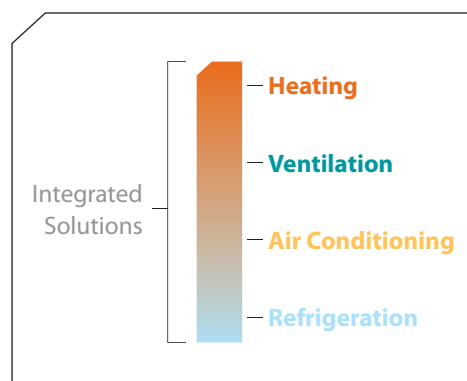




Sky Air Product Range

Leading in seasonal efficiency

Welcome
to the era
of the SEER







Daikin leads the way: Seasonal Sky Air series

Daikin again leads the industry with their full light commercial range optimised for seasonal efficiency, which already meets the very challenging 2014 ErP requirements even before those for 2013 are implemented.

Our Sky Air Seasonal series – Seasonal Smart and Seasonal Classic – offers at least 20% better performance than current existing inverter solutions and this is fully in line with 20/20/20 EU policy. This performance can be further enhanced with a smart use of unique Daikin options. The technology used gives very high levels of seasonal efficiency while maintaining or improving the comfort and flexibility features that make Daikin so unique.

Daikin has a solution for all your needs:

-  **Seasonal Smart** • Seasonal Smart offers top seasonal efficiency. It meets the needs of projects requiring high flexibility such as longer piping lengths, a wider operating range or EDP applications. Efficiency and comfort can be further enhanced with selectable evaporating and condensing temperatures.
-  **Seasonal Classic** • Seasonal Classic offers an effective solution for budget applications where less flexibility is required.

Content

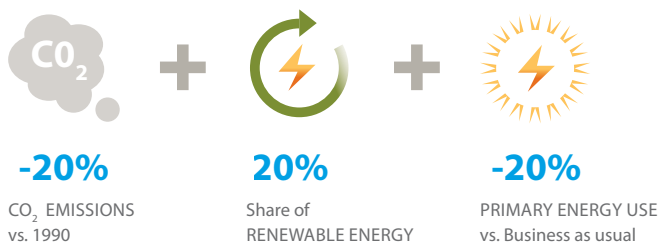
Daikin leads the way: Seasonal Sky Air series	02
Seasonal efficiency ... in more detail	03
Sky Air: the solution for the light commercial sector	04
Sky Air solutions	05
Products in the spotlight	07
Sky Air - the complete solution	13
Sky Air product portfolio	14

Seasonal efficiency ... in more detail


In response to the Kyoto Protocol, the European Union have set challenging targets for reduction of CO₂ emissions. These targets also include improving energy efficiency and reducing environmental impact. To help accomplish these targets, a European wide action plan has been put together. This aims to achieve:

- 20% reduction CO₂ emissions.
- 20% improvement in energy efficiency.
- 20% reduction in primary energy use (vs. business as usual).

European action plan 20/20/20



To help achieve these targets, an Energy Related Products (ERP) Directive has been introduced and this specifies minimum eco-design requirements, such as improved energy efficiency, that must be integrated into energy-using products. The ERP sets minimum standards for energy efficiency of products. Products that are less efficient than this standard will, from January 2013, not be able to be placed on the market. For climate control systems, these efficiency standards will be based not on current industry standard of nominal efficiencies, but a new measure called Seasonal Efficiency.

 Seasonal efficiency is a more accurate measurement of the real-life energy efficiency of systems and will be the standard from 2013.

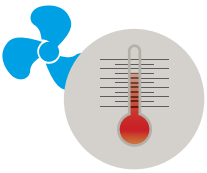
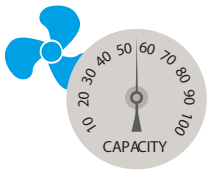

Measuring real-life performance

Customers need access to a common set of performance data to enable them to make accurate and informed comparisons between climate control systems and thus make their choice of which system to buy. To ensure that objective performance metrics are used and presented in a consistent manner, the EU currently uses the 'nominal efficiency' ratio (EER). However, this results in a significant gap between announced performance and what is actually achieved and so a more accurate method – the 'seasonal efficiency' ratio (SEER) – has been developed. The major changes include:


- the integration of several rating temperatures for cooling and heating.
- the inclusion of energy use at part-load as well as full-load.
- the power used in auxiliary and standby modes.

