

DATA SHEET

grid | Xtreme VR
PURE series

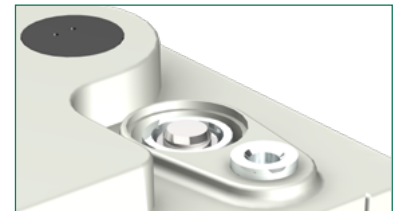
Application | Telecommunication

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 at high ambient temperatures, such as in telecom applications.

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.



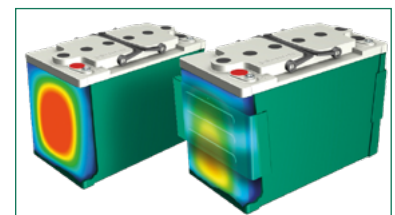
grid | XtremeStack - optimal use of space with a minimal footprint

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 energy density (kWh/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 **-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 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]	AMPERE HOUR RATINGS @ 77°F (25°C) OPERATING TIME (IN HOURS) TO 1.75 VPC										DIMENSIONS [inches]			WEIGHT	
		1	2	3	4	5	6	7	8	10	LENGTH	WIDTH	HEIGHT	LBS	KG	
grid Xtreme VR 12-80	12	62.5	70.4	74.1	76.8	79.0	81.0	83.3	84.8	88.0	10	6.85	9.17	56.9	25.8	
grid Xtreme VR 12-110	12	83.4	93.9	99.0	102.4	105.0	108.1	111.0	113.3	116.8	12.6	6.85	9.17	71.4	32.4	
grid Xtreme VR 12-150	12	120.6	136.8	145.4	152.9	157.8	161.2	163.8	165.8	168.6	14.13	6.85	11.14	102.1	46.3	
grid Xtreme VR 12-170	12	136.1	153.3	163.3	172.2	178.0	182.1	185.1	187.5	190.8	19.61	6.85	9.17	113.3	51.4	
grid Xtreme VR 12-100 FT 19"	12	76.9	86.1	90.4	93.8	96.0	97.7	99.1	100.3	102.5	15.91	4.33	10.39	66.6	30.2	
grid Xtreme VR 12-100 FT 23"	12	83.4	94.0	98.7	101.6	104.0	106.2	107.8	108.8	112.0	22.17	4.92	7.87	74.7	33.9	
grid Xtreme VR 12-150 FT	12	128.1	144.9	152.3	158.8	163.9	167.4	170.0	172.1	175.1	22.17	4.33	12.09	110.7	50.2	
grid Xtreme VR 12-180 FT	12	143.8	164.5	172.7	180.7	185.8	189.4	192.1	194.1	197.1	22.17	4.92	12.09	126.5	57.4	
grid Xtreme VR 12-200 FT	12	154.4	176.1	187.2	194.2	199.2	203.1	206.1	208.7	212.7	22.17	4.92	12.68	134.9	61.2	

MODEL	TERMINAL	BATTERY CAPACITY		MAXIMUM DISCHARGE CURRENT [A]	SHORT CIRCUIT CURRENT (IEC 60896-21) [A]	TERMINAL TYPE	TERMINAL TORQUE	FIG.
		C ₅ TO 1.75 VPC @ 77°F (25°C)	C ₁₀ TO 1.80 VPC @ 68°F (20°C)					
grid Xtreme VR 12-80	TOP	85	83	1100	2153	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-110	TOP	113	110	1100	2771	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-150	TOP	166	159	1100	3045	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-170	TOP	188	180	1100	3896	Insert (M8)	133 in.-lbs (15 Nm)	A
grid Xtreme VR 12-100 FT 19"	FRONT	100	96	1000	2118	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-100 FT 23"	FRONT	109	105	1000	2262	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-150 FT	FRONT	172	165	1000	2398	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-180 FT	FRONT	194	185	1000	3013	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-200 FT	FRONT	209	201	1000	2879	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 CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	62.5	35.2	24.7	19.2	15.8	13.5	11.9	10.6	8.8	
1.80	61.3	34.6	24.4	18.9	15.5	13.3	11.7	10.5	8.6	
1.85	58.9	33.5	23.6	18.2	14.9	12.8	11.3	10.1	8.3	
1.90	53.7	30.8	21.7	16.8	13.7	11.9	10.4	9.3	7.7	

grid | Xtreme VR 12-110

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	83.4	46.9	33.0	25.6	21.0	18.0	15.9	14.2	11.7	
1.80	81.8	46.1	32.5	25.2	20.7	17.7	15.6	13.9	11.5	
1.85	78.5	44.7	31.4	24.3	19.8	17.1	15.1	13.4	11.1	
1.90	71.6	41.1	29.0	22.4	18.3	15.8	13.9	12.4	10.2	

