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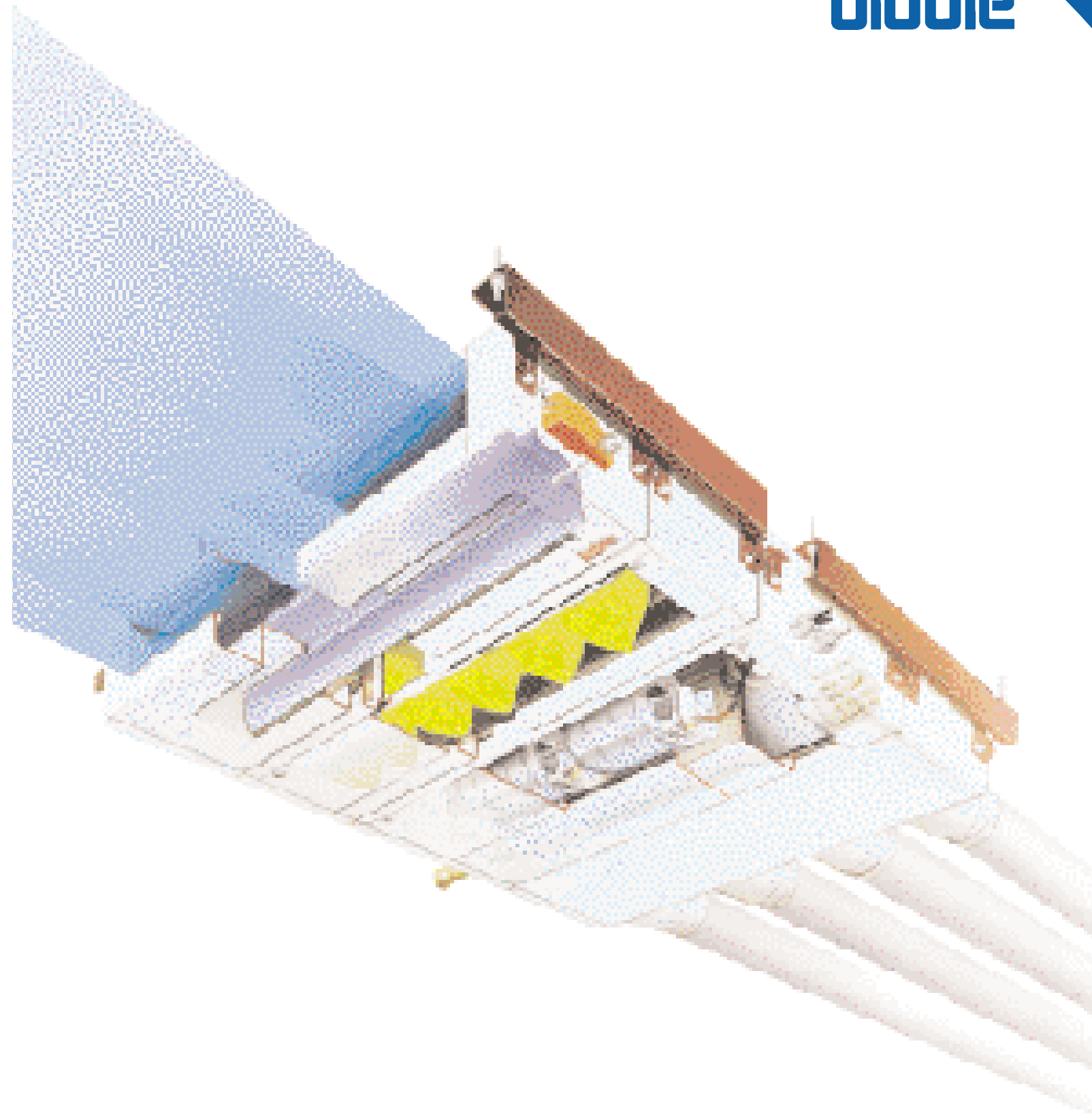
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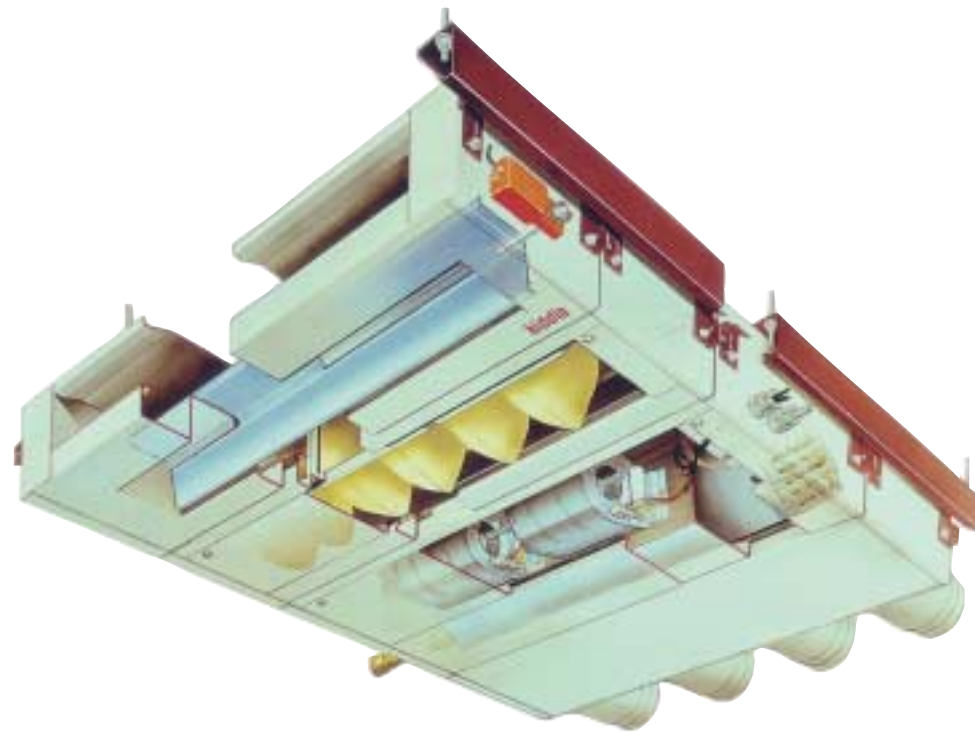
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The information given in this brochure is, to the best of our knowledge, correct at the time of going to print. However, Biddle Air Systems are constantly looking at ways of improving their products and services and therefore reserve the right to change without prior notice any of the data contained in this publication.



