MOTIVE POWER

Eternity TECHNOLOGIES

QUASAR™ Gel

Carbon Nano Maintenance Free Motive Battery

CNT TECHNOLOGY

HIGH ENERGY ON DEMAND™

QUASAR™ - High Energy On Demand

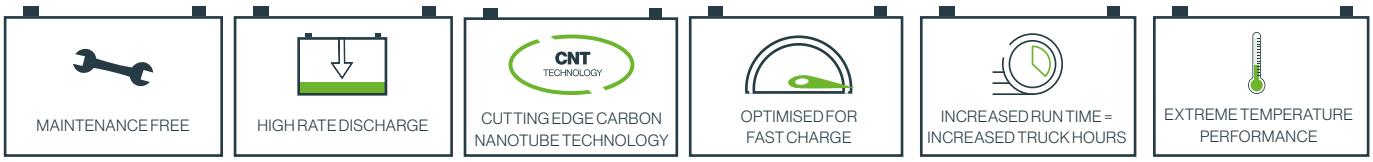
With an extensive product range available, Eternity Technologies prides itself on world-class product design, production processes, technical development, cost structure and global location.

Eternity Technologies ongoing commitment to delivering industry leading product, at the cutting edge of product development delivers QUASAR.

QUASAR batteries deliver increased performance for today's demand for high performance in energy demanding applications.

The new QUASAR Gel Battery range sets new benchmarks for performance. This range seamlessly integrates VRLA Gel technology with cutting-edge Carbon Nano Tube (CNT) innovation. As a result, our batteries deliver unparalleled Deep Cycle performance, opportunity and fast charge capabilities. Additionally, they accommodate partial states of charge (PSOC) operation.

QUASAR Gel batteries offer a maintenance free option. This valve regulated option does not require topping up and eliminates any maintenance in the field.



no topping up required | **fast recharge** | **increased run time** | **up to 50% higher performance at cold temperature**

™

Applications:

Multi Shift Applications - 24/7

VNA Applications

Cold Storage Applications

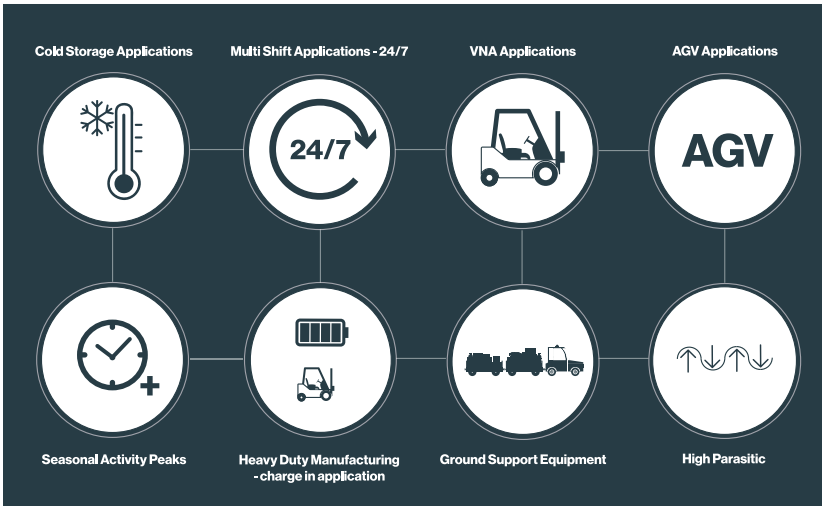
Seasonal Activity Peaks

Ground Support Equipment

Heavy Duty Manufacturing - charge in application

High Parasitic Loads

AGV Applications



QUASAR™ Gel Technology

CNT TECHNOLOGY

1. Positive plate

The QUASAR positive plate utilises thin tube technology. The advantages of this are:

- Higher discharge rates due to increase in active material surface area
- Higher energy density
- Increased active material ultilisation
- Guantlet - increased fabric thickness

2. Negative plate

The QUASAR negative plate contains CNT (Carbon Nanotube Technology).

