



## **SUBMITTAL**

### **Project**

Chillers 2023

### **Date**

lunes, 13 de marzo de 2023

### **General Contractor**

### **Mechanical Contractor**

### **Mechanical Engineer**



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Prepared By:

03/13/2023  
01:12p. m.

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## Unit Report For Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

03/13/2023  
01:12p. m.

### Unit Information

Tag Name:..... **Chiller 30 TR 220**  
 Model Number:..... **30RAP030**  
 Condenser Type:..... **Air Cooled**  
 Compressor Type:..... **Scroll**  
 Nameplate Voltage:..... **208/230-3-60** V-Ph-Hz  
 Quantity:..... **1**  
 Manufacturing Source:..... **Charlotte, NC USA**  
 Refrigerant:..... **R410A**  
 Independent Refrigerant Circuits:..... **1**  
 Capacity Control Steps:..... **2**  
 Minimum Capacity:..... **50.0** %  
 Shipping Weight:..... **1262** lb  
 Operating Weight:..... **1283** lb  
 Unit Length:..... **89** in  
 Unit Width:..... **41** in  
 Unit Height:..... **79** in

### Accessories and Installed Options

Evaporator Heater  
 Micro Channel  
 Low Sound - Aero Acoustic Fans  
 Single Point  
 Fixed Speed Condenser Fan

### Chiller Warranty Information (Note: for US & Canada only)

First Year - Parts Only (Standard)

### Ordering Information

Part Number	Description	Quantity
30RAP0305D-00100	Packaged Chiller	1
	Base Unit	
	Evaporator Heater	
	Micro Channel	
	Low Sound - Aero Acoustic Fans	
	Single Point	
	Fixed Speed Condenser Fan	

**Certified Drawing for Chiller 30 TR 220**

Project: Chillers 2023  
Prepared By:

03/13/2023  
01:12p. m.



# Certified Drawing for Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

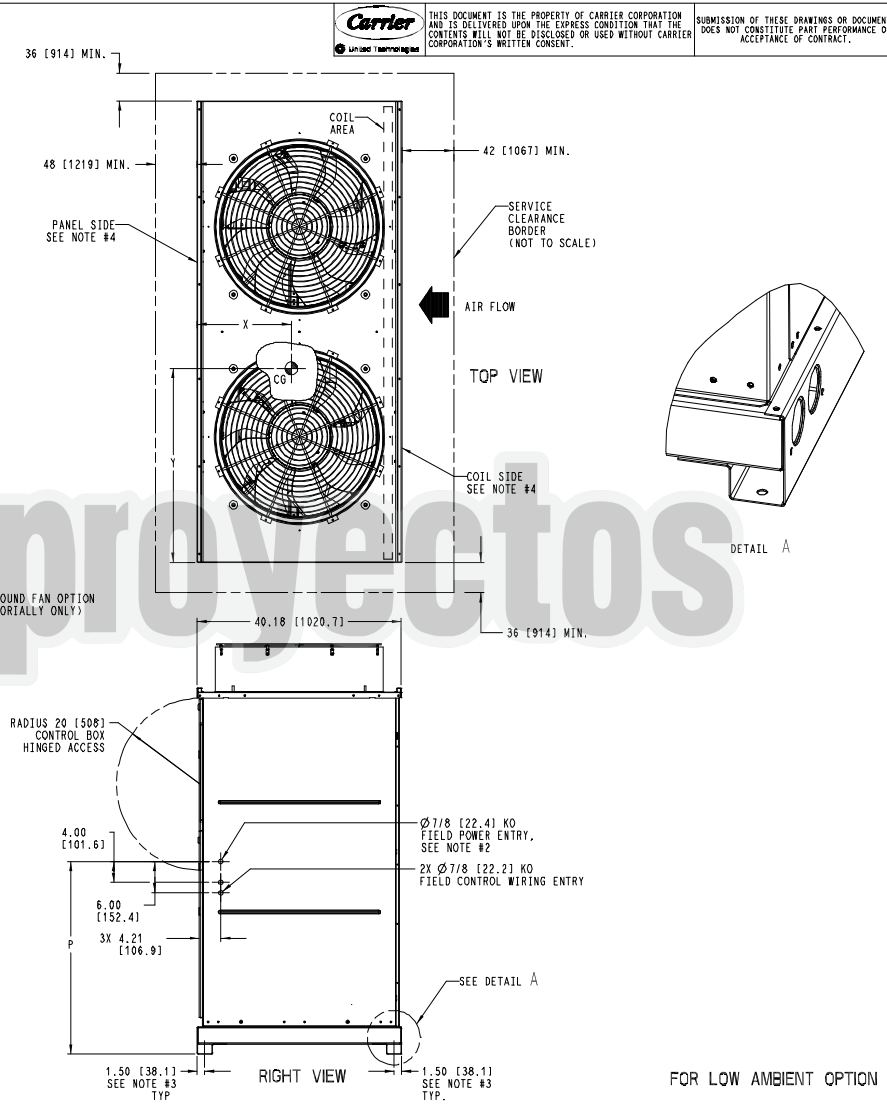
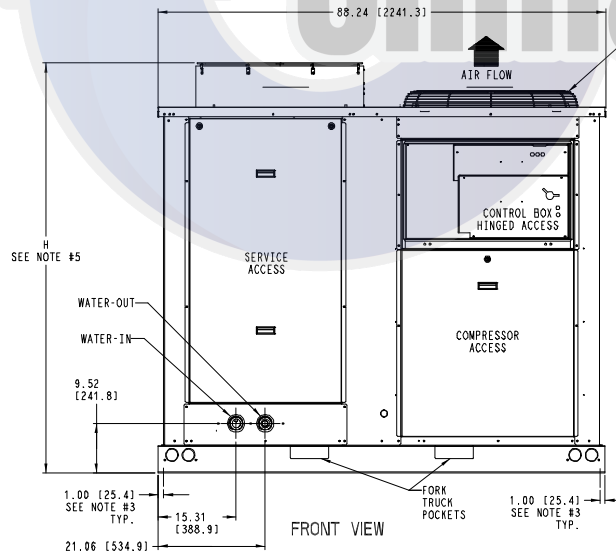
03/13/2023  
01:12p. m.

