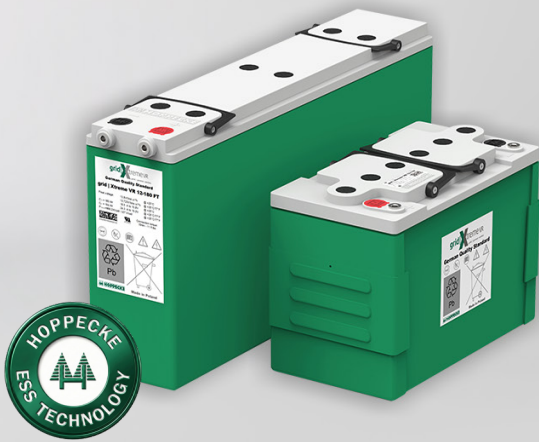




Application Oil & Gas

grid | Xtreme VR

New generation of pure lead battery

By using high-purity lead (99.99%), HOPPECKE has deliberately opted for superior corrosion resistance and outstanding service life—even in the harsh environments typical of Oil & Gas applications. The grid | Xtreme VR product line is specifically suited for high-temperature, remote, and mission-critical applications where reliability and reduced maintenance are essential.

Designed for Oil & Gas Environments

- **Proven ESS technology – reduced life cycle costs (TCO)**

Enhanced Stability Standard (ESS) technology provides:

Improved resistance to thermal runaway, Better charge acceptance, More stable voltage behavior
Result: longer service life and optimized lifecycle costs.

- **Unique dual-pole design – reduced maintenance effort**

Dedicated pole contact points allow for precise impedance measurement, enabling:

Faster commissioning, Simplified maintenance, Improved diagnostics in remote installation

- **Extended operating temperature range = reduced cooling costs**

The permissible operating temperature range extends up to 55°C (131°F), with tolerance to short peaks up to 60°C.

This makes grid | Xtreme VR ideal for:

Remote wellhead installation, Offshore platforms, High ambient desert environments

Reduced cooling requirements significantly lower total operating costs

Key tech at a glance

- Wide operating temperature range from -40°F to +131°F / -40°C to +55°C, with tolerance for short peaks up to 60°C, making the battery well-suited for desert, outdoor, offshore, and high-ambient-temperature installations.
- 15-year design life supports long-term reliability in mission-critical Oil & Gas infrastructure where battery replacement access may be difficult or costly.
- Low-maintenance VRLA construction eliminates water refilling, reducing routine maintenance visits to remote or unmanned sites.
- Flame-retardant UL94 V-0 housing supports enhanced safety in industrial environments with demanding heat, shock, and vibration requirements.



Oil & Gas Application Areas

Control & Safety Systems

- Reliable standby power for ESD and SIS systems
- Stable voltage ensures proper relay and actuator operation
- Long design life reduces risk of critical failure

Wellhead Control & Monitoring

- Excellent performance in remote and unmanned locations
- Low maintenance reduces site visits
- Wide temperature range ensures continuous monitoring capability

Artificial Lift Systems

- Supports intermittent high-load control requirements
- Durable construction withstands vibration and harsh environments
- Compact design allows integration into existing enclosures

Telecom & SCADA Systems

- Proven reliability in distributed communication networks
- Long service life reduces maintenance cycles
- High temperature capability supports outdoor installations



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 PC-ABS 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
- Suitable for permanently high operating temperatures with short peaks up to 60°C



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 PC-ABS 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	65.0	72.8	76.8	79.4	81.3	82.8	84.1	85.1	87.0	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 12-130	12	103.1	115.2	121.2	127.0	131.0	134.1	136.4	138.4	141.4	12.6	6.85	11.14	94.1	42.7
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	73.8	84.4	88.6	92.7	95.3	97.2	98.5	99.8	101.1	15.91	4.33	10.39	66.6	30.2
grid Xtreme VR 12-100 FT 23"	12	79.1	90.5	95.0	99.4	102.2	104.2	105.6	106.7	108.4	22.17	4.92	7.87	74.7	33.9
grid Xtreme VR 12-150 FT		116.6	131.8	138.7	144.6	149.2	152.3	154.7	156.6	159.8	22.17	4.33	12.09	109.8	49.8
grid Xtreme VR 12-170 FT	12	128.1	144.9	152.3	158.8	163.9	167.4	170.0	172.1	175.5	22.17	4.33	12.09	110.7	50.2
grid Xtreme VR 12-190 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	12.74	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	82	1100	1439	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 12-130	TOP	138	134	1100	2650	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	95	1000	1545	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-100 FT 23"	FRONT	107	102	1000	1657	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-150 FT	FRONT	157	152	1000	2349	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-170 FT	FRONT	172	167	1000	2398	Insert (M8)	133 in.-lbs (15 Nm)	B
grid Xtreme VR 12-190 FT	FRONT	194	187	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	65.0	36.4	25.6	19.9	16.3	13.8	12.0	10.6	8.7
1.80	63.4	35.7	25.2	19.5	16.0	13.6	11.8	10.5	8.6
1.85	60.4	34.2	24.2	18.8	15.4	13.1	11.4	10.2	8.3
1.90	55.0	31.4	22.3	17.4	14.3	12.2	10.6	9.5	7.8

