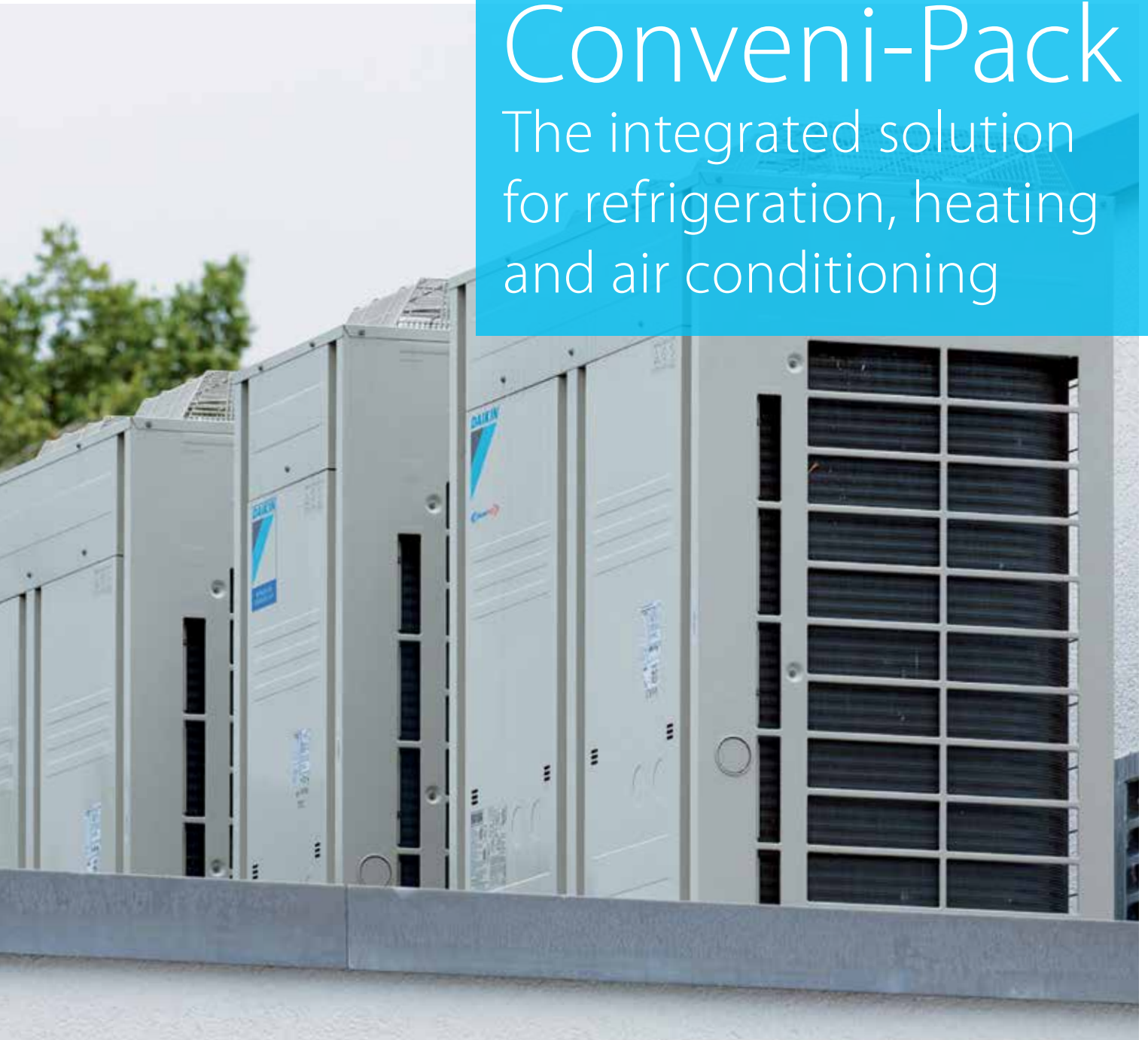
