

Air Conditioning
Vulcan Air Handling Unit



ISO 9001 - Cert. n° 0545/2
Unit heaters
Radiant panels
Fan coils
Air handling units
Flues



SABIANA

ENVIRONMENTAL COMFORT



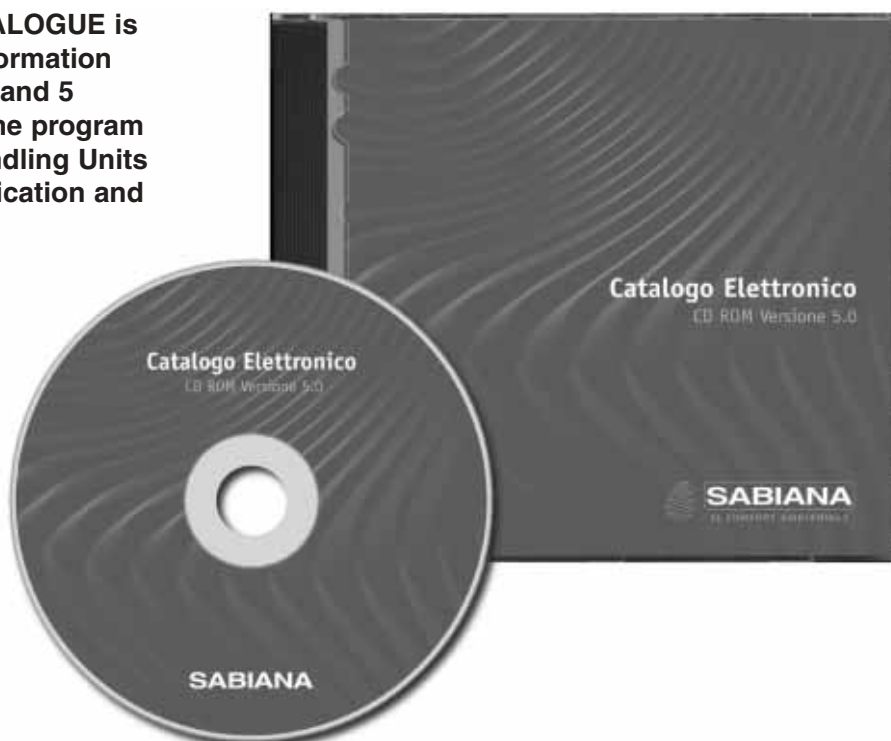
Air Conditioning

SABIANA

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The **SABIANA ELECTRONIC CATALOGUE** is available on CD-ROM. It offers information about the company and its range and 5 different calculation programs. One program is dedicated to the Vulcan Air Handling Units and it allows easy and fast specification and quotation of the unit requested.



CASING

The casing is manufactured from sandwich panels constructed in different modular sizes, these modules are made up in multiples of 305 mm. The panels contain a 30 mm or 50 mm thick mineral wool insulation with a density of 90 Kg/m³, which is perimetrically sealed within two laminations, forming a rigid connection flange.

The flame-proof insulation is to Class A0 of the UNI ISO 1182 ensuring a high degree of safety i.e. in case of fire no toxic gases will escape.

Connecting the different panels may be easily carried out from outside the casing by means of 6 mm cadmium bolts. In this way we obtain a self-supporting construction with perfectly smooth internal surfaces and an extraordinary overall rigidity. The connections between the panels are externally covered with insulated metal strips which clip into position.

These strips can either be flat or angled. In this way we achieve uniformity in the thermo-acoustic insulation.

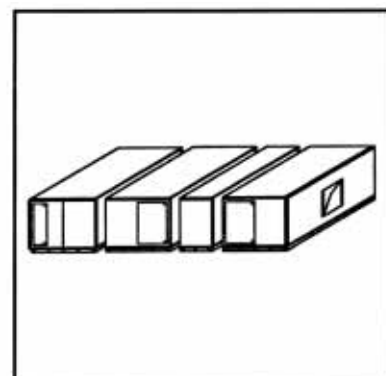
In the following tables we illustrate the sound deadening (R') achieved by the casing with frequencies in the various octave bands in accordance to EN 1886.