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## THE CONCEPT

Modulair from Biddle Air Systems Limited is another product innovation from one of the UK's leading names in the design and manufacture of advanced heating and ventilating systems.

Modulair meets all the demands of a modern air conditioning system yet uniquely offers the added convenience and controllability of an individual fan coil system.

Modulair offers the following inherent benefits in a single system:

- Modulair features flexibility
- High performance, efficient operation
- Low noise
- Simple installation
- Low maintenance

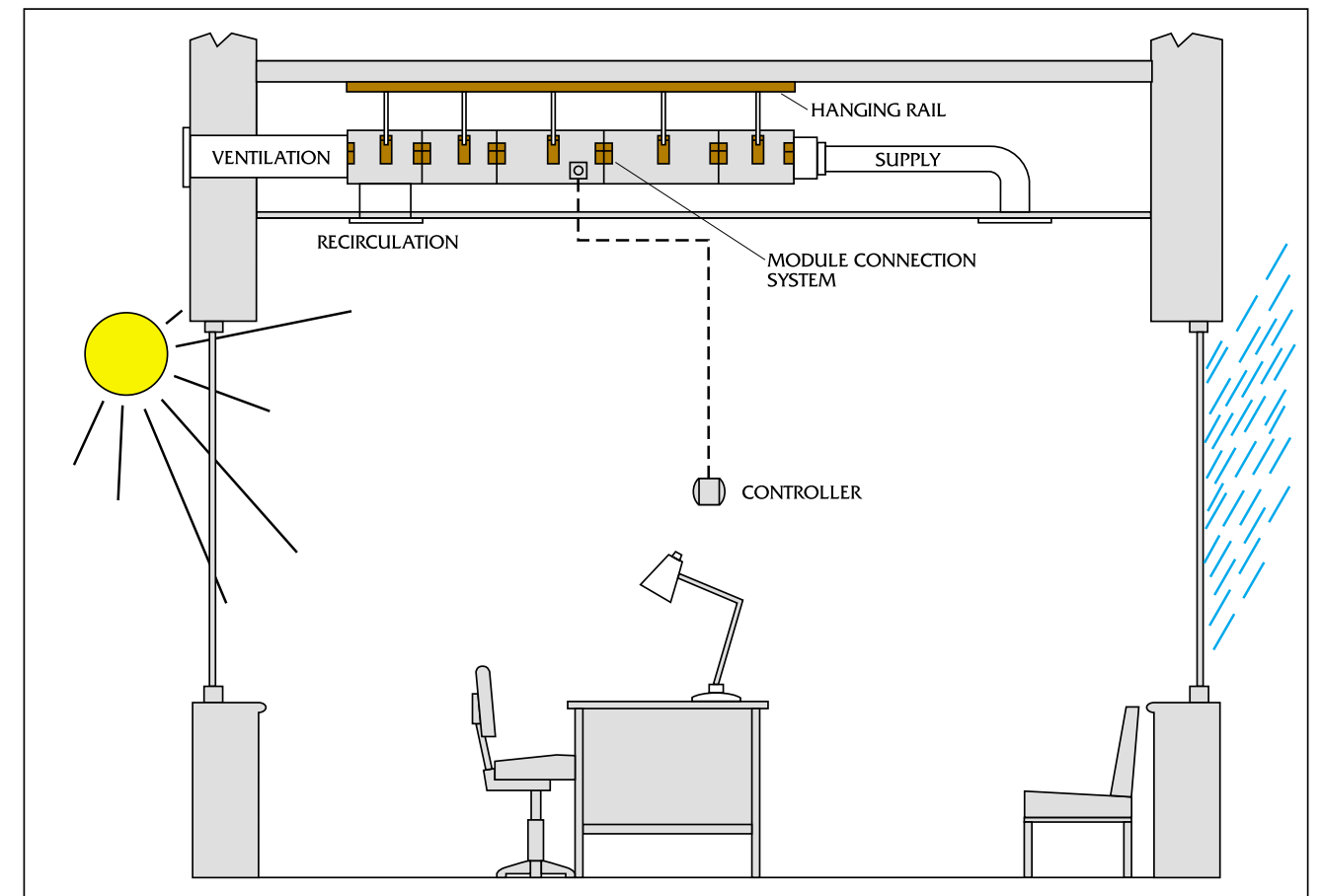
## A TOTALLY NEW CONCEPT IN BUILDING ENVIRONMENT CONTROL

Developed in conjunction with Biddle Air Systems' Dutch associate Biddle BV, the Modulair system is the result of an intensive 2 year research and design project. This identified a requirement for a system that offered a flexible yet fully controllable solution to heating, ventilation and cooling in building "zones" rather than conventional office or "large space" configurations.

The Modulair system allows this individual control of temperature and ventilation, combined with minimised noise levels and an exceptionally compact and streamlined design - infinitely flexible as accommodation requirements change within a structure.



## ZONAL COMFORT CONTROL IN ALL CLIMATES



## MATERIAL COMPONENTS AND SPECIFICATIONS

### Unit Casing

The Modulair system's unit casing is manufactured in zinc coated sheet steel, which has been additionally stiffened to prevent the risk of distortion and reduce vibration.

Colour finish:

- Casing - Brackets - grey RAL 9018

### Fans and Motors

The Base Module can be equipped with a single or multiple fan and motor assembly. Double inlet centrifugal fans are driven by motors with sealed bearings and integral thermal protection, (Protection Class IP44, Insulation Class B).

### Heating/Cooling Coils

These high output coils are manufactured from copper tubes with mechanically bonded aluminium fins. Each coil is tested to 30 bar pressure.

