



**DRI™ FLEXAIR™**

**Treated Fresh Air Unit  
(TFA)**



**DRI™**

**Innovative Air Solutions**





inside

The Air is Changing . . . Are you ?  
**IAQ** ....  
 You can't ignore it any longer !

Some of the World's **TALLEST, BIGGEST, LARGEST** Projects maintain IAQ with Ecofresh inside !



Qianxi Plaza, China



G+3 Life Line Hospital, UAE



Ecoberri, Brazil



Central Gwinnett High School, USA



Goodwood Hotel, Malaysia



Prestige Palladium, India



Solaire Manila, Philippines

## fresh air **INDOORS** !

You and Your Building may not be Breathing Right ! It could be a

### 'Sick Building Syndrome'...

Sick Building Syndrome (SBS), an outcome of poor IAQ (Indoor Air Quality), is the condition of a building in which more than 20% of the occupants suffer from adverse health effects, but with no clinically diagnosable disease present. IAQ refers to the physical, chemical and biological characteristics of air in the indoor environment within an occupied building. IAQ relates to the quality of air that we breathe for almost 80% of our life-the time we spend indoors.

Poor IAQ and SBS reports adverse consequences, other than occupational health problems, as loss of productivity and legal liability.

- ✓ Productivity loss of around 10% is identified in buildings with poor IAQ.
- ✓ Legal challenges are on the rise, the onus being on facility owners, design consultants, architects etc.

### Meeting ASHRAE IAQ Standards means more Air-Conditioning Tonnage and more Energy...

Meeting ASHRAE\* 62+, provides the necessary fresh air for building occupants; however presents a tough challenge to the HVAC engineer. The outdoor air at a higher design level needs to be conditioned to the level of the indoor design condition, which increases the air conditioning tonnage considerably. The recurring energy expense is another matter of concern.

## ENERGY COST vs IAQ

### Cut down the Energy Costs

Thus, **Cost Effective Ventilation** i.e. Indoor Air Quality (IAQ) with energy conservation has become the fundamental design goal of HVAC Designers.

Today, almost all new projects are designed to include greater amounts of fresh air in the HVAC systems without a significant energy penalty by incorporating Energy Recovery.

**Triple concerns**  
 of Designers -

**IAQ**  
 (Indoor Air Quality)

**Humidity**  
 and

**Energy Costs**



makes this possible  
 without adding to  
 tonnage or  
 significant increase  
 in energy costs.

\*American Society of Heating, Refrigeration and Air-conditioning Engineers.  
 The current standard uses a combination of number of people and floor area as a basis to calculate fresh air.



## Design Your Air . . . Feel the Winds of Change with the

**FLEXAIR™ TFA Series**

– The Next Generation of Fresh Air Units

➤➤➤ Unique Features ➤➤➤ Extra advantage ➤➤➤ Enhanced Energy Savings

**FlexAir** offers all the prerequisites for creating a ventilation system with the lowest running costs possible to suit your application with the added advantage of Energy Recovery which cuts down the aircon costs.

The new **FlexAir** Treated Fresh Air Units with **Ecofresh** Molecular Sieve Coated Heat Wheel inside provides a complete solution for IAQ and Energy Saving in a single unit, with the option to add modules for cooling, heating, humidification, high efficiency filtration, mixing, sound attenuation, etc.



## How Does the **FLEXAIR™** Work ?

Treated Fresh Air Units

The heart of the **FlexAir** Treated Fresh Air Unit is the **EcoFresh** desiccant coated energy recovery wheel, which slowly rotates between its two sections. In one section, the stale, conditioned air is passed through the wheel, and exhausted in the atmosphere. During this process, the wheel absorbs sensible

and latent energy from the conditioned air, which is used to condition (cool / heat) the incoming fresh Air in the other section, during the second half of its rotation cycle. Thus, you can have more fresh Air at lower humidity levels and energy costs inside your conditioned space.

**ECOFRESH™** Heat Wheels from **DRI™** are **AHRI** certified

**AHRI** certification help ensure HVAC product perform as rated. In order for a piece of equipment to be certified, its rating and performance must meet or exceed the applicable **AHRI** Standard for Rating.

