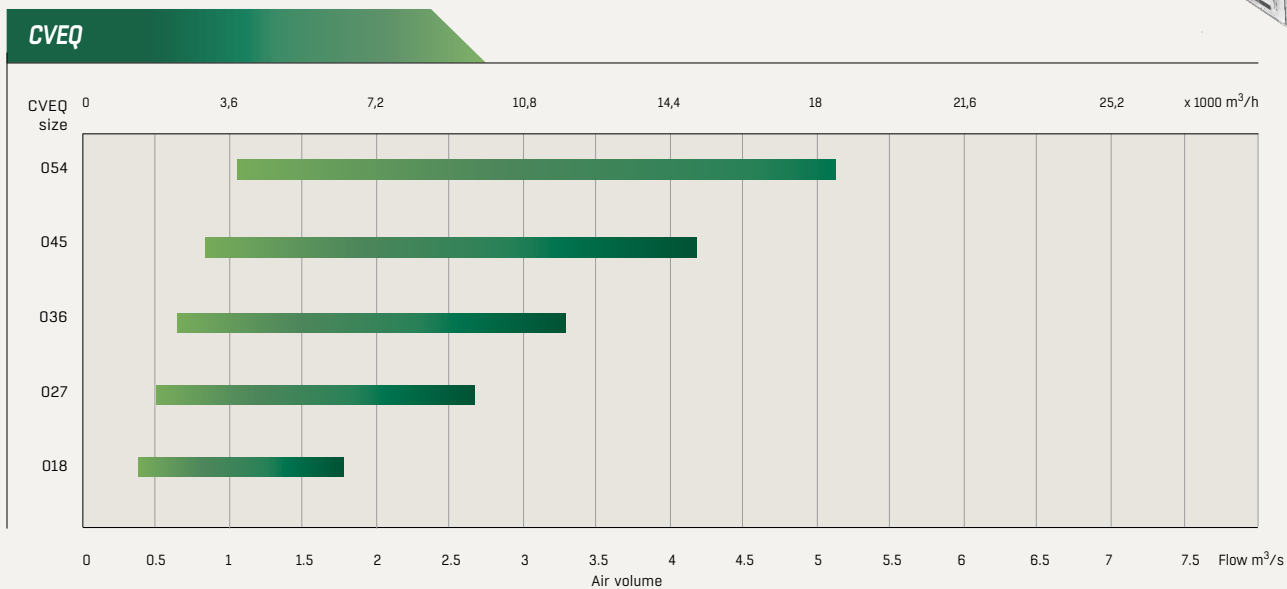


CASING ELEMENT IN DOUBLE-WALL CONSTRUCTION

The casing elements are manufactured as a double-plate construction with a 50mm sandwich layer of mineral wool insulation. The insulation is made of mineral wool, standard and heavy. The standard wool has the quality of heat insulation, whereas the heavy wool has the quality of sound-proof. The casing elements consist of 0.9mm aluminium zinc coated sheet steel depending on the size. Alternatively, the wall elements consist of polyester coated galvanized 0.9mm sheet steel, or a combination of these.

Flowchart

CVEQ



Quick selection

CVEQ



	Air flow	Filter		Ext. cross-section	
	2.5 m³/s	Filter Cassettes	Cassettes	Unit width mm	Unit height mm single deck
018	1.8 (6480)	2x592x592		1400	776
027 Standard	2.6 (9360)	2x592x592 2x287x592		1400	1076
027 Vertical	2.6 (9360)	2x592x592 2x287x592		1076	1400
036	3.3 (11880)	4x592x592		1400	1376
045	4.2 (15120)	4x600x600 2x287x592		1700	1376
054	5.1 (18360)	6x592x592		2000	1376

DESIGNED FOR HIGH DEMANDS OF COMMERCIAL KITCHEN EXTRACT



Air handling unit CVEQ meets the requirements according to the classification in the CEN standard for air handling units.

The component parts making up the unit are designed and tested in accordance with international norms. The CVEQ air handling unit is manufactured in four sizes, which cover an air flow range from 1.8 m³/s to 4.5 m³/s.

It is supplied in blocks, which include one or more functions, or as a complete pre-assembled unit. The unit is available for both indoor and outdoor installation.

