

DATA SHEET

grid | Xtreme VR

PURE series

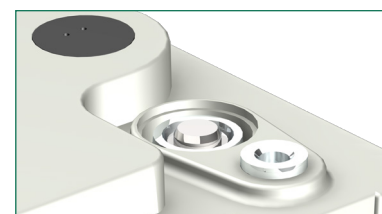
Application | Data Center

The next generation of real pure lead batteries

By using high-purity lead (99.99%), HOPPECKE has deliberately opted for better corrosion resistance and thus an outstanding service life even in high-current applications and high ambient temperatures, such as 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.



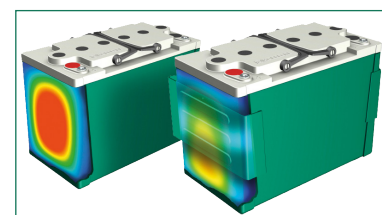
grid | XtremeStack – optimal use of space with a minimal footprint

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 maximum corrosion resistance also under **elevated operating temperature**
- Active mass is designed for **maximum discharge performance** with good cyclability
- High-quality and low resistance microporous glass fiber 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 **-40°F to +131°F (-40°C to +55°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 2015
- 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**



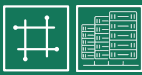
Type overview grid | Xtreme VR

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 12-80	12	641.5	465.9	363.5	10.00	6.85	9.17	56.9	25.8
grid Xtreme VR 12-110	12	880.5	617.1	469.5	12.60	6.85	9.17	71.4	32.4
grid Xtreme VR 12-150	12	1017.7	763.6	606.9	14.13	6.85	11.14	102.1	46.3
grid Xtreme VR 12-170	12	1266.4	940.1	743.3	19.61	6.85	9.17	113.3	51.4
grid Xtreme VR 12-100 FT 19"	12	548.9	452.1	377.4	15.91	4.33	10.39	66.6	30.2
grid Xtreme VR 12-100 FT 23"	12	590.2	486.5	406.4	22.17	4.92	7.87	74.7	33.9
grid Xtreme VR 12-150 FT	12	809.0	677.4	578.1	22.17	4.33	12.09	110.7	50.2
grid Xtreme VR 12-180 FT	12	1044.4	864.5	724.4	22.17	4.92	12.09	126.5	57.4
grid Xtreme VR 12-200 FT	12	1028.7	862.5	736.8	22.17	4.92	12.68	134.9	61.2

MODEL	TERMINAL	MAXIMUM DISCHARGE CURRENT [A]	SHORT CIRCUIT CURRENT (acc. IEC 60896-21) [A]	TERMINAL TYPE	TERMINAL TORQUE	FIG.
grid Xtreme VR 12-80	TOP	1100	1439	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-110	TOP	1100	2771	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-150	TOP	1100	2766	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-170	TOP	1100	3896	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-100 FT 19"	FRONT	1000	1545	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-100 FT 23"	FRONT	1000	1657	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-150 FT	FRONT	1000	2372	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-180 FT	FRONT	1000	3013	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-200 FT	FRONT	1000	3078	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 12-80

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	546.3	546.3	546.3	546.3	546.3	441.1	351.6	293.8	222.1	163.4	129.5
1.70	664.9	664.9	664.9	664.9	623.1	459.9	361.3	298.1	223.2	163.6	129.5
1.67	686.9	686.9	686.9	686.9	641.5	465.9	363.5	298.9	223.2	163.6	129.5
1.65	738.6	738.6	738.6	698.6	651.7	468.6	364.0	298.9	223.2	163.6	129.5
1.60	833.7	833.7	775.9	720.0	668.2	471.6	364.0	298.9	223.2	163.6	129.5

grid | Xtreme VR 12-110

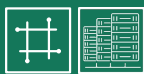
END POINT VPC	CONSTANT POWER DISCHARGE RATINGS - WATTS PER CELL @ *77°F (+25°C)										
	OPERATING TIME TO END POINT VOLTAGE (IN MINUTES)										
	1	2	3	4	5	10	15	20	30	45	60
1.75	937.9	937.9	937.9	864.9	802.7	595.3	465.5	385.1	287.9	210.0	165.8
1.70	1116.7	1116.7	1020.4	933.3	856.4	612.6	469.5	386.5	288.1	210.0	165.9
1.67	1161.5	1161.5	1059.2	964.5	880.5	617.1	469.5	386.5	288.1	210.0	165.9
1.65	1187.8	1187.8	1073.8	977.0	894.7	618.4	469.5	386.5	288.1	210.0	165.9
1.60	1258.4	1258.4	1128.9	1016.4	920.5	618.4	469.5	386.5	288.1	210.0	165.9

grid | Xtreme VR 12-150

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	975.0	975.0	975.0	975.0	915.2	708.6	584.2	495.7	383.9	289.5	234.3
1.70	1125.1	1125.1	1125.1	1052.2	980.0	747.0	602.6	506.9	385.3	290.2	234.6
1.67	1169.9	1169.9	1169.9	1091.5	1017.7	763.6	606.9	508.6	385.3	290.2	234.6
1.65	1273.5	1273.5	1190.5	1108.2	1032.1	768.5	609.1	508.8	385.3	290.2	234.6
1.60	1339.9	1339.9	1235.2	1144.3	1062.8	777.0	610.0	508.8	385.3	290.2	234.6

