

Service Bulletin

Subject: UP0310 Technical Specifications

AIR-COOLED & WATER-COOLED MODELS

GENERAL SPECIFICATIONS			
Operating Temperatures	Minimum 50°F (10°C) Maximum 100°F (38°C)		
Refrigerant Charge (R-290)	UP0310A 115V/60Hz & 230V/60 Hz	UP0310A 230V/60Hz	UP0310W 115-230V/50-60Hz
	5.2 oz (148 g)	4.5 oz (120 g)	3.9 oz (110 g)
Energy Use Kwh / 100 lbs	Air-cooled		Water-cooled
	Half Dice: 5.85 Kwh Dice: 5.85 Kwh Regular 5.85 Kwh		Half Dice: 4.66 Kwh Dice: 4.66 Kwh
Ice Making Water Inlet	Connection Size - 3/8" FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4.4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.3 bar) Maximum 80 psig (5.5 bar)
Condenser Water Inlet	Connection Size - 3/8" FPT (Female Pipe Thread)	Water Temperature - Minimum 40°F (4.4°C) Maximum 90°F (32°C)	Water Pressure - Minimum 20 psig (1.3 bar) Maximum 150 psig (10.3 bar)
Ice Making Water Drain	Connection Size - 1/2" FPT (Female Pipe Thread)		
Condenser Water Drain	Connection Size - 1/2" FPT (Female Pipe Thread)		
Bin Drain	Connection Size - 1/2" FPT (Female Pipe Thread)		
Potable Water Use	15.5 gallons per 100 lbs of ice 58.67 liters per 45.5 kg of ice		
Electrical	115V/60Hz/1Ph	208-230V/60Hz/1Ph	230V/50Hz/1Ph
	Air: Min Circuit Amps - 8.0 Max Fuse Size - 15 amp Water: Min Circuit Amps - 7.0 Max Fuse Size - 15 amp	Min Circuit Amps - 5.0 Max Fuse Size - 15 amp	Min Circuit Amps - 5.0 Max Fuse Size - 15 amp
Compressor Nominal Rating	0.5 HP		
Heat of Rejection	Air Conditioning 5,500 BTU/hr (1,386 kcal/hr)	Peak 6,500 BTU/hr (1,638 kcal/hr)	
Fan Cycle Control Settings	Cut-in - 250 psig (17 bar)	Cut-out - 200 psig (14 bar)	
High Pressure Settings	Cut-in - 250 psig (17 bar)	Cut-out - 350 psig (24 bar)	
Dimensions	Height	Width	Depth
	38.5 in (980 mm) with legs	30.0 in (765 mm)	28.5 in (725 mm)
Clearances	Top	Side	Back
	5.0 in (130 mm)	5.0 in (130 mm)	5.0 in (130 mm)

Self Contained Air-cooled Ice Machines

Cycle Times

Freeze Time + Harvest Time = Total Cycle Time

Air Temperature Around the Unit	Freeze Time (Minutes)			Harvest Time
	Water Temperature			
	50°F 10°C	70°F 21°C	90°F 32°C	
70°F 21°C	10.8-11.5	11.6-13.6	14.0-16.0	1.0-2.5
80°F 27°C	11.0-12.1	12.5-14.0	13.5-15.5	
90°F 32°C	11.3-12.8	13.5-15.7	15.2-17.5	
100°F 38°C	12.1-14.2	15.2-17.5	17.5-20.0	
110°F 43°C	15.5-17.8	19.3-21.8	21.2-24.1	
Cycle times and pressures vary with operating condition. Production and cycle times are for dice cube - Half dice cube cycle times can be 2 - 3 minutes faster, depending on water and ambient temperature				

24 Hour Ice Production

Air Temperature Around the Unit	Water Temperature		
	50°F 10°C	70°F 21°C	90°F 32°C
70°F 21°C	305 lbs 138 kgs	265 lbs 120 kgs	235 lbs 107 kgs
80°F 27°C	295 lbs 134 kgs	255 lbs 116 kgs	225 lbs 102 kgs
90°F 32°C	280 lbs 127 kgs	235 lbs 107 kgs	210 lbs 95 kgs
100°F 38°C	255 lbs 116 kgs	210 lbs 95 kgs	185 lbs 84 kgs
110°F 43°C	210 lbs 95 kgs	170 lbs 77 kgs	155 lbs 70 kgs
Ice slab weight of one harvest cycle = 2.3 lbs to 2.9 lbs (1.0 kgs to 1.3 kgs).			