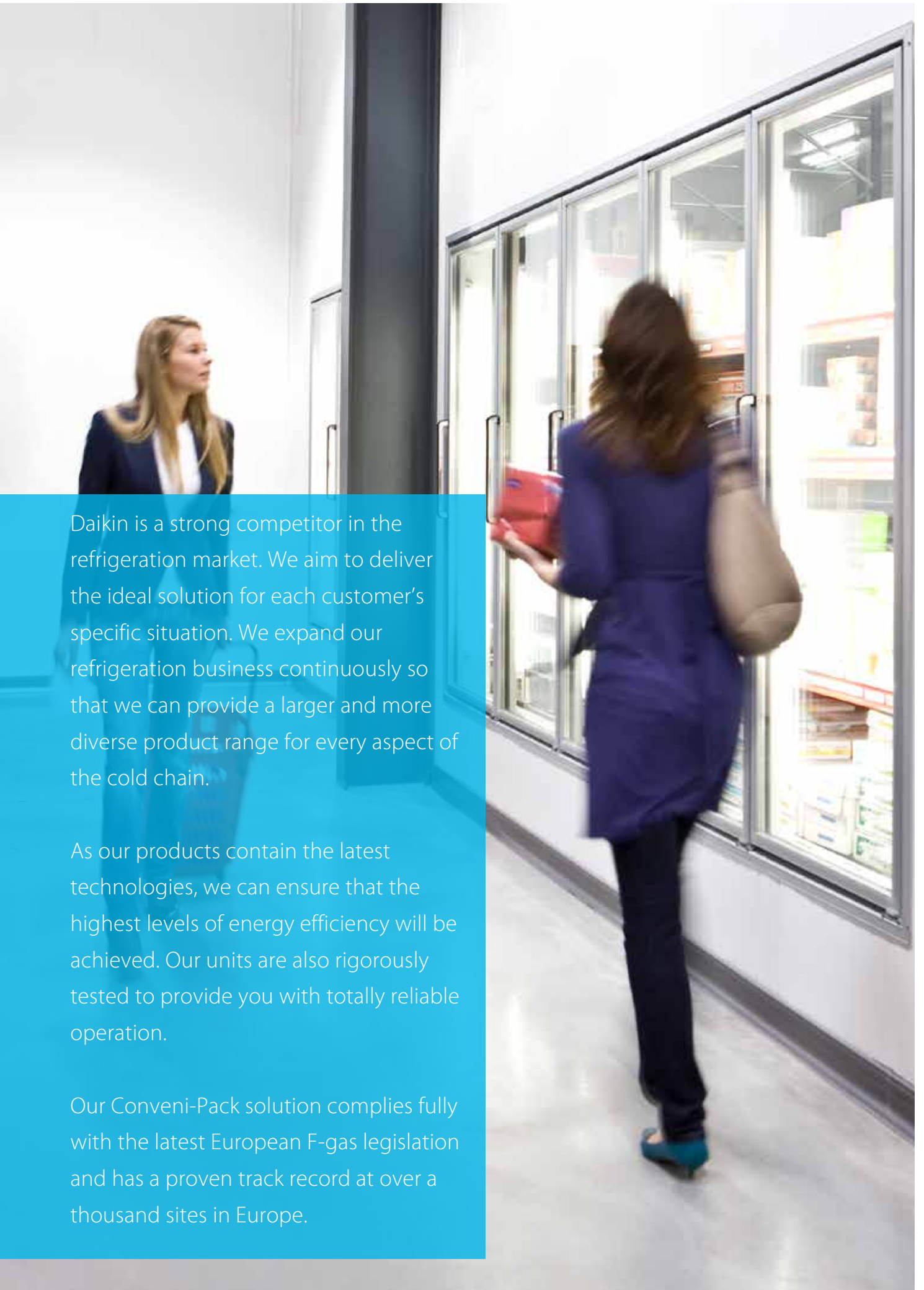


