



Product Catalog

Model #: RTWD 120F 2G01 A1A1 AA2A 1A1Y 1B1A 0B00 0000 0000 00A1 00D0
Serial #: U18D00749

Year: 2018
Size: 120 Tons

Series R[®] Helical Rotary Liquid Chillers
80 to 250 Nominal Tons Model RTWD Water-Cooled
80 to 250 Nominal Tons Model RTUD Condenserless
Made in USA (60 Hz)



Shipping Weight: 6,248 lbs.
Operating Weight: 6,530 lbs.

L: 11' 7" W: 2' 11" H: 6' 5"

October 2016

RLC-PRC029H-EN





RTWD 120 F 2 G0 1 A 1 A 1 A A 2 A 1 A 1 Y 1 B 1 A 0 B 0 0 0 0 0 0 0 0

Model Number Descriptions

Digits 1-4 — Chiller Model

RTWD= Water-Cooled Series R® Chiller

RTUD= Series R® Compressor Chiller

Digits 5-7 — Unit Nominal Tonnage

060 =	60 Nominal Tons
070 =	70 Nominal Tons
080 =	80 Nominal Tons
090 =	90 Nominal Tons
100 =	100 Nominal Tons
110 =	110 Nominal Tons
120 =	120 Nominal Tons
130 =	130 Nominal Tons
140 =	140 Nominal Tons
150 =	150 Nominal Tons
160 =	160 Nominal Tons
180 =	180 Nominal Tons
200 =	200 Nominal Tons
220 =	220 Nominal Tons
250 =	250 Nominal Tons

Digit 8 — Unit Voltage

A =	200/60/3
B =	230/60/3
D =	380/60/3
F =	460/60/3
G =	575/60/3

Digit 9 — Manufacturing Plant

2 =	Pueblo, USA
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Digits 10, 11 — Design Sequence

** =	Factory Assigned
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Digit 12 — Unit Type

1 =	Standard Efficiency/Performance
2 =	High Efficiency/Performance
3 =	Premium Efficiency/Performance

Digit 13 — Agency Listing

0 =	No Agency Listing
A =	UL Listed to US and Canadian Safety Standards
D =	IBC Seismically Rated Unit
E =	UL/Canadian and IBC
F =	OSHDP Seismically Rated Unit
G =	UL/Canadian and OSHDP

Digit 14 — Pressure Vessel Code

1 =	ASME Pressure Vessel Code
3 =	Chinese Code Pressure Vessel
S =	Special

Digit 15 — Unit Application

A =	Std Condenser <=95°F/35°C Entering Water Temperature
B =	High Temperature Condenser >95°F/35°C Entering Water Temp
C =	Water-to-Water Heat Pump
D =	Remote Condenser by Trane
E =	Remote Condenser by Others

Digit 16 — Pressure Relief Valve

1 =	Single Relief Valve
2 =	Dual Relief Valve with 3-Way Isolation Valve

Digit 17 — Water Connection Type

A =	Grooved Pipe - Standard
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Digit 18 — Evaporator Tubes

A =	Internal and External Enhanced Evap Tube
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Digit 19 — Evaporator Passes

2 =	2-Pass Evaporator
3 =	3-Pass Evaporator

Digit 20 — Evaporator Water Side Pressure

A =	150 psi/10.5 bar Evaporator Water Pressure
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Digit 21 — Evaporator Application

1 =	Standard Cooling
2 =	Low Temperature
3 =	Ice Making

Digit 22 — Condenser Tubes

A =	Enhanced Fin - Copper
B =	Internally Enhanced 90/10 CuNi Fin
X =	Remote Condenser

Digit 23 — Condenser Water Side Pressure

0 =	Remote Condenser
1 =	150 psi/10.5 Bar Condenser Water Pressure

Digit 24 — Compressor Starter Type

X =	Across-the-Line Starter
Y =	Wye-Delta Closed Transition Starter

Digit 25 — Incoming Power Line Connection

1 =	Single Point Power Connection
2 =	Dual Point Power Connection

Digit 26 — Power Line Connection Type

A =	Terminal Block
B =	Mechanical Disconnect Switch
D =	Circuit Breaker
E =	High Fault Rated Panel with Circuit Breaker

