

Optyma™ Plus INVERTER

# Capacity modulation in a simple and **adaptive** package

Optyma™ Plus INVERTER combines our market leading expertise in condensing unit design with the unique benefits of stepless inverter scroll technology. The result is 25% higher energy efficiency in an adaptive package, for medium and high temperature refrigeration applications in the range of 2kW to 9kW with R407A, R407F and R404A.

**3.84**

Best SEPR  
with capacity  
modulation and  
smart design



# Danfoss Optyma™ Plus INVERTER

## Versatile, energy-saving, powerful

Optyma™ Plus INVERTER condensing unit combines ease of use and energy efficiency with the latest Danfoss inverter scroll technology. Ideal for cold rooms, display cabinets, fermentation rooms and general refrigeration applications, Optyma™ Plus INVERTER provides both optimum cooling power and increased energy savings for food retail and convenience stores. All in a simple to setup adaptive package.

### Stepless capacity modulation

Danfoss Optyma™ Plus INVERTER's 3,5:1 turndown ratio allows continuous adaptation of cooling capacity to cooling demand. Variable speed drive ensures that temperatures are correctly maintained without wasting energy and supports a wide variety of refrigeration applications. This is particularly important for applications with large daily temperature and load shifts. It is also invaluable in maintaining accurate temperature and humidity levels even when using multiple evaporators.

Greatly reduced start/stop and short cycling functions minimize stress on the compressor motor, resulting in increased reliability and longer system life.

### Superior energy savings and low in-rush current

A compression process with variable speed technology is efficient by design. It combines optimal cooling control with outstanding energy efficiency. As well as maintaining precise temperature levels, the high evaporating temperature means fewer defrost cycles and increased energy savings. In addition, the micro channel heat exchanger further reduces energy consumption.

Low in-rush current of the compressor starting at minimal speed helps to minimize the device's impact on the power grid. This can lead to a reduction in both your bill for electricity consumed and your electricity subscription.



### Unique Danfoss features

- Danfoss inverter scroll and drive tuned to work together for a wide range of refrigeration applications
- Danfoss micro-channel heat exchanger
- IDV\* technology enhances part-load efficiency and allow less stress on components
- Danfoss proven condensing unit design
- Optyma™ Plus Controller

\*IDV: Intermediate Discharge Valves

### Plug-and-play variable speed technology

- One model suits several applications and model selection is easy and safe, especially in sensitive applications where the loads change rapidly
- The installation of an Optyma™ Plus INVERTER is as simple as a standard Optyma™ Plus. Preset parameters and Modbus communication makes start-up and maintenance of the condensing unit effortlessly quick and easy

### High reliability for safe food preservation

- Accurate temperature and humidity control can be tailored to suit the requirements of different foods and beverages
- Improved food preservation and less waste of valuable products
- Electronic controller enables quick and accurate diagnostics
- Built-in compressor protection functions

# Optyma™ Plus INVERTER

## Brings benefits for everyone

### Future-proof

On top of operating with R404A fully qualified for R407A and R407F a couple of the alternative refrigerants for tomorrow

### Stepless capacity modulation

From 30 to 100 Hz modulation leads to 20-30% higher energy efficiency compared to fixed speed condensing units

### Simple commissioning

Preset drive parameters with dedicated refrigeration software

### Quiet performance

Low operating noise level



### Danfoss compressor and drive package

Dedicated to refrigeration with years of market application and validation

### Simple plug-and-play installation

Safe, simple and hassle-free installation with tried and tested components

### Full intelligent control through the Optyma™ Plus Controller

Control, alarm management, day & night operation, can connect to ADAP-KOOL® software, etc.

Want to learn more

[Optymaplusinverter.danfoss.com](http://Optymaplusinverter.danfoss.com)





