



Multi-Circuit Condensers with CVD Technology[®]

Now approved
for use with Manitowoc
QuietQube[®] Ice Machines



CONTENTS

Multi-Pak Advantages.....	3
Multi-Pak Refrigeration Systems.....	4
Dimensional Data	5
Job Information Request Form.....	6
Warranty	7

MULTI-PAK • Multi-circuit Condensing Unit

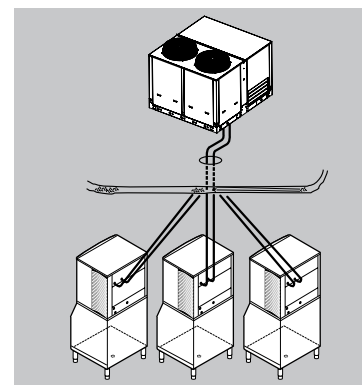
The all new Multi-Pak is a multi-circuited vertical discharge condensing unit that can be configured to handle multiple compressors. The MC1 single fan model is capable of handling up to three compressors with a maximum of 5 HP. The MC2 two fan model is capable of handling up to five compressors with a maximum of 8 HP. The MC3 three fan model is capable of handling up to seven compressors with a maximum of 14 HP. The MC4 four fan model is capable of handling nine compressors with a maximum of 20 HP.

Multi-Pak Advantages:

- Available with Hermetic, Semi-hermetic or Scroll compressors
- Installer has only one unit to mount (reduces the amount of space required)
- Single point electrical connection
- Condenser circuits may be allocated for use with ice machines or other condenser requirements
- Easily removable panels for service
- Timer for electric defrost application is mounted and pre-wired
- Compressors are individually protected (circuit breakers)
- Crank case heaters only come on when unit is in off-cycle (reduces excess heat that the compressors have to overcome during warm conditions and reduces energy consumption overall)
- Head master valves (allows refrigerant to bypass the condenser coil during cold weather conditions by maintaining a minimum head pressure)
- Color-coded wiring
- All units have liquid line sight glass and dryer
- Single energy efficient 1/2 HP (1100 RPM) PSC fan motor
- Large 24" diameter fan blade
- Exterior finish 18 Ga. G90 galvanized
- Unique placement of air intake louvers provides maximum air flow over compressors for cooler operation
- Provided with weather-proof housing
- Adjustable low pressure control
- Refrigerant lines piped for roof curb or ground pad connections



The flexibility of this unit makes it ideal for walk-in cooler/freezer applications, as well as ice machines and other remote condenser needs.



Multi-pak • Multi-circuit Condensing

Multi-Pak Refrigeration System

The Multi-Pak refrigeration system will be ETL Listed to UL Standard 1995, and may be located either on the roof of the building, or, on a pad outside of the building. The condensing unit consists of compressors, multi-circuit condenser, receivers, and electrical panel, all located within a weatherproof outdoor housing. The evaporator coils supplied as part of the system, are complete with all of the accessories required. All of the component parts, and required options and accessories will be mounted, wired, and piped as required. The system will be manufactured to operate at either 208-230/1/60, or, 208-230/3/60. This unit can also be configured to support remote condenser loads.

Weatherproof Outdoor Housing

The Outdoor Weatherproof Housing is fabricated of either 18 ga. G90 galvanized or 20 ga. stainless steel. Each panel of the housing is removable for complete access to the interior of the unit for servicing. The perimeter rails are punched with openings to accommodate spreader bars for lifting purposes.

Compressors and Multi-Circuit Condenser

All compressors shall be Hermetic, Semi-Hermetic or Scroll. Compressors are available to operate R-404A as standard refrigerant but may be supplied with others when required. Each compressor will be charged with the appropriate refrigerant oil as required. Each compressor will be provided with discharge and suction vibration isolation (vibrasorbers will be provided on semi-hermetic compressors). Each compressor system will include a dual pressure control, liquid line filter/drier, sight glass w/moisture indicator, crankcase heater, and receiver tank. Each receiver tank will be provided with an isolation valve and access port at its outlet and are sized to accommodate the required refrigerant charge, without exceeding its capacity. The capacity can be exceeded if the lines are too long.