### Electric Heating

Electric heating is possible as the main (in Base Module) or auxiliary (in Additional Heating Module) heating source.

### Filtration

A wide range of filtration levels can be accommodated from EU2-EU9.

### Control

Fan speed and ventilation control is by means of a remote mounted, touch sensitive electronic controller. The controller consists of two components, a remote mounted key pad, and an interface built into the base module. This can be used to control an individual unit or group of units.

### Attenuation

An Attenuation Module for use on the air intake, discharge or both sides of the Base Module offers even further noise reduction where exceptional quietness is demanded.

### Electrical Supply

- Base Module 240V - 1PH - 50Hz
- Electric Heaters 415V - 3PH - 50Hz

### Accessories Available

- Damper motor
- Frost thermostat
- Flexible connecting
- Remote touch sensitive electronic controller
- Valve packages
- Roof coil
- External air intake grille
- Rectangular spigots

### Air Mixing Module

The Air Mixing Module is used for either the introduction of fresh air or recirculated air. A damper mechanism driven by an integral motor with or without spring return can be provided.

### Plenum Module

Equipped with 2, 4 or 6 specially designed aerodynamic 178mm diameter plastic duct connectors. The Plenum Module distributes the conditioned air to the space using site installed ductwork.

## FAST AND SIMPLE INSTALLATION



The Modulair system has been specifically designed to allow fast and simple installation with associated cost benefits.

Modulair incorporates a unique yet very simple patented hanging system whereby each module is attached to a hanging rail suspended by threaded rods. Modules may then be connected "in line" to effect an airtight and noise proof seal.

The Modulair system's exceptionally shallow design also enables fast and simple installation in virtually all ceiling void applications. Modules measure only 229mm in depth (245mm including suspension rail).

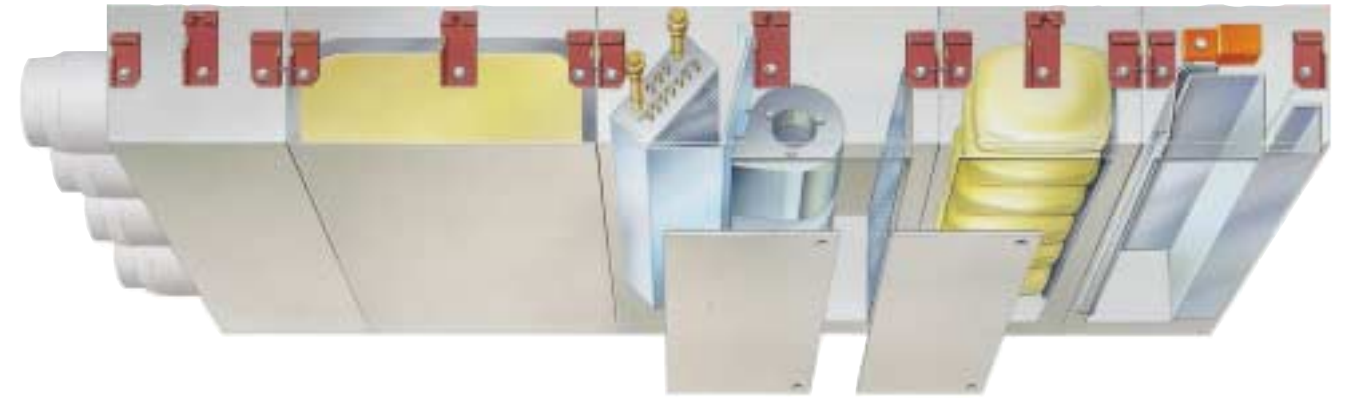
The system also utilises a remote mounted, touch sensitive electronic controller which simply plugs into the Base Module for control of either single or grouped units.



## HIGH PERFORMANCE HIGH EFFICIENCY

During the design and development of the Modulair system, special attention was focused on reducing air pressure drop within individual modules.

