



# SOLAR

## PHOTOVOLTAIC BATTERIES



### Sealed, Valve-Regulated, Gelled-Electrolyte Batteries for Renewable Energy Applications

#### Features

- Valve-regulated...
- Gelled electrolyte...
- Compu-cast, power path grids and computer-controlled oxide...
- Low stand loss...
- Tank formed plates...
- Rated non-spillable by ICAO, IATA and DOT...
- Made in the U.S.A...

#### Benefits

- Sealed construction eliminates periodic watering, corrosive acid fumes and spills.
- Electrolyte will not stratify. No equalization charging required.
- Increases durability and deep cycle ability for heavy demand applications.
- Less than 2% per month stand loss means little deterioration during transport and storage.
- Ensure voltage matching between cells.
- Transports easily and safely by air. No special containers needed.
- Ensures reliable service, support and quality.



QUALITY SYSTEM  
CERTIFIED TO  
**ISO 9001**  
**ISO/TS 16949**  
**ISO 14001**



UL Recognized Component

# Deka<sup>®</sup>

# SOLAR<sup>®</sup>

## PHOTOVOLTAIC BATTERIES

The Deka Solar series of valve-regulated, gelled-electrolyte batteries is designed to offer reliable, maintenance-free power for renewable energy applications where frequent deep cycles are required and minimum maintenance is desirable.

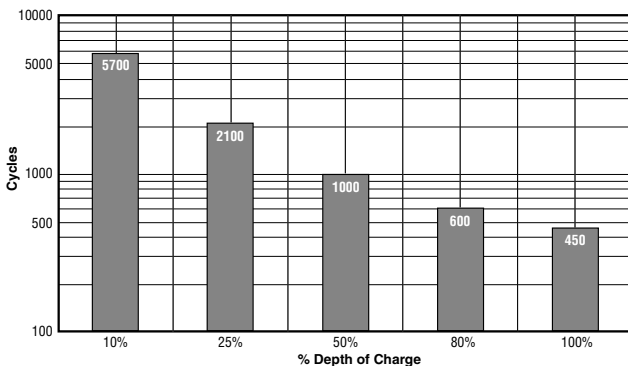
### Applications

Water pumping • Residential • Communications  
Cathodic protection • Remote monitoring • Refrigeration  
Lighting • Aids to navigation • Wind generation

### Specifications

Voltage ..... 12 volts nominal (8GGC2 is 6 volts)  
Plate alloy ..... Lead calcium  
Element, post ..... Threaded stud or "flag" terminal, forged bushing  
Container/cover ... Polypropylene  
Electrolyte ..... Sulfuric acid thixotropic gel  
Vent ..... Self sealing

**Gel Cycle Life vs Depth of Discharge at +25°C (77°F)\*  
Based on BCI 2-hour Capacity**



Cycle Chart applies to types with similar design characteristics, ex., U1, 22NF, 24, 27, 31.

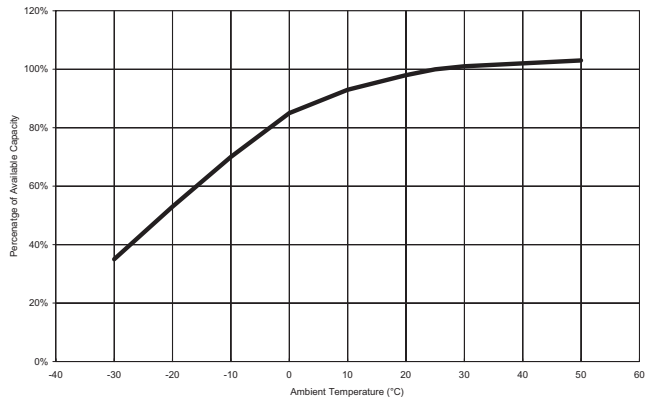
The solar battery excels in cycling applications.

\*Dependent upon proper charging and ambient temperatures.

Photovoltaic Charging Parameters		
Bulk Charge	Max Current (amps)	30% of 20 Hr Rate
Absorption (Regulation) Charge	Constant Voltage	2.35 - 2.40 vpc
Float Charge	Constant Voltage	2.25 - 2.30 vpc
Equalize Charge	Constant Voltage	2.40 - 2.45 vpc
Temperature Coefficient	0.005 mv / °C	

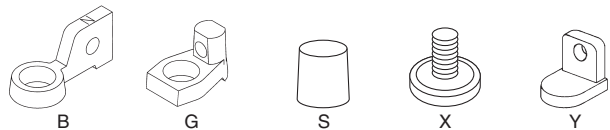
Cut-off parameters per charge & equalize intervals are application specific and will vary dependent upon site specific characteristics such as temperature, days of autonomy, array to load ratio, ect.