Frequencies in the octave band	125	250	500	1K	2K	4K	8K
R' [dB] 30 mm	14,0	15,0	21,9	27,1	26,8	23,4	28,7
R' [dB] 50 mm	14,4	15,9	23,8	32,7	29,7	32,5	35,7

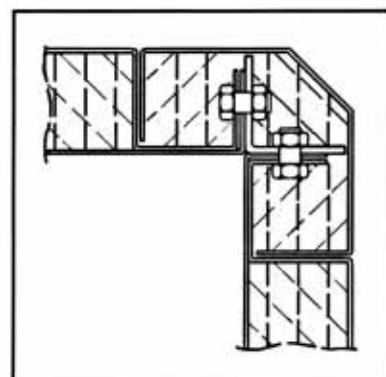
The internal walls of the panels are of galvanized steel 1 mm thick. The external walls are made of galvanized and prepainted steel 1 mm thick (colour RAL 9016). The plastic connections and corners and the labels are in red colour Pantone 193C.

Due to its modular construction the elements of the unit can be easily removed and reassembled. All the materials used to construct the casing are highly resistant to wear.

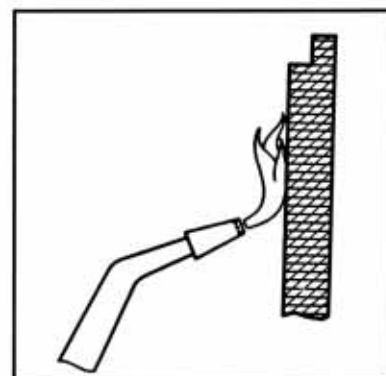
Large, lockable service doors allow easy inspection of the unit. The door frame and gasket assembly ensure an airtight seal.



Flexible modular structure



A solid construction and excellent thermo-acoustic insulation:
 K=0.75 W/m² °C (30mm)
 R=32 dB (30 mm)
 K=0.57 W/m² °C (50mm)
 R=34 dB (50 mm)



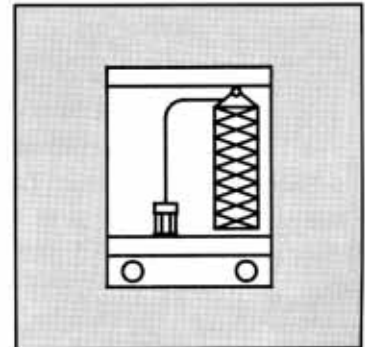
Insulation with flame-proof materials to Class A0 of the UNI ISO 1182

HUMIDIFICATION SECTION

The humidification system consists of 100 or 200 mm thick cell-like evaporators, with an option of a water recirculation pump. The evaporation pack is composed of corrugated and intersected sheets of pure cellulose paper, impregnated with thermoplastic resins and enriched with conservation and humidification agents. This material withstands temperatures of up to 70°C without deforming.

The hygroscopic surface of this material makes it possible to achieve a considerable saturation efficiency while using modest quantities of water. For example, with an air speed of 2.5 m/sec you reach a saturation efficiency of 70% (85% for 200 mm pack).

The section has been designed to subsequently contain, if necessary, a drop separator. Like the evaporation pack, this element can be easily removed to carry out regular maintenance.



Humidification section

MOTOR - VENTILATION SECTION

Centrifugal fans with a double aspiration and statically and dynamically balanced blades, are directed forward or backward and mounted in the ventilation section.

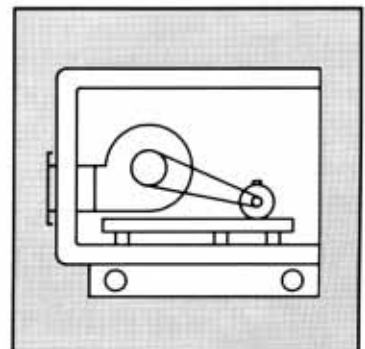
The transmission shaft is supported by precharged, hermetical ball bearings, which are self-aligned and mounted on rubber.

