

Danfoss scroll compressors for refrigeration

# High efficiency and reliability even in low temperatures **Cooler than ever!**

MLZ and LLZ series for MBP and LBP refrigeration are efficient by design.  
Cut down operating costs and meet the most demanding food standards.  
LLZ & MLZ: the new names in scroll technology!

**-40°F to +50°F**  
extended  
compressor range.

Suits rack  
systems and all  
applications for  
refrigeration.



# Danfoss **scroll compressors** for refrigeration applications

The MLZ and LLZ series are purpose-engineered for applications in refrigeration with respectively medium and low temperatures. They suit all operating conditions in different cooling systems.



## energy savings

Optimize your system with the scroll compressors for refrigeration. The combination of an energy efficient motor and an optimized scroll wrap for refrigeration applications delivers high efficiency in fixed-speed compressors. Optional vapor injection boosts the cooling capacity and efficiency by more than 20%.



## Low sound

Improve the sound environment with the lowest sound level in the industry. Scroll technology is quiet by design: the scroll provides smooth continuous compression, the absence of suction and discharge valves, and the unique disc check valve design ensure quiet, vibration-free operations.



## Reliability

Improve your system reliability to reduce your maintenance and warranty costs. Reliability is built into this compressor range, from the compliant scroll design and the engineered bearings to the simplified manufacturing process (30% fewer parts). The patented thermal fault protection also contributes to excellent reliability. A smart way to reduce your field service costs.



## Compactness

Footprint up to 30% smaller than alternative reduces the logistics costs and frees up space in the system.

**significant**

annual cost savings with vapor injection.

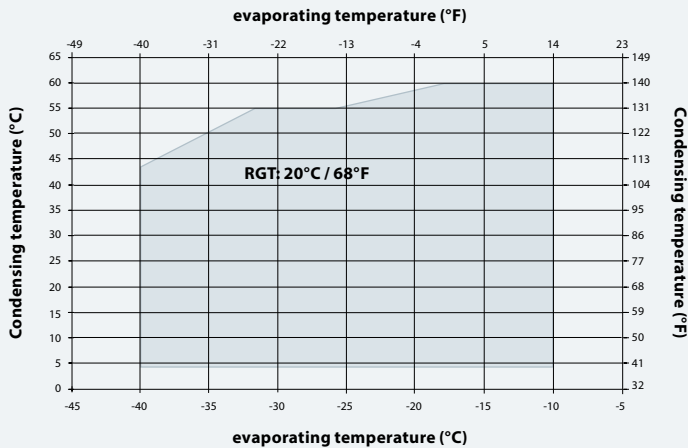
## Featured for immediate **benefit**

- Multi-refrigerant scrolls save on inventory
- Vapor injection available with optional economizer kit increases LLZ efficiency and cooling capacity
- Optional sound jacket attenuates sound levels
- Suitable for transport of refrigerated goods



# Wide operating envelopes **comply** with **all applications** in the refrigeration

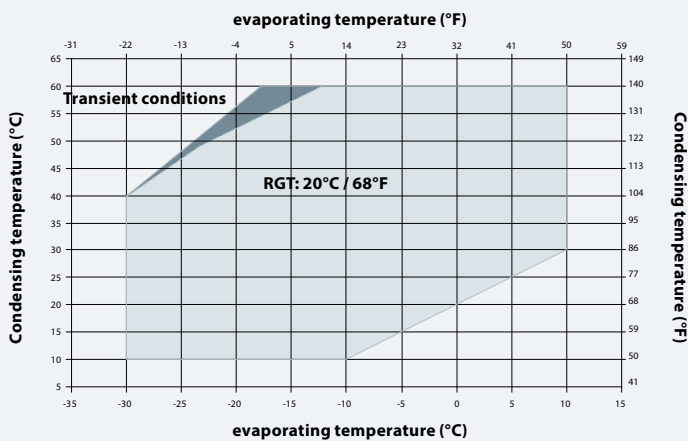
**LLZ – R404a / R507 for low temperatures**  
With vapor injection



Boost cooling **capacity**  
**and efficiency** with  
**vapor injection** in low  
temperatures

Danfoss proposes the optional economizer kit to boost compressor efficiency and capacity with vapor injection. The system uses a liquid subcooler circuit. During the liquid subcooler process, some liquid refrigerant evaporates in the economizer and is injected into the scroll set at intermediate pressure. This provides additional cooling capacity thanks to subcooling in the economizer and increases efficiency of the system.

