

# ABSOLYTE<sup>®</sup> IIP



## PHOTOVOLTAIC & ALTERNATIVE ENERGY

**GNB**  
INDUSTRIAL POWER

# ABSOLYTE<sup>®</sup> IIP

## THE WORLD LEADER IN SEALED BATTERY POWER FOR PHOTOVOLTAIC AND ALTERNATIVE ENERGY APPLICATIONS

- Proven Field Experience Since 1983.
- The Absolyte was developed by GNB, in conjunction with Sandia National Laboratories, as the first sealed, large capacity, deep-cycle battery for photovoltaic applications.
- Patented MFX positive grid alloy provides excellent cycle life for photovoltaic applications.
- Provides for extended partial state of charge operation and allows for deep discharge recovery.
- Wide band of temperature operation — retains more capacity in cold temperatures than traditional flooded batteries.
- Modular steel tray design provides excellent heat dissipation in high temperature applications to maximize life.
- Housed in protective steel trays designed for maximum installation flexibility.
- Single cell modules simplify transport to remote locations.
- Absolyte IIP is qualified to stack horizontally up to eight high for use in U.B.C. 1994 Seismic Zone IV and to ten high for U.B.C. 1997 Seismic Zone IV (at or below grade).
- Eliminates the need for periodic topping up with water as found in flooded cells. Periodic visual inspections, voltage readings, and connection retorquing is all that is required.



## APPLICATIONS

Absolyte IIP batteries are ideal for photovoltaic and alternative energy applications including:

- Village Electrification
- Telecommunications
- Residential Power
- Railroad Signal
- Navigational Aids

## ADDED FEATURES AND BENEFITS

- Extended partial state of charge operation
- Deep discharge recovery
- Freezing tolerant
- Does not require separate battery room
- Recombination efficiency greater than 99%
- Recyclable to world standards
- Single cell and stackable modules
- Simple cell replacement capability
- IEC 896, BS 6290, UL Recognized, ISO 9002 and designed to meet Telcordia SR4228.



# ABSOLYTE<sup>®</sup> IIP

## Absolyte IIP Stackable Module Weights and Dimensions

MODULE TYPE	VOLTS	NOM AH CAP (8 HR)	STACKING DIMENSIONS								DOMESTIC PACKED WEIGHT		EXPORT PACKED WEIGHT	
			LENGTH		WIDTH		DEPTH OR HEIGHT		UNPACKED WEIGHT		LBS	KG	LBS	KG
			IN	MM	IN	MM	IN	MM	LBS	KG				
<b>50A</b>														
6-50A05	12	104	17.19	437	8.53	217	16.22	412	157	71	176	80	228	104
6-50A07	12	152	21.69	551	8.53	217	16.22	412	209	95	228	104	280	127
6-50A09	12	208	26.19	665	8.53	217	16.22	412	252	114	271	123	323	147
6-50A13	12	312	35.19	894	8.53	217	16.22	412	356	162	381	173	433	197
<b>90A</b>														
6-90A07	12	256	21.69	551	8.53	217	23.56	599	316	143	335	152	413	187
6-90A09	12	344	26.19	665	8.53	217	23.56	599	396	180	415	188	493	224
6-90A11	12	432	30.69	780	8.53	217	23.56	599	477	216	502	228	581	264
6-90A13	12	520	35.19	894	8.53	217	23.56	599	557	253	582	264	661	300
6-90A15	12	608	39.69	1008	8.59	218	23.56	599	637	289	668	303	747	339
<b>100A</b>														
3-100A13	6	600	19.93	506	8.53	217	26.38	670	328	149	356	162	436	198
3-100A15	6	696	22.18	563	8.59	218	26.38	670	374	170	408	185	489	222
3-100A17	6	800	24.50	622	8.59	218	26.38	670	424	192	446	202	528	240
3-100A19	6	896	26.75	679	8.59	218	26.38	670	470	213	491	223	574	260
3-100A21	6	1000	29.00	737	8.59	218	26.38	670	515	234	539	245	623	283
3-100A23	6	1096	31.25	794	8.59	218	26.38	670	561	255	589	267	674	306
3-100A25	6	1200	33.50	851	8.59	218	26.38	670	608	276	637	289	723	328
3-100A27	6	1296	35.75	908	8.59	218	26.38	670	653	296	684	310	772	350
3-100A29	6	1400	38.00	965	8.59	218	26.38	670	704	319	736	334	824	374
3-100A31	6	1496	40.25	1022	8.59	218	26.38	670	750	340	783	355	873	396
3-100A33	6	1600	42.50	1080	8.59	218	26.38	670	795	361	829	376	920	417
1-100A39	2	1800	19.93	506	8.53	217	26.38	670	328	149	356	162	436	198
1-100A45	2	2088	22.18	563	8.59	218	26.38	670	374	170	408	185	489	222
1-100A51	2	2400	24.50	622	8.59	218	26.38	670	424	192	446	202	528	240
1-100A57	2	2688	26.75	679	8.59	218	26.38	670	470	213	491	223	574	260
1-100A63	2	3000	29.00	737	8.59	218	26.38	670	515	234	539	245	623	283
1-100A69	2	3288	31.25	794	8.59	218	26.38	670	561	255	589	267	674	306
1-100A75	2	3600	33.50	851	8.59	218	26.38	670	608	276	637	289	723	328
1-100A81	2	3888	35.75	908	8.59	218	26.38	670	653	296	684	310	772	350
1-100A87	2	4200	38.00	965	8.59	218	26.38	670	704	319	736	334	824	374
1-100A93	2	4488	40.25	1022	8.59	218	26.38	670	750	340	783	355	873	396
1-100A99	2	4800	42.50	1080	8.59	218	26.38	670	795	361	829	376	920	417

