

40% Ethylene Glycol Data

FluidCool™
Remote Air Cooled Outdoor Propeller Fan(s) Glycol Drycoolers

PumpAll™
1/2 to 50 HP, Single, Duplex & Triplex Glycol Pump Packages

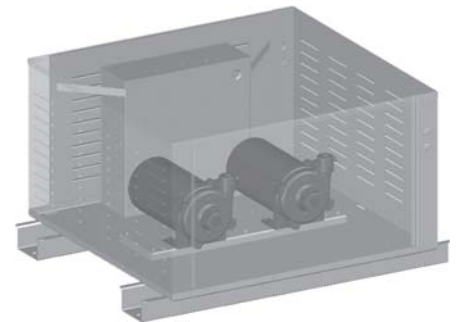


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Outdoor Glycol Drycoolers - Product Overview

DX Glycol Cooled System Applications:

FluidCool™ remote outdoor mounted propeller fan glycol drycoolers are designed to provide glycol condenser source heat rejection for DX glycol cooled air conditioners, refrigerant dehumidifiers and liquid chillers. Typical DX glycol cooled system applications include:

- Computer Room A/C's
- Packaged Water/Glycol Cooled A/C's
- Water Source Heat Pumps
- 100% Outside Air Systems
- Refrigerant Type Dehumidifiers
- Glycol Cooled Liquid Chillers

Systems are available in both single row and dual row fan configurations in 43 incremental sizes ranging from 3 to 180 tons of total heat rejection. Select from standard fan cycling or free-cooling fan cycling glycol temperature control. Systems are complete with low rpm propeller fans for quiet operation and fan motor starter / contactors. Systems can be arranged for vertical or optional horizontal air discharge.

**** Systems are available for quick delivery to meet the demands of your critical construction time schedules!**

Remote Propeller Fan Outdoor Drycoolers



Outdoor Glycol Drycoolers - Features & Benefits



A Participating Corporation
in the ARI 430
Certification Program



MEA

Features & Benefits:

Fans / Motors

- High Efficiency Direct Drive Fan Motors
- Low RPM Propeller Fans

Coil:

- Copper Tubed and Aluminum Finned Coil Construction
- Galvanized Steel Coil Casings
- Factory Leak tested at 400 psig Dry Nitrogen
- Coils Designed in Accordance with ARI Standard 410

Cabinet Construction:

- Heavy Duty Galvanized Steel Cabinet
- Optional Flip-Top Venturi Access Panels for ease of Coil Cleaning and Servicing Fan and Motor

Electrical:

- Fan Motor Starter/Contactors
- Main Power to 24 VAC Control Transformer
- Optional, Non-Fused Main Power Disconnect

Glycol Temperature Control:

- Standard Fan Cycling Glycol Temperature Control

Code Compliance:

- UL / CSA Approved and Labeled
- NYC MEA Approved (MEA-179-87-E)

Warranty:

- 1- Year Limited Parts Warranty

Performance Data - Remote Outdoor Glycol Drycoolers

Performance Data - Outdoor, Propeller Fan Drycoolers 40% Ethylene Glycol, 120°F EGT/110°F LGT

Model	95°F Ambient Selection			100°F Ambient Selection			105°F Ambient Selection		
	Max Flow Rate		Total Heat Rejection (BTUH)	Max Flow Rate		Total Heat Rejection (BTUH)	Max Flow Rate		Total Heat Rejection (BTUH)
	GPM	PD Ft. w.g.		GPM	PD Ft. w.g.		GPM	PD Ft. w.g.	
Single Width-Fan Drycoolers									
FCP-040-1S	8.8	8.8	39,200	6.0	4.4	26,800	N/A		
FCP-052-1S	11.6	7.0	51,600	8.7	12.1	38,900	5.1	4.6	22,800
FCP-080-2S	17.6	7.8	78,400	12.9	9.4	57,500	8.2	12.2	36,500
FCP-100-2S	23.2	6.2	103,200	17.5	10.7	78,100	10.3	4.1	45,800
FCP-118-2S	26.4	9.8	117,500	19.2	5.5	85,400	11.0	2.0	48,700
FCP-131-2S	29.6	6.5	131,700	21.4	6.4	95,400	12.4	3.9	55,200
FCP-150-2S	33.5	8.1	149,200	24.6	8.3	109,600	14.4	5.1	64,100
FCP-186-2S	41.8	10.4	185,900	31.1	9.8	138,500	18.1	3.7	80,600
FCP-210-2S	47.2	12.9	210,000	35.0	12.2	155,700	20.9	4.8	93,000
FCP-260-2S	58.1	11.1	258,400	42.8	10.8	190,500	26.7	7.5	118,900
FCP-283-2S	63.6	13.1	282,900	45.7	7.2	203,300	29.7	9.1	132,100
FCP-298-2S	67.0	8.1	298,100	50.4	8.7	224,200	31.1	5.9	138,400
FCP-355-2S	80.0	13.3	355,800	60.1	12.9	267,400	37.0	5.4	164,600
FCP-430-3S	96.7	16.6	430,000	68.9	9.0	306,500	44.6	9.3	198,400
FCP-455-3S	102.1	10.9	454,300	77.0	14.0	342,600	49.6	11.4	220,600
FCP-498-3S	112.0	8.6	498,300	85.1	11.6	378,500	55.3	9.3	246,000
FCP-562-4S	126.2	11.6	561,400	90.0	6.3	400,200	58.4	8.3	259,800
FCP-594-4S	133.6	7.6	594,100	102.6	13.7	456,300	66.1	13.3	294,000
FCP-655-4S	147.2	6.1	654,700	113.1	10.9	503,200	74.3	11.4	330,400
FCP-693-4S	155.7	6.7	692,500	119.8	12.1	533,000	78.9	12.7	351,000
FCP-767-5S	172.5	14.3	767,200	125.3	8.0	557,200	82.1	11.0	365,200
FCP-840-5S	189.1	11.3	840,900	137.4	6.4	611,200	91.0	8.8	404,800
FCP-887-5S	199.4	12.4	886,700	146.1	7.1	649,700	97.6	10.0	434,200
FCP-941-6S	211.6	23.8	941,200	153.7	13.4	683,600	101.0	18.5	449,300
FCP-1030-6S	231.7	18.8	1,030,400	169.5	10.7	754,000	112.6	15.1	500,900
FCP-1086-6S	244.2	20.6	1,086,000	179.6	11.9	798,800	120.3	17.0	535,100
Dual Width-Fan Drycoolers									
FCP-566-4D	127.2	13.1	565,800	94.1	12.8	418,600	59.4	9.1	264,300
FCP-616-4D	138.6	15.4	616,300	103.0	14.5	458,100	66.3	14.2	295,000
FCP-690-4D	155.0	20.3	689,600	113.5	11.6	504,900	76.6	22.4	340,800
FCP-727-4D	163.4	22.3	726,600	120.2	12.9	534,700	81.8	25.2	364,000
FCP-860-6D	193.4	16.6	860,000	137.8	9.0	613,000	89.2	9.3	396,900
FCP-909-6D	204.3	10.9	908,700	154.1	14.0	685,300	101.3	19.4	450,600
FCP-997-6D	224.1	8.6	996,700	174.9	21.2	778,000	112.9	15.8	502,200
FCP-1123-8D	252.5	11.6	1,122,800	193.6	20.7	861,100	116.8	8.3	519,500
FCP-1256-8D	282.5	24.3	1,256,400	205.2	13.7	912,600	132.2	13.3	587,900
FCP-1375-8D	309.2	19.2	1,375,200	226.3	10.9	1,006,500	152.7	21.1	679,300
FCP-1450-8D	325.9	21.1	1,449,300	239.7	12.1	1,066,200	157.9	12.7	702,200
FCP-1535-10D	345.0	14.3	1,534,300	250.6	8.0	1,114,400	164.3	11.0	730,700
FCP-1682-10D	378.2	11.3	1,681,800	291.1	20.6	1,294,600	182.1	8.8	809,900
FCP-1775-10D	398.8	12.4	1,773,400	308.3	22.8	1,371,000	195.3	10.0	868,600
FCP-1883-12D	423.3	23.8	1,882,600	307.4	13.4	1,367,200	202.1	18.5	898,800
FCP-2061-12D	463.4	18.8	2,060,800	339.1	10.7	1,508,100	225.3	15.1	1,001,900
FCP-2172-12D	488.4	20.6	2,172,000	359.3	11.9	1,597,700	240.7	17.0	1,023,800

Drycooler Selection Procedure:

Step-1: Calculate the total condenser source flow rate (gpm) required for the Total Heat of Rejection of all cooling systems to be connected to the Drycooler.

Step-2: Select the proper drycooler from the adjacent table based on a comparison of the Total Condenser Source Flow Rate (Step-1) and the Max Flow Rate values within the table at the design summer ambient temperature.

The proper drycooler selection will be one in which the Max Flow Rate as illustrated in these tables is greater than or equal to the calculated Total Condenser Flow Rate.

Example:

Suppose an application calls for the following at 95°F Ambient Design:

Step-1: Calculate Total Condenser Flow Rate

A/C Unit	Qty.	Unit Flow	Total Flow
AC-1	2 x	16.0 GPM	= 32.0 GPM
AC-2	1 x	22.0 GPM	= 22.0 GPM
AC-3	2 x	20.0 GPM	= 40.0 GPM

System's Total Flow Rate = 94.0 GPM

Step-2: Drycooler Selection @ 95°F Ambient

Using above table, under the 95°F ambient data:

Step-1's calculated System's Total Flow Rate (94.0 GPM) falls between the Max Flow Rates for drycooler models FCP-355-2S (80.0 GPM) and FCP-430-3S (96.7 GPM).

