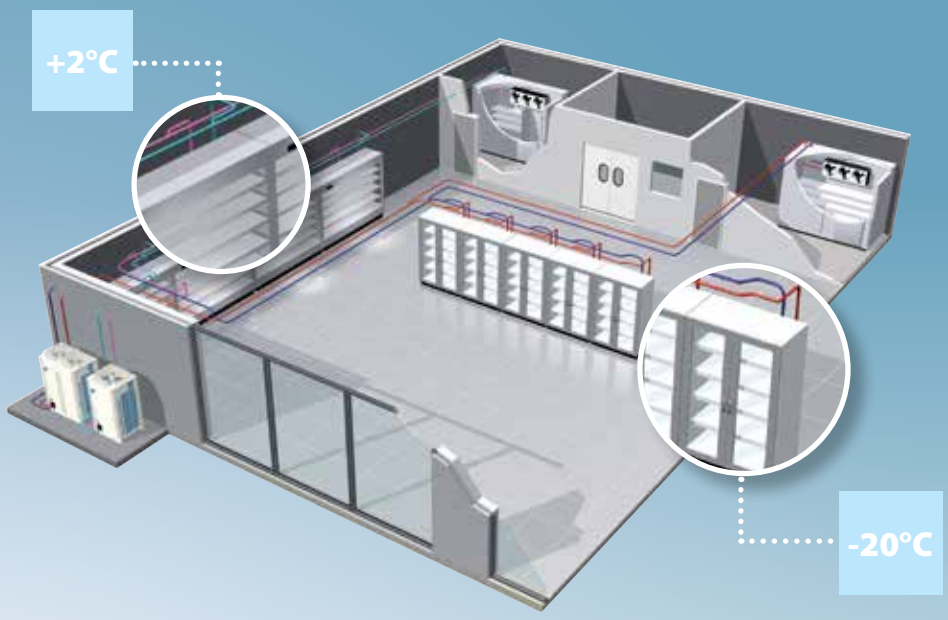
Refrigeration

ZEAS condensing units

- High-energy efficiency
- Fully packaged unit
- Compact solution
- Low sound level
- VRV technology for refrigeration



www.daikin.eu

LREQ-BY1

With this new range of inverter-driven condensing units, Daikin expands its range of specified solutions with **unified models for medium and low- temperature refrigeration applications**.

The ZEAS condensing units are the perfect solution for applications with fluctuating loads and **high energy efficiency needs,** including supermarkets, blast coolers and freezers, cold storage, butchers, bakeries, restaurants and petrol station retail outlets.

On top of that their small footprint and low sound emissions allow installation in virtually any available place.

Multi ZEAS: by coupling two 15 HP or 20 HP single units, Daikin can now reach double capacity and thus larger applications using the same pipe work, thus saving on copper piping and installation time.

Installer benefits

- Local European production allows for smarter order-to-delivery
- Reduced piping requirements and thus installation time
- Integrated electrical and control box and a pre-charged unit ensure quick and easy commissioning

Consultant benefits

- One model enables most refrigeration needs in the market
- Multi ZEAS enables even bigger applications (up to 75.8 kW)
- The use of high ESP fans allows for indoor installation

End user benefits

- Low electricity bills and a reduced environmental footprint
- Only lightweight roof structures required, so no need for a dedicated technical room
- Neighbourhood-friendly choice, including a silent night-operation mode

High energy efficiency

Daikin's ZEAS range is based on the company's **proven VRV technology**, which is renowned for its energy efficiency, reliability and controllability, resulting in lower CO_2 emissions and reduced operating costs. The units are equipped with **DC inverter scroll compressors**, which can meet cooling demands, while consuming less power than traditional units. High levels of energy efficiency are achieved, even in partial load conditions.

Fully packaged unit

The ZEAS units are factory-assembled to ensure that all the correct components are installed and work together in an optimal manner, thus reducing the installation time. The units are then subjected to a range of tests to ensure the correct performance and that there are no leaks of the pre-loaded refrigerant. This, together with the advanced, built-in controls and pre-charged refrigerant, mean that the ZEAS is truly a plug-and-play installation.