\* Includes 77 mm (3") additional for Module Cover Assembly

# ABSOLYTE® IIP

## CELL SPECIFICATIONS

### 140-6300 AH @ 100 Hour Rate

**Container and Cover** — Polypropylene.

Flame retardant UL94 V-0/28% L.O.I. is optional.

**Separators** — Spun glass, microporous matrix.

**Safety Vent** — 5-10 psi opening pressure, self-resealing.

**Terminals** — Solid copper insert.

**Positive Plate** — Patented MFX grid alloy.

**Negative Plate** — Lead calcium grid alloy.

**Orientation** — 50A, 90A, 100A Horizontal.  
50A Vertical (Horizontal preferred)

**Operating Temperature** — Temperature excursions between -40°C(-40°F) to +50°C(122°F) allowed (battery performance and life will be affected).

**Cycle Life** — 5000 cycles at 20% D.O.D.; 1200 cycles at 80% D.O.D. [at 25°C (77°F)] with proper charging.

**Self Discharge** — 0.5 to 1.0% per week maximum at 25°C (77°F).

**Charge Controller Upper Voltage Settings**—  
at 25°C (77°F) with a maximum charge current of 5% of nominal C/100 Amp-hour rating.

2.28 ± 0.02 V.P.C. @ 0-2% D.O.D.

2.33 ± 0.02 V.P.C. @ 3-5% D.O.D.

2.38 ± 0.02 V.P.C. @ >5% D.O.D.

For other temperatures and charge currents, contact GNB for recommendations.

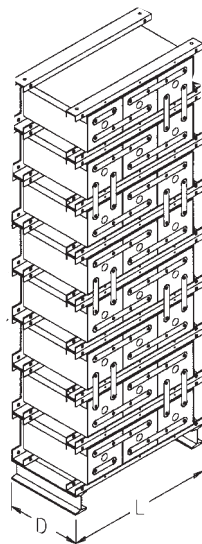
## Absolyte IIP Single Cell Module Weights and Dimensions

CELL TYPE	NOM AH CAP (100 HR)	LENGTH		WIDTH		DEPTH OR HEIGHT		UNPACKED WEIGHT		DOMESTIC PACKED WEIGHT		EXPORT PACKED WEIGHT	
		IN	MM	IN	MM	IN	MM	LB	KG	LB	KG	LB	KG
<b>50A</b>													
50A05	140	3.80	97	6.49	165	16.00	406	32	15	35	16	44	20
50A07	210	3.80	97	6.49	165	16.00	406	39	18	41	19	51	23
50A11	360	4.55	116	6.49	165	16.00	406	50	23	53	24	61	28
50A13	430	5.30	135	6.49	165	16.00	406	58	26	61	28	69	31
50A15	510	6.05	154	6.55	166	16.00	406	66	30	69	31	77	35
50A19	655	7.67	195	6.67	169	16.00	406	91	41	95	43	112	51
50A27	950	10.67	271	6.67	169	16.00	406	124	56	130	59	147	67

