



DATA SHEET

grid | Xtreme VR

GREEN series

Application | Data Center

Cost-optimized pure lead technology (green series)

The HOPPECKE grid | Xtreme VR green series was developed with a high cost-benefit factor in mind to make the advantages of pure lead technology available to cost-conscious customers. The superior technical characteristics in both top and front terminal versions make them the preferred solution for UPS batteries in data center.

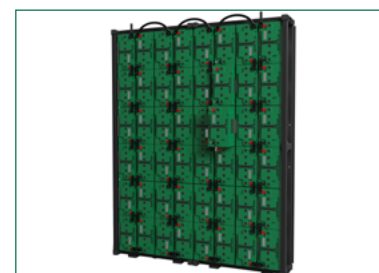
Unique dual-pole design - less service efforts

Dedicated pole contact points with touch protection allows for a precise impedance measurement making it quick and easy during installation and regular maintenance work.



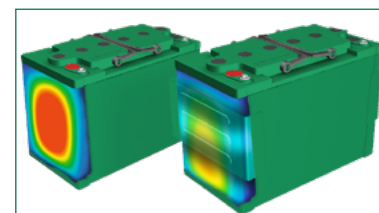
grid | XtremeStack – optimal use of space with a minimal footprint

The innovative stacking solution from HOPPECKE. Tailored for grid | Xtreme VR batteries in the top terminal variant to achieve maximum efficient use of space and power density (kW/m²) - with comparatively less installation effort and lower costs. grid | XtremeStack is both horizontally and vertically expandable and adapts flexibly to your needs. Suitable for seismic loads up to UBC Zone 1.



Patented. innovative safeguard-tec - lower operational costs

The innovative safeguard-tec for the top terminal types (optional) ensures dimensional stability throughout battery lifetime and at elevated ambient temperature. This allows installation in cabinets or on racks with limited demand for a continuous cost-intensive air-conditioning.



Proven ESS technology - reduced life cycle costs (TCO)

The result of Enhanced Stability Standard (ESS) technology is a proprietary improved resilience against thermal runaway, better charge acceptance and more even voltage behavior of the battery. This leads to a longer service life and reduced service costs: in summary optimized life cycle costs.





Construction

- High Performance Pure Lead grid electrodes for very good corrosion resistance also under **elevated operating temperature**
- Active mass is designed for **high discharge performance** with good cyclability
- High-quality and low resistance microporous glass fibre separators combined with **ESS technology** ensures optimum charge carrier exchange and improves a **long-term stability**
- Fully isolated HOPPECKE connector system**
- Innovative plastic-overmolded dual-pole design with an **access for impedance measurements**
- 100% tested self-regulating pressure relief valve per cell to prevent interaction between cells of a block with backfire inhibiting for increased **operational safety**
- UL94 V-0** rated flame retardant ABS-PC material (halogen-free) - high heat, shock and vibration resistant
- 15 years** design life and optimized aging behavior at high temperatures



Installation & Operation

- Suitable for standby parallel operation as well as partial cyclic applications
- Vertical as well as horizontal installation** on racks, in battery cabinets or in the grid | XtremeStack due to the robust folding handles integrated in the lid for easy assembly
- FT: real front terminals** for an ease of installation and maintenance - no additional connectors needed
- TT: safeguard-tec** optional available - **improves the overall performance** significantly
- Recommended charge float voltage: 2.3 Vpc @ 68°F (20°C) / 2.288 Vpc @ 77°F (25°C)
- Operating temperature range extremely wide from **-31°F to +122°F (-35°C to +50°C)**
- Storage time** extended up to **2 years** for maximum project deployment flexibility
- Reduced maintenance: no refilling of distilled water is required



