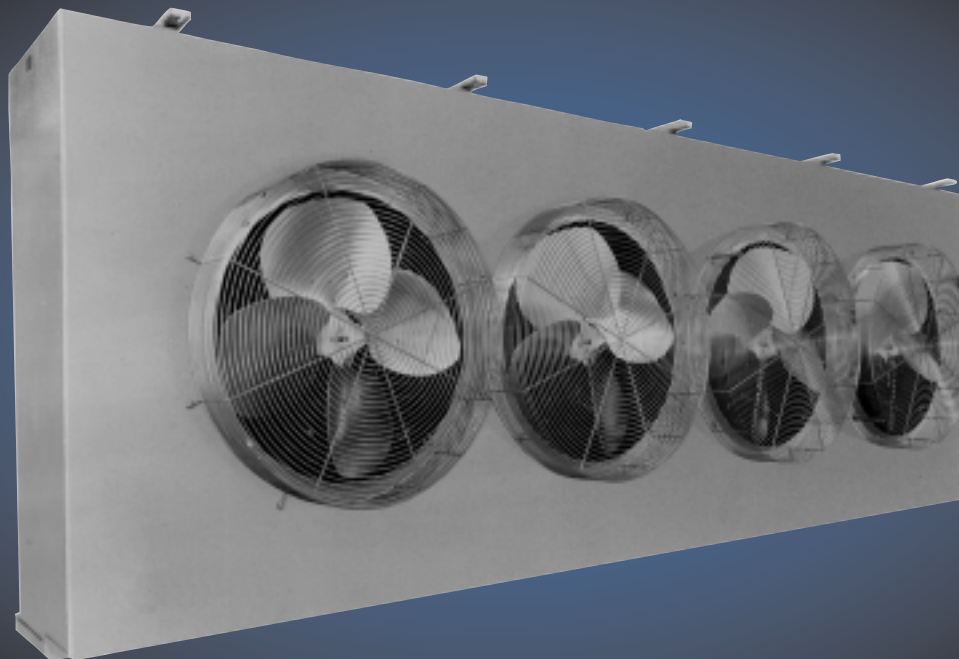


# Heavy Duty Unit Cooler

Catalog 440



Air Defrost - 16,400 to 273,000 BTUH  
Electric Defrost - 11,800 to 248,000 BTUH  
Hot Gas - 11,800 to 248,000 BTUH

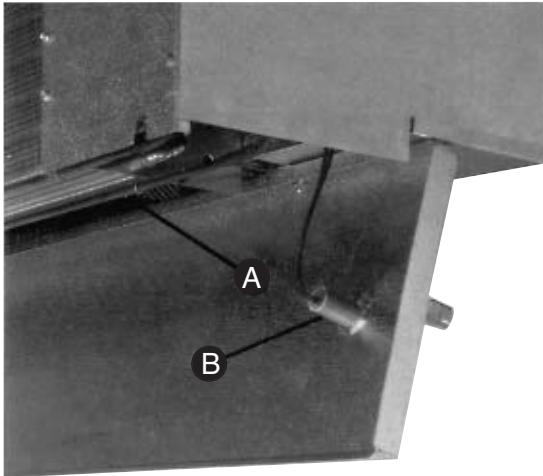
**Large Walk-Ins  
and Warehouses**

**Cooler & Freezer  
Applications**

# Features

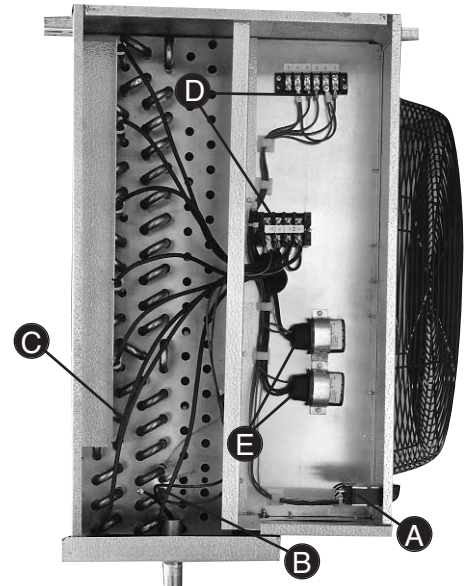
- **APPLICATIONS** — Polar-Flo unit coolers are ideally suited for a wide range of large coolers, freezers and blast freezers. The **P•U** and **P•L** models are designed for use below 25°F room temperature. The **P•M** and **PAH** models are designed for coolers in the medium and high temperature range.
- **SIZES** — There are 61 sizes available, ranging in capacity from 11,800 to 273,000 BTUH @ 10°TD, with air flows from 2,720 to 29,900 CFM.
- **HOUSING** — Rust-free, heavy-gauge textured aluminum—lightweight and durable. Drain pans are hinged to allow convenient servicing and maintenance.
- **LIFTING LEGS** — 2-fan models and larger are shipped upright with removable lifting legs, allowing the unit to be installed quickly and easily with a forklift. Slotted hangers are provided for fast installation.
- **COIL** — Seamless copper tubes are mechanically expanded into heavy-gauge corrugated aluminum fins to assure maximum heat transfer. Die-formed fin collars are provided for accurate fin spacing. Hangers are fastened directly to the tube sheets of the coil to provide high structural strength.
- **REFRIGERANTS** — For use with direct expansion R-22, R-404A, R-502 and R-507. Specify the refrigerant when ordering. A separate compartment is provided for all refrigeration connections, allowing ample room for internal mounting of expansion valve(s). Polar-Flo units can also be used for chilled water or glycol solutions—contact factory for selection.
- **FANS** — Powerful heavy-duty aluminum fans are individually balanced to provide vibration-free operation. Wire fan guards are epoxy coated for corrosion resistance. Optional air straighteners are available for increased air throw.
- **MOTORS** — All motors are high efficiency PSC, ball bearing type—life lubricated and thermally protected. **P•U** and **P•L** models use ¾ HP, 1075 RPM or ¾ HP, 1625 RPM motors. **P•M** and **PAH** models use ½ HP or ¾ HP, 1075 RPM motors.
- **ELECTRICAL** — Polar-Flo units are available in 60 Hz 115/1, 208/230/1, 208/230/3, 460/1 or 460/3 (see page 10). They can also be operated on 50 Hz 220/1, 220/3, 380/1, and 380/3 power (contact factory for details). All components are factory wired to convenient screw-type terminal blocks. A large compartment is supplied for all electrical components and is easily accessible by removing the end panel.
- **AIR DEFROST** — For use in coolers at 35°F and above. Complete Air Defrost systems are available from Witt.
- **ELECTRIC DEFROST** — The heaters are located inside the refrigeration coil itself to promote a more efficient and rapid defrost cycle than other designs. This arrangement enables heat to be conducted from the center of the core out for a more even defrost pattern. All heaters are factory wired to screw-type terminal blocks, allowing for a quick field changeover from 1 to 3 phase or 230V to 460V and vice versa with the use of jumpers. An adjustable, remote-bulb defrost termination and fan delay (DTFD) is mounted and wired. Drain pans are heated for fast reliable drainage. Timer and contactors are available as options (see page 11). Complete Electric Defrost systems are available from Witt.
- **HOT GAS RE-EVAP DEFROST** — These units include an adjustable defrost termination and fan delay (DTFD), factory installed. A hot gas drain pan circuit is supplied to eliminate the need for electric heat and additional wiring. **A Heat Exchanger/Re-Evaporator is supplied with every unit.** Complete Hot Gas Re-Evap systems are available from Witt.
- **HOT GAS REVERSE CYCLE DEFROST** — These units include an adjustable defrost termination, fan delay (DTFD) and bypass check valve — factory installed. A hot gas drain pan circuit is supplied to eliminate the need for electric heat and additional wiring. This unit is also used for the Alternating Evaporator System.

