

# Coolstar™

CS48200 F2 A/D/F

Controlled temperature cabinet for VRLA batteries for Outdoor application

The Narada Coolstar™ cabinet is designed to protect VRLA type lead acid batteries in telecommunication and photovoltaic energy storage applications against stressful ambient temperature conditions.

The Coolstar™ energy efficient operation allows to significantly reduce equipment-cooling costs by targeting the thermal management efforts directly toward the 48V battery. It will minimize air conditioning energy costs of radio base stations by splitting the thermal management into natural ventilation and forced cooling. Coolstar™ is ideal for countries with hot or tropical climate and for any location where cooling/heating energy is at a premium and its consumption has to be minimized.

The Coolstar™ cabinet has been designed on the basis of extensive CFD simulations of cell layout and airflow pattern.



## Features

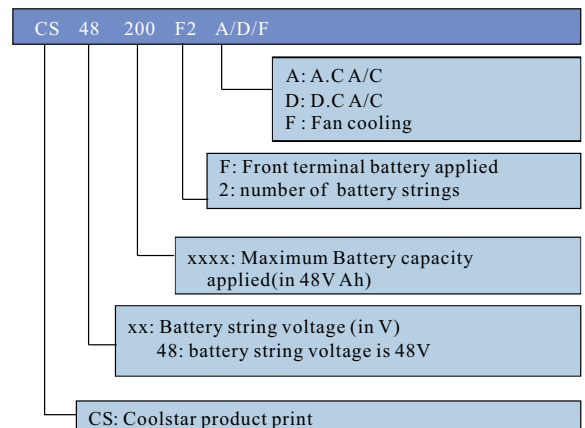
- ★ Up to 95% power saving compared to traditional, A/C based, thermal management solution.
- ★ Interchangeable and visual display service adapter, can freely set cooling temperature from +18 to +28° C to optimize energy consumption
- ★ Cabinet and cooling system rated for -40 to +55°C service
- ★ Proper design for easily installation and service
- ★ Completely gas release safety protected accordingly EN50272-2 and IEC 62485-2
- ★ Minimizing battery temperature differences to less than 3° C after being stabilized
- ★ Universal rack design applied for types of battery
- ★ Dual skin construction with foam insulation against hot outdoor condition for A/C cooling unit
- ★ Environmental friendly refrigerant of R134a without CFC for A/C cooling unit
- ★ Ingress protection class IP55 and 10 year design life

## Standards

### Product Approvals

- Transport ETSI EN 300 019-1-2 V2.1.4(2003-04)
- Storage ETSI EN 300 019-1-1 V2.1.4(2003-04)
- Operation ETSI EN 300 019-1-4 V2.1.2(2003-04)
- Chemical and mechanical substances ETSI EN 300 019-1-4 Class 4.1
- EMC ETSI EN 300 386 V1.5.1:2010 Tests according to IEC 61000-3
- EMC FCC CFR 47 part 15
- EMC EN 55022: 2006+A1:2007(CISPR22),
- EMC EN/IEC 61000-6-4:2007
- EMC EN/IEC 61000-6-2:2005
- EMC EN 55024:1998+A1:2001+A2:2003(CISPR24)

CE marked  
RoHS compliance



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### Electrical

| Type   | CS48200 F2A      | CS48200 F2D      | CS48200 F2F |
|--|------------------|------------------|-------------|
| <b>Cooling power</b>   | 600watts 35L/35L | 500watts 35L/35L |             |
|  | 500watts 35L/25L | 300watts 35L/25L |             |
| <b>Power consumption (maximum)</b>                               | 300 watts        | 200 watts        | 58 watts    |
| <b>Power consumption (cyclic/average daly)</b>                   | 120~160 watts    | 60~96 watts      | 58watts     |
| <b>Power consumption (float/average daily)</b>                   | 50~60 watts      | 50~60 watts      | 58watts     |
| <b>Power consumption (cyclic/average at 35°C economic mode )</b> | 42~56 watts      | 30~48 watts      | 58watts     |
| <b>Power consumption (float/average at 35°C economic mode )</b>  | 20~28 watts      | 20~28 watts      | 58 watts    |
| <b>Input voltage</b>   | 220V +/- 15% AC  | -48V DC          | -48V DC     |
| <b>MTBF</b>  | ≥50,000 hrs      |                  |             |
| <b>Communication</b>   | RS485            |                  | —           |

### Mechanical

### Battery configuration

| Type                                    | CS48200 F2 A/D/F                  | Battery (48V) | 19' Rack |
|---|-----------------------------------|---------------|----------|
| <b>Cabinet(WxDxH)</b>                   | 800 x801 x 1150 mm                | 1 string      | 7U       |
| <b>Weight (Without A/C and Battery)</b> | 139kg                             | 2strings      | —        |
| <b>Protection class</b>                 | IP55                              |               |          |
| <b>Operating temperature</b>            | -40°C ~ +55°C(with heater)        |               |          |
|   | +15°C ~ +55°C(without heater)     |               |          |
| <b>Coating colors</b>                   | Ral 7035                          |               |          |
| <b>Components</b>                       | Cabinet, rack and air conditioner |               |          |
|   | Universal rack for option         |               |          |

### Drawing