Therefore, the proper selection at 95°F ambient should be the larger drycooler, **model FCP-430-3S**.

(Note: Contact your local Sales Representative for Drycooler Performance Data and Selection falling outside the range of the above table.)

Performance Data

Technical Data - Remote Outdoor Glycol Drycoolers

Technical Data - Outdoor Propeller Fan Drycoolers

Model	Fan / Motor Data				Connection Data						Coil Glycol Charge		Unit Weight Dry (lbs)
	CFM	Fan Dia (inches)	Fan/Motor Qty.	Motor HP	95°F Amb. Unit		100°F Amb. Unit		105°F Amb. Unit		Volume (Gal.)	Weight (lbs.)	
					Qty.	IN/OUT (Inches MPT)	Qty.	IN/OUT (Inches MPT)	Qty.	IN/OUT (Inches MPT)			
Single Width-Fan Configurations													
FCP-040-1S	4,250	22	1	1/2	1	1-1/4	1	1-1/4	1	1-1/4	1.26	10.5	144
FCP-052-1S	3,850	22	1	1/2	1	1-1/4	1	1-1/4	1	1-1/4	1.90	15.8	160
FCP-080-2S	8,550	22	2	1/2	1	1-1/4	1	1-1/4	1	1-1/4	2.44	20.3	234
FCP-100-2S	7,700	22	2	1/2	1	1-1/2	1	1-1/4	1	1-1/4	3.66	30.5	259
FCP-118-2S	7,000	22	2	1/2	1	1-1/2	1	1-1/4	1	1-1/4	4.88	40.6	283
FCP-131-2S	15,400	26	2	1	1	1-1/2	1	1-1/2	1	1-1/4	4.89	40.7	410
FCP-150-2S	15,250	26	2	1	1	1-1/2	1	1-1/2	1	1-1/4	4.89	40.7	418
FCP-186-2S	15,000	26	2	1	1	2	1	1-1/2	1	1-1/4	7.33	61.0	436
FCP-210-2S	14,850	26	2	1	1	2	1	1-1/2	1	1-1/4	7.33	61.0	455
FCP-260-2S	21,500	30	2	1-1/2	1	2	1	2	1	1-1/2	7.33	61.0	495
FCP-283-2S	21,000	30	2	1-1/2	1	2	1	2	1	1-1/2	7.33	61.0	520
FCP-298-2S	20,500	30	2	1-1/2	1	2	1	2	1	1-1/2	9.77	81.4	550
FCP-355-2S	20,000	30	2	1-1/2	1	2-1/2	1	2	1	1-1/2	12.21	101.7	600
FCP-430-3S	32,000	30	3	1-1/2	1	2-1/2	1	2	1	2	10.85	90.4	800
FCP-455-3S	31,500	30	3	1-1/2	1	2-1/2	1	2-1/2	1	2	14.47	120.6	900
FCP-498-3S	31,000	30	3	1-1/2	1	3	1	2-1/2	1	2	18.09	150.7	1,000
FCP-562-4S	42,000	30	4	1-1/2	1	3	1	2-1/2	1	2	14.38	119.8	1,050
FCP-594-4S	41,000	30	4	1-1/2	1	3	1	2-1/2	1	2	19.17	159.7	1,100
FCP-655-4S	40,500	30	4	1-1/2	1	3	1	3	1	2-1/2	23.97	199.7	1,150
FCP-693-4S	40,000	30	4	1-1/2	2	2-1/2	1	3	1	2-1/2	23.97	199.7	1,200
FCP-767-5S	51,250	30	5	1-1/2	2	2-1/2	1	3	1	2-1/2	23.88	198.9	1,370
FCP-840-5S	50,625	30	5	1-1/2	2	2-1/2	1	3	1	2-1/2	29.85	248.6	1,430
FCP-887-5S	50,000	30	5	1-1/2	2	2-1/2	1	3	1	2-1/2	29.85	248.6	1,490
FCP-941-6S	61,500	30	6	1-1/2	2	3	2	2-1/2	1	2-1/2	28.58	238.1	1,690
FCP-1030-6S	61,750	30	6	1-1/2	2	3	2	2-1/2	1	3	35.72	297.6	1,750
FCP-1086-6S	60,000	30	6	1-1/2	2	3	2	2-1/2	1	3	35.72	297.6	1,830
Dual Width-Fan Configurations													
FCP-566-4D	42,000	30	4	1-1/2	1	3	1	2-1/2	1	2	14.66	122.1	1,080
FCP-616-4D	41,000	30	4	1-1/2	1	3	1	3	1	2	19.54	162.8	1,140
FCP-690-4D	40,500	30	4	1-1/2	2	2-1/2	1	3	1	2-1/2	24.43	203.5	1,190
FCP-727-4D	40,000	30	4	1-1/2	2	2-1/2	1	3	1	2-1/2	24.43	203.5	1,240
FCP-860-6D	64,000	30	6	1-1/2	2	2-1/2	1	3	1	2-1/2	21.71	180.8	1,640
FCP-909-6D	63,000	30	6	1-1/2	2	3	2	2-1/2	1	2-1/2	28.95	241.1	1,840
FCP-997-6D	62,000	30	6	1-1/2	2	3	2	2-1/2	1	3	36.18	301.4	2,050
FCP-1123-8D	84,000	30	8	1-1/2	2	3	2	2-1/2	1	3	28.76	239.6	2,150
FCP-1256-8D	82,000	30	8	1-1/2	2	3	2	3	1	3	38.35	319.4	2,250
FCP-1375-8D	81,000	30	8	1-1/2	3	3	2	3	2	2-1/2	47.94	399.3	2,350
FCP-1450-8D	80,000	30	8	1-1/2	3	3	2	3	2	2-1/2	47.94	399.3	2,460
FCP-1535-10D	102,250	30	10	1-1/2	3	3	2	3	2	2-1/2	47.75	397.8	2,800
FCP-1682-10D	101,250	30	10	1-1/2	3	3	2	3	2	2-1/2	59.69	497.2	2,950
FCP-1775-10D	100,000	30	10	1-1/2	3	3	3	3	2	2-1/2	59.69	497.2	3,075
FCP-1883-12D	12,3000	30	12	1-1/2	3	3	3	3	2	3	57.16	476.1	3,400
FCP-2061-12D	121,500	30	12	1-1/2	4	3	3	3	2	3	71.44	595.1	3,620
FCP-2172-12D	120,000	30	12	1-1/2	4	3	3	3	2	3	71.44	595.1	3,750

Electrical & Dimensional Data - Outdoor Drycoolers

Electrical Data - Drycooler / Fluid Cooler (Outdoor, Propeller Fan Systems)

Model	Electrical Data (FLA)			
	208/1/60	208/3/60	460/3/60	575/3/60
Single Width-Fan Configurations				
FCP-040-1S	2.5	2.0	1.0	1.0 *
FCP-052-1S	2.5	2.0	1.0	1.0 *
FCP-080-2S	5.0	4.0	2.0	2.0 *
FCP-100-2S	5.0	4.0	2.0	2.0 *
FCP-118-2S	5.0	4.0	2.0	2.0 *
FCP-131-2S	9.8	8.0	4.0	3.4
FCP-150-2S	9.8	8.0	4.0	3.4
FCP-186-2S	9.8	8.0	4.0	3.4
FCP-210-2S	9.8	8.0	4.0	3.4
FCP-260-2S	N/A	13.0	6.6	4.8
FCP-283-2S	N/A	13.0	6.6	4.8
FCP-298-2S	N/A	13.0	6.6	4.8
FCP-355-2S	N/A	13.0	6.6	4.8
FCP-430-3S	N/A	19.5	9.9	7.2
FCP-455-3S	N/A	19.5	9.9	7.2
FCP-498-3S	N/A	19.5	9.9	7.2
FCP-562-4S	N/A	26.0	13.2	9.6
FCP-594-4S	N/A	26.0	13.2	9.6
FCP-655-4S	N/A	26.0	13.2	9.6
FCP-693-4S	N/A	26.0	13.2	9.6
FCP-767-5S	N/A	32.5	16.5	12.0
FCP-840-5S	N/A	32.5	16.5	12.0
FCP-887-5S	N/A	32.5	16.5	12.0
FCP-941-6S	N/A	39.0	19.8	14.4
FCP-1030-6S	N/A	39.0	19.8	14.4
FCP-1086-6S	N/A	39.0	19.8	14.4

Model	Electrical Data (FLA)			
	208/1/60	208/3/60	460/3/60	575/3/60
Dual Width-Fan Configurations				
FCP-566-4D	N/A	26.0	13.2	9.6
FCP-616-4D	N/A	26.0	13.2	9.6
FCP-690-4D	N/A	26.0	13.2	9.6
FCP-727-4D	N/A	26.0	13.2	9.6
FCP-860-6D	N/A	39.0	19.8	14.4
FCP-909-6D	N/A	39.0	19.8	14.4
FCP-997-6D	N/A	39.0	19.8	14.4
FCP-1123-8D	N/A	52.0	26.4	19.2
FCP-1256-8D	N/A	52.0	26.4	19.2
FCP-1375-8D	N/A	52.0	26.4	19.2
FCP-1450-8D	N/A	52.0	26.4	19.2
FCP-1535-10D	N/A	65.0	33.0	24.0
FCP-1682-10D	N/A	65.0	33.0	24.0
FCP-1775-10D	N/A	65.0	33.0	24.0
FCP-1883-12D	N/A	78.0	39.6	28.8
FCP-2061-12D	N/A	78.0	39.6	28.8
FCP-2172-12D	N/A	78.0	39.6	28.8

Legend:

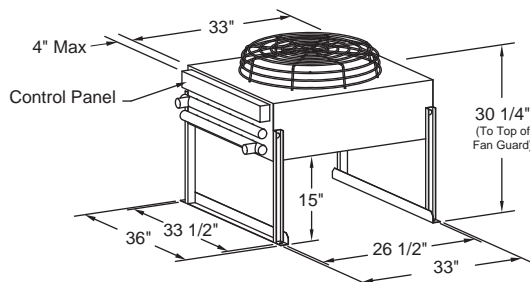
FLA = Full Load Amps

* = 575/1/60

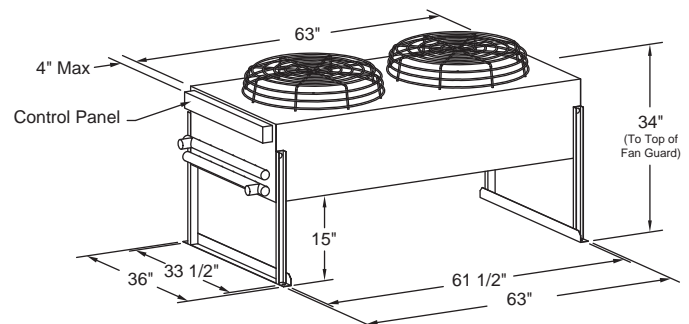
Dimensional Data

(Models FCP-040-()S thru 118-()S)

FCP-040 & 052-1S
(1x1 Fan Config.)



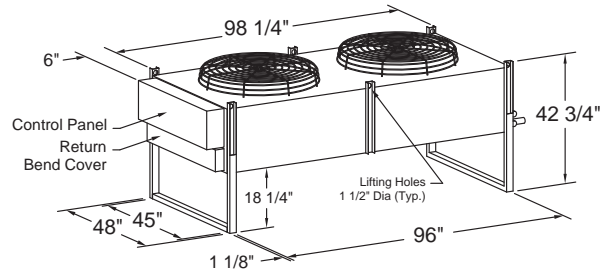
FCP-080, 100 & 118-2S
(1x2 Fan Config.)



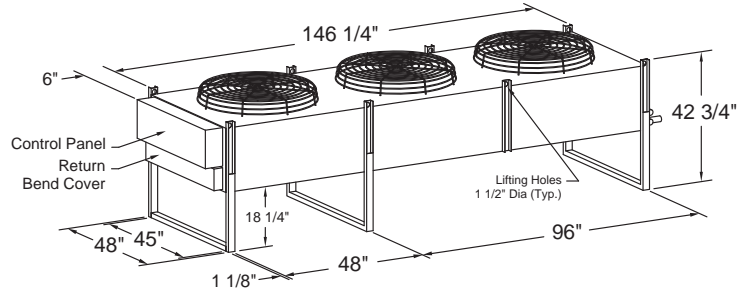
Dimensional Data - FCP(-)-()S, Single Fan-Width Drycoolers

FCP-131/1086-()S (Single Fan Width Outdoor Drycoolers)

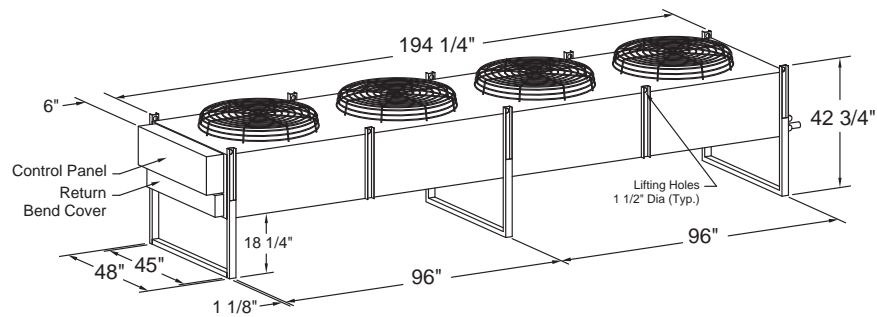
Model Size	Fan Config
FCP-131-2S	1 X 2
FCP-150-2S	
FCP-186-2S	
FCP-210-2S	
FCP-260-2S	
FCP-283-2S	
FCP-298-2S	1 X 3
FCP-355-2S	
FCP-430-3S	
FCP-455-3S	1 X 4
FCP-498-3S	
FCP-562-4S	1 X 5
FCP-594-4S	
FCP-655-4S	
FCP-693-4S	1 X 6
FCP-767-5S	
FCP-840-5S	
FCP-887-5S	1 X 6
FCP-941-6S	
FCP-1030-6S	
FCP-1086-6S	



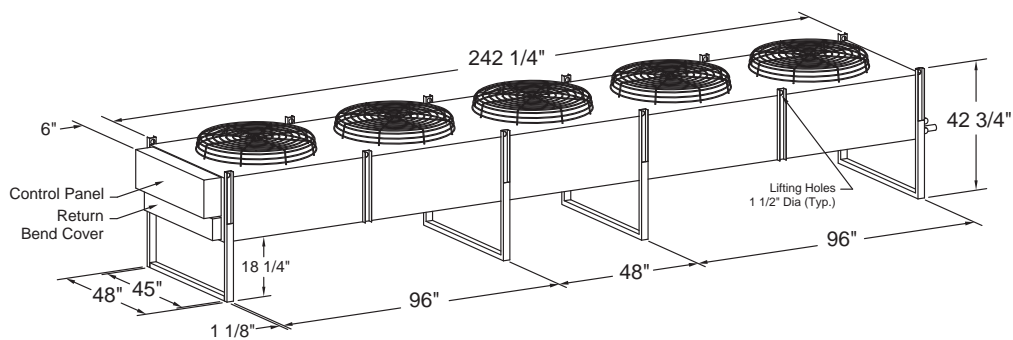
**1 x 2
(Fan Config.)**



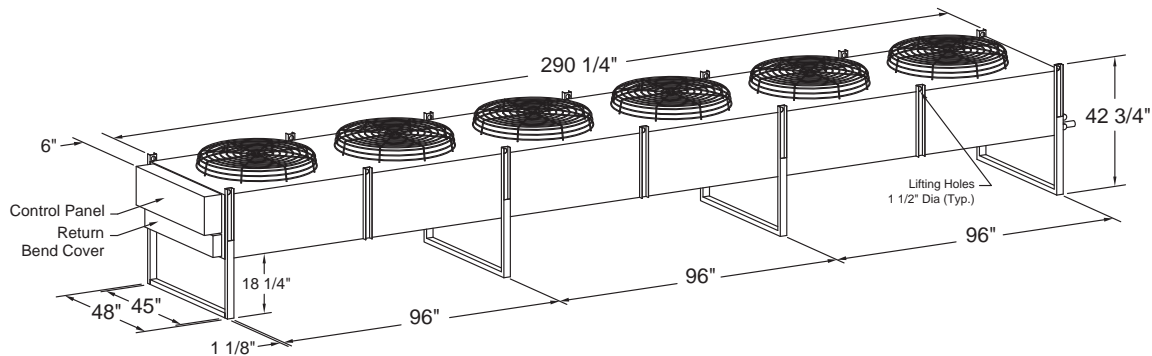
**1 x 3
(Fan Config.)**



**1 x 4
(Fan Config.)**



**1 x 5
(Fan Config.)**

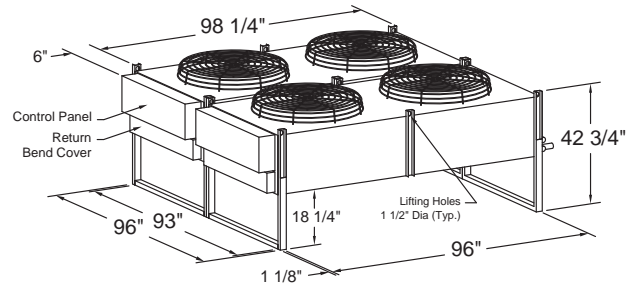


**1 x 6
(Fan Config.)**

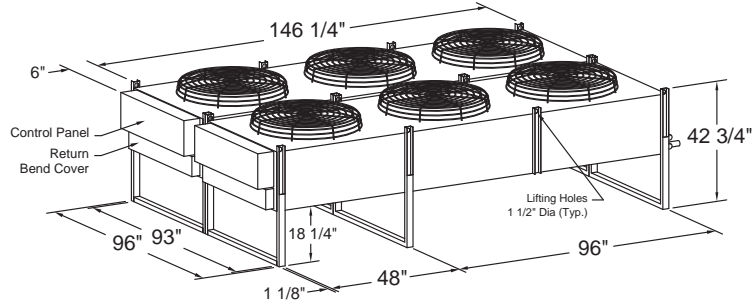
Dimensional Data - FCP(-)-()D, Dual Fan-Width Drycoolers

FCP-566/2172-()D (Dual Fan Width Outdoor Drycoolers)

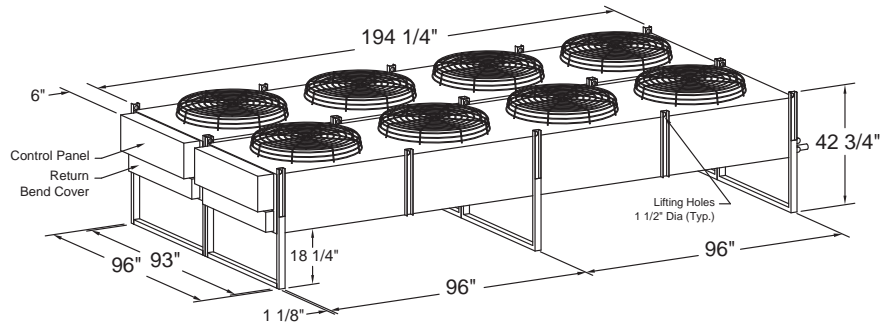
Model Size	Fan Config
FCP-566-4D	2 X 2
FCP-616-4D	
FCP-690-4D	
FCP-727-4D	
FCP-860-6D	2 X 3
FCP-909-6D	
FCP-997-6D	
FCP-1123-8D	2 X 4
FCP-1256-8D	
FCP-1375-8D	
FCP-1450-8D	
FCP-1535-10D	2 X 5
FCP-1682-10D	
FCP-1775-10D	
FCP-1883-12D	2 X 6
FCP-2061-12D	
FCP-2172-12D	