The fans are coupled to the motor by means of a V-type belt transmission. The base of the motor and fan is made of zinc-coated steel and supported by rubber dampers.

The fan outlet is connected to the housing by means of an anti-vibration joint.

The Unel-Mec series motors have an IP55-class F protection and are suitable for operation on 230/400V - 50Hz.

On the fan is a cast-iron pulley with a trapezoidal throat, equipped with a removable tapered bush. On the motors up to 7.5 kW is mounted a pulley with a variable throat, equipped with grub screw fixing. The size of the pulley on the motor determines the performance of the fan. Please contact our Technical Office if you want to work under conditions different from those indicated in the following tables. The fan outlet can be positioned for either front or top discharge.



Motor - ventilation section

CAUTION: the single-pole motors with a power rating greater than or equal to 7,5 kW must be started with a Delta-Star connection.

AIR INTAKE AND FILTRATION SECTION

This section can include one or two air intake dampers of zinc-coated steel with multiple fins. The fins, which are mounted on pins and rotate in nylon bushes, allow a silent operation and are self-lubricating and maintenance free.

The dampers are manually operated.

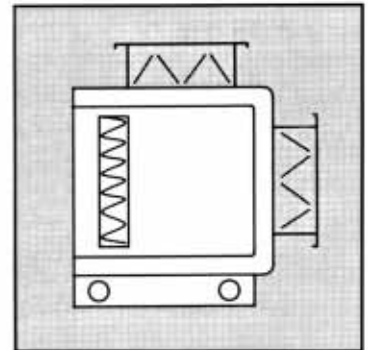
A 48 mm thick plate filter section is available. The filtration medium is a washable synthetic fibre, flame-proof according to Class 1 with increasing density in the direction of the air flow.

Efficiency of 84% according to the gravimetric method ASHRAE 52-76, EUROVENT 4/5 EU3 (G3 in accordance to EN 779).

Higher efficiency on request (EU4/G4).

The filter frame is made of galvanized steel with galvanized protection mesh on either side of the cell. Special sliding guides allow for easy insertion and removal of the filter cell.

Cleaning of the filter medium may be carried out either by washing, shaking, vacuuming or blowing with compressed air. Bag or HEPA filters on request.



Air intake and filtration section

HEAT EXCHANGE BATTERY SECTION

The batteries are made of expanded copper tubes with aluminium fins enclosed in a galvanized steel frame. The steel headers have threaded connections.

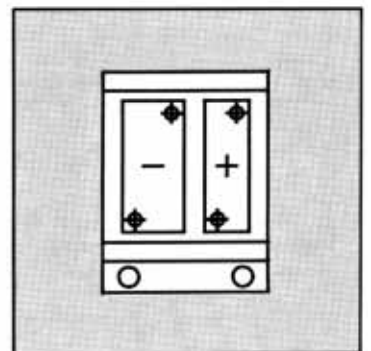
Battery with steel tubes or copper fins on request.

All the batteries are equipped with air vents and are tested to 30 bar.

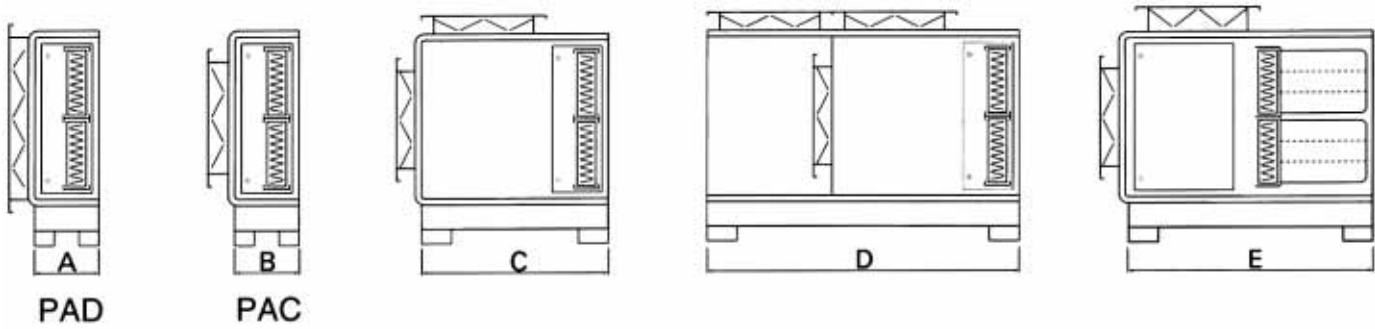
If a cooling battery is required a condensate collecting tray is included.