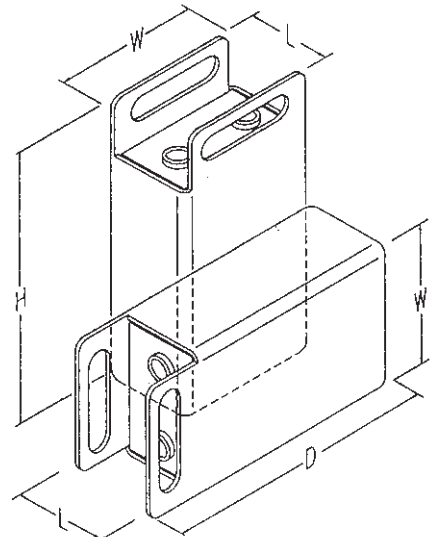
## ASSEMBLY CONFIGURATIONS

### Horizontal Stack Assembly (Preferred)

Depth is overall, including module cover assembly. Add 102mm (4") for bottom I-beam supports to determine total height (width) of assembled horizontal stack.



NOTE: Design and/or specifications subject to change without notice. If questions arise, contact your local GNB sales representative for clarification.



# ABSOLYTE® IIP

Absolyte IIP Performance Characteristics — Constant Current  
Amperes to 1.75 Volts Per Cell @ 25°C (77°F)

CELL TYPE	HOURS									
	120	100	72	48	36	24	20	12	10	8
<b>50A</b>										
50A05	1.2	1.4	1.9	2.8	3.6	5.1	6	9.3	11	13
50A07	1.8	2.1	2.9	4.2	5.5	7.7	9.1	14	16	19
50A09	2.4	2.9	3.9	5.6	7.3	10	12	18	22	26
50A11	3.1	3.7	5.0	7.1	9.2	13	15	23	27	33
50A13	3.7	4.3	5.9	8.5	11	15	18	28	33	39
50A15	4.3	5.1	6.9	10	13	18	21	33	38	46
50A19	5.6	6.6	8.9	13	17	23	27	42	49	59
50A27	8.0	9.5	13	19	24	34	39	61	71	85
<b>90A</b>										
90A07	3.0	3.6	4.9	7.0	9.1	12	15	23	27	32
90A09	4.0	4.8	6.5	9.4	12	17	20	31	36	43
90A11	5.0	6.0	8.1	11	15	21	25	39	46	54
90A13	6.1	7.2	9.8	14	18	25	30	47	55	65
90A15	7.1	8.4	11	16	21	30	35	55	64	76
<b>100A</b>										
100A13	6.7	7.9	10	15	20	29	34	54	62	75
100A15	7.8	9.2	12	18	23	33	40	63	73	87
100A17	8.9	10	14	20	26	38	45	72	83	100
100A19	10	11	16	23	30	43	51	81	94	112
100A21	11	13	17	25	33	48	57	90	104	125
100A23	12	14	19	28	36	53	63	99	115	137
100A25	13	15	21	31	40	58	68	108	125	150
100A27	14	17	23	33	43	62	74	117	135	162
100A29	15	18	25	36	46	67	80	127	146	175
100A31	16	19	26	38	50	72	85	136	156	187
100A33	17	21	28	41	53	77	91	145	167	200
100A39	20	23	30	45	60	87	102	162	186	225
100A45	23	27	36	54	69	99	120	189	219	261
100A51	26	30	42	60	78	114	135	216	249	300
100A57	30	33	48	69	90	129	153	243	282	336
100A63	33	39	51	75	99	144	171	270	312	375
100A69	36	42	57	84	108	159	189	297	345	411
100A75	39	45	63	93	120	174	204	324	375	450
100A81	42	51	69	99	129	186	222	351	405	486
100A87	45	54	75	108	138	201	240	381	438	525
100A93	48	57	78	114	150	216	255	408	468	561
100A99	51	63	84	123	159	231	273	435	501	600

For Additional Ratings, refer to section 26.10B



# ABSOLYTE® IIP

Absolyte IIP Performance Characteristics — Constant Current  
Amperes to 1.80 Volts Per Cell @ 25°C (77°F)