The unit is manufactured by Fläkt Woods, which has a certified management system according to ISO 9001 (quality), ISO 14001 (external environment) and AFS 2001:1 (working environment).

WHAT GIVES THE UNIT ITS QUALITY:

- The construction of the unit casing meets the requirements of the CEN standard for air handling units
- In-house manufacture means that the functions are optimally adapted to the CVEQ unit
- A robust frame with fully closed frame profiles gives a unit casing with high strength
- Casing elements in double-wall construction with a 50mm thick sandwich layer of non-combustible mineral wool insulation providing good thermal and acoustic insulation
- Mechanically secured sealing strips of cellular rubber in the inspection doors reduce leakage flow to a minimum
- Can be supplied in blocks with one or more functional parts to facilitate transport and installation in tight spaces
- Totally smooth inside and outside, which ensures that strict hygiene requirements are met
- Free choice of material and surface finish for the unit casing
- Casing element and frame made of aluminium zinc coated sheet steel or stainless sheet steel
- Casing element with internal and external polyester-coated, galvanized sheet steel and aluminium zinc coated frame
- Mineral wool



FILTER DESCRIPTION

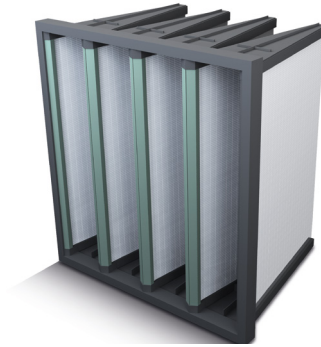
- Filter cassettes, coarse filter: G4, fine filter: F9 & F8
- Filter manufactured from a synthetic material
- Glass fibre filter for lower pressure drop (low SFPV, energy-saving filter), available for all sizes
- A stainless tray without drainage is available as an accessory
- Easy to maintain with replaceable disposable filters

CVEQ FILTERS



PRE FILTRATION STAGE: DISPOSABLE PANEL FILTERS

- G4 pleated filter (EU4)
- Tested according to EN 779:2012
- Arrestance >90%
- Offers a consistent performance for hotels, offices, hospitals & food environments
- High indoor air quality, uniformed pleat configuration for maximum performance
- Longer service life
- Energy saving



BAG FILTRATION STAGE: DISPOSABLE BAG FILTERS

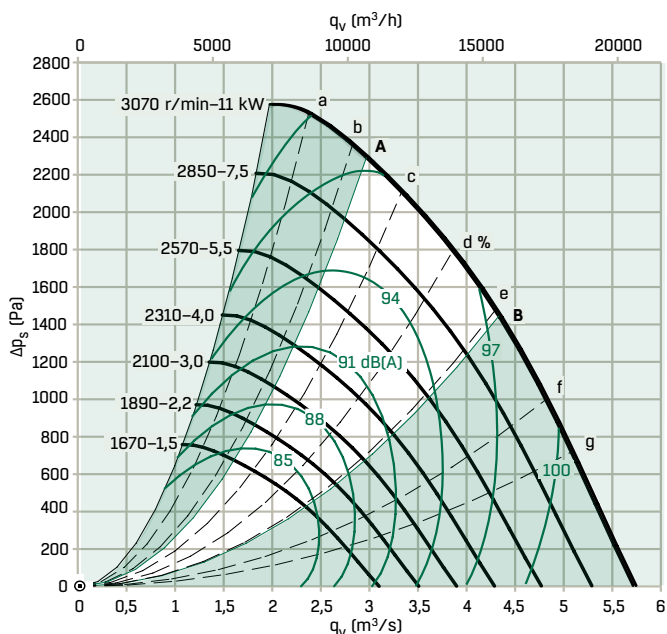
- F8 Bag Filter (EU8)
- Tested according to EN779:2012 and Eurovent Approved
- Fire prevention requirements according to DIN53438-3 (F1)
- Shatter proof synthetic medium
- Final filtration



CARBON FILTRATION STAGE: ACTIVATED CARBON FILTERS

- Low cost
- Odour and grease reduction in commercial kitchens
- Refillable system
- Multi compartments to prevent settling
- State-of-the-art patented technology
- Available in a variety of sizes and depths

