



Project: ACDS070 R454B prototype	Consultant: Justin B. Hogan
Location:	Date: 5/24/23 1:14 PM
PRICE SUMMARY	

Tag	Model	
CHILLER ACDS-R410A-1	ACDS070ARGS	
Project Total		

Chiller - ACDS070ARGS

Description
Tag - CHILLER ACDS-R454B-1 ▪ Manufacturer DBM ▪ Base Price (R-454b Unit, Voltage: 460V/3/60) ▪ UVR:Over/under/phase ▪ HGBP:Hot gas bypass for low load operation Auto Lead Lag ▪ DSIV:Compressor Isolation Valves ▪ UVR:Over/under/phase (standard) ▪ DBD:DB Director ▪ Capacity (Tons): 77.17, Input power (kW): 91.57, RLA (A): 144, Ampacity: 144, Unit max. fuse/HACR CB size: 175, Refrigerant: R-410a ▪ Fluid flow (USgpm): 184.7, EFT (°F): 54.0, LFT (°F): 44.0, Pressure drop (psi): 6.3, Fouling factor (h·ft²·°F/Btu): 0.00010, Fluid: Water ▪ Design ambient (°F): 95.00, Altitude (ft): 0.00
Total List/Net Adds
Net Total (1 count at 1.0 mult)

Grand Total



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Scroll Compressor Air Cooled Package Chiller

Model #	ACDS070ARGS
Quantity	1 Rating version
Manufacturer	ACDG14 DBM

Physical Specifications

Compressor Qty	4	Shipping weight (lb)	3,897
Length (in)	115.75	Operating weight (lb)	3,936
Width (in)	89.00	Refrigerant	R-454b
Height (in)	87.50	Approx. refrigerant charge (lb)	179

Conditions of service

Percent of full load	100%	Compressor power (kW)	81.97
Capacity (Tons)	77.17	Total Fan Power (kW)	9.600
Unit power (kW)	91.57	Cooling Efficiency (EER, Btu /W.hr)	10.11
		IPLV.IP (EER, Btu /W.hr)	14.91

Evaporator

Fluid	Water	Leaving fluid temp. (°F)	44.00
Fluid flow rate (USgpm)	184.7	Fouling factor (h-ft ² -°F/Btu)	0.000100
Entering fluid temp. (°F)	54.00	Pressure drop (psi/ft.H ₂ O)	6.25/14.4
		Fluid freezing point (°F)	32.00

Condenser

Design ambient (°F)	95.0	Altitude (ft)	0.000
		Fan Motor Power (kW) (Qty)	2.400 (4)

Electrical characteristics

Unit power supply	460V/3ph/60Hz	Unit rated load amps	136.0
Control power	115V/1ph/60Hz	Unit min. circuit ampacity (A)	144.0
Unit max. fuse/HACR CB size (A)	175.0	Comp. rated load amps (A)	30.0(4)
		Comp. locked rotor amps (A)	215.0(4)

Notes

- Certified in accordance with the AHRI Air Cooled Water-Chilling Packages Using the Vapor Compression Cycle 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.
- Meets ASHRAE 90.1-2019 Path A chiller minimum efficiency guidelines

- Refrigerant charge may vary. Unit nameplate will show final factory charge.
- The electrical data is being projected base on 95F ambient temperature, Please consult factory for all other ambient temperature

IPLV.IP Points at Standard AHRI Rating Conditions

% Full load	Tons	Unit kW	Comp. kW	Fan kW	Evap. EFT	Evap. LFT	EER	Ambient(°F)
100%	77.17	91.57	81.97	9.600	54.00	44.00	10.11	95.0
75%	57.88	53.08	45.17	7.910	51.50	44.00	13.08	80.0
50%	38.59	29.30	25.32	3.980	49.00	44.00	15.80	65.0
25%	19.29	12.63	10.72	1.910	46.50	44.00	18.33	55.0

Sound Data

Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	Total dB(A)
Sound Pressure Level (free field) at 32.80 ft	32	42	49	57	60	60	58	52	65

*Sound Pressure Level (free field) ± 2 dB(A) Tolerance

Standard Equipment

Unit Construction

- Unit shall be constructed of heavy gauge G90 galvanized steel
- All sheet metal parts are painted with oven baked epoxy / polyester powder paint, sustaining 1000 hour salt spray test in accordance with ASTM B-117

Hermetic Scroll Compressors

- Strap on belt type crankcase heater or sump heater
- Compressor staging on all units
- One (1) year warranty. (Factory provides standard warranty of 12 months from start up or 18 months from shipment date)



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- Control panel IP54

whichever occurs first. Limited to parts replacement only and excludes freight, taxes/duties, labours, consumable items, etc. Machine must be well maintained by DB authorized service representative.)