UNIT	CENTER OF GRAVITY		UNIT HEIGHT		POWER ENTRY	WATER CONNECTION VICIAULIC IPS CARBON STEEL
	X	Y	H (STANDARD)	H (VALUE SOUND)		
30RA018	18.37 [467]	38.77 [985]	66.5 [1689]	61.0 [1549]	24.9 [631]	2"
30RA020	18.38 [467]	38.79 [985]	66.5 [1689]	61.0 [1549]	24.9 [631]	2"
30RA025	18.58 [472]	38.93 [989]	78.5 [1994]	73.0 [1854]	36.9 [936]	2"
30RA030	18.59 [472]	38.98 [990]	78.5 [1994]	73.0 [1854]	36.9 [936]	2"

**NOTES.**

1. DO NOT CAP OR OTHERWISE OBSTRUCT THE LIQUID LINE TEMPERATURE RELIEF.
2.  $\varnothing 7/8$  [22.4] PILOT HOLE PROVIDED FOR LOCATING FIELD POWER WIRING. ACTUAL HOLE REQUIRED DEPENDS ON FIELD WIRE SIZING.
3.  $\varnothing 0.437$  [11.10] HOLE USED FOR MOUNTING UNIT.
4. UNIT MUST HAVE CLEARANCES AS FOLLOWS:  
TOP - DO NOT RESTRICT.  
COIL SIDE - 42 [1067] FROM SOLID SURFACE.  
PANEL SIDE - 48 [1219] PER NEC.
5. SEE TABLE COLUMN H: DIMENSION FOR STANDARD FAN OR VALUE SOUND FAN OPTION.
6. CARRIER DOES NOT RECOMMEND INSTALLATION IN A PIT.
7. UNIT CAN BE HANDLED USING THE FORK TRUCK LIFT POCKETS.
8. WATER CONNECTIONS RECESSED 2 INCHES INSIDE UNIT. ALL WATER DRAIN AND VENTING HOLES ARE 1/4" NPT.