# Conveni-Pack

The integrated solution  
for refrigeration, heating  
and air conditioning



For small and medium-sized food retailers



Daikin is a strong competitor in the refrigeration market. We aim to deliver the ideal solution for each customer's specific situation. We expand our refrigeration business continuously so that we can provide a larger and more diverse product range for every aspect of the cold chain.

As our products contain the latest technologies, we can ensure that the highest levels of energy efficiency will be achieved. Our units are also rigorously tested to provide you with totally reliable operation.

Our Conveni-Pack solution complies fully with the latest European F-gas legislation and has a proven track record at over a thousand sites in Europe.

# Smart solution for commercial refrigeration

## Benefits for consumers

Keeping your customers comfortable means providing a pleasantly warm temperature in winter and a pleasantly cool temperature in summer. Conveni-Pack's wide range of air conditioning units allows you to achieve that ideal climate.

### ✓ Comfort

- › Daikin's indoor and outdoor units operate at extremely low sound levels. This avoids disturbing neighbours and maintains a comfortable environment.
- › Refrigeration units keep food and drinks chilled at the ideal temperature
- › Biddle air curtains can be integrated into the system to achieve energy savings by preventing heat loss through open doors. They also provide climate separation between indoor and outdoor environments.

### ✓ Energy-efficient and cost-saving solution

- › 100% of heat generated is recovered from the refrigeration showcases or evaporators inside the store
- › Heat is sent to the indoor air conditioning units to be reused. This results in high cost savings and contributes to the system's high energy efficiency
- › Conveni-Pack has unrivalled energy efficiency. Third party energy measurements have shown energy cost savings of up to 50%.

### ✓ Innovative features

- › Built to meet and surpass energy efficiency regulations
- › The unit's small installation footprint creates more store space
- › Conveni-Pack has won several international awards\* for its innovative and sustainable technologies

#### \*2014

- › Winner of the Institute of Refrigeration Ireland (IRI) Environmental Award
- › Winner of the Top Retail Product Award, Handelsjournal, Germany.

#### 2008

- › Innovation Trophy, Equipmag (exhibition in France)

#### 2007

- › Incentive Prize, German Environment Ministry

## Benefits for installers

Guarantees customer satisfaction thanks to reliable and highly energy-efficient products.

### ✓ Flexible installation

- › Fully packaged, factory-tested system
- › Reduces installation costs thanks to its flexible and modular build

### ✓ Advanced technology

- › Uses the renowned VRV technology and optimised controls
- › Inverter scroll compressor delivers greater energy efficiency by adapting the capacity of the compressor
- › The built-in economiser technology reduces the discharge temperature. This improves the compressors' life expectancy, as well increasing the system's overall energy efficiency, resulting in lower running costs.

### ✓ Reliability

- › Long lifetime guarantee thanks to the optimisation of start/stop cycles, DC motors and overall safety
- › Daikin's Conveni-Pack system runs on R-410A refrigerant which is fully F-gas compliant and ensures a well-balance TEWI value between indirect (energy efficiency) and direct (refrigerant type and charge) CO<sup>2</sup> emissions compared with other traditional systems.
- › Refrigerant R-410A requires less piping, less space and lower quantities to achieve optimum capacity.

#### 2006

- › UK Environmental Product of the Year, Cooling Industry Awards



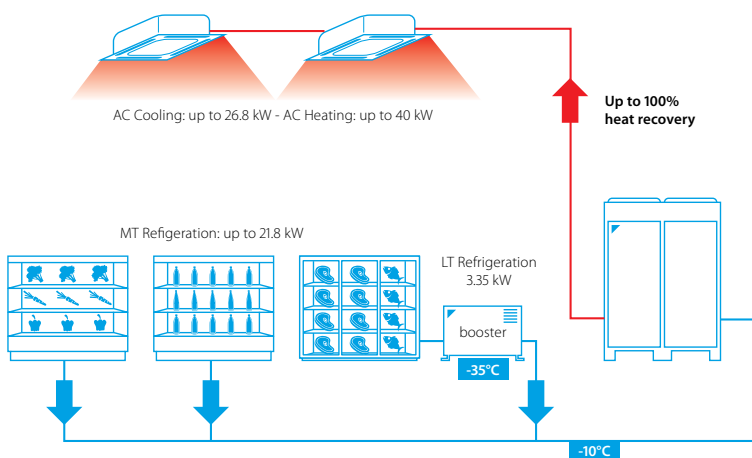
# Conveni-Pack,

a commercial refrigeration system with heat recovery

Refrigeration and deep freeze systems have traditionally been separate from air conditioning and heating systems. Daikin's Conveni-Pack combines them into an all-in-one-system which covers all your refrigeration and climate control needs.

## An energy-efficient heat recovery system

The Conveni-Pack recovers up to 100% of the heat extracted from supermarket refrigeration cases. It re-uses this to heat the retail space and deliver a comfortable temperature for the store at no additional cost.