The multi-circuit condenser system includes up to four 1/2 HP, PSC energy efficient fan motors with a 24" fan blade mounted in a formed venture fan orifice. The fan motor/blade assembly is protected by a coated fan guard. Each compressor and condenser circuit is

equipped with "headmaster" flooded condenser head pressure control. The compressor/condenser circuit is sized to operate at an average temperature differential (TD) between the ambient and condensing temperature of 20°F.

Electrical Control Panel

The weatherproof electrical control panel is mounted on the interior of the housing, and is fabricated of 18ga. Galvanized steel. The control panel is equipped with circuit breakers for each compressor system, contactors, auxiliary contacts, fuses, defrost time clocks, and compressor starting components (for single phase operation). A color-coded wiring diagram is provided, and mounted to the interior of the removable access panel. The wiring is color coded per the diagram, and is held in place with the appropriate fasteners. The entire electrical system is protected by an exterior mounted NEMA 3R rated fused disconnect switch.

Refrigeration System Piping

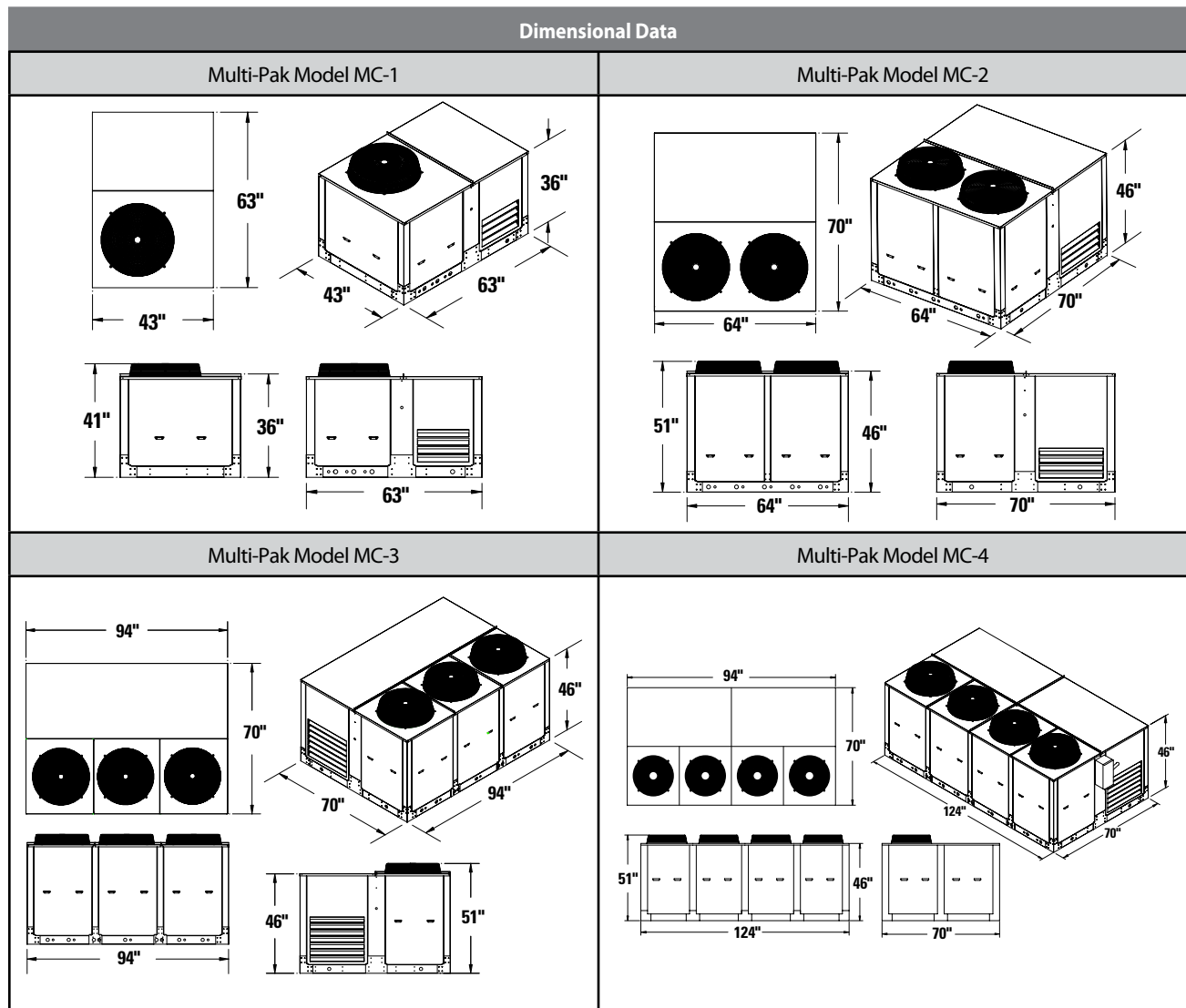
The refrigeration system piping is routed within the housing so the installation contractor can pipe the lines through the roof for roof curb applications or through protective bushings in the lower perimeter rail for ground pad mounting. Each set of liquid/suction lines will be identified as to the system they serve. All refrigeration piping will be A.C.R. grade refrigeration copper, and will be held in place with tubing straps. All suction lines shall be covered with 1/2" thick insulation tube. The entire condensing unit assembly shall be tested at a minimum of 250 psig for leaks. The system will be shipped with a 50psig holding charge of dry nitrogen.