027 CVEQ FAN TECHNICAL DETAILS



CVEQ-027

- Fan type - centrifflow 3D fan unit 11 kW
- Typical selection point - 2.7 m³/s @ 2000 Pa
- Fan efficiency 73.2%
- Motor output 11 kW - IE2
- Electric current 20.0 A
- Speed 2935 Rpm
- Number of poles 2
- Max frequency at frequency control 52.3 Hz
- Fan description: GMEB-1-0b-050

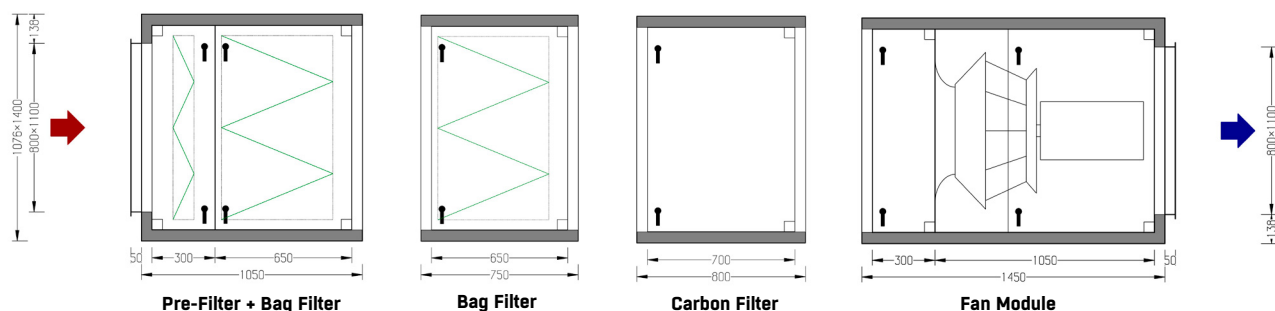
SOUND POWER LEVELS

	Lw per octave band (dB)								LwA
Octave band (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
Extract connection	79	82	95	86	82	82	82	77	91
Exhaust connection	84	82	89	85	87	84	83	81	92
Too surroundings	67	66	73	57	53	55	54	40	66

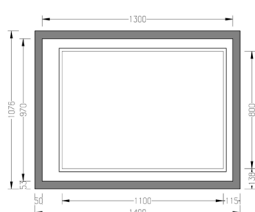
Sound Levels based on 2.7 m³/s @ 2000 Pa

For sound data specific to your selection point please enquire.

MODULE SELECTION & DIMENSIONS



DUCT CONNECTIONS

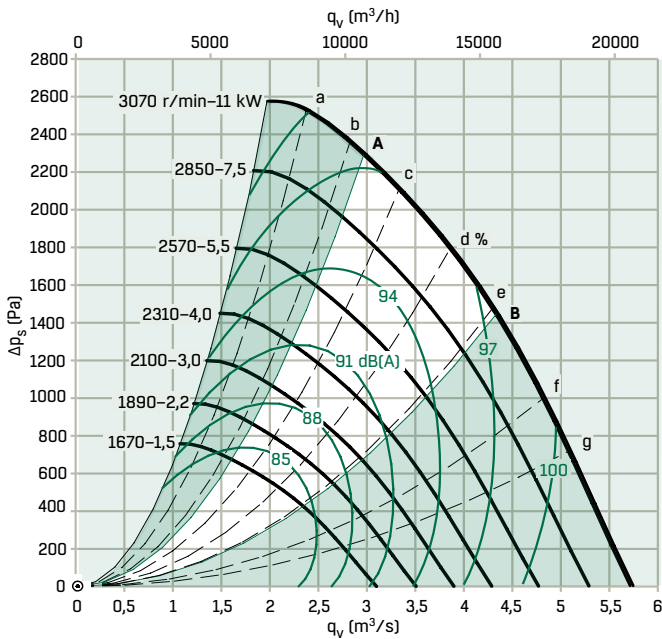


FILTERS

Unit Size / Filter	Pre Filter	Bag Filter	Carbon Filter
027 Standard	(2x592x592) 8 (2x287x592)	(2x592x592) 8 (2x287x592)	32x605x562x25 (2 rows of 16)

The dimensions stated above are for internally mounted units only, please enquire for a unit suitable for external mounting as an additional base frame and weather roof are required.

