



# PHOTOVOLTAIC BATTERIES

## UNIGY II MODULES



**The DEKA UNIGY II LINE** features two module designs with a wide range of capacities and sizes to fit the requirements of renewable energy applications. These modules are constructed using the finest quality materials and state-of-the-art manufacturing techniques enhancing their performance in these demanding applications.

Built-in advanced features such as:

- “Two Way” Post design is lead plated solid copper providing a large contact area with front access bolting for easier installation and maintenance.
- Pure Virgin Lead (99.99%) positive grid alloy is very resistant to corrosion/growth.
- Positive and Negative plates are formed with IPF® technology to ensure plates operate at 100% capacity.
- Collapsible bottom bridge accommodates for normal plate growth, reducing stress on battery post seals.
- Air Gap between cells has been designed to reduce foot print while maintaining required cooling.
- Front safety shield design easily slides on and off without tools for quicker assembly.

**DEKA UNIGY II INTERLOCK™ SYSTEM** utilizes:

- Interlocking modules require only front access bolts for mounting, providing quick and safe installation.
- Modules are coated with acid resistant epoxy powder paint.
- Each module has mounting holes for grounding option.
- Standard one-piece base enables it to be used as anchoring template. Anchors can be drilled and installed with base in place.
- Meets UBC 97 Zone 4 certification of top of building in most applications up to 8 modules high.

**DEKA UNIGY II NON-INTERLOCK SYSTEM** utilizes:

- Non-Interlock modules require front and rear access bolts for mounting, providing easy and safe installation.
- Modules are coated with acid resistant epoxy powder paint.
- Each module has mounting holes for grounding option.
- Standard two-piece base enables anchors to be drilled and installed with base in place.
- Meets UBC 97 Zone 4 certification of ground level in most applications up to 8 modules high.

### FEATURES AND BENEFITS

Container and Cover	Impact-Resistant Polypropylene, UL 94 V-0, 28% L.O.I.
Separators	Microporous Glass Mat
Individual Plate Formation	Shipped at 100% Capacity
Cycle Life	2400 cycles @ 20% DOD



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

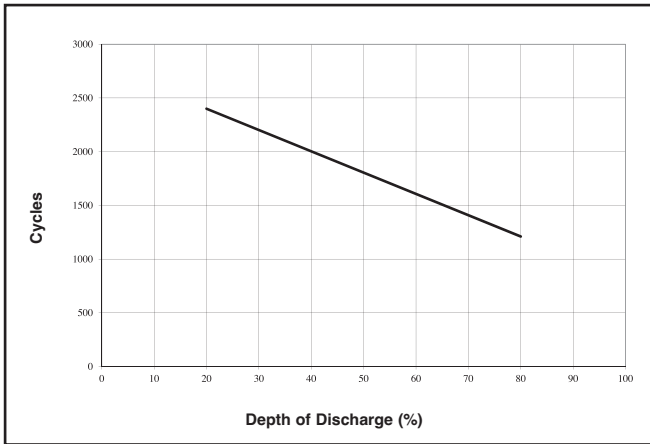


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Photovoltaic Charging Parameters		
Bulk Charge	Max Current (amps)	15% of 20 Hr Rate
Absorption (Regulation) Charge	Constant Voltage	2.35 - 2.40 vpc
Float Charge	Constant Voltage	2.24 - 2.26 vpc
Equalize Charge	Constant Voltage	2.40 - 2.43 vpc
Temperature Coefficient	0.003 v / °C	

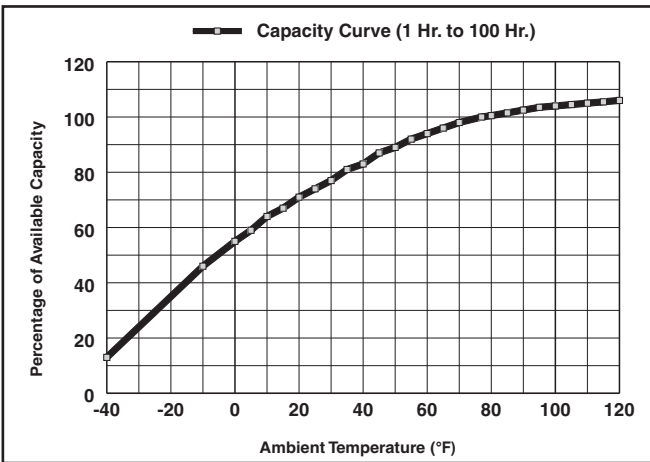
Cut-off parameters per charge & equalize intervals are application specific and will vary dependent upon site specific characteristics such as temperature, days of autonomy, array to load ratio, etc.

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.

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

Cell Type	Amp Hours at 77°F (25°C) to 1.75 v.p.c.				Cell Weights**	
	10	20	24	100	Lb.	kg
AVR45-5	96	107	110	121	18	8.2
AVR45-7	144	161	165	181	25	11.3
AVR45-9	192	214	220	242	32	14.5
AVR45-11	240	268	275	302	39	17.7
AVR45-13	288	322	330	363	46	20.9
AVR45-15	336	375	385	423	53	24.0
AVR45-17	384	429	440	484	60	27.2
AVR45-19	432	482	495	544	67	30.4
AVR45-21	480	536	550	605	74	33.6
AVR45-23	528	590	605	665	81	36.7
AVR45-25	576	643	660	726	88	39.9
AVR45-27	624	697	715	786	95	43.1
AVR45-29	672	750	770	847	102	46.3
AVR45-31	720	804	825	907	109	49.4
AVR45-33	768	858	880	968	116	52.6

Cell Type	Amp Hours at 77°F (25°C) to 1.75 v.p.c.				Cell Weights**	
	10	20	24	100	Lb.	kg
AVR75-5	154	165	168	200	28	12.7
AVR75-7	230	257	264	300	39	17.7
AVR75-9	312	350	360	400	50	22.7
AVR75-11	395	443	456	500	61	27.7
AVR75-13	467	515	528	600	72	32.7
AVR75-15	543	608	624	699	83	37.7
AVR75-17	619	700	720	799	94	42.6
AVR75-19	697	772	792	899	105	47.6
AVR75-21	779	865	888	999	116	52.6
AVR75-23	855	958	984	1099	127	57.6
AVR75-25	933	1047	1080	1199	137	62.1
AVR75-27	1009	1123	1152	1299	148	67.1
AVR75-29	1086	1215	1248	1399	159	72.1
AVR75-31	1168	1308	1344	1499	170	77.1
AVR75-33	1240	1380	1416	1599	181	82.1

Cell Type	Amp Hours at 77°F (25°C) to 1.75 v.p.c.				Cell Weights**	
	10	20	24	100	Lb.	kg
AVR95-7	298	339	348	403	44	20.0
AVR95-9	398	452	464	538	57	25.9
AVR95-11	497	565	580	672	70	31.8
AVR95-13	596	678	696	807	83	37.7
AVR95-15	696	791	812	941	96	43.5
AVR95-17	795	904	928	1076	108	49.0
AVR95-19	895	1016	1044	1210	121	54.9
AVR95-21	994	1129	1160	1345	134	60.8
AVR95-23	1093	1242	1276	1479	147	66.7
AVR95-25	1193	1355	1392	1613	160	72.6
AVR95-27	1292	1468	1508	1748	172	78.0
AVR95-29	1392	1581	1624	1882	186	84.4
AVR95-31	1491	1694	1740	2017	198	89.8
AVR95-33	1591	1807	1856	2151	211	95.7
AVR125-33	2104	2367	2423	2930	300	136

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



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