Air Cooled Condenser	Evaporator
▪ Copper tubes ▪ Subcooling circuit(s) ▪ Direct drive fans with internal motor protection ▪ Standard operation to 45°F ambient using fan cycling	▪ Braze Plate Heat Exchanger(Optional Shell & Tube Heat Exchanger) ▪ Single and True Dual Evaporator ▪ Plate material AISI 316 ▪ Fully insulated
Refrigeration Specialties	Code Compliance
▪ Thermal expansion valve(Standard for ACDS010-090) ▪ Liquid line solenoid valve (Standard with thermal expansion valve) ▪ Sight glass ▪ Refrigerant charge of R-410A ▪ Electronic expansion valve (optional for ACDS010-090, standard for ACDS100-180)	▪ Units conform to NEC, NEMA, ANSI/ASHRAE 15 ▪ Units conform and certified to ANSI/UL Std. 1995 & CAN/CSA Std. C22.2 No.236 (ETL Listed)
Controls	
▪ DB Director microcomputer controller on all models ▪ Two line 16 character alpha numeric display control functions ▪ Compressor loading/staging based on leaving fluid temperature ▪ Evaporator fluid freeze protection ▪ High and low pressure protection ▪ Staggered starting of compressors ▪ Anti-recycle timing in controller ▪ Fan cycling ▪ Accepts remote start & stop signal ▪ Keyboard accessed LCD readouts, continuously updated ▪ Discharge and suction pressure for all circuits	
Optional Equipment/Service Included	
Factory Mounted Options Included	
▪ Hot Gas By-Pass	



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- NOTES:
1. ALL DIMENSIONS ARE IN INCHES [MILLIMETERS].
 2. ALLOW 60 [1524] CLEARANCE FOR CONTROL PANEL.
 3. EXTERNAL WATER PIPING MUST BE SUPPORTED TO MINIMIZE EXTERNAL WEIGHT ONTO EVAPORATOR OR UNIT.
 4. IF VIBRATION ISOLATORS ARE INSTALLED, FLEXIBLE CONNECTIONS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE EVAPORATOR WATER CONNECTIONS TO ISOLATE THE VIBRATION IN THE WATER PIPING.
 5. PLEASE CONSULT FACTORY FOR CERTIFIED DRAWING IF OTHER OPTION IS SELECTED.

OPTION ITEMS (CLICK WHERE APPLICABLE)

OPTION 1: VIBRATION ISOLATORS

☒ X NIL

☐ RUBBER ISOLATOR

☐ SPRING ISOLATOR

OPTION 2: PROTECTIVE PANELS

☒ X NIL

☐ WIRE MESH (CONDENSER COIL SECTION ONLY)

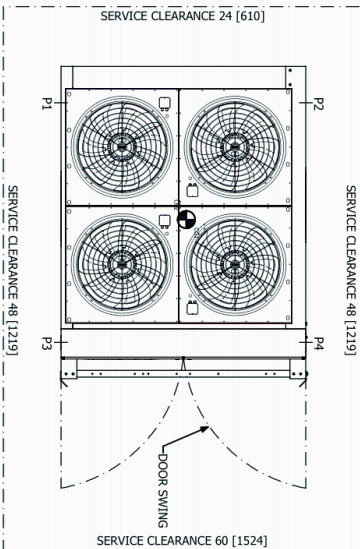
☐ HALI GUARD (COMPLETE UNIT)

OPTION 3: WATER CONNECTOR TYPE

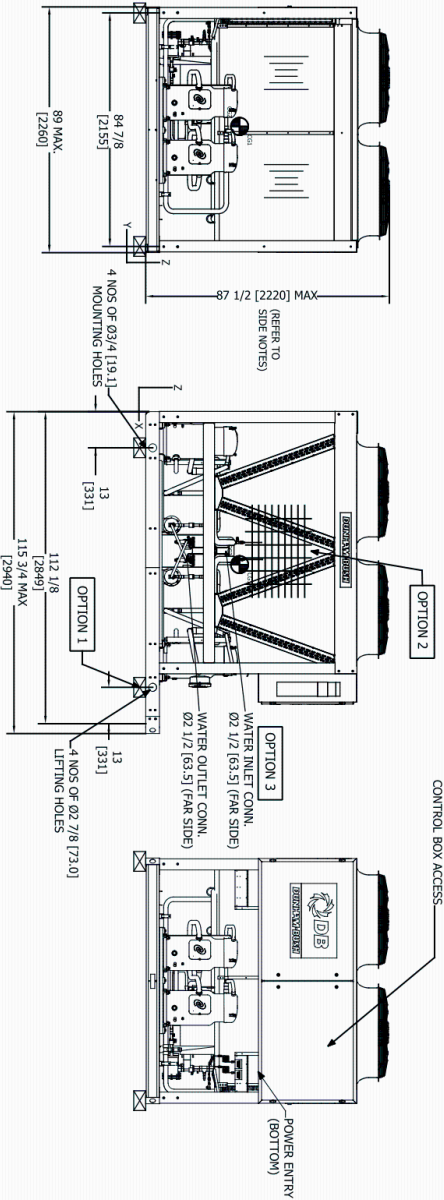
☒ X STANDARD (MNP)