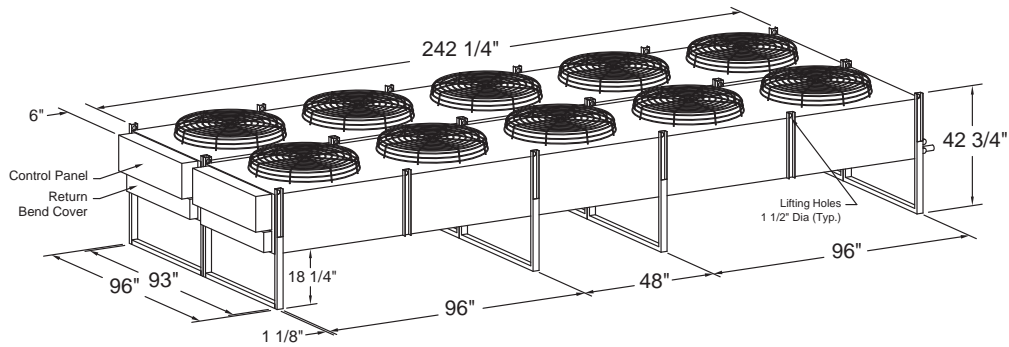
2 x 2
(Fan Config.)



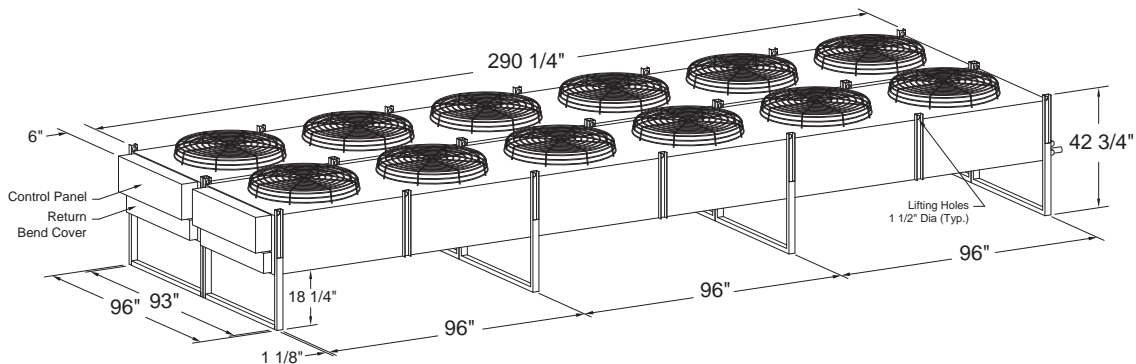
2 x 3
(Fan Config.)



2 x 4
(Fan Config.)



2 x 5
(Fan Config.)



2 x 6
(Fan Config.)

Dimensional Data

1.0 GENERAL



☑ 1.1 Summary

These specifications describe the requirements for a remote outdoor mounted propeller fan type glycol drycooler. The system shall be designed to provide glycol source heat rejection for the specified glycol condenser loop.

The drycooler manufacturer shall design and furnish all applicable equipment in the quantities and configurations shown on the project plans and specifications.

The system shall be UL and CSA approved and labeled. The system shall be NYC MEA (MEA-179-87-E) and Chicago Code approved.

The system shall be provided by AboveAir Technologies. The system model number shall be FCP-(____).

☑ 1.2 Design Requirements

Provide a FluidCool™ brand outdoor propeller fan type drycooler completely factory assembled and tested.

The system shall provide _____ BTUH total heat rejection at a flow rate of _____ GPM with _____ °F EGT and _____ °F LGT at _____ °F ambient air temperature. The glycol solution shall be ____ % (ethylene or propylene) by volume.

The drycooler shall be designed for _____ Volt, _____ Phase, _____ Hertz main power supply.

☑ 1.3 Submittals

Submittals shall be provided after manufacturer's receipt of a written purchase order and shall include: Detailed Performance and Electrical Data; Guide Specifications; and Dimensional, Electrical and Piping Drawings.

☑ 1.4 Quality Assurance

The system shall be factory run tested prior to shipment. The system shall be designed in accordance with ARI Standard 430. All coils shall be factory leak tested at 400 psig dry nitrogen. The system shall be designed and manufactured according to world class quality standards.

2.0 PRODUCT

2.1 Standard Features

☑ 2.1.1 Cabinet Construction

The drycooler cabinet shall be constructed of heavy gauge, corrosion resistant galvanized steel. All multiple fan units shall be divided by full width baffles to separate individual fan sections, prevent air bypass and provided additional casing reinforcement.

☑ 2.1.2 Component Access



Removable fan guards shall provide ease of coil cleaning and fan and motor service. Electrical components shall be accessible through a weather-tight enclosure at the end of the unit.

(Note: Flip-top venturi access panel is optional.)

☑ 2.1.3 Electrical System

The unit electrical components shall be mounted in a weather-tight enclosure located at the header end of the drycooler. Fan motor contactors shall be provided with selected fan cycling kit. The system shall be complete with main power to 24V control transformer and dry-contact closure for remote unit stop/start. The electrical control panel shall be built in accordance and approved by UL.

Glycol Fluid Temperature Control:

Fluid temperature sensing aquastats shall be provided to cycle fans ON and OFF for automatic control of the leaving glycol temperature. Individual fans shall be cycled on single fan-width units; or in pairs on dual fan-width units. The fan, or fans, nearest the header end of the unit shall run continuously.

☑ 2.1.4 Glycol Coil

The drycooler coil shall be constructed of copper tubes and aluminum fins. Coil casings shall be constructed of 16 gauge galvanized steel. Coils shall have single inlet and outlet steel MPT connections plus universal drain or vent connection. All coils shall be factory leak tested at 400 psig dry nitrogen. Coils shall be designed in

accordance with ARI Standard 410.

☑ 2.1.5 Propeller Fans



Fans shall be direct-driven aluminum propeller blade type with painted steel hubs. Fans shall be dynamically balanced and factory tested prior to shipping. Fans shall have dual square head set screws spaced 90 degrees apart that seat on one flat and one keyway on the motor shafts. Fan diameters shall not exceed 30 inches. The fan assembly shall be designed for _____ CFM @ free discharge.

☑ 2.1.6 Fan Guards

Fan guards shall be heavy-gauge, close-meshed steel wire with vinyl coating for maximum rigidity, long life and attractive appearance.

☑ 2.1.7 Fan Motors

The fan motor shall be _____ Hp at _____ RPM. Fan motors shall be heavy duty PSC or three phase open drip-proof type with permanently lubricated ball bearings and built-in overload protection.

All motors shall be factory wired with leads terminating in a weather-tight enclosure located opposite the header end of the unit. Leads on units having five or more fans shall terminate at a power block.

2.2 Optional Features

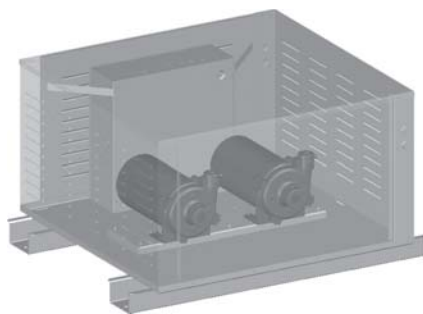
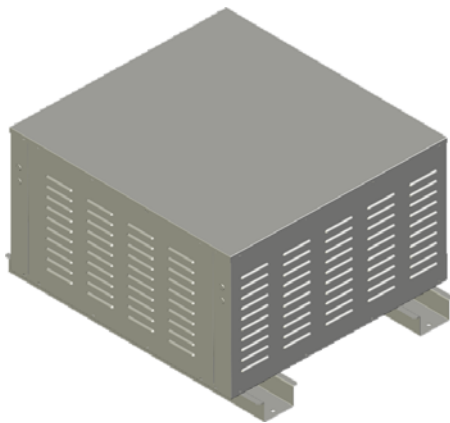
☐ 2.2.1 Main Power, Non-Fused Disconnect Switch

A main power non-fused disconnect switch shall be factory installed.

☐ 2.2.2 Glycol-Side Economizer / Free-Cooling Fan Cycling

The fan cycling control system shall be designed for use with air conditioners configured for glycol-side Free-Cooling cycle. During Free-Cooling mode air conditioning operation, the drycooler fans shall reverse standard DX cooling mode operation to assist in cooling the glycol coolant solution.