**EcoFresh Heat Wheels 270mm deep are AHRI Certified\***

\*Air-Conditioning and Refrigeration Institute \*270mm deep (MS Series)



### Benefits of



- Beyond Payback
- Enhanced Energy Saving



Molecular sieve coated Heat Wheels

- Almost no cross contamination.
- Over 80% energy recovery both latent and sensible. Ideal for tropical climates where latent loads are 2-3 times the sensible load.
- Total energy recovery, recovers both latent and sensible energy.
- Specially, adjustable purge section rules out cross contamination of air stream. (less than .04%).
- Special labyrinth sealing arrangement ensure no cross leakage of air stream between the supply and exhaust section.
- Most advanced technology.
- Certified / Tested in international labs.
- Wheels edges hardened to suit marine / coastal application needs.
- Best LCC (Life Cycle Cost).

**FLEXAIR™ TFA Series**

Ensures good IAQ in Hotels, Auditoriums, Multiplexes and other large air-conditioned spaces !

**FlexAir** TFAs are perfect for cold and dry climates as well as hot and humid climates. **FlexAir** TFAs helps to maintain IAQ and humidity in conditioned areas like :

- **Hospitality** – Hotels, Restaurants, Pubs, Bars, Discotheques . . .
- **Healthcare** – Hospitals, Nursing Homes, Operation Theatres, Nurseries, Burn Wards . . .
- **Commercial Areas** – Supermarkets, Departmental Stores, Office Buildings, Conference Facility . . .
- **Educational and Recreational Areas** – Schools, Auditoriums, Bowling alleys . . .
- **All other conditioned spaces . . .**

### Ideal for Healthcare and Pharmaceutical industry

The requirement of fresh and clean air is very high in Healthcare and Pharmaceutical installations. The expression "Air handling unit in hygienic design" means that it must be possible in an easy and effective way, to clean these units' exterior and interior parts. It should be designed in a way that prevents growing of bacteria. It is also very important to design the complete unit to make it possible to inspect and clean between the different section parts like coils and heat exchangers.

**FlexAir** meets all the criteria as it is designed and manufactured using selection of materials to comply to Hygiene needs !

### Why **FLEXAIR™**

- Ensures great Building IAQ
- Reduced Aircon and thus, Energy Costs
- Helps qualify for LEED Certification

Each one of the functions in a conventional air handling unit consumes energy. The new **FlexAir** Treated Fresh Air (TFA) Unit is designed to be not only energyefficient but to save energy and control humidity as well. **FlexAir** adds to your bottom line with the best life cycle cost (LCC) in the industry.



**FLEXAIR™** TFAs gives you what is going

to be demanded in the future





# FLEXAIR™ TFAs are designed to provide IAQ plus Humidity Control plus Maximum Energy Saving

## New Modular Design . . . More Model Options :

The new design allows for several functions to be placed in the same casing. The FlexAir series has a wider range to cover the flow range better making it possible for you to easily select the right unit with the lowest LCC.

## Highly Reliable Operation :

Assured problem free operations even under tough circumstances as a result of solid construction with tight sealing between supply and exhaust air ensures minimal leakage.

