

Technical Data Sheet

Compressor model **ML90FR**
 Voltage **115-127V 60Hz ~1**
 Refrigerant **R404A**

APPLICATION

Application Low Back Pressure
 Refrigerant R404A
 Evaporating Temp. -40,0 °C to -10,0 °C
 Expansion Capillar/Valve
 Comp. Cooling Fan cooled
 Max. ambient temp. 43,0 °C

COMPRESSOR

Displacement 8,85 cm³
 Diameter 25,40 mm
 Stroke 17,47 mm
 Net Weight 11,97 Kg
 Oil type ISO VG 32 ESTER
 Oil charge 350 cm³

MOTOR

Nominal Power 1/3 hp
 Voltage/Frequency 115-127V 60Hz
 Voltage range 98-140 V
 Type CSIR
 Phase number 1 PH
 Locked Rotor Amps (LRA) 36,00 A
 Max. Cont. Current (MCC) 7,70 A
 Main W. resist. at 25°C 1,03 Ω
 Start W. resist. at 25°C 7,69 Ω

NOMINAL PERFORMANCE

	ASHRAE	CECOMAF
Cooling Capacity	410 kCal/h	323 W
COP	1,11 W/W	0,79 W/W
EER	0,95 kCal/Wh	0,68 kCal/Wh
Input Power	430 W	411 W
Current	5,40 A	5,27 A

APPROVALS



TEST CYCLE CONDITIONS

	ASHRAE LBP (B)	CECOMAF LBP (A)
Evaporating temp. (T _e)	-23,3 °C	-25,0 °C
Condensing temp. (T _c)	55,0 °C	55,0 °C
Liquid temp. (T _{liq.})	32,0 °C	55,0 °C
Ambient temp. (T _{amb.})	32,0 °C	32,0 °C
Suction temp. (T _{suction})	32,0 °C	32,0 °C
Voltage/Frequency	115 V 60 Hz	115 V 60 Hz

ELECTRICAL COMPONENTS

Starting capacitor	170 µF 160 V			
Relay	Option 1			
Reference	2014 184.			
Pick-Up	18,70 A			
Drop-Out	15,60 A			
Protector	Option 1	Option 2		
Reference	MRA38123	T0534		
Current	22,00 A	20,00 A		
Time check	7,5-14 seg	7,5-14 seg		
Disc temp. (Open/Close)	105,00 / 52,00 °C	105,00 / 52,00 °C		

ASHRAE

Tc °C	Te °C	Cooling Capacity kCal/h	Consumption W	Current A	COP W/W	EER kCal/Wh
40	-40	208	293	4,53	0,83	0,71
40	-35	285	323	4,72	1,03	0,88
40	-30	378	359	4,94	1,23	1,05
40	-25	487	400	5,20	1,42	1,22
40	-23,3	528	415	5,30	1,48	1,27
40	-20	612	446	5,51	1,59	1,37
40	-15	752	498	5,86	1,76	1,51
40	-10	908	555	6,27	1,90	1,64

45	-40	185	285	4,49	0,75	0,65
45	-35	258	319	4,69	0,94	0,81
45	-30	346	359	4,94	1,12	0,96
45	-25	450	403	5,23	1,30	1,11
45	-23,3	488	420	5,33	1,35	1,16
45	-20	569	454	5,56	1,46	1,25
45	-15	704	509	5,94	1,61	1,38
45	-10	855	570	6,38	1,74	1,50

50	-40	163	278	4,44	0,68	0,59
50	-35	230	315	4,67	0,85	0,73
50	-30	313	359	4,94	1,02	0,87
50	-25	412	407	5,25	1,18	1,01
50	-23,3	449	425	5,37	1,23	1,06
50	-20	527	461	5,61	1,33	1,14
50	-15	657	520	6,02	1,47	1,26
50	-10	803	585	6,49	1,60	1,37

55	-40	140	270	4,40	0,60	0,52
55	-35	203	312	4,65	0,76	0,65
55	-30	281	359	4,94	0,91	0,78
55	-25	375	411	5,27	1,06	0,91
55	-23,3	410	430	5,40	1,11	0,95
55	-20	484	469	5,66	1,20	1,03
55	-15	609	532	6,10	1,33	1,15
55	-10	750	600	6,60	1,45	1,25

60	-40	118	263	4,36	0,52	0,45
60	-35	175	308	4,63	0,66	0,57
60	-30	248	359	4,94	0,80	0,69
60	-25	337	415	5,30	0,95	0,81
60	-23,3	371	435	5,43	0,99	0,85
60	-20	442	476	5,71	1,08	0,93
60	-15	562	543	6,18	1,20	1,03
60	-10	698	615	6,71	1,32	1,13

