

# SOLAR

SOLAR PHOTOVOLTAIC BATTERIES  
BATTERIES PHOTOVOLTAÏQUES SOLAIRES

Eastpenn  
CANADA

## SOLAR PHOTOVOLTAIC BATTERIES

### FOR RENEWABLE ENERGY APPLICATIONS



#### Features

- ▶ Valve-regulated design...
- ▶ Excellent high-rate discharge...
- ▶ Completely sealed...
- ▶ Individual plate formation...
- ▶ Higher freeze resistance...
- ▶ Quick recharge rate...
- ▶ Heavy-duty "flag" type terminals...
- ▶ Convenient removable carrying handle...

#### Benefits

- ▶ Reduces maintenance and labor costs by eliminating the need to add water.
- ▶ For highest performance.
- ▶ Eliminates acid spills and terminal corrosion, protecting sensitive electronic equipment.
- ▶ Fully formed plates for high initial capacity and voltage matching.
- ▶ Withstands temperature extremes for longer battery life.
- ▶ Delivers dependable power when needed.
- ▶ Resists breakage for reliable operation and lowest resistance.
- ▶ Provides easy transport and installation.

**VALVE-REGULATED ABSORBED GLASS MAT (AGM)**

# EAST PENN CANADA

A subsidiary of East Penn Manufacturing Co., Inc.

165 Harwood Ave. North, Ajax ON L1Z 1L9

Tel: 905-427-2718 Fax: 905-427-0854

Email: sales@eastpenncanada.com



## SOLAR PHOTOVOLTAIC BATTERIES

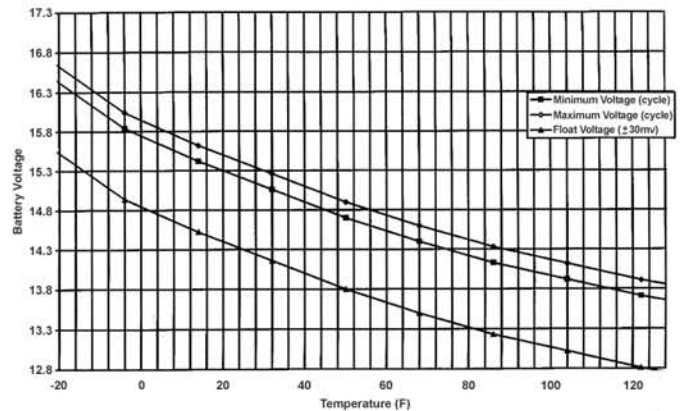
### AGM Features – The extremely efficient design includes several unique features.

- ▶ Specially-engineered safety relief valve system effectively controls critical internal gas pressure, preventing capacity loss from excessive gas seepage. This one-way valve also prevents outside air from entering the battery - a common cause of failure in most sealed valve-regulated battery designs.
- ▶ Fine microfiber glass separators are highly porous to hold electrolyte more efficiently and have extremely low electrical resistance for higher capacity.
- ▶ Power path grids are computer-cast and pasted to uniform thickness, allowing for the exact degree of compression needed for optimum oxygen flow between the plates and separators. (Plates compressed too tightly will impede oxygen flow, while plates packed too loosely allows valuable oxygen to escape to the top of the battery. Both conditions seriously impair performance and shorten battery life.)
- ▶ Exclusive individual formed plates provide the highest quality and most consistent performance.
- ▶ Most AGM batteries are rated non-spillable by ICAO (International Commercial Airline Organization), IATA (International Airline Transport Association) and DOT (Department of Transportation) definitions.

### AGM Charge and Float Voltages at Various Temperature Ranges

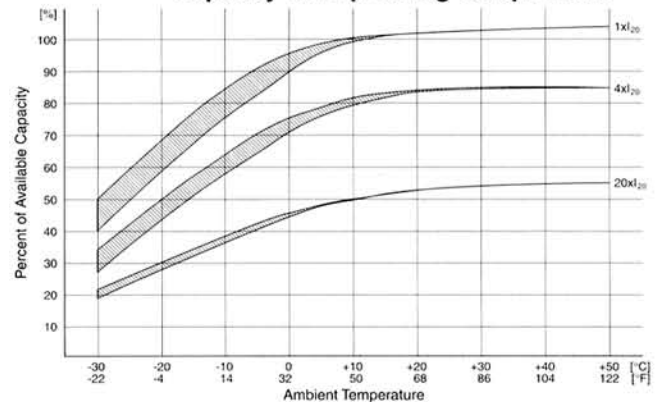
Temp. °F	Charge		Float		Temp. °C
	Optimum	Maximum	Optimum	Maximum	
≥ 120	13.60	13.90	12.80	13.00	≥ 49
110 – 120	13.80	14.10	12.90	13.20	43 – 49
100 – 110	13.90	14.20	13.00	13.30	38 – 43
90 – 100	14.00	14.30	13.10	13.40	32 – 38
80 – 90	14.10	14.40	13.20	13.50	27 – 32
70 – 80	14.30	14.60	13.40	13.70	21 – 27
60 – 70	14.45	14.75	13.55	13.85	16 – 21
50 – 60	14.60	14.90	13.70	14.00	10 – 16
40 – 50	14.80	15.10	13.90	14.20	4 – 10
≤ 40	15.10	15.40	14.20	14.50	≤ 4

