



# 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 Zone 4 certification of ground level 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 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**

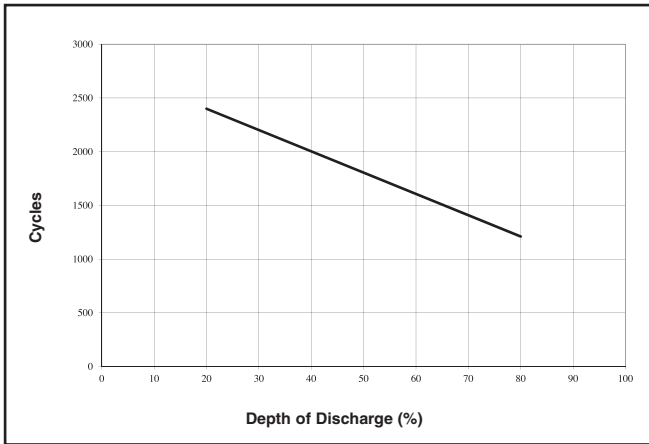


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Photovoltaic Charging Parameters		
Bulk Charge	Max Current (amps)	15% of 20 Hr Rate
Absorption (Regulation) Charge	Constant Voltage	2.35 - 2.40 vpc
Float Charge	Constant Voltage	2.24 - 2.26 vpc
Equalize Charge	Constant Voltage	2.40 - 2.43 vpc
Temperature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

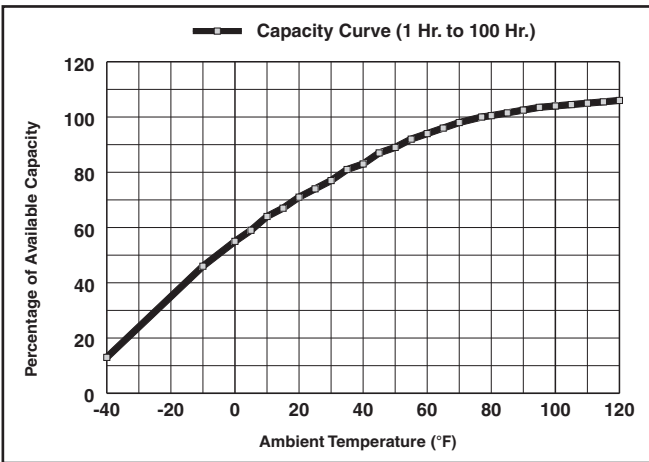
Cut-off parameters per charge & equalize intervals are application specific and will vary dependent upon site specific characteristics such as temperature, days of autonomy, array to load ratio, etc.

**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



East Penn Manufacturing Co., Lyon Station, PA 19536-0147  
Domestic & International Inquiries Call: 610-682-3263  
Phone: 610-682-6361 • Fax: 610-682-0891  
www.dekabatteries.com • e-mail: reservepowersales@dekabatteries.com



Domestic Inquiries Call: 1-800-372-9253  
www.mkbattery.com • e-mail: sales@mkbattery.com

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