grid | Xtreme VR 12-170

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	1304.8	1304.8	1304.8	1223.9	1152.0	888.3	720.8	600.6	455.5	337.3	269.9
1.70	1514.5	1514.5	1411.1	1318.1	1234.8	928.5	738.7	610.8	458.2	337.6	269.9
1.67	1579.2	1579.2	1461.4	1357.8	1266.4	940.1	743.3	611.7	459.4	337.6	269.9
1.65	1617.7	1617.7	1495.5	1387.0	1290.9	948.4	744.2	611.9	459.4	337.6	269.9
1.60	1700.6	1700.6	1568.0	1448.1	1341.1	962.6	745.6	611.9	459.4	337.6	269.9



grid | Xtreme VR 12-100 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	485.4	485.4	485.4	485.4	485.4	407.7	346.4	302.0	240.4	181.6	145.7
1.70	569.7	569.7	569.7	547.8	526.9	437.8	368.8	316.2	247.2	184.4	146.8
1.67	595.4	595.4	595.4	571.6	548.9	452.1	377.4	322.0	249.4	184.7	146.8
1.65	612.7	612.7	612.7	586.5	561.8	459.9	382.1	325.0	250.5	184.7	146.8
1.60	671.8	671.8	644.8	617.8	591.3	476.5	389.7	328.2	250.5	184.7	146.8

grid | Xtreme VR 12-100 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	522.3	522.3	522.3	522.3	522.3	439.0	373.1	325.4	259.1	195.8	157.1
1.70	612.6	612.6	612.6	589.1	566.7	471.2	397.1	340.6	266.5	198.8	158.4
1.67	640.0	640.0	640.0	614.6	590.2	486.5	406.4	346.8	268.8	199.1	158.4
1.65	658.5	658.5	658.5	630.4	604.0	494.9	411.4	350.1	270.0	199.1	158.4
1.60	721.5	721.5	692.6	663.7	635.5	512.6	419.5	353.5	270.0	199.1	158.4

grid | Xtreme VR 12-150 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	678.6	678.6	678.6	678.6	678.6	612.7	535.8	470.8	377.2	290.4	236.9
1.70	797.8	797.8	797.8	797.8	772.9	659.3	565.9	493.0	388.9	296.0	240.0
1.67	841.8	841.8	841.8	841.8	809.0	677.4	578.1	500.9	391.8	297.0	240.3
1.65	892.7	892.7	892.7	854.8	819.9	679.3	578.1	500.9	391.8	297.0	240.3
1.60	989.0	989.0	953.2	916.4	879.8	715.4	591.0	505.0	392.3	297.0	240.3

grid | Xtreme VR 12-180 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	927.5	927.5	927.5	927.5	927.5	782.0	666.3	582.0	464.4	351.6	282.5
1.70	1083.3	1083.3	1083.3	1042.9	1004.2	838.0	708.2	608.6	477.4	357.0	284.7
1.67	1130.0	1130.0	1130.0	1086.3	1044.4	864.5	724.4	619.5	481.4	357.4	284.7
1.65	1161.3	1161.3	1161.3	1113.3	1067.9	879.0	733.0	625.2	483.5	357.4	284.7
1.60	1267.4	1267.4	1218.5	1169.4	1121.0	909.2	746.9	631.0	483.5	357.4	284.7

grid | Xtreme VR 12-200 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	852.5	852.5	852.5	852.5	852.5	780.8	683.2	600.7	481.6	371.0	302.8
1.70	1014.7	1014.7	1014.7	1014.7	983.3	839.7	721.3	628.8	496.4	378.1	306.6
1.67	1070.0	1070.0	1070.0	1070.0	1028.7	862.5	736.8	638.8	500.1	379.4	307.1
1.65	1151.3	1151.3	1151.3	1102.9	1058.1	877.7	743.9	642.5	500.9	379.5	307.1
1.60	1254.4	1254.4	1209.6	1163.5	1117.4	910.3	753.0	643.9	500.9	379.5	307.1

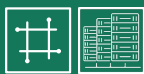


Fig. A

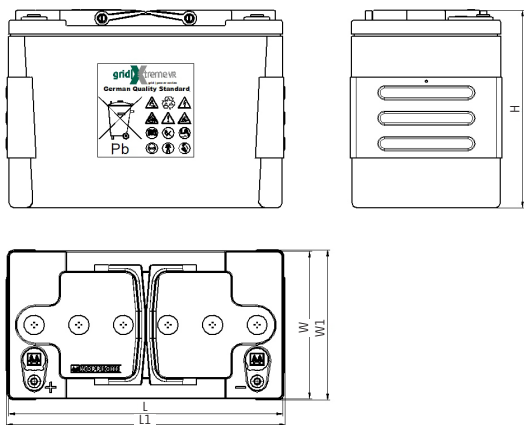
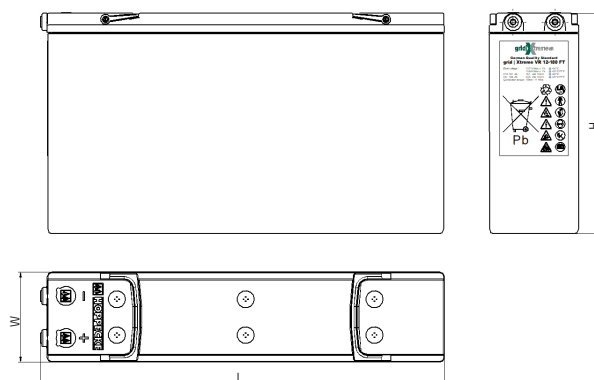


Fig. B



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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