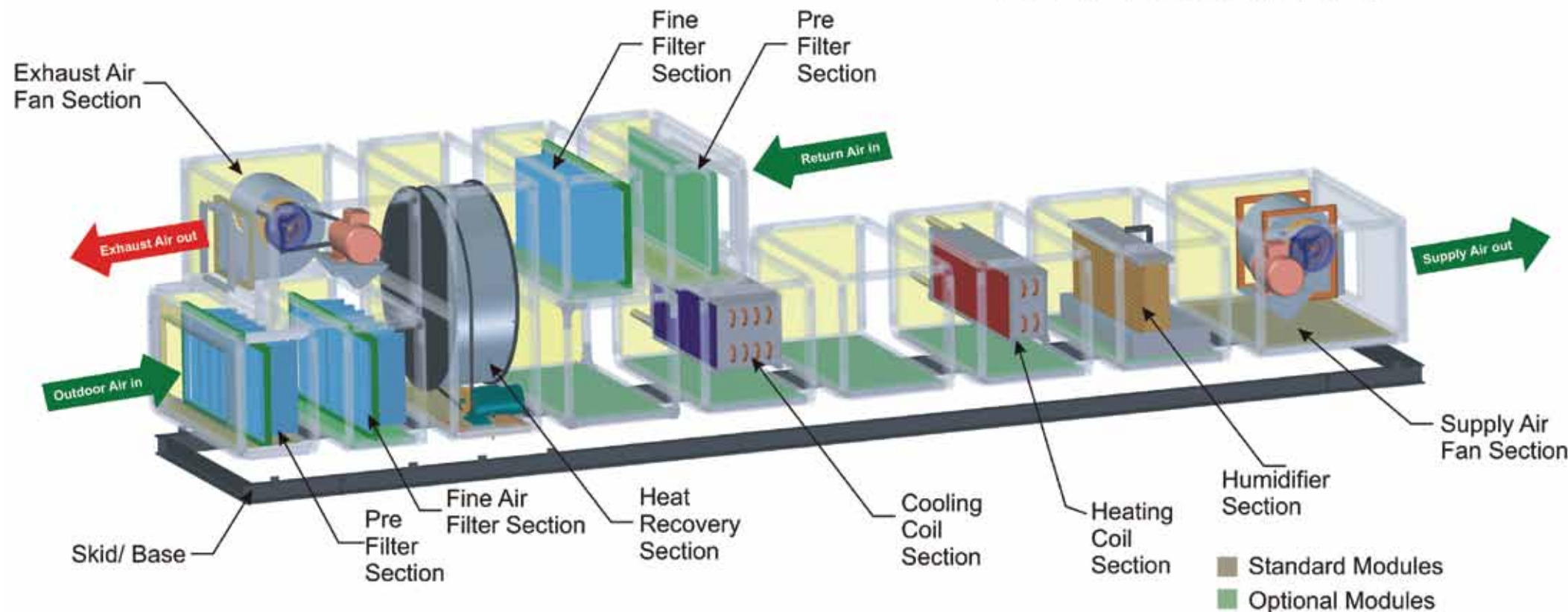
## Widest Range :

With almost 9 models available for CFM upto 14000, one has the flexibility to choose the right model resulting in better performance and lower LCC.

## Best Technology in Casing Manufacturing :

The DRI TFA is manufactured in accordance with the best technology incasing manufacturing. With 0.8 mm sheet on inside and out side, the design is very sturdy and results in better lower leakage class.

## UNIT ASSEMBLY



## Uniquely Designed Connection system :

The unique design makes it possible for the assembler to choose from two different ways of connection when he assembles the unit in the machine room in concealed PG joints and flange connections with strips.

## Very Low Pressure drops :

All functions like coils, heat exchangers etc. are optimised to give lowest possible pressure drop in proportion to highest possible efficiency resulting in very low LCC.

## Time tested Reliability :

The FlexAir TFA is the manifestation of DRI's experience in the field of air handling technology and over 200 man years of R&D and experience in manufacturing the world class Energy Recovery Wheels.

## Selection Software

The Selection Software is one of the most user friendly programme. Selection becomes easy, quick, accurate and generates GA diagrams and all technical data at click of a finger.

## Space Saving Design :

Compact design integrating all components in a single unit.

## Easy to Maintain Fan Assembly :

Tool free access to fan assembly. Fan assembly slides out for servicing with a quick disconnect system. Saves time and money ! Reliable solid transmission construction saves belts and bearing.

## Designed as per highest European Standard for Casing Air Leakage :

The casing air leakage is of prime importance in two tier systems i.e. systems with two streams with high latent difference between both. **FlexAir** is designed in accordance with highest European Standard for leakage - **Class B**.

Leakage Class	Maximum leakage rate l.s <sup>-1</sup> m <sup>-2</sup>	Filter Class (EN 779)
3A	3.96	G1-4
A	1.32	F5-7
B	0.44	F8-9

FlexAir

## High Quality Standardised filters :

Deep folded bag filters with big filter areas and good sealing. The good tightness ensure clean air supply to the room is of high quality.Tool free access for easy cleaning.

All sizes of the FlexAir (except size 060 and 100) has filters in standard dimensions making maintenance and stocking of spare filters easier. A big advantage for customers those who wish to keep a stock of filters.