Digit 27 — Under/Over Voltage Protection

0 =	No Under/Over Voltage Protection
1 =	Under/Over Voltage Protection

Digit 28 — Unit Operator Interface

A =	DynaView™/English
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Digit 29 — Remote Interface (Digital Comm)

0 =	No Remote Digital Comm
1 =	LonTalk®/Tracer™ Summit Interface
2 =	Time of Day Scheduling
4 =	BACnet® Interface

Digit 30 — External Water and Current Limit Setpoint

0 =	No External Water and Current Limit Setpoint
A =	External Water and Current Limit Setpoint 4-20 mA
B =	External Water and Current Limit Setpoint 2-10 Vdc

Digit 31 — Ice Making

0 =	No Ice Making
A =	Ice Making with Relay
B =	Ice Making without Relay

Digit 32 — Programmable Relays

0 =	No Programmable Relay
A =	Programmable Relay

Digit 33 — Condenser Refrigerant Pressure Output

0 =	No Condenser Refrigerant Output
1 =	Condenser Water Control Output
3 =	Differential Pressure Output

Digit 34 — Outdoor Air Temp Sensor

0 =	No Outdoor Air Temp Sensor
A =	Outdoor Air Temp Sensor - CWR Low Ambient

Digit 35 — Condenser Leaving Hot Water Temp Control

0 =	No Condenser Leaving Hot Water Temp Control
1 =	Condenser Leaving Hot Water Temp Control

Digit 36 — Power Meter

0 =	No Power Meter
P =	Power Meter

Digit 37 — Motor Current Analog Output (%RLA)

0 =	No Motor Current Analog Output
1 =	Motor Current Analog Output

Digit 38 — A/C Fan Control

0 =	No Fan Controls (RTWD)
A =	Fan Control By Others
B =	Integral Fan Controls



Model Number Descriptions

0000A100D0

Digit 39 — Low Ambient Fan Control

0 = No Low Ambient Fan Control (RTWD)

- 1 = Two Speed Fans
- 2 = Variable Speed Fan with Analog Interface
- 3 = Variable Speed Fan with PWM Interface

Digit 40 — Installation Accessories

0 = No Installation Accessories

- A = Elastomeric Isolators
- B = Flanged Water Connection Kit
- C = Isolators and Flanged Water Connection Kit

Digit 41 — Flow Switch

0 = No Flow Switch

- 1 = 150 psi NEMA 1: Flow Switch x 1
- 2 = 150 psi NEMA 1: Flow Switch x 2
- 3 = 150 psi NEMA 4: Flow Switch x 1
- 4 = 150 psi NEMA 4: Flow Switch x 2
- 7 = Factory Installed Proof of Flow (Evap/Cond)
- 8 = Factor Installed Proof of Flow (Evap)

Digit 42 — 2-Way Water Regulating Valve

0 = No 2-Way Water Regulating Valve

- A = 3" 150 psi/88.9 mm 10.5 bar 115V
- B = 3" 150 psi/88.9 mm 10.5 bar 220V
- C = 4" 150 psi/114.3 mm 10.5 bar 115V
- D = 4" 150 psi/114.3 mm 10.5 bar 220V

Digit 43 — Sound Reduction Package

0 = No Sound Reduction Package

A = Sound Reduction - Factory Installed

Digit 44 — Insulation

- 0 = No Insulation
- 1 = Factory Insulation - All Cold Parts
- 2 = Insulation for High Humidity

Digit 45 — Factory Charge

0 = Full Factory Refrigerant Charge (R-134a)

- 1 = Nitrogen Charge
- 5 = Full Factory Refrigerant Charge (R-513A)