This tray is enclosed within the battery section to avoid condensation on the external surfaces.

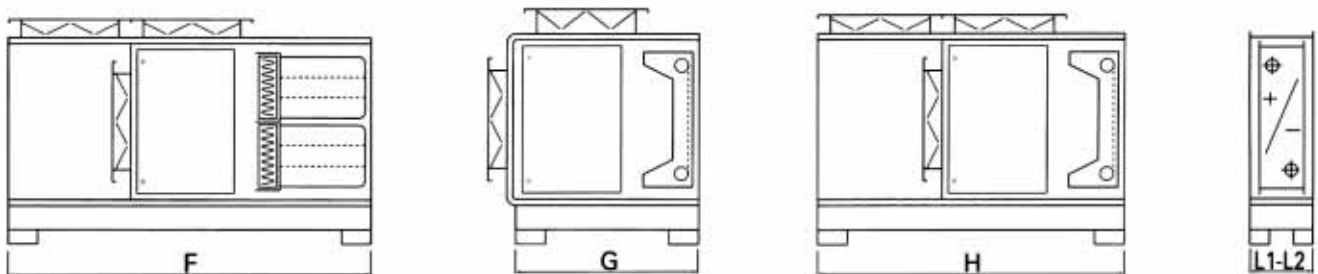
Water connections and access hatches can be specified either left or right hand depending on the direction of the air flow.



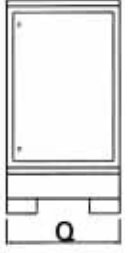
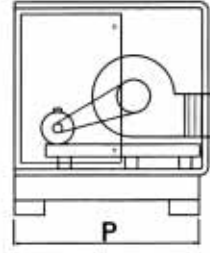
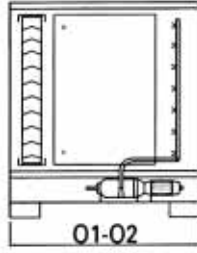
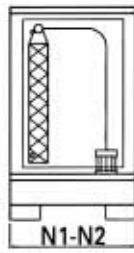
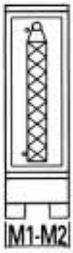
Heat exchange battery section