Standards

- Designed to be compliant with international standard **IEC 60896-21/22**
- Usage in applications where longest life (15 years design life) and highest reliability are required. Therefore, classified as "Very Long Life" according to Eurobat Guide 20 15
- UL recognized** component
- UL94 V-0 rated flame retardant ABS-PC material (halogen-free)
- Classified as non-spillable battery and approved as non-hazardous cargo for land, sea and air transportation in accordance with the requirements of **ADR / RID, IMDG and IATA**
- Exclusively manufactured in HOPPECKE certified production facilities in accordance with **ISO 9001, ISO 14001, ISO 50001 and ISO 45001**



Type overview grid | Xtreme VR

Capacity, dimensions and weights

| MODEL | VOLTAGE [V] | CONSTANT POWER RATINGS IN WATTS PER CELL @ 77°F (25°C) | | | DIMENSIONS [inches] | | | WEIGHT | |
|---------------------------------|-------------|--|-----------------|-----------------|---------------------|-------|--------|--------|------|
| | | 1.67 VPC 5 MIN | 1.67 VPC 10 MIN | 1.67 VPC 15 MIN | LENGTH | WIDTH | HEIGHT | LBS | KG |
| grid Xtreme VR 122700 | 12 | 649.6 | 454.7 | 345.8 | 10 | 6.85 | 9.17 | 55.6 | 25.2 |
| grid Xtreme VR 123600 | 12 | 870.8 | 610.5 | 464.6 | 12.6 | 6.85 | 9.17 | 69.9 | 31.7 |
| grid Xtreme VR 124400 | 12 | 1061.2 | 802.6 | 640.6 | 14.13 | 6.85 | 11.14 | 100.1 | 45.4 |
| grid Xtreme VR 125100 | 12 | 1252.4 | 930.1 | 735.5 | 19.61 | 6.85 | 9.17 | 111.1 | 50.4 |
| grid Xtreme VR 12-1000 FT 19" | 12 | 710.3 | 522.7 | 410.6 | 15.91 | 4.33 | 10.39 | 65.3 | 29.6 |
| grid Xtreme VR 12-1000 FT 23" | 12 | 809.7 | 595 | 467.3 | 22.17 | 4.92 | 7.87 | 73 | 33.1 |
| grid Xtreme VR 12-1500 FT | 12 | 921.9 | 751.2 | 632.8 | 22.17 | 4.33 | 12.09 | 108.5 | 49.2 |
| grid Xtreme VR 12-1800 FT | 12 | 1035.2 | 856.7 | 717.7 | 22.17 | 4.92 | 12.09 | 123.9 | 56.2 |
| grid Xtreme VR 12-2000 FT | 12 | 1027.2 | 860 | 735.8 | 22.17 | 4.92 | 12.68 | 132.3 | 60 |

| MODEL | TERMINAL | MAXIMUM DISCHARGE CURRENT [A] | SHORT CIRCUIT CURRENT (acc. IEC 60896-21) [A] | TERMINAL TYPE | TERMINAL TORQUE | FIG. |
|---------------------------------|----------|-------------------------------|---|---------------|---------------------|------|
| grid Xtreme VR 122700 | TOP | 1100 | 2210 | Insert (M8) | 133 in.-lbs (15 Nm) | A |
| grid Xtreme VR 123600 | TOP | 1100 | 2715 | Insert (M8) | 133 in.-lbs (15 Nm) | A |
| grid Xtreme VR 124400 | TOP | 1100 | 2984 | Insert (M8) | 133 in.-lbs (15 Nm) | A |
| grid Xtreme VR 125100 | TOP | 1100 | 3818 | Insert (M8) | 133 in.-lbs (15 Nm) | A |
| grid Xtreme VR 12-1000 FT 19" | FRONT | 1000 | 2076 | Insert (M8) | 133 in.-lbs (15 Nm) | B |
| grid Xtreme VR 12-1000 FT 23" | FRONT | 1000 | 2217 | Insert (M8) | 133 in.-lbs (15 Nm) | B |
| grid Xtreme VR 12-1500 FT | FRONT | 1000 | 2350 | Insert (M8) | 133 in.-lbs (15 Nm) | B |
| grid Xtreme VR 12-1800 FT | FRONT | 1000 | 2953 | Insert (M8) | 133 in.-lbs (15 Nm) | B |
| grid Xtreme VR 12-2000 FT | FRONT | 1000 | 2821 | Insert (M8) | 133 in.-lbs (15 Nm) | B |

