CSS SuperFreezer

Ultra-low temperatures for critical cargo

- Extreme cooling capacity
- Maintain ultra-low temperatures as low as -70°C
- Protect the most sensitive and valuable cargoes
- Solution can be used for transport over land or sea or as storage

TECHNICAL DATA

GENERAL

Unit type	Ultra-Low temperature unit for installation in Reefer containers for stationary applications. All Aluminum "Picture frame". Cascade system with dual refrigeration circuit. R134a with Copeland 3 cylinder compressor. Charge 3.5 kg (7.7 lbs) R23 with Copeland Scroll compressor. Charge 3.2 kg (7.0 lbs)
Container protection	Pressure equalization valve (1400 Pascal / 140 mm WG) to avoid excessive vacuum in the container
Setpoint Range	-70°C to -10°C (-94°F to -14°F)
Ambient temperature Range	-30°C to +37.8°C (-22°F to 100°F)
Required heat leakage of 10' box	18 Watt/°K @ 20C wall temperature, to ensure set-point at ambient
Required heat leakage of 20' box	20 Watt/°K @ 20C wall temperature, to ensure set-point at ambient

COOLING CAPACITY
@ AMBIENT TEMPERATURE +37.8°C (100°F)

At setpoint -60°C (-76°F)	5,850 watt @ 460V/60Hz 5,086 watt @ 400V/50Hz
At setpoint -70°C (-94°F)	3,880 watt @ 460V/60Hz 3,344 watt @ 400V/50Hz
At setpoint -30°C (-22°F)	8,250 watt @ 460V/60Hz 7,112 watt @ 400V/50Hz

CONTROLLER

General	Advanced Microprocessor MP3000 Emerson Controls Temperature control using 6 NTC sensors Temperature accuracy: +/- 1°C (+/-1.8°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 30 min, 2 or 4 hr 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). 3 USDA cargo sensor ports with Cannon receptacles (Option supply of

FEATURES

Noise level	80db (A) in 250 Hz band. Measurement taken in front of the unit 1,5 m distance and 1,2 m above ground, with the unit operating at 50 Hz
Certifications and design standards	ISO1496-2 CE ATP AHRI USDA TIR (International Customs Regulations for Containers)
Weight of SuperFreezer unit	630 kg (1,390 lbs)

ELECTRICITY

Power supply	A/C 400 to 500 Volt 3 phase 60 Hz ±2,5% A/C 360 to 460 Volt 3 phase 50 Hz ±2,5%
Main circuit breaker	32 Amp
Power cable	18.3 m (60 LF) cable (3phase and ground) with CEE17 power plug (32 Amp; ground 3h)
Maximum power draw	19 kw during "pull down"

MARINE

15m (49 LF) long cables with PT100 sensor (accuracy +/- 0.15°C (+/- 0.27°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, 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 an "Alarm" is active Defrost: To melt ice entering with cargo, and/or from door openings electrical defrost heaters are installed with capacity 8,160 watt @ 460/60Hz and 6,300 watt @ 400V/50Hz. Defrost activate every 6 hours, or per user s controller set-up using temperature difference between evaporator coil sensor and return air sensor.