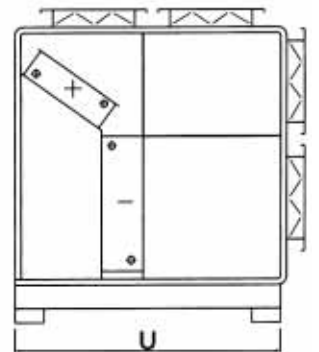
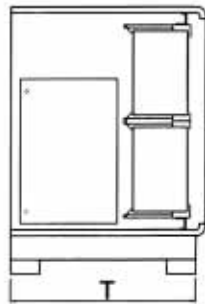
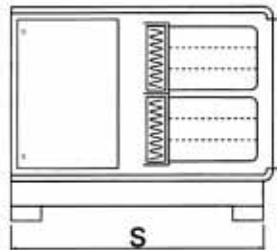
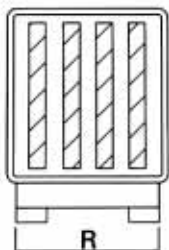
SIZE	WIDTH	HEIGHT	A	B	C	D	E	F	G	H	L1 1-5 Rows
10-10	1.0	1.0	0.5	0.5	1.5	2.5	2.0	3.0	2.0	3.0	0.5
15-10	1.5	1.0	0.5	0.5	1.5	2.5	2.0	3.0	2.0	3.0	0.5
15-15	1.5	1.5	0.5	0.5	1.5	2.5	2.0	3.0	2.0	3.0	0.5
20-15	2.0	1.5	0.5	0.5	1.5	2.5	2.0	3.0	2.0	3.0	0.5
20-20	2.0	2.0	0.5	0.5	2.0	3.5	2.5	4.0	2.5	4.0	0.5
25-15	2.5	1.5	0.5	0.5	1.5	2.5	2.0	3.0	2.0	3.0	0.5
25-20	2.5	2.0	0.5	0.5	2.0	3.5	2.5	4.0	2.5	4.0	0.5
30-20	3.0	2.0	0.5	0.5	2.0	3.5	2.5	4.0	2.5	4.0	0.5
30-25	3.0	2.5	0.5	1.0	2.0	3.5	2.5	4.0	2.5	4.0	0.5
35-25	3.5	2.5	0.5	1.0	2.0	3.5	2.5	4.0	2.5	4.0	0.5
40-25	4.0	2.5	0.5	1.0	2.0	3.5	2.5	4.0	2.5	4.0	0.5
40-30	4.0	3.0	0.5	1.0	2.0	3.5	2.5	4.0	2.5	4.0	0.5
45-30	4.5	3.0	0.5	1.0	2.0	4.5	3.0	5.0	2.5	5.0	0.5
50-30	5.0	3.0	0.5	1.0	2.5	4.5	3.0	5.0	3.0	5.0	0.5
55-35	5.5	3.5	1.5	1.5	2.5	4.5	3.0	5.0	3.0	5.0	0.5
65-35	6.5	3.5	1.5	1.5	2.5	4.5	3.0	5.0	3.0	5.0	0.5
65-40	6.5	4.0	1.5	1.5	2.5	4.5	3.0	5.0	3.0	5.0	0.5



Note: The above figures are in module, the internal dimension of the standard module is 610 mm. For the total dimension, you have to add the panel thickness, the base height and the dampers.



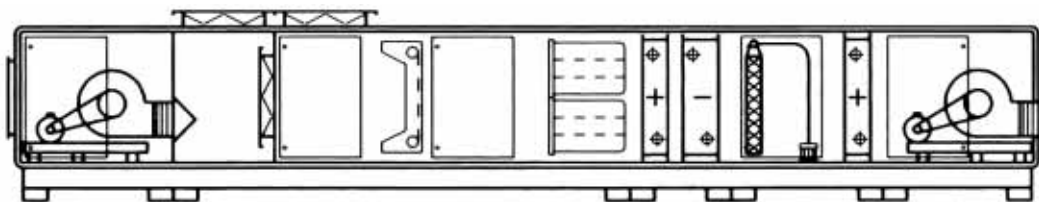
L2 6-10 Rows	M1 Thick=100 mm.	M2 Thick=200 mm.	N1 Thick=100 mm.	N2 Thick=200 mm.	O1 Eff. 75%	O2 Eff. 90%	P	Q	R	S	T	U
1.0	0.5	1.0	1.0	1.0	2.0	3.0	1.5	0.5	1.5	2.0	1.5	2.0
1.0	0.5	1.0	1.0	1.0	2.0	3.0	1.5	0.5	1.5	2.0	1.5	2.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.0	1.0	1.5	2.0	1.5	2.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.0	1.0	1.5	2.0	1.5	3.0
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.0	1.0	1.5	2.0	1.5	3.0
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.0	1.0	1.5	2.0	1.5	2.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.5	1.0	1.5	2.0	1.5	3.0
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.5	1.0	1.5	2.0	1.5	3.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.5	1.0	1.5	2.0	1.5	3.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.5	1.0	1.5	2.0	1.5	3.5
1.0	0.5	1.0	1.0	1.0	2.0	3.0	2.5	1.0	1.5	2.0	1.5	3.5
1.0	1.0	1.0	1.0	1.0	2.0	3.0	2.5	1.5	1.5	2.5	1.5	4.0
1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0	1.5	1.5	2.5	1.5	4.0
1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0	1.5	1.5	2.5	1.5	4.0
1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.0	1.5	1.5	2.5	1.5	4.0
1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.5	1.5	1.5	2.5	1.5	4.0
1.0	1.0	1.0	1.0	1.0	2.0	3.0	3.5	1.5	1.5	2.5	1.5	4.0