027 (VERTICAL) CVEQ FAN TECHNICAL DETAILS



CVEQ-027_(V)

- Fan type - Centriflow 3D fan unit 11 kW
- Typical selection point - 2.7 m^3/s @ 2000 Pa
- Fan efficiency 73.2%
- Motor output 11 kW - IE2
- Electric current 20.0 A
- Speed 2935 Rpm
- Number of poles 2
- Max frequency at frequency control 52.3 Hz
- Fan description: GMEB-1-0b-050

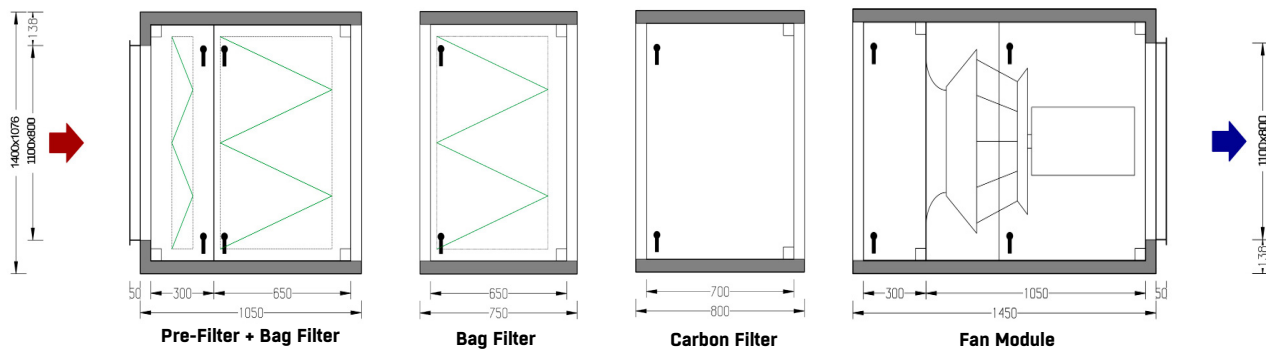
SOUND POWER LEVELS

	Lw per octave band (dB)								LwA
Octave band (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
Extract connection	79	82	95	86	82	82	82	77	91
Exhaust connection	84	82	89	85	87	84	83	81	92
Too surroundings	67	66	73	57	53	55	54	40	66

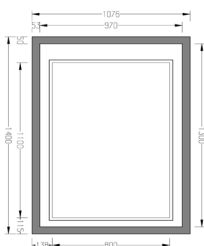
Sound Levels based on 2.7 m^3/s @ 2000 Pa

For sound data specific to your selection point please enquire.

MODULE SELECTION & DIMENSIONS



DUCT CONNECTIONS

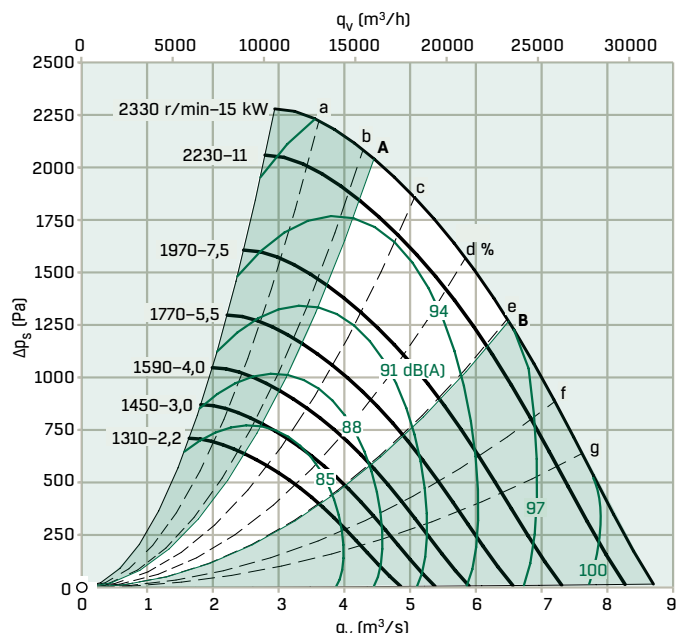


FILTERS

Unit Size / Filter	Pre Filter	Bag Filter	Carbon Filter
027 Vertical	(2x592x592) 6 (2x287x592)	(2x592x592) 6 (2x287x592)	32x605x562x25 (2 rows of 16)

The dimensions stated above are for internally mounted units only, please enquire for a unit suitable for external mounting as an additional base frame and weather roof are required.