Digit 46 — Base Rail Forklifting

0 = No Base Rail Forklifting

B = Base Rail Forklifting

Digit 47 — Label and Literature Language

- B = Spanish
- D = English
- E = French
- G = Chinese - Traditional

Digit 48 — Special

0 = None

- F = Ship to Final Finisher
- S = Special

Digits 49-55

0 = Not Used

Digit 56 — Shipping Package

- 0 = No Skid (Standard)
- 1 = Skid
- 2 = Shrink Wrap
- 3 = Skid + Shrink Wrap

Digit 59 — Performance Test

- 0 = No Performance Test
- C = 1-Point Test with Report
- D = 2-Point Test with Report
- E = 3-Point Test with Report
- F = 4-Point Test with Report
- G = Witness 1-Point Test with Report
- G = Witness 1-Point Test with Report Rapid Restart
- H = Witness 2-Point Test with Report
- J = Witness 3-Point Test with Report
- K = Witness 4-Point Test with Report
- K = Witness 4-Point Test with Report Rapid Restart

Digit 60 — Evaporator Fluid Type

- 0 = Water
- 1 = Calcium Chloride
- 2 = Ethylene Glycol
- 3 = Propylene Glycol
- 4 = Methanol

Digit 61 — Condenser Fluid Type

- 0 = Water
- A = Calcium Chloride
- B = Ethylene Glycol
- C = Propylene Glycol
- D = Methanol
- E = Air-Cooled Condenser



General Data

Table 1. General data – RTWD, 60 Hz, standard efficiency

Size		80	90	100	110	120	130	140
Compressor								
Quantity		2	2	2	2	2	2	2
Evaporator								
		2 Pass Arrangement						
Water Conn. Size	NPS	4	4	4	4	5	5	5
	mm	100	100	100	100	125	125	125
Water Storage	gal	11.2	11.2	12.6	14.0	15.2	16.2	17.7
	l	42.2	42.2	47.6	53.0	57.4	61.5	66.8
Minimum Flow	gpm	77	77	89	101	101	110	122
	l/s	4.9	4.9	5.6	6.3	6.3	6.9	7.6
Maximum Flow	gpm	281	281	325	368	368	400	444
	l/s	17.8	17.8	20.5	23.2	23.2	25.3	28.0
		3 Pass Arrangement						
Water Conn. Size	NPS	3	3	3	3	4	4	4
	mm	80	80	80	80	100	100	100
Water Storage	gal	11.2	11.2	12.6	14.0	15.2	16.2	17.7
	l	42.2	42.2	47.6	53.0	57.4	61.5	66.8
Minimum Flow	gpm	52	52	59	67	67	73	81
	l/s	3.2	3.2	3.7	4.2	4.2	4.6	5.1
Maximum Flow	gpm	187	187	216	244	244	266	295
	l/s	11.8	11.8	13.6	15.5	15.5	16.8	18.6
Condenser								
Water Conn. Size	NPS	5	5	5	5	5	5	5
	mm	125	125	125	125	125	125	125
Water Storage	gal	12.4	14.2	16.0	16.9	18.5	18.5	20.9
	l	46.8	53.6	60.4	63.8	70.1	70.1	79.2
Minimum Flow	gpm	83	99	115	124	135	135	156
	l/s	5.2	6.2	7.3	7.8	8.5	8.5	9.8
Maximum Flow	gpm	301	361	421	451	491	491	572
	l/s	19.0	22.8	26.6	28.5	31.0	31.0	36.1
General Unit								
Refrigerant Type		R-134a or R-513A						
# Refrig Circuits		2	2	2	2	2	2	2
Refrigerant Charge	lb	114.6/114.6	114.6/114.6	112.4/114.6	112.4/112.4	132.3/132.3	130.1/130.1	127.9/132.3
	kg	52/52	52/52	51/52	51/51	60/60	59/59	58/60
Oil Type		OIL00048						
Oil Charge	qt	7.2/7.2	7.2/7.2	7.2/10.5	10.5/10.5	10.5/10.5	10.5/10.5	10.5/10.5
	l	6.8/6.8	6.8/6.8	6.8/9.9	9.9/9.9	9.9/9.9	9.9/9.9	9.9/9.9

Notes:

1. Data containing information on two circuits is shown as circuit 1/circuit 2.
2. Flow limits are for water only.

Electrical Data

Electrical Data Tables

Table 9. Electrical data — RTWD, 60 Hz, standard efficiency, standard condensing temperature