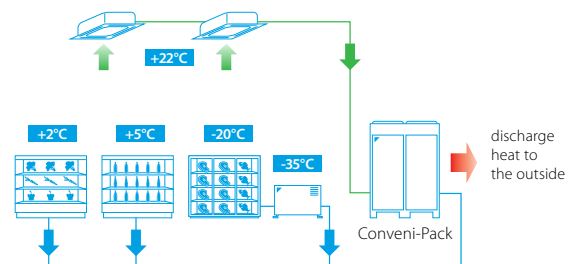


Above-mentioned scheme is an example of what can be delivered depending on predefined conditions. For more detailed information, please consult the technical specifications in this catalogue.

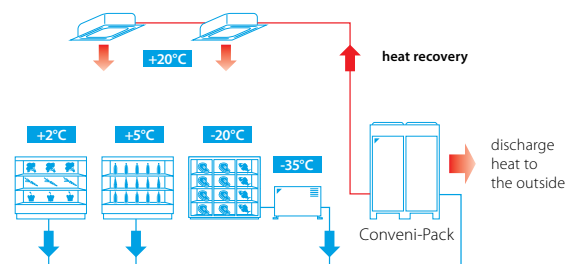
## Ensuring year-round climate comfort

The heat recovered from refrigerated and freezer display cabinets can be used to provide heating for the store. In spring or autumn, heat recovered from freezer display cabinets can be used to heat the shop and the excess is discharged to the outside. In winter, heat is extracted from the outside air and combined with heat recovered from the freezer cabinets and used to heat the shop.

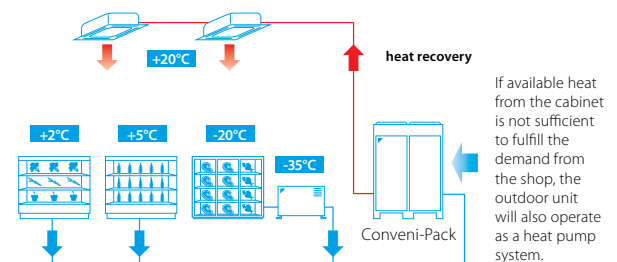
### Summer



### Spring/Autumn



### Winter



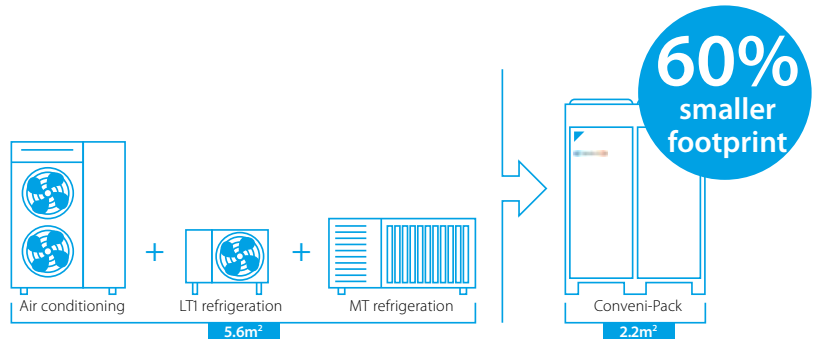
## A trustworthy system

### Reduced footprint

The Conveni-Pack's compact size makes it an ideal unit to install in situations where space is limited and expensive. This is because it has a **60% smaller installation footprint** than conventional systems.

### Outstanding flexibility

Because the Conveni-Pack is a **modular solution**, you can install **multiple outdoor units** and **add extra units as demand increases**. If you combine the Conveni-Pack with other Daikin outdoor refrigeration units, you get the ultimate all-in-one solution for heating, air conditioning and refrigeration for almost every type of shop. The ability to decentralise outdoor units reduces the need for long piping.