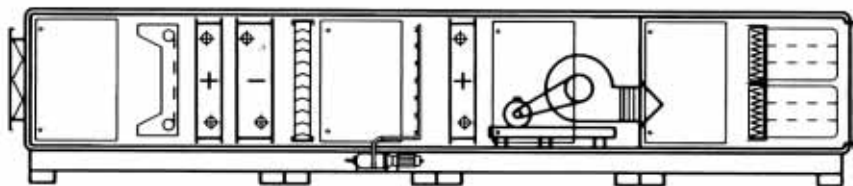
DAMPER DIMENSION:

- "Pad" and "Pac" damper width: (N° modulesx610) - 60 mm.
- "Pad" damper height: (N° modulesx610) - 60 mm.
- "Pac" damper height

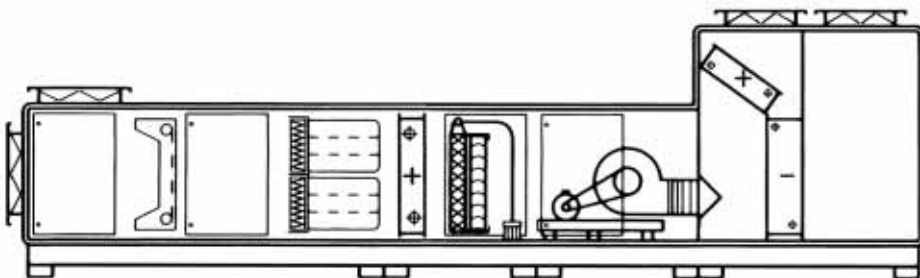
for unit from 1 to 1.5 module height =	550 mm.
for unit from 2 to 2.5 module height =	855 mm.
for unit with 3.0 module height =	1160 mm.



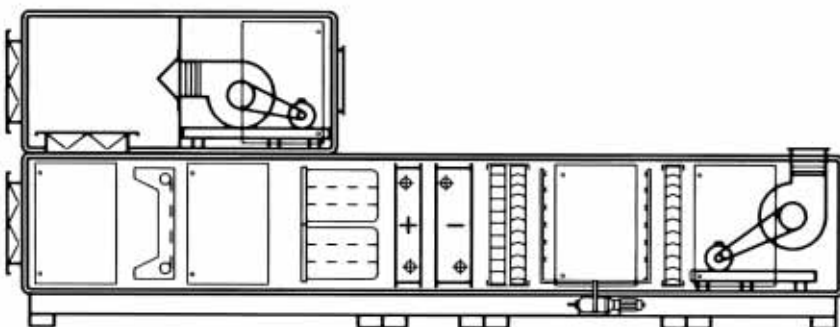
Air handling unit with supply and return fan