*) Top terminal batteries: +0.12 inch in length and +0.2 inch in width using optional safeguard-tec



grid | Xtreme VR 122700

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 691.9 | 691.9 | 691.9 | 637.9 | 591.9 | 438.6 | 342.8 | 283.5 | 211.9 | 154.5 | 122.0 |
| 1.70 | 824.6 | 824.6 | 753.1 | 688.6 | 631.7 | 451.4 | 345.8 | 284.6 | 212.0 | 154.5 | 122.0 |
| 1.67 | 858.0 | 858.0 | 782.1 | 711.8 | 649.6 | 454.7 | 345.8 | 284.6 | 212.0 | 154.5 | 122.0 |
| 1.65 | 877.6 | 877.6 | 792.9 | 721.1 | 660.1 | 455.7 | 345.8 | 284.6 | 212.0 | 154.5 | 122.0 |
| 1.60 | 930.4 | 930.4 | 834.0 | 750.4 | 679.3 | 455.7 | 345.8 | 284.6 | 212.0 | 154.5 | 122.0 |

grid | Xtreme VR 123600

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 927.5 | 927.5 | 927.5 | 855.5 | 794.0 | 589.0 | 460.6 | 381.1 | 284.9 | 207.9 | 164.1 |
| 1.70 | 1104.0 | 1104.0 | 1008.9 | 922.9 | 847.0 | 606.1 | 464.6 | 382.5 | 285.1 | 207.9 | 164.2 |
| 1.67 | 1148.2 | 1148.2 | 1047.3 | 953.8 | 870.8 | 610.5 | 464.6 | 382.5 | 285.1 | 207.9 | 164.2 |
| 1.65 | 1174.2 | 1174.2 | 1061.6 | 966.1 | 884.8 | 611.8 | 464.6 | 382.5 | 285.1 | 207.9 | 164.2 |
| 1.60 | 1243.7 | 1243.7 | 1116.0 | 1004.9 | 910.3 | 611.8 | 464.6 | 382.5 | 285.1 | 207.9 | 164.2 |

grid | Xtreme VR 124400

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 1070.3 | 1070.3 | 1070.3 | 1009.3 | 954.8 | 751.5 | 615.8 | 518.0 | 394.4 | 294.1 | 236.1 |
| 1.70 | 1162.6 | 1162.6 | 1162.6 | 1090.4 | 1025.9 | 788.0 | 636.2 | 529.5 | 398.0 | 294.3 | 236.1 |
| 1.67 | 1299.6 | 1299.6 | 1210.9 | 1131.8 | 1061.2 | 802.6 | 640.6 | 530.3 | 398.1 | 294.3 | 236.1 |
| 1.65 | 1332.9 | 1332.9 | 1240.0 | 1156.7 | 1082.2 | 810.3 | 641.8 | 530.3 | 398.1 | 294.3 | 236.1 |
| 1.60 | 1404.9 | 1404.9 | 1303.1 | 1210.2 | 1126.6 | 823.4 | 641.9 | 530.3 | 398.1 | 294.3 | 236.1 |

grid | Xtreme VR 125100

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 1290.5 | 1290.5 | 1290.5 | 1210.5 | 1139.5 | 878.9 | 713.3 | 594.4 | 450.8 | 333.8 | 267.1 |
| 1.70 | 1497.4 | 1497.4 | 1395.3 | 1303.5 | 1221.2 | 918.6 | 730.9 | 604.4 | 453.5 | 334.1 | 267.1 |
| 1.67 | 1561.3 | 1561.3 | 1445.0 | 1342.7 | 1252.4 | 930.1 | 735.5 | 605.3 | 454.6 | 334.1 | 267.1 |
| 1.65 | 1599.2 | 1599.2 | 1478.6 | 1371.5 | 1276.6 | 938.2 | 736.3 | 605.5 | 454.6 | 334.1 | 267.1 |
| 1.60 | 1680.9 | 1680.9 | 1550.1 | 1431.7 | 1326.1 | 952.2 | 737.8 | 605.5 | 454.6 | 334.1 | 267.1 |



grid | Xtreme VR 12-1000 FT 19"