- › Combined cooling and freezing (with optional booster unit): evaporating temperature range from -45°C to +10°C
- › Multiple outdoor units can be positioned to make the best use of the space available
- › Outdoor units can be positioned up to 35m above or 10m below the indoor units
- › The piping length can be up to 130m between the outdoor unit and the furthest refrigeration cabinet or air conditioning indoor unit
- › Suitable for indoor installations through the use of high ESP fans

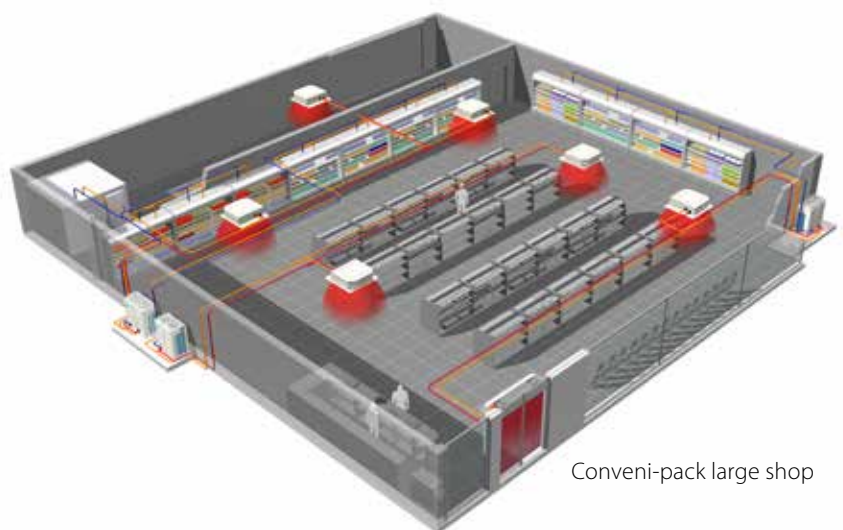
## The advantages of Conveni-Pack

### Traditional system

- › One compressor rack system in the machine room, remote condenser on the roof
- › Very long piping length required
- › Large refrigerant content
- › Elevated risk of leaks
- › **Longer periods of downtime**

### Conveni-Pack system

- › Distributed layout
- › Much shorter piping lengths
- › Up to 66% less refrigerant content compared with traditional R-134A systems
- › Lower risk of leaks
- › **Highly reliable system**



### Built to inspire trust

Conveni-Pack units are **thoroughly tested** during production to guarantee **unrivalled reliability**. Daikin also ensures a reliable agreement for planning and timely **on-site delivery**.

'Conveni-Pack software is easy to use and understand. The detailed reports for the condensing units are very useful when learning how to control the system.'

**Installer for mid-sized supermarket, Ireland**



# Proactive measures: staying ahead of legislation

**Daikin continues to lead the HVAC-R industry in innovation and design. Environmental legislation and regulations are getting increasingly tougher all around the world. Daikin is committed to meeting these challenges head on by investing in the development of new refrigeration technologies. We aim to help our customers to develop their businesses by providing advanced technological solutions.**

## F-gas regulation

The new F-gas regulation came into effect at the beginning of 2015. Daikin's Conveni-Pack uses R-410A refrigerant which already complies with this legislation by reducing life-cycle leakage risks to an absolute minimum.

## Inverter capacity control

We have incorporated inverter technology into our Conveni-Pack to provide optimum control of fluctuating loads in refrigerated cabinets. This delivers outstanding temperature control of the cabinet contents at the lowest possible energy cost.

## Economiser function

The economiser function in our refrigeration products delivers two main benefits. Firstly, it increases the evaporator's capacity which means that it requires less absorbed power. Secondly, it simultaneously reduces the compressor's discharge temperature and increases its lifetime.

## Adaptable evaporation temperature

To reduce energy consumption, the Conveni-Pack's configured evaporation temperature can be raised via an external signal.

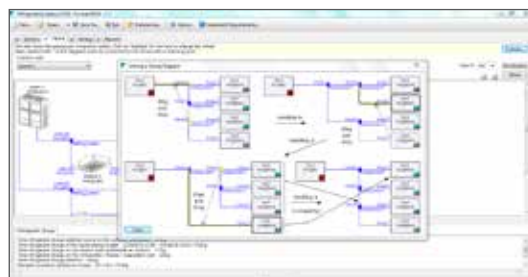
At closing time, night curtains are lowered, reducing the load by 1/3. This means that the evaporator coil is now oversized and allows the system to evaporate at higher temperature. Per °C increased gives you 3% higher efficiency on the complete system.

# Tools and platforms

Here are a few handy tools for refrigeration professionals.