LCC  
Life  
Cycle  
Cost =



Investment + Running cost

DRI™

IAQ

+

Energy  
Saving

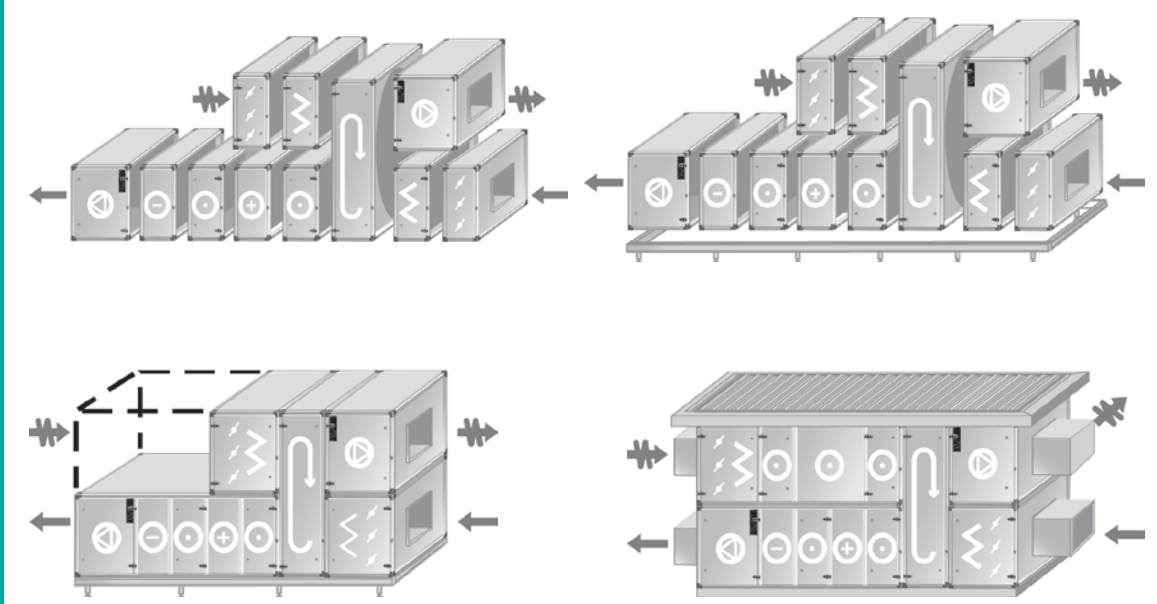


# FLEXAIR™ TFAs

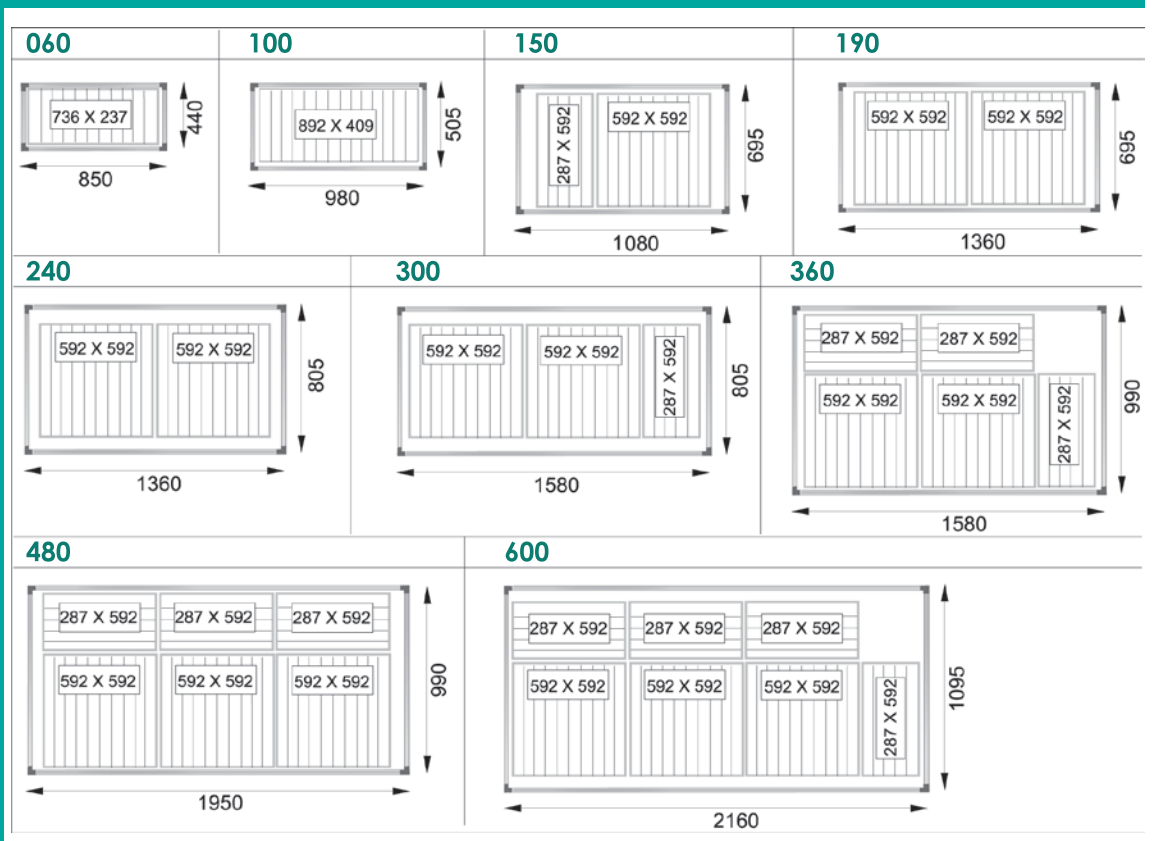
## New Modular Design

### ... More Model Options

The new design allows for several functions to be placed in the same casing. The FlexAir series has a wider range to cover the flow range better making it possible for you to easily select the right unit with the lowest LCC.