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 736.2 | 736.2 | 736.2 | 685.7 | 641.9 | 487.4 | 393.5 | 331.6 | 253.2 | 187.4 | 150.1 |
| 1.70 | 846.8 | 846.8 | 788.6 | 735.8 | 688.3 | 513.5 | 406.3 | 339.2 | 256.3 | 188.7 | 150.5 |
| 1.67 | 891.6 | 981.6 | 823.3 | 763.2 | 710.3 | 522.7 | 410.6 | 341.1 | 256.5 | 188.7 | 150.5 |
| 1.65 | 913.7 | 913.7 | 842.3 | 779.3 | 723.8 | 528.1 | 412.3 | 341.6 | 256.5 | 188.7 | 150.5 |
| 1.60 | 966.0 | 966.0 | 883.5 | 811.9 | 749.7 | 536.6 | 414.3 | 341.6 | 256.5 | 188.7 | 150.5 |

grid | Xtreme VR 12-1000 FT 23"

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 839.1 | 839.1 | 839.1 | 784.5 | 735.9 | 558.5 | 448.1 | 374.7 | 284.1 | 209.5 | 166.3 |
| 1.70 | 973.9 | 973.9 | 904.1 | 841.7 | 786.2 | 584.8 | 462.5 | 382.8 | 287.1 | 210.3 | 166.7 |
| 1.67 | 1015.5 | 1015.5 | 938.4 | 870.1 | 809.7 | 595.0 | 467.3 | 384.8 | 287.2 | 210.3 | 166.7 |
| 1.65 | 1041.5 | 1041.5 | 959.2 | 886.8 | 823.3 | 600.0 | 469.1 | 385.2 | 287.2 | 210.3 | 166.7 |
| 1.60 | 1097.0 | 1097.0 | 1002.5 | 920.6 | 849.7 | 607.2 | 469.9 | 385.2 | 287.2 | 210.3 | 166.7 |

grid | Xtreme VR 12-1500 FT

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 818.3 | 818.3 | 818.3 | 818.3 | 818.3 | 683.7 | 585.6 | 510.9 | 404.9 | 307.7 | 247.8 |
| 1.70 | 924.8 | 924.8 | 924.8 | 924.8 | 886.3 | 730.0 | 619.2 | 534.7 | 417.9 | 313.4 | 250.2 |
| 1.67 | 1007.9 | 1007.9 | 1007.9 | 963.5 | 921.9 | 751.2 | 632.8 | 543.3 | 421.4 | 314.0 | 250.2 |
| 1.65 | 1014.1 | 1014.1 | 1014.1 | 969.8 | 927.8 | 753.4 | 632.8 | 543.3 | 421.4 | 314.0 | 250.2 |
| 1.60 | 1151.6 | 1151.6 | 1092.4 | 1037.7 | 987.4 | 788.9 | 649.7 | 549.6 | 422.5 | 314.0 | 250.2 |