Since most systems operate under a partial load the majority of the time, the new methodology gives a better indication of expected real-life performance.

Nominal versus seasonal efficiency

Temperature		Capacity		Auxiliary modes	
NOMINAL	SEASONAL	NOMINAL	SEASONAL	NOMINAL	SEASONAL
 <p>1 Temperature condition: 35°C for cooling 7°C for heating</p> <p>Does not often occur in reality</p>	<p>Several rating temperatures for cooling and heating, reflecting actual performance over an entire season</p>	 <p>Does not reflect partial capacity</p> <p>Benefits of inverter technology not visible</p>	<p>Integrates operation at partial instead of full capacity</p> <p>Benefits of inverter technology are shown</p>	 <p>Does not take auxiliary power modes into account</p>	<p>Includes consumption auxiliary modes:</p> <ul style="list-style-type: none"> • Thermostat off • Standby mode • OFF mode • Crankcase heater

Nominal efficiency gives an indication on how efficient an air conditioner is when operating in a nominal condition.

 Seasonal efficiency gives an indication on how efficient an air conditioner is when operating over an entire cooling or heating season.

Sky Air the solution for the light commercial sector



Sky Air is Daikin's industry-leading light commercial range, which has been redesigned for optimum seasonal energy efficiency ahead of the latest legislation. Providing the ideal solution for all kinds of small commercial spaces, the Sky Air series offers a complete comfort solution that puts you in total control.



Retail

Versatility and control are key to creating the comfortable conditions within trading areas and changing rooms that will keep customers shopping. It's important to select a system that offers excellent performance, while also minimising operating costs and energy consumption.



IT & Server Rooms

Computer systems run round the clock and require a controlled temperature environment to operate effectively. Equipment in these rooms can generate a lot of heat and not removing the heat effectively can cause computer servers to malfunction. Downtime from inoperable servers can mean lost business and productivity.



Offices / Banks

The challenge for an office or bank is the ability to effectively heat or cool open plan areas as well as meeting rooms. Cooling a meeting room when it is empty will mean running costs mount up unnecessarily. Conditions within open-plan areas are important for staff comfort levels.



Restaurants

Guests expect a perfect atmosphere, including comfort conditions. Heat generated from lighting, the kitchen area and the dining area can all contribute to make restaurants uncomfortable with inadequate air conditioning. Air conditioning needs to be discreet and flexible to meet the demands of your restaurant and customers.



Sky Air for retailers

- Discreet with limited visual and operating impact.
- Reduces energy usage and costs.
- Smart control of A/C and air-curtains.
- Creates an inviting atmosphere for your customers.

Our round flow cassettes blend with your décor as they are integrated into the ceiling with only the decoration panel visible. This decoration panel is the secret to increasing comfort levels and providing the perfect climate conditions for your customers as the various flaps can be individually opened and closed to ensure that the heating and cooling are directed to where they are needed.

The decoration panel is also the secret to reducing maintenance as it conceals the auto cleaning function that traps dust with a special filter that cleans itself once a day, while the collected dust can be easily removed. Up to 50% energy can be saved.

Air conditioning can be integrated with air curtains using an RTD 20 Retail Economiser. This gives full control over your systems, allowing different temperature settings for trading hours or non-trading periods where staff are at work. The Retail Economiser will adjust depending on the comfort requirements of different parts of a store, such as main retail area, changing rooms, or till area. It will also take into account external temperature to optimise internal conditions accordingly. The level of smart control offered can give real reductions in carbon footprint and running costs.



Sky Air for offices and banks

- A solution for every type and size of room.
- Easy management with full control & monitoring.
- Ventilation option if required.
- Ensures perfect comfort for your visitors and optimum efficiency for the building owner.

For office environments, versatility & comfort are required. Ceiling cassettes – either 600x600 cassettes (which fit within standard suspended ceiling grids for ease of installation), or the larger Roundflow are ideal for heating or cooling open plan areas or meeting rooms.

Both cassettes can be combined with presence sensors to optimise the energy efficiency and provide perfect comfort.

