LEGACY CHILLER SYSTEMS
Legacy Chiller Systems, Inc.
www.Legacychillers.com
877-988-5464

AIR-COOLED CHILLERS

VALUE LINE

PACKAGED SYSTEMS

R407C

EPA COMPLIANT

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Along with a complete line of standard products that Legacy Chiller Systems Inc. offers, we also have the ability to custom build units to each customers particular needs.

Please contact the factory or your Legacy representative for a special application.

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Due to manufacturers's policy of continuous product improvement, the manufacturer reserves the right to make changes without notice. Drawings in this booklet are representations of the equipment shown. Contact the factory for specific unit drawings.

NOMENCLATURE

Example: V P AC T 3 S 3 - T3 - Z

V	V = Value Line	
P	P = Packaged ES = Evaporator Section CS = Condenser Section	
AC	AC = Air-Cooled Condenser	
T	T = Tank Model	
3	Nominal Tons Ex. 3 = 3 Tons	
S	S = Single Circuit Unit	
3	1 = R134a 3= R407C 6 = R404A, R507	
T3	Electrical Requirement	S2 = 208/230-1-60 T3 = 208/230-3-60 S4 = 460-1-60 T4 = 460-3-60 T5 = 575-3-60 S6 = 220-1-50 T7 = 200/208-3-50 T9 = 380-3-50
Z	Compressor Type Z = Scroll	

Low ambient, or lower leaving water temperatures, can require the recirculation of gycol solutions or other fluid blends.

These solutions can effect unit capacities. Please consult the factory on these or other special applications for proper sizing.

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Consult factory on sizing chillers with glycol or any fluid other than water.

AIR-COOLED SELECTION PROCEDURES

To properly select an air-cooled packaged chiller, the following information must be known:

1. The required cooling capacity, BTUH.
2. Delta T of entering and leaving fluid temperatures.
3. Fluid factor (ex. water = 500).
4. GPM of process fluid to be circulated.
5. Design ambient air temperature.

If you know any three of the items 1 through 4 above, you can calculate the fourth by using the formulas below.

For 100% water:

Cooling capacity (in BTUH) = GPM x Delta T x 500

$$\text{GPM} = \frac{\text{Capacity (in BTUH)}}{\text{Delta T} \times 500}$$

$$\text{Delta T} = \frac{\text{Capacity (in BTUH)}}{\text{GPM} \times 500}$$

Sample selection:

Select an air-cooled, packaged chiller to cool 6.5 GPM of 100% water from 54°F to 44°F. Design ambient air temperature 95°F.

Find:

Air-cooled chiller model.

Solution:

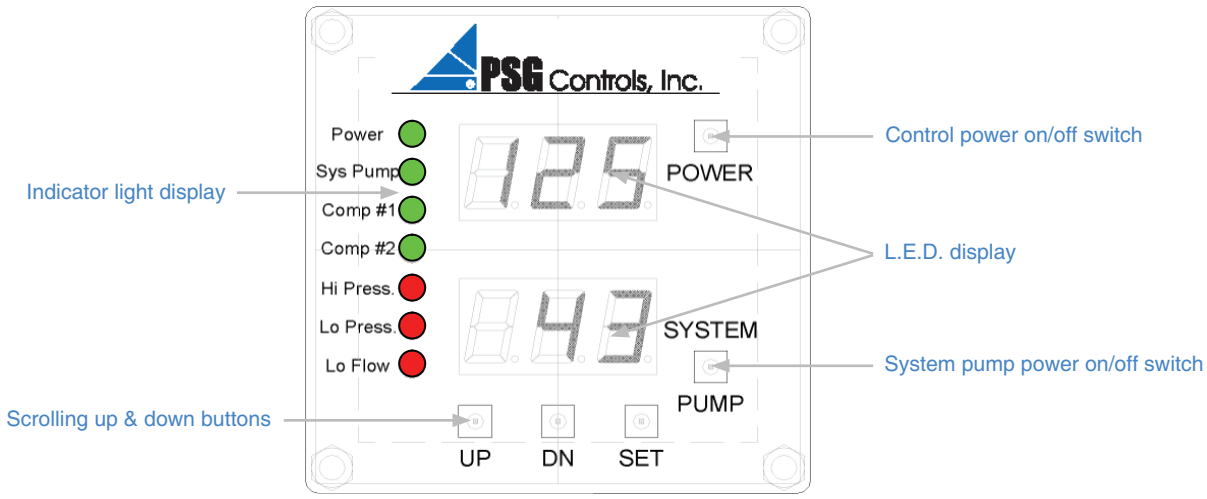
1. Chilled fluid Delta T = 54°F - 44°F = 10°F
2. Capacity (in BTUH) = 6.5 GPM x 10°F Delta T x 500 = 32,500 BTUH
3. From the chiller capacity tables, it can be determined that the VPACT3 has the capacity to meet the requirements.