Unit Size Rated Voltage		Unit Wiring				Motor Data		
		Single Point Power - 1 Power Connection		Dual Point Power - 2 Power Connections				
		MCA	MOP	MCA	MOP	RLA	LRA YD	LRA XL
80	200/60/3	216	300	122/118	200/200	94/94	276/276	912/912
	230/60/3	188	250	106/103	175/175	82/82	238/238	786/786
	380/60/3	115	150	65/63	110/110	50/50	138/138	456/456
	460/60/3	94	125	53/51	90/90	41/41	114/114	376/376
	575/60/3	76	100	43/41	70/70	33/33	93/93	308/308
90	200/60/3	249	350	140/136	225/225	109/109	304/304	1003/1003
	230/60/3	217	300	122/119	200/200	95/95	262/262	866/866
	380/60/3	130	175	73/71	125/125	57/57	161/161	530/530
	460/60/3	110	150	62/60	100/100	48/48	131/131	433/433
	575/60/3	87	110	49/48	80/80	38/38	105/105	346/346
100	200/60/3	291	400	140/178	225/300	109/142	304/355	1003/1137
	230/60/3	252	350	122/154	200/250	95/123	262/294	866/942
	380/60/3	153	225	73/94	125/150	57/75	161/177	530/566
	460/60/3	127	175	62/78	100/125	48/62	131/147	433/471
	575/60/3	102	150	49/63	80/110	38/50	105/118	346/377
110	200/60/3	324	450	182/178	300/300	142/142	355/355	1137/1137
	230/60/3	280	400	157/154	250/250	123/123	294/294	942/942
	380/60/3	171	225	96/94	150/150	75/75	177/177	566/566
	460/60/3	141	200	80/78	125/125	62/62	147/147	471/471
	575/60/3	114	150	64/63	110/110	50/50	118/118	377/377
120	200/60/3	356	500	182/210	300/350	142/168	355/419	1137/1368
	230/60/3	309	450	157/183	250/300	123/146	294/367	942/1200
	380/60/3	187	250	96/110	150/175	75/88	177/229	566/747
	460/60/3	155	225	79/91	125/150	62/73	147/184	471/600
	575/60/3	125	175	64/74	110/125	50/59	118/148	377/483
130	200/60/3	382	500	214/210	350/350	168/168	419/419	1368/1368
	230/60/3	332	450	186/183	300/300	146/146	367/367	1200/1200
	380/60/3	200	250	112/110	200/175	88/88	229/229	747/747
	460/60/3	166	225	93/91	150/150	73/73	184/184	600/600
	575/60/3	134	175	75/74	125/125	59/59	148/148	483/483
140	200/60/3	425	600	214/253	350/450	168/202	419/487	1368/1498
	230/60/3	368	500	186/219	300/350	146/175	367/427	1200/1314
	380/60/3	223	300	112/133	200/225	88/106	229/260	747/801
	460/60/3	185	250	93/110	150/175	73/88	184/212	600/652
	575/60/3	148	200	75/88	125/150	59/70	148/172	483/528

Notes:

1. Voltage Utilization Range: +/- 10% of rated voltage
Rated voltage (use range): 208/60/3 (187.2-228.8), 230/60/3 (208-254), 380/60/3 (342-418), 460/60/3 (414-506), 575/60/3 (516-633)
2. MCA—minimum circuit ampacity
3. MOP—maximum overcurrent protection
4. RLA—rated load amps are rated in accordance with UL Standard 1995.
5. LRA—locked rotor amps are based on full winding starts.
6. LRA YD—Locked Rotor Amps in Wye configuration. LRA XL—Locked Rotor Amps in the Delta configuration.
7. Local codes may take precedence.
8. Data containing information on two circuits shown as follows: circuit 1/circuit 2.
9. Standard condensing temperature option refers to entering condenser water temperatures 95°F (35°C) and below.