The presence sensor adjusts the set point or switches the unit off when there is nobody in the room but when someone is there, the air-flow is directed away from that person to avoid draught. This combined process has been found to reduce energy usage by up to 27%.

Using a control interface to connect your Sky Air system to the building management system allows central monitoring and control of several devices, including lighting, and climate control system so as to maximize energy efficiency.



Sky Air for server rooms

- Continuous cooling operation.
- Automatic rotation between active units.
- Backup outdoor unit ensures continuous operation.
- Possible to restrict use of remote control by room occupants.

Servers & IT equipment needs to be run continuously & can generate a great deal of heat which needs to be removed through continuous cooling and humidity control. This presents a challenge that Sky Air can easily meet with its "EDP" server room configuration. A typical application would have two indoor units each connected to a single outdoor unit to ensure that if one outdoor unit fails, the other is there as an automatic back up.

The indoor units are configured for constant cooling and duty rotation. This is achieved through automatic switching between units after a certain period of use to ensure that at any time one unit is working while the other is available for maintenance.

Given the critical importance of continuous cooling for server rooms, the system is managed via an RTD 10 controller that can monitor and control indoor units either directly or via the building management system and has a 'control of duty' unit that locks the server room settings so that they cannot be changed by people in the server room.



Sky Air for restaurants










- Ensures an even temperature distribution to provide optimal comfort for your guests.
- Highly energy efficient.
- Uses intelligent control systems operated from one central location.

Nothing should distract diners from enjoying the perfect ambience and that ambience includes the optimal temperature. That's exactly what Daikin's concealed ceiling units deliver through whisper-quiet operation and improved comfort from the 3-step air flow control. These turn your restaurant into a comfortable, welcoming environment for your customers. With the centralised control and easy scheduling for the entire restaurant system, energy use is minimised to control your running costs. For example, use of an RTD20 within a series of partitioned rooms can allow individual control of units in each room for smaller groups, or linked control of units when the partitions are removed for larger room configurations and events.

Long pipe runs & duct runs are possible, so equipment can be placed further away from areas accessed by guests.

Products in the spotlight

Daikin's Sky Air range is a traditional "split" with an outdoor condensing unit and an indoor fan coil unit. Sky Air offers capacities of between 7 and 14kW, and with a full range of indoor units, can be tailored to suit many retail and commercial applications.

		FCQG / FCQHG	FHQG	FBQ	FDQ	FAQ	FVQ	FUQ
								
RZQG-L Seasonal Smart		✓	✓	✓	✓	✓	✓	✓
RZQSG-L Seasonal Classic		✓	✓	✓	✓	✓	✓	

> Seasonal outdoor units:

Seasonal Smart and Seasonal Classic products have been specially designed to offer a very high seasonal performance that already meets the 2014 ErP requirements as well as the 2013 requirements. Some of these design improvements include:

- A new compressor that offers substantial efficiency improvements.
- Upgraded control logic to:
 - optimise the efficiency at the most frequently encountered operating conditions.
 - minimise energy use during the auxiliary modes (when the unit is not active).
- Newly designed heat exchangers optimise the refrigerant flow at the most frequent operating conditions (temperature and load). The heat exchanger piping diameter has been reduced allowing more runs and greater surface area. This leads to a significant enhancement in energy efficiency.

These components all combine to give Seasonal Smart & Seasonal Classic condensers a significant enhancement in energy efficiency and make them the first on the market that are designed specifically for Seasonal Efficiency.

Additionally, these new seasonal outdoor models also offer an improved nominal performance.

> Selectable evaporating & condensing temperatures.

For air conditioning systems, efficiencies can be linked to the refrigerant temperatures. A low evaporating temperature will cool a room very quickly, but will not be very efficient as the compressor will be working hard to maintain this. Similarly, a high condensing temperature will heat a room rapidly, but will be over-working once set-point is reached.

Seasonal Smart & Classic both have "floating" evaporating & condensing temperatures, so they will be automatically adjusted within a permissible band of temperatures to prevent over-heating or cooling.

Seasonal Smart takes this to the next level, allowing a building manager to customise a Sky Air system with an exact configuration or to choose weather dependant settings – for example a "default" evaporating temperature could be set. This would cool the room steadily, and consume less energy.