### Constant Voltage vs. Temperature



Shown is the constant charging voltage in relation to the ambient temperature for cyclic and float use.

### Capacity vs. Operating Temperature



Shown are the changes in capacity for a wider ambient temperature range, giving the available capacity as a percentage of the rated capacity at different ambient temperatures, for three different load examples, with uninterrupted discharge to the appropriate discharge cut-off voltage. The values for the upper edge of the curve were obtained from charging at an ambient temperature of +20°C (68°F) with a voltage limit of 2.3 V/cell. For the lower edge, charging was carried out at the specified ambient temperature. The curves show the behavior of the battery after a number of cycles.

GROUP NO.	PART NO.	FOOT NOTES	MINUTES DISCHARGED AT*						CCA @ 0°F (-18°C)	RES. CAP.	VOLTAGE	AMPERE HOUR CAPACITY*						APPROX. WEIGHT LBS. (KGS.)	MAXIMUM OVERALL DIMENSIONS INCHES (MM)		
			75 AMPS	50 AMPS	25 AMPS	15 AMPS	8 AMPS	5 AMPS				100 HR.	20 HR.	8 HR.	6 HR.	3 HR.	1 HR.		LENGTH	WIDTH	HEIGHT
U1	8AU1	38.39	10	20	54	98	200	340	200	48	12	37.0	32.0	29.5	28.3	26.5	23.0	24.0 (10.9)	7% (197)	5% (130)	7% (184)
22NF	8A22NF	38.39	22	40	102	180	365	620	350	90	12	63.0	55.0	50.0	49.0	45.0	35.5	38.5 (17.5)	9% (238)	5% (140)	9% (235)
24	8A24	17.38.39	35	60	150	280	550	900	470	140	12	91.0	79.0	72.0	70.5	65.0	50.5	53.0 (24.0)	10% (276)	6% (171)	9% (251)
27	8A27	17.38.39	43	75	185	330	640	1080	580	175	12	106.0	92.0	84.0	82.5	75.0	59.0	63.0 (28.6)	12% (324)	6% (171)	9% (251)
31	8A31DT	17.38	53	87.4	200	348	706	1265	800	190	12	116.0	105.0	90.0	87.4	81.5	68.2	69.0 (31.3)	12% (329)	6% (171)	9% (238)
4D	8A4D	17	106	180	413	745	1512	2507	1110	380	12	216.0	198.2	176.0	167.4	150.0	115.0	129.0 (58.5)	20% (527)	8% (216)	10 (254)
8D	8A8D	17	138	230	517	953	1874	3040	1350	480	12	257.0	245.0	212.0	202.8	182.1	151.1	158.0 (71.7)	20% (527)	11 (279)	10 (254)
GC2	8AGC2	94	171	409	718	1409	2304		690	380	6	220.0	187.0	173.7	167.8	144.8	102.6	69.5 (32.0)	10% (260)	7% (181)	10% (276)

17 - Includes handles

38 - "Non-Spillable" defined by DOT (Department of Transportation) definition

39 - "Non-Spillable" defined by ICAO (International Commercial Airline Organization) and IATA (International Airline Transportation Association) definitions

Warranty void if opened or improperly charged. Caution: Constant under- or over-charging will damage any battery and shorten its life. Use a good constant potential, voltage-regulated charger. For 12-volt batteries, charge to at least 13.8 volts but no more than 14.1 volts at 68°F (20°C). For 6-volt batteries, charge to at least 6.9 volts but no more than 7.05 volts at 68°F (20°C). Do not charge in a sealed container. The Solar AGM Series has more capacity at high discharge rates than conventional deep cycle batteries.