Glycol Pump Packages (Technical Data)



Model	Type	Pump Size (HP)	Electrical Data (FLA)			Approx. Weight (LBS)
			208/1/60	208/3/60	460/3/60	
PA1-005	Single	1/2	4.2	2.0	1.0	120
PA1-007	Single	3/4	5.1	3.0	1.5	125
PA1-010	Single	1	6.2	3.4	1.7	130
PA1-015	Single	1-1/2	9.0	4.2	2.1	140
PA1-020	Single	2	---	5.6	2.8	145
PA1-030	Single	3	---	8.0	4.0	150
PA1-050	Single	5	---	13.2	6.6	200
PA2-005	Dual	1/2	4.2	2.0	1.0	205
PA2-007	Dual	3/4	5.1	3.0	1.5	210
PA2-010	Dual	1	6.2	3.4	1.7	215
PA2-015	Dual	1-1/2	9.0	4.2	2.1	230
PA2-020	Dual	2	---	5.6	2.8	235
PA2-030	Dual	3	---	8.0	4.0	250
PA2-050	Dual	5	---	13.2	6.6	375

Note: Motor FLA data is nominal. Nameplate data may vary slightly depending on motor manufacturer model provided.

Guide Specifications - PumpAll™ Glycol Pump Packages

☑ 1.0 General

Provide a PumpAll™ brand _____ (single, duplex or triplex) glycol pump package completely factory assembled and tested. The pump package shall be designed for indoor or outdoor installation.

The system shall be provided by AboveAir Technologies. The system model number shall be _____.

☑ 1.1 Design Requirements

Each pump shall be _____ HP and rated to provide _____ GPM of total glycol flow @ _____ ft. w.g. total system head pressure. Glycol solution shall be _____ %, _____ glycol (ethylene or propylene).

The pump package shall be designed for _____ Volt, _____ Phase, _____ Hertz single point main power supply.

☑ 1.2 Construction

Pumps and factory installed specified accessories shall be mounted in a heavy duty galvanized steel cabinet designed for indoor or outdoor installation.

☑ 1.3 Component Access

Pumps and electrical components shall be accessible for removable side or end access panels.

☑ 1.4 Electrical System

The pump electrical system shall be complete with individual pump controls factory mounted to the pump package. The electrical control panel shall be housed in a weather tight enclosure and be built in accordance with NEC code requirements.

The system shall be complete with:

- 24 Volt Control Transformer
- Main Power Distribution Block and Grounding Lug
- Individual Pump Motor Contactors with Circuit Breaker and Overload Protection
- Automatic Restart After Power Loss
- Remote Stop / Start Contact
- Drycooler & A/C Interface Connections

☐ Dual Pump Packages:

- Automatic Pump Changeover via Field Installed Flow Switch
- Pump Failure Dry-Contact Connection
- Manual Lead-Lag Pump Selector Switch

☑ 1.6 Pumps - Motors/Impellers

Pumps shall be the single stage end suction centrifugal typed close coupled to an EPACT compliant Motor via a carbon steel shaft. Pumps shall be constructed of heavy duty cast iron with precision machined and balanced bronze, non-overloading impellers secured to the motor shaft with a stainless steel locknut.

Each pump motor shall be _____ Hp at _____ RPM. Motors shall have overload protection and a minimum NEMA service factor of 1.15.

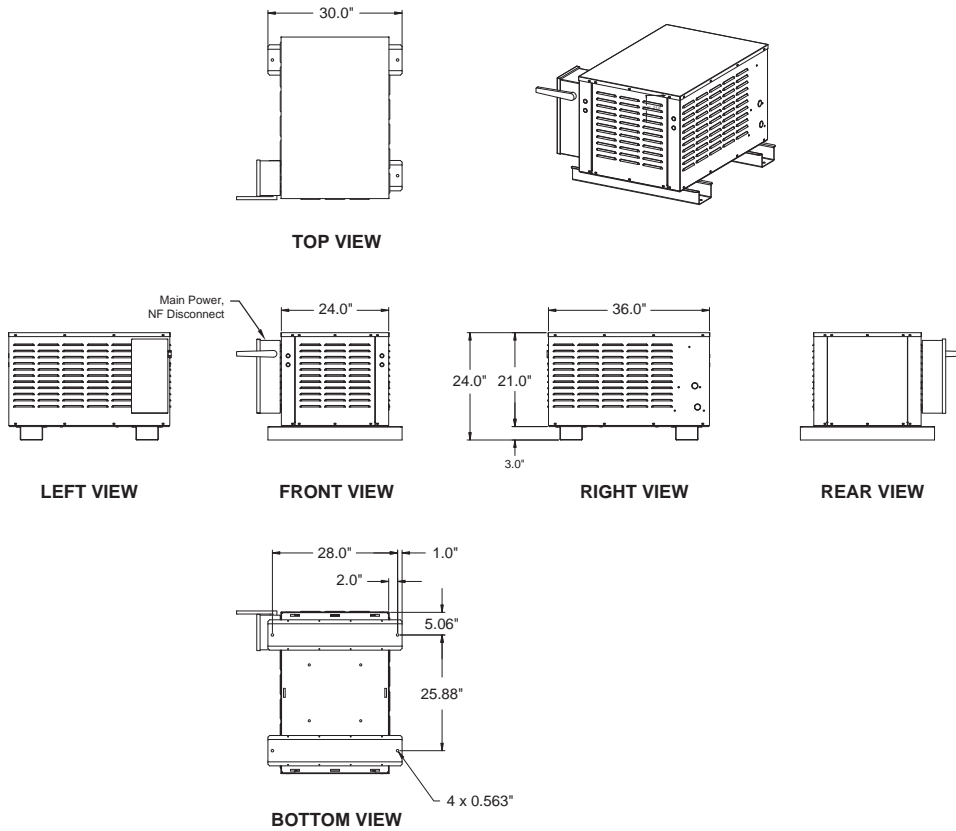
☑ 1.7 Main Power, Non-Fused Disconnect Switch

A main power non-fused disconnect switch shall be factory installed.

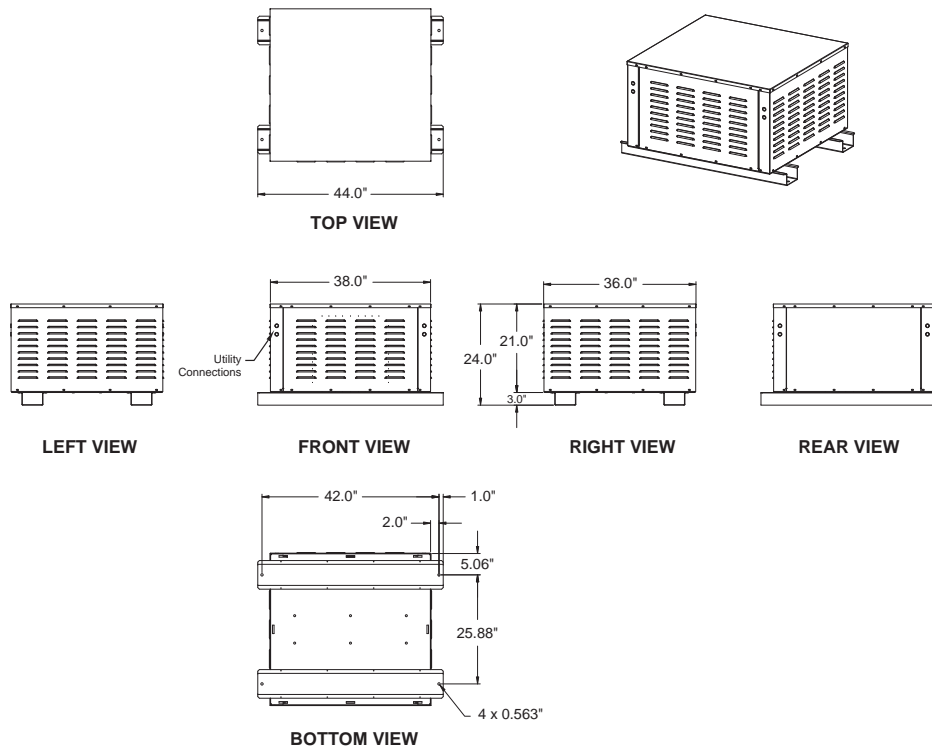
☐ 1.8 Expansion Tank & AirTrol Fitting (Optional)

Each pump package shall include a factory provided, field installed steel volume expansion tank and automatic air-bleed airtrol fitting.

Single Pump Packages (1/2 to 10 Hp, PA1-005/100-_)



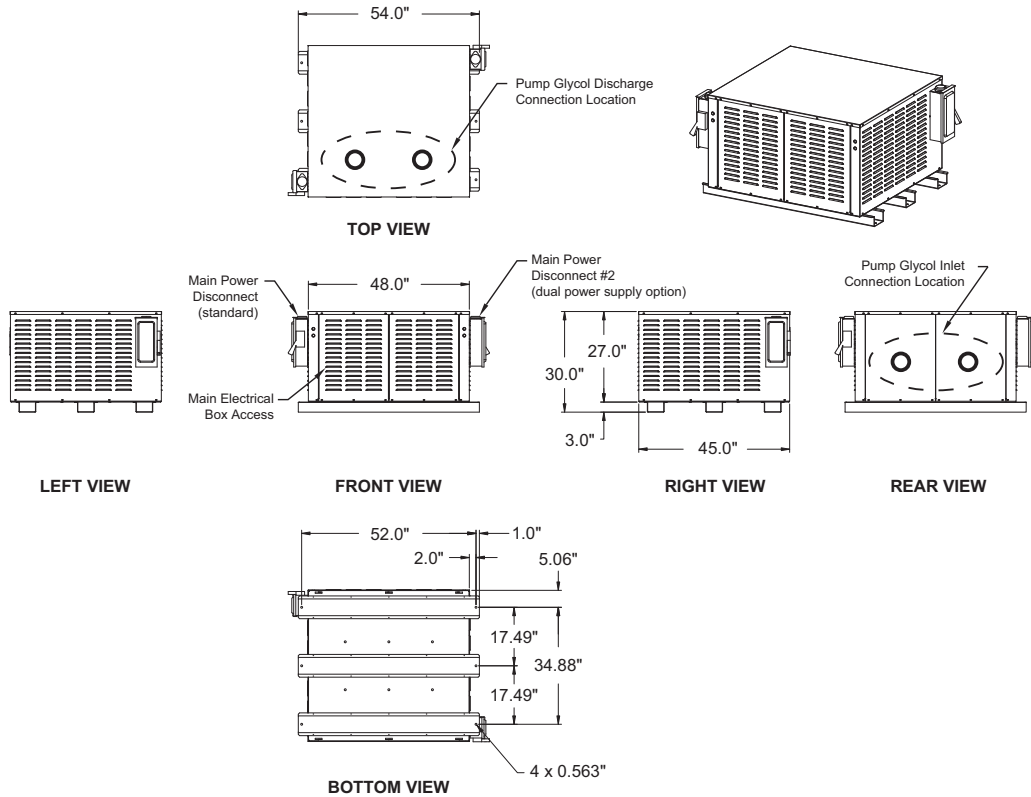
Dual Pump Packages (1/2 to 10 Hp, PA2-005/100-_)