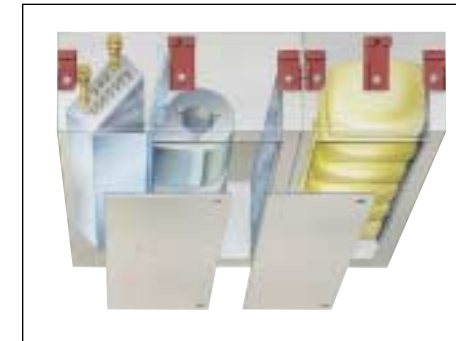
Modulair's high performance and highly efficient operation is a direct result of this research and is enhanced by the use of high quality direct drive fans providing optimum, consistent pressure build-up and maximum performance.



## LOW NOISE SPECIFICATION

Designed with the modern demands of architects, heating and ventilating engineers, specifiers and end users in mind, the Modulair system provides virtually noise-free performance.

Special attention to casing design, use of efficient double inlet fans and low-noise motors ensures the noise level of the unit is kept to a minimum. Levels can be further reduced in noise-sensitive applications with the addition of an Attenuator Module on either the air intake inlet, discharge outlet or both.



## LOW MAINTENANCE

The Modulair system offers virtually maintenance-free performance. The system's fan motors incorporate sealed bearings for constant and reliable service. A sliding inspection panel featured in both the Base and Filter Modules provides fast and easy access for filter maintenance and removal when required.

## APPLICATIONS

The Modulair system is ideally suited for use in both new build projects and refurbishment/renovation in the widest range of buildings such as:

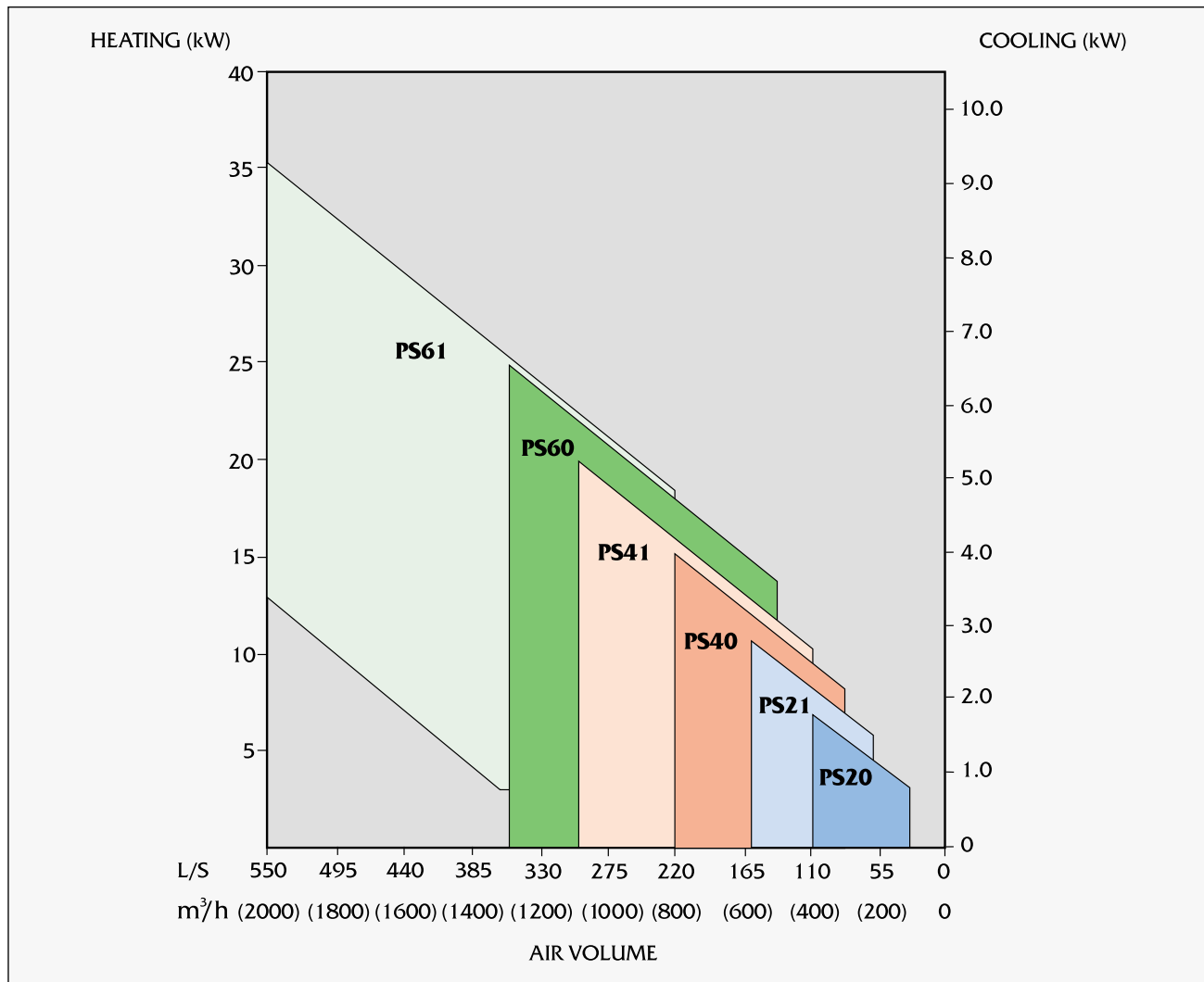
- Offices
- Restaurants
- Hotels
- Reception Areas
- Exhibition Areas
- Shops



