



Taurus EC 60-480

Optimum Efficiency Environmental Control System
For Water Leisure Centres and Municipal Swimming Pools

- Hybrid systems - dual heat recovery methods for expelled room air
- UK building regulations compliant for non-residential pools
- 'Blue-EC' ultra efficient digital inverter fan systems
- Dual function dehumidifying and expelled room air heat pumps
- Integral Aerothermal fresh air source heat pump boiler
- 'Direct-Contact' heat pump technology
- Full rate fresh air ventilation with 'Cross Flow' heat recuperators
- 'Auto fan' intelligent air recirculation fan management
- Active heat recycling into room air and pool water via dehumidifiers
- Room air and pool water integral support heating provision
- Fully compliant with 'Eco-Design' Directive (ERP) 2015

Heatstar
Energy Technology Systems 



Engineered with Excellence, Specified with Confidence.

Available with a range of technologies, the Taurus offers high energy efficiency environmental control for swimming pools and larger water leisure complexes.

Introduction

Heatstar Taurus systems are a dedicated range of premium quality high capacity environmental control units, designed solely and specifically for application on large municipal swimming pools and water leisure centres.

Taurus units offer humidity control, energy recovery, fresh air, variable rate ventilation, mechanical cooling and renewable energy heating solutions.

The specialist dedicated design of the Taurus overcomes all the traditional problems associated with operation in aggressive, corrosive and comparatively humid environments.

The Taurus systems features the latest energy saving approaches and can be specified with a range of technologies including EC digital fans, active energy recycling via a dehumidifying heat pump, passive recovery via heat recuperators, integral aerothermal heat pump and comfort cooling provision.

Purpose designed for UK Building Regulation legal compliance

All newly designed UK projects need to comply with the minimum standards stipulated by Part F of the latest building control regulations. The Taurus is purpose designed to exceed these strenuous standards and ensure legal compliance.

Key compliance criteria

- Expelled room air heat recovery efficiency

At least 50% for non-domestic and be rated against the standard BS EN 308:1997. The regulation stipulates 'dry' heat recovery efficiency, therefore eliminating any allowance for any additional latent recovery contribution through the condensing of moisture contained within the expelled air.

- Specific Fan Power

A maximum of 1.5 W/(l/s).

- Fan Power Control

Equipped with a variable speed control and that must be able to operate at 1/4 power with the same efficiency as at 100% power.

'Blue EC' Ultra-efficient digital inverter fan system

Against the consideration that the permanent operation of large air fan motors may represent the largest single consumer of energy within a pool complex, the Taurus employs a very special type of digital fan to offer the best possible energy efficiency and, so, the lowest operating cost of any such system. The digital fan uses a directly driven, backward curved, centrifugal impeller, which features a DC motor coupled to an AC inverter.

'Intelligent' Auto-Fan - Why run the fan at full power when you don't need to?

The Taurus features 'auto-fan' technology, whereby the speed and power of the air recirculation fan is managed automatically to enable significant energy savings whenever there is low demand for dehumidification or air heating.

Fully adjustable air re-circulation air flow

The air flow rate provided by the fan system can be adjusted electronically on-site to precisely match the exact requirement of the pool room.

Illuminated fan window

Another unique feature is the blue LED illuminated Perspex window, enabling the special energy saving EC fan, and its managed speed of rotation, to be observed at will within the plant room.

Perfect pool room air quality

The Taurus always provides a modulated level of fresh air dilution to achieve an enhanced impression of freshness and to prevent any build up of chemical odours. A slightly negative air pressure is also achieved to help prevent the pool room atmosphere migrating into adjoining areas, or compromising vapour barriers. The 'dual' process of heat extraction is retained to maintain efficiency.

Close-Control precision fresh air ventilation management

As the quantity of air emitted to atmosphere has an increased relevance to the overall energy usage of the application, the expelled air volume is precisely regulated by the combined effect of a motorised air damper and the automated power of the exhaust air fan.

Integral support heating provision

To ensure that the optimum pool room air and pool water temperatures are always achieved, during periods when the heating requirements exceed the heat recycled and introduced by the dehumidifying heat pump, supplementary heat emitters are incorporated within the Taurus.

These heat exchanging coils transfer heat piped from a separate heat source, typically a fuel or heat pump boiler, into the pool room air or pool water. For installations where a separate heat pump boiler is used, special up-rated emitters and fan systems are used to compensate for the lower heating circuit temperature. If there is no boiler available, then direct electric heat emitters are also offered as an option.

A high capacity pool water heat emitter is used to ensure a swift initial warm-up period for the pool from cold and, for salt water pools, special titanium coils are available.

