



MPCA – Mini Portable Air Cooled Chillers

	MPCA-1.5	MPCA-02	MPCA-03	MPCA-05	MPCA-07	MPCA-09	MPCA-10
--	----------	---------	---------	---------	---------	---------	---------

Compressor	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Compressor HP	1½	2½	3½	5	7	9	10
Oil	POE	POE	POE	POE	POE	POE	POE

Condenser							
No. Condenser Fans	1	2	2	2	2	2	2

Pump & Stainless Steel Tank							
Pump HP	¾	1	1	1½	1½	1½	2
SS Tank Capacity (gallons)	20	20	30	30	30	30	30
Chilled Water Flow Rate @ 50°F LWT (GPM @ psi)	6 @ 35	8 @ 43	10 @ 42	15 @ 42	18 @ 41	22 @ 40	28 @ 55

Dimensions (in.)							
Length	41"	46"	46"	62"	62"	74"	74"
Width	31"	32"	32"	37"	37"	37"	37"
Height	50"	53"	53"	59"	59"	69"	69"
Shipping Weight (lbs.)	580	580	625	785	1,140	1,250	1,380
Chilled Water Conn. (in)	¾"	¾"	1"	1"	1"	1½"	1½"

Hot Gas By-Pass	n/a	n/a	standard	standard	standard	standard	standard
Suction Valve	standard	standard	standard	standard	standard	standard	standard
Accumulator	standard	standard	standard	standard	standard	standard	standard
Receiver	standard	standard	standard	standard	standard	standard	standard
BX Conduit	standard	standard	standard	standard	standard	standard	standard
Fan Guard	standard	standard	standard	standard	standard	standard	standard
Discharge Line Thermostat	standard	standard	standard	standard	standard	standard	standard
High/Low Pressure Control	standard	standard	standard	standard	standard	standard	standard
Time Delay Relay	standard	standard	standard	standard	standard	standard	standard
Filter Drier	standard	standard	standard	standard	standard	standard	standard
Moisture Indicator	standard	standard	standard	standard	standard	standard	standard
Liquid Solenoid Valve w/coil	standard	standard	standard	standard	standard	standard	standard
Fan Cycle Control	standard	standard	standard	standard	standard	standard	standard
Evaporator, Braze Plate SS	standard	standard	standard	standard	standard	standard	Standard
Flow Switch	standard	standard	standard	standard	standard	standard	standard
Freeze Stat	standard	standard	standard	standard	standard	standard	standard
Casters	standard	standard	standard	standard	standard	standard	standard
NEMA 12 electric Panel	standard	standard	standard	standard	standard	standard	standard
Stainless steel pump	standard	standard	standard	standard	standard	standard	standard
Liquid Filled Pressure gauge	standard	standard	standard	standard	standard	standard	standard
Water Bypass	standard	standard	standard	standard	standard	standard	standard
Low Temperature Alarm	standard	standard	standard	standard	standard	standard	Standard
Controller, CAREL, Electronic	standard	standard	standard	standard	standard	standard	Standard

OPTIONS							
Controller, Electronic, MICRO MAG	optional	optional	optional	optional	optional	optional	optional
Low/High Temperature Alarms	optional	optional	optional	optional	optional	optional	optional
Auto Water Make-Up Valve	optional	optional	optional	optional	optional	optional	optional
Low Water Level Alarm	optional	optional	optional	optional	optional	optional	optional

MPCA – Medium / High Temperature

Electrical Rating & Cooling Capacities



Operating Range: 55°F Max. - 10°F Min.
Refrigerant: R-404A
Copeland SCROLL Compressors

	MPCA-1.5	MPCA-02	MPCA-03	MPCA-05	MPCA-07	MPCA-09	MPCA-10
--	----------	---------	---------	---------	---------	---------	---------

Condenser

No. Condenser Fans	1	2	2	2	2	2	2
--------------------	---	---	---	---	---	---	---

Compressor Ampacity

	1½ HP	2 HP	3 HP	5 HP	7 HP	9 HP	10 HP
Comp. Amp (230-1-60)	16.4	22.4	31.8	43.4	44.8	51	60.8
Comp. Amp (230-3-60)		16.1	21.8	30.4	23.2	26.3	29.4
Comp. Amp (460-3-60)		10	11.8	14.4	17.9	20.25	21.3

Pump Ampacity

	¾ HP	1 HP	1 HP	1½ HP	1½ HP	1½ HP	2 HP
Pump Amp (230-1-60)	6.9	8.0	8.0	10	10	10	12
Pump Amp (230-3-60)	2.8	3.6	3.6	5.2	5.2	5.2	6.8
Pump Amp (460-3-60)	1.4	1.8	1.8	2.6	2.6	2.6	3.4

Chiller Ampacity

	24.1	30.4	39.8	53.4	54.8	61	72.8
FLA @ 230-1-60							
FLA @ 230-3-60	17.2	19.7	25.4	35.6	28.4	56.2	67.6
FLA @ 460-3-60	8.4	11.8	13.6	17	20.2	22.9	24.7