## Refrigeration Xpress software

User-friendly design software for Conveni-Pack, CCU, SCU and ZEAS condensing units. Its detailed report includes a list of materials, piping and wiring diagrams, and device options.



## Daikin product finder

For an overview of refrigeration products or if you want to make a comparison, go to the Refrigeration Product Finder on our website or business portal.



Find more references on [www.daikineurope.com/references](http://www.daikineurope.com/references)

Check out the Conveni-Pack animation on our YouTube channel

Discover why a Belgian petrol station owner chose Conveni-Pack: <https://www.youtube.com/DaikinEurope>



## Satisfied buyers of Daikin's refrigeration solution



'We have cut our annual energy consumption by nearly 60% thanks to Conveni-Pack's combination of heat recovery, optimised controls and inverter compressor technology.'

**Convenience store, Hungary**



'With Conveni-Pack, we have a complete and totally reliable solution for all our heating and air conditioning needs, as well as for refrigerating all our fresh and frozen products.'

**Food store, Austria**



- > 2 Conveni-Pack systems supply 32 metres of service counters
- > 12.5 metres of convenience fridges
- > 1 cold storage room for fruit
- > 1 air curtain
- > 5 indoor units
- > The ZEAS system supplies two deep-freeze cabinets with a total capacity of 5 kW

'Conveni-Pack keeps the shop quiet for our customers, and our neighbours are also very pleased with how silent the outdoor unit is. So everybody's comfortable with it.'

**Edeka Buschkühle supermarket, Germany**





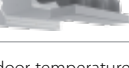
# Indoor units and Biddle air curtains for connection to Conveni-Pack

There is a wide range of indoor AC units and Biddle air curtains to meet all shop requirements for comfort cooling and heating.

Capacity class (kW)

Model	Product name	50	63	71	80	100	125	140	200	250
Cooling capacity (kW) <sup>1</sup>		5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0
Heating capacity (kW) <sup>2</sup>		6.3	8.0	9.0	10.0	12.5	16.0	18.0	25.0	31.5
Round flow cassette	FXFQ-A 	•	•		•	•	•			
2-way blow ceiling mounted cassette	FXCQ-A 	•	•		•		•			
Ceiling mounted corner cassette	FXKQ-MA 		•							
Concealed ceiling unit with inverter driven fan	FXSQ-A 	•	•		•	•	•			
Concealed ceiling unit with inverter driven fan	FXMQ-P7 	•	•		•	•	•			
Large concealed ceiling unit	FXMQ-MB 								•	•
Ceiling suspended unit	FXHQ-A 		•			•				
4-way blow ceiling suspended unit	FXUQ-A 			•		•				
Floor standing unit	FXLQ-P 	•	•							
Concealed floor standing unit	FXNQ-A 	•	•							



Capacity class (kW)

Model	Product Name	80	100	125	140	200	250
Heating capacity (kW) <sup>2</sup>		7.4 - 9.2	11.6 - 13.4	15.6	16.2 - 19.9	29.4	29.4 - 31.1
Biddle air curtain free hanging	CYVS-DK 	•	•	•	•	•	•
Biddle air curtain cassette	CYVM-DK 	•	•	•	•	•	•
Biddle air curtain recessed	CYVL-DK 	•	•	•	•	•	•

<sup>1</sup> Nominal cooling capacities are based on: indoor temperature: 27°CDB / 19°CWB, outdoor temperature: 35°CDB, piping length: 7.5m, level difference: 0m

<sup>2</sup> Nominal heating capacities are based on: indoor temperature: 20°CDB, outdoor temperature: 7°CDB / 6°CWB, piping length: 7.5m, level difference: 0m

## Options - Refrigeration

	Conveni-Pack LRYEQ16AY
Digital pressure gauge kit	BHGP26A1
(a+b+c+d) kit	KPS26C504
a. Air outlet	KPS26C504T
Snowbreak hood* b. Air inlet (left)	KPS26C504L
c. Air inlet (right)	KPS26C504R
d. Air inlet (rear)	KPS26C504B
Central drain pan kit	KWC26C450**
Communication box	BRR9A1V1
Booster unit	LCBKQ3AV19
Refnet header	KHRQM22M29H8 / KHRQ22M64H8 / KHRQM22M75H8
Refnet joint	KHRQ22M20TA8 / KHRQ22M29T9 / KHRQ22M64T8 / KHRQ22M75T8
 Intelligent Controller	DSC601C51
 Intelligent Manager	DCM601A51

\* Snowbreak hoods are field-supplied. For technical drawings and more information, contact your dealer. It is recommended to install a snowbreak hood when regular snowfall occurs.