1S - 10S VALUE LINE CHILLERS

Capacity Table

MODEL	COMPRESSOR	LWT °F	80			90			95			100			105		
			TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
1S	ZR16KCE	42.0	1.3	1.2	9.1	1.2	1.3	8.0	1.2	1.4	7.5	1.2	1.5	7.0	1.1	1.6	6.6
		44.0	1.3	1.2	9.3	1.2	1.3	8.3	*1.2*	*1.4*	*7.7*	1.2	1.5	7.2	1.2	1.6	6.8
		45.0	1.3	1.2	9.5	1.3	1.3	8.4	1.2	1.4	7.8	1.2	1.5	7.3	1.2	1.6	6.9
		50.0	1.5	1.2	10.3	1.4	1.3	9.2	1.4	1.4	8.5	1.3	1.5	8.0	1.3	1.6	7.5
2S	ZB19KCE	42.0	2.1	1.7	11.0	1.9	2.0	9.4	1.9	2.1	8.7	1.8	2.2	8.0	1.8	2.4	7.3
		44.0	2.2	1.8	11.5	2.0	2.0	9.9	*2.0*	*2.1*	*9.2*	1.9	2.2	8.4	1.9	2.4	7.7
		45.0	2.2	1.8	11.7	2.1	2.0	10.1	2.0	2.1	9.3	1.9	2.2	8.6	2.0	2.4	7.9
		50.0	2.4	1.8	12.8	2.3	2.0	11.0	2.2	2.1	10.2	2.2	2.3	9.4	2.1	2.4	8.7
3S	ZB26KCE	42.0	2.8	2.5	11.0	2.6	2.8	9.3	2.5	3.0	8.6	2.4	3.2	7.9	2.4	3.4	7.3
		44.0	2.9	2.5	11.4	2.7	2.9	9.7	*2.7*	*3.0*	*9.0*	2.5	3.2	8.2	2.5	3.4	7.6
		45.0	2.9	2.5	11.6	2.8	2.9	9.9	2.7	3.0	9.2	2.6	3.2	8.3	2.5	3.4	7.7
		50.0	3.2	2.6	12.6	3.1	2.9	10.8	3.0	3.1	10.0	2.9	3.3	9.2	2.8	3.4	8.5
4S	ZB30KCE	42.0	3.4	3.2	11.1	3.3	3.6	9.6	3.1	3.8	8.9	3.1	4.0	8.3	3.0	4.2	7.7
		44.0	3.6	3.3	11.5	3.4	3.6	10.0	*3.2*	*3.8*	*9.3*	3.2	4.0	8.5	3.1	4.2	8.0
		45.0	3.7	3.3	11.7	3.5	3.6	10.1	3.3	3.8	9.4	3.3	4.0	8.7	3.2	4.2	8.1
		50.0	4.0	3.3	12.5	3.8	3.7	10.9	3.6	3.9	10.2	3.6	4.1	9.4	3.5	4.3	8.8
5S	ZB38KCE	42.0	4.5	3.8	12.7	4.3	4.2	11.0	4.2	4.4	10.2	4.1	4.7	9.5	4.0	4.9	8.8
		44.0	4.7	3.8	13.0	4.4	4.2	11.3	*4.2*	*4.5*	*10.5*	4.2	4.7	9.7	4.1	4.9	9.1
		45.0	4.8	3.8	13.2	4.5	4.2	11.4	4.5	4.5	10.6	4.3	4.7	9.8	4.2	4.9	9.2
		50.0	5.3	3.9	14.2	5.0	4.4	12.4	4.9	4.6	11.5	4.8	4.8	10.7	4.6	5.1	10.0