# ELECTRIC DEFROST



HINGED DRAIN PAN

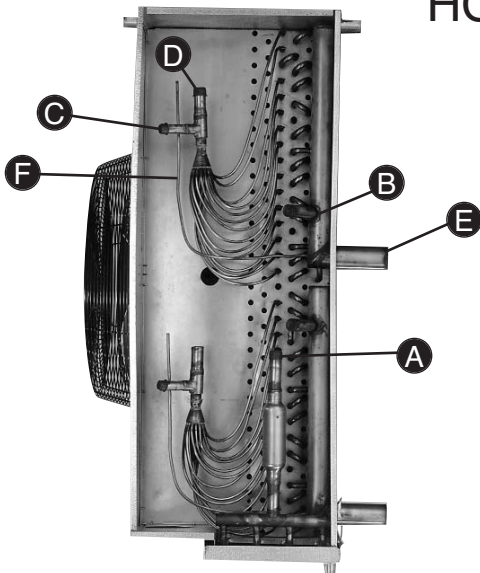
- A. Tubular pan heater
- B. Connection



ELECTRICAL END COMPARTMENT

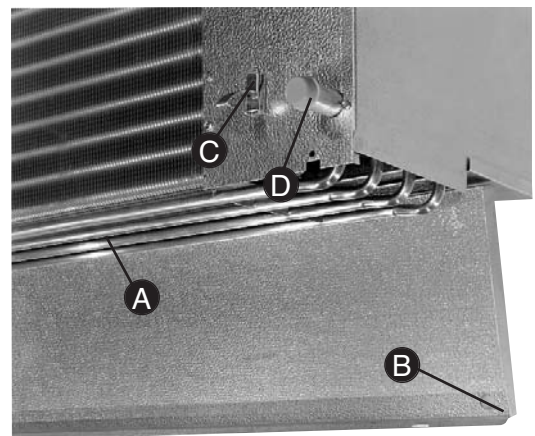
- A. Defrost control (DTFD)
- B. DTFD sensing bulb
- C. Fin heater
- D. Field wiring terminal strips
- E. Fan motor capacitors

# HOT GAS DEFROST



REFRIGERANT END COMPARTMENT  
(Larger two-circuit coil shown)

- A. Hot gas supply (from drain Pan)
- B. Hot gas inlet to coil (two-pipe)
- C. Hot gas inlet to coil (three-pipe)  
Hot gas outlet from coil (two-pipe)
- D. Liquid inlet from TX valve
- E. Suction equalizer line
- F. External equalizer line



HINGED DRAIN PAN

- A. Hot gas drain pan loop
- B. Drain connection
- C. Drain pan latch/tensioner
- D. Hot gas inlet to drain pan

# Options

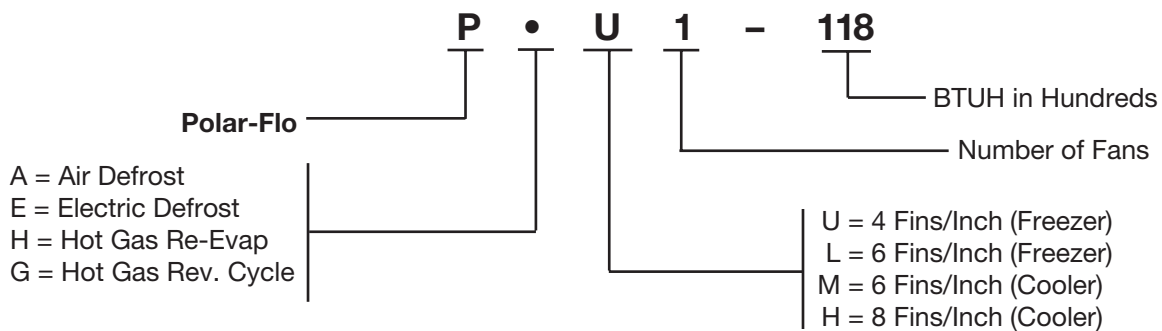
- *Copper fins*
- *Coated fins (air and hot gas models only)*
- *Galvanized steel casing*
- *High pressure propellar fans (up to 0.5" external pressure)*
- *Inherent 3 phase motors*
- *Ultra low temperature motor grease for applications down to -60°F suction temperature*
- *Insulated drain pans*
- *Custom circuiting for chilled water or glycol applications*
- *High air-throw fan guards*

## Air Throw

*Air throw is affected by installation variables.  
Optimum air throw is obtained by high ceilings  
with no interference from beams, product or return air restrictions.*

<i>Model</i>	<i>Wire Fan Guard</i>	<i>Fan Guard / Air Straightener</i>
P•U / P•L	60—80 feet	80—100 feet
P•M / PAH	50—70 feet	70— 90 feet

## Nomenclature



## PERFORMANCE DATA

COOLER 8 FPI		
MODEL NUMBER	CFM	CAPACITY BTUH @10° TD +25°F ST
PAH1-182	2800	18200
PAH1-232	2720	23200
PAH2-300	6880	30000
PAH2-365	6600	36500
PAH2-433	6400	43300
PAH2-490	6250	49000
PAH3-530	9800	53000
PAH3-648	9600	64800
PAH3-736	9400	73600
PAH4-866	12800	86600
PAH4-980	12500	98000
PAH4-1100	12200	110000
PAH4-1452	20700	145200
PAH4-1821	19900	182100
PAH5-2275	24900	227500
PAH6-2730	29900	273000

