

PURESTREAM

PCD PROCESS CHILLER DRYERS



BY FRIULAIR



8 - 420 SCFM

ULTIMATE
ENERGY SAVING
TECHNOLOGY



PCD DRYERS SERIES FOR COLD AIR OUTLET

PCD dryers (Process Chiller-Dryer) are dedicated to specific manufacturing industries or processes that require cold compressed air temperature equal to dew-point. Industries requiring a PCD dryer would include: injection molding industry, food industry, food cold pressing process, etc.

This series is equipped with a single air-to-refrigerant heat exchanger. Inlet compressed air exchanges heat with the refrigerant circuit in a counter flow configuration designed to quickly cool the compressed air. Moisture is removed after passing through a demisted separator where condensed moisture is collected and drained from the system. The compressed air then exits at a temperature dew-point of approximately 5 degrees C (41 degrees F).

MAINTENANCE AND ACCESSIBILITY

The PCD series dryer has been designed and built to allow for ease of maintenance and service. The cabinet panels are removable and allows for easy access to all components within the dryer. The layout of the components and simple design of the refrigerant circuit as well as numbered wires in the electrical system facilitate maintenance and accessibility for the maintenance staff.



CONDENSER

Generous sizing of the condenser ensures maximum performance of the refrigerant circuit and the ability to operate in high ambient conditions. Access to the condenser for cleaning and maintenance is easily achieved.

CONTROL PANELS



DMC 15 (PCD 8 - 22) CONTROLLER

The DMC 15 is composed of a digital thermometer displaying dew point with 10 LED displays.



DMC 14 (PCD 35 - 210) CONTROLLER

The DMC 14 features a 3 digit dew point display, remote alarm contacts for alarm conditions and manages the condensate draining system.



DMC 24 (PCD 280 - 420) CONTROLLER

In addition to the characteristics already present in the DMC14 model, this instrument features a new client-protection function which allows the user to plan maintenance operations and receive advance warning of defects. The 4 temperature probes and pressure transducer record and display the parameters of the dryer when in use. The DMC24 model includes a meter, an RS485 interface for connection to a PC and a series of protective devices, including one for monitoring the supply phases.

FREEZE PROTECTION



HOT GAS BY-PASS VALVE

The precise and accurate hot gas by-pass valve, which prevents the formation of ice inside the evaporator at any load condition, is a recent development unavailable in the past. The valve is set during final test and no further adjustments are necessary.



All dryers come standard with timed electric drains. No air loss drains available upon request.

COMPRESSORS



RECIPROCATING TYPE

Models PCD 8 - 35 are fitted with high efficiency piston compressors sourced from major producers.

ROTARY COMPRESSOR

For models PCD 50 - 210 (with single-phase power supply). This is a new technology applied to refrigerants as an alternative to the traditional piston compressor. Compression of the refrigerant is achieved by way of interaction between a cylindrical stator and rotating eccentric nucleus. In this method, the parts which come into contact with one another are wear-resistant and therefore more reliable.

SCROLL COMPRESSOR

For models PCD 280 - 420, the scroll compressor is the standard refrigerant compressor used for this range. The scroll compressor is widely used in the air conditioning and refrigeration market sectors due to its reliable performance and low energy consumption. Compression of the refrigerant is achieved by way of concentric coils, one moving and one fixed. The scroll is wear resistant, highly reliable and guarantees a high level of noise reduction.