6S	ZB45KCE	42.0	5.1	4.5	12.3	4.9	5.0	10.6	4.7	5.3	9.8	4.6	5.6	9.1	4.5	5.9	8.4
		44.0	5.3	4.5	12.7	5.0	5.1	10.9	*4.9*	*5.3*	*10.1*	4.8	5.6	9.3	4.7	6.0	8.7
		45.0	5.4	4.5	12.8	5.2	5.1	11.0	5.0	5.4	10.3	4.9	5.7	9.4	4.7	6.0	8.8
		50.0	5.9	4.6	13.7	5.6	5.2	11.8	5.5	5.5	11.1	5.3	5.8	10.2	5.2	6.1	9.5
7S	ZB58KCE	42.0	7.1	6.0	12.2	6.7	6.6	10.5	6.5	7.0	9.7	6.3	7.4	9.0	6.2	7.8	8.3
		44.0	7.4	6.0	12.5	7.0	6.7	10.9	*6.8*	*7.0*	*10.1*	6.6	7.4	9.3	6.4	7.9	8.7
		45.0	7.6	6.1	12.8	7.2	6.7	11.2	7.0	7.1	10.3	6.8	7.5	9.6	6.6	7.9	8.9
		50.0	8.2	6.2	13.8	7.8	6.8	12.1	7.6	7.2	11.2	7.4	7.6	10.4	7.2	8.0	9.6
8S	ZB66KCE	42.0	7.8	6.8	11.9	7.4	7.5	10.5	7.2	7.9	9.8	7.0	8.3	9.0	6.8	8.7	8.4
		44.0	8.1	6.8	12.3	7.7	7.6	10.8	*7.5*	*7.9*	*10.1*	7.3	8.4	9.3	7.2	8.8	8.7
		45.0	8.2	6.9	12.5	7.8	7.6	11.0	7.7	8.0	10.2	7.4	8.4	9.5	7.2	8.8	8.9
		50.0	9.0	7.0	13.5	8.7	7.7	11.9	8.5	8.1	11.1	8.2	8.6	10.3	8.0	9.0	9.6
10S	ZB76KCE	42.0	9.1	8.2	11.8	8.7	9.1	10.3	8.5	9.6	9.6	8.2	10.0	8.9	8.0	10.6	8.3
		44.0	9.5	8.3	12.2	9.0	9.2	10.6	*8.8*	*9.6*	*9.9*	8.6	10.1	9.2	8.3	10.7	8.5
		45.0	9.7	8.3	12.4	9.2	9.2	10.8	9.0	9.7	10.1	8.7	10.2	9.4	8.5	10.7	8.7
		50.0	10.6	8.5	13.3	10.1	9.4	11.6	9.8	9.9	10.8	9.6	10.4	10.1	9.3	10.9	9.4

1. Capacities on this chart are based on refrigerant R407C. Low ambient or lower leaving water temperatures can require the use of a glycol solution or other fluid blends. These solutions affect unit capacities. Please consult the factory on these or other special fluids.
2. KW input is for compressor(s) only.
3. EER = Energy Efficiency Ration (BTU/watt-hour). Power inputs include compressor(s), condenser fan motor(s) and control power.