Dimensions

Unit Dimensions

Figure 11. **RTWD/RTUD 80 to 140 tons, 60 Hz**

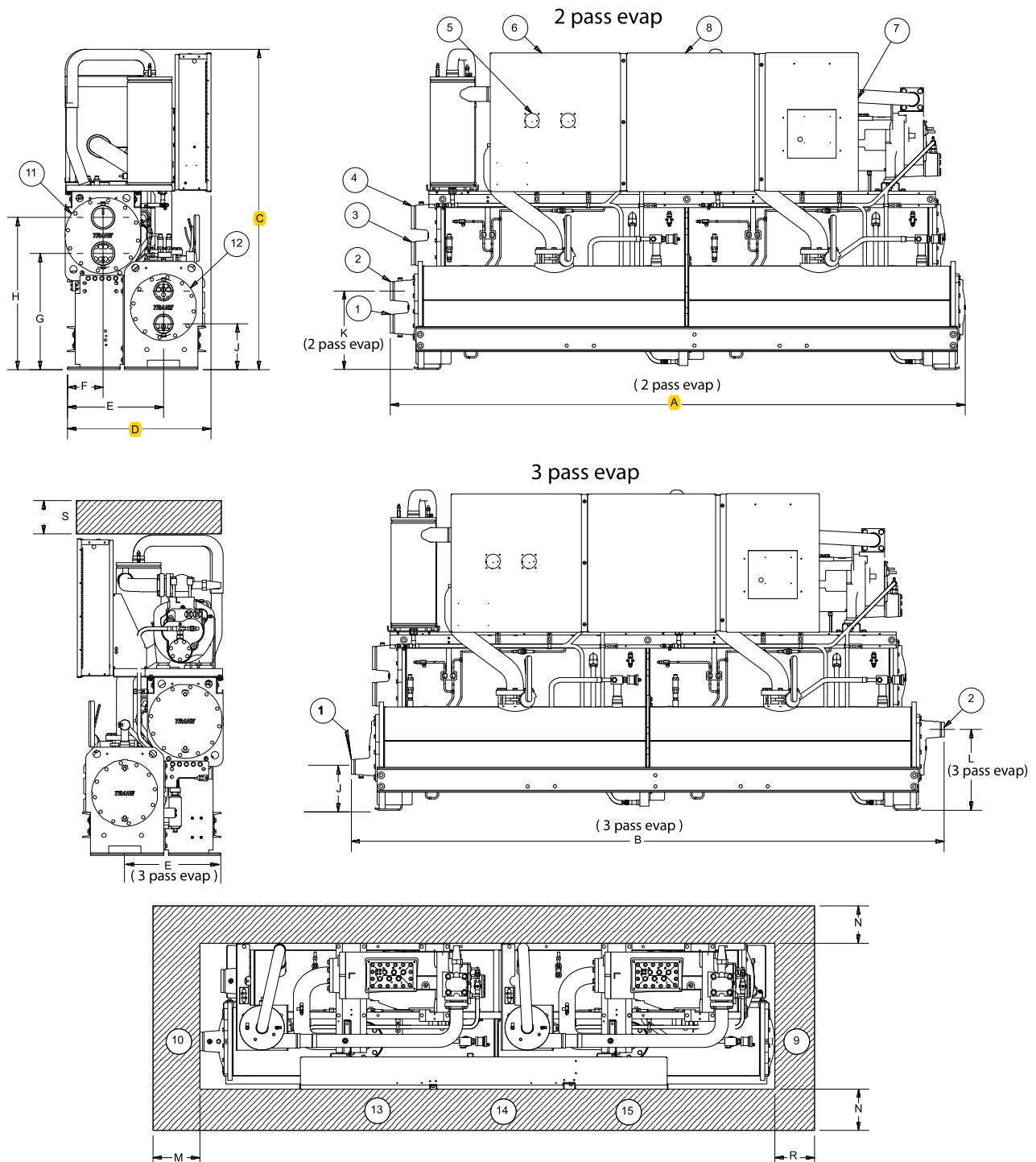


Table 28. RTWD/RTUD, 80 to 140 tons, 60 Hz — in (mm)