Medium/High Temp. Capacities @ 90°F Ambient

65°F Return Gas Temp., 5°F Sub-cooling

10°F	-12.2°F	9,040	11,300	16,700	27,700	37,700	48,600	56,500
15°F	-9.4°F	9,980	12,600	18,500	30,500	42,200	53,800	62,200
20°F	-6.7°C	11,000	13,900	20,400	33,400	46,800	59,000	67,800
25°F	-3.9°C	12,000	15,200	22,400	36,500	51,500	64,400	73,800
30°F	-1.1°C	13,100	16,700	24,600	39,800	56,500	70,100	80,000
35°F	1.7°C	14,600	18,900	27,900	45,400	61,700	76,000	86,400
40°F	4.4°C	15,800	20,600	30,500	49,300	67,200	82,100	93,000
45°F	7.2°C	17,000	22,500	33,300	53,500	72,800	88,400	99,900
50°F	10.0°C	18,200	24,400	36,400	57,500	78,800	95,000	107,000
55°F	12.8°C	19,500	26,800	39,700	62,200	85,000	101,700	114,300

Medium/High Temp. Capacities @ 100°F Ambient

65°F Return Gas Temp., 5°F Sub-cooling

10°F	-12.2°F	8,270	10,400	15,300	25,300	33,800	44,500	51,400
15°F	-9.4°F	9,120	11,500	17,000	27,900	38,000	49,300	56,600
20°F	-6.7°C	10,000	12,700	18,700	30,500	42,300	54,000	61,600
25°F	-3.9°C	10,900	14,000	20,500	33,300	46,700	59,000	66,900
30°F	-1.1°C	11,000	15,300	22,400	36,300	51,300	64,200	72,500
35°F	1.7°C	13,700	17,400	25,700	41,800	56,200	69,500	78,200
40°F	4.4°C	14,700	19,000	28,100	45,300	61,200	75,100	84,100
45°F	7.2°C	15,800	20,700	30,700	49,000	66,500	80,900	90,300
50°F	10°C	16,900	22,500	33,500	53,000	72,000	86,900	96,700
55°F	12.8°C	18,100	24,700	36,600	57,000	77,800	93,000	103,200

Medium/High Temp. Capacities @ 110°F Ambient

65°F Return Gas Temp., 5°F Sub-cooling

10°F	-12.2°F	7,420	9,430	13,800	22,800	29,600	40,100	46,100
15°F	-9.4°F	8,170	10,400	15,300	25,100	33,600	44,500	50,700
20°F	-6.7°C	8,930	11,500	16,800	27,500	37,500	48,900	55,100
25°F	-3.9°C	9,740	12,600	18,400	30,000	41,700	53,400	59,800
30°F	-1.1°C	10,600	13,800	20,100	32,700	45,900	58,100	64,700
35°F	1.7°C	13,000	15,800	23,300	37,900	50,400	62,900	69,800
40°F	4.4°C	14,000	17,300	25,500	41,100	55,000	68,000	75,000
45°F	7.2°C	n/a	18,800	27,900	44,500	59,900	73,200	n/a
50°F	10°C	n/a	20,600	20,500	48,100	65,000	n/a	n/a
55°F	12.8°C	n/a	22,600	n/a	52,000	70,400	n/a	n/a



MPCA - Low Temperature

Electrical Rating & Cooling Capacities

Low Temperature: 35°F Max. - 20°F Min.
Refrigerant: R404A

MPCA-1.5	MPCA-02	MPCA-03	MPCA-04	MPCA-05
----------	---------	---------	---------	---------

Condenser

No. Condenser Fans	1	2	2	2	-	-	-
--------------------	---	---	---	---	---	---	---

Compressor Ampacity

	1½ HP	2 HP	3 HP	4 HP	5 HP		
Comp. Amp (230-1-60)	16.4	22.4	31.8	38.9	43.4	-	-
Comp. Amp (230-3-60)	n/a	16.1	21.8	31.5	30.4	-	-
Comp. Amp (460-3-60)	n/a	10	11.8	14.9	14.4	-	-

Pump Ampacity

	¾ HP	1 HP	1 HP	1½ HP	1½ HP		
Pump Amp (230-1-60)	6.9	8.0	8.0	10	10	-	-
Pump Amp (230-3-60)	2.8	3.6	3.6	5.2	5.2	-	-
Pump Amp (460-3-60)	1.4	1.8	1.88	2.6	2.6	-	-

Chiller Ampacity

FLA @ 230-1-60	23.3	30.4	39.8	53.4	53.4	-	-
FLA @ 230-3-60		19.7	25.4	35.6	35.6	-	-
FLA @ 460-3-60		11.8	13.6	17.5	17	-	-

