



## **MLZ Refrigeration scroll compressors**

**50 Hz - R404A / R507 / R134a / R22**

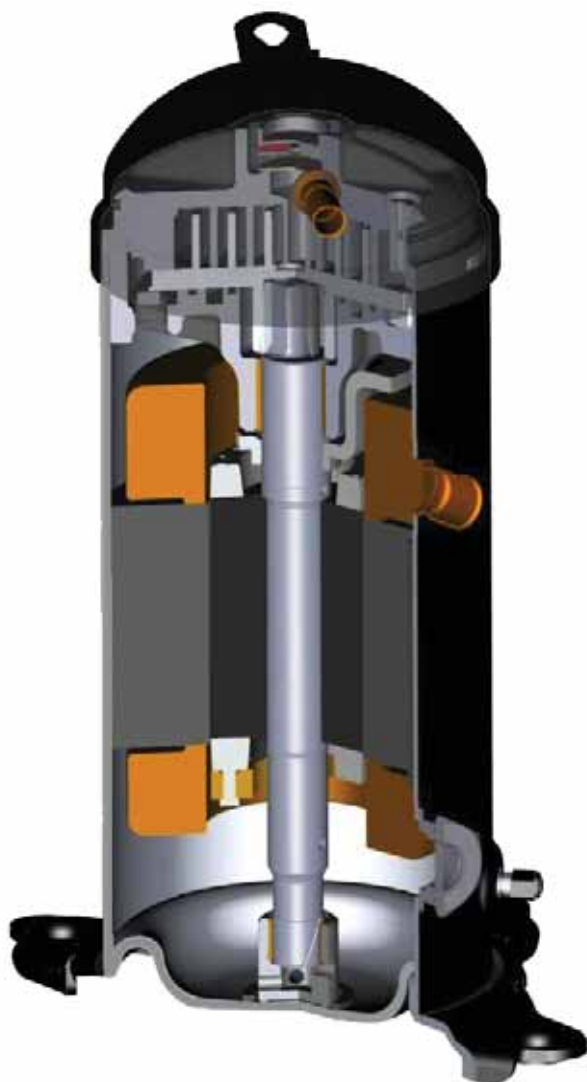
## KEY BENEFITS

**Lowest real world energy consumption:** The combination of an energy-efficient motor and a scroll wrap optimized for refrigeration applications delivers the highest efficiency in fixed speed, normal operation. The Danfoss patented "Adaptive" axial compliance design plus an extended application envelope to allow operating at low condensing temperature insures reduced operating costs in colder ambient conditions. Energy cost savings range from 5-15% versus semi-hermetic piston and up to 8% versus other scroll designs.

**Quiet operation:** The MLZ Scroll compressor is quiet by design: the scroll's smooth continuous compression, the press fit design, and the unique disc check valve ensure quiet, vibration-free operation. The MLZ is up to 4 dB(A) quieter than other scroll designs and up to 12 dB(A) quieter than piston designs, reducing the need for sound attenuation material.

**Reduced downtime:** Reliability is built into to this compressor family from the self-aligning, compliant scroll design to the Teflon-coated or carbon bearings, to the reduced complexity of the manufacturing process (30% fewer parts and press-fit manufacturing). In addition, the patented Hot Oil Over Protector (HOOP) overload protection insures excellent motor protection while eliminating nuisance trips, and the oil injection system insures adequate lubrication even in varying operating conditions.

**Lowest installed cost:** The combination of a common base design, common connector orientation, no start equipment required in most applications, reduced weight, and PVE oil allows fewer physical connection designs, reduced material costs, reduced handling expenses, and reduced installation time.