Evaporator Coils

The evaporator coils will be mounted inside each walk-in compartment. Each evaporator coil will include a thermostatic expansion valve (matched to the system capacity requirements), liquid line solenoid valve (for pump down), and a temperature control. If two or more evaporators are required for a system, the solenoid valve will be mounted on each evaporator and the temperature control is shipped loose for field installation in a central location.



Air-Cooled Refrigeration Systems



Physical Data						
Maximum Total HP	Maximum Number of Compressor Spaces	Number of Condenser Fans	Dimensions (In.)			Approximate Weight (lbs.)
			Length	Width	Height	
5	3 May contain up to 6 fractional hermetic condensers.	1	43"	63"	41"	750
8	5 May contain up to 10 fractional hermetic condensers.	2	64"	70"	51"	1100
14	7 May contain up to 14 fractional hermetic condensers.	3	94"	70"	51"	1450
20	9 May contain up to 16 fractional hermetic condensers.	4	124"	70"	51"	2000

Warranty

RDI Parts and Labor Warranty (11-5-04)

All invoices submitted for consideration under RDI's parts and labor warranty must include the product serial number and must be received by RDI within 60 days of the date of service.

Parts Coverage

One (1) year from original start up date but no more than fifteen (18) months from ship date RDI will at it's option repair, replace, or reimburse for local purchase of parts or assemblies found to be defective in material or workmanship. Reimbursement for local purchase will require a copy of the wholesale invoice and a maximum 20% markup. During the first year defective compressors shall be exchanged over the counter by the compressor manufacturer's wholesaler. RDI will match the standard 3-year parts-and-labor warranty provided by Manitowoc Ice on all components attached to the Manitowoc ice machine.

Labor Coverage

RDI systems are covered by a 30 day labor warranty for the replacement of component parts which are defective in material or workmanship. The warranty period begins on the original start up date but no more than 18 months from ship date. RDI reserves the right to pay maximum hourly rates equal to the average commercial hourly rates within that territory or region of the country.

Extended Compressor Coverage

If the optional four (4) year compressor warranty is purchased and the original compressor fails after the expiration of the one (1) year parts warranty. RDI will provide a replacement compressor for the condensing unit assembly. RDI will at it's option provide directly or authorize local purchase of the replacement compressor. If local purchase is authorized the wholesale invoice along with the serial tag from the original defective compressor shall be sent to RDI for reimbursement. In some instances the entire failed compressor may be required. Labor, freight/transportation, and additional parts/supplies are not covered.

General Conditions

This warranty is issued only to the original purchaser-user at the original installation location and is in lieu of all other warranties expressed or implied.

Following the expiration of the basic parts warranty, replacement parts purchased from RDI shall be warranted for parts replacement and shipping only for a period of ninety days from ship date.

Exclusions From Warranty Coverage

1. Normal maintenance and adjustments such as temperature controls, thermal expansion valves, defrost timers and cleaning.
2. Repairs due to unauthorized modifications of warranted equipment.
3. Damage or failure caused by improper installation, improper electrical supply, fire, flood, or other natural disasters, acts of terrorism or war.
4. Damage or delays occurring in transit.
5. Parts or assemblies subject to misuse, abuse, neglect or accidents.
6. Damage or loss of any products, property, loss of income or profit due to malfunctioning of sold unit.