Standard Features

- Control operates to a +/- 1°F accuracy
- Powered from the chiller 24 volt control circuit. No high voltage interference.
- 1 or 2 compressor control capability
- Operates and displays in °F and °C
- Controls chiller on inlet or outlet temperature
- Scroll through set up and review mode
- 30-second compressor time delay to prevent short cycling and nuisance faults
- 60-second hot gas solenoid delay to prevent false hot gas feeding during compressor start up
- Lock out relay shuts down the chiller when control fault settings activate
- Automatic compressor lead lag on dual circuit chillers
- Weather resistant for outdoor use
- Basic chiller functionality for ease of set up and operation
- Factory default function code to reset the controller to the initial factory settings
- Two L.E.D. display windows
    a) Inlet and outlet temperature during chiller operation
    b) Displays refrigerant high and low pressure in review mode
        1) No cap tubes to break causing a loss of refrigerant and down time
        2) No refrigerant revcovery to change out the pressure transducer
- Indicator lights
    a) Chiller control power on/off switch with green indicator
    b) System pump on/off switch with green indicator
    c) Compressor run indicator lights
    d) High and low refrigerant pressure red fault indicator
    e) Low fluid flow red indicator
- Display flashes all chiller safety faults
    a) High fluid temperature outlet alarm
        Display only - does not shut the chiller down
    b) Low fluid temperature outlet alarm
        Shuts down the chiller and requires manual reset
    c) High refrigerant pressure
        Shuts down the chiller and requires manual reset
    d) Low refrigerant pressure
        Shuts down the chiller and requires manual reset
    e) Low water flow through evaporator
        Shuts down the chiller and automatically resets when flow is restored
- Monitors and logs compressor run hours

VPACT - VALUE LINE
R407C Packaged, Air-Cooled Chillers with Tank

Dimensional and Electrical Specifications

MODEL	BTUH @ 95°F AMB. 50°F Lwt	LENGTH IN.	WIDTH IN.	HEIGHT IN.	TANK GAL.	FLUID CONN.	COMPRESSOR		RLA EA	LRA EA	FAN MOTOR		CHILLER PUMP HP	CHILLER PUMP FLA	MCA	M.O.P.	WT. LBS.
							QTY	HP			QTY	FLA EA.					
1S3-S2-Z	16,800	36	34	46.25	6	3/4" FPT	1	1.3	10	41	1	3.3	1	8.4	25	30	350
2S3-S2-Z	26,400				13	1" FPT		2.5	15.7	73		3.3		8.4	35	45	425
2S3-T3-Z									8.2	63		3.3		8.4	25	30	
2S3-T4-Z									4.3	31		1.6		2.0	15	15	
3S3-S2-Z	36,000							3.5	20.7	127		3.3		8.4	40	50	475
3S3-T3-Z									13.9	88		3.3		8.4	30	40	
3S3-T4-Z									7.1	44		1.6		2.0	15	20	
3S3-T5-Z									5.0	35		1.72		1.6	15	15	
4S3-S2-Z	43,200	56		47.25				4	25.0	132		3.3		8.4	45	60	525
4S3-T3-Z									15.0	115		3.3		8.4	35	45	
4S3-T4-Z									7.4	48		1.6		2.0	15	20	
4S3-T5-Z									6.4	40		1.72		1.6	15	15	
5S3-S2-Z	58,800				24			5	30.1	175		3.3	1.5	10.0	60	80	575
5S3-T3-Z									20.7	115		3.3		10.0	40	50	
5S3-T4-Z									8.9	63		1.6		2.8	20	25	
5S3-T5-Z									7.1	50		1.72		1.8	15	15	
6S3-T3-Z	66,000							6	20.7	156		3.3		10.0	40	50	575
6S3-T4-Z									11.5	70		1.6		2.8	20	30	
6S3-T5-Z									7.9	54		1.72		1.8	15	20	
7S3-T3-Z	91,200	85			31	1.25" FPT		8	32.1	195	2	3.3		10.0	60	80	700
7S3-T4-Z									16.4	95		1.6		2.8	30	40	
7S3-T5-Z									12.0	80		1.72		1.8	25	30	
8S3-T3-Z	102,000							9	33.6	225		3.3	2	10.5	60	90	700
8S3-T4-Z									17.3	114		1.6		3.2	30	45	
8S3-T5-Z									13.5	80		1.72		2.3	25	35	
10S3-T3-Z	117,600							10	41.4	239		3.3		10.5	70	110	750
10S3-T4-Z									19.2	125		1.6		3.2	35	45	
10S3-T5-Z									13.8	80		1.72		2.3	25	35	