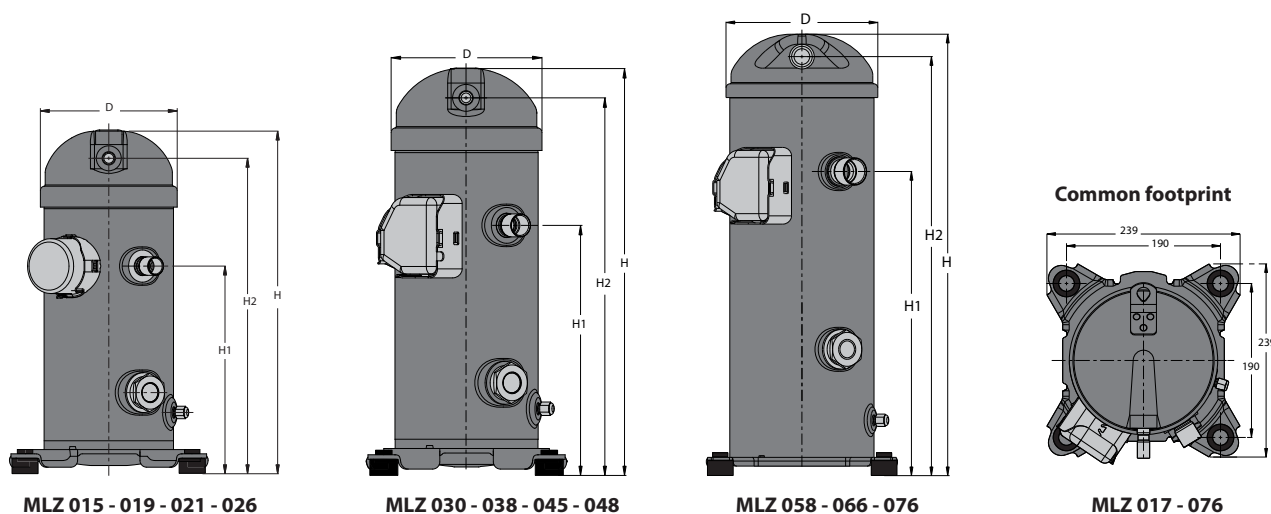


- ↳ Compressor range from 3.4 to 21 kW cooling capacity range
- ↳ Multi-refrigerant compressor suitable for R404A, R507, R134a and R22
- ↳ Suitable for operation down to 10°C condensing temperature use with floating condensing pressure control
- ↳ Common, small footprint and light weight
- ↳ Oil sight glass, schraeder connection for oil fill / drain, Rubber mounting grommets, Brazed connectors, IP 22 electrical box
- ↳ Accessories: Sound jacket, crankcase heater, rotolock adaptor, or rotolock adaptor set

## KEY APPLICATIONS

- ↳ Cold Rooms
- ↳ Storage Rooms
- ↳ Milk Tanks
- ↳ Ice makers
- ↳ Ice Cream machines
- ↳ Cooling Processes
- ↳ Air Dryers
- ↳ Electronic Cooling
- ↳ Beverage Cooling / Frozen Beverage Machines

## TECHNICAL SPECIFICATIONS



Model	HP	Swept volume (cm <sup>3</sup> /rev)	Displacement (m <sup>3</sup> /h)	Sound power (dB(A))		Net weight (kg)	Oil charge (l)	ODF Connections		Dimensions (mm)			
				without jacket	with jacket			Suction	Discharge	D	H	H1	H2
MLZ 015	2					31	1.1	3/4"	1/2"	165	412	250	379
MLZ 019	2 ½	43.5	7.6	65	57	31	1.1	3/4"	1/2"	165	412	250	379
MLZ 021	3	46.2	8.0	65	57	31	1.1	3/4"	1/2"	165	412	250	379
MLZ 026	3 ½	57.1	9.9	67	59	31	1.1	3/4"	1/2"	165	412	250	379
MLZ 030	4	68.8	12.0	70	62	37	1.6	7/8"	1/2"	184	455	280	422
MLZ 038	5	81.0	14.1	71	63	37	1.6	7/8"	1/2"	184	455	280	422
MLZ 045	6	98.6	17.2	71	63	37	1.6	7/8"	1/2"	184	455	280	422
MLZ 048	7	107.5	18.7	72	64	37	1.6	7/8"	3/4"	184	455	280	422
MLZ 058	7 ½	126.0	21.9	74	66	44	2.7	1"1/8	7/8"	185	536	369	509
MLZ 066	9	148.8	25.9	74	66	45	2.7	1"1/8	7/8"	185	545	369	518
MLZ 076	10	162.4	28.3	74	66	45	2.7	1"1/8	7/8"	185	545	369	518