Semi-Hermetic

Medium Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-54M-2	208-230/1/60	3.7	22.0	H AJB-005E-CAV	7374	5922.00	1.25	2
MC-54M-3	208-230/3/60	2.2	13.0	H AJB-005E-TAC	7374	5922.00	1.25	2
MC-74M-2	208-230/1/60	6.1	36.0	K ANB-007E-CAV	9057	5922.00	1.53	2
MC-74M-3	208-230/3/60	3.5	19.9	K ANA-007E-TAC	9057	5922.00	1.53	2
MC-104M-2	208-230/1/60	7.4	40.0	K ARB-010E-CAV	11732	5922.00	1.98	2
MC-104M-3	208-230/3/60	4.3	27.0	K ARA-010E-TAC	13797	5922.00	2.33	3
MC-124M-2	208-230/1/60	7.5	40.0	K AGB-010E-CAV	12803	5922.00	2.16	3
MC-124M-3	208-230/3/60	4.3	27.0	K AGA-010E-TAC	12803	5922.00	2.16	3
MC-154M-2	208-230/1/60	10.6	55.0	K AKB-021E-CAV	21948	5922.00	3.71	4
MC-154M-3	208-230/3/60	6.8	50.0	K AKA-020E-TAC	22155	5922.00	3.74	4
MC-204M-3	208-230/3/60	6.6	46.0	E RCA-021E-TAC	28096	5922.00	4.74	5
MC-304M-2	208-230/1/60	17.0	86.0	E RFB-031E-CAB	40307	5922.00	6.81	7
MC-304M-3	208-230/3/60	12.4	82.0	E RFA-031E-TAC	40307	5922.00	6.81	7
MC-305M-3	208-230/3/60	14.2	82.0	3 RAA-031E-TAC	40110	5922.00	6.77	7
MC-404M-3	208-230/3/60	21.8	141.0	N RB2-040E-TFC	55420	5922.00	9.36	10
MC-504M-3	208-230/3/60	22.3	120.0	2 DC3-050E-TFC	59485	5922.00	10.04	10
MC-505M-3	208-230/3/60	22.3	120.0	2 DD3-050E-TFC	70750	5922.00	11.95	12

Low Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-54L-2	208-230/1/60	3.6	24.0	K ANB-005E-CAV	5200	5922.00	0.88	1
MC-54L-3	208-230/3/60	2.2	13.2	K ANA-005E-TAC	5200	5922.00	0.88	1
MC-74L-2	208-230/1/60	5.6	36.0	K ANB-007E-CAV	8375	5922.00	1.41	2
MC-74L-3	208-230/3/60	3.2	19.9	K AMA-007E-TAC	8375	5922.00	1.41	2
MC-104L-2	208-230/1/60	6.9	40.0	K AJB-010E-CAV	9168	5922.00	1.55	2
MC-104L-3	208-230/3/60	4.6	27.0	K AJA-011E-TAC	9168	5922.00	1.55	2
MC-154L-2	208-230/1/60	9.9	55.0	K ALB-015E-CAV	16262	5922.00	2.75	3
MC-154L-3	208-230/3/60	6.6	50.0	K ALA-016E-TAC	16536	5922.00	2.79	3
MC-204L-2	208-230/1/60	14.7	102.0	E AVB-021E-CAV	22364	5922.00	3.78	4
MC-204L-3	208-230/3/60	7.4	50.0	E AVA-021E-TAC	22364	5922.00	3.78	4
MC-304L-2	208-230/1/60	16.7	105.0	L AHB-032E-CAB	35467	5922.00	5.99	6
MC-304L-3	208-230/3/60	12.8	112.0	L AHA-032E-TAC	29924	5922.00	5.05	6
MC-305L-3	208-230/3/60	16.8	102.0	2 DF3F16KE-TFC-200	31743	5922.00	5.36	6
MC-404L-3	208-230/3/60	26.3	161.0	2 DL3-040E-TFC	31348	5922.00	5.29	6
MC-601L-3	208-230/3/60	30.3	150.0	3 DA3F28KE-TFC	45462	5922.00	7.68	8

