HOPPECKE
POWER FROM INNOVATION

# grid | power FNC-VR

## Valve regulated
## Fibre Nickel Cadmium Batteries

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# grid | power FNC-VR

The extremely low-maintenance grid | power FNC-VR battery is developed in line with the HOPPECKE proven fibre matrix plate technology. The addition of the special recombinant technology of this battery to the fibre plate design gives exceptional reliability in critical applications. Therefore, the grid | power FNC-VR provides superior performance to other valve regulated Nickel Cadmium technologies.

The grid | power FNC-VR battery was developed for applications where the system must be completely reliable with minimal maintenance. Typical applications are:

- UPS systems
- Telecommunications systems
- Power stations and substations
- Safety lighting

**Product advantages**

Fibre Nickel Cadmium (FNC®) technology provides the best solution for long reliable battery life with minimal maintenance.

### Extremely low maintenance

- The incorporation of a low-pressure valve and a flame arresting vent with the grid | power FNC-VR technology, recombines oxygen and hydrogen gasses inside the cell with up to 90% efficiency.
- The grid | power FNC-VR cell technology with liquid electrolyte has significant advantages over other valve regulated battery systems in which only minimal electrolyte reserves are available.
  - Large electrolyte reserve to protect against dry out in the case of a charger failure.
  - No tendency to thermal runaway. Therefore, the grid | power FNC-VR can be used in a large temperature range.
- No water addition or filling is required over a period of 20 years when operated on float charge at 20°C.

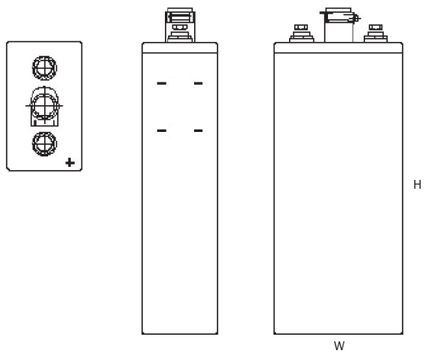
### Technical data

- Operating temperature range: -50°C to +60°C
- Float Charge: 1.40 to 1.45 V/cell
- Boost Charge: 1.50 to 1.70 V/cell
- Water maintenance period 1.40 V/cell: 20 years at 20°C
- Recharge time to 90% available capacity:
  7 - 8 hours at normal boost charge voltage
- Low pressure valve
- Cell jar/lid: Translucent Polypropylene, optional opaque flame retardant polypropylene, UL-94 V0
- Jar/Lid seal: Welded, leak proof
- Terminals: Nickel plated steel
- Electrode design: Nickel plated steel
  tab welded to the fiber structure
- Electrolyte: KOH density = 1.190 kg/l

# Capacities, dimensions and weights

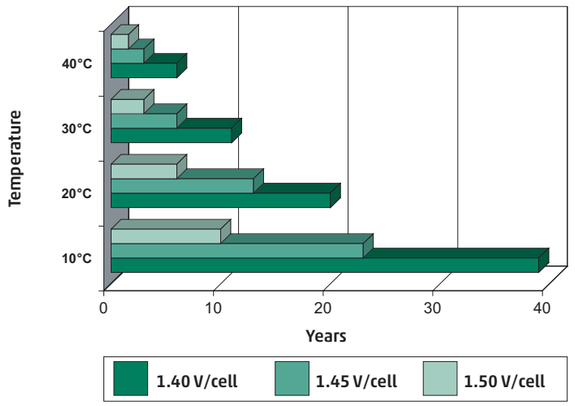
| Type | | Capacity $C_5$ (Ah) | Length (mm) | Width (mm) | Height (mm) | Cell weight with electrolyte (kg) | Cell weight without electrolyte (kg) | Electrolyte quantity (l) |
|---|---|---|---|---|---|---|---|---|
| **FNC® VR** | 40 M | 40 | 47 | 122 | 299 | 2.60 | 1.60 | 0.84 |
| **FNC® VR** | 60 M | 60 | 47 | 122 | 299 | 2.80 | 2.20 | 0.50 |
| **FNC® VR** | 80 M | 80 | 72 | 122 | 299 | 4.00 | 2.70 | 1.09 |
| **FNC® VR** | 100 M | 100 | 72 | 122 | 299 | 4.20 | 3.10 | 0.92 |
| **FNC® VR** | 120 M | 120 | 92 | 122 | 299 | 5.40 | 3.70 | 1.43 |
| **FNC® VR** | 140 M | 140 | 92 | 122 | 299 | 5.60 | 4.20 | 1.18 |
| **FNC® VR** | 160 M | 160 | 115 | 122 | 299 | 6.70 | 4.80 | 1.60 |
| **FNC® VR** | 180 M | 180 | 115 | 122 | 299 | 6.90 | 5.20 | 1.43 |
| **FNC® VR** | 200 M | 200 | 92 | 194 | 299 | 8.70 | 6.30 | 2.02 |
| **FNC® VR** | 234 M | 235 | 92 | 194 | 299 | 8.90 | 6.80 | 1.76 |
| **FNC® VR** | 265 M | 265 | 115 | 194 | 299 | 10.50 | 8.00 | 2.10 |
| **FNC® VR** | 300 M | 300 | 115 | 194 | 299 | 11.20 | 8.90 | 1.93 |
| **FNC® VR** | 333 M | 333 | 155 | 198 | 299 | 13.80 | 9.70 | 3.45 |
| **FNC® VR** | 367 M | 367 | 155 | 198 | 299 | 14.20 | 10.40 | 3.19 |
| **FNC® VR** | 400 M | 400 | 155 | 198 | 299 | 14.60 | 11.10 | 2.94 |
| **FNC® VR** | 433 M | 433 | 155 | 198 | 299 | 14.90 | 11.90 | 2.52 |