DIMENSIONS IN [ ] ARE IN MILLIMETERS



FOR LOW AMBIENT OPTION

DATE	SUPERCEDES	UNIT ASSY	REV
09/07/15	G	30RAP018-030 UNIT ASSY	H

## Field Wiring Diagram for Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

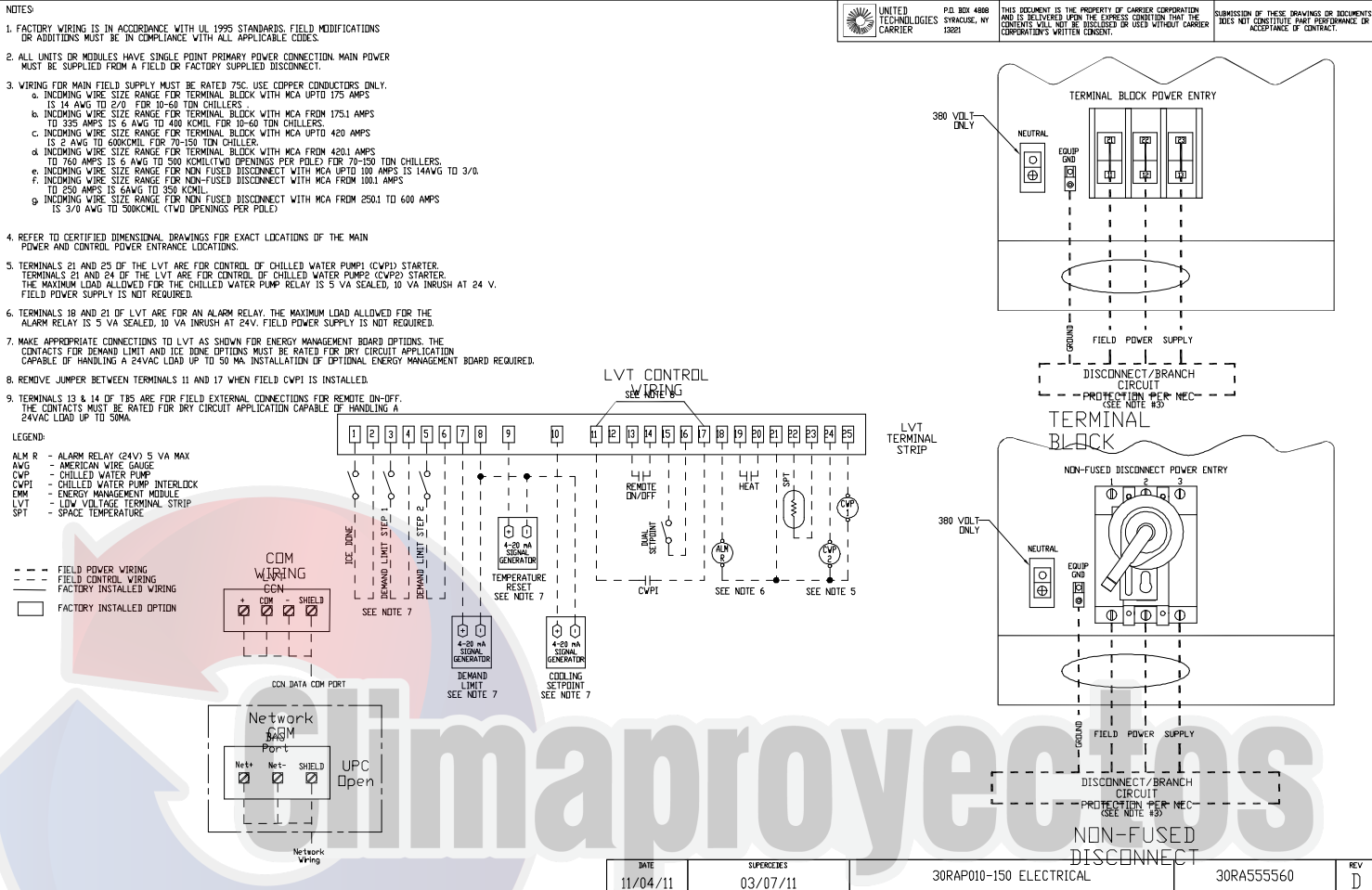
03/13/2023  
01:12p. m.



# Summary Performance Report For Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

03/13/2023  
01:12p. m.