CECOMAF

Tc °C	Te °C	Cooling Capacity W	Consumption W	Current A	COP W/W	EER kCal/Wh
40	-40	217	293	4,53	0,74	0,64
40	-35	308	323	4,72	0,95	0,82
40	-30	412	359	4,94	1,15	0,99
40	-25	529	400	5,20	1,32	1,14
40	-23,3	571	415	5,30	1,38	1,19
40	-20	658	446	5,51	1,48	1,28
40	-15	801	498	5,86	1,61	1,39
40	-10	957	555	6,27	1,72	1,49

45	-40	185	285	4,49	0,65	0,56
45	-35	264	319	4,69	0,83	0,71
45	-30	355	359	4,94	0,99	0,86
45	-25	460	403	5,23	1,14	0,98
45	-23,3	498	420	5,33	1,19	1,03
45	-20	578	454	5,56	1,27	1,10
45	-15	708	509	5,94	1,39	1,20
45	-10	852	570	6,38	1,49	1,29

50	-40	153	278	4,44	0,55	0,48
50	-35	219	315	4,67	0,70	0,60
50	-30	299	359	4,94	0,83	0,72
50	-25	391	407	5,25	0,96	0,83
50	-23,3	426	425	5,37	1,00	0,87
50	-20	497	461	5,61	1,08	0,93
50	-15	615	520	6,02	1,18	1,02
50	-10	747	585	6,49	1,28	1,10

55	-40	121	270	4,40	0,45	0,39
55	-35	175	312	4,65	0,56	0,49
55	-30	242	359	4,94	0,68	0,58
55	-25	323	411	5,27	0,79	0,68
55	-23,3	353	430	5,40	0,82	0,71
55	-20	416	469	5,66	0,89	0,77
55	-15	522	532	6,10	0,98	0,85
55	-10	642	600	6,60	1,07	0,92

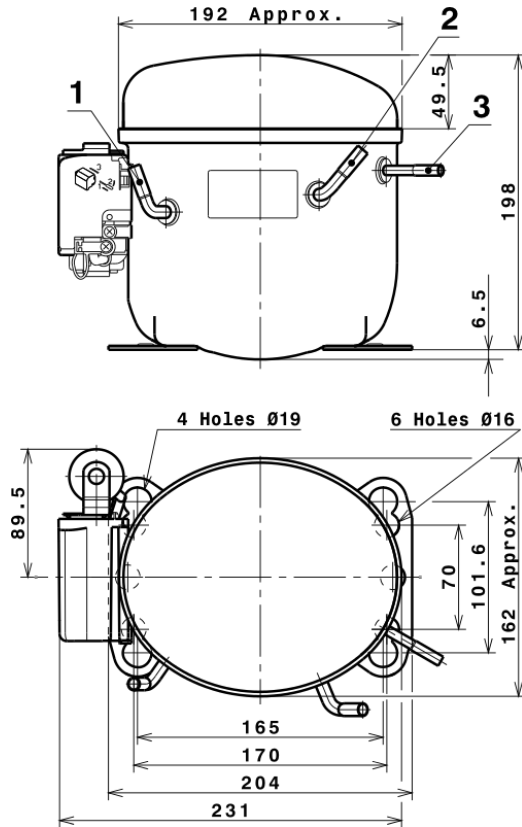
60	-40	89	263	4,36	0,34	0,29
60	-35	131	308	4,63	0,43	0,37
60	-30	186	359	4,94	0,52	0,45
60	-25	254	415	5,30	0,61	0,53
60	-23,3	280	435	5,43	0,64	0,56
60	-20	335	476	5,71	0,70	0,61
60	-15	429	543	6,18	0,79	0,68
60	-10	537	615	6,71	0,87	0,75

EN12900

X	Cooling Capacity (W)	Consumption (W)	Current (A)	Mass Flow (kg/h)
1	2.311,8734150512	520,4360015597	6,0566831278	51,659541646125
2	56,1088362763	8,5000481997	0,0710227500	1,4157512858175
3	-26,1642561040	4,6184492251	0,0337467994	-0,36772918527937
4	0,2474974198	0,1124191503	0,0010743408	0,0098547560321629
5	-0,4956698875	0,1537915193	0,0010707664	-0,0060494820608011

Equation	$x_1 + x_2Te + x_3Tc + x_4Te^2 + x_5TeTc$
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COMPRESSOR DIMENSIONS



DESIGNATION INTERNAL DIAM.

DESIGNATION	INTERNAL DIAM.
1 Suction	8,1 mm
2 Service	8,1 mm
3 Discharge	6,5 mm

WIRING DIAGRAMS AND ELECTRICAL ASSEMBLY

CSIR CONNECTION (L, P ranges)



Technical Data Sheet

FIXINGS



SILENT BLOCKS (MOUNTING ACCESSORIES)

STANDARD

Ø16 holes (170x70 net)



AMERICAN FEET

Ø19 holes (165x101.6 net)



SNAP-ON

Ø16 holes (170x70 net)



SOA

SOA R404A LBP