Standard Features

- **ETL listed**
- **Scroll** compressor with crankcase heater
- **Microprocessor controller** *(see page 6 for details)*
- **STAINLESS STEEL**, brazed plate evaporator with 1/2" insulation and secured in a steel bracket
- **Casters (factory mounted)**
- **Fused, STAINLESS STEEL chiller circulation pump**
- **Insulated polyethylene reservoir tank**
- **Low flow by-pass valve**
- **Suction accumulator**
- **Water flow switch**
- **Hot gas by-pass**
- **24V control transformer**
- Direct drive condenser fan motor
- Rust resistant, high CFM, aluminum condenser fan blade
- Condenser(s): copper tube/aluminum fin
- Compressor motor contactor
- Condenser motor and control circuit fusing
- Painted, galvanized sheet metal cabinet
- 1/2" insulation on all water and low pressure refrigerant lines
- Liquid line drier, sightglass, solenoid, TEV
- Complete refrigerant charge from factory

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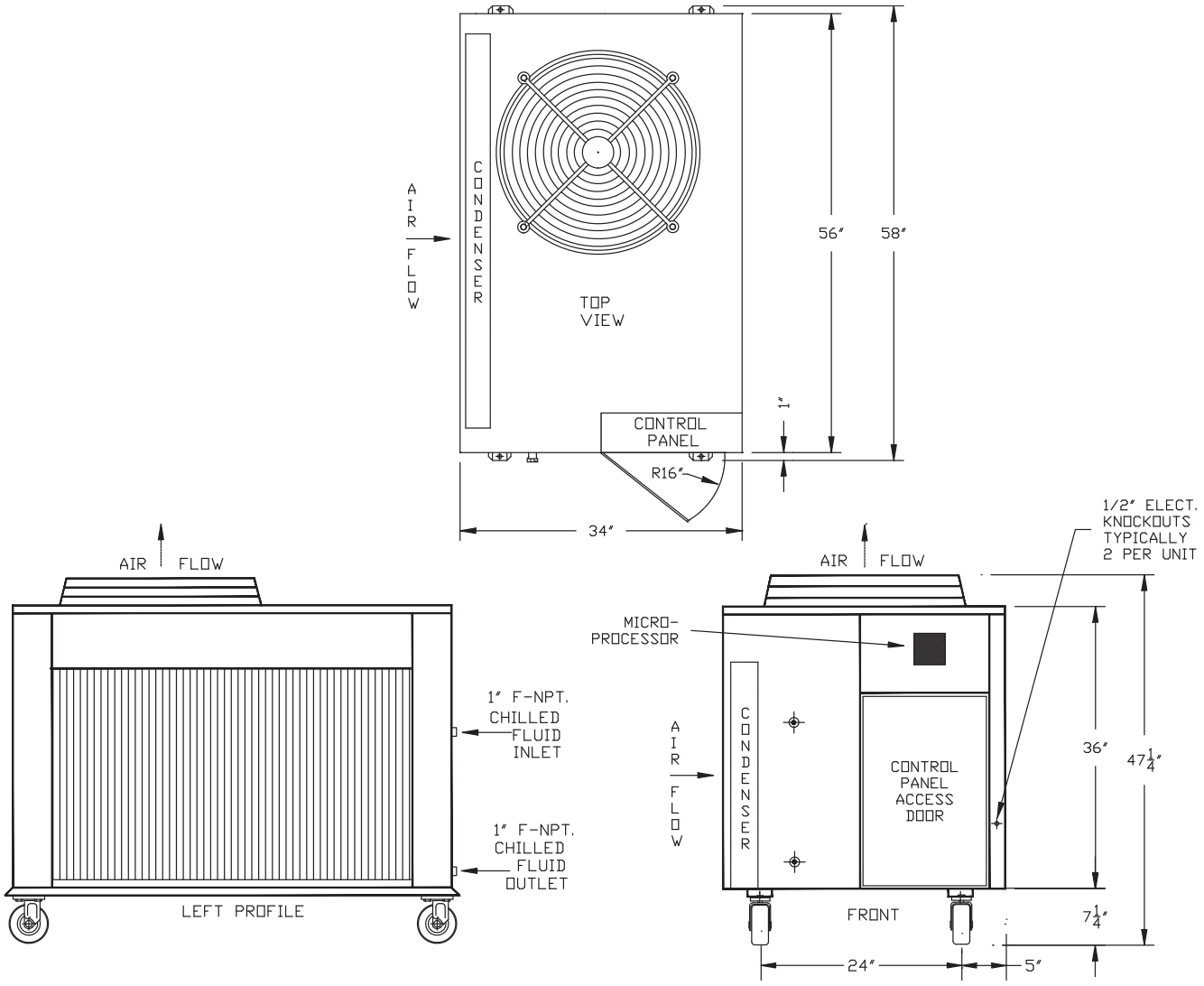