Scroll

Medium Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-139MZ-2	208-230/1/60	10.0	41.0	ZB10KCE-PFV	16944	5922.00	2.86	3
MC-149MZ-2	208-230/1/60	10.0	45.0	ZB11KCE-PFV	21116	5922.00	3.57	4
MC-179MZ-2	208-230/3/60	12.9	54.0	ZB13KCE-PFV	22682	5922.00	3.83	4
MC-199MZ-2	208-230/1/60	15.7	61.0	ZS15K4E-PFV	30384	5922.00	5.13	
MC-199MZ-3	208-230/3/60	8.9	55.0	ZB15KCE-TF5	25130	5922.00	4.24	5
MC-249MZ-2	208-230/1/60	16.4	73.0	ZS19K4E-PFV	32210	5922.00	5.44	6
MC-249MZ-3	208-230/3/60	9.7	63.0	ZS19K4E-TF5	32210	5922.00	5.44	6
MC-299MZ-2	208-230/1/60	16.4	20.2	ZB21K4E-PFV	34364	5922.00	5.80	6
MC-299MZ-3	208-230/3/60	11.1	77.0	ZS21K4E-TF5	34685	5922.00	5.86	6
MC-349MZ-3	208-230/3/60	13.6	88.0	ZS26K4E-TF5	43809	5922.00	7.40	8
MC-399MZ-3	208-230/3/60	15.0	99.0	ZS30K4E-TF5	50060	5922.00	8.45	9
MC-499MZ-3	208-230/3/60	21.4	123.0	ZS38K4E-TF5	68255	5922.00	11.53	12
MC-599MZ-3	208-230/3/60	22.1	172.0	ZS45K4E-TF5	68355	5922.00	11.54	12
MC-749MZ-3	208-230/3/60	30.0	189.0	ZS56K4E-TF5	90500	5922.00	15.28	16
MC-999MZ-3	208-230/3/60	43.6	278.0	ZS75K4E-TF5		5922.00	0.00	
MC-1299MZ-3	208-230/3/60	52.9	55.4	ZS92K4E-TF5		5922.00	0.00	

Low Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-199LZ-2	208-230/1/60	13.6	61.0	ZF06K4E-PFV	17397	5922.00	2.94	3
MC-199LZ-3	208-230/3/60	9.3	55.0	ZF06K4E-TF5	17397	5922.00	2.94	3
MC-249LZ-2	208-230/1/60	16.4	73.0	ZF08K4E-PFV	18313	5922.00	3.09	3
MC-249LZ-3	208-230/3/60	9.7	63.0	ZF08K4E-TF5	18313	5922.00	3.09	3
MC-299LZ-2	208-230/1/60	16.4	88.0	ZF09K4E-PFV	19345	5922.00	3.27	4
MC-299LZ-3	208-230/3/60	11.1	77.0	ZF09K4E-TF5	19345	5922.00	3.27	4
MC-349LZ-2	208-230/1/60	20.7	109.0	ZF11K4E-PFV	24088	5922.00	4.07	4
MC-349LZ-3	208-230/3/60	13.6	88.0	ZF11K4E-TF5	24088	5922.00	4.07	4
MC-399LZ-2	208-230/1/60	26.8	129.0	ZF13K4E-PFV	27553	5922.00	4.65	5
MC-399LZ-3	208-230/3/60	15.0	99.0	ZF13K4E-TF5	27553	5922.00	4.65	5
MC-499LZ-2	208-230/1/60	31.8	169.0	ZF15K4E-PFV	30384	5922.00	5.13	5
MC-499LZ-3	208-230/3/60	21.4	123.0	ZF15K4E-TF5	30384	5922.00	5.13	5
MC-599LZ-3	208-230/3/60	23.9	156.0	ZF18K4E-TF5	40770	5922.00	6.88	7
MC-749LZ-3	208-230/3/60	30.0	189.0	ZF24K4E-TWC	57207	5922.00	9.66	10
MC-999LZ-3	208-230/3/60	43.6	278.0	ZF33K4E-TWC	63645	5922.00	10.75	11
MC-1299LZ-3	208-230/3/60	52.9	350.0	ZF40K4E-TWC	79656	5922.00	13.45	14