## AquaSnap™ Air-Cooled Scroll Chiller



### Unit Information

Tag Name: **Chiller 30 TR 220**  
 Model Number: **30RAP030**  
 Quantity: **1**  
 Manufacturing Source: **Charlotte, NC USA**  
 ASHRAE 90.1: **2013/2016, 2010, 2007**  
 Refrigerant: **R-410A**  
 Independent Refrigerant Circuits: **1**  
 Shipping Weight: **1262** lb  
 Operating Weight: **1283** lb  
 Refrigerant Weight (Circuit A): **19** lb  
 Unit Length: **89** in  
 Unit Width: **41** in

Unit Height: **79** in  
 Chiller Pressure Drop\*: **18.5** ft H2O  
 \*Use Chiller Pressure Drop for sizing pumps. This value includes losses due to chiller piping, fittings, 40 mesh factory supplied strainer and BPHX.

### Evaporator Information

Fluid Type: **Fresh Water**  
 Fouling Factor: **0.000100** (hr-sqft-F)/BTU  
 Leaving Temperature: **44.00** °F  
 Entering Temperature: **54.00** °F  
 Fluid Flow: **68.88** gpm  
 Evaporator Pressure Drop\*: **12.1** ft H2O

# Summary Performance Report For Chiller 30 TR 220

Project: Chillers 2023  
 Prepared By:

03/13/2023  
 01:12p. m.

\*Refer to Chiller Pressure Drop for sizing pumps.

### Condenser Information

Altitude:..... **0.000** ft  
 Number of Fans:..... **2**  
 Total Condenser Fan Air Flow:..... **19,400** CFM  
 Entering Air Temperature:..... **95.0** °F

### Integrated Pump Information

No Pump Selected

### Performance Information

Cooling Capacity:..... **28.81** Tons  
 Total Compressor Power:..... **30.58** kW  
 Total Fan Motor Power:..... **2.674** kW  
 Total Unit Power (without pump):..... **33.25** kW  
 Efficiency (without pump) (EER):..... **10.40** BTU/Wh  
 IPLV:..IP:..... **16.12** BTU/Wh

### Accessories and Installed Options

Evaporator Heater  
 Micro Channel  
 Low Sound - Aero Acoustic Fans  
 Single Point  
 Fixed Speed Condenser Fan

### Electrical Information

Unit Voltage:..... **208/230-3-60** V-Ph-Hz  
 Connection Type:..... **Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	137.6	---
MOCP	175.0	---
ICF	407.8	---
Rec Fuse Size	175.0	---

Sound power measured in accordance with ANSI/AHRI Standard 370-2015.



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at [www.ahridirectory.org](http://www.ahridirectory.org).



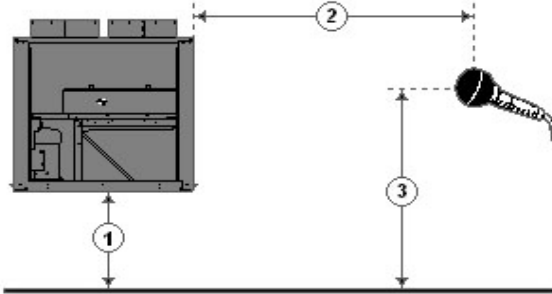
# Summary Performance Report For Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

03/13/2023  
01:12p. m.

### Unit Parameters

Tag Name:..... **Chiller 30 TR 220**  
 Model Number:..... **30RAP030**  
 Condenser Type:..... **Air Cooled**  
 Compressor Type:..... **Scroll**  
 Chiller Nameplate Voltage:..... **208/230-3-60** V-Ph-  
 Hz  
 Quantity:..... **1**  
 Manufacturing Source:..... **Charlotte, NC USA**  
 Refrigerant:..... **R-410A**  
 Shipping Weight:..... **1262** lb  
 Operating Weight:..... **1283** lb  
 Refrigerant Weight (Circuit A):..... **19** lb  
 Unit Length:..... **89** in  
 Unit Width:..... **41** in  
 Unit Height:..... **79** in



1 - Chiller Height Above Ground  
 2 - Horizontal Distance From Chiller to Receiver  
 3 - Receiver Height Above Ground  
 (See Note 3)

### Accessories and Installed Options

Evaporator Heater  
 Micro Channel  
 Low Sound - Aero Acoustic Fans

Single Point  
 Fixed Speed Condenser Fan

### Acoustic Information

**Table 1. A-Weighted Sound Power Levels (dB re 1 picowatt). See note #1.**

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	---	59	72	78	83	84	84	78	70	89
75% Load	---	58	68	77	83	84	83	77	67	89
50% Load	---	56	68	76	82	84	82	76	65	88
25% Load	---	55	65	74	80	81	80	74	64	86