grid | Xtreme VR 12-1800 FT

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 919.2 | 919.2 | 919.2 | 919.2 | 919.2 | 774.8 | 660.1 | 576.5 | 460.0 | 348.2 | 279.8 |
| 1.70 | 1073.8 | 1073.8 | 1073.8 | 1033.7 | 995.3 | 830.4 | 701.7 | 602.9 | 472.8 | 353.5 | 281.9 |
| 1.67 | 1120.2 | 1120.2 | 1120.2 | 1076.8 | 1035.2 | 856.7 | 717.7 | 613.7 | 476.8 | 354.0 | 281.9 |
| 1.65 | 1151.3 | 1151.3 | 1151.3 | 1103.6 | 1058.6 | 871.1 | 726.3 | 619.4 | 478.9 | 354.0 | 281.9 |
| 1.60 | 1256.8 | 1256.8 | 1208.2 | 1159.4 | 1111.4 | 901.1 | 740.1 | 625.1 | 478.9 | 354.0 | 281.9 |

grid | Xtreme VR 12-2000 FT

| END POINT VPC | CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C) | | | | | | | | | | |
|---------------|---|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|
| | OPERATING TIME TO END POINT VOLTAGE (IN MINUTES) | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 10 | 15 | 20 | 30 | 45 | 60 |
| 1.75 | 908.2 | 908.2 | 908.2 | 908.2 | 908.2 | 775.5 | 676.8 | 594.1 | 477.2 | 365.6 | 295.7 |
| 1.70 | 1025.1 | 1025.1 | 1025.1 | 1025.1 | 986.1 | 832.3 | 716.8 | 624.8 | 492.1 | 371.0 | 297.4 |
| 1.67 | 1117.3 | 1117.3 | 1117.3 | 1070.1 | 1027.2 | 860.0 | 735.8 | 638.1 | 495.9 | 371.7 | 297.7 |
| 1.65 | 1145.7 | 1145.7 | 1145.7 | 1095.6 | 1050.4 | 876.6 | 746.2 | 644.8 | 499.5 | 372.8 | 297.7 |
| 1.60 | 1264.3 | 1264.3 | 1205.9 | 1152.7 | 1103.9 | 911.2 | 767.0 | 656.0 | 500.4 | 372.8 | 297.7 |



Fig. A

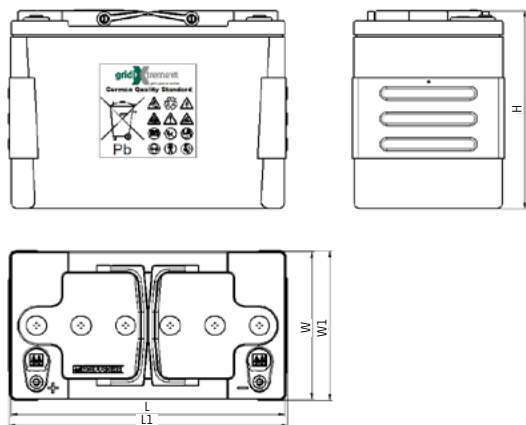
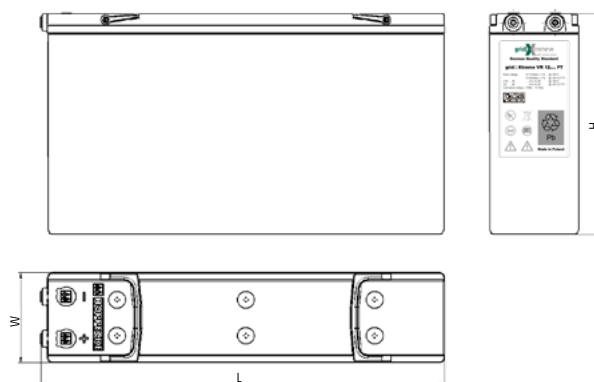


Fig. B



Tightening torque of terminal screw: 15 Nm - 133 lbf in

grid | Xtreme VR is versatile and may be used in other DC or AC industrial applications.

All of our cells and batteries should be installed, commissioned and operated in accordance with:

- HOPPECKE Operational Manual / Recommendations / Instructions
- International Standard IEC 62485-2 Safety requirements for secondary batteries and battery installations – Part 2: Stationary batteries
- Regional / National / Local Standards for the Environment

Optimal environmental compatibility - closed material cycle in certified recycling system

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