



# INTEGRATED POWER PACK

refrigeration innovation for convenience retail



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Compact, low noise refrigeration and heating system

## Dual temperature refrigeration central plant system

*the all in one solution*

The central plant contains both high and low temperature compressors, enabling both chilled and frozen food cases to be connected directly to the IPP without the need for additional booster systems or add-ons.



## Shop floor heating and cooling

*maintaining customer comfort*

The IPP captures the waste heat from the refrigeration process by transferring the heat into water. The hot water is then circulated around the shop floor and distributed via ceiling mounted fan-coil units. Not only is the heat from the shop floor refrigeration used, but also the plant room extraction is innovatively utilised to gather waste heat from switchgear, power transformers, motors, crank case heaters, oil heaters and every other source of heat normally associated with working plant rooms.



## Energy efficient operation

*lowering running costs*

The feature-rich intelligent plant controller boasts a first and unique feature by directly controlling 4 Copeland digi-scroll™ compressors, 2 for each temperature range. This reduces the total number of compressors required thereby minimising inefficiencies normally associated with multi-compressor systems.



Additionally, by providing step-less capacity control, the IPP achieves precise control of working pressures, eliminating wasteful peaks and troughs in operation and reducing the number of energy-hungry compressor starts.

Outstanding stability of the condensing pressure is maintained by the IPPs controller which directly drives energy efficient EC fan motors, the motor speed being constantly adjusted to achieve a near flat-line condition no matter how dynamic the connected load.

By way of communication with the intruder alarm or by utilising the integrated scheduler, the IPP is able to determine when heating is required. This enables the system to automatically adjust the operating conditions to achieve the utmost efficiency when no heating is necessary. Meanwhile, excess heat is stored in the water system until required to quickly raise the temperature of the building.

## Low noise

*seen but not heard*

These days, noise can be one of the biggest headaches for the community convenience store. Often located in residential areas, it is essential that the equipment is whisper quiet.



Thanks to our intelligent compressor controller, the IPP contains fewer working parts than conventional plant, thereby reducing the noise output.

All of the machinery is packed neatly into a weatherproof, acoustically insulated housing - cutting noise to below 30dbA@10m.

The condenser fans are powered by highly efficient EC motors which are speed controlled to maintain the optimum operating conditions whilst keeping noise to a minimum. During the evening, the intelligent controller will limit the maximum operating speed to ensure the peace and quiet of the night.



## Full alarm and monitoring system

*in check*

Refrigerated food is an essential part of the convenience store offer and therefore it is vital that the equipment is constantly monitored to ensure correct operation. The IPP features advanced self-monitoring and diagnosis that, should a fault arise, will immediately notify the operator.



There are no meaningless fault codes, or the need to contact a help desk to translate cryptic error messages. All alarms are displayed in clear English and are logged in the IPPs memory along with the time and date they occurred to aid fault-finding by an engineer.

The IPP is supplied ready to be connected to the internet to allow remote viewing or adjustment from anywhere in the world and can send email alerts to the owner/operator or their incumbent contractor. Alternatively, the IPP can be connected one of the industry's leading monitoring systems, the RDM DataManager, for total integration with shop floor temperature monitoring, HACCP compliance and temperature control.



## Ease of operation

*keeping it simple*



Each IPP is ready prepared in the factory for operation and does not require complicated set-up, testing and commissioning. The near 'plug-and-play' approach minimises the engineering setpoints required to get up and running whilst the user interface is simple and unimposing. Meanwhile, critical engineering information is shown in real-time on the IPP's integrated display.

The operator has limited access to operating parameters so as not to inadvertently disrupt the correct operation, but via a simple web browser or optional connected RDM DataManager, can easily adjust the store temperature set-point and view the status of the equipment.

## Low cost maintenance and improved reliability

*for piece of mind*



The IPP's design contains fewer electrical and mechanical parts, and utilises modern solid-state components to minimise the likelihood of failure. Furthermore, by the reduced number of compression fittings and the use of hermetically sealed compressors, sensors and pressure switches, the IPP minimises the risk of refrigerant gasses escaping to the atmosphere.

The unique approach to digi-scroll™ compressor control eliminates the unreliability associated with conventional lead-lag systems by providing equal run hours for each compressor, allowing resting of each digi-scroll™ to further improve reliability.

For maintenance, the integrated intelligent controller provides a multitude of diagnostic aids to expedite repairs meanwhile routine servicing is made simple and easily accessible.

## Cost effective

*value is everything*



In today's economic climate the balance of cost and economy has never been more important. Whilst businesses strive to cut energy costs and improve their environmental impact, often such technologies are expensive and beyond budget restraints.

The IPP strikes the perfect balance between efficiency and affordability. By providing refrigeration for both chilled and frozen food without the need for additional components, eliminating the requirement for heating or air conditioning and enhanced reliability due to the reduction in working parts, it is easy to see why IPP offers best value.

## Optional extras

*expanding the IPP*



The IPP's intelligent controller can easily be expanded to control additional useful and energy saving initiatives including:

- Store lighting control
- Signage lighting control
- Outdoor/car park lighting control
- Energy monitoring
- Comfort cooling

# "A Truly Integrated Solution"



Designed and built in the UK, our one stop solution for convenience retailers provides refrigeration, heating, cooling and energy efficient building management control in a cost effective package.

## Refrigeration



Chilled display



Frozen display



Back-up chiller and freezer

## Heating & Cooling



Shop floor heating and cooling

## Internet



Temperature alarm and monitor with BMS control



Intruder alarm



Store lighting



Heating & cooling controls



Signage and outdoor lighting



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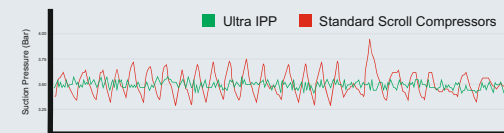
Web: [www.ultrarefrigeration.co.uk](http://www.ultrarefrigeration.co.uk)

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## Benefits of the Ultra IPP system:

- Fully configurable refrigeration load
- Chilled and frozen capability as standard
- Indoor or outdoor installation
- Low noise
- Internet enabled
- Remote alarm and monitoring built-in
- Digital pressure display
- On-board data logging
- Energy monitoring
- Integrated electrical control panel
- Heat recovery as standard
- Digital Scroll for step-less control
- EC low energy condenser fans
- Minimal commissioning required
- Reduced running costs
- Small footprint

## Suction Pressure Control



## Specifications

Dimensions (mm):	2180w x 677d x 1815h
Temperature range (°C evaporating):	LT: -38 to -25 HT: -12 to +2
Refrigerants:	R404A, R407A, R407F
Cooling Capacity (kw):	LT: 5 to 11 HT: 5 to 60
Max Heating Capacity (kw)	91
Noise Level (dBA@10m):	30

Specifications are subject to change without notice and may vary according to specific requirements and model chosen. Detailed specification available on request. e&oe