Stand-Alone dedicated controls package

All functions of the Taurus are completely automatic with the actual temperatures, conditions and system status clearly displayed upon the control panel.

Once the desired temperatures are set on the intuitive and easy-to-use controller, the integral sensors and processors accurately self-govern the various modes of operation. The controls permit the pool room temperature to automatically be reduced to a 'set back' to save energy when the pool is not in use, via a link to the pool surface cover or other switch facility.

The controls feature robust digital technology and are specifically selected for assured long term operation and serviceability within the equipment room atmosphere. Various optional BMS interfaces are also available.

Performance and configuration flexibility

Each Taurus unit is tailor-made to the precise individual requirements of the application, obviating the need to under or oversize performance aspects or tolerate inappropriate equipment room layout.

Dehumidification rates, air flows and heating duties are all specified individually to give a completely balanced, highly effective system, operating at ideal efficiency.

The performance specification envelope for single unit application encompasses air flow volumes to 12 M³/Sec. and dehumidification loads to 550 Kg/Hr.

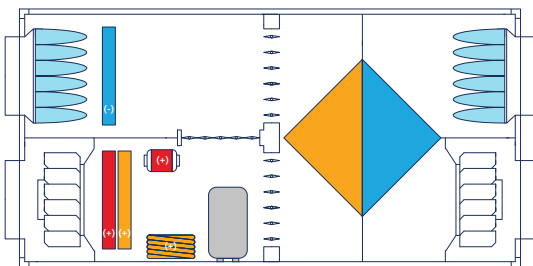
The position of the control panel, pipes, air duct spigots and maintenance access can also all be orientated during manufacture to accommodate the ideal equipment room layout.

For retrofit and refurbishment applications, the Taurus units can be custom-made as necessary to accommodate existing services and plant space restrictions.

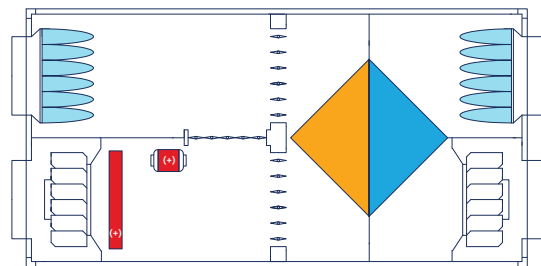
Special 'weatherproof' models are also available for external positioning. Therefore, irrespective of the demand characteristics of the application, the Taurus is the perfect uncompromised approach.

→ Taurus EC standard configurations

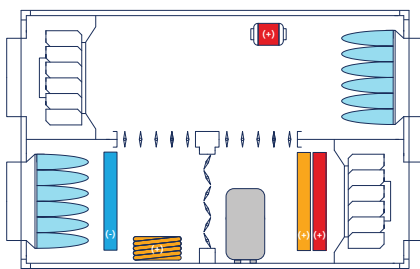
Taurus HPXF



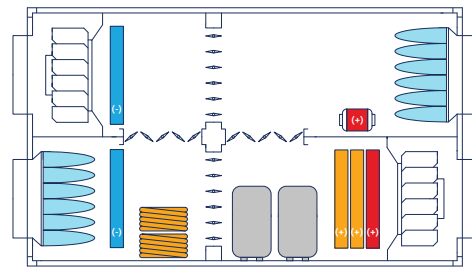
Taurus XF



Taurus HP



Taurus ATHP



→ Taurus EC standard performance specifications

	Type	60		120		180		240		360		480	
		Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
Air recirculation fan duty	M ³ /Sec.	0.97	2.50	1.94	6.11	3.19	9.17	3.89	12.22	3.89	12.22	5.56	12.22
Variable speed control range	%	0	100	0	100	0	100	0	100	0	100	0	100
Expelled / fresh air fan duty	M ³ /Sec.	0.39	1.39	0.78	3.89	1.17	5.00	1.56	5.83	2.33	7.50	3.11	10.00
Variable speed control range	%	0	100	0	100	0	100	0	100	0	100	0	100
Fan type	"Blue EC" backward curved, direct drive, electronically commutated, brushless DC motor												
Dehumidification													
Dehumidifying heat pump	Kg/Hr.	15.3		30.6		45.9		61.2		91.8		122.4	
Fresh air induction: Summer	Kg/Hr.	8.7	31.0	17.4	86.7	26.1	111.4	34.7	129.9	51.9	167.1	69.3	222.8
Fresh air induction: Winter	Kg/Hr.	14.4	51.3	28.8	143.5	43.2	184.5	57.6	215.1	86.0	276.7	114.7	368.9
Room air heating potential													
Dehum heat pump recycled heat	kW	22.4		44.8		67.2		89.6		134.4		179.2	
LTHW coil	kW	22.8	58.8	45.6	143.6	75.0	215.6	91.4	287.3	91.4	287.3	130.7	287.3
Pool water heating potential													
Dehum heat pump recycled heat	kW	22.4		44.8		67.2		89.6		134.4		179.2	
LTHW coil	kW	26.4	68.6	68.6	92.4	68.6	92.4	92.4	137.9	92.4	184.7	92.4	275.8