Carbon Nanotubes increase the negative plates fast charge capability. The Carbon Nanotubes work as conductors to the charging current and accepts charge easily with little resistance. The advantages of this are:

- Faster charging with no degradation to life
- Improves thermal operational ranges
- Improves charge acceptance

3. Separator

QUASAR uses a market leading phenolic resin separator made in Germany. This separator is used due to the heavy-duty operating demands placed on the QUASAR product. The advantages of this are:

- Higher porosity leading to higher gel content volume resulting in higher energy density
- Lower internal resistance
- Excellent oxidation resistance

4. Electrolyte

Silica-based-gel-form electrolyte that has no water loss and therefore maintenance free.

Recyclable

Compliant with

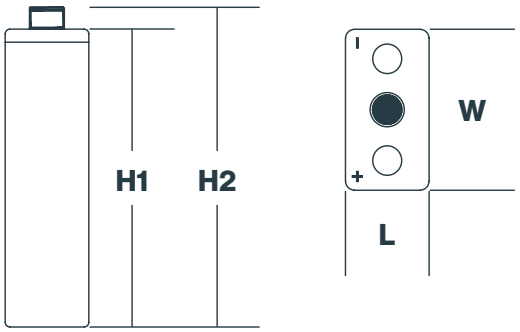
EN60-254-1 & EN60-254-2
IEC254-1 & IEC254-2

QUASAR™ - Weight, Capacity and Dimension Chart: 198mm width

PzVcell configuration		QUASAR Gel cell configuration								
DIN Cell Type	Length (mm)	QUASAR Gel Cell Type	Height H1 (mm) Height H2 (mm)	Weight (kg)	QUASAR Gel (Ah)	QUASAR Gel Energy Output (Wh)*	24V (kWh)	36V (kWh)	48V (kWh)	80V (kWh)
3 PzV-ET 240	65	QUAGEL540	448.5 / 478.5	16.5	270	540	3.2	4.9	6.5	10.8
4 PzV-ET 320	83	QUAGEL720	448.5 / 478.5	20.6	360	720	4.3	6.5	8.6	10.4
5 PzV-ET 400	101	QUAGEL950	448.5 / 478.5	26.9	475	950	5.7	8.6	11.4	19.0
6 PzV-ET 480	119	QUAGEL1080	448.5 / 478.5	31.0	540	1080	6.5	9.7	13.0	21.6
7 PzV-ET 560	137	QUAGEL1220	448.5 / 478.5	35.2	610	1220	7.3	11.0	14.6	24.4
8 PzV-ET 640	155	QUAGEL1480	448.5 / 478.5	41.6	740	1480	8.9	13.3	17.8	29.6
9 PzV-ET 720	173	QUAGEL1620	448.5 / 478.5	45.6	810	1620	9.7	14.6	19.4	32.4
10 PzV-ET 800	191	QUAGEL1890	448.5 / 478.5	49.8	945	1890	11.3	17.0	22.7	37.8
3 PzV-ET 300	65	QUAGEL700	554.0 / 584.0	20.7	350	700	4.2	6.3	8.4	14.0
4 PzV-ET 400	83	QUAGEL930	554.0 / 584.0	25.8	465	930	5.6	8.4	11.2	18.6
5 PzV-ET 500	101	QUAGEL1190	554.0 / 584.0	33.8	595	1190	7.1	10.7	14.3	23.8
6 PzV-ET 600	119	QUAGEL1400	554.0 / 584.0	39.0	700	1400	8.4	12.6	16.8	28.0
7 PzV-ET 700	137	QUAGEL1580	554.0 / 584.0	44.2	790	1580	9.5	14.2	19.0	31.6
8 PzV-ET 800	155	QUAGEL1870	554.0 / 584.0	52.3	935	1870	11.2	16.8	22.4	37.4
9 PzV-ET 900	173	QUAGEL2090	554.0 / 584.0	57.4	1045	2090	12.5	18.8	25.1	41.8
10 PzV-ET 1000	191	QUAGEL2390	554.0 / 584.0	62.6	1195	2390	14.3	21.5	28.7	47.8
3 PzV-ET 420	65	QUAGEL890	686.5 / 716.5	25.8	445	890	5.34	8.0	10.7	17.8
4 PzV-ET 560	83	QUAGEL1150	686.5 / 716.5	32.2	575	1150	6.9	10.4	13.8	23.0
5 PzV-ET 700	101	QUAGEL1510	686.5 / 716.5	42.2	755	1510	9.1	13.6	18.1	30.2
6 PzV-ET 840	119	QUAGEL1780	686.5 / 716.5	48.7	890	1780	10.7	16.0	21.4	35.6
7 PzV-ET 980	137	QUAGEL2040	686.5 / 716.5	55.1	1020	2040	12.2	18.4	24.5	40.8
8 PzV-ET 1120	155	QUAGEL2370	686.5 / 716.5	65.0	1185	2370	14.2	21.3	28.4	47.4
9 PzV-ET 1260	173	QUAGEL2650	686.5 / 716.5	71.6	1325	2650	15.9	23.9	31.8	53.0
10 PzV-ET 1400	191	QUAGEL3020	686.5 / 716.5	78.1	1510	3020	18.1	27.2	36.2	60.4