If the external temperature rises above a chosen level, say 25°C, then the evaporating temperature will drop, giving additional boost to cooling & helping maintain indoor conditions. Once the external temperature drops back below 25°C, the evaporating temperature will automatically return to the pre-set level, resuming its' steady performance.

Smart use of the evaporating and condensing temperature functionality gives Daikin a unique advantage, and true seasonal performance.

Products in the spotlight

Seasonal Smart

- Suits computer room applications (EDP).
- R-22/R-407C Replacement technology has been incorporated; replacement solutions deliver major energy savings, offering rapid payback and a cost-effective upgrade solution, phased for minimal downtime.
- Guarantees operation in heating mode down to -20°C external temperature.
- A 75m pipe run to achieve longer runs for installation(100-140 class).
- Compatibility with D-BACS – links your unit into the wider building management system.
- Customisable evaporating & condensing temperatures to improve operating efficiencies.
- 3 phase or single phase available for all classes.



Seasonal Classic

- Compact size single fan units in 71, 100 and 125 class.
- 3 phase and single phase power.
- R-22/R-407C Replacement technology has been incorporated; replacement solutions deliver major energy savings, offering rapid payback and a cost-effective upgrade solution, phased for minimal downtime.
- Guarantees operation in heating mode down to -15°C external temperature.
- A 50m pipe run to achieve longer runs for installation (100-140 class).



> Air conditioning with smart use – user friendly remote controller BRC1E52A

The Sky Air remote controller has been upgraded to offer a series of energy saving functions:

- The 3 independent schedules, e.g. winter, summer, mid-season allow flexibility in which setting the occupant can choose.
- The temperature range limit can also be set which help avoid excessive heating or cooling by limiting the max/min set points that can be selected.
- Set point auto reset allows user flexibility to control room temperature, but returns the unit to pre-set temperature to prevent accidental over-heating/cooling.
- New features include a kWh usage chart which allows users to see indicative energy consumption of cassette system.



Products in the spotlight

> Round Flow Cassette: setting the standard for efficiency and comfort

The round flow cassettes FCQG and FCQHG-F series are designed for use in all forms and sizes of commercial offices and retail environments and provide you with a more energy efficient model.

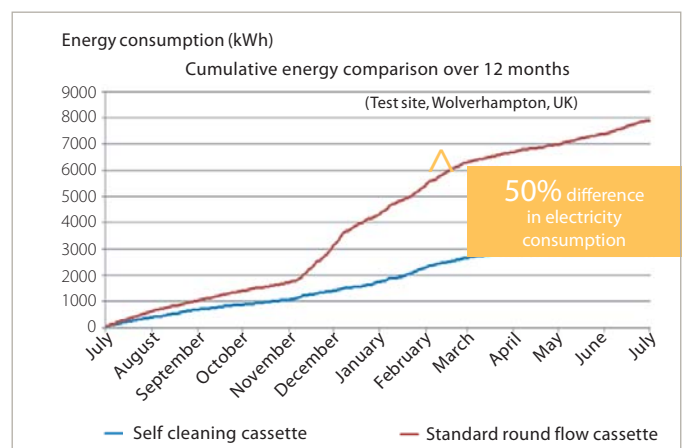
Daikin's new generation cassettes have been re-designed visually and operationally:

- The heat exchanger has reduced diameter pipes, but longer runs for higher efficiency.
- Fan motors & drain pumps are now DC power, so consume less energy.
- A new look decoration panel gives a contemporary edge to the classic 360 degree round-flow grill.



Even more energy efficient

- Daikin was the first to launch a self cleaning decoration panel. With this panel the costs can be further reduced as the filter cleans itself automatically once a day.
- Running costs are reduced compared to standard solutions; up to 50% energy can be saved thanks to daily filter cleaning (Wolverhampton, UK).