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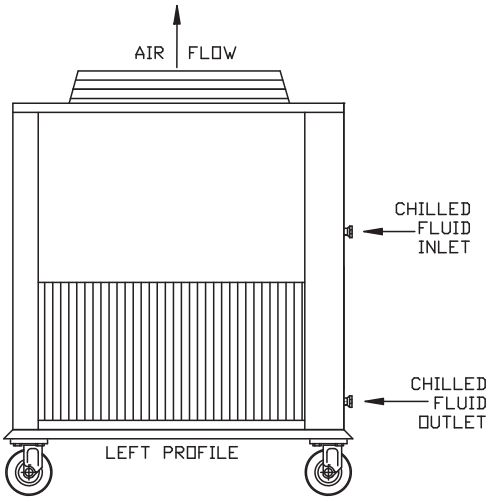

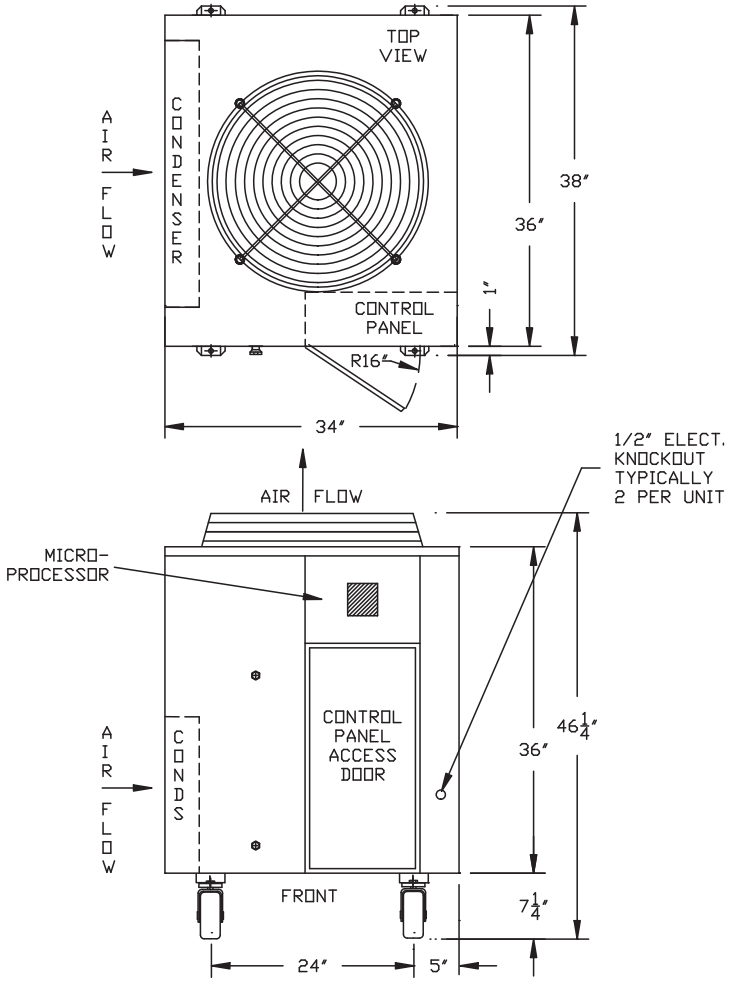

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