**MLZ – R404a / R507 for medium temperatures**

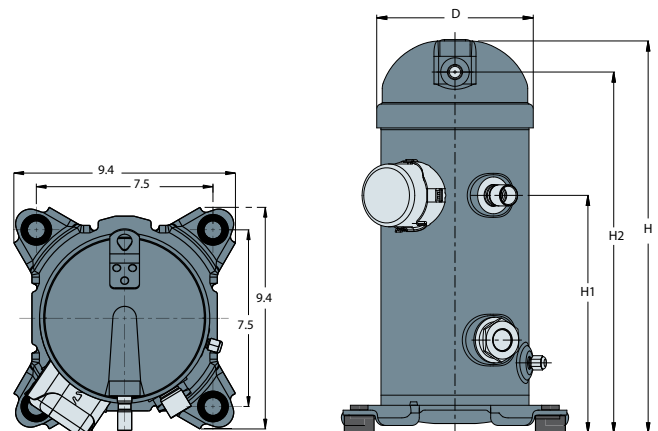


The effect of vapor injection increases together with the increase of the system pressure ratio.



## Dimensions

| Dimensions in inch | H    | H1   | H2   | D   | Weight (lbs) |
|--------------------|------|------|------|-----|--------------|
| LLZ 013-018        | 18.8 | 11.9 | 14.8 | 7.2 | 92.6         |
| LLZ 024            | 21.0 | 13.5 | 16.3 | 7.2 | 101.4        |
| LLZ 034            | 21.9 | 14.4 | 17.3 | 7.2 | 112.4        |
| MLZ 015-026        | 15.5 | 9.1  | 14.2 | 6.5 | 68.3         |
| MLZ 030-048        | 17.2 | 10.3 | 15.9 | 7.2 | 81.6         |
| MLZ 058-076        | 20.8 | 13.8 | 19.6 | 9.1 | 99.2         |



# COOLING CAPACITY in W / 100°F CONDENSING

ARI

## MLZ – medium temperatures

**R134a**

| 60Hz • 460 V / 3-pHases | MLZ Models | 5°F    | 10°F   | 20°F   | 30°F   | 40°F   | 50°F    | 60°F   | "Cooling capacity Btu/h" | "Power Input kW" | "EER Btu/h/W" | "Sound power dB(A)" |
|-------------------------|------------|--------|--------|--------|--------|--------|---------|--------|--------------------------|------------------|---------------|---------------------|
|                         | MLZ015     | 7 100  | 8 100  | 10 700 | 13 700 | 17 200 | 21 200  | 25 700 | 9 300                    | 1,3              | 7,17          | 71                  |
| MLZ019                  | 9 100      | 10 500 | 13 700 | 17 600 | 22 100 | 27 300 | 33 100  | 12 000 | 1,68                     | 7,10             | 71            |                     |
| MLZ021                  | 9 500      | 11 100 | 14 700 | 18 800 | 23 500 | 29 000 | 35 300  | 12 800 | 1,74                     | 7,34             | 71            |                     |
| MLZ026                  | 11 900     | 13 800 | 18 000 | 23 100 | 29 100 | 35 900 | 43 500  | 15 700 | 2,1                      | 7,47             | 71            |                     |
| MLZ030                  | 14 400     | 16 600 | 21 800 | 27 900 | 35 000 | 43 200 | 52 400  | 18 900 | 2,57                     | 7,37             | 73            |                     |
| MLZ038                  | 17 000     | 19 500 | 25 500 | 32 700 | 41 200 | 50 800 | 61 600  | 22 300 | 3,05                     | 7,30             | 74            |                     |
| MLZ045                  | 21 000     | 24 200 | 31 500 | 40 200 | 50 500 | 62 200 | 75 600  | 26 900 | 3,64                     | 7,37             | 74            |                     |
| MLZ048                  | 22 400     | 25 700 | 33 300 | 42 500 | 53 200 | 65 500 | 79 500  | 28 600 | 3,88                     | 7,37             | 75            |                     |
| MLZ058                  | 26 800     | 30 700 | 39 600 | 50 200 | 62 500 | 76 600 | 92 500  | 34 300 | 4,69                     | 7,30             | 78            |                     |
| MLZ066                  | 30 900     | 35 300 | 45 500 | 57 600 | 71 700 | 88 000 | 106 500 | 39 400 | 5,34                     | 7,37             | 78            |                     |
| MLZ076                  | 35 000     | 39 700 | 51 000 | 64 600 | 80 500 | 98 700 | 119 300 | 44 300 | 6,16                     | 7,17             | 78            |                     |

ARI MBP: Evaporating temperature: 20°F; Condensing temperature: 120°F; Subcooling 0°F; Superheat 20°F