	Standard Efficiency			RTWD/RTUD - High Efficiency	
	80,90T	100,110T	120,130,140T	80,90T	100,110,120,130T
A (2 pass evap)	138.2 (3510)	138.2 (3510)	138.8 (3525)	126.4 (3210)	126.9 (3225)
B (3 pass evap)	142.6 (3621)	142.6 (3621)	142.6 (3621)	130.8 (3321)	130.7 (3320)
C	75.9 (1929)	76.9 (1955)	76.9 (1955)	76.1 (1933)	76.9 (1955)
D	34.3 (871)	34.3 (871)	34.8 (884)	35.1 (890)	35.1 (890)
E	23.6 (600)	23.6 (600)	23.6 (600)	23.6 (600)	23.6 (600)
F	9.1 (231)	9.1 (231)	9.1 (231)	9.1 (231)	9.1 (231)
G	27.9 (709)	27.9 (709)	27.9 (709)	27.9 (709)	27.9 (709)
H	36.6 (929)	36.6 (929)	36.6 (929)	36.6 (929)	36.6 (929)
J (2 pass evap)	11.0 (280)	11.0 (280)	10.6 (268)	10.8 (273)	11.8 (299)
J (3 pass evap)	10.4 (265)	10.4 (265)	10.1 (256)	10.2 (258)	11.3 (287)
K (2 pass evap)	18.9 (479)	18.9 (479)	19.2 (487)	18.6 (472)	20.4 (519)
L (3 pass evap)	19.5 (495)	19.5 (495)	19.5 (496)	19.2 (488)	19.2 (487)
M	36 (914)	36 (914)	36 (914)	36 (914)	36 (914)
N*	36 (914)*	36 (914)*	36 (914)*	36 (914)*	36 (914)*
R	127 (3226)	127 (3226)	127 (3226)	115 (2921)	115 (2921)
S	36 (914)	36 (914)	36 (914)	36 (914)	36 (914)

Reference

- 1 Evaporator Water Inlet
- 2 Evaporator Water Outlet
- 3 Condenser Water Inlet (RTWD only)
- 4 Condenser Water Outlet (RTWD only)
- 5 Power Disconnect
- 6 Power Wire
- 7 Control Wire
- 8 Control Panel
- 9 Condenser Return Waterbox End (RTWD only) - minimum clearance (for tube removal)
- 10 Condenser Supply Waterbox End (RTWD only) - minimum clearance (for maintenance)
- 11 Condenser (RTWD only)
- 12 Evaporator
- 13 Panel Power Section - door swing 31.3 inch (796.9 mm)
- 14 Panel Power Section - door swing 31.1 inch (790.1 mm)
- 15 Panel Control Section - door swing 22.4 inch (568.14 mm)
- * 42 inch (1067 mm) clearance required to other ground parts, two units with panels facing each other or other live parts require a clearance of 48 inch (1220 mm)
- ** Sound attenuator may increase the footprint - submittal should be used.



Weights

RTWD

Table 31. **Weights — RTWD, 60 Hz**

Model	Standard Efficiency				High Efficiency				Premium Efficiency			
	Operating		Shipping		Operating		Shipping		Operating		Shipping	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
80	5900	2676	5703	2587	5732	2600	5551	2518	-	-	-	-
90	5933	2691	5721	2595	5792	2627	5587	2534	-	-	-	-
100	6140	2785	5902	2677	6255	2837	6025	2733	-	-	-	-
110	6332	2872	6074	2755	6475	2937	6208	2816	-	-	-	-
120	6530	2962	6248	2834	6510	2953	6230	2826	-	-	-	-
130	6535	2964	6244	2832	6543	2968	6248	2834	-	-	-	-
140	6971	3162	6649	3016	-	-	-	-	-	-	-	-
150	-	-	-	-	7884	3576	7544	3422	8724	3957	8243	3739
160	-	-	-	-	8395	3808	8036	3645	9171	4160	8691	3942
180	-	-	-	-	8490	3851	8098	3673	9290	4214	8772	3979
200	-	-	-	-	8578	3891	8157	3700	9337	4235	8803	3993
220	-	-	-	-	9493	4306	8995	4080	-	-	-	-
250	-	-	-	-	10071	4568	9478	4299	-	-	-	-

Note: Weights include optional base rail fork lifting. Subtract 300 lbs (136.1 kg) if this option is not selected.