

# CSS Magnum Plus

Fresh or frozen. faster is better

- Lowest temperature
- Fast pull-down
- Precise temperature control
- Low energy consumption
- Proven technology and simple design
- Global service

## PERFORMANCE

### TECHNICAL DATA

GENERAL		FEATURES	
Unit type	High capacity Refrigeration unit for installation in 10, 20, 40 or 45 $\square$ containers for stationary applications. All Aluminum "Picture frame" R-404A or R-452A Refrigerant. Charge 4.0 kg (8.8 lbs) Copeland Scroll compressor. Emerson MP4000 controller	Fresh Air Exchange	Unit allow fresh air exchange to cargo area. Using: Rotating disk in 0-100 m <sup>3</sup> /h. And hinged door for 100 m <sup>3</sup> /h, 150 m <sup>3</sup> /h, 175 m <sup>3</sup> /h, 215 m <sup>3</sup> /h, or 225 m <sup>3</sup> /h. Optional to get sensor and log in datalogger.
Required heat leakage of box	42 Watt/°K @ 20C wall temperature, to ensure set-point at ambient	Noise level	Soundpower per ISO 3744:2010) is 90.1 dB(A) with set-point -30°C running 400V/50 Hz. 94.9dB(A) with set-point -30°C running 400V/60 Hz.
Container protection	Pressure equalization valve (1400 Pascal / 140 mm WG) to avoid excessive vacuum in the container	Certifications and design standards	ISO1496-2 CE Pharma GDP AHRI ATO (former Sprenger Institute) ATP American Bureau of Shipping, Lloyds and Bureau Veritas USDA TIR (International Customs Regulations for Containers)
Setpoint Range	-40°C to +30°C (-40°F to 86°F)		
Ambient temperature Range	-30°C to +50°C (-22°F to 122°F)		
COOLING CAPACITY @ AMBIENT TEMPERATURE +37.8°C (100°F)		ELECTRICITY	
At setpoint +21.1°C (70°F)	16,500 watt @ 460V/60Hz 14,220 watt @ 400V/50Hz	Power supply	A/C 400 to 500 Volt 3 phase 60 Hz $\pm$ 2,5% A/C 360 to 460 Volt 3 phase 50 Hz $\pm$ 2,5%
At setpoint +1.7°C (35°F)	11,900 watt @ 460V/60Hz 10,260 watt @ 400V/50Hz	Main circuit breaker	25 Amp
At setpoint -17.8°C (0°F)	7,200 watt @ 460V/60Hz 6,210 watt @ 400V/50Hz	Power cable	18.3 m (60 LF) cable (4phase and ground) with CEE17 power plug (32 Amp; ground 3h). Control box is equipped with a 3 m cable 230V/16 Amp 3 phase power plug to provide output for light, man-trap alarm
At setpoint -28.9°C (-20°F)	5,000 watt @ 460V/60Hz 4,310 watt @ 400V/50Hz		
At setpoint -40°C (-40°F)	3,700 watt @ 460V/60Hz 3,190 watt @ 400V/50Hz		
Max heating capacity	5,250 watt @ 460V/60Hz	Heaters for defrost / heating mode	3 * 1,360 watt electrical resistance heaters. Optional to get 3*2,000 watt heater, and allow cargo temperature +40C
CONTROLLER			
General	Advanced Microprocessor MP4000 Emerson Controls Temperature control using 5 PT1000 sensors and 1 NTC for compressor. Main control temperature sensors for Supply and Return air are PT1000 Class A per EN60751:2008 i.e. with accuracy of +/-0.15°C (+/-0.27°F) Temperature accuracy in "non-optimized energy savings mode": Chilled temperature +/-0.25°C (+/-0.45°F) Frozen temperature set-points: +/- 1°C		

## MARINE

( $\pm 1.8^{\circ}\text{F}$ ) Datalogger document system parameters and changes, results of Pre-Trip Inspections, Alarms & messages, as well as temperature logs. Temperature logs are defaulted to 1 hour interval, and user can change to other interval. Datalogger memory allow 15,000 temperature logs. When power is disconnected, datalogger continue to log temperatures for 120 logs (3 days \* 24 hr interval). 4 USDA cargo sensor ports with Deutsch receptacles (Option supply of 15m (49 LF) long cables with NTC sensor (accuracy  $\pm 0.15^{\circ}\text{C}$  ( $\pm 0.27^{\circ}\text{F}$ )) Telematics (option) to allow two-way communication with controller. Using Global Network Satellite System and Global cellular LTE, 2G, 3G signal) Datalogger can be retrieved via serial port on unit, via SD-card or via Telematics Controller continuously monitor health of system and components, an early indication can trigger a "message" and a critical issues trigger an "alarm" Unit controller has LED that flash red if "Alarm" is active Defrost: To melt ice entering with cargo, and/or from door openings electrical defrost heaters are installed with capacity 4,080 watt @ 460/60Hz and 3,520 watt @ 400V/50Hz. Defrost activates after 2 hour, after that controller monitor coil temperature, and allow upto 48 hour before a timed defrost. Controller monitor between evaporator coil sensor and return air sensor. Dehumidification: Humidity in cargo area can be controlled between 50 and 98 rH%. This is controlled by re-heating the evaporator air with the defrost heaters. Accuracy at rH set-point: 50% to 75%:  $\pm 1.5\%$  75% to 95%:  $\pm 3.0\%$