



# PHOTOVOLTAIC BATTERIES



## **MAINTENANCE SAVER<sup>®</sup> FLOODED SYSTEM / 2V**

Higher voltage systems naturally have greater power requirements. **DEKA SOLAR MAINTENANCE SAVER<sup>®</sup> FLOODED BATTERIES** are available as a single cell or system. They are designed to offer reliable, low maintenance power for renewable energy applications where frequent deep cycles are required and minimum maintenance is desirable.

### FEATURES & BENEFITS

Plates formed using IPF <sup>®</sup> Technology	Optimizes power capacity, cell consistency, and long term reliability
Jar and Cover	Molded high impact polypropylene
Separators	Microporous polyethylene material
Retainers	Vertically and horizontally wrapped glass mat, folded perforated envelope, molded plastic bottom shield
Positive and Negative Plate	Antimony flat plate
Specific Gravity (fully charged)	1.250 @ 25°C (77°F).
Self discharge	4% per month
Cycle life	1500 cycles @ 80% DOD, 4000 cycles @ 20% DOD [Number of cycles based on 6-hr. rate @ 25°C (77°F)]

### INNOVATIVE FEATURES

- High capacity flat plate cells
- Long life: 12 to 14 years in shallow cycle service
- Extended watering interval - up to six months because of a large reservoir for electrolyte
- Thermally sealed cover to container
- Long-lasting epoxy coated steel trays
- Custom design modules

### OPTIONS AVAILABLE

- Jars and covers constructed of LOI material
- Single point watering system
- Design variations based on specific application needs
- Cone and thimble bolt-on terminals
- EZ Link bolt-on connections
- High Density Polyethylene plastic trays



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



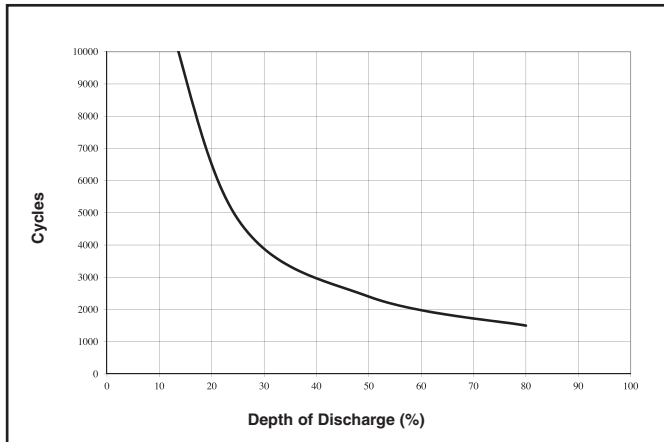
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## Cell Performance – Photovoltaic Batteries Capacity in Ampere Hours, Temperature at 77°F (25°C), Cut-Off Voltage at 1.75 VPC

Photovoltaic Charging Parameters		
Bulk Charge	Max Current (amps)	20% of 20 Hr Rate
Absorption (Regulation) Charge	Constant Voltage	2.40 - 2.45 vpc
Float Charge	Constant Voltage	2.30 - 2.35 vpc
Equalize Charge	Constant Voltage	2.50 - 2.55 vpc
Temperature Coefficient	0.003 v / °C	

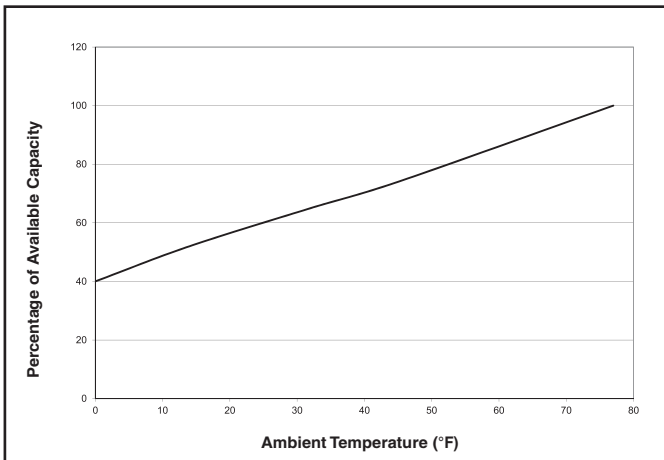
Cut-off parameters per charge & equalize intervals are application specific and will vary dependent upon site specific characteristics such as temperature, days of autonomy, array to load ratio, etc.

### Cycle Life vs Depth of Discharge at +25°C (77°F)\*



The solar battery excels in cycling applications.  
\*Dependent upon proper charging and ambient temperatures.

### 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.

Amp Hours at 77°F (25°C) to 1.75 v.p.c.					
Cell Type	10	20	24	100	Cell Weights**
M75-5	157	178	182	218	31
M75-7	235	267	273	327	42
M75-9	314	356	364	437	54
M75-11	392	444	455	546	65
M75-13	471	533	546	655	77
M75-15	549	622	637	764	88
M75-17	628	711	728	873	99
M75-19	706	800	819	982	111
M75-21	785	889	910	1091	122
M75-23	863	978	1001	1200	133
M75-25	942	1067	1092	1310	144
M75-27	1020	1155	1182	1419	156
M75-29	1098	1244	1273	1528	167
M75-31	1177	1333	1364	1637	177
M75-33	1255	1422	1456	1746	189

Amp Hours at 77°F (25°C) to 1.75 v.p.c.					
Cell Type	10	20	24	100	Cell Weights**
M85-5	179	202	207	247	32
M85-7	266	302	309	371	45
M85-9	356	403	409	494	57
M85-11	445	504	516	618	68
M85-13	534	605	619	742	80
M85-15	622	705	722	865	92
M85-17	712	806	825	989	104
M85-19	800	907	928	1113	115
M85-21	890	1008	1032	1236	128
M85-23	979	1109	1135	1360	140
M85-25	1067	1209	1237	1483	151
M85-27	1156	1310	1341	1607	163
M85-29	1245	1411	1444	1731	175
M85-31	1335	1512	1547	1854	186
M85-33	1423	1612	1650	1978	198

Amp Hours at 77°F (25°C) to 1.75 v.p.c.					
Cell Type	10	20	24	100	Cell Weights**
M100-5	209	237	243	291	40
M100-7	313	355	363	436	52
M100-9	418	474	485	582	64
M100-11	523	592	606	727	77
M100-13	628	712	729	873	89
M100-15	733	830	849	1018	102
M100-17	838	949	971	1164	114
M100-19	942	1067	1092	1309	128
M100-21	1047	1186	1214	1455	140
M100-23	1151	1304	1335	1600	154
M100-25	1256	1423	1456	1746	167
M100-27	1360	1541	1577	1891	180
M100-29	1465	1659	1698	2035	193
M100-31	1570	1779	1821	2182	206
M100-33	1674	1896	1940	2326	219

\*\* = Cell weight does not include steel tray



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