**Table 2. A-Weighted Sound Pressure Levels (dB re 20 micropascals) calculated based upon user defined input for dimensions 1, 2 and 3 as shown in above diagram. See note #2 and #3.**

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	---	32	45	51	55	56	56	50	42	62
75% Load	---	31	40	49	55	57	56	50	40	61
50% Load	---	28	40	49	55	56	54	48	38	60
25% Load	---	28	37	46	52	54	53	47	37	58

- Notes: (1) Measurements performed in accordance with AHRI Standard 370-2015 for air cooled Chillers.  
 (2) Chiller is assumed to be a point source on a reflecting plane.  
 (3) Without user defined input, the default dimensions used to construct Table 2 are as follows:  
 1 - Chiller Height Above Ground = 0.0 ft  
 2 - Horizontal Distance From Chiller to Receiver = 30.0 ft  
 3 - Receiver Height Above Ground = 3.0 ft

**Please refer to Performance Output Summary or Detailed Performance Report for Acoustic information**



# Detailed Performance Summary For Chiller 30 TR 220

Project: Chillers 2023  
Prepared By:

03/13/2023  
01:12p. m.



## AquaSnap™ Air-Cooled Scroll Chiller



### Unit Information

Tag Name: **Chiller 30 TR 220**  
 Model Number: **30RAP030**  
 Condenser Type: **Air Cooled**  
 Compressor Type: **Scroll**  
 Nameplate Voltage: **208/230-3-60** V-Ph-Hz  
 Quantity: **1**  
 Manufacturing Source: **Charlotte, NC USA**  
 ASHRAE 90.1: **2013/2016, 2010, 2007**  
 Refrigerant: **R-410A**  
 Capacity Control Steps: **2**  
 Minimum Capacity: **50.00** %  
 Shipping Weight: **1262** lb  
 Operating Weight: **1283** lb  
 Refrigerant Weight (Circuit A): **19** lb  
 Unit Length: **89** in  
 Unit Width: **41** in  
 Unit Height: **79** in  
 Minimum Outdoor Operating Temp: **45.0** °F  
 Chiller Pressure Drop\*: **18.5** ft H2O

\*Use Chiller Pressure Drop for sizing pumps. This value includes losses due to chiller piping, fittings, 40 mesh factory supplied strainer and BPHX.

### Performance Information

Cooling Capacity: **28.81** Tons  
 Total Compressor Power: **30.58** kW  
 Total Fan Motor Power: **2.674** kW  
 Total Unit Power (without pump): **33.25** kW  
 Efficiency (without pump) (EER): **10.40** BTU/Wh

### Evaporator Information

Fluid Type: **Fresh Water**  
 Fouling Factor: **0.000100** (hr-sqft-F)/BTU  
 Leaving Temperature: **44.00** °F  
 Entering Temperature: **54.00** °F  
 Fluid Flow: **68.88** gpm  
 Fluid Flow Min: **33.00** gpm  
 Fluid Flow Max: **133.0** gpm

\*Refer to Chiller Pressure Drop for sizing pumps.  
 Evaporator Pressure Drop\*: **12.1** ft H2O  
 \*Refer to Chiller Pressure Drop for sizing pumps.

### Condenser Information

Altitude: **0.000** ft  
 Number of Fans: **2**  
 Total Condenser Fan Air Flow: **19,400** CFM  
 Entering Air Temperature: **95.0** °F

### Integrated Pump Information

No Pump Selected

### Accessories and Installed Options

Evaporator Heater  
 Micro Channel  
 Low Sound - Aero Acoustic Fans  
 Single Point  
 Fixed Speed Condenser Fan

### Electrical Information

Unit Voltage: **208/230-3-60** V-Ph-Hz  
 Connection Type: **Single Point**

Amps	Electrical Circuit 1	Electrical Circuit 2
MCA	137.6	---
MOCP	175.0	---
ICF	407.8	---
Rec Fuse Size	175.0	---

## Detailed Performance Summary For Chiller 30 TR 220

Project: Chillers 2023  
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03/13/2023  
01:12p. m.