COOLER 6 FPI		
MODEL NUMBER	CFM	CAPACITY BTUH @10° TD +25°F ST
P*M1-164	2920	16400
P*M1-209	2840	20900
P*M2-270	7000	27000
P*M2-329	6840	32900
P*M2-390	6640	39000
P*M2-441	6480	44100
P*M3-583	9960	58300
P*M3-662	9720	66200
P*M4-780	13280	78000
P*M4-882	12960	88200
P*M4-1100	21700	110000
P*M4-1320	21200	132000
P*M4-1656	20400	165600
P*M5-2065	25500	206500
P*M6-2480	30600	248000

FREEZER 6 FPI					
MODEL NUMBER	CFM	CAPACITY BTUH @10°TD (404A, R22)			
		SUCTION TEMPERATURE (°F)			
		-30	-20	-10	+10
P*L1-125	3750	10900	11700	12500	13500
P*L1-152	3650	13200	14200	15200	16400
P*L1-193	3550	16800	18100	19300	20800
P*L2-240	7600	20900	22400	24000	25900
P*L2-304	7300	26400	28400	30400	32800
P*L2-361	8300	31400	33800	36100	39000
P*L2-408	8100	35500	38200	40800	44100
P*L3-445	12800	38700	41600	44500	48000
P*L3-540	12450	47000	50500	54000	58300
P*L3-613	12150	53300	57300	61300	66200
P*L3-660	11800	57400	61700	66000	71200
P*L4-722	16600	62700	67500	72200	78000
P*L4-817	16200	71100	76400	81700	88200
P*L4-950	21500	82500	88900	95000	102600
P*L4-1100	21200	95700	102900	110000	118800
P*L4-1260	20800	109600	117800	126000	136000
P*L4-1380	20400	120000	129000	138000	149000
P*L5-1575	26000	137000	147300	157500	170000
P*L5-1725	25500	150000	161300	172500	186300
P*L6-1890	31200	164400	176700	189000	204000
P*L6-2070	32100	180000	193500	207000	223500

FREEZER 4 FPI					
P*U1-118	3750	11800	12400	12900	14000
P*U2-236	7500	23600	24700	25700	27900
P*U2-355	8200	35500	37100	38700	42100
P*U3-474	12450	47400	49500	51600	56100
P*U4-711	16400	71100	72800	74500	81000
P*U4-851	21600	85100	89000	92800	100900
P*U4-1080	21600	108000	112900	117700	128000
P*U5-1350	26250	135000	141000	147000	160000
P*U6-1620	32400	162000	169400	176600	192000

\*A = Air Defrost    E = Electric defrost    G = Hot gas defrost - Reverse cycle    H = Hot gas defrost - Re-evap

## PHYSICAL DATA

### COOLER 8 FPI

Model Number	Fan Dia. (In)	Motor Data (1)			Optional Heat Exch. (loose)	Re-Evap. Heat Exch. (loose)	Connections (in.) (2)				Ship Weight (lbs)
		Qty	HP	RPM			Liquid	Suction ODS	HG ODS	Drain MPT	
PAH1-182	20	1	1/3	1075	HX-150	N/A	5/8 ODS	7/8	N/A	3/4	210
PAH1-232	20	1	1/3	1075	HX-150	N/A	5/8 ODS	7/8	N/A	3/4	230
PAH2-300	20	2	1/3	1075	HX-250	N/A	5/8 ODS	1-1/8	N/A	3/4	370
PAH2-365	20	2	1/3	1075	HX-250	N/A	5/8 ODS	1-1/8	N/A	3/4	410
PAH2-433	24	2	1/3	1075	HX-250	N/A	5/8 ODS	1-1/8	N/A	3/4	435
PAH2-490	24	2	1/3	1075	HX-350	N/A	5/8 ODS	1-1/8	N/A	3/4	458
PAH3-530	24	3	1/3	1075	HX-350	N/A	7/8 ODS	1-3/8	N/A	3/4	550
PAH3-648	24	3	1/3	1075	HX-350	N/A	7/8 ODS	1-3/8	N/A	3/4	600
PAH3-736	24	3	1/3	1075	HX-350	N/A	7/8 ODS	1-3/8	N/A	3/4	635
PAH4-866	24	4	1/3	1075	HX-350	N/A	7/8 ODS	1-3/8	N/A	1-1/4	690
PAH4-980	24	4	1/3	1075	HX-500	N/A	7/8 ODS	1-3/8	N/A	1-1/4	746
PAH4-1100	24	4	1/3	1075	LHX-15	N/A	7/8 ODS	1-3/8	N/A	1-1/4	785
PAH4-1452	24	4	3/4	1075	(2) LHX-20	N/A	7/8 ODS	1-5/8	N/A	1-1/4	905
PAH4-1821	24	4	3/4	1075	(2) LHX-25	N/A	7/8 ODS	2-1/8	N/A	1-1/4	930
PAH5-2275	24	5	3/4	1075	(2) LHX-25	N/A	1-7/8 ODS	2-5/8	N/A	1-1/4	1165
PAH6-2730	24	6	3/4	1075	(2) LHX-25	N/A	1-5/8 ODS	2-5/8	N/A	1-1/4	1395

### COOLER 6 FPI

P*M1-164	20	1	1/3	1075	HX-150	HEA3A	1/2 ODS	7/8	7/8	3/4	200
P*M1-209	20	1	1/3	1075	HX-150	HEA3A	5/8 ODS	7/8	7/8	3/4	220
P*M2-270	20	2	1/3	1075	HX-250	HEA4A	5/8 ODS	1-1/8	7/8	3/4	360
P*M2-329	20	2	1/3	1075	HX-250	HEA4A	5/8 ODS	1-1/8	7/8	3/4	400
P*M2-390	24	2	1/3	1075	HX-250	HEA4A	5/8 ODS	1-1/8	7/8	3/4	425
P*M2-441	24	2	1/3	1075	HX-250	HEA5A	5/8 ODS	1-1/8	7/8	3/4	446
P*M3-583	24	3	1/3	1075	HX-350	HEA5A	5/8 ODS	1-3/8	7/8	3/4	585
P*M3-662	24	3	1/3	1075	HX-350	HEA6A	7/8 ODS	1-3/8	7/8	3/4	620
P*M4-780	24	4	1/3	1075	HX-500	HEA6A	7/8 ODS	1-3/8	1-1/8	1-1/4	675
P*M4-882	24	4	1/3	1075	HX-500	(2) HEA5A	7/8 ODS	1-3/8	1-1/8	1-1/4	726
P*M4-1100	24	4	3/4	1075	LXR-15	(2) HEA5A	7/8 ODS	1-5/8	1-1/8	1-1/4	830
P*M4-1320	24	4	3/4	1075	LXR-15	(2) HEA5A	1-1/8 ODS	1-5/8	1-1/8	1-1/4	885
P*M4-1656	24	4	3/4	1075	LXR-20	(2) HEA6A	1-1/8 ODS	2-1/8	1-1/8	1-1/4	910
P*M5-2065	24	5	3/4	1075	LXR-20	N/A	1-5/8 ODS	2-5/8	1-1/8	1-1/4	1140
P*M6-2480	24	6	3/4	1075	LXR-25	N/A	1-5/8 ODS	2-5/8	1-1/8	1-1/4	1365