\*\* In cold areas, provide a drain pan heater (field supply) to prevent drained water from freezing up in the drain pan

# Conveni-Pack refrigeration system with heat recovery

Refrigeration solution for food retailers featuring award winning technology for heat recovery

- › Integrates medium and low temperature refrigeration, air conditioning and heating into one system
- › By using heat recovery, optimised controls and state-of-the-art compressor technology, Conveni-Pack can reduce annual energy consumption up to 50% or more when compared with other conventional systems
- › Lower associated CO<sub>2</sub> emissions thanks to heat pump technology
- › Conveni-Pack’s modular design allows it to be used for small and large shops
- › The modularity of the Conveni-Pack system maximises installation flexibility. Outdoor units can be grouped in blocks or rows, or distributed around the building to meet individual installation constraints
- › The heat extracted from the refrigeration showcases or evaporators can be re-used to heat the shop at no extra cost
- › Low sound level including, ‘night mode’ operation



Medium Temperature Refrigeration				LRYEQ-AY	16
Cooling capacity	Air conditioning	Nom.	kW	14.0 (1)	
	Refrigeration	Nom.	kW	21.8 (2)	
Heating capacity	Air conditioning	Nom.	kW	27.0 (3)	
	Refrigeration	Nom.	kW	21.8 (4)	
Dimensions	Unit	Height	mm	1,680	
		Width	mm	1,240	
		Depth	mm	765	
Weight	Unit		kg	370	
Heat exchanger	Type			Cross fin coil	
Compressor	Type			Hermetically sealed scroll compressor	
	Piston displacement		m <sup>3</sup> /h	13.34	
	Speed		rpm	6,300	
	Output		W	2,500	
	Starting method				Direct on line (inverter driven)
	Frequency ON/OFF			Less than 6 times/hour	
Compressor 2	Speed		rpm	2,900	
	Output		W	3,600	
Compressor 3	Speed		rpm	2,900	
	Output		W	4,500	
Fan	Type			Propeller fan	
	Quantity			2	
	Air flow rate	Cooling	Nom.	m <sup>3</sup> /min	230
Fan motor	Output		W	750	
	Drive			Direct drive	
Sound pressure level	Nom.		dBA	62.0	
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-20~-10
	Cooling	Ambient	Min.~Max.	°CDB	-5~-43
	Heating	Ambient	Min.~Max.	°CDB	-15~21
Refrigerant	Type			R-410A	
	GWP			2,087.5	
	Charge		kg	11.5	
			TCO <sub>2</sub> eq	24.0	
	Control			Electronic expansion valve	
Power supply	Phase/Frequency/Voltage		Hz/V	3~/50/380-415	

(1) Cooling priority mode: indoor temp. 22°CDB; 19°CWB; outdoor temp. 32°CDB; piping length: 7.5m; level difference: 0m (2) Cooling priority mode: evaporating temp. -10°C; outdoor temp. 32°CDB; Suction SH: 10°C (3) Heat recovery 100% mode: indoor temp. 20°CDB; outdoor temp. 7°CDB, 6°CWB; refrigeration load 18kW; piping length: 7.5m; level difference: 0m (4) Saturated temperature equivalent to suction pressure (refrigeration side): -10°C (under chilled condition); connection capacity for indoor air conditioner: 10HP, when heat recovery is 100%