Rated conditions

Pool air: 30°C/60% R.H. Pool water: 28°C
Ambient: 7°C/100 R.H. Winter: 28°C/45% R.H. summer
LTHW: 70°C Flow/50°C return

Due to continuous development the right to alter specifications without notice is reserved. E&OE

Room air 'free cooling' provision

Free cooling to the pool room air, utilising the introduction of outside fresh air, is a standard feature on all Taurus models.

Pre-Packaged for simplified installation

To reduce installation work and complexity to a minimum, the Taurus can be offered as a completely pre-assembled package, incorporating all heating coils, controls and motorised heating valves, providing dehumidification, heat recovery, air heating, pool water heating and fresh air ventilation, all from a single, easily installed unit.

Highest quality construction

The Taurus is designed and constructed to the highest possible standard and all components have been especially selected for use within corrosive swimming pool environments.

For maximum strength and durability, the units are constructed from a 50mm thick anodised aluminium skeleton frame. All exterior access panels are formed from an insulated double skin 'sandwich' construction using galvanised steel, with a tough PVC coating to prevent corrosion, fixed via chrome latches.

All air heat exchange coils feature 'gold' epoxy coating to protect against corrosion.

Where applied, the refrigeration compressors which drive the heat pumps use a special 'orbital scroll' design, manufactured in the UK by Copeland, offering the best possible operating efficiency.

The heat pumps utilise zero ozone depletion eco refrigerant and are completely hermetically sealed to guard against leakage.

Energy Related Product Directive compliance (ERP)

The European Union Directive for 'Energy Related Products' is now in force and encompasses sweeping legislation which impacts upon ventilation product engineering, efficiency and performance rating. The Taurus is so energy efficient that, not only does it comply with the new directive, but it actually even exceeds the more stringent regulations proposed for the future.

Sectional delivery

To ensure convenient and practical access for the equipment into the technical area, the Taurus units are normally supplied in a sectional format for re-assembly in situ.

Rigorous testing procedures

Prior to every new Taurus unit leaving the Heatstar factory, it is first subjected to a thorough procedure of testing and appraisal within Heatstar's own climatic chamber to ensure that all aspects meet the required quality and performance standards. Individual certificates of testing are provided.

Assured delivery period

As the equipment is manufactured within the UK delivery times are prompt and can be guaranteed as necessary. The uncertainty and expense of long distance shipping is avoided.

Free commissioning

All Taurus units are commissioned free of charge within the UK by experienced Heatstar technicians to ensure correct installation and optimal performance.

Factory supported warranty and maintenance

The Taurus comes with the assurance and peace of mind of a comprehensive, on-site warranty within the UK. Also available are extended warranty options and the benefit and assurance of future routine servicing by Heatstar's own technicians to ensure minimal maintenance costs, a very long operating life and that the Taurus is always able to obtain optimum efficiency.

Free application selection service

Heatstar offer a free, computer-aided application service providing accurate and precise equipment selections, installation schemes and economic assessments. Heatstar's highly experienced team of experts are available for consultation on all related aspects, without charge or obligation.

Why chose Heatstar?

Heatstar is a specialist British manufacturer and the renowned leading authority for the application of environmental control technology for indoor swimming pools. Heatstar have pioneered the innovation, design and development of modern, highly energy efficient, systems and are specified with total confidence by the UK's leading water leisure experts.

A flag-bearer for energy-efficiency for over three decades, Heatstar continue to play a huge part in making swimming pools role models for energy savings and reduced carbon emissions.

Heatstar have been producing pre-packaged climate control units like the Taurus longer than any other company and this experience is evident throughout the product range. Through the years, over 10,000 Heatstar systems have been supplied within the UK and also exported to numerous Countries.

When investing in equipment of this nature, confidence and assurance in the brand are important considerations. Needless to say, the performance, quality and, very importantly, the long-term reliability and durability of Heatstar and their products systems have been demonstrated beyond question.

Contact us

Contact Heatstar for detailed specifications and a full analysis of your swimming pool heating and environmental control requirements.

Tel +44 (0)1983 521465

Fax +44 (0)1983 822016

Email info@heatstar.com

www.heatstar.com

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