DIMENSIONAL DATA

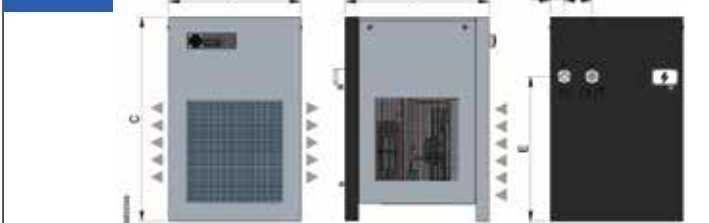
PCD8-22



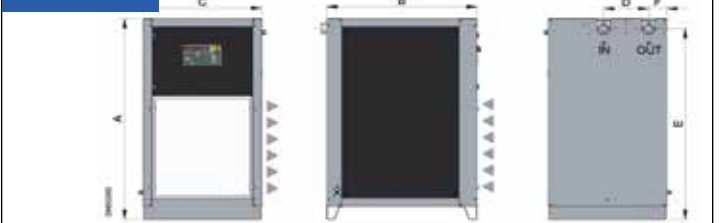
PCD35-140



PCD210



PCD280-420



TECHNICAL DATA

MODEL	FLOW RATE SCFM	VOLTAGE							DIMENSIONS IN INCHES					
		115/1/60	230/1/60	460/3/60	575/3/60	REFRIG.	PIPE SIZE	WEIGHT (lbs)	A	B	C	D	E	F
PCD8	8	115/1/60	230/1/60			R134.a	3/8" NPT	59	14.57	20.28	18.70	3.35	14.17	2.95
PCD22	22	115/1/60	230/1/60			R134.a	3/8" NPT	64	14.57	20.28	18.70	3.35	14.17	2.95
PCD35	35	115/1/60	230/1/60			R134.a	3/4" NPT	81	13.58	16.54	29.13	1.57	16.73	4.92
PCD50	50	115/1/60	230/1/60			R407C	3/4" NPT	130	19.88	17.91	32.48	1.57	18.50	4.92
PCD70	70	115/1/60	230/1/60			R407C	3/4" NPT	134	19.88	17.91	32.48	1.57	18.50	4.92
PCD90	90	115/1/60	230/1/60			R407C	1" NPT	179	21.85	22.83	34.84	1.97	20.08	9.45
PCD140	140		230/1/60			R407C	1" NPT	269	21.85	22.83	34.84	1.97	20.08	9.45
PCD210	210		230/1/60			R407C	1,1/2" NPT	287	26.18	28.54	43.50	2.76	30.91	5.51
PCD280	280			460/3/60	575/3/60	R407C	2" NPT	481	57.68	39.37	31.10	11.81	54.72	4.72
PCD350	350			460/3/60	575/3/60	R407C	2" NPT	518	57.68	39.37	31.10	11.81	54.72	4.72
PCD420	420			460/3/60	575/3/60	R407C	2" NPT	540	57.68	39.37	31.10	11.81	54.72	4.72

Flow rates are based on the following conditions: 100 degrees F entering air temperature, 100 degrees F ambient, 100 psig operating temperature and a dew point of 41 degrees F.

Outlet air temperature 41°F / 5°C

Max. Inlet

131°F / 55°C

Pressure Dewpoint 41°F / 5°C

Max Pressure

220psig / 15barg

Max. Ambient 122°F / 50°C

Min. Ambient 34°F / 1°C

CORRECTION FACTORS

CAPACITIES BASED ON:

Correction factor for operating pressure changes:										
Inlet air pressure	psig	60	80	100	120	140	160	180	203	220
	barg	4	5.5	7	8	10	11	12	14	15
	Factor	0.79	0.91	1.00	1.07	1.13	1.18	1.23	1.27	1.30

Correction factor for ambient temperature changes (Air-Cooled):										
Ambient temperature	°F	77	90	95	100	105	113	122		
	°C	25	32	35	38	41	45	50		
	Factor	1.00	0.94	0.90	0.86	0.81	0.70	0.63		

Correction factor for inlet air temperature changes:										
Inlet air temperature	°F	77	90	95	100	109	122	131		
	°C	25	32	35	38	43	50	55		
	Factor	1.39	1.11	1.00	0.88	0.68	0.53	0.46		

Correction factor for Dew Point changes:										
Dew Point	°F	39	41	45	50	59	68			
	°C	4	5	7	10	15	20			
	Factor	0.88	1.00	1.04	1.15	1.42	1.82			