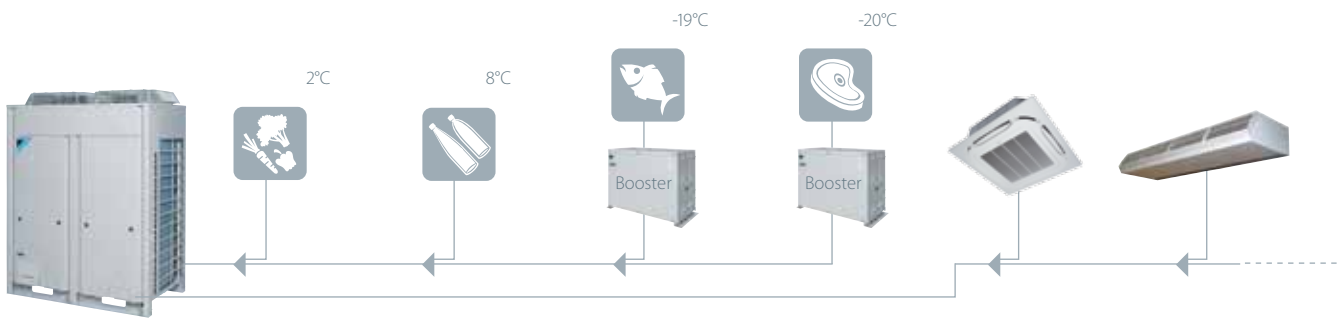
# Booster unit

- › A booster unit allows freezer showcases/rooms to be connected to ZEAS and Conveni-Pack outdoor units
- › Reduced piping requirements, compared with a conventional system
- › Low sound mode significantly reduces sound emissions



## Booster with Conveni-Pack:

MEDIUM + LOW TEMPERATURE refrigeration + space air conditioning + Biddle air curtain



Low Temperature Refrigeration				LCBKQ-AV1	3
Refrigerating capacity	Low temperature	Nom.		kW	3.35 (1)
Dimensions	Unit	Height		mm	480
		Width		mm	680
		Depth		mm	310
Weight	Unit			kg	47
Compressor	Type	Hermetically sealed swing compressor			
	Piston displacement			m <sup>3</sup> /h	10.16
	Number of revolutions			rpm	6,540
	Output			W	1,300
	Starting method	Direct on line (inverter driven)			
Fan	Frequency ON/OFF	Less than 6 times/hour			
	Type	Propeller fan			
	Air flow rate	Cooling	Nom.	m <sup>3</sup> /min	1.6
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-45~-20
	Ambient temperature	Min.~Max.		°C	-15~43
Refrigerant	Type	R-410A			
	GWP	2,087.5			
	Control	Electronic expansion valve			
Piping connections	For outdoor unit	Liquid	OD	mm	6.35
	To indoor unit	Liquid	OD	mm	6.35
	For indoor unit	Gas	OD	mm	15.9
	To outdoor unit	Gas	OD	mm	9.5
Power supply	Phase/Frequency/Voltage			Hz/V	1~/50/220-240

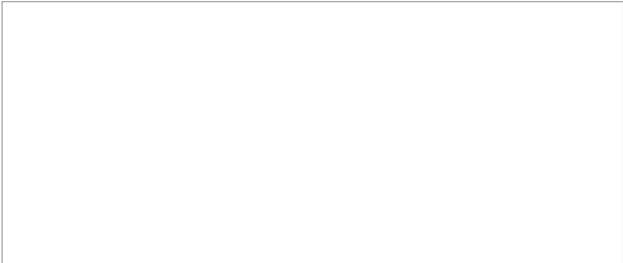
(1) Evaporating temp. -35°C; outdoor temp. 32°C; suction SH 10K; saturated temp. to discharge pressure of booster unit -10°C



Keep cool,  
save money

COMPLIANT WITH  
NEW F-GAS REGULATION  
MARKET WEIGHT  
CORRECT PACK  
BY 01/18  
www.daikin.com

Daikin Europe N.V. Naamloze Vennootschap Zandvoordestraat 300 · 8400 Oostende · Belgium · www.daikin.eu · BE 0412 120 336 · RPR Oostende (Responsible Editor)



ECPEN17-802 03/17



The present publication is drawn up by way of information only and does not constitute an offer binding upon Daikin Europe N.V. Daikin Europe N.V. has compiled the content of this publication to the best of its knowledge. No express or implied warranty is given for the completeness, accuracy, reliability or fitness for particular purpose of its content and the products and services presented therein. Specifications are subject to change without prior notice. Daikin Europe N.V. explicitly rejects any liability for any direct or indirect damage, in the broadest sense, arising from or related to the use and/or interpretation of this publication. All content is copyrighted by Daikin Europe N.V.

Printed on non-chlorinated paper. The present publication supersedes ECPEN15-802