036 CVEQ FAN TECHNICAL DETAILS



CVEQ-036

- Fan type - Centriflow 3D fan unit 15 kW
- Typical selection point - $3.6 m^3/s$ @ 2000 Pa
- Fan efficiency 70.8%
- Motor output 15 kW - IE2
- Electric current 28.0 A
- Speed 1460 Rpm
- Number of poles 4
- Max frequency at frequency control 79.8 Hz
- Fan description: GMEB-1-0b-063

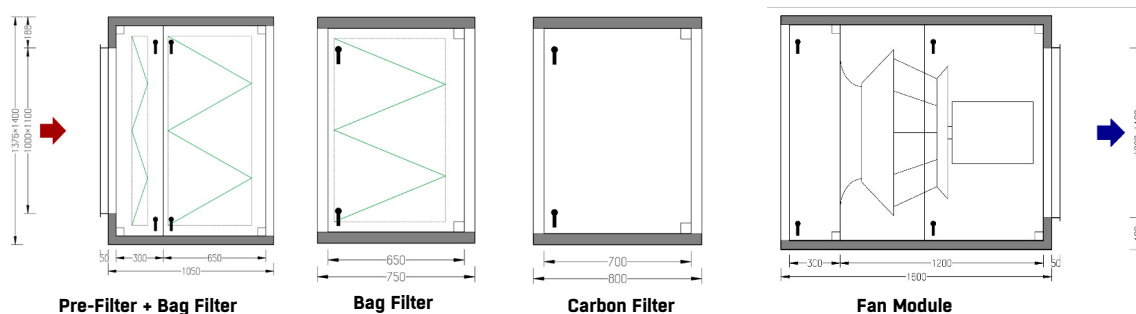
SOUND POWER LEVELS

	Lw per octave band (dB)								LwA
Octave band (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
Extract connection	78	95	98	88	84	85	82	72	93
Exhaust connection	85	89	89	88	87	88	84	80	93
Too surroundings	66	79	76	59	55	58	54	35	69

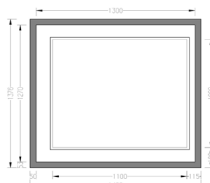
Sound Levels based on $3.6 m^3/s$ @ 2000 Pa

For sound data specific to your selection point please enquire.

MODULE SELECTION & DIMENSIONS



DUCT CONNECTIONS

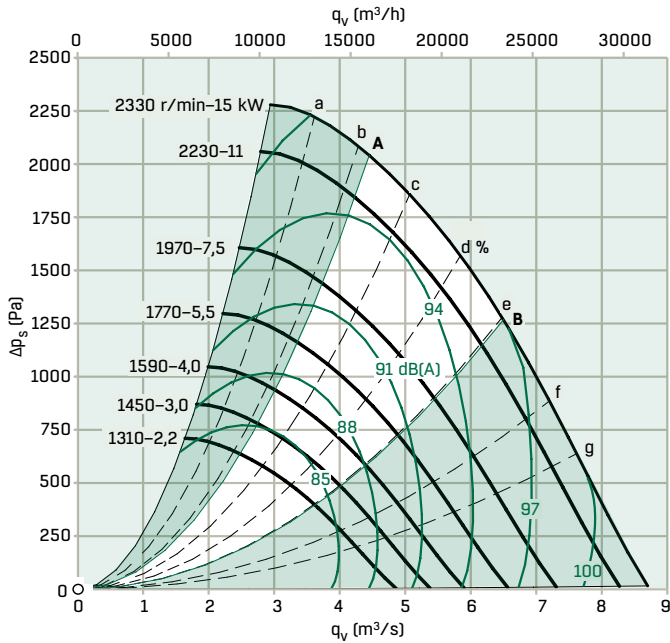


FILTERS

Unit Size / Filter	Pre Filter	Bag Filter	Carbon Filter
036 Standard	4x592x592	4x592x592	34x605x562x25

The dimensions stated above are for internally mounted units only, please enquire for a unit suitable for external mounting as an additional base frame and weather roof are required.