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 12-130

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	103.1	57.6	40.4	31.8	26.2	22.3	19.5	17.3	14.1
1.80	101.1	56.8	39.7	31.2	25.8	22.0	19.2	17.1	14.0
1.85	95.6	54.4	38.2	30.2	25.0	21.3	18.6	16.5	13.5
1.90	85.5	49.8	35.3	27.8	23.0	19.6	17.1	15.1	12.3

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	73.8	42.2	29.5	23.2	19.1	16.2	14.1	12.5	10.1
1.80	70.5	40.9	29.0	22.7	18.7	15.9	13.8	12.2	9.9
1.85	65.4	38.7	27.7	21.8	18.0	15.3	13.3	11.8	9.6
1.90	58.3	34.9	25.2	19.9	16.5	14.0	12.2	10.8	8.8

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	79.1	45.2	31.7	24.8	20.4	17.4	15.1	13.3	10.8
1.80	75.6	43.8	31.1	24.4	20.0	17.0	14.8	13.1	10.6
1.85	70.1	41.5	29.7	23.4	19.3	16.4	14.3	12.6	10.3
1.90	62.5	37.4	27.0	21.3	17.7	15.1	13.1	11.6	9.5

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	116.6	65.9	46.2	36.1	29.8	25.4	22.1	19.6	16.0
1.80	112.7	64.2	45.0	35.3	29.2	24.9	21.7	19.2	15.8
1.85	104.6	60.9	43.0	33.9	28.0	23.9	20.8	18.4	15.0
1.90	92.9	53.9	38.9	30.9	25.6	21.8	19.0	16.8	13.7

grid | Xtreme VR 12-170 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	17.6
1.80	123.8	70.5	49.4	38.8	32.1	27.3	23.8	21.1	17.4
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 12-190 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	19.5
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

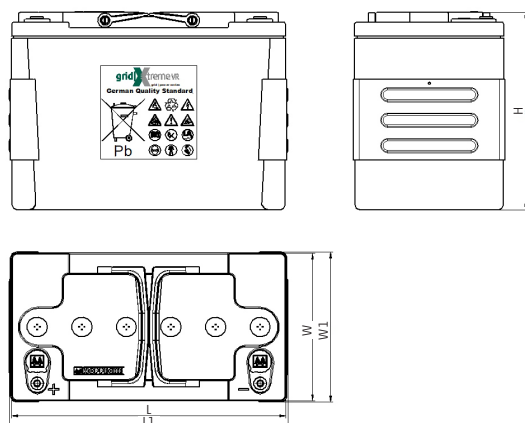
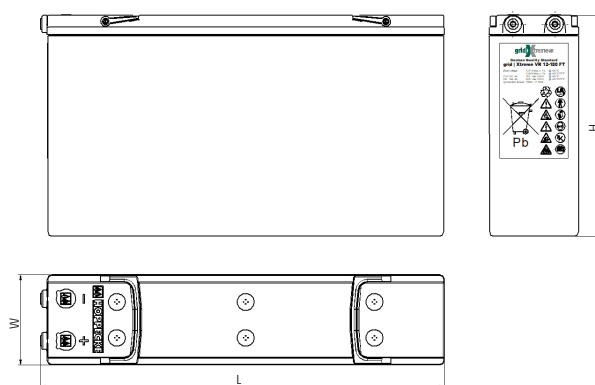


Fig. B



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

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

HOPPECKE Baterie Polska Sp. z o.o.
ul. Logistyczna 10
63-006 Śródka
Poland
Tel.: +48 61 64 65 000
Fax: +48 61 64 65 001
E-Mail: sbo@hoppecke.pl

HOPPECKE Batterien GmbH & Co. KG
Bontkirchener Straße 1
59929 Brilon
Germany
Tel: +49 (0) 2963 61-374
Fax: +49 (0) 2963 61-270
E-Mail: reservepower@hoppecke.com



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