± 5% weight tolerance
H1: Height over lid
H2: Overall height including connector and bolt
Torque: 23Nm

Not to scale



Advantages over traditional lead acid batteries...

Higher energy density resulting in increased performance

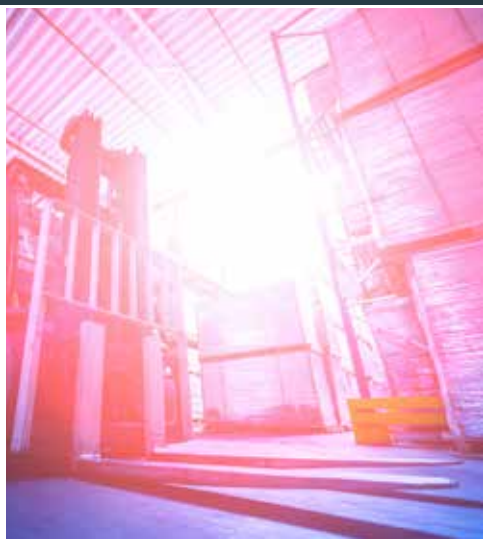
Extra long running times due to increased capacity

Ultra energy efficient due to low resistance

Reduced operating temperatures for increased cycle life and battery lifetime

Cost savings due to increased efficiency

Suitable for opportunity charging



Features of Maintenance Free Batteries...

Valve-regulated gas recombination batteries with tubular positive plate design and gel immobilised electrolyte

Maintenance free

Operating temperature -30°C to +45°C

Cycle life > 1200 cycles at 70% D.O.D

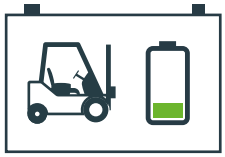
Increased running hours

Increased operating hours & lower operating temperatures result in a significant increased battery life. This results in more truck hours than a standard lead acid battery.

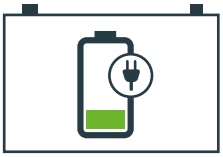
QUASAR™ - High Performing Charging

Fast Charging QUASAR Gel Battery

The QUASAR Gel battery can be fully charged in only 5 hours from 70% depth of discharge when using Eternity Technologies recommended charging profile .

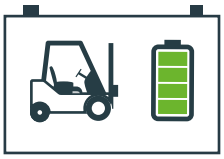


Fast charge profile



Approved charger

Fully charged in 5 hours



Increased running time

Opportunity Charging

Unlike standard batteries, QUASAR Gel batteries allow for opportunity charging to give you those extra running times when required.