045 CVEQ FAN TECHNICAL DETAILS



CVEQ-045

- Fan type - Centriflow 3D fan unit 15 kW
- Typical selection point - 4.5 m³/s @ 1750 Pa
- Fan efficiency 74.3%
- Motor output 15 kW - IE2
- Electric current 28.0 A
- Speed 1460 Rpm
- Number of poles 4
- Max frequency at frequency control 79.8 Hz
- Fan description: GMEB-1-0b-063

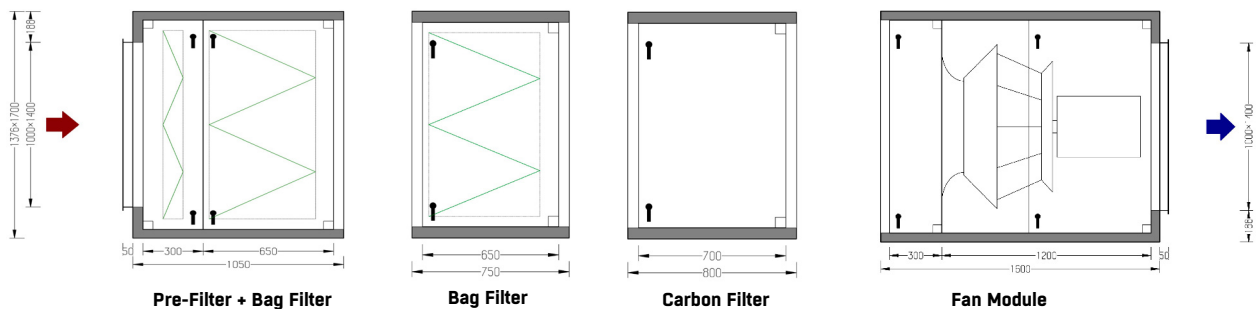
SOUND POWER LEVELS

	Lw per octave band (dB)								LwA
Octave band (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
Extract connection	74	81	92	85	79	77	76	72	88
Exhaust connection	81	80	89	87	86	82	81	79	91
Too surroundings	63	66	71	57	51	51	50	37	64

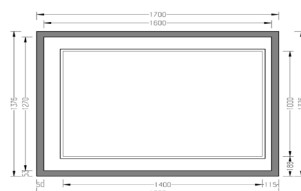
Sound Levels based on 4.5 m³/s @ 1750 Pa

For sound data specific to your selection point please enquire.

MODULE SELECTION & DIMENSIONS



DUCT CONNECTIONS

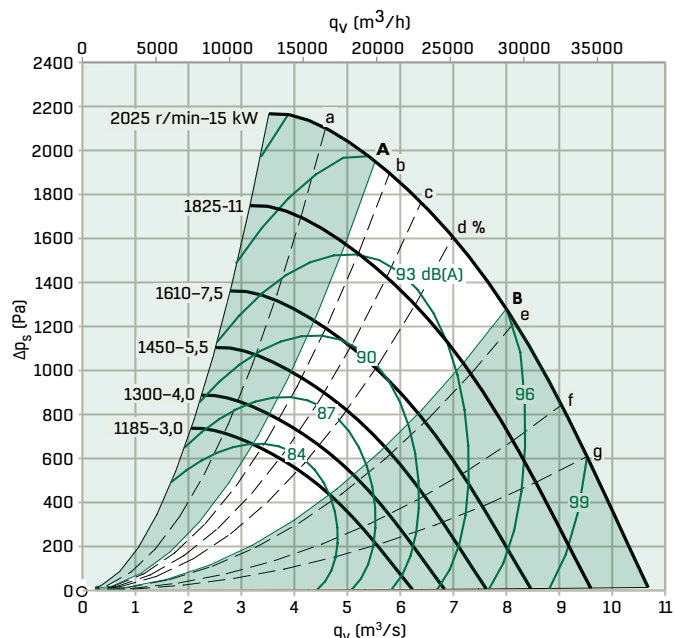


FILTERS

Unit Size / Filter	Pre Filter	Bag Filter	Carbon Filter
045 Standard	(4x592x592) 6 (2x287x592)	(4x592x592) 6 (2x287x592)	(34x605x562x25) 6 (17x302x562x25)

The dimensions stated above are for internally mounted units only, please enquire for a unit suitable for external mounting as an additional base frame and weather roof are required.

