



Pathfinder™ Air-Cooled Chillers

Catalog 623

Model AWS-C • Standard, High, & Premium Efficiencies
Includes VFD models • 170 to 550 tons • 600 to 1930 kW •

R-134a • 60Hz

Model #: AWS550CTSEWNN-ER10
Serial #: STNU131000054

Year: 2013
Size: 550 Tons



Shipping Weight: 28,444 lbs
Operating Weight: 29,643 lbs

L: 48' 4"
W: 7' 4"
H: 8' 4"



Daikin Pathfinder® Chillers

The Daikin Pathfinder air-cooled chillers continue our legacy of high quality, high efficiency, advanced technology and quiet operation. Pathfinder chillers feature Daikin Applied's unique single screw compressor design with a reputation for quiet operation and have a new ultra-quiet fan, making them "neighborhood friendly". Superior control is

provided by the innovative Daikin MicroTech® III family of controllers. They can easily interface with your building's automation system using the optional Daikin Open Choice feature, which uses factory- (or field-) installed LONWORKS, BACnet or Modbus communication modules. Pathfinder chillers provide the best overall value in air-cooled screw chillers available today!

Customer Benefits

Superior Efficiency

- Standard, High and Premium efficiency models available
- Optional compressor VFD for optimized efficiency
- Electronic expansion valve control
- True counter flow evaporator design
- High efficiency lanced condenser fins
- Potential contribution to LEED® points

Quiet Operation

- Single-rotor compressor design
- New patented ultra-quiet, low-speed fans

Superior Controls Logic

- Easy to read 4-line by 20-character LCD display
- Supports standard open protocols: LONTALK, BACnet or Modbus
- Superior reliability under extreme operating conditions

Outstanding Reliability

- Multiple compressors with independent circuits
- Rugged compressor design using advanced composite compressor gaterotor material
- Proactive controls logic
- Full factory-run-testing to optimize trouble-free operation*
- Factory authorized supervision of startup

Options

Efficiency options available with Pathfinder chillers:

- **Standard Efficiency** models are designed to meet ASHRAE 90.1 efficiency standard and provide the lowest dollar per ton price. Ratings begin on [page 16](#).
- **High and Premium Efficiency** models utilize an economizer for improved efficiency.
- **Variable Frequency Drive (VFD)** for each compressor to provide the most efficient compressor speed matched to cooling load and ambient air temperature.
- **High Ambient Operation** is a factory-installed option that allows operation in locations with operating temperatures 100°F - 125°F (38°C to 51°C).
- **Remote Evaporator** models provide application flexibility, allowing evaporator to be installed indoors. Technical details for remote evaporator models can be found in IOM 1203, available on www.DaikinApplied.com.

Other Options:

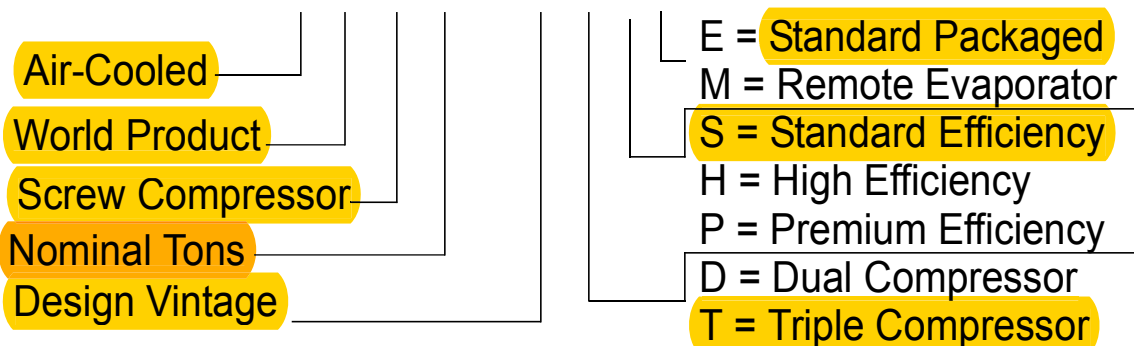
- Single-point power connections
- Choice of Solid State or Wye-Delta starter
- Double evaporator insulation for low temperature operation
- Remote User Interface
- RapidRestore™ and Fast Loading for mission-critical applications