**Capacity vs. Operating Temperature**



**Capacity vs. Operating Temperatures:** Above are the changes in capacity for wider ambient temperature range, giving the available capacity, as a percentage of the rated capacity, at different ambient temperatures. The curves show the behavior of the battery after a number of cycles.

### Terminal Information



Type No.	Footnotes	Volts	Discharge Amps per unit to 1.75VPC at 77°F (25°C)														Approx. Wt. Lbs. (Kgs.)	Dimensions In (mm)		
			5 Min	10 Min	15 Min	20 Min	30 Min	60 Min	90 Min	3 Hr	6 Hr	8 Hr	20 Hr	24 Hr	48 Hr	100 Hr		L	W	H
			Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min	Min				
8GU1	4,38,39,Y	12	74.7	54.3	44.6	38.8	31.9	21	15	8.50	4.67	3.56	1.58	1.33	0.73	0.36	23.4 (10.6)	7¼ (197)	5½ (130)	7¼ (184)
8GU1H	4,17,38,39,Y	12	74.7	54.3	44.6	38.8	31.9	21	15	8.50	4.67	3.56	1.58	1.33	0.73	0.36	23.4 (10.6)	8¾ (211)	5½ (130)	7¼ (184)
8G22NF	4,38,39,G	12	120	86.7	69.1	60	47	31.8	23.2	13.30	7.65	5.74	2.55	2.15	1.16	0.58	37 (16.8)	9¾ (238)	5½ (140)	9¼ (235)
8G24	4,17,38,39,G	12	204	152	119	100	78	48.5	35	19.77	10.75	8.30	3.68	3.12	1.68	0.845	52 (23.6)	10¾ (276)	6¾ (171)	9¼ (235)
8G27	4,17,38,39,G	12	242	185.3	142.5	118.8	90.25	57	41.5	23.30	12.67	9.80	4.32	3.67	1.99	0.99	62.7 (28.4)	12¾ (324)	6¾ (171)	9¼ (235)
8G30H	4,17,38,39,B	12	266	199.5	161.5	137.8	104.5	64.5	47	26.20	14.20	11.00	4.88	4.10	2.15	1.08	69.5 (31.5)	12½ (329)	6¾ (171)	9¾ (248)
8G31	4,17,38,39,X	12	266	199.5	161.5	137.8	104.5	64.5	47	26.20	14.20	11.00	4.88	4.10	2.15	1.08	69.5 (31.5)	12½ (329)	6¾ (171)	9¾ (238)
8GGC2	4,38,39,G	6	325	250	210	180	150	99	76	45.30	25.80	20.00	9.00	7.60	3.90	1.98	68.4 (31.0)	10¾ (260)	7¾ (181)	11 (279)
8G4D	4,17,38,39,S	12	485	375	300	255	195	122	88	49.20	26.70	20.70	9.15	7.78	4.22	2.10	127 (57.5)	20¾ (527)	8¾ (216)	10 (254)
8G8D	4,17,38,39,S	12	600	460	370	315	245	150	105	60.80	33.00	25.50	11.25	9.54	5.18	2.65	157 (71.1)	20¾ (527)	11 (279)	10 (254)

ALL RATINGS ARE AFTER 15 CYCLES AND CONFORM TO B.C.I. SPECIFICATIONS.

**IMPORTANT CHARGING INSTRUCTIONS:** WARRANTY VOID IF OPENED OR IMPROPERLY CHARGED. Do not install in a sealed container. Constant under or overcharging will damage any battery and shorten its life! Use a good constant potential, voltage-regulated charger. The **open circuit voltage** of a fully charged 12-volt battery is 12.8V at 68°F (20°C).

### Footnotes:

- 4 - Gray Cover / Gray Case
- 17 - Includes handle
- 38 - "Non-Spillable" defined by DOT(Department of Transportation) definitions
- 39 - "Non-Spillable" defined by ICAO (International Commercial Airline Organization) and IATA (International Airline Transport Association) definitions
- B - Flag terminal w/ 3/8" diameter hole

- G - Offset post w/ horizontal hole, stainless steel 5/16" bolt & hex nut
- S - SAE "automotive type" post
- X - 3/8" x 16" stainless steel stud posts
- Y - Small L terminal with round holes

Batteries manufactured in polypropylene cases and covers.

**"POWERED FOR PERFORMANCE"<sup>™</sup>**  
**EAST PENN manufacturing co., inc.**

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