### FREEZER 6 FPI

P*L1-125	20	1	3/4	1625	HX-150	HEA3A	1/2 ODS	1-1/8	7/8	3/4	180
P*L1-152	20	1	3/4	1625	HX-150	HEA3A	1/2 ODS	1-1/8	7/8	3/4	200
P*L1-193	20	1	3/4	1625	HX-250	HEA3A	5/8 ODS	1-1/8	7/8	3/4	220
P*L2-240	20	2	3/4	1625	HX-250	HEA4A	7/8 ODS	1-3/8	7/8	3/4	370
P*L2-304	20	2	3/4	1625	HX-350	HEA4A	7/8 ODS	1-3/8	7/8	3/4	400
P*L2-361	24	2	3/4	1075	HX-350	HEA4A	7/8 ODS	1-5/8	7/8	3/4	425
P*L2-408	24	2	3/4	1075	HX-350	HEA5A	7/8 ODS	1-5/8	7/8	3/4	446
P*L3-445	24	3	3/4	1075	HX-500	HEA5A	7/8 ODS	2-1/8	7/8	3/4	525
P*L3-540	24	3	3/4	1075	HX-500	HEA5A	7/8 ODS	2-1/8	7/8	3/4	585
P*L3-613	24	3	3/4	1075	LHX-15	HEA6A	7/8 ODS	2-1/8	7/8	3/4	620
P*L3-660	24	3	3/4	1075	LHX-15	HEA6A	7/8 ODS	2-1/8	7/8	3/4	645
P*L4-722	24	4	3/4	1075	LHX-15	HEA6A	1-3/8 ODS	2-1/8	1-1/8	1-1/4	675
P*L4-817	24	4	3/4	1075	LHX-15	(2) HEA5A	1 3/8 ODS	2-1/8	1-1/8	1-1/4	726
P*L4-950	24	4	3/4	1075	(2) HX-500	(2) HEA5A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	850
P*L4-1100	24	4	3/4	1075	(2) HX-500	(2) HEA5A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	885
P*L4-1260	24	4	3/4	1075	(2) LHX-15	(2) HEA6A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	895
P*L4-1380	24	4	3/4	1075	(2) LHX-15	(2) HEA6A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	910
P*L5-1575	24	5	3/4	1075	(2) LHX-15	N/A	(2) 1-1/8 ODS	(2) 2-1/8	1-1/8	1-1/4	1120
P*L5-1725	24	5	3/4	1075	(2) LHX-20	N/A	(2) 1-1/8 ODS	(2) 2-1/8	1-1/8	1-1/4	1140
P*L6-1890	24	6	3/4	1075	(2) LHX-20	N/A	(2) 1-3/8 ODS	(2) 2-5/8	1-1/8	1-1/4	1345
P*L6-2070	24	6	3/4	1075	(2) LHX-20	N/A	(2) 1-3/8 ODS	(2) 2-5/8	1-1/8	1-1/4	1365

### FREEZER 4 FPI

P*U1-118	20	1	3/4	1625	HX-150	HEA2A	1/2 FL	1-1/8	7/8	3/4	190
P*U2-236	20	2	3/4	1625	HX-250	HEA3A	7/8 ODS	1-3/8	7/8	3/4	370
P*U2-355	24	2	3/4	1075	HX-350	HEA4A	7/8 ODS	1-5/8	7/8	3/4	440
P*U3-474	24	3	3/4	1075	HX-500	HEA5A	7/8 ODS	1-5/8	7/8	3/4	570
P*U4-711	24	4	3/4	1075	LHX-15	HEA6A	7/8 ODS	2-1/8	1-1/8	1-1/4	665
P*U4-851	24	4	3/4	1075	(2) HX-500	(2) HEA5A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	875
P*U4-1080	24	4	3/4	1075	(2) HX-500	(2) HEA5A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	900
P*U5-1350	24	5	3/4	1075	(2) LHX-15	N/A	(2) 7/8 ODS	(2) 2-1/8	1-1/8	1-1/4	1125
P*U6-1620	24	6	3/4	1075	(2) LHX-15	N/A	(2) 1-1/8 ODS	(2) 2-5/8	1-1/8	1-1/4	1350

(1) All motors are single phase. All three fan models and larger are delta wired for three phase power. Inherent three phase motors are available—contact factory.  
 (2) All Polar-Flo units are custom circuited for optimum performance and operating efficiency. Should conditions vary from those listed in the table to the right, connection sizes and quantity may be subject to change—contact factory to confirm.

Connection sizes are based on the following criteria:

P\*U: -30° ST, 10° TD R404A  
 P\*L: -20° ST, 10° TD R404A  
 P\*M: +25° ST, 10° TD R-22  
 PAH: +25° ST, 10° TD R-22

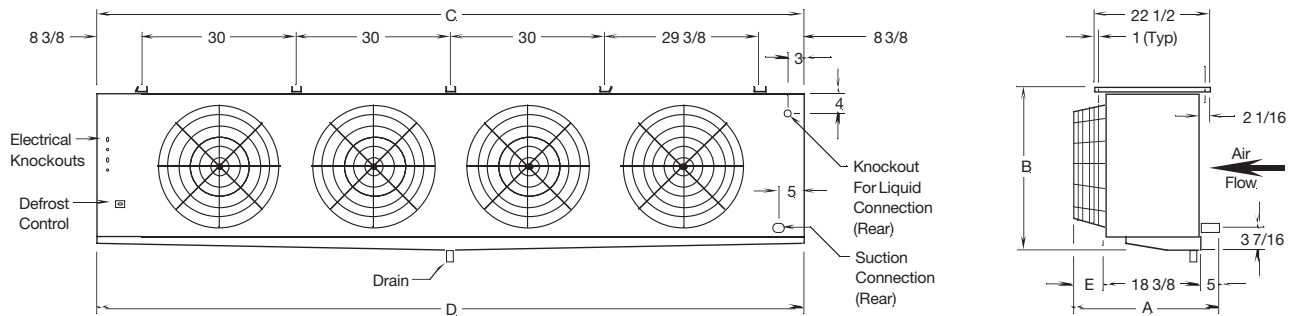
\* A = Air defrost E = Electric defrost G = Hot gas defrost - Reverse cycle H = Hot gas defrost - Re-*evap*