PumpAll™ Pump Packages - Dimensional Data

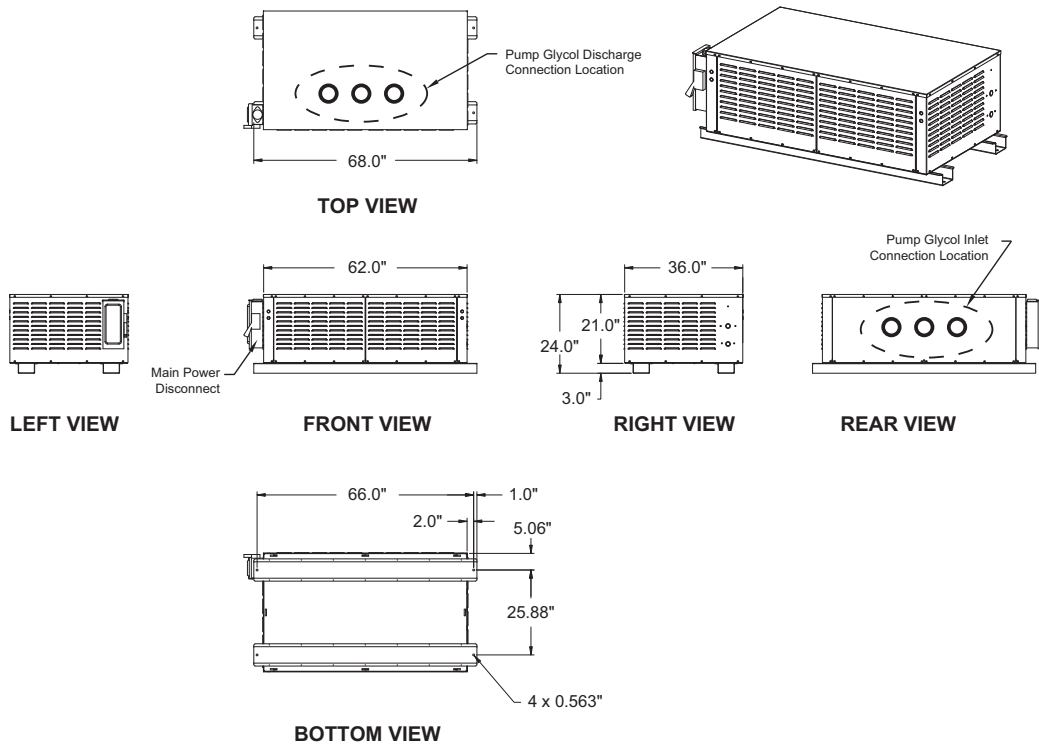
Dual Pump Packages - Optional 1750 RPM

(5 to 15 Hp, PA2-050/150-_-1750)



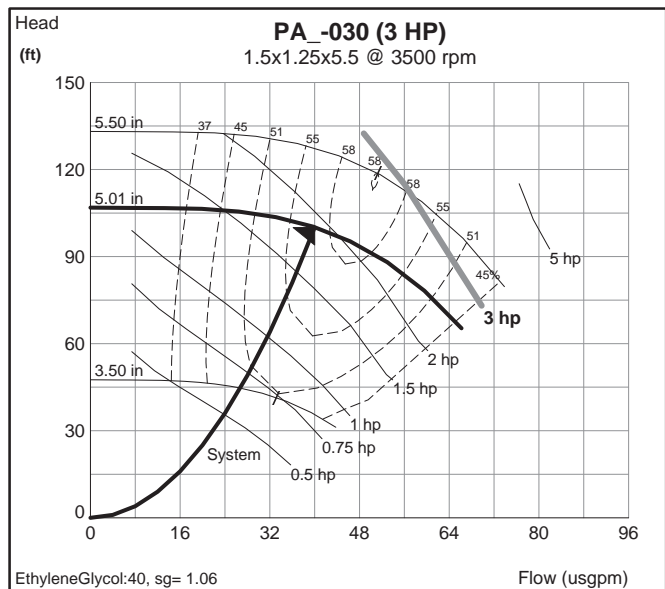
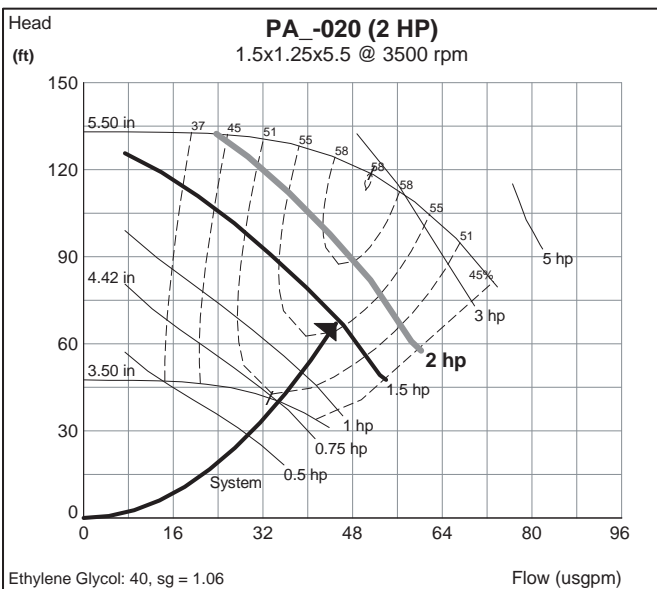
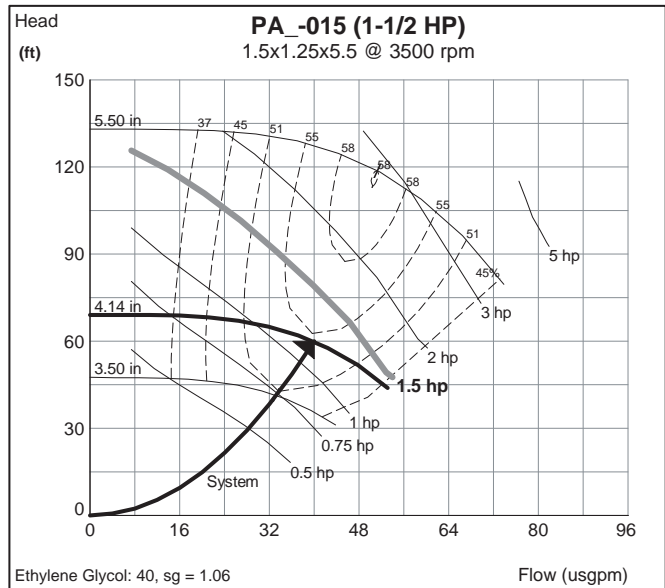
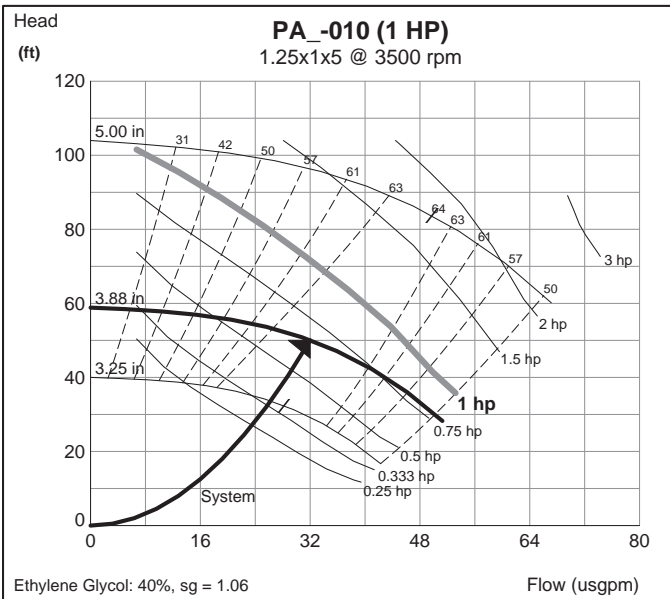
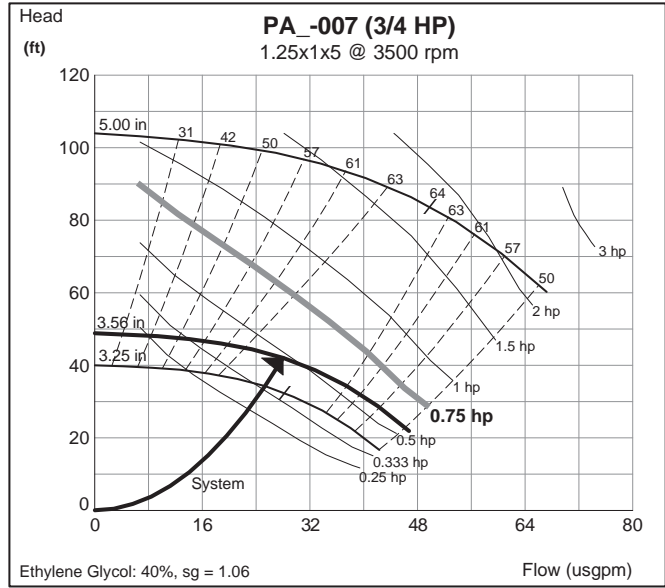
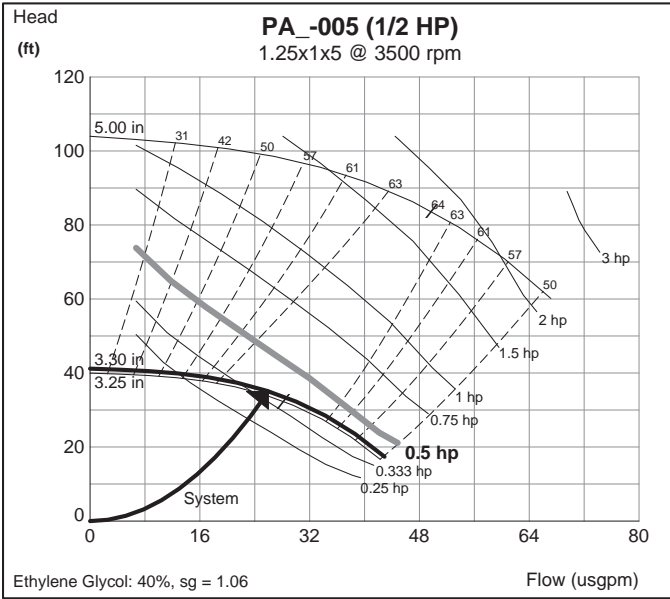
Triplex Pump Packages