**Packaged models only; Models with Remote Evap are sequence-tested.*

Pathfinder Chiller Nomenclature

A W S 5 5 0 C T S E

A W S XXX C D SE



Performance Data (non-VFD)

Table 7: Performance Data 60 Hz Standard Efficiency non-VFD Models AWS525-550CTS (I-P Units)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
AWS 525 CTS	60	29.1	40°F	543.0	525.8	12.4	514.0	572.1	10.8	482.4	621.1	9.3	448.3	672.7	8.0	411.6	726.8	6.8
			42°F	562.4	537.1	12.6	532.4	584.2	10.9	499.9	634.0	9.5	464.8	686.3	8.1	427.3	741.2	6.9
			44°F	582.2	548.7	12.7	551.2	596.6	11.1	517.7	647.1	9.6	481.8	700.2	8.3	443.4	755.8	7.0
			46°F	602.3	560.5	12.9	570.3	609.2	11.2	535.9	660.6	9.7	499.0	714.4	8.4	459.8	770.8	7.2
			48°F	622.6	572.6	13.0	589.7	622.2	11.4	554.4	674.3	9.9	516.7	728.9	8.5	471.6	775.4	7.3
			50°F	643.3	585.1	13.2	609.5	635.4	11.5	573.2	688.4	10.0	534.6	743.8	8.6	483.2	780.0	7.4
AWS 550 CTS	60	31.2	40°F	573.5	555.7	12.4	543.1	604.8	10.8	509.9	656.9	9.3	474.1	711.7	8.0	435.6	769.3	6.8
			42°F	594.0	567.5	12.6	562.6	617.5	10.9	528.4	670.3	9.5	491.6	726.0	8.1	452.2	784.4	6.9
			44°F	614.9	579.6	12.7	582.5	630.4	11.1	547.3	684.1	9.6	509.6	740.6	8.3	469.2	799.8	7.0
			46°F	636.2	592.0	12.9	602.7	643.7	11.2	566.6	698.2	9.7	527.8	755.5	8.4	486.6	815.5	7.2
			48°F	657.7	604.7	13.1	623.2	657.2	11.4	586.1	712.6	9.9	546.5	770.7	8.5	504.3	831.5	7.3
			50°F	679.6	617.7	13.2	644.1	671.1	11.5	606.1	727.3	10.0	565.5	786.2	8.6	522.4	847.8	7.4

Table 8: Performance Data 60 Hz High Efficiency non-VFD Models AWS210-280CDH (I-P Units)