## DIMENSIONAL DATA

### Air and Electric Defrost Models

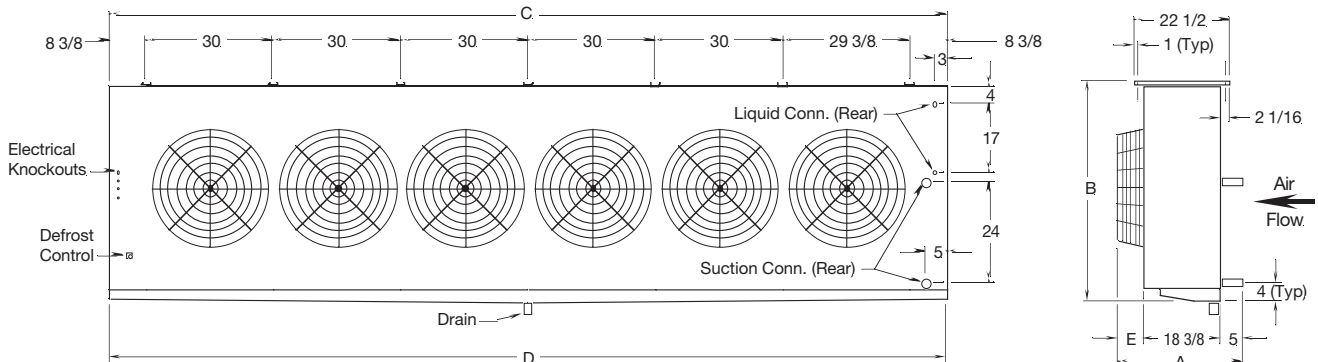
Air and Electric Defrost Models only				Qty. of Hangers	Fig.	Dimensions (in.)				
PAH1-182 PAH1-232	P*M1-164 P*M1-209	P*L1-125 P*L1-152 P*L1-193	P*U1-118			A	B	C	D	E
				2	1	27-3/8	25-3/4	46-1/8	46-1/2	4
				3	1	27-3/8	26	76-1/8	76-1/2	4
				3	1	29-1/8	31-3/4	76-1/8	76-1/2	5-3/4
				4	1	29-1/8	32	106-1/8	106-1/2	5-3/4
				5	1	29-1/8	32-1/4	136-1/8	136-1/2	5-3/4
				5	2	29-1/8	50-1/4	136-1/8	136-1/2	5-3/4
				6	2	29-1/8	50-1/2	166-1/8	166-1/2	5-3/4
				7	2	29-1/8	50-3/4	196-1/8	196-1/2	5-3/4

\* **A** = Air defrost    **E** = Electric defrost    **G** = Hot gas defrost - Reverse cycle    **H** = Hot gas defrost - Re-evap



**FIGURE 1**

- 1) 29-3/8 mounting dimension is consistent on all 1 thru 4 fans models.
- 2) Refrigerant connections are on the air inlet side (rear) of the unit.
- 3) Hanger slots are 1/2 x 1-1/4.
- 4) All dimensions are inches.



**FIGURE 2**

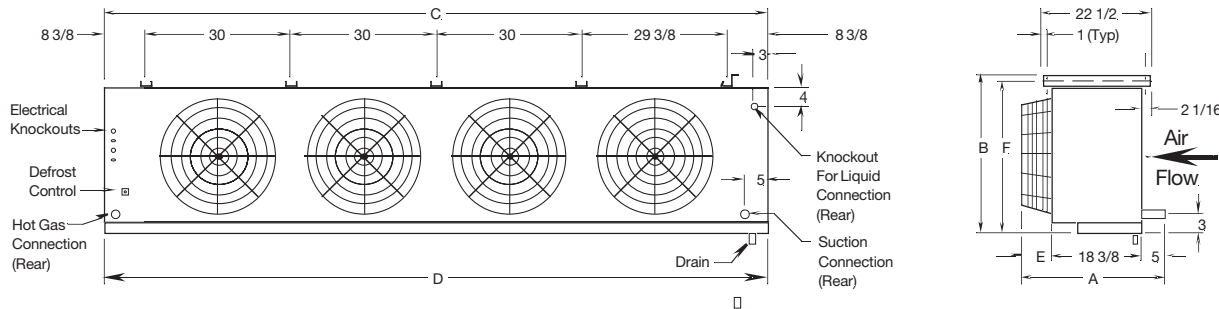
- 1) 29-3/8 mounting dimension is consistent on all 4 thru 6 fans models.
- 2) Refrigerant connections are on the air inlet side (rear) of the unit.
- 3) Hanger slots are 1/2 x 1-1/4.
- 4) All dimensions are inches.

