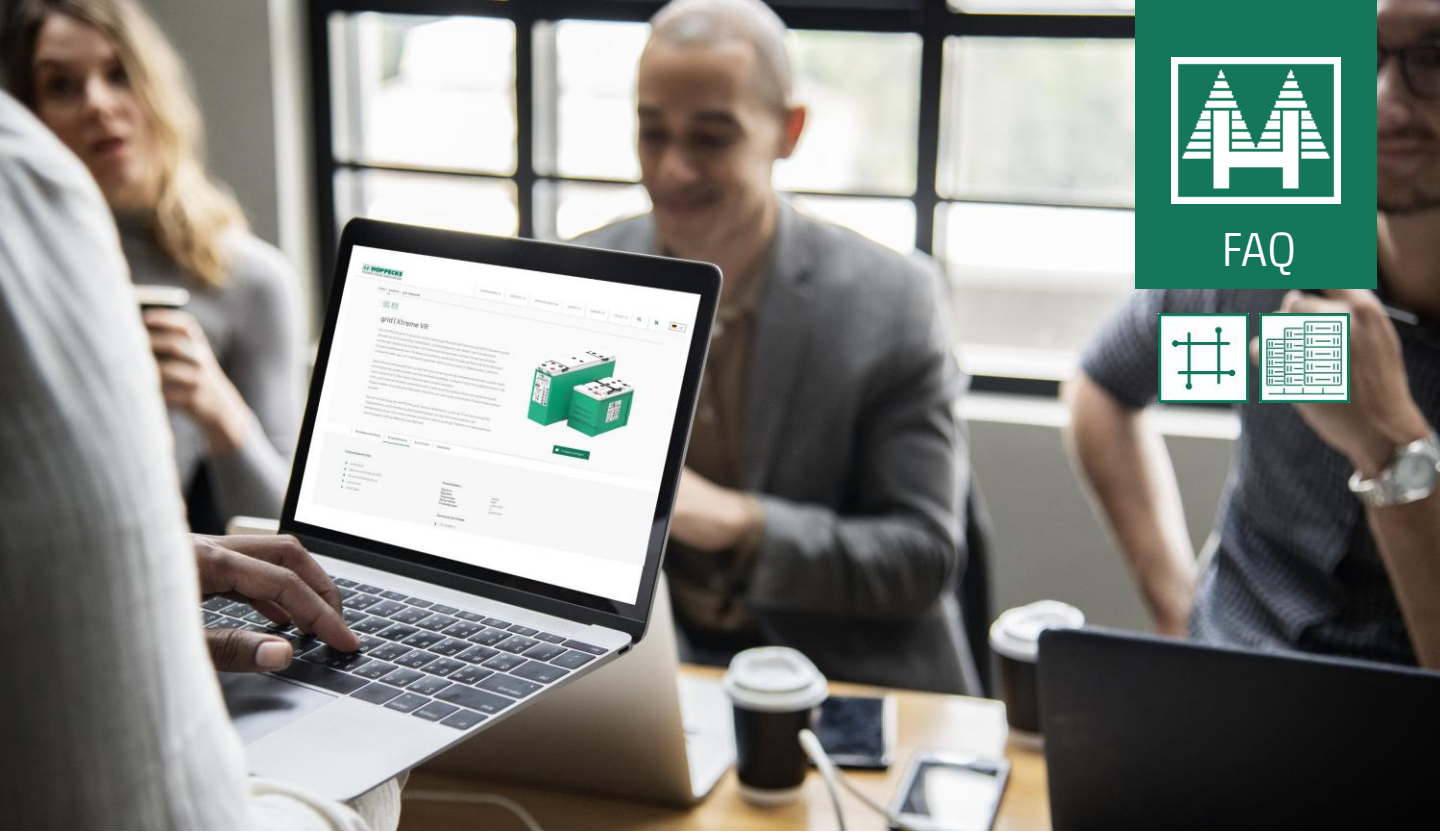

FAQ

FAQ: grid | Xtreme VR the new pure lead battery
Applictaion area: Data Center

Q: What is behind HOPPECKE's HPPL technology?

- HPPL means high performance pure lead. High-purity unalloyed lead ensures the best corrosion properties. Thanks to thin plate technology, HPPL provides superior energy and power density compared to other lead-acid batteries. This results in a long service life even under elevated operating temperatures.

Q: What makes HOPPECKE's grid | Xtreme battery unique?

- It represents the next generation of modern pure lead batteries with the following design features:
  - Proven ESS technology provides increased charge acceptance, improves voltage spread behavior and avoids thermal runaway effect.
  - Unique dual-pole allows impedance measurement in a touch-safe design molded into the lid.
  - True-front terminal for ease of installation and safe maintenance.
  - Our patented, innovative safeguard-tec on top terminal types ensures dimensional stability throughout the battery life even under harsh environmental conditions.

Q: What are the differences between front and top terminal batteries?

- Short bridging times with high discharge rates are essential requirements in data centers and are supported by the top terminal solution. High energy densities combined with good cycle ability in the compact design of a front terminal battery are fundamental criteria for a secure power supply in telecom applications.

Q: What is the average lifetime of the product?

- Several factors influence the lifetime of a battery. It is therefore essential to consider these factors in order to prolong the service life in line with the design life. Our pole design as well as the safeguard-tec support this target especially under harsh conditions.

HOPPECKE
POWER FROM INNOVATION

Q: How would you compare lead-acid and Lithium-ion technologies?

- A general comparison of lead-acid and Lithium-ion batteries is quite impossible due to multiple chemistries and different applications. Today, Lithium-ion batteries are mainly designed for cycling applications and less for standby parallel operation with full charge. To achieve a service life of more than 10 years in such applications, the graphite anode would have to be greatly oversized - this is neither economical nor state of the art. Furthermore, Lithium-ion recycling or disposal will be costly for end-users. As a well-proven technology, lead-acid will still remain in popular standby applications for the time being.

Q: Why have you chosen green for your product color?

- The green color stands for sustainability and green energy. Recycling lead can be done unlimited times on a very cost effective and environmentally friendly level. The lead in our car battery could have been used already in your grandfather's car - that's a cool second life, isn't it?

Q: Have you considered all of the international standards?

- HOPPECKE, as a long term manufacturer of batteries, holds all relevant ISO certificates according to quality. All of our products meet the international battery test standard IEC-60896. Additionally, we follow many customer and country specific approvals in telecom, UPS and railway infrastructure business.

Q: Could you summarize the advantages during operation and maintenance?

- Flexible due to 24 months shelf life
- Safe and simple impedance measurement to determine battery condition
- Extremely wide temperature range from -40°C up to 55°C
- Powerful parallel standby operation possible

Q: What about investment and cost?

- Electric power consumption is a key driver of data center operating costs. Our innovative grid | Xtreme VR can operate in higher temperature environments, which means less air conditioning and significant operating cost savings. As real estate and technical infrastructure costs are already on a high level and further increasing our compact design with high power density will help to reduce the footprint significantly. The compact design with high power density will help to reduce the required space significantly. This stops the already high real estate and technical infrastructure costs to increase further. So you get the best of both worlds: low CAPEX and low OPEX imply optimal total cost of ownership! Available now for orders - take action.

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

05/2023