| Type | | Capacity $C_5$ (Ah) | Length (mm) | Width (mm) | Height (mm) | Cell weight with electrolyte (kg) | Cell weight without electrolyte (kg) | Electrolyte quantity (l) |
|---|---|---|---|---|---|---|---|---|
| **FNC® VR** | 20 L | 20 | 30 | 122 | 299 | 1.50 | 1.00 | 0.42 |
| **FNC® VR** | 45 L | 45 | 47 | 122 | 299 | 2.50 | 1.50 | 0.84 |
| **FNC® VR** | 66 L | 66 | 47 | 122 | 299 | 2.70 | 1.90 | 0.76 |
| **FNC® VR** | 90 L | 90 | 72 | 122 | 299 | 3.90 | 2.50 | 0.59 |
| **FNC® VR** | 110 L | 110 | 72 | 122 | 299 | 4.10 | 2.90 | 1.01 |
| **FNC® VR** | 132 L | 132 | 92 | 122 | 299 | 5.20 | 3.30 | 1.51 |
| **FNC® VR** | 154 L | 154 | 92 | 122 | 299 | 5.40 | 3.70 | 1.43 |
| **FNC® VR** | 176 L | 176 | 115 | 122 | 299 | 6.40 | 4.30 | 1.76 |
| **FNC® VR** | 198 L | 198 | 115 | 122 | 299 | 6.90 | 5.20 | 1.43 |
| **FNC® VR** | 222 L | 222 | 92 | 194 | 299 | 8.50 | 5.80 | 2.27 |
| **FNC® VR** | 259 L | 259 | 92 | 194 | 299 | 8.80 | 6.40 | 2.02 |
| **FNC® VR** | 296 L | 296 | 115 | 194 | 299 | 10.60 | 7.30 | 2.77 |
| **FNC® VR** | 333 L | 333 | 115 | 194 | 299 | 10.90 | 7.90 | 2.52 |
| **FNC® VR** | 370 L | 370 | 115 | 194 | 299 | 11.20 | 8.80 | 2.02 |
| **FNC® VR** | 407 L | 407 | 155 | 198 | 299 | 14.10 | 10.10 | 3.36 |
| **FNC® VR** | 444 L | 444 | 155 | 198 | 299 | 14.50 | 10.80 | 3.11 |
| **FNC® VR** | 481 L | 481 | 155 | 198 | 299 | 14.80 | 11.50 | 2.77 |
| **FNC® VR** | 518 L | 518 | 155 | 198 | 299 | 15.20 | 12.10 | 2.61 |




**Maintenance Interval for grid | power FNC-VR - L-types**

**Years at temperature & charge voltage**




Technical changes reserved.

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All details in this brochure are based on state-of-the-art technology. Our products are subject to constant development. We therefore reserve the right to make changes.

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