grid | Xtreme VR 12-150

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	120.6	68.4	48.5	38.2	31.6	26.9	23.4	20.7	16.9	
1.80	116.9	67.0	47.6	37.6	31.0	26.4	23.0	20.4	16.6	
1.85	110.5	63.9	45.6	36.2	29.9	25.5	22.3	19.7	16.1	
1.90	100.4	58.4	41.9	33.3	27.6	23.5	20.5	18.2	14.8	

grid | Xtreme VR 12-170

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	136.1	76.6	54.4	43.1	35.6	30.3	26.4	23.4	19.1	
1.80	133.2	75.4	53.5	42.3	35.0	29.8	26.0	23.0	18.8	
1.85	126.7	72.3	51.4	40.7	33.6	28.7	25.0	22.1	18.0	
1.90	115.5	65.9	47.5	37.6	31.1	26.5	23.1	20.4	16.6	



grid | Xtreme VR 12-100 FT 19"

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	76.9	43.1	30.1	23.4	19.2	16.3	14.2	12.5	10.3	
1.80	74.4	42.0	29.4	22.9	18.7	15.9	13.8	12.3	10.0	
1.85	69.8	39.7	27.9	21.7	17.8	15.1	13.2	11.7	9.6	
1.90	62.6	35.8	25.2	19.8	16.4	13.9	12.1	10.7	8.7	

grid | Xtreme VR 12-100 FT 23"

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	85.2	47.0	32.9	25.4	20.8	17.7	15.4	13.6	11.2	
1.80	82.1	45.8	32.2	24.9	20.4	17.3	15.1	13.4	10.9	
1.85	76.6	43.4	30.6	23.8	19.5	16.6	14.4	12.8	10.4	
1.90	69.3	39.5	27.9	21.9	18.0	15.3	13.3	11.8	9.6	

grid | Xtreme VR 12-150 FT

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	128.1	72.4	50.8	39.7	32.8	27.9	24.3	21.5	17.5	
1.80	123.8	70.5	49.4	38.8	32.1	27.3	23.8	21.1	17.2	
1.85	114.9	66.9	47.3	37.2	30.8	26.2	22.8	20.2	16.5	
1.90	102.1	59.2	42.8	33.9	28.1	24.0	20.9	18.5	15.1	

grid | Xtreme VR 12-180 FT

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	143.8	82.3	57.6	45.2	37.2	31.6	27.4	24.3	19.7	
1.80	137.5	79.7	56.5	44.3	36.4	30.9	26.9	23.8	19.3	
1.85	127.5	75.4	53.9	42.5	35.1	29.8	26.0	23.0	18.7	
1.90	113.7	68.0	49.1	38.8	32.1	27.4	23.8	21.1	17.2	

grid | Xtreme VR 12-200 FT

END POINT VPC	CONSTANT CURRENT DISCHARGE RATINGS - AMPERES @ *77°F (+25°C)									
	OPERATING TIME TO END POINT VOLTAGE (IN HOURS)									
	1	2	3	4	5	6	7	8	10	
1.75	154.4	88.1	62.4	48.6	39.8	33.8	29.4	26.1	21.3	
1.80	147.8	85.5	60.9	47.5	39.1	33.2	28.9	25.6	20.9	
1.85	136.4	80.4	57.8	45.2	37.3	31.7	27.6	24.5	19.9	
1.90	119.7	72.2	52.3	41.1	33.9	28.9	25.1	22.3	18.2	



Fig. A

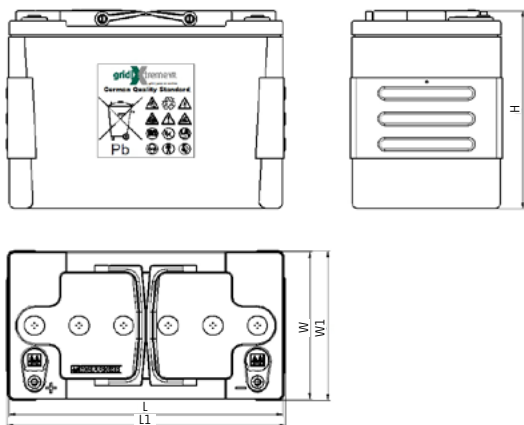
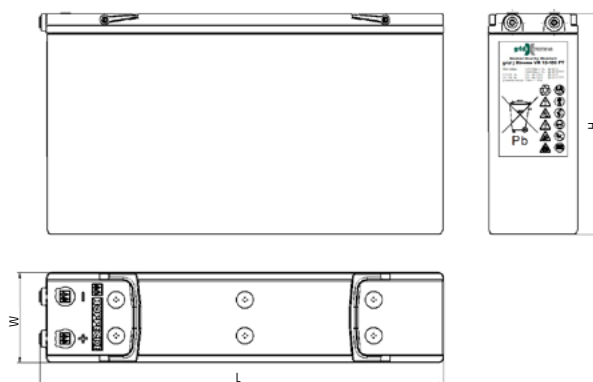


Fig. B



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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