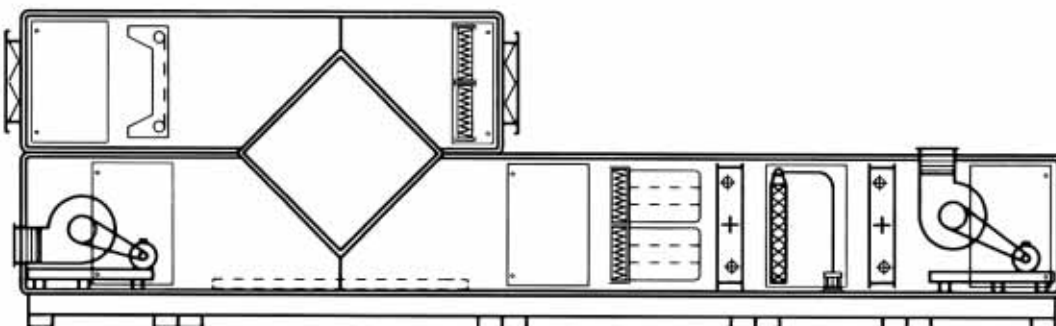
Air handling unit with fresh air intake



Air handling unit with multi-zone section

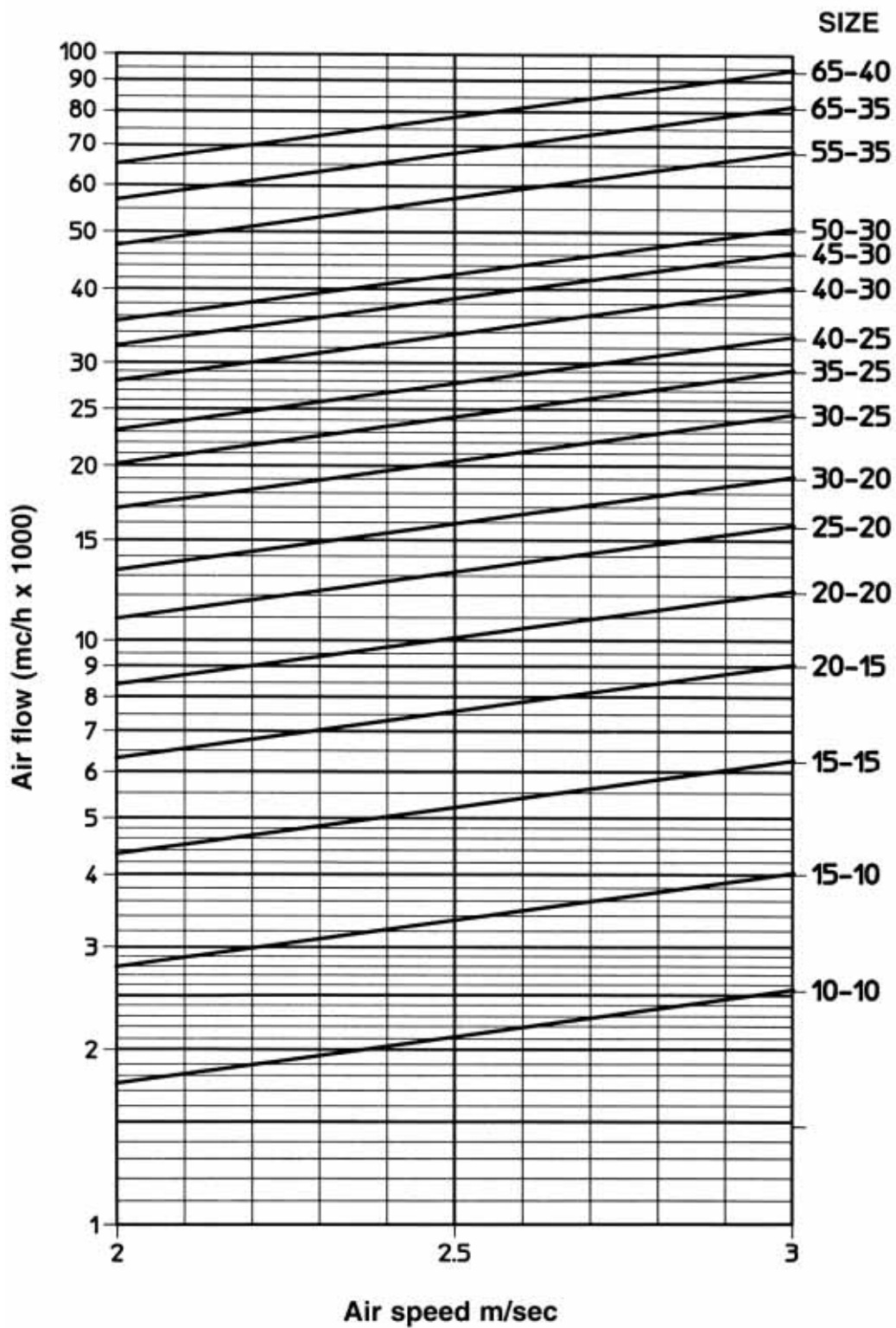


Air handling unit with double deck



Air handling unit with heat recovery system

SELECTION GRAPH





THE INTERNATIONAL CERTIFICATION NETWORK[®]

CERTIFICATE

IQNet and its partner
CISQ/ICIM
hereby certify that the organization

SABIANA S.p.A.