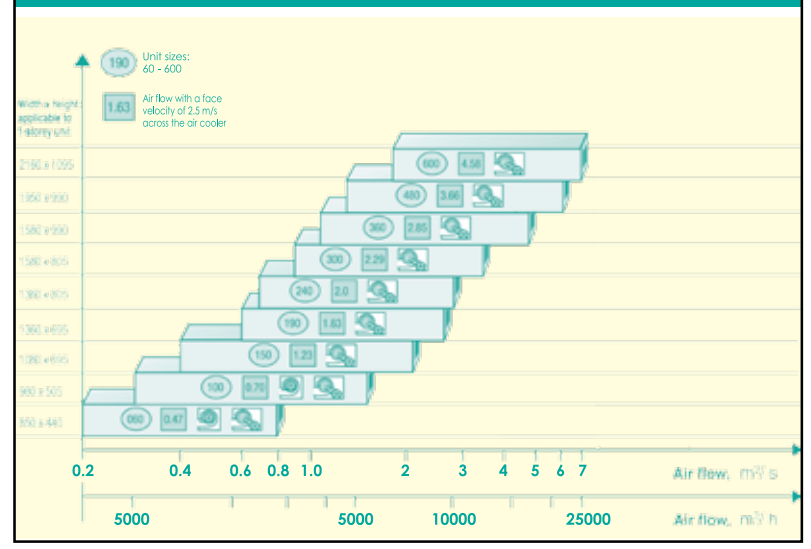


### Cross-sectional Area and Number of Filters



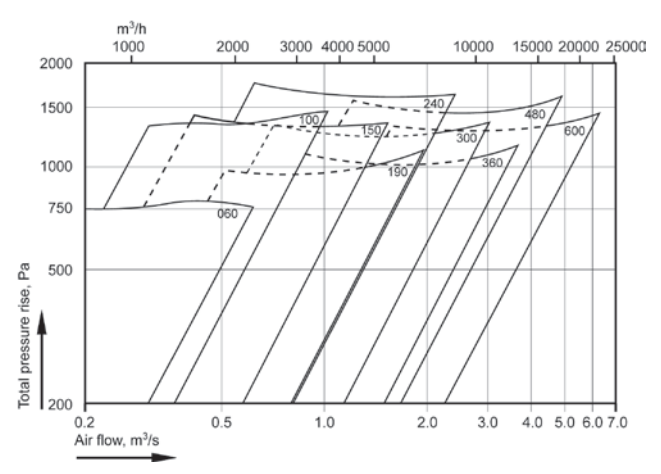
Wide  
Flexible  
Choice

## Select the Best Option

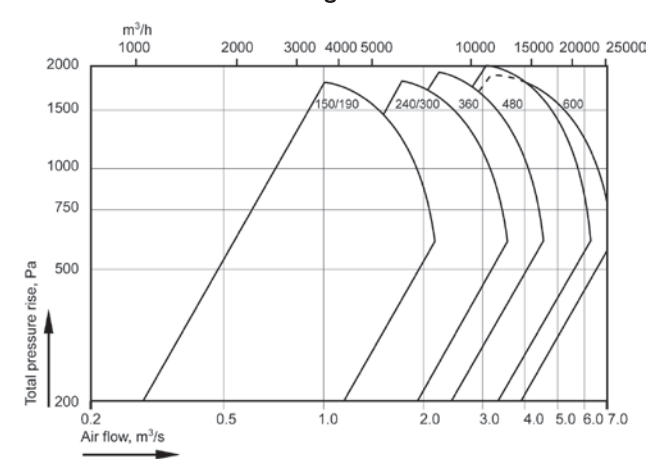


## Fan Performance

Belt Driven DIDW Centrifugal Forward Curved Fan



Belt Driven DIDW Centrifugal Backward Curved Fan



**DESIGNERAIR™**

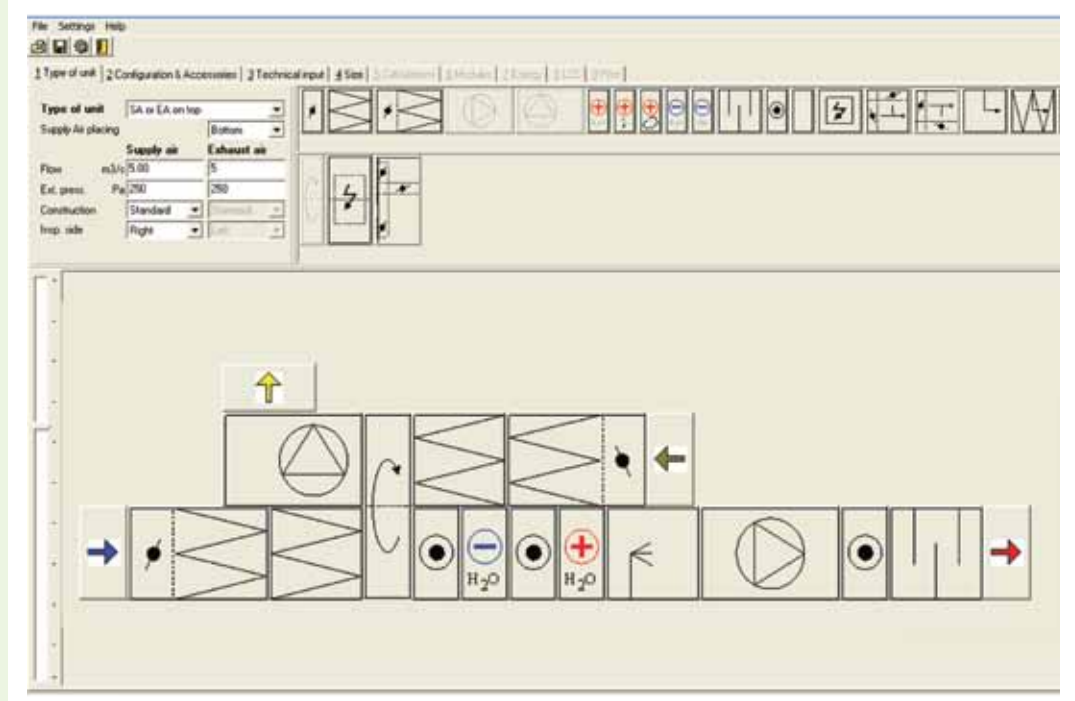
Design your 'in'vironment with the

**FLEXAIR™**

## Easy to use Selection Software

### Selection Program

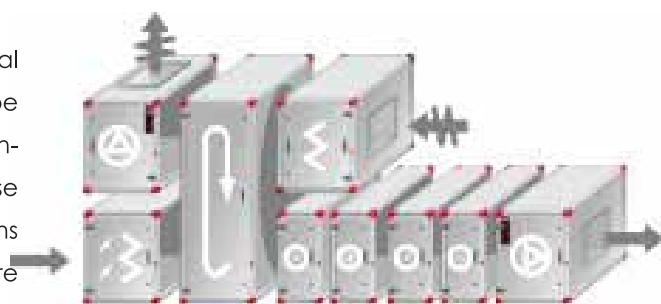
The selection program is one of the most user-friendly programmes. It allows you to check out various options and helps to make your decision for the right model easier. Selection becomes easy, quick, accurate and generates GA diagrams and all technical data at click of a finger.