Hermetic

Medium Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-49M-1	115/1/60	10.1	51.0	RS43C1E-IAA	10171	5922.00	1.72	2
MC-49M-2	208-230/1/60	5.4	24.1	RS43C1E-CAV	8665	5922.00	1.46	2
MC-69M-2	208-230/1/60	6.1	40.0	RS55C2E-CAV	12954	5922.00	2.19	3
MC-99M-2	208-230/1/60	7.0	34.2	RS70C1E-PFV	16010	5922.00	2.70	3
MC-99M-3	208-230/3/60	4.7	31.0	RS70C1E-TFC	13449	5922.00	2.27	3
MC-149M-2	208-230/1/60	9.6	59.2	CF04K6E-PFV	22070	5922.00	3.73	4
MC-149M-3	208-230/3/60	6.8	52.0	CS10K6E-TF5	19035	5922.00	3.21	4
MC-199M-2	208-230/1/60	10.9	56.0	CS12K6E-PFV	22990	5922.00	3.88	4
MC-199M-3	208-230/3/60	7.5	51.0	CS12K6E-TF5	22450	5922.00	3.79	4
MC-299M-2	208-230/1/60	16.0	82.0	CS18K6E-PFV	33860	5922.00	5.72	6
MC-299M-3	208-230/3/60	8.8	65.0	CS18K6E-TF5	33150	5922.00	5.60	6
MC-399M-2	208-230/2/60	23.9	121.0	CS27K6E-PFV	52053	5922.00	8.79	9
MC-399M-3	208-230/3/60	15.6	105.0	CS27K6E-TF5	50885	5922.00	8.59	9
MC-499M-3	208-230/3/60	20.7	90.0	CS33K3E-TF5	59589	5922.00	10.06	10

Low Temp - Semi-Hermetic					20° TD			Circuiting Bundels
					@20° TD THR	THR Per Circuit	# Of Circuits Required	
Model	Electrical	RLA Amps	LRA Amps	Compressor				
MC-49L-1	115/1/60	4.1	30.0	AFT18C1E-IAV	5103	5922.00	0.86	1
MC-69L-2	208-230/1/60	9.8	43.3	RS86C1E-PFV	10192	5922.00	1.72	2
MC-99L-2	208-230/1/60	9.6	59.2	CF04K6E-PFV	6680	5922.00	1.13	2
MC-99L-3	208-230/3/60	6.8	52.0	CF04K6E-TF5	6271	5922.00	1.06	2
MC-149L-2	208-230/1/60	11.4	59.2	CF06K6E-PFV	10905	5922.00	1.84	2
MC-149L-3	208-230/3/60	7.0	52.0	CF06K6E-TF5	10328	5922.00	1.74	2
MC-199L-2	208-230/1/60	16.7	87.0	CF09K6E-PFV	15751	5922.00	2.66	3
MC-199L-3	208-230/3/60	10.2	72.2	CF09K6E-TF5	15534	5922.00	2.62	3
MC-249L-2	208-230/1/60	16.7	87.0	CF09K6E-PFV	18901	5922.00	3.19	4
MC-249L-3	208-230/3/60	10.2	72.2	CF09K6E-TF5	18640	5922.00	3.15	4
MC-299L-2	208-230/1/60	20.5	105.0	CF12K6E-PFV	25448	5922.00	4.30	5
MC-299L-3	208-230/3/60	12.3	85.0	CF12K6E-TF5	25448	5922.00	4.30	5
MC-404L-3	208-230/3/60	26.3	161.0	2DL3-040E-TFC	34766	5922.00	5.87	6



RDI

2915 TENNESSEE AVE NORTH, PARSONS, TN 38363 • 1-877-759-9019 • FAX 1-731-847-9012



SOLUTIONS

RDI provides many of the operational solutions from Manitowoc Foodservice, a global company dedicated to bringing value to foodservice operators by equipping them with highly individualized real-world answers that enhance menus, service, profits and efficiency.

To learn how Manitowoc Foodservice and its leading brands can equip you, visit our global web site at www.manitowocfoodservice.com then find the regional or local resources available to you.