## DIMENSIONAL DATA

### Hot Gas Defrost Models

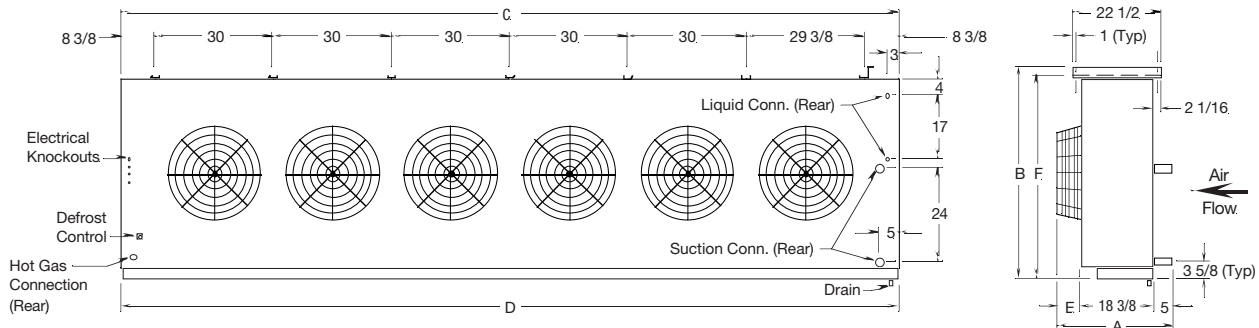
Hot Gas Defrost Models only			Qty. of Hangers	Fig.	Dimensions (in.)					
					A	B	C	D	E	F
P*M1-164	P*L1-125	P*U1-118	2	3	27-3/8	26-7/8	46-1/8	46-1/2	4	26-1/8
P*M1-209	P*L1-152									
	P*L1-193									
P*M2-270	P*L2-240	P*U2-236	3	3	27-3/8	27-3/8	76-1/8	76-1/2	4	26-1/8
P*M2-329	P*L2-304									
P*M2-390	P*L2-361	P*U2-355	3	3	29-1/8	33-3/8	76-1/8	76-1/2	5-3/4	32-1/8
P*M2-441	P*L2-408									
P*M3-583	P*L3-445	P*U3-474	4	3	29-1/8	33-7/8	106-1/8	106-1/2	5-3/4	32-1/8
P*M3-662	P*L3-540									
	P*L3-613									
	P*L3-660									
P*M4-780	P*L4-722	P*U4-711	5	3	29-1/8	34-1/4	136-1/8	136-1/2	5-3/4	32-1/8
P*M4-882	P*L4-817									
P*M4-1100	P*L4-950	P*U4-851	5	4	29-1/8	52-1/4	136-1/8	136-1/2	5-3/4	50-1/8
P*M4-1320	P*L4-1100	P*U4-1080								
P*M4-1656	P*L4-1260									
	P*L4-1380									
P*M5-2065	P*L5-1575	P*U5-1350	6	4	29-1/8	52-3/4	166-1/8	166-1/2	5-3/4	50-1/8
	P*L5-1725									
P*M6-2480	P*L6-1890	P*U6-1620	7	4	29-1/8	53-1/4	196-1/8	196-1/2	5-3/4	50-1/8

\* **A** = Air defrost    **E** = Electric defrost    **G** = Hot gas defrost - Reverse cycle    **H** = Hot gas defrost - Re-evap



**FIGURE 3**

- 1) 29-3/8 mounting dimension is consistent on all 1 thru 4 fans models.
- 2) Refrigerant connections are on the air inlet side (rear) of the unit.
- 3) Hanger slots are 1/2 x 1-1/4.
- 4) All dimensions are inches.



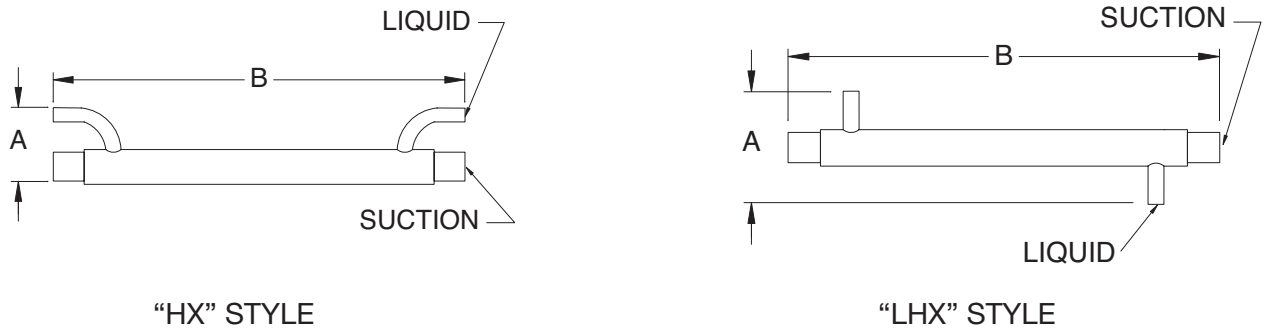
**FIGURE 4**

- 1) 29-3/8 mounting dimension is consistent on all 4 thru 6 fans models.
- 2) Refrigerant connections are on the air inlet side (rear) of the unit.
- 3) Hanger slots are 1/2 x 1-1/4.
- 4) All dimensions are inches.



## SUCTION LINE HEAT EXCHANGERS

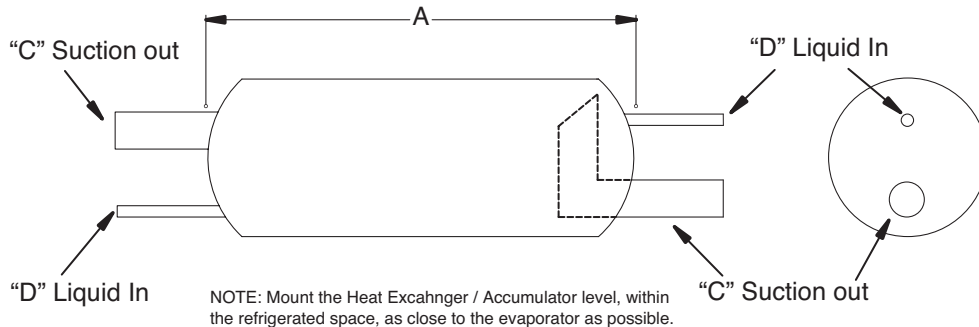
Model Number	Capacity - MBH (R-22, 404A)				Dimensions (in)		Connections (ODS) (in)		Wgt. (lbs)
	Suction Temperature (°F)				A	B	Liquid	Suction	
	-40	-20	+10	+25					
HXR25	2.6	3.4	6.0	6.8	11-1/2	1-3/4	1/4	1/2	2
HXR50	4.5	6.0	11.9	13.6	12-3/4	2-3/8	3/8	5/8	2
HXR75	7.0	9.4	17.8	21.3	13-5/8	2-5/8	3/8	7/8	2
HXR100	9.6	12.8	24.7	28.1	14-1/8	2-7/8	3/8	1-1/8	3
HXR150	14.0	18.7	36.6	42.5	14-1/8	3	1/2	1-1/8	3
HXR250	23.0	30.6	59.5	69.7	14-1/4	3-5/8	5/8	1-3/8	4
HXR350	34.4	45.9	90.1	102.0	16-1/4	3-5/8	5/8	1-5/8	6
HXR500	47.2	62.9	120.7	141.1	17-1/4	4-5/8	7/8	2-1/8	7
LHXR15	70.1	93.5	182.3	204.0	29-1/2	6-7/8	7/8	2-1/8	12
LHXR20	92.4	123.3	238.0	272.0	29-1/2	6-7/8	1-1/8	2-1/8	15
LHXR25	108.4	144.5	289.0	348.5	38	7-1/2	1-1/8	2-5/8	18
LHXR30	140.3	187.0	348.5	399.5	38	8	1-3/8	2-5/8	20