(5 to 15 Hp, PA2-050/150-_-)

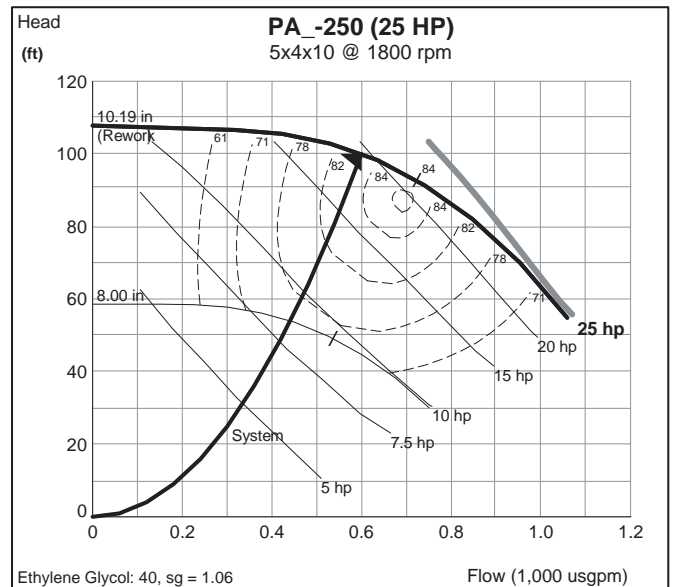
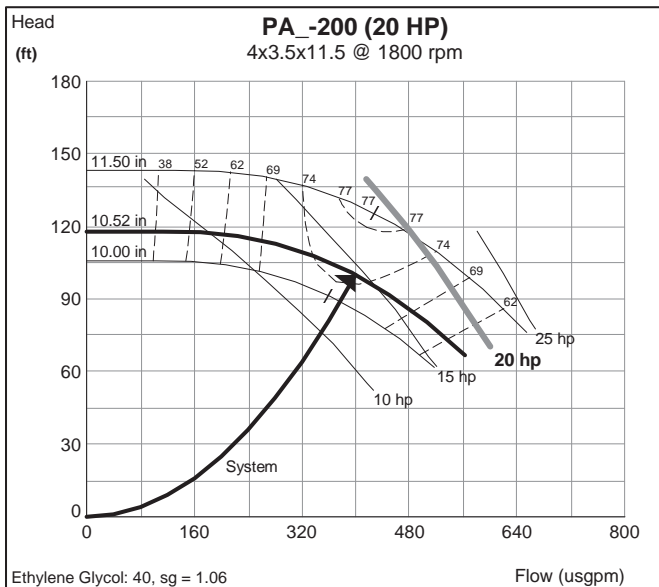
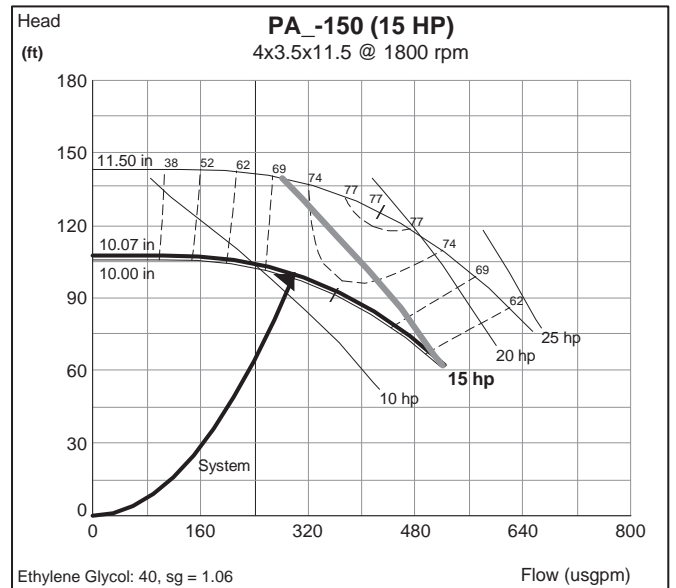
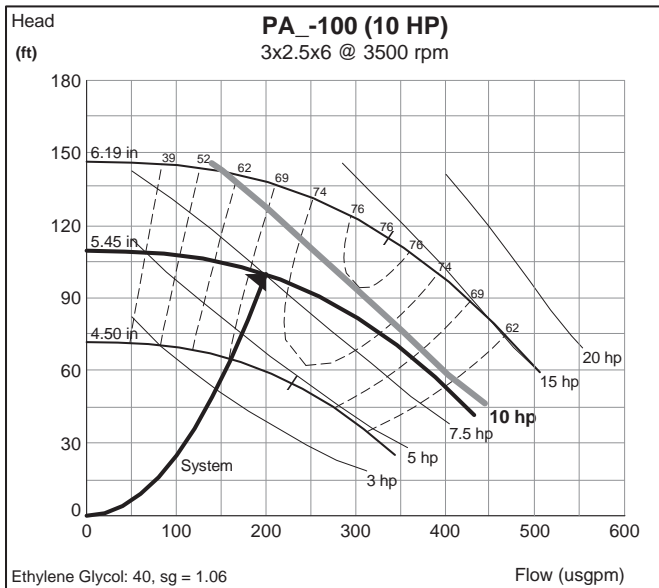
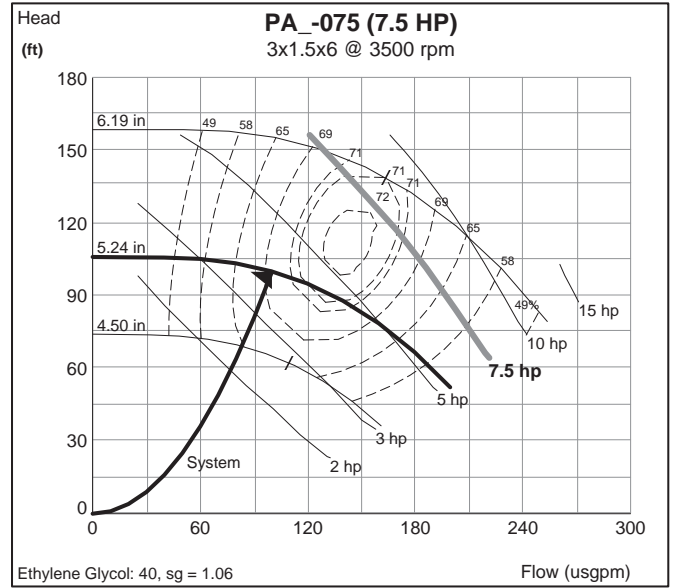
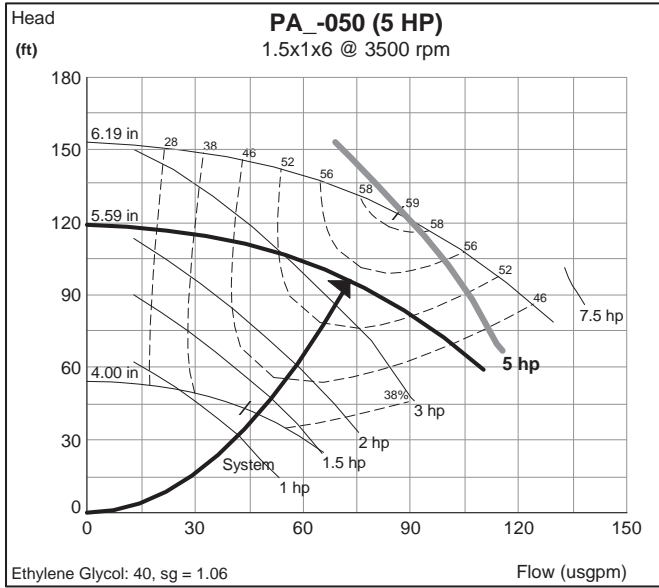


Dimensional Data

PumpAll™ Pump Packages - Performance Curves (1/2 to 3 HP)