Low Temp. Capacities @ 90°F Ambient

40°F Return Gas Temp., 5°F Sub-cooling

-20°F	-28.9°C	4,720	5,810	8,610	12,200	14,600	-	-
-15°F	-26.1°C	5,310	6,560	9,720	13,800	16,400	-	-
-10°F	-23.3°C	5,960	7,370	10,900	15,500	18,400	-	-
-5°F	-20.6°C	6,650	8,250	12,200	17,400	20,500	-	-
0°F	-17.8°C	7,400	9,210	13,600	19,500	22,700	-	-
+5°F	-15°C	8,200	10,200	15,100	21,700	25,100	-	-
+10°F	-12.2°C	9,040	11,300	16,700	24,200	27,700	-	-
+15F	-9.4C	9,980	12,600	18,500	26,800	30,500		
+20F	-6.7C	11,000	13,900	20,400	29,700	33,400		
+25F	-3.9C	12,000	15,200	22,400	32,800	36,500		
+30F	-1.1C	13,100	16,700	24,600	36,100	39,600		
+35F	1.7C	14,300	18,300	26,900	39,600	43,200		

Low Temp. Capacities @ 100°F Ambient

40°F Return Gas Temp., 5°F Sub-cooling

-15°F	-26.1°C	4,950	6,110	9,050	12,900	15,200	-	-
-10°F	-23.3°C	5,530	6,860	10,100	14,500	16,900	-	-
-5°F	-20.6°C	6,150	7,650	11,300	16,200	18,800	-	-
0°F	-17.8°C	6,920	8,510	12,600	18,100	20,900	-	-
+5°F	-15°C	7,540	9,450	13,900	20,100	23,000	-	-
+10°F	-12.2°C	8,270	10,400	15,300	22,300	25,300	-	-
+15F	-9.4C	9,120	11,500	17,000	24,700	27,900		
+20F	-6.7C	10,000	12,700	18,700	27,300	30,500		
+25F	-3.9C	10,900	14,000	20,500	30,100	33,300		
+30F	-1.1C	11,900	15,300	22,400	33,100	36,300		
+35F	1.7C	13,000	16,700	24,500	36,400	39,400		

Low Temp. Capacities @ 110°F Ambient

40°F Return Gas Temp., 5°F Sub-cooling

-15°F	-26.1°C	n/a	5,630	n/a	11,900	13,800	-	-
-10°F	-23.3°C	5,040	6,290	9,270	10,300	15,400	-	-
-5°F	-20.6°C	5,580	6,990	10,40010,300	14,900	17,100	-	-
0°F	-17.8°C	6,170	7,750	11,50011,400	16,500	18,900	-	-
+5°F	-15°C	6,790	8,580	12,70012,600	18,400	20,800	-	-
+10°F	-12.2°C	7,420	9,430	n/a13,800	20,300	22,800	-	-
+15F	-9.4C	8,170	10,400	n/a15,300	22,500	25,100	-	-
+20F	-6.7C	8,930	11,500	16,800	24,800	27,500		
+25F	-3.9C	9,740	12,600	18,400	27,300	30,000		
+30F	-1.1C	10,600	13,800	20,100	30,000	32,700		
+35F	1.7C	11,600	15,000	22,000	32,900	35,500		



Basic Construction

CONSTRUCTION

Frame	Heavy structural steel base and frame.
Finish	Primed & Painted with Acrylic Enamel
Features	Heavy gauge laminated aluminum panels

CONDENSING UNIT

Copeland Scroll	Suction line valve
Superior liquid handling capability and require no tip seals that wear out	Accumulator
High efficiency, in part, to near 100% volumetric efficiency during compression process	Receiver with liquid shut-off valve
Light, compact and reduced foot print	Condenser fan guards
Smooth, nearly continuous compression cycle allows scroll compressor to operate more smoothly and quietly with less vibration	Fan Cycling and Pressure Controls Fan Guard and End Covers
Hermetic moisture indicator	UL listed
Liquid line solenoid valve with coil	Hot gas by-pass (MPCA-03-10)
Refrigeration filter drier	Crankcase Heater

EVAPORATOR

Type	Direct expansion – Brazed plate design
Construction	AISI 316L Stainless Steel plate with copper brazing
Insulation	Closed cell foam
Fluid Pressure Drop	<6 psig (typical)

INLINE WATER FILTER WITH STAINLESS STEEL MESH

Construction	AISI 304 Stainless Steel filter element with bronze or ABS body
Filter Size	18 mesh

TANK

Construction	Stainless Steel
Insulation	½" Armaflex* foam insulation
Features	Sight glass Drain Make-up connection; 1 ½" Water Fill Port

REFRIGERANT

Type	R-404A (Optional 134A available)
------	----------------------------------

ELECTRICAL CONTROLS

Electronic CAREL Controller	Motor overload protection
Option: Micro Processor Controller	High pressure/Low pressure cut-out
Low-flow cutout	Motor starters
Freeze stat protection	Time delay low pressure cutout

REFRIGERATION SPECIALTIES

Thermal expansion valve	Sight glass / moisture indicator
Liquid line solenoid valve	Filter Dryer
High pressure relief valve	Hot Gas Bypass Capacity Control



All Major Components are bolted to the structural steel base with easy accessibility and Serviceability.
Chiller comes with heavy duty two swivel and two fixed casters.

MPCA TYPICAL PIPING LAYOUT

