CRH High Inlet Temperature Refrigerated Air Dryers

General Scope of Offering

Vendor shall supply one fully assembled, piped, and wired refrigerated compressed air dryer packaged in an epoxy powder coated cabinet. Package shall be complete with: heat exchanger, integral moisture separator, timed electric condensate drain, all interconnecting piping, an CFC free refrigeration system with controls, all wired, piped and mounted onto a rail type base frame furnished with pre-drilled mounting holes, and ready for start-up after utility connections are made. Dryer connections are located on the back panel of dryer and staggered for ease of connection.

Package shall be produced by an ISO 9001 registered manufacturer to ensure consistent quality of product. Dryers are certified for quality and safety to UL1995/CSA 22.2 No. 236-95.

ISO Quality Class

Product shall operate automatically and continuously in producing a dehydrated gas stream at pressure while achieving a dew point of ISO 8573.2010 Class 5 (50°F) at 125 PSIG (8.6 bar) with site conditions of 100°F (37.8°C) ambient, 180°F (82°C) inlet air temperature, and inlet air relative humidity of 100%. Package pressure drop shall not exceed 5 PSI (.35 bar) under rated conditions.

Table 1. Product Specifications

Model Number	[1] Flow (scfm)	Voltage	Input Power (kW)	Refrigerant Type	Inlet/Outlet Connections	Dimensions (in)			Weight lbs.
						H	W	D	
CRH20	20	115/1/60	0.69	R-134A	¾" NPT	29.3	14.4	16.9	100
CRH25	25								
CRH35	35		0.99	R-407C					106
CRH50	50		0.83		1" NPT	41.4	17.6		125
CRH75	75		1.13						130
CRH125	125	230/1/60	1.97						153

[1] Flow rating based on 180°F inlet air temperature, 125 psig, 100°F ambient air temperature

Table. 2 Minimum- Maximum Operating Parameters

Inlet Air Temperature (°F)		Ambient Air Temperature (°F)		Operating Pressure (psig)	
Min	**Max**	**Min**	**Max**	**Min**	**Max**
40	180	40	110	42	225

Heat Exchanger

The compressed air stream shall be chilled to a temperature below the designed pressure dew point in corrosion resistant, stainless steel brazed plate heat exchangers formed from multiple alternating layers of chevron embossed, 304 stainless steel plates. Flow paths shall provide non-fouling surfaces and ensure high heat transfer efficiency for the life of the dryer.

Heat exchangers shall be fully encapsulated in non-degrading urethane foam insulation to retain maximum energy efficiency while minimizing the potential of cooling media temperature degradation. All components of the air and refrigeration circuits shall be insulated to prevent condensate.

Moisture Separator
Design shall incorporate a high efficiency, integral to the heat exchanger, stainless steel demister type separator to capture solids and bulk liquids from 0 to 100% of rated flow.

Air-Cooled Condensing Unit
Dryers shall use forced convection design, utilizing ambient air driven over a condenser core to provide pre-cooling of refrigerant gas. Top mount fan with upward condenser air flow promotes ease of installation in confined spaces.

Automatic Condensate Drain
Dryers shall include a timed electric drain to eject moisture without the loss of compressed air from the system. Drain line leads to ¼" NPT(F) connection on the side panel of the dryer.

Refrigeration System
A non-cycling, direct expansion type refrigeration system shall be utilized to ensure dew point stability from zero to 100% of rated volumetric flow. Dryer shall perform as specified throughout an ambient temperature range of 40°F to 110°F. Control shall be automatic without the need for load or ambient adjustments. Specifically, the dryer will be capable of operating at all flow rates down to and including 0% load without a freezing condition in the air circuit. A liquid line filter/dryer shall be supplied. Refrigeration systems shall be cleaned, purged, and evacuated prior to being charged with refrigerant. Models 20 to 25 scfm shall utilize CFC free R-134A refrigerant; Models 35 to 125 scfm are charged with environmentally friendly R-407C refrigerant, then leak checked and performance tested before shipment.

Electrical Construction
Electrical construction shall be certified to meet UL1995/CSA 22.2 No. 236-95. Compressor and fan motors shall be protected with overloads. A 6-foot grounded power cord with plug shall be included on models 20 to 75 scfm with 115/1/60 electrical service. The 125 scfm model in 230/1/60 shall have a 6-foot power cord, less plug, for electrical service hook-up. Compressor protection shall include high and low refrigerant pressure cutout switches in addition to normal overload protection.

Instrumentation and Controls
Easy to view instrumentation shall be located on front panel. Models shall be equipped with lighted compressor On/Off switch, and colored dew point temperature indicator. The On/Off switch illuminates when compressor is on. Fault light indicates overload or malfunction.

Warranty
Quality coverage shall protect user from defects in materials and/or workmanship in covering all parts and labor for a period of two years on the complete assembly. User accepts the responsibility of ensuring unit is properly applied, installed, and maintained in accordance with manufacturer's written instructions.

Air System Conditions
- Rated Capacity (SCFM) _____
- Maximum Inlet air temperature (°F) _____
- Maximum ambient air temperature (°F) _____
- Maximum working pressure (PSIG) _____
- Electrical Requirements: _____ Voltage, _____ Phase, _____ Hertz
- Specified Air Dryer model #_____