# Technical data

## Optyma™ Plus INVERTER



### Capacity table

Refrigerant	Designation Code number	[Hz]	Cooling capacity [W]						SEPR*	Dimensions HxWxD [mm] Net weight [kg]
			-15°C	-10°C	-7°C	-5°C	0°C	5°C		
R407A	OP-MPLM028VVL01E 114X4300	30	1 350	1 690	1 930	2 100	2 590	3 150	4.04	965 x 1406 x 481 124
		75	3 340	4 220	4 820	5 250	6 430	7 790		
		100	4 360	5 520	6 290	6 840	8 360	10 080		
	OP-MPLM035VVL01E 114X4315	30	1 700	2 130	2 430	2 640	3 250	3 950	3.97	965 x 1406 x 481 125
		75	4 180	5 280	6 010	6 540	8 000	9 650		
		100	5 450	6 860	7 810	8 480	10 330	12 400		
OP-MPLM044VVL01E 114X4333	30	2 170	2 720	3 100	3 370	4 130	5 020	3.82	965 x 1406 x 481 125	
	75	5 290	6 660	7 580	8 240	10 030	12 060			
	100	6 870	8 620	9 780	10 610	12 840	15 330			
R407F	OP-MPLM028VVL01E 114X4300	30	1 450	1 820	2 070	2 250	2 750	3 340	3.84	965 x 1406 x 481 124
		75	3 650	4 590	5 220	5 670	6 910	8 310		
		100	4 750	5 940	6 750	7 320	8 880	10 640		
	OP-MPLM035VVL01E 114X4315	30	1 830	2 290	2 600	2 820	3 460	4 190	3.75	965 x 1406 x 481 125
		75	4 560	5 730	6 510	7 070	8 590	10 300		
		100	5 920	7 390	8 370	9 070	10 970	13 100		
OP-MPLM044VVL01E 114X4333	30	2 340	2 920	3 310	3 600	4 400	5 320	3.59	965 x 1406 x 481 125	
	75	5 770	7 230	8 200	8 890	10 770	12 870			
	100	7 460	9 280	10 480	11 340	13 650	16 220			
R404A	OP-MPLM028VVL01E 114X4300	30	1 450	1 800	2 040	2 210	2 700	3 280	3.77	965 x 1406 x 481 124
		75	3 730	4 660	5 270	5 700	6 870	8 180		
		100	4 840	6 020	6 790	7 340	8 810	10 440		
	OP-MPLM035VVL01E 114X4315	30	1 830	2 260	2 560	2 780	3 390	4 100	3.66	965 x 1406 x 481 125
		75	4 640	5 790	6 540	7 070	8 500	10 080		
		100	6 000	7 430	8 370	9 030	10 800	12 750		
OP-MPLM044VVL01E 114X4333	30	2 340	2 880	3 260	3 530	4 300	5 190	3.5	965 x 1406 x 481 125	
	75	5 840	7 260	8 190	8 840	10 590	12 510			
	100	7 480	9 240	10 380	11 170	13 290	15 600			

Conditions EN12900 MBP: Temp. amb = 32°C, Superheat = 10K, Subcooling = 0K  
 For full data details, please refer to Coolselector\*2  
 For more information about the Optyma™ Plus INVERTER, contact your local Danfoss representative  
 \*Preliminary SEPR values at RGT20°C

### About Variable Speed technology

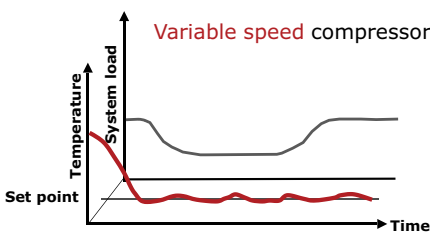
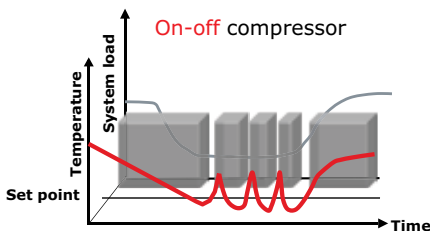
Refrigeration systems are usually designed for peak demand, which represents only a small percentage of actual operational time. Such oversizing leads to efficiency losses and extra costs for oversized equipment. Capacity modulation is a way to match cooling capacity to cooling demand.

There are several ways to modulate the cooling capacity in refrigeration systems. The most commonly used are on-off cycling, hot gas bypass, manifold configurations of multiple compressors, mechanical modulation and variable speed technology.

The variable speed method varies refrigerant flow by actually changing the speed of the compressor. An inverter compressor uses a variable frequency drive – also known as an inverter drive – to slow down or speed up the motor that drives the compressor. This is where inverter compressors bring most of savings compared with alternative technologies.

Currently, three different market trends are converging to create growing demand for efficient and sustainable solutions:

- Application requirements (accurate temperature and humidity levels)
- Energy efficiency & Environmental impact
- Intelligent systems and reliability



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