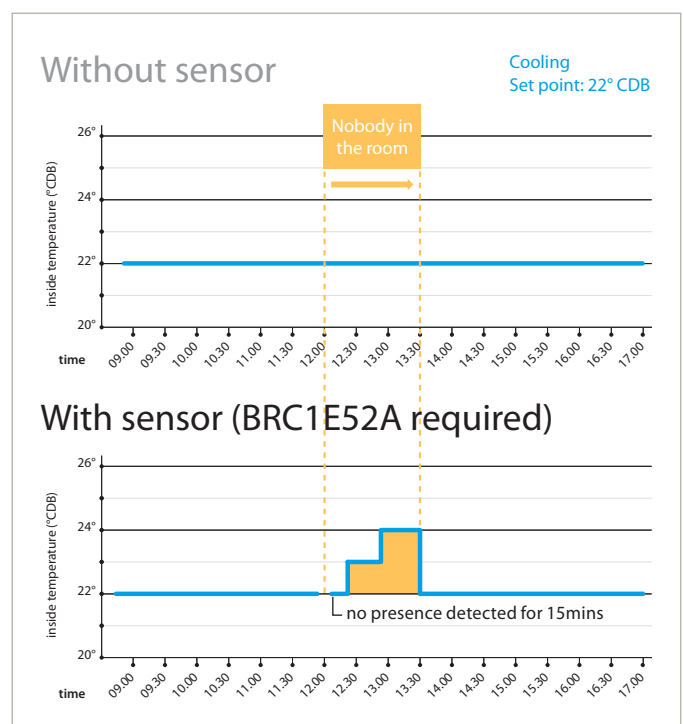


Self cleaning panel saves up to 50% >

- The optional presence sensor adjusts the temperature or switches off the unit when there is nobody in the room. Up to 27% energy can be saved with this new function over a 3 hour period.
- If no presence is detected in the room for 15mins, the set temperature is changed until a minimum temperature (for heating) or maximum temperature (for cooling) is reached. When selecting the setback function, the unit will maintain the temperature within a preset minimum and maximum temperature, when there is no presence detected in the room for 1 hour.

Presence sensor saves up to 27%* >

* estimated energy saving





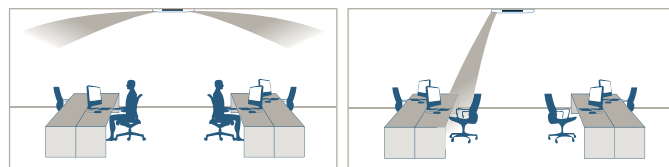
... and improved comfort

- The unique 360° air flow discharge pattern ensures a uniform temperature distribution across the room without dead corners.



Comfort can be further enhanced thanks to the optional sensors:

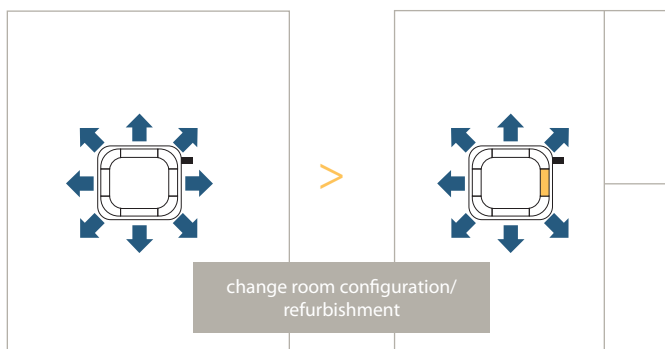
- The presence sensor allows air flow control. It directs the air away from any person detected in the room, when the air flow control is on.
- With the floor sensor having cold feet becomes history. This sensor detects the average floor temperature and ensures an even temperature distribution between ceiling and floor.



Flexible installation

The round flow cassette offers higher flexibility thanks to:

- The possibility of easily closing one or more flaps via the wired remote controller (BRC1E52A - optional), to suit the room configuration.
- Optional closure kits are available as well.



Other features

- Standard D3-net compatibility – link your cassette into a Daikin building management system.
- Fresh air intake possible (max. 20%).

Products in the spotlight

> Wall mounted model – FAQ-C

The new flat, stylish front panel blends easily with any interior décor and is easier to clean.