**Via Piave, 53
I-20011 CORBETTA (MI)**

for the following field of activities

**Design, production and service of heating and air conditioning equipment
(unit heaters, radiant panels, fan coil units and air handling units) and chimneys.**

has implemented and maintains a
Quality Management System

which fulfills the requirements of the following standard

ISO 9001:2000

Issued on: **2003-04-10**

Validity date: **2006-04-09**

Registration Number: **IT-4000**



Fabio Roversi
President of IQNet



Gianrenzo Prati
President of CISQ

IQNet partners*:

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CQM China CQS Czech Republic DQS Germany DS Denmark ELOT Greece FCAV Brazil FONDONORMA Venezuela
HKQAA Hong Kong ICONTEC Colombia IRAM Argentina JQA Japan KEMA Netherlands KFQ Korea MSZT Hungary
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SAI Global Australia SFS Finland SII Israel SIQ Slovenia SQS Switzerland SRAC Romania TEST St Petersburg Russia
IQNet is represented in the USA by the following partners: AFAQ, AIB-Vinçotte International, CISQ, DQS, KEMA, NSAI, QMI and SAI Global
*The list of IQNet partners is valid at the time of issue of this certificate. Updated information is available under www.iqnet.certification.com



CISQ is a member of



IQNet, the association of the world's first class certification bodies, is the largest provider of management System Certification in the world. IQNet is composed of more than 30 bodies and counts over 150 subsidiaries all over the globe.

CERTIFICATO n. 0545/2
CERTIFICATE No. _____

SI CERTIFICA CHE IL SISTEMA DI GESTIONE PER LA QUALITA' DI
WE HEREBY CERTIFY THAT THE QUALITY MANAGEMENT SYSTEM OPERATED BY

SABIANA S.p.A.

UNITA' OPERATIVE
OPERATIVE UNITS

Via Piave, 53 - 20011 Corbetta (MI)
Italia

E' CONFORME ALLA NORMA
IS IN COMPLIANCE WITH THE STANDARD

UNI EN ISO 9001:2000

PER LE SEGUENTI ATTIVITA'
FOR THE FOLLOWING ACTIVITIES

EA: 18

Progettazione, produzione e assistenza di apparecchiature per il riscaldamento e il condizionamento dell'aria (aerotermi, termostrisce radianti, ventilconvettori e unità trattamento aria) e canne fumarie.

Design, production and service of heating and air conditioning equipment (unit heaters, radiant panels, fan coil units and air handling units) and chimneys.

Riferirsi al Manuale della Qualità per l'applicabilità dei requisiti della Norma ISO 9001:2000.
Refer to Quality Manual for details of application to ISO 9001:2000 requirements.

Il presente certificato è soggetto al rispetto del regolamento per la certificazione dei sistemi di gestione per la qualità delle aziende.
The use and validity of this certificate shall satisfy the requirements of the rules for the certification of company quality management systems.

Data emissione
First issue
10/06/1996

Emissione corrente
Current issue
10/04/2003

Data di scadenza
Expiring date
09/04/2006

ICIM S.p.A. - PIAZZA DIAZ, 2 - 20123 MILANO

CISQ è la Federazione Italiana di Organismi di Certificazione dei sistemi di gestione aziendale

CISQ is the Italian Federation of management system Certification Bodies

SINERT

Registraz. n°004A

FEDERAZIONE

CISQ

www.cisq.com

Air Conditioning
Vulcan Air Handling Unit



SABIANA

ENVIRONMENTAL COMFORT

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UTA - EX - 05/04
Cod. A4190100 B/05/04