This allows the user to charge during breaks in production to give maximum flexibility.

Cold Storage

In standard batteries, the lower the operating temperature results in a lower capacity. QUASAR has increased initial capacity and is therefore suitable for extreme temperature variants, for example, cold stores and outdoor applications such as ground support.

cold stores

+

QUASAR™

=

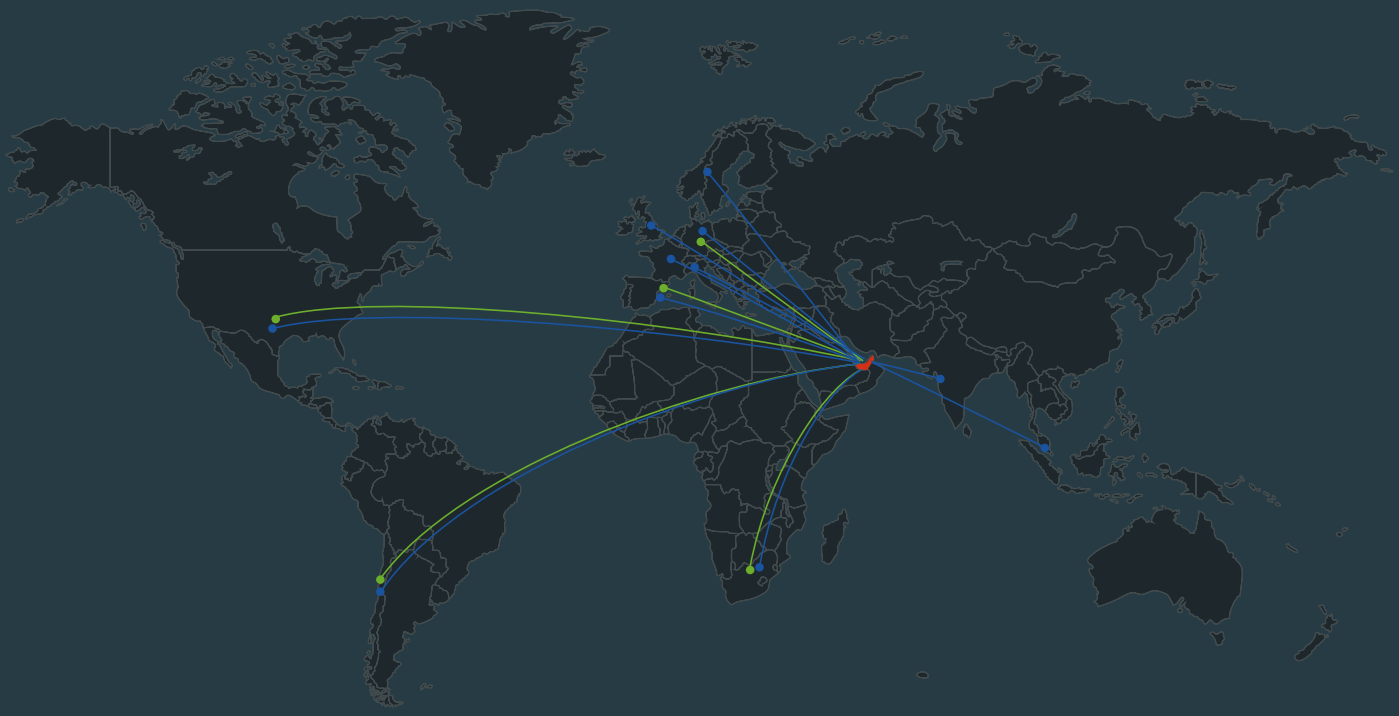
up to 50% higher
run time at cold temperature vs PZV

High temperatures

The lower operating temperature of the QUASAR Gel product makes it the ideal battery for outdoor applications in extreme high temperatures.

HIGH ENERGY ON DEMAND™

A global leader in the industrial battery market providing world-class products for Motive Power and Reserve Power applications.



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