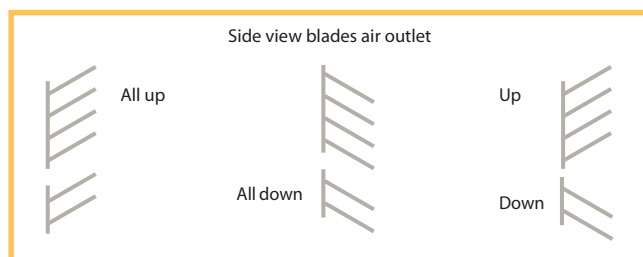
The new wall mounted unit provides improved comfort levels:

- new** • Automatic airflow volume control for all classes. Based on the difference between room temperature and set temperature, the unit will automatically select the appropriate airflow volume. If the temperature difference is high, the unit will select high fan speed; if the temperature difference is low, the unit will select low fan speed. This allows the room to return to set temperature as quickly as possible.
 - Vertical auto swing moves the discharge flaps up and down for efficient air and temperature distribution throughout the room.
 - 5 Different discharge angles can be programmed via the remote control for an air distribution to be directed as you require.
- Decrease of temperature variation by automatic fan speed selection: 3-step fan speed can be freely selected.
 - The adoption of a new heat exchanger with an increased surface area gives improved efficiencies.
 - Flexible installation: installation can be done more flexibility as bottom, back, left or right piping connections are possible.
 - Maintenance can easily be performed from the front of the unit.
 - Standard D3-net compatibility – link your wall mounted into a Daikin building management system.

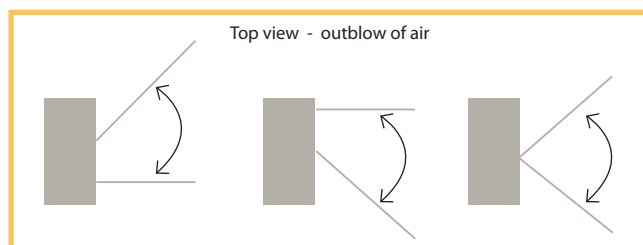


> Floor standing model – FVQ-C

- Decrease of temperature variation by automatic fan speed selection or freely selectable 3-step fan speed.
- Improved efficiency by adoption of DC fan motor.
- Standard D3-net compatibility – link your floor standing unit into a Daikin building management system.
- Improved comfort as a result of better airflow distribution from the improved vertical out blow which allows manual adjustment of air outlet blades at the top of the unit. Selectable horizontal out blow to better suit the lay-out of the room (only if connected to BRC1E52A).



- Selectable horizontal out blow to better suit the lay-out of the room (only if connected to BRC1E52A).



Products in the spotlight

> Concealed ceiling unit – FDQ-C

- New casing: with reduced height to fit flush into false ceilings.
- Blends unobtrusively with any interior décor: only the suction and discharge grilles are visible.
- Up to 200Pa external static pressure allows extensive ductwork runs and flexible application; ideal for use in large areas.
- Easy installation: less duct calculations are needed; moreover, the air flow can be adjusted during installation via the wired remote control (optional) instead of via channel adjustments.
- Standard drain pump available.
- Optional D3-net compatibility – link your concealed ceiling unit into a Daikin building management system.



Sky Air the complete solution



User-friendly controls

Our user friendly controls allow you to manage your Sky Air system for maximum efficiency:



- The wired remote controller gives full access to the unit's functions and energy saving features, including indication of kWh usage (on cassette systems) and flexible scheduling for different seasons.
- The D3-net connection is now standard on most units, allowing you to link into a Daikin building management system.
- From individualised unit control to centralised management via touch-screen options and code based controllers, we put you in command at all times.
- Text based remote control and monitoring of the entire building is available via the internet.

RTD options

- Retail Economisers can monitor and control air conditioning systems, ensuring desired temperatures in different parts of a store, while matching footfall and outside temperature.
- RTD10's help maintain consistent conditions in server & IT rooms, controlling rotation of operational fan-coils & heating lock.



Twin, triple and double twin applications

- Sky Air systems can be connected up to four indoor units to only one outdoor unit even if they have different capacities.
- All indoor units operate in the same mode (cooling or heating).