## NOMENCLATURE

	Type	Size	Motor	Features												
<b>Application</b> M: medium temperature refrigeration	<b>MLZ</b>	<b>021</b>	<b>T4L</b>	<b>P9</b>												
<b>Family, Refrigerant &amp; lubricant</b> LZ: R404A - R507 - R134a - R22, PVE lubricant																
<b>Nominal capacity</b> In thousand Btu/h at 60 Hz, ARI, MBP conditions																
<b>Model variation</b> T: design optimised for refrigeration																
				<b>Other features</b> <table border="1"> <thead> <tr> <th></th> <th>Oil sight glass</th> <th>Oil equalisation</th> <th>Oil drain</th> <th>LP gauge port</th> <th>Gas equalisation port</th> </tr> </thead> <tbody> <tr> <td><b>9</b></td> <td>Threaded</td> <td>None</td> <td>Schrader</td> <td>None</td> <td>None</td> </tr> </tbody> </table>		Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalisation port	<b>9</b>	Threaded	None	Schrader	None	None
	Oil sight glass	Oil equalisation	Oil drain	LP gauge port	Gas equalisation port											
<b>9</b>	Threaded	None	Schrader	None	None											
				<b>Tubing and electrical connections</b> <b>P:</b> brazed connections, spade terminals <b>C:</b> brazed connections, screw terminals												
				<b>Motor protection</b> L: internal motor protection												
				<b>Motor voltage code</b> <b>1:</b> 208-230V/1~/60 Hz <b>2:</b> 200-220V/3~/50 Hz & 208-230V/3~/60 Hz <b>4:</b> 380-400V/3~/50 Hz & 460V/3~/60 Hz <b>5:</b> 220-240V/1~/50 Hz <b>7:</b> 500V/3~/50 Hz & 575V/ 3~/60 Hz <b>9:</b> 380V/3~/60 Hz												

**PERFORMANCE DATA**

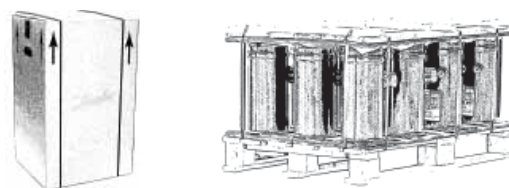
Models		T <sub>o</sub> = -10°C, T <sub>c</sub> = 40°C RGT=20°C, SC=0K Coldroom		T <sub>o</sub> = -6.7°C, T <sub>c</sub> = 40°C RGT=20°C, SC=0K Ice machine		T <sub>o</sub> = 0°C, T <sub>c</sub> = 40°C RGT=20°C, SC=0K Air drier		T <sub>o</sub> = -3°C, T <sub>c</sub> = 45°C RGT=20°C, SC=0K Milk tank		T <sub>o</sub> = -10°C, T <sub>c</sub> = 45°C RGT=20°C, SC=0K EN12900 conditions	
		Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP	Capacity	COP
		W	W/W	W	W/W	W	W/W	W	W/W	W	W/W
<b>R404A *</b>	MLZ015										
	MLZ019	4 800	2.52	5 500	2.85	6 900	3.64	5 700	2.68	4 500	2.06
	MLZ021	5 100	2.53	5 800	2.86	7 300	3.63	6 100	2.68	4 700	2.08
	MLZ026	6 400	2.54	7 200	2.88	9 200	3.67	7 600	2.71	5 900	2.09
	MLZ030	7 700	2.59	8 700	2.93	11 100	3.72	9 200	2.75	7 100	2.13
	MLZ038	9 200	2.59	10 400	2.92	13 200	3.68	10 900	2.73	8 500	2.13
	MLZ045	11 100	2.70	12 500	3.05	15 900	3.86	13 100	2.86	10 200	2.22
	MLZ048	12 100	2.68	13 600	3.03	17 300	3.85	14 300	2.84	11 100	2.20
	MLZ058	14 300	2.57	16 300	2.93	20 900	3.75	17 000	2.75	12 900	2.07
	MLZ066	16 500	2.65	18 600	2.98	23 600	3.71	19 500	2.80	15 200	2.19
MLZ076	19 100	2.67	21 500	2.99	27 200	3.71	22 100	2.75	17 300	2.18	
<b>R134a</b>	MLZ015										
	MLZ019	2 800	2.40	3 200	2.75	4 300	3.60	3 600	2.73	2 600	2.05
	MLZ021	3 000	2.46	3 400	2.82	4 600	3.69	3 800	2.80	2 800	2.11
	MLZ026	3 700	2.49	4 200	2.87	5 600	3.75	4 700	2.84	3 400	2.13
	MLZ030	4 400	2.53	5 100	2.91	6 800	3.81	5 700	2.88	4 200	2.16
	MLZ038	5 200	2.45	6 000	2.80	8 000	3.66	6 700	2.78	4 900	2.09
	MLZ045	6 400	2.64	7 500	3.04	9 900	4.00	8 300	3.01	6 000	2.24
	MLZ048	6 800	2.60	7 900	2.99	10 500	3.90	8 800	2.95	6 400	2.21
	MLZ058	8 200	2.50	9 400	2.85	12 400	3.67	10 400	2.80	7 700	2.12
	MLZ066	9 500	2.55	11 000	2.91	14 500	3.76	12 100	2.86	8 900	2.17
MLZ076	10 500	2.50	12 200	2.86	16 100	3.68	13 500	2.81	9 900	2.13	
<b>R22</b>	MLZ015										
	MLZ019	4 500	2.64	5 100	3.01	6 500	3.81	5 500	2.93	4 200	2.25
	MLZ021	4 800	2.56	5 400	2.94	6 900	3.73	5 900	2.88	4 500	2.16
	MLZ026	6 000	2.85	6 900	3.25	8 800	4.09	7 500	3.12	5 700	2.39
	MLZ030	7 100	2.58	8 100	3.05	10 300	3.91	8 800	3.01	6 700	2.19
	MLZ038	8 300	2.59	9 400	3.02	12 100	3.86	10 300	2.97	7 800	2.20
	MLZ045	10 500	2.91	11 800	3.19	15 000	3.99	12 700	3.05	9 900	2.47
	MLZ048	11 100	2.82	12 700	3.16	16 400	3.99	13 900	3.06	10 600	2.39
	MLZ058	12 800	2.72	14 800	3.14	19 300	4.07	16 300	3.09	12 000	2.26
	MLZ066	15 100	2.83	17 300	3.25	22 400	4.12	19 000	3.20	14 400	2.43
MLZ076	17 600	2.96	20 000	3.31	25 600	4.15	21 800	3.20	16 600	2.48	