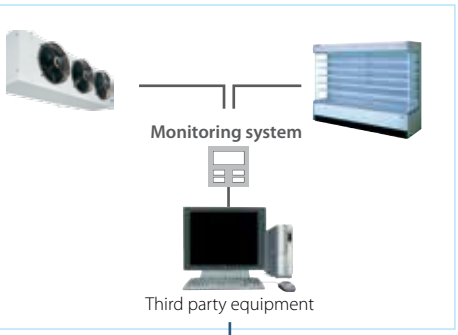
Low noise levels

ZEAS condensing units are also far quieter than traditional units, because the inverter control allows fan speeds to be kept low while still meeting cooling demands. Sound levels can be adjusted to match environmental requirements or the time of day. At night, for example, maximum fan speeds can be lowered to reduce noise, with only a limited loss of refrigeration capacity. The fans have blades and grills designed specially to reduce turbulence and thus sound level.

Small footprint

The physically small size of the ZEAS condensing units contradict their power. The low overall dimensions of these units, the smallest 5 HP condensing units on the market, means that they can be installed close to where they are required. This eliminates the need for a dedicated technical room, providing enormous savings in terms of space, a critical economic benefit in applications such as supermarkets. All in all, the ZEAS provides the best surface-to-capacity ratio in the market.

Modbus communication box and diagnostic tool



Modbus communication box
Powerful interface provies a two-way communication possibility with third-party monitoring systems (BMS), via Modbus. Allows remote access to all operating parameters, while at the same time provides the possibility to control the refrigeration units from a distance: setting the target evaporating temperature, resetting error codes, switching units on and off, and setting to low noise operation.

Diagnostic tool
Handy tool providing easy access to main operating data, error codes, error history and main PCB settings.

Service checker Type III
Powerful service tool allows monitoring and loggin of all operating parameters, providing all the necessary information for efficient and effective troubleshooting.

Specifications

OUTDOOR UNIT					LREQ5BY1	LREQ6BY1	LREQ8BY1	LREQ10BY1	LREQ12BY1	LREQ15BY1	LREQ20BY1
Refrigerating capacity	Medium temperature	Nom.		kW	12.5	15.2	19.8	23.8	26.5	33.9	37.9
	Low temperature	Nom.		kW	5.51	6.51	8.33	10.0	10.7	13.9	15.4
Power input	Medium temperature	Nom.		kW	5.10	6.56	8.76	10.6	12.0	15.2	17.0
	Low temperature	Nom.		kW	4.65	5.88	7.72	9.27	9.89	12.8	14.1
Dimensions	Unit	HeightxWidthxDepth		mm	1,680x635x765		1,680x930x765			1,680x1,240x765	
Weight	Unit			kg	166		242			331	337
Heat exchanger	Type				Cross fin coil						
Compressor	Type				Hermetically sealed scroll compressor						
	Piston displacement			m^3/h	11.18	13.85	19.68	23.36	25.27	32.24	35.8
	Speed			rpm	5,280	6,540	4,320 + 2,900	6,060 + 2,900	6,960 + 2,900	5,280+ 2,900 + 2,900	6,960 + 2,900 + 2,900
	Output			W	2,600	3,200	2,100 + 3,600	3,000 + 3,600	3,400 + 3,600	2,600+ 3,600 + 3,600	3,400 + 3,600 + 3,600
	Starting method				Direct on line (inverter driven)						
Fan	Type				Propeller fan						
	Quantity				1					2	
	Air flow rate	Cooling	Nom.	m^3/min	95	102	171	179	191	230	240
Fan motor	Output			W	350		750			350 x 2	750 x 2
	Drive				Direct drive						
Sound pressure level	Nom.			dBA	55.0	56.0	57.0	59.0	61.0	62.0	63.0
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-45~10						
	Ambient temperature	Min.~Max.		°C	-20~43						
Refrigerant	Type				R-410A						
	Charge			kg	5.2		7.9			11.5	
	Control				Electronic expansion valve						
Refrigerant oil	Type				Daphne FVC68D						
	Charged volume			l	1.7 / 2.5		1.7 / 2.1 / 3.0			1.7 / 2.1 / 4.0	
Piping connections	Liquid	50m or less			ø 9.5 C1220T (Brazing connection)				ø 12.7 C1220T (Brazing connection)		
		50~130m			ø 9.5 C1220T (Brazing connection)		ø 12.7 C1220T (Brazing connection)				
	Gas	50m or less			ø 22.2 C1220T (Brazing connection)		ø 28.6 C1220T (Brazing connection)			ø 34.9 C1220T (Brazing connection)	
		50~130m			ø 22.2 C1220T (Brazing connection)		ø 28.6 C1220T (Brazing connection)			ø 34.9 C1220T (Brazing connection)	
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/380-415						
Current	Nominal running current (RLA) - 50Hz			A	7.1/-/-	9.2/-/-	5.3/7.5/-	7.4/7.9/-	9.8/8.3/-	7.0/8.2/8.2	9.5/8.4/8.4
Current - 50Hz	Starting current (MSC)			A	-		74	75		84	