054 CVEQ FAN TECHNICAL DETAILS



CVEQ-054

- Fan type - Centriflow 3D fan unit 15 kW
- Typical selection point - 5.4 m^3/s @ 1500 Pa
- Fan efficiency 74.1%
- Motor output 15 kW - IE2
- Electric current 28.0 A
- Speed 1460 Rpm
- Number of poles 4
- Max frequency at frequency control 69.4 Hz
- Fan description: GMEB-1-0b-071

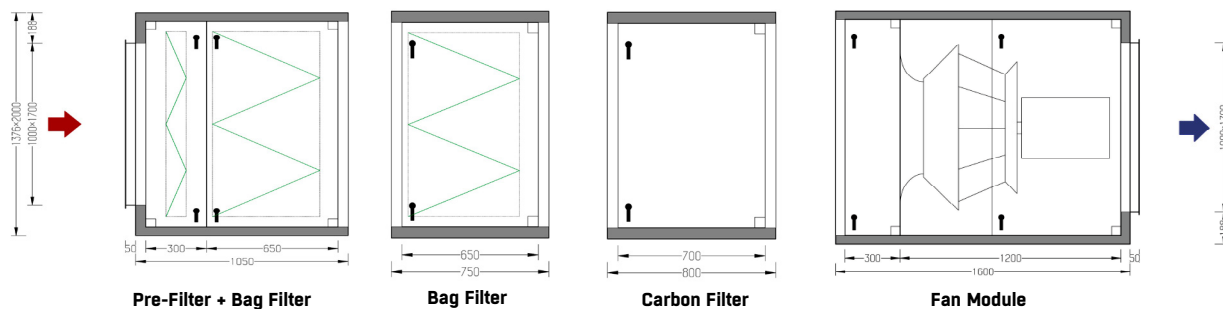
SOUND POWER LEVELS

	Lw per octave band (dB)								LwA
Octave band (Hz)	63	125	250	500	1k	2k	4k	8k	dB(A)
Extract connection	76	90	93	85	81	77	76	69	88
Exhaust connection	80	86	90	85	84	81	80	78	89
Too surroundings	65	75	72	57	53	51	50	34	65

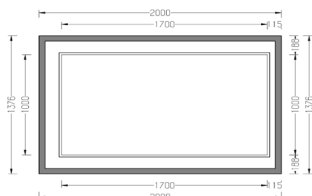
Sound Levels based on 5.4 m^3/s @ 1500 Pa

For sound data specific to your selection point please enquire.

MODULE SELECTION & DIMENSIONS



DUCT CONNECTIONS



FILTERS

Unit Size / Filter	Pre Filter	Bag Filter	Carbon Filter
054 Standard	6 x 592x592	6 x 592x592	51 x 605x592x25

The dimensions stated above are for internally mounted units only, please enquire for a unit suitable for external mounting as an additional base frame and weather roof are required.

WE BRING BETTER AIR™ TO LIFE

Fläkt Woods range offers over 100 years of experience in ventilation within the UK. The Woods brand formerly Woods of Colchester is one of the most recognised names within the UK. Since our formation in 1909 we have been a pioneer in ventilation and are a name you can trust and rely on.

Within our Woods range you can buy quality products manufactured at our state of the art manufacturing facilities in Colchester and around the world. Choose from an extensive range of products that are stocked and available next day (if ordered by 4pm) and speak to an expert team that will work around the clock to assist you.

Email

woodsuk@flaktgroup.com

Website

www.flaktwoods.co.uk/woods

Twitter

@Woods_Fans_UK

» To learn more about our offering and get in contact with your nearest sales representative please visit www.flaktwoods.co.uk/woods

AIR MOVEMENT - FANS CENTRE OF EXCELLENCE

Axial Way, Colchester, Essex. CO4 5ZD Tel: +44 (0)1206 222555



WWW.FLAKTWOODS.CO.UK/WOODS

CVEQ | 20170302