### Integrated Part Load Value (AHRJ)

IPLV:.....16.12 BTU/Wh

<b>Unit Performance</b>				
Percent of Full Load Capacity, %	100.00	75.00	50.00	25.00
Percent of Full Load Power, %	100.00	54.45	30.59	13.12
Unloading Sequence	A	A	A	A
Cooling Capacity, Tons	28.81	21.61	14.40	7.202
Total Unit Power, kW	33.25	18.11	10.17	4.364
Efficiency (EER), BTU/Wh	10.40	14.32	16.99	19.80
<b>Evaporator Data</b>				
Fluid Entering Temperature, °F	54.00	51.49	48.99	46.50
Fluid Leaving Temperature, °F	44.00	44.00	44.00	44.00
Fluid Flow Rate, gpm	68.88	68.88	68.88	68.88
Fouling Factor, (hr-sqft-F)/BTU	0.000100	0.000100	0.000100	0.000100
Pressure Drop, psi	8.01	8.04	8.08	8.12
<b>Condenser Data</b>				
Entering Air Temperature, °F	95.0	80.0	65.0	55.0

For some 75% operating points, the efficiency may be calculated at a condenser inlet air operating temperature as much as 0.8 degrees higher.

Sound power measured in accordance with ANSI/AHRI Standard 370-2015.



Certified in accordance with the AHRI Air-Cooled Water-Chilling Packages Certification Program, which is based on AHRI Standard 550/590 (I-P) and AHRI Standard 551/591 (SI). Certified units may be found in the AHRI Directory at [www.ahridirectory.org](http://www.ahridirectory.org).

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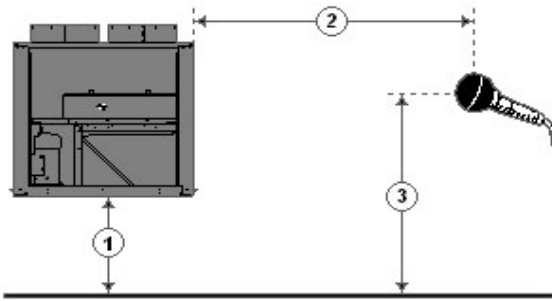
# Detailed Performance Summary For Chiller 30 TR 220

Project: Chillers 2023  
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### Unit Parameters

Tag Name:.....**Chiller 30 TR 220**  
 Model Number:.....**30RAP030**  
 Condenser Type:.....**Air Cooled**  
 Compressor Type:.....**Scroll**  
 Chiller Nameplate Voltage:.....**208/230-3-60** V-Ph-  
 Hz  
 Quantity:.....**1**  
 Manufacturing Source:.....**Charlotte, NC USA**  
 Refrigerant:.....**R-410A**  
 Shipping Weight:.....**1262** lb  
 Operating Weight:.....**1283** lb  
 Refrigerant Weight (Circuit A):.....**19** lb  
 Unit Length:.....**89** in  
 Unit Width:.....**41** in  
 Unit Height:.....**79** in



1 - Chiller Height Above Ground  
 2 - Horizontal Distance From Chiller to Receiver  
 3 - Receiver Height Above Ground  
 (See Note 3)

### Accessories and Installed Options

Evaporator Heater  
 Micro Channel  
 Low Sound - Aero Acoustic Fans

Single Point  
 Fixed Speed Condenser Fan

### Acoustic Information

**Table 1. A-Weighted Sound Power Levels (dB re 1 picowatt). See note #1.**

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	---	59	72	78	83	84	84	78	70	89
75% Load	---	58	68	77	83	84	83	77	67	89
50% Load	---	56	68	76	82	84	82	76	65	88
25% Load	---	55	65	74	80	81	80	74	64	86

**Table 2. A-Weighted Sound Pressure Levels (dB re 20 micropascals) calculated based upon user defined input for dimensions 1, 2 and 3 as shown in above diagram. See note #2 and #3.**

Octave Band Center Frequency, Hz	31	63	125	250	500	1k	2k	4k	8k	Overall
100% Load	---	32	45	51	55	56	56	50	42	62
75% Load	---	31	40	49	55	57	56	50	40	61
50% Load	---	28	40	49	55	56	54	48	38	60
25% Load	---	28	37	46	52	54	53	47	37	58

- Notes: (1) Measurements performed in accordance with AHRI Standard 370-2015 for air cooled Chillers.  
 (2) Chiller is assumed to be a point source on a reflecting plane.  
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 1 - Chiller Height Above Ground = 0.0 ft  
 2 - Horizontal Distance From Chiller to Receiver = 30.0 ft  
 3 - Receiver Height Above Ground = 3.0 ft