OUTDOOR UNIT					LREQ30BY1	LREQ40BY1
System					LREQ15BY1R x 2	LREQ20BY1R x 2
Refrigerating capacity	Medium temperature	Nom.		kW	67.8	75.8
	Low temperature	Nom.		kW	27.8	29.6
Power input	Medium temperature	Nom.		kW	30.4	34.0
	Low temperature	Nom.		kW	25.6	27.6
Dimensions	Unit	HeightxWidthxDepth		mm	(1,680x1,240x765) x 2	(1,680x1,240x765) x 2
Weight	Unit			kg	331 x 2	337 x 2
Heat exchanger	Type				Cross fin coil	
Compressor	Type				Hermetically sealed scroll compressor	
	Piston displacement			m^3/h	32.24 x 2	35.80 x 2
	Speed			rpm	(5,280+2,900+2,900) x 2	(6,960+2,900+2,900) x 2
	Output			W	(2.6+3.6+3.6) x 2	-
	Starting method				Direct online (inverter driven)	
Fan	Type				Propeller fan	
	Quantity				2 x 2	2 x 2
	Air flow rate	Cooling	Nom.	m^3/min	230 x 2	240 x 2
Fan motor	Output			W	(350 x 2) x 2	(750 x 2) x 2
	Drive				Direct drive	
Sound pressure level	Nom.			dBA	65.0	66.0
Operation range	Evaporator	Cooling	Min.~Max.	°CDB	-45~10	
	Ambient temperature	Min.~Max.		°C	-20~43	
Refrigerant	Type				R-410A	
	Charge			kg	11.5 x 2	
	Control				Electronic expansion valve	
Refrigerant oil	Type				Daphne FVC68D	
	Charged volume			l	(1.7+ 2.1+2.1+ 4.0) x 2	
Piping connections	Liquid	50m or less			ø 19.05 C1220T (Brazing connection)	
		50~130m				
	Gas	50m or less			ø 41.28 C1220T (Brazing connection)	
		50~130m				
Power supply	Phase/Frequency/Voltage			Hz/V	3~/50/380~415	
Current	Nominal running current (RLA) - 50Hz			A	(7.0/8.2/8.2) x 2	(9.5/8.4/8.4) x 2
Current - 50Hz	Starting current (MSC)			A	109	115

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ECPEN14-741

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ECPEN14-741 • 500 • 10/14 • Copyright Daikin
The present publication supersedes ECPEN13-741A.
Printed on non-chlorinated paper. Prepared by La Movida, Belgium
Responsible Editor: Daikin Europe N.V., Zandvoordestraat 300, B-8400 Oostende