Biddle air curtains for entrances

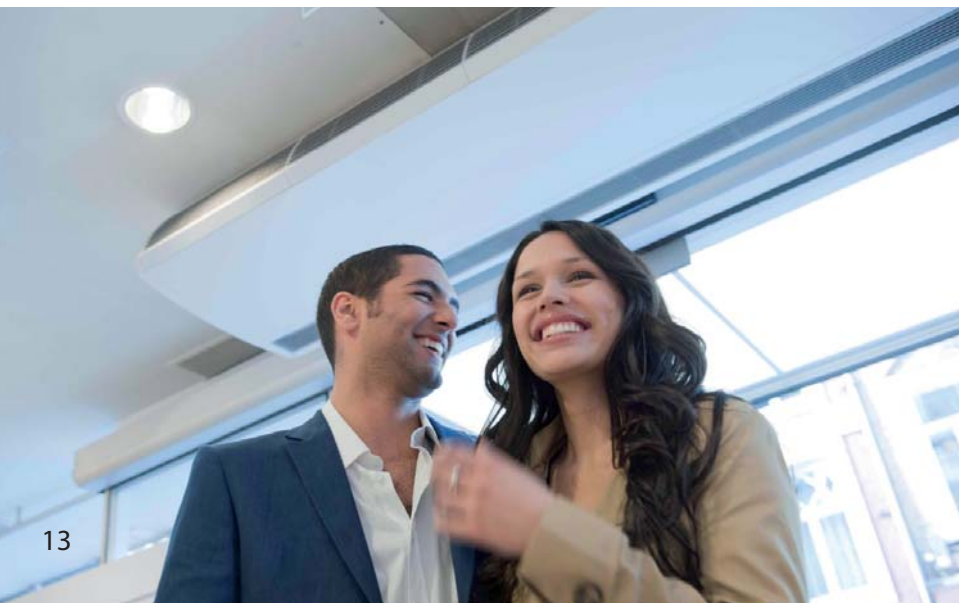
- Sky Air can connect to selected Biddle air curtains. Biddle Standard air curtains are the ideal solution for retailers to combat the issue of climate separation across their shop doorway.
- These automatically operate as heated or ambient air curtains to maintain year round store entrance temperature, and to minimise heat loss or heat gains through the doorway.



Ventilation

Daikin's ventilation option provides a supply of fresh air to help create a healthy and high-quality indoor environment:










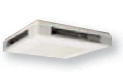

- Heat is reclaimed between outdoor and indoor air.
- The fresh air from the ventilation provides additional cooling virtually free.
- Optimum humidity control.



Sky Air product portfolio

Indoor Units



Pair, twin, triple & double twin application

Type	Model	Product name		Capacity (class)									
				25	35	50	60	71	100	125	140	200	250
CEILING MOUNTED CASSETTE	High COP, Round flow ceiling mounted cassette	FCQHG-F											
	Round flow ceiling mounted cassette	FCQG-F											
	4-way blow ceiling mounted cassette	FFQ-B9V											
CONCEALED CEILING	Inverter driven concealed ceiling unit	FBQ-C8 ¹											
	Large concealed ceiling unit	FDQ-C											
	Large concealed ceiling unit	FDQ-B ¹											
WALL MOUNTED	Wall mounted unit	FAQ-C											
CEILING SUSPENDED	Ceiling suspended unit	FHQ-B8											
	Ceiling suspended unit	FHQG-C											
	4-way blow ceiling suspended unit	FUQ-B8 ²											
FLOOR STANDING	Floor standing unit	FVQ-C											

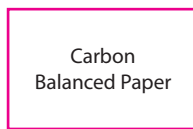
1) Twin, triple, double twin application is only possible up to 125 class - 2) Only combination with RZQG

Outdoor Units

Pair, twin, triple & double twin application

System	Type	Product name		Capacity (Class)					
				71	100	125	140	200	250
AIR COOLED	HEAT PUMP	RZQG-L 7V1/LY1 Seasonal Smart							
		RZQSG-LV1/LY1 ¹ Seasonal Classic							

1) RZQSG100-125-140LY1



Visit **www.eca.gov.uk/etl** and type 'Daikin' in the quick search box for details of the latest ECA qualifying Daikin units



Daikin Europe N.V. participates in the Eurovent Certification Programme for Air Conditioners (AC), Liquid Chilling Packages (LCP) and Fan Coil Units (FC); the certified data of certified models are listed in the Eurovent Directory. Multi units are Eurovent certified for combinations up to 2 indoor units. VRV products, Rooftops, FWB-J and FWD-units are not within the scope of the Eurovent Certification Programme.



Daikin units comply with the European regulations that guarantee the safety of the product.

Daikin products are distributed by:

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