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	150-220 psig 10.3-15.2 bar	40-9 psig 2.8-0.6 bar
70°F 21°C	150-220 psig 10.3-15.2 bar	46-9 psig 3.2-0.6 bar
80°F 27°C	150-230 psig 10.3-15.9 bar	53-10 psig 3.7-0.7 bar
90°F 32°C	175-245 psig 12.1-16.9 bar	58-11 psig 4.0-0.8 bar
100°F 38°C	220-270 psig 15.2-18.6 bar	60-11 psig 4.1-0.8 bar
110°F 43°C	250-300 psig 17.2-20.7 bar	62-12 psig 4.3-0.8 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	100-115 psig 6.9-7.9 bar	55-70 psig 3.8-4.8 bar
70°F 21°C	100-120 psig 6.9-8.3 bar	55-75 psig 3.8-5.2 bar
80°F 27°C	115-130 psig 7.9-9.0 bar	55-85 psig 3.8-5.9 bar
90°F 32°C	130-150 psig 9.0-10.3 bar	55-95 psig 3.8-6.6 bar
100°F 38°C	150-170 psig 10.3-11.7 bar	60-110 psig 4.1-7.6 bar
110°F 43°C	170-185 psig 11.7-12.8 bar	85-125 psig 5.9-8.6 bar

Storage Capacity

Storage Bin Capacity*
119 lbs (54 kg)
*Storage Capacity is AHRI certified.

NOTE: Ice Production Derate %

- 60Hz Dice and Half Dice production derate as shown
- 60Hz Regular cube production derate is 7%.
- 50Hz Dice and Half Dice production derate is 12%.
- 50Hz Regular cube production derate is 14%.

Self Contained Water-cooled Ice Machines

Cycle Times

Freeze Time + Harvest Time = Total Cycle Time

Air Temperature Around the Unit	Freeze Time (Minutes)			Harvest Time
	Water Temperature			
	50°F 10°C	70°F 21°C	90°F 32°C	
70°F 21°C	9.8-13.1	11.2-12.8	11.9-13.5	1.0-2.5
80°F 27°C	10.0-11.2	11.4-13.0	12.3-13.8	
90°F 32°C	10.0-11.4	12.1-14.1	13.0-15.0	
100°F 38°C	10.3-11.7	12.2-14.2	13.2-15.1	
110°F 43°C	10.5-12.2	12.5-14.5	13.4-15.4	

Cycle times and pressures vary with operating condition.
Production and cycle times are for dice cube - Half dice cube cycle times can be 2 - 3 minutes faster, depending on water and ambient temperature

24 Hour Ice Production

Air Temperature Around the Unit	Water Temperature		
	50°F 10°C	70°F 21°C	90°F 32°C
70°F 21°C	305 lbs 138 kgs	265 lbs 120 kgs	235 lbs 107 kgs
80°F 27°C	300 lbs 136 kgs	255 lbs 116 kgs	225 lbs 102 kgs
90°F 32°C	295 lbs 134 kgs	235 lbs 107 kgs	210 lbs 95 kgs
100°F 38°C	290 lbs 132 kgs	250 lbs 113 kgs	235 lbs 107 kgs
110°F 43°C	270 lbs 122 kgs	245 lbs 111 kgs	230 lbs 104 kgs

Ice slab weight of one harvest cycle = 2.3 lbs to 2.9 lbs (1.0 kgs to 1.3 kgs).

Operating Pressures - Freeze Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	160-180 psig 11.0-12.4 bar	36-14 psig 2.5-1.0 bar
70°F 21°C	160-180 psig 11.0-12.4 bar	37-15 psig 2.6-1.0 bar
80°F 27°C	160-180 psig 11.0-12.4 bar	37-15 psig 2.6-1.0 bar
90°F 32°C	160-180 psig 11.0-12.4 bar	42-12 psig 2.9-0.8 bar
100°F 38°C	160-180 psig 11.0-12.4 bar	42-14 psig 2.9-1.0 bar
110°F 43°C	160-180 psig 11.0-12.4 bar	45-14 psig 2.9-1.0 bar

Operating Pressures - Harvest Cycle

Air Temperature Around the Unit	Discharge Pressure	Suction Pressure
50°F 10°C	100-140 psig 6.9-9.7 bar	55-70 psig 3.8-4.8 bar
70°F 21°C	100-140 psig 6.9-9.7 bar	55-70 psig 3.8-4.8 bar
80°F 27°C	100-140 psig 6.9-9.7 bar	55-70 psig 3.8-4.8 bar
90°F 32°C	110-160 psig 7.6-11.0 bar	55-75 psig 3.8-5.2 bar
100°F 38°C	110-160 psig 7.6-11.0 bar	55-75 psig 3.8-5.2 bar
110°F 43°C	110-160 psig 7.6-11.0 bar	55-75 psig 3.8-5.2 bar

Condenser Water Consumption

Ice Production	Water Usage
100 lbs 45.4 kgs	160 Gallons 605 Liters

Water Regulating Valve set point: 235 psig (16.2 bar)

Storage Capacity

Storage Bin Capacity*
119 lbs (54 kg)

*Storage Capacity is AHRI certified.

NOTE: Ice Production Derate %

- 60Hz Dice and Half Dice production derate as shown
- 60Hz Regular cube production derate is 7%.
- 50Hz Dice and Half Dice production derate is 12%.
- 50Hz Regular cube production derate is 14%.