COP = Coefficient Of Performance

All performance data are for motor voltage code 4, 380-400V/3ph/50 Hz

\* R507 performance data are nearly identical to R404A performance data

Capacity data at other conditions are available in the datasheets at: [www.danfoss.com/odsg](http://www.danfoss.com/odsg)

**ORDERING INFORMATION AND PACKAGING**


	Compressors	Model variation	Connections	Features	Single pack		Industrial pack	
					code 4	code 5	code 4	code 5
US pallet	MLZ015	T	P	9	120U8002	120U8024	120U8001	120U8023
	MLZ019	T	P	9	120U8004	120U8026	120U8003	120U8025
	MLZ021	T	P	9	120U8006	120U8028	120U8005	120U8027
	MLZ026	T	P	9	120U8008	120U8030	120U8007	120U8029
	MLZ030	T	C	9	120U8010	120U8032	120U8009	120U8031
	MLZ038	T	C	9	120U8012	120U8034	120U8011	120U8033
	MLZ045	T	C	9	120U8014		120U8013	
	MLZ048	T	C	9	120U8016		120U8015	
	MLZ058	T	C	9	120U8018		120U8017	
	MLZ066	T	C	9	120U8020		120U8019	
MLZ076	T	C	9	120U8022		120U8021		
Danfoss pallet	MLZ015	T	P	9	121U8002	121U8024	121U8001	121U8023
	MLZ019	T	P	9	121U8004	121U8026	121U8003	121U8025
	MLZ021	T	P	9	121U8006	121U8028	121U8005	121U8027
	MLZ026	T	P	9	121U8008	121U8030	121U8007	121U8029
	MLZ030	T	C	9	121U8010	121U8032	121U8009	121U8031
	MLZ038	T	C	9	121U8012	121U8034	121U8011	121U8033
	MLZ045	T	C	9	121U8014		121U8013	
	MLZ048	T	C	9	121U8016		121U8015	
	MLZ058	T	C	9	121U8018		121U8017	
	MLZ066	T	C	9	121U8020		121U8019	
	MLZ076	T	C	9	121U8022		121U8021	

**PACKAGING DETAILS**

	US pallets Optimized for overseas container loading		Danfoss pallets Optimized for overseas container loading & European storage racks		
	Code number	120U....	Code number	121U....	
Pack type	Industrial pack	Single pack	Industrial pack	Single pack	
Compressors per pallet	16	9 *	12	6 *	
Static stacking of pallets **	4	4	4	4	
Shipped accessories	Run capacitor (for single phase models)	Not included	Not included	Not included	Included
	Screw for earth connection	Not included	Included	Included	Included
	4 grommets per compressor	Included	Included	Included	Included
	4 assemblies of self tapping US thread bolt + washer + sleeve per compressor	Not included	Included	Not included	Included
	4 extra sleeves per compressor	Included	Included	Included	Included

\* Quantity for full pallets. Single packs can be ordered per 1.

\*\* Stacking only allowed for full pallets with identical products per pallet



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*Controls for  
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*Electronic Controls &  
Sensors*



*Industrial Automation*



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*Sub-Assemblies*



*Thermostats*



*Brazen plate  
heat exchanger*

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