**R404a**

| 60Hz • 460 V / 3-pHases | MLZ Models | -10°F  | -5°F   | 0°F    | 10°F   | 20°F    | 30°F    | 40°F    | 50°F   | "Cooling capacity Btu/h" | "power input kW" | "eeR Btu/h/W" | "Sound power dB(A)" |
|-------------------------|------------|--------|--------|--------|--------|---------|---------|---------|--------|--------------------------|------------------|---------------|---------------------|
|                         | MLZ015     | 8 100  | 9 300  | 10 700 | 13 700 | 17 200  | 21 400  | 26 300  | 31 900 | 13 700                   | 2,29             | 6,01          | 71                  |
| MLZ019                  | 11 300     | 12 800 | 14 500 | 18 300 | 22 800 | 28 000  | 34 200  | 41 300  | 18 400 | 2,81                     | 6,55             | 71            |                     |
| MLZ021                  | 12 000     | 13 600 | 15 400 | 19 500 | 24 300 | 29 900  | 36 400  | 43 800  | 19 700 | 2,98                     | 6,62             | 71            |                     |
| MLZ026                  | 15 000     | 16 900 | 19 100 | 24 200 | 30 200 | 37 200  | 45 400  | 54 600  | 24 400 | 3,75                     | 6,52             | 71            |                     |
| MLZ030                  | 17 500     | 19 900 | 22 500 | 28 400 | 35 500 | 43 800  | 53 300  | 64 200  | 28 700 | 4,25                     | 6,76             | 73            |                     |
| MLZ038                  | 21 000     | 23 900 | 27 000 | 34 100 | 42 500 | 52 300  | 63 700  | 77 000  | 34 500 | 5,13                     | 6,72             | 74            |                     |
| MLZ045                  | 25 500     | 29 000 | 32 700 | 41 300 | 51 500 | 63 500  | 77 500  | 93 500  | 41 800 | 6,16                     | 6,79             | 74            |                     |
| MLZ048                  | 27 900     | 31 600 | 35 700 | 45 100 | 56 400 | 69 600  | 84 700  | 101 900 | 45 700 | 6,71                     | 6,79             | 75            |                     |
| MLZ058                  | 31 700     | 36 400 | 41 600 | 53 500 | 67 700 | 84 200  | 103 200 | 124 600 | 52 500 | 8,01                     | 6,55             | 78            |                     |
| MLZ066                  | 37 800     | 42 800 | 48 400 | 61 200 | 76 500 | 94 500  | 115 400 | 139 300 | 62 000 | 9,14                     | 6,79             | 78            |                     |
| MLZ076                  | 43 700     | 49 500 | 55 800 | 70 200 | 87 500 | 108 100 | 132 400 | 160 900 | 70 000 | 10,43                    | 6,72             | 78            |                     |

ARI MBP: Evaporating temperature: 20°F; Condensing temperature: 120°F; Subcooling 0°F; Superheat 20°F

## LLZ – low temperatures

**R404a**

| 60Hz • 460 V / 3-pHases | LLZ Models | -10°F  | -5°F   | 0°F    | 10°F   | 20°F   | 30°F   | 40°F   | "Cooling capacity Btu/h" | "Power input kW" | "EER Btu/h/W" | "Sound power dB(A)" |
|-------------------------|------------|--------|--------|--------|--------|--------|--------|--------|--------------------------|------------------|---------------|---------------------|
|                         | LLZ013     | -      | -      | 12 000 | 13 700 | 15 500 | 19 500 | 29 700 | 13 200                   | 2,29             | 4,51          | 71                  |
| LLZ015                  | -          | -      | 14 800 | 16 800 | 19 000 | 24 000 | 37 400 | 16 100 | 2,81                     | 4,61             | 71            |                     |
| LLZ018                  | -          | -      | 17 600 | 19 900 | 22 600 | 28 600 | 44 500 | 19 200 | 2,98                     | 4,78             | 71            |                     |
| LLZ024                  | -          | -      | 21 900 | 24 900 | 28 200 | 35 700 | 55 600 | 24 000 | 3,75                     | 4,91             | 71            |                     |
| LLZ034*                 | -          | -      | 30 800 | 34 800 | 39 300 | 49 400 | 75 600 | 33 500 | 4,25                     | 5,05             | 73            |                     |
| <b>With economizer</b>  |            |        |        |        |        |        |        |        |                          |                  |               |                     |
| LLZ013-Eco.             | 13 700     | 15 700 | 17 800 | 19 900 | 22 100 | 26 800 | 37 800 | 19 700 | 5,13                     | 5,53             | 74            |                     |
| LLZ015-Eco.             | 16 900     | 18 800 | 21 100 | 23 500 | 26 200 | 32 200 | 46 600 | 23 300 | 6,16                     | 5,46             | 74            |                     |
| LLZ018-Eco.             | 20 200     | 22 500 | 25 200 | 28 100 | 31 300 | 38 500 | 55 700 | 27 900 | 6,71                     | 5,73             | 75            |                     |
| LLZ024-Eco.             | 25 000     | 27 900 | 31 200 | 34 800 | 38 800 | 47 700 | 69 100 | 34 500 | 8,01                     | 5,84             | 78            |                     |
| LLZ034-Eco.*            | 35 200     | 39 900 | 44 400 | 48 900 | 53 600 | 63 900 | 92 300 | 47 900 | 9,14                     | 5,94             | 78            |                     |

LLZ models without economizer: ARI LBP: Evaporating temperature: -25°F; Condensing temperature: 105°F; Subcooling 0°F; Return gas temperature 65°F  
 LLZ models with economizer: ARI LBP: Evaporating temperature: -25°F; Condensing temperature: 105°F; Subcooling 9°F; Return gas temperature 65°F  
 \* preliminary data

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