Modulair is also suited to applications requiring high levels of filtration, versatile and adaptable heating and ventilation requirements controlled in zones, and high performance, high efficiency air conditioning.

## QUICK SELECTOR CHART

The following Modulair Quick Selector Chart has been designed as a fast and easy reference guide showing nominal duties and should only be used as a guide. For details of actual performance duties please see the Modulair Technical Brochure or contact Biddle's Sales Office.



### External Dimensions (mm)

Model	Depth	Width	Length
<b>Base and Attenuator Modules</b>			
PS 20/21	229	748	552*
PS 40/41	229	1123	552*
PS 60/61	229	1623	552*
<b>Filter, Plenum and Air Mixing Modules</b>			
PS 20/21	229	748	334*
PS 40/41	229	1123	334*
PS 60/61	229	1623	334*

\* Add 150mm for length of discharge spigots

- Discharge spigots 178mm diameter
- Number of spigots per unit is 2, 4 and 6 respectively for PS20/21 PS40/41 and PS60/61

## MODULAR CONSTRUCTION

As the system's name suggests, Modulair's modular design and construction allows engineers the ability to tailor the performance of the system to the individual requirements of a zone - according to planned usage. For example, working offices, computer rooms, conference areas etc.

Individual modules can be easily assembled on site and readily added to the existing system for cooling, heating, ventilation or filtration requirements.

### Base Module



The Base Module is the heart of the Modulair system and is available with one or more double inlet centrifugal fans, dependent on requirements, a high performance heating and/or cooling coil and a washable filter (Class EU2).

Heating/cooling coils are manufactured in high quality copper tubes and lightweight, high strength aluminium fins.

Fans are powered by 240V motors featuring integral thermal cut-out protection for enhanced safety. (Protection Class IP44: Insulation Class B).

### Additional Heating Module

Where increased levels of performance are required, the Additional Heating Module can provide additional or auxiliary heating by either LPHW or electricity. Where heating is electrically powered, a switch-on and re-heat device is provided in addition to thermal cut-out protection.

### Attenuator Module

In modern building applications where workforce comfort is highly regarded, the addition of an Attenuator Module provides a highly efficient means of noise reduction. The Modules' aerodynamic section of high performance sound-absorbent material is finished with an overlay to prevent the migration of fibres.

The versatility of the Modulair system allows the Attenuator Module to be used on the intake, discharge, or where required, on both sides of the Base Module to reduce noise levels.

### Filter Module

The levels of filtration on the Modulair system can be tailored to specific needs - from standard filters where low levels of filtration are necessary to exceptionally high performance filters for the most demanding environments (see Technical Specification for details).

The Modulair system has been carefully designed for simplicity of maintenance and filters are quickly and easily removed for servicing via a sliding access panel on the underside of the unit.