**FIGURE 5**

## SUCTION LINE HEAT EXCHANGER—ACCUMULATOR (For Re-Evap Hot Gas Units)

Model Number	Capacity BTUH	Dimension (in.)		Connections (in.)				Wgt. (lbs.)
		A	B	Liquid (ODS)		Suction (ODS)		
				Inlet	Outlet	Inlet	Outlet	
HEA-1A	6000	9-3/4	5	3/8	3/8	7/8	7/8	10
HEA-2A	12000	15-3/4	5	1/2	1/2	1-1/8	1-1/8	15
HEA-3A	24000	27-3/4	5	1/2	1/2	1-3/8	1-3/8	20
HEA-4A	36000	37-3/4	5	5/8	5/8	1-5/8	1-5/8	25
HEA-5A	55000	45-3/8	6	5/8	5/8	2-1/8	2-1/8	40
HEA-6A	80000	64-3/8	6	7/8	7/8	2-5/8	2-5/8	50



**FIGURE 6**

# ELECTRICAL DATA

## COOLER 8 FPI

Model Number	Total Motor Amps (3) 60 Hz					Electric Defrost (4)						Watts	
						Amperage Ratings @ 60 Hz							
	115 V. 1 PH	208/230 V. 1 PH   3 PH		460 V. 1 PH   3 PH		208 V. 1 PH   3 PH		230 V. 1 PH   3 PH		460 V. 1 PH   3 PH			
PAH1-182	7.1	3.2	—	1.3	—	—	—	—	—	—	—	—	—
PAH1-232	7.1	3.2	—	1.3	—	—	—	—	—	—	—	—	—
PAH2-300	14.2	6.4	—	2.6	—	—	—	—	—	—	—	—	—
PAH2-365	14.2	6.4	—	2.6	—	—	—	—	—	—	—	—	—
PAH2-433	14.2	6.4	—	2.6	—	—	—	—	—	—	—	—	—
PAH2-490	14.2	6.4	—	2.6	—	—	—	—	—	—	—	—	—
PAH3-530	21.3	9.6	5.5	3.9	2.9	—	—	—	—	—	—	—	—
PAH3-648	21.3	9.6	5.5	3.9	2.9	—	—	—	—	—	—	—	—
PAH3-736	21.3	9.6	5.5	3.9	2.9	—	—	—	—	—	—	—	—
PAH4-866	28.4	12.8	8.5	5.2	4.5	—	—	—	—	—	—	—	—
PAH4-980	28.4	12.8	8.5	5.2	4.5	—	—	—	—	—	—	—	—
PAH4-1100	28.4	12.8	8.5	5.2	4.5	—	—	—	—	—	—	—	—
PAH4-1452	—	16.8	11.1	8.4	5.6	—	—	—	—	—	—	—	—
PAH4-1821	—	16.8	11.1	8.4	5.6	—	—	—	—	—	—	—	—
PAH5-2275	—	21.0	14.6	11.5	7.3	—	—	—	—	—	—	—	—
PAH6-2730	—	25.2	14.6	12.6	7.3	—	—	—	—	—	—	—	—

**PAH MODELS ARE ONLY  
AVAILABLE IN AIR DEFROST  
AND  
ARE NOT RECOMMENDED  
FOR APPLICATIONS BELOW 35°F  
ROOM TEMPERATURE**

## COOLER 6 FPI

P*M1-164	7.1	3.2	—	1.3	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*M1-209	7.1	3.2	—	1.3	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*M2-270	14.2	6.4	—	2.6	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*M2-329	14.2	6.4	—	2.6	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*M2-390	14.2	6.4	—	2.6	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*M2-441	14.2	6.4	—	2.6	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*M3-583	21.3	9.6	5.5	3.9	2.9	—	33.8	—	37.4	—	24.5	14152
P*M3-662	21.3	9.6	5.5	3.9	2.9	—	33.8	—	37.4	—	24.5	14152
P*M4-780	28.4	12.8	8.5	5.2	4.5	—	43.3	—	47.8	—	24.3	18440
P*M4-882	28.4	12.8	8.5	5.2	4.5	—	43.3	—	47.8	—	24.3	18440
P*M4-1100	—	16.8	11.1	8.4	5.6	—	64.3	—	71.3	—	33.7	27660
P*M4-1320	—	16.8	11.1	8.4	5.6	—	64.3	—	71.3	—	33.7	27660
P*M4-1656	—	16.8	11.1	8.4	5.6	—	64.3	—	71.3	—	33.7	27660
P*M5-2065	—	21.0	14.6	11.5	7.3	—	72.2	—	79.8	—	39.9	34575
P*M6-2480	—	25.2	14.6	12.6	7.3	—	86.6	—	95.7	—	47.9	41490

## FREEZER 6 FPI

P*L1-125	—	4.2	—	2.1	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*L1-152	—	4.2	—	2.1	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*L1-193	—	4.2	—	2.1	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*L2-240	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*L2-304	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*L2-361	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*L2-408	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*L3-445	—	12.6	7.3	—	3.6	—	33.8	—	37.4	28.2	24.5	14152
P*L3-540	—	12.6	7.3	—	3.6	—	33.8	—	37.4	28.2	24.5	14152
P*L3-613	—	12.6	7.3	—	3.6	—	33.8	—	37.4	28.2	24.5	14152
P*L3-660	—	12.6	7.3	—	3.6	—	33.8	—	37.4	28.2	24.5	14152
P*L4-722	—	16.8	11.1	—	5.6	—	43.2	—	47.8	—	26.0	18440
P*L4-817	—	16.8	11.1	—	5.6	—	43.2	—	47.8	—	26.0	18440
P*L4-950	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*L4-1100	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*L4-1260	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*L4-1380	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*L5-1575	—	21.0	14.6	—	7.3	—	72.2	—	79.8	—	39.9	34575
P*L5-1725	—	21.0	14.6	—	7.3	—	72.2	—	79.8	—	39.9	34575
P*L6-1890	—	25.2	14.6	—	7.3	—	86.6	—	95.7	—	47.9	41490
P*L6-2070	—	25.2	14.6	—	7.3	—	86.6	—	95.7	—	47.9	41490

## FREEZER 4 FPI

P*U1-118	—	4.2	—	2.1	—	19.9	13.2	22.0	14.6	11.0	9.5	5512
P*U2-236	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*U2-355	—	8.4	—	4.2	—	35.5	23.5	39.3	26.0	19.6	17.0	9832
P*U3-474	—	12.6	7.3	—	3.6	—	33.8	—	37.4	28.5	24.5	14152
P*U4-711	—	16.8	11.1	—	5.6	—	43.3	—	47.8	—	26.0	18440
P*U4-851	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*U4-1080	—	16.8	11.1	—	5.6	—	64.3	—	71.3	—	33.7	27660
P*U5-1350	—	21.0	14.6	—	7.3	—	72.2	—	79.8	—	39.9	34575
P*U6-1620	—	25.2	14.6	—	7.3	—	86.6	—	95.7	—	47.9	41490

(3) All models have single phase motors. Three-fan models and larger are delta wired for three phase supply power.