Unit Size	Hz	Fan Power (kW)	LWT (°F)	Ambient Air Temperature														
				75°F			85°F			95°F			105°F			115°F		
				Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER	Unit Tons	Power kW	Unit EER
AWS 210 CDH	60	12.5	40°F	205.7	184.7	13.4	199.5	206.3	11.6	191.0	231.6	9.9	180.2	260.5	8.3	167.2	292.8	6.9
			42°F	213.6	188.4	13.6	207.1	210.2	11.8	198.3	235.6	10.1	187.2	264.5	8.5	173.9	296.7	7.0
			44°F	221.6	192.3	13.8	214.8	214.2	12.0	205.7	239.7	10.3	194.3	268.6	8.7	180.7	300.9	7.2
			46°F	229.7	196.3	14.0	222.7	218.3	12.2	213.3	243.9	10.5	201.6	272.9	8.9	187.6	305.3	7.4
			48°F	238.0	200.3	14.3	230.7	222.5	12.4	221.0	248.3	10.7	209.0	277.4	9.0	194.8	309.8	7.5
			50°F	246.4	204.6	14.5	238.9	226.9	12.6	228.9	252.8	10.9	216.6	282.0	9.2	202.0	314.4	7.7
AWS 230 CDH	60	14.6	40°F	224.0	197.9	13.6	217.7	219.3	11.9	209.0	243.5	10.3	197.9	270.3	8.8	184.6	299.8	7.4
			42°F	232.6	201.8	13.8	226.0	223.5	12.1	217.0	248.0	10.5	205.6	275.1	9.0	192.0	304.7	7.6
			44°F	241.3	205.9	14.1	234.5	227.9	12.3	225.2	252.6	10.7	213.5	279.9	9.2	199.6	309.8	7.7
			46°F	250.3	210.1	14.3	243.2	232.4	12.6	233.6	257.3	10.9	221.6	284.9	9.3	207.4	315.0	7.9
			48°F	259.3	214.4	14.5	252.0	237.0	12.8	242.2	262.2	11.1	229.9	290.0	9.5	215.3	320.4	8.1
			50°F	268.6	218.8	14.7	261.0	241.7	13.0	250.9	267.2	11.3	238.3	295.3	9.7	223.5	325.9	8.2
AWS 250 CDH	60	14.6	40°F	240.9	218.7	13.2	233.3	241.7	11.6	223.4	266.5	10.1	211.1	293.0	8.6	196.5	321.2	7.3
			42°F	250.0	223.3	13.4	242.2	246.8	11.8	231.9	272.0	10.2	219.3	298.9	8.8	204.4	327.5	7.5
			44°F	259.3	228.0	13.6	251.2	251.9	12.0	240.6	277.6	10.4	227.7	305.0	9.0	212.4	334.0	7.6
			46°F	268.8	232.8	13.9	260.4	257.3	12.1	249.5	283.4	10.6	236.2	311.2	9.1	220.7	340.7	7.8
			48°F	278.5	237.8	14.1	269.8	262.7	12.3	258.6	289.3	10.7	245.0	317.6	9.3	229.1	347.5	7.9
			50°F	288.4	242.9	14.2	279.4	268.3	12.5	267.9	295.4	10.9	253.9	324.2	9.4	237.7	354.5	8.0
AWS 280 CDH	60	16.6	40°F	271.4	240.5	13.5	263.2	265.6	11.9	252.1	292.6	10.3	238.4	321.6	8.9	222.2	352.3	7.6
			42°F	281.9	245.5	13.8	273.3	271.2	12.1	261.9	298.7	10.5	247.9	328.1	9.1	231.2	359.3	7.7
			44°F	292.6	250.7	14.0	283.7	276.9	12.3	271.9	304.9	10.7	257.5	334.8	9.2	240.5	366.5	7.9
			46°F	303.5	256.0	14.2	294.2	282.7	12.5	282.1	311.3	10.9	267.4	341.7	9.4	250.0	373.8	8.0
			48°F	314.6	261.5	14.4	305.0	288.8	12.7	292.6	317.9	11.0	277.4	348.8	9.5	259.7	381.4	8.2
			50°F	325.8	267.1	14.6	316.0	294.9	12.9	303.3	324.6	11.2	287.7	356.0	9.7	269.6	389.1	8.3

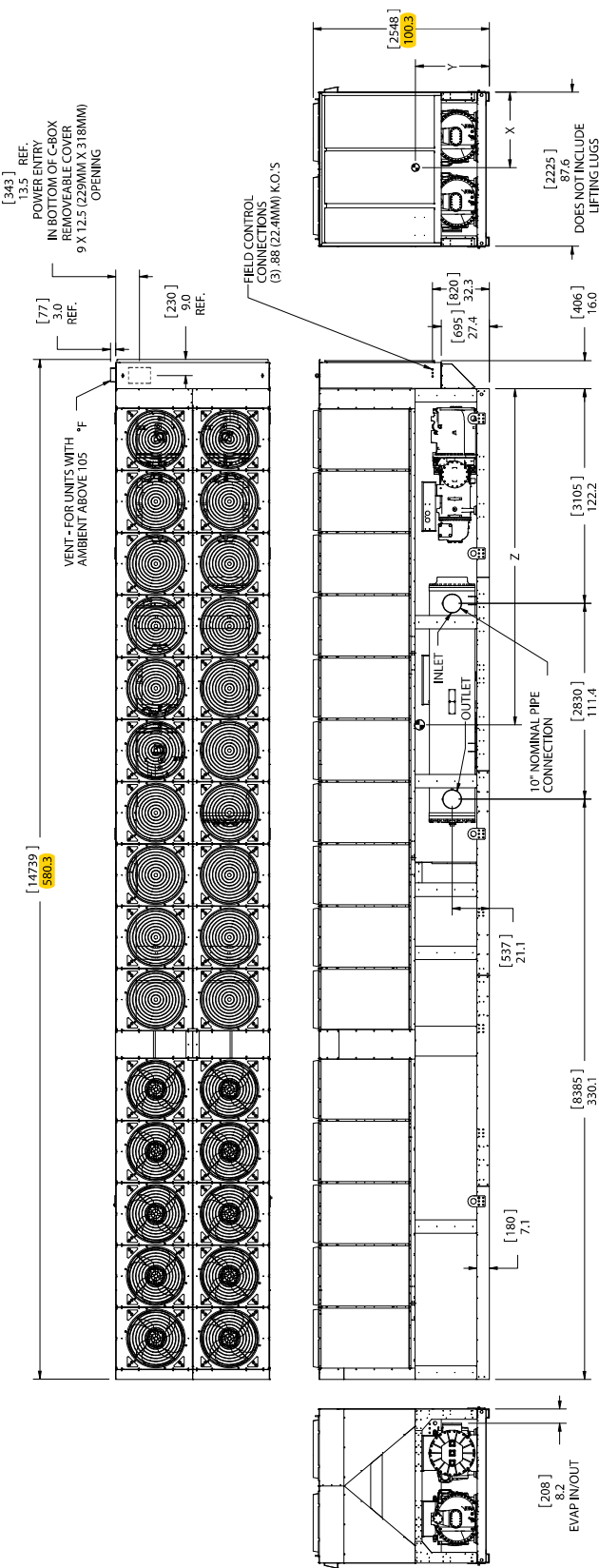
Table 36: Physical Data (60 Hz, Standard Efficiency, non-VFD models)