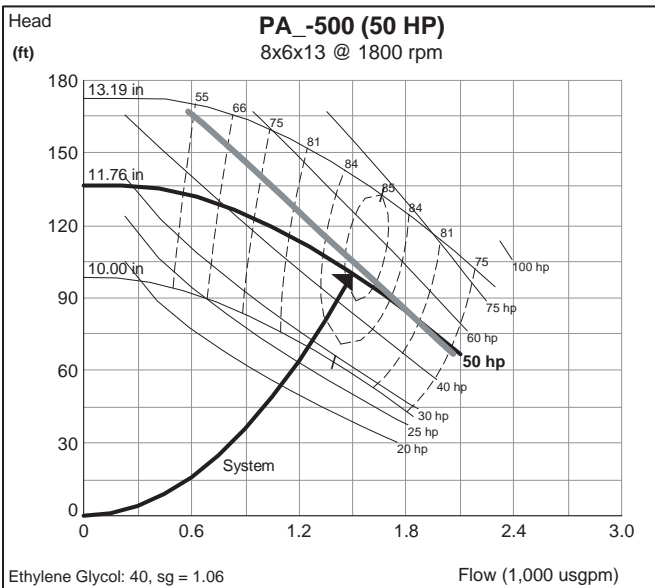
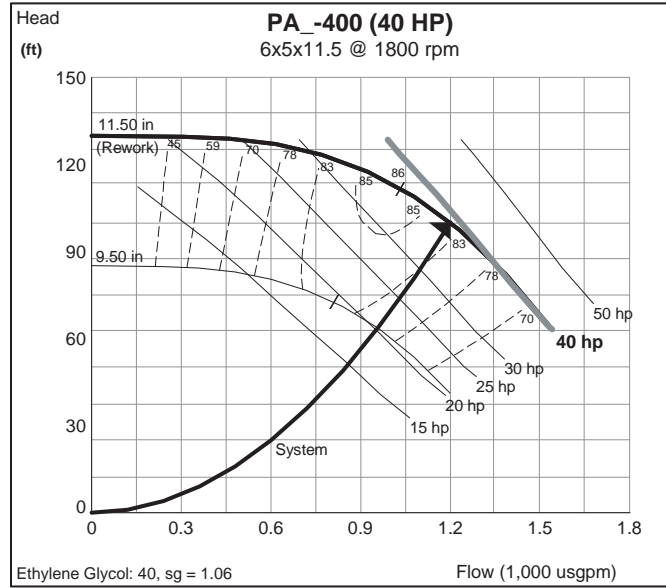
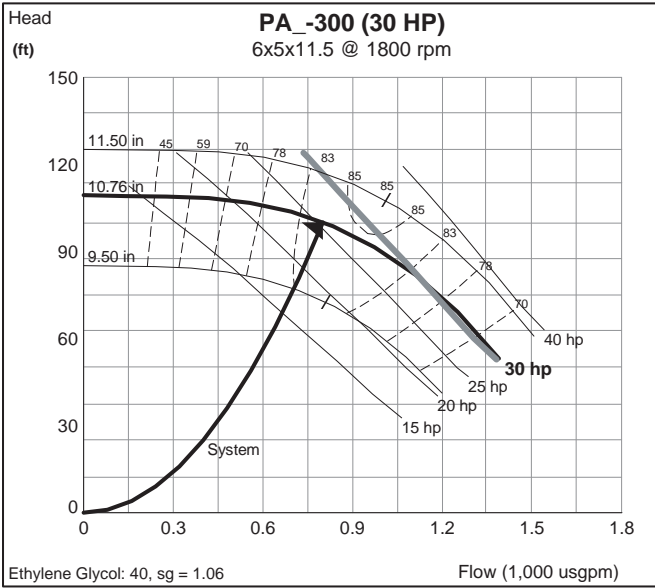


PumpAll™ Pump Packages - Performance Curves (5 to 25 HP)



Performance Data

PumpAll™ Pump Packages - Performance Curves (30 to 50 HP)

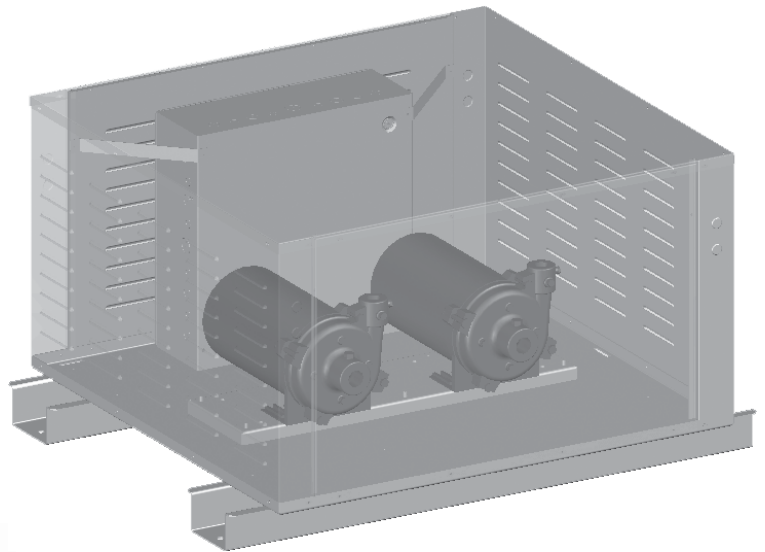
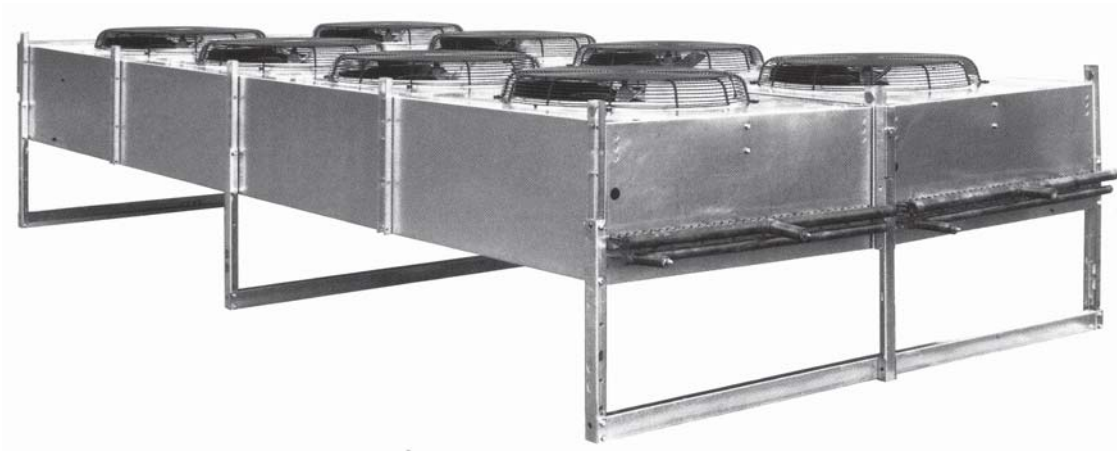


Alternate Pump Performance?

Please consult your local AboveAir Technologies Sales Representative for pump performance requirements falling outside the range of the curves in this manual. A wide selection of pump packages are available to match your unique requirements:

- 1/3 to 50 Hp
- 1800 & 3600 RPM Motors
- Wide Selection of Impeller Sizes
- Optional In-Line Vertical Pumps

Glycol Drycoolers & Pump Packages





Ceiling Air Conditioners

SpotCool™ - 2x4 T-Bar "Spot-Cooler" Comfort & Precision Ceiling Mounted A/C's

HK™ Horizontal - Hi-Static Ducted "Same-Face" Comfort & Precision Ceiling Mounted A/C's

HK-OA™ - Horizontal Up to 100% DOAS High-Percentage Outside Air Ceiling Mounted A/C's

Floor Air Conditioners

VK™ Vertical - SCAV, Vertical Floor Mounted Self-Contained & Split Comfort Constant Air Volume and Variable Air Volume (VAV) A/C's & Heat Pumps

VK-OA™ - Vertical Up to 100% DOAS High-Percentage Outside Air Vertical Floor Mounted A/C's

MissionCritical™ - Precision Vertical Floor Mounted Computer Room A/C's

VK™ Console - Vertical Floor Console Mounted Self-Contained & Split A/C's & Heat Pumps

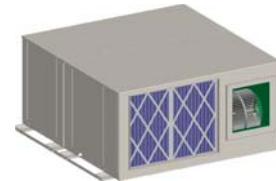
Remote Heat Rejection

FluidCool™ - Indoor & Outdoor Remote Glycol Drycoolers

PumpAll™ - Single, Dual & Triplex Standard & Variable (VFD) Speed Glycol Pump Packages



**2x4 "Spot-Cooler"
Ceiling Mounted A/C's**
(1 to 3 Tons)



**Ducted "Same-Face"
Ceiling Mounted A/C's**
(1 to 30 Tons)



**Comfort - Packaged & Split
Vertical Floor Mounted
Air Conditioners**
(1 to 30 Tons)



**Precision - Vertical Floor
Mounted Computer Room
Air Conditioners**
(1 to 30 Tons)

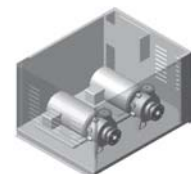


**VK-Console™ - Up-Flow & Down-Flow
Floor Console Mounted Air Conditioners**
(1 to 5 Tons)



**Remote Air Cooled
Condensers, Condensing Units &
Glycol Drycoolers**
(1 to 180 Tons of THR)

**Single & Dual
Glycol Pump Packages**
(1/2 to 50 HP)



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