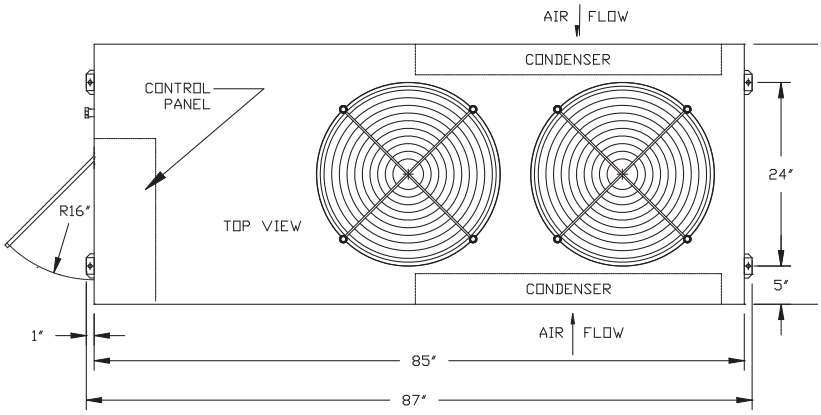

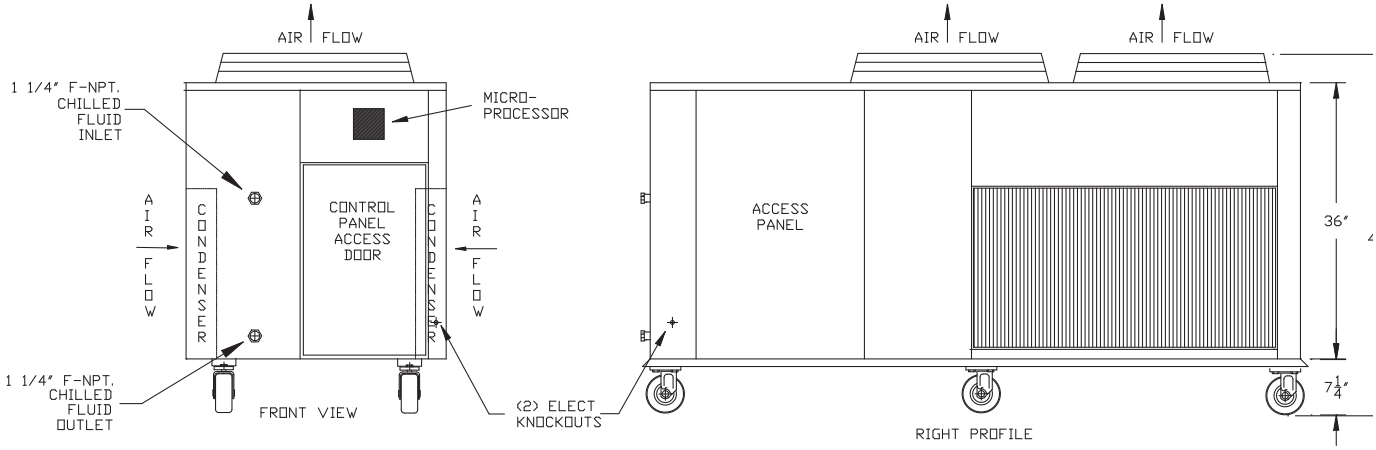

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