Data	AWS550CTS		
	CIRCUIT 1	CIRCUIT 2	CIRCUIT 3
BASIC DATA			
Unit Cap. @ AHRI tons (kW)	547.3 (1924)		
Unit Operating Charge lbs (kg)	270 (122)	270 (122)	280 (127)
Unit Dimensions L x W x H, in. (mm)	580 x 88 x 100 (14722 x 2225 x 2548)		
Unit Operating Weight, lbs. (kg)	29643 (13446)		
Unit Shipping Weight, lbs (kg)	28244 (12812)		
Weight-Add for Copper Fins, lbs (kg)	4466 (2026)		
Weight-Add for Louvered Panels, lbs (kg)	1796 (815)		
Weight-Add for Sound Enclosures, lbs (kg)	776 (352)		
Weight-Add for PFCC option, lbs (kg)	120 (55)		
COMPRESSORS, SCREW, SEMI-HERMETIC			
Nominal Capacity, tons (kW)	185 (650)	185 (650)	185 (650)
Minimum Capacity (% of Full Load)	8		
Oil charge per circuit , gallons (liters)	6 (23)	6 (23)	6 (23)
CONDENSERS, HIGH EFFICIENCY FIN AND TUBE TYPE			
Pumpdown Capacity, lbs (kg)	416 (189)	416 (189)	416 (189)
Coil Inlet Face Area, sq. ft. (sq. m.)	246.1 (22.8)	246.1 (22.8)	246.1 (22.8)
Rows Deep/Fins Per Inch	3 / 16	3 / 16	3 / 16
CONDENSER FANS, DIRECT DRIVE PROPELLER TYPE			
Number of Fans per Circuit	10	10	10
Fan Diameter: 31.5 in. (800 mm)			
Fan Motor, hp (kW)	1.4 (1.05)		
Fan & Motor RPM	850		
Fan Tip Speed, fpm (m/s)	6984 (35)		
Airflow, cfm (l/s)	332550 (156945)		
EVAPORATOR, DIRECT EXPANSION SHELL AND TUBE			
Shell Dia.-Tube Length, in.(mm)	26 x 130 / (660 x 3300)		
Water Volume, gallons (liters)	220 (831)		
Victaulic inlet/outlet conn. in. (mm)	10 (273)		
Max. Water Pressure, psi (kPa)	152 (1048)		
Max. Refrigerant Press., psi (kPa)	325 (2241)		

Note: A 20 mesh strainer must be placed in the supply water line just prior to the inlet of the evaporator. Care must be exercised when welding pipe or flanges to the evaporator to prevent any slag from entering the vessel.

