

Introduction

Over the past twenty-five years, Environmental Specialties (ES) has served the Biomedical and Pharmaceutical industries with the CRS product line designed for uniform and dependable temperature control below an ambient condition. Overall range capability of standard CRS models is -50°C to +25°C and chambers can be designed for single point temperature control or variable set points. Sizes vary from "mini" twelve square foot lab step-in units to high bay warehouse storage chambers.



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Applications

- Bulk raw material and finished product storage
- Depressed temperature stability and shelf life studies
- Hazardous material storage
- Chromatography and analytical separations
- Media, chemical and reagent holding
- Plasma and blood product storage

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CRS - Standard Features

- Modular metal skinned panels with urethane insulated tongue and groove construction for chamber enclosure.
- "Cam-locking" construction with vinyl gasketed seams.
- Internal aluminum standard unit cooler plenum housings for efficient air delivery.
- Totally accessible hinged drain pan for maintenance and cleaning of all interior plenum components.
- PSC fan motors for energy efficiency.
- Automatic defrosting with refrigerant hot gas and/or electric heat for quick and efficient operation.
- Semi hermetic continually operating compressors for extended equipment life and maximum chamber temperature control and uniformity.
- Uniform horizontal and vertical air distribution through a lay-in ceiling air distribution system with anodized aluminum support.
- Fully accessible control panel to efficiently and securely house all controls, alarms, recording devices and communication networks.
- Microprocessor based control of chamber parameters.
- Vapor proof fluorescent, incandescent or high bay sodium light fixtures.
- Factory leak testing of all refrigeration assemblies prior to shipment.
- Bench testing of complete control panel and electrical devices performed prior to shipment.
- Applicable ISO listing 9001:2000 applies.

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CRS Options – Structure / Electrical

- Stainless wall, ceiling and floor finishes.
- Electrical wiring to NEC standards for CLASS I DIV 1 or 2 environments.
- Maximum product security through dead-bolts or locking bars. All security locking mechanisms are furnished with internal emergency relief.
- Standard and custom shelving, casework and chromatography support racking.
- Thermopane view window in door or wall panels.
- Access ports and pass throughs.
- Surface mounted vapor proof duplex outlets, anodized aluminum plug mold or recessed outlets.
- Vinyl floor mat runners in open areas or seamless floor covering over complete area.
- Exterior/interior door ramps.
- Emergency lighting systems.
- PLC upgrade available replacing all microprocessor based controls and alarms.
- RS 232 / 485 or 4-20 mA comms available.

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CRS Options - Mechanical

- Upgrade the aluminum unit cooler housing to a stainless steel finish (ceiling plenum) including drain pan.
- Exhaust fans with stainless steel filtered air intake or dampered connection ports for host building supply and return air.
- Base level dehumidification with a proportional reheat package.
- Extended range dehumidification by ES developed and field proven proportional air volume regenerative desiccant drier. This design allows close tolerance control and extended life of drier components.
- Low range humidity supplementation with mechanical atomizer or ultrasonic generator.
- Extended range humidification by independent passivated stainless steel steam generator designed for pure water supply.
- Point of use water purification systems for steam generator supply water.
- Copper or phenolic coated evaporator fin construction for protection in corrosive environments.
- Complete 100% redundant backup refrigeration systems with automatic switch over.
- Available designs for temperature uniformity throughout entire chamber to $\pm 0.3^{\circ}\text{C}$.
- Available designs for humidity uniformity throughout entire chamber to $\pm 1\% \text{RH}$.
- Conditioning packages designed to use host building chilled water systems for chamber cooling.



Environmental Specialties

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