



OBS12450HRF (12V 450W)

High Rate VRLA Battery

Osonix HRF Serie Front Terminal Pure Lead Acid Batteries are designed with advanced technology to optimize performance and improve energy density. Utilize a special fine-mesh grid technology and specially formulated paste plates, which enhance the adhesion of the active material.

Features

- Absorbent Glass Mat (AGM) technology, maintenance-free.
- Front terminals for easy installation, maintenance, and monitoring.
- Pure lead technology ensuring extended service life, 12+ years.
- Advanced welding technology ensures excellent high-current charge/discharge capacity.
- Oxygen recombination efficiency $\geq 98\%$.
- PbCaSn alloy grids - reduced gassing and lower self-discharge.
- Full compliance with IATA/ICAO regulations - A67 approved (unrestricted transport by rail, road, sea and air).

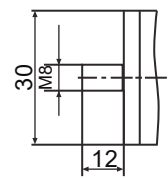
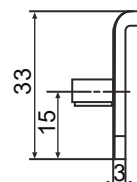
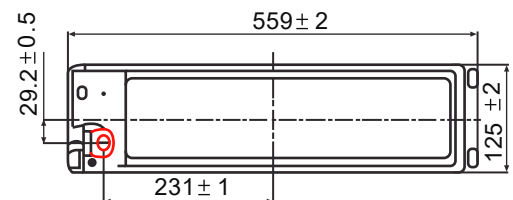
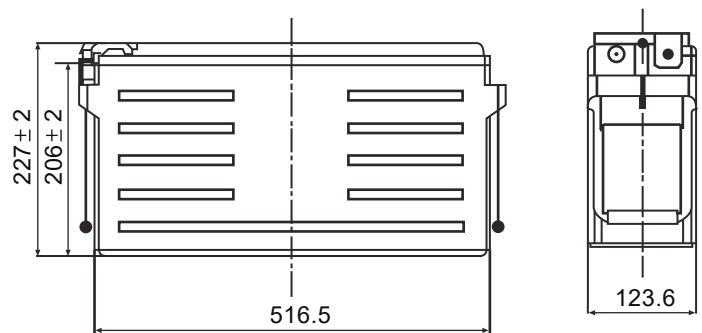
Applications

- Uninterruptible Power Supplies (UPS).
- Telecommunications Backup Power System.
- Emergency and Backup Power Sources.
- Power Plant Energy Storage Systems.
- Emergency Lighting.

PHYSICAL SPECIFICATION

| | | |
|---|---|---|
| Dimension | Length Width Height Total Height | 559 ±2 mm (22.01 in) 125 ±2 mm (4.92 in) 227 ±2 mm (8.94 in) 227 ±2 mm (8.94 in) |
| Weight | | 37.7 Kg (83.7 lb) |
| Terminal | | M8 |
| Container Mat. (Flame retardant) | | ABS UL94 HB o V0 |
| Recommended Torque | | (11 ~ 14.7) N·m (97.35 ~ 130.1) in·lbs |

| SPECIFICATIONS Standard @ 25°C (77°F) | | |
|---|---|--|
| Rated Voltage | 12 V | |
| Nominal Capacity (W) (15 min to 1.67 V/cell) | 450W | |
| Nominal Capacity (Ah) (10 h to 1.80 V/cell) | 110 Ah | |
| Rated Capacity | 125.6 Ah 116 Ah 103.8 Ah 91.2 Ah | (20hrs, 6.28A, 1.80V/cell) (8hrs, 14.5A, 1.75V/cell) (3hrs, 34.6A, 1.75V/cell) (1hr, 91.2A, 1.60V/cell) |
| Max. Discharge Current | 1320 A (5 s) | |
| Internal Resistance | 4 mΩ | |
| Operating Temp. Range | Discharge Charge Storage | -40~65°C (-40~149°F) 0~40°C (32~104°F) -20~40°C (-4~104°F) |
| Max. charge Current | 33 A | |
| Charge Voltage (25°C) | Float | 13.62 V |
| | Temp. Coefficient | -3mV/cell/°C |
| | Equalization | 14.1 ~ 14.4V |
| Design Life | ≥ 15 years | |



Unit: mm

Compliance:

IEC 60896

CE, UL 1989, UL94 HB o V-0

Certified production IATF16949, ISO 9001, ISO 14001



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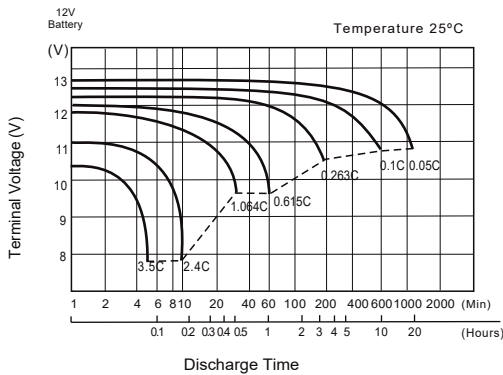
Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V / Time | 5 min | 10 min | 15 min | 20 min | 30 min | 45 min | 1 h | 2 h | 3 h | 4 h | 5 h | 8 h | 10 h | 20 h |
|------------|-------|--------|--------|--------|--------|--------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 309.3 | 238.4 | 186.7 | 160.2 | 123.2 | 95.7 | 78.1 | 45.9 | 33 | 25.8 | 21.3 | 14 | 10.8 | 6.08 |
| 1.80V/cell | 348.8 | 263.4 | 203 | 172.8 | 132.9 | 101.1 | 81.8 | 47.4 | 33.8 | 26.4 | 21.7 | 14.3 | 11 | 6.28 |
| 1.75V/cell | 388.6 | 287.3 | 218.7 | 184.6 | 140.6 | 105.8 | 85.2 | 48.8 | 34.6 | 26.9 | 22 | 14.5 | 11.9 | 6.41 |
| 1.70V/cell | 425.6 | 297.6 | 232.4 | 194.8 | 146.4 | 109.6 | 87.9 | 49.7 | 35.2 | 27.3 | 22.4 | 14.7 | 12 | 6.53 |
| 1.67V/cell | 483.3 | 310.7 | 245.6 | 200.9 | 148.6 | 111.6 | 89.2 | 50.3 | 35.5 | 27.6 | 22.7 | 14.8 | 12.1 | 6.53 |
| 1.60V/cell | 532.4 | 331.4 | 261.1 | 209.2 | 151.8 | 114.7 | 91.2 | 51.2 | 36.1 | 28 | 22.8 | 15 | 12.2 | 6.63 |

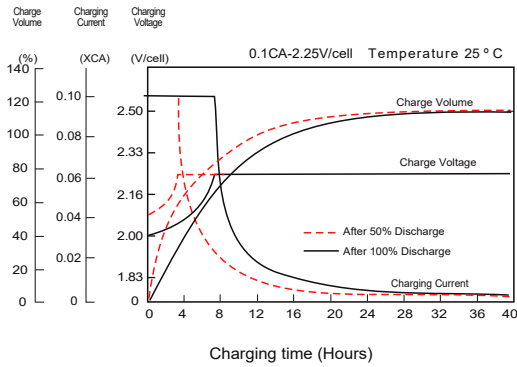
Constant Power Discharge (Watts/cell) at 25°C (77°F)

| F.V / Time | 5 min | 10 min | 15 min | 20 min | 30 min | 45 min | 1 h | 2 h | 3 h | 4 h | 5 h | 8 h | 10 h | 20 h |
|------------|-------|--------|--------|--------|--------|--------|-------|------|------|------|------|------|------|------|
| 1.85V/cell | 579.8 | 457.7 | 362.3 | 311.7 | 241.4 | 189.2 | 154.9 | 91.7 | 66 | 51.8 | 42.9 | 28.4 | 23.3 | 12.4 |
| 1.80V/cell | 646.6 | 500.5 | 391.5 | 334.1 | 258.8 | 198.6 | 161.4 | 94.2 | 67.4 | 52.7 | 43.4 | 28.8 | 23.6 | 12.8 |
| 1.75V/cell | 711.4 | 539.7 | 417.5 | 353.7 | 271.6 | 206.3 | 166.8 | 96.3 | 68.6 | 53.5 | 44 | 29.1 | 24 | 13 |
| 1.70V/cell | 772 | 551.9 | 439.3 | 369.7 | 280.3 | 212.3 | 171 | 97.9 | 69.5 | 54.1 | 44.6 | 29.5 | 24.2 | 13.2 |
| 1.67V/cell | 805.6 | 568.6 | 450 | 377.3 | 285.7 | 215.1 | 172.7 | 98.6 | 69.9 | 54.5 | 44.9 | 29.6 | 24.3 | 13.2 |
| 1.60V/cell | 872.8 | 597.8 | 466.9 | 388.7 | 292.2 | 218.7 | 175.1 | 99.6 | 70.6 | 55 | 45.2 | 29.6 | 24.5 | 13.3 |

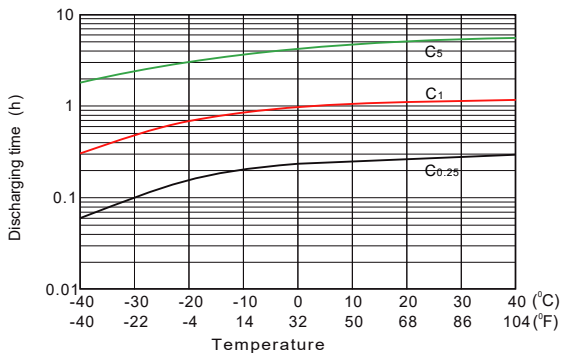
Discharge Characteristics



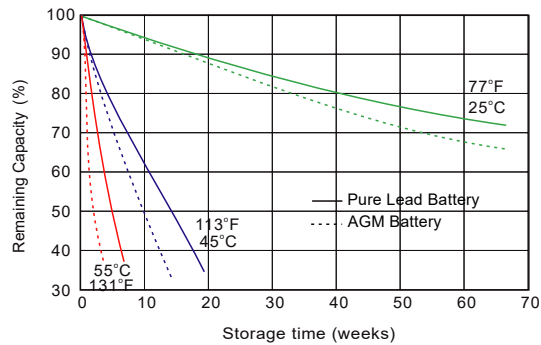
Float Charging Characteristics



Effects of Temperature on Discharging Time



Self-discharge Characteristics



* The OBS12450HRF can be stored for up to 24 months at 25°C (77°F). For higher temperatures, the storage time will be shorter.
 **Charging should be done when the OCV (Open Circuit Voltage) approaches 2.10 V/cell or when the maximum storage time is reached, whichever comes first.

* Product specifications are subject to change without notice.
 * US-V2509-REV1.02
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