Dimensions (non-VFD)

Figure 28: AWS530CTH, AWS550CTS (non-VFD)



MODEL NO.	VOLTAGE	Hz	CENTER OF GRAVITY					
			X		Y		Z	
			IN	MM	IN	MM	IN	MM
AWS530CTH	380-575V	60	43.2	1097	42	1067	191.3	4859
AWS550CTS	480-575V	60	43.6	1107	42.8	1087	188.6	4791

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AWS30FAN.DWG

Note: All dimensions in decimal inches [mm]. Allow 1-inch manufacturing tolerance on all dimensions. The water connection shown is for the default (left-hand) configuration; your unit may be configured differently. This drawing applies to Rev 0B models only. Consult the Item Summary sheet for exact configuration.

Multipoint Electrical Data (non-VFD)

Table 64: Multipoint Electrical Data (60Hz, standard efficiency, non-VFD models)

Model Size	Hz	Voltage	Multiple Point Field Data - Circuit #1			Multiple Point Field Data - Circuit #2			Multiple Point Field Data - Circuit #3		
			Ratings			Ratings			Ratings		
			M C A	R F S	M F S	M C A	R F S	M F S	M C A	R F S	M F S
190 CDS	60	208V	441	600	700	441	600	700	-	-	-
		230V	399	600	600	399	600	600	-	-	-
		380V	242	350	400	242	350	400	-	-	-
		460V	200	300	300	200	300	300	-	-	-
		575V	160	225	250	160	225	250	-	-	-
210 CDS	60	208V	449	600	700	540	800	800	-	-	-
		230V	406	600	600	488	700	800	-	-	-
		380V	246	350	400	296	450	500	-	-	-
		460V	203	300	300	244	350	400	-	-	-
		575V	163	250	250	195	300	300	-	-	-
225 CDS	60	208V	540	800	800	540	800	800	-	-	-
		230V	488	700	800	488	700	800	-	-	-
		380V	296	450	500	296	450	500	-	-	-
		460V	244	350	400	244	350	400	-	-	-
		575V	195	300	300	195	300	300	-	-	-
250 CDS	60	208V	548	800	800	644	1000	1000	-	-	-
		230V	495	700	800	583	800	1000	-	-	-
		380V	300	450	500	353	500	600	-	-	-
		460V	248	350	400	291	450	500	-	-	-
		575V	198	300	300	233	350	400	-	-	-
260 CDS	60	208V	644	1000	1000	644	1000	1000	-	-	-
		230V	583	800	1000	583	800	1000	-	-	-
		380V	353	500	600	353	500	600	-	-	-
		460V	291	450	500	291	450	500	-	-	-
		575V	233	350	400	233	350	400	-	-	-
290 CDS	60	380V	357	500	600	433	600	700	-	-	-
		460V	295	450	500	357	500	600	-	-	-
		575V	235	350	400	285	400	450	-	-	-
310 CDS	60	380V	433	600	700	433	600	700	-	-	-
		460V	357	500	600	357	500	600	-	-	-
		575V	285	400	450	285	400	450	-	-	-
350 CDS	60	380V	441	600	700	489	700	800	-	-	-
		460V	364	500	600	404	600	700	-	-	-
		575V	291	400	500	323	500	500	-	-	-
375 CDS	60	380V	489	700	800	489	700	800	-	-	-
		460V	404	600	700	404	600	700	-	-	-
		575V	323	500	500	323	500	500	-	-	-
400 CTS	60	380V	353	500	600	353	500	600	357	500	600
		460V	291	450	500	291	450	500	295	450	500
		575V	233	350	400	233	350	400	235	350	400
425 CTS	60	380V	353	500	600	353	500	600	433	600	700
		460V	291	450	500	291	450	500	357	500	600
		575V	233	350	400	233	350	400	285	400	450
450 CTS	60	380V	433	600	700	433	600	700	357	500	600
		460V	357	500	600	357	500	600	295	450	500
		575V	285	400	450	285	400	450	235	350	400
470 CTS	60	380V	433	600	700	433	600	700	433	600	700
		460V	357	500	600	357	500	600	357	500	600
		575V	285	400	450	285	400	450	285	400	450
500 CTS	60	380V	433	600	700	433	600	700	489	700	800
		460V	357	500	600	357	500	600	404	600	700
		575V	285	400	450	285	400	450	323	500	500
525 CTS	60	460V	404	600	700	404	600	700	357	500	600
		575V	323	500	500	323	500	500	285	400	450
550 CTS	60	460V	404	600	700	404	600	700	404	600	700
		575V	323	500	500	323	500	500	323	500	500