(4) All electric defrost models are standard three phase heaters unless otherwise specified. See table above to determine models applicable to single phase heater applications.

\*A = Air defrost    E = Electric defrost    G = Hot gas defrost - Reverse cycle    H = Hot gas defrost - Re-evap

## ELECTRIC DEFROST KITS

COOLER 6 FPI						
Model Number	1 Evaporator		2 Evaporators		3 Evaporators	
	230/3	460/3	230/3	460/3	230/3	460/3
P*M1-164	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*M1-209	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*M2-270	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*M2-329	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*M2-390	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*M2-441	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*M3-583	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*M3-662	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*M4-780	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*M4-882	ED-14	ED-12	ED-28	ED-24	ED-38	ED-36
P*M4-1100	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*M4-1320	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*M4-1656	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*M5-2065	ED-16	ED-14	(1)	ED-26	(1)	ED-38
P*M6-2480	(1)	ED-16	(1)	ED-28	(1)	ED-38

FREEZER 6 FPI						
P*L1-125	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*L1-152	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*L1-193	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*L2-240	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*L2-304	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*L2-361	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*L2-408	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*L3-445	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L3-540	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L3-613	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L3-660	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L4-722	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L4-817	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*L4-950	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*L4-1100	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*L4-1260	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*L4-1380	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*L5-1575	ED-16	ED-14	(1)	ED-26	(1)	ED-38
P*L5-1725	ED-16	ED-14	(1)	ED-26	(1)	ED-38
P*L6-1890	(1)	ED-16	(1)	ED-28	(1)	ED-38
P*L6-2070	(1)	ED-16	(1)	ED-28	(1)	ED-38

FREEZER 4 FPI						
P*U1-118	ED-11	ED-12	ED-21	ED-22	ED-33	ED-32
P*U2-236	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*U2-355	ED-11	ED-12	ED-25	ED-24	ED-35	ED-36
P*U3-474	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*U4-711	ED-14	ED-12	ED-26	ED-24	ED-38	ED-36
P*U4-851	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*U4-1080	ED-16	ED-14	ED-28	ED-26	(1)	ED-38
P*U5-1350	ED-16	ED-14	(1)	ED-26	(1)	ED-38
P*U6-1620	(1)	ED-16	(1)	ED-28	(1)	ED-38

\* A = Air defrost

E = Electric defrost

G = Hot gas defrost - Reverse cycle

H = Hot gas defrost - Re-evap

(1) Contact Factory

### ELECTRIC DEFROST KIT COMPONENTS

Model Number	Timer	Auxiliary Switch	Block-Out Relay	Contactors		Sequence Relay
				Defrost Heaters	Fan	
ED-10	1	—	1-30A	—	—	—
ED-11	1	1	—	1-30A	—	—
ED-12	1	1	—	1-30A	1-25A	—
ED-13	1	1	—	1-50A	—	—
ED-14	1	1	—	1-50A	1-25A	—
ED-15	1	1	—	2-50A	—	—
ED-16	1	1	—	2-50A	1-25A	—
ED-20	1	—	1-30A	—	—	2
ED-21	1	1	—	2-15A	—	2
ED-22	1	1	—	2-15A	1-25A	2
ED-23	1	1	—	2-25A	—	2
ED-24	1	1	—	2-25A	1-25A	2
ED-25	1	1	—	2-50A	—	2
ED-26	1	1	—	2-50A	1-25A	2
ED-27	1	1	—	2-75A	—	2
ED-28	1	1	—	2-75A	1-25A	2
ED-30	1	—	1-30A	—	—	3
ED-32	1	1	—	3-10A	1-25A	3
ED-33	1	1	—	3-15A	—	3
ED-34	1	1	—	3-15A	1-25A	3
ED-35	1	1	—	3-30A	—	3
ED-36	1	1	—	3-30A	1-25A	3
ED-37	1	1	—	3-50A	—	3
ED-38	1	1	—	3-50A	1-40A	3

#### TIMER

Initiates the defrost cycle. Also used as over ride protection for defrost termination.

#### AUXILIARY SWITCH

Mounted on the compressor contactor, it prevents the defrost contactor from operating whenever the compressor is energized.

#### BLOCK-OUT RELAY

Serves the same function as auxiliary switch, except used when a defrost contactor is not required (single phase only).

#### FAN CONTACTOR

Used with 460 V. motors or when 230 V. motors are wired for 3 phase power.

#### DEFROST CONTACTOR

Carries amperage load for heaters. Contactor selection is based on the maximum resistive load rating of the contactor.

#### SEQUENCING RELAYS

Provides interconnection of multiple unit coolers on a single system so that each unit cooler is allowed to individually terminate defrost on temperature.

### **Witt Refrigeration Systems**

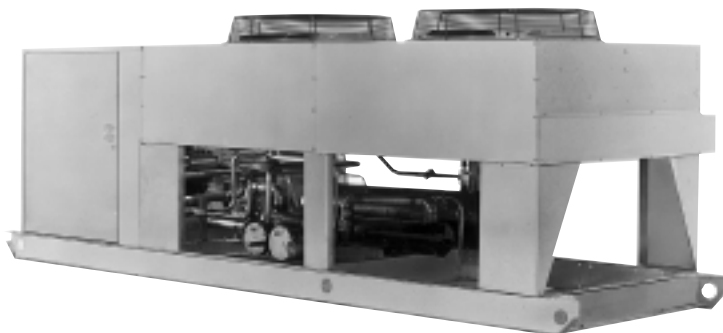
*Use one of our high quality condensing units with one or more Polar-Flo unit coolers for a refrigeration system to meet your requirements. Factory-matched components plus factory wiring and piping assure the highest quality at the lowest installed cost.*



Proline  
1/2 thru 6 HP



WD  
3 thru 22 HP



WVCD/WVLD/WVSD  
15 thru 80 HP

P/N - 122312014 Rev.3 5/05 R3000

*WITT reserves the right to make design changes and modifications to its products without notice.*