# FLEXAIR™ Combinations

The FlexAir TFAs consist of a number of complete functional sections and 15 modules in standard lengths. The modules can be fitted with the air handling functions selected - with your dimension restrictions for on-site transport - as limit factors. Concise details of the complete functional sections, air handling functions and basic data for determining the overall length of unit are specified on the pages that follow.



Standard module EMM	Length (mm)	Standard module EMM	Length (mm)	Standard module EMM	Length (mm)
10	330	35	1080	60	1830
15	480	40	1230	65	1980
20	630	45	1380	70	2130
25	780	50	1530	75	2280
30	930	55	1680	80	2430

Maximum number of modules supplied, supply air = 7 modules



Overall length (780) + (380) + (330) + (330) + (330) + (330) + (630) = 3110 mm

Maximum number of modules supplied, supply air = 3 modules



Overall length (780) + (380) + (1830) = 2990 mm

## Installation Alternatives



Functional Components			Size	Moudule
		<b>MIE-KS Damper function</b> Damper to Tightness Class 3 in accordance with Swedish Standard VVS-AMA 98 (type 4 to VVS-AMA 83) made of extruded, anodised aluminium sections, with nylon-reinforced ABS plastic gear wheel drive, well protected by side panels.	060-600	10
		<b>MIE-ID Air intake function</b> Connection gable, damper and filter.* *See the MIE-FB Filter.	060-600	25
		<b>MIE-FB Filter function</b> For deep-pocketed bag filter, Equipped with filter slide rails and eccentric clamping device for maximum tightness. Standard size filter bags for unit sizes : 150 - 600. Filter material: Filter class: Synthetic material G3, F6, F7 Glass fibre F8 Synthetic + carbon (not 060 - 100) C7 = F7 + carbon filter Aluminium Aluminium (flat filter)	060-600 060-600	15 (G3, AL) 25 (F6, F7) (F8, C7)
		<b>MIE-CL Air heater/cooler function (water, DX and steam)</b> The coils consist of copper tubes and aluminium fins. ELEV air heater for hot water, ELES Air heater for steam, ELBC Air cooler for chilled water, ELBD Direct-expansion air cooler, ELXT and ELXF Energy recovery coils.	060-600	10 15 25 Vary depending on the output variant
		<b>MIE-EF Humidifier function</b> Designed for EFEF evaporative humidifier for direct-water or circulating water. Humidification rates: 85% or 95%. Sizes 060 - 100 are available for direct-water only. Degree of humidification: 85%	060-600	25
		<b>MIE-AF Fan, for horizontal air discharge</b> Easily withdrawable fan system equipped with anti-vibration mountings and end connection wall. FB belt-driven centrifugal fan with fan casing, forward-curved blades. (Sizes : 060-600) BB belt-driven centrifugal fan with fan casing, backward-curved blades. (Sizes : 150-600)	060-100 150 190-300 360-600	20 25 30 40