☐ FLANGE

DIMENSION CHANGES C/W STANDARD OPTION
> IF SOFTSTARTER IS SELECTED, CONTROL BOX HEIGHT MIGHT BE HIGHER THAN AS SHOWN. UNIT MAXIMUM HEIGHT MIGHT INCREASE BY UP TO 6 [152.4].
> LOW AMBIENT KIT (LAL / L2 ONLY):
ADDITIONAL CONTROL BOX MIGHT BE ADDED, AND THE UNIT COMPONENT LAYOUT MIGHT BE CHANGED.
(PLEASE TAKE NOTE ON THE UNIT CONTROL BOX HEIGHT INCREASE PRECAUTIONS TO BE TAKEN DURING SHIPPING AND MOVING THE UNIT. PLEASE CONSULT FACTORY PRIOR TO UNIT SHIPPING IF SOFTSTARTER IS SELECTED)



CHILLED WATER CONNECTION INLET/OUTLET



CERTIFIED DRAWING

OPTION 2: PROTECTIVE PANELS

☒ X NIL, WIRE MESH (CONDENSER COIL SECTION ONLY)

SHIP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES
070	3897 [1768]	3936 [1786]
		55, 45, 34

G01: CENTRE OF GRAVITY

☐ HALI GUARD (COMPLETE UNIT)

SHIP. WEIGHT LBS [KG]	OPERAT. WEIGHT LBS [KG]	CENTRE OF GRAVITY (X,Y,Z) INCHES
070	4288 [1945]	4227 [1963]
		54, 45, 35

G02: CENTRE OF GRAVITY

ALL DIMENSIONS ARE IN INCHES [MM]

This is computer generated drawing.

No signature required

REV	DESCRIPTION	DATE	DRN BY



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LOCATION.

QTY.

MODEL ACDS070 60HZ

PROJECT STANDARD

TITLE

AIR COOLED CHILLER

DRAWING NO 83299G-340

SCALE : N.T.S. SHEET 1 OF 1



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REV.	DESCRIPTION	DATE	DRN. BY	UNIT NO.	MODEL:	PROJECT:	TYPING	DATE:	DATE:	DATE:	SHEET 4 of 4	F.O. NO.	<table border="1"><caption>RECOMMENDED FAN STAGING</caption><thead><tr><th></th><th>SYSTEM 1</th><th>SYSTEM 2</th></tr></thead><tbody><tr><td>BASE FANS</td><td>4</td><td>2</td></tr><tr><td>STAGE 2</td><td>3</td><td>1</td></tr></tbody></table> • COIL HEADER		SYSTEM 1	SYSTEM 2	BASE FANS	4	2	STAGE 2	3	1
														SYSTEM 1	SYSTEM 2							
BASE FANS	4	2																				
STAGE 2	3	1																				
ALARM CONTACT	HOT GAS BYPASS OPTION ☐ 1 SYSTEM ☐ 2 SYSTEM ☒ NOT FURNISHED																					
				LOW AMBIENT OPTION ☐ FURNISHED ☒ NOT FURNISHED				CHILLER LINK OPTION (N2 / LONWORKS/ BACNET MSTP) ☒ FURNISHED ☐ NOT FURNISHED														
				EVAPORATOR HEATER OPTION ☐ FURNISHED ☒ NOT FURNISHED				ALARM BELL ☐ FURNISHED ☒ NOT FURNISHED														
				DOOR LATCH SOLENOID OPTION ☐ FURNISHED ☒ NOT FURNISHED				PILOT LIGHT OPTION ☐ FURNISHED ☒ NOT FURNISHED														
				GROUND FAULT OPTION ☐ FURNISHED ☒ NOT FURNISHED																		