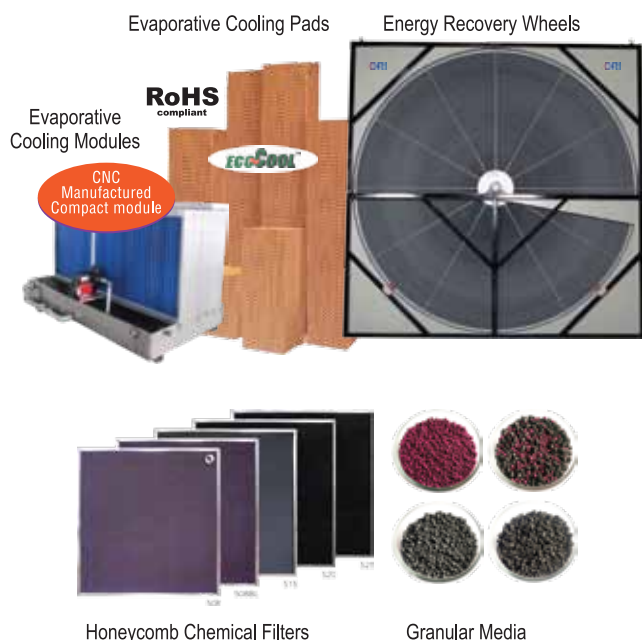
Functional Components			Size	Moudule
		<b>MIE-KM Inspection door, MIE-TD Empty section panel</b> MIE-KM* hinged inspection door and MIE-TD empty section panel for installation between unit sections.	060-600	10 15 20 Vary as required
		<b>MIE-TD Empty section panel</b> for special function (e.g. steam pipes). Can also be used on spacer section.	060-600	05-80 Vary as required
		<b>MIE-KL Silencer function</b> Withdrawable sound baffle elements consisting of mineral wool covered with cleanable woven fabric (Cleantech).	060-600	30 40 50 60 Vary depending on the degree of attenuation desired.
		<b>MIE-MD Media installation components</b> Shielded space for the installation of electrical and control cubicles. Equipped with an inspection door hung on hinges.	240-600	30
		<b>Rotary heat exchanger</b> <b>Ecofresh</b> Heat Wheels use custom made metallic honey comb matrix coated with Ecosorb Molecular Sieve desiccant. In typical installation, the wheel is positioned in a duct so that it is divided into two half moon sections. Stale air from the conditioned space is exhausted through one half while outdoor air is drawn through the other half in a counter flow pattern.	060-600	380

Complete Functional Section - 1 Storey			Size	Length (mm)
		<b>EBA Mixing section</b> Complete functional section containing two interconnected dampers for mixing outdoor air and exhaust air, for example.	060 100 150-190 240-300 360-480 600	440 505 695 805 990 1095
		<b>EBB Mixing section</b> Complete functional section containing three dampers, has two outgoing shafts, for mixing outdoor air, exhaust air and recirculated air, for example.	060 100 150-190 240-300 360-480 600	880 1010 1390 1610 1980 2190
		<b>EKV Angle section</b> A functional section for deflecting the air flow 90° upward or downward. Can be fitted with a filter.	060 100 150-190 240-300 360-480 600	440 505 695 805 990 1095

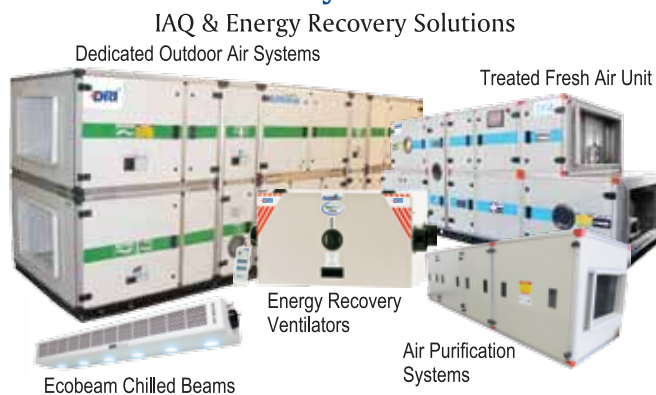
Complete Functional Section - 2 Storeys			Size	Length (mm)
		<b>EBC Mixing section</b> A complete two storey functional section containing three dampers with two outgoing shafts, for mixing outdoor air, exhaust air and recirculated air.	060 100 150-190 240-300 360-480 600	440 505 695 805 990 1095
		<b>EBD Media section</b> Complete two storey functional section with shielded space for electrical and control cubicle installation.	060-600	930

# ...your Green HVAC partner

## DRI Components



## DRI Systems



## Innovative Evaporative Cooling Solutions



Our products are manufactured to meet international standards and are shipped regularly to the Americas, Europe, Japan, Korea, Australia, China, South Africa, West Asia, Indian subcontinent, South East Asia, Russia and the CIS Countries.

 *Never too far from you !*



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