CELL TYPE	HOURS									
	120	100	72	48	36	24	20	12	10	8
<b>50A</b>										
50A05	1.2	1.4	1.9	2.8	3.6	5.1	6.0	9.2	10	12
50A07	1.8	2.1	2.9	4.2	5.4	7.7	9.0	13	16	19
50A09	2.4	2.8	3.9	5.6	7.2	10	12	18	21	25
50A11	3.1	3.6	4.9	7.0	9.1	13	15	23	26	31
50A13	3.6	4.3	5.8	8.4	10	15	18	27	32	38
50A15	4.3	5.1	6.8	10	13	18	21	32	37	44
50A19	5.5	6.5	8.8	13	16	23	27	42	48	57
50A27	8.0	9.4	13	18	24	34	39	60	69	82
<b>90A</b>										
90A07	3.0	3.5	4.8	6.9	9.0	12	14	23	27	32
90A09	4.0	4.7	6.4	9.3	12	17	19	31	36	43
90A11	5.0	5.9	8.0	11	15	21	24	39	45	53
90A13	6.0	7.1	9.7	13	18	25	29	46	54	64
90A15	7.0	8.3	11	16	21	29	34	54	63	75
<b>100A</b>										
100A13	6	7	10	15	19	28	33	53	62	73
100A15	7	9	12	17	23	33	39	62	72	85
100A17	8	10	14	20	26	38	45	71	82	97
100A19	9	11	15	22	29	42	50	80	93	110
100A21	11	13	17	25	32	47	56	89	103	122
100A23	12	14	19	28	36	52	62	98	113	134
100A25	13	15	21	30	39	57	67	107	124	146
100A27	14	17	22	33	42	61	73	116	134	159
100A29	15	18	24	35	46	66	78	125	144	171
100A31	16	19	26	38	49	71	84	134	155	183
100A33	17	20	28	40	52	76	90	143	165	195
100A39	19	23	30	45	57	84	99	159	186	219
100A45	23	27	36	51	69	99	117	186	216	255
100A51	26	30	42	60	78	114	135	213	246	291
100A57	29	33	45	66	87	126	150	240	279	330
100A63	33	39	51	75	96	141	168	267	309	366
100A69	36	42	57	84	108	156	186	294	339	402
100A75	39	45	63	90	117	171	201	321	372	438
100A81	42	51	66	99	126	183	219	348	402	477
100A87	45	54	72	105	138	198	234	375	432	513
100A93	48	57	78	114	147	213	252	402	465	549
100A99	51	60	84	120	156	228	270	429	495	585

For Additional Ratings, refer to section 26.10B

# ABSOLYTE® IIP

Absolyte IIP Performance Characteristics — Constant Current  
Amperes to 1.90 Volts Per Cell @ 25°C (77°F)

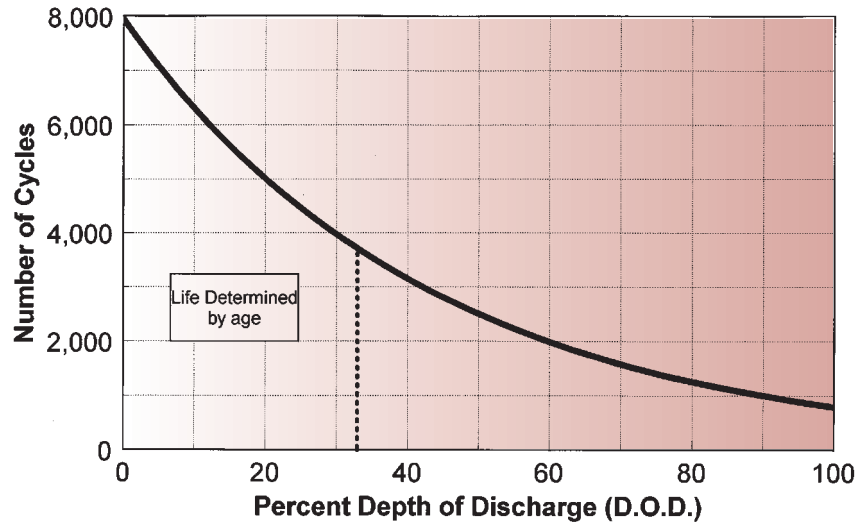
CELL TYPE	HOURS									
	120	100	72	48	36	24	20	12	10	8
<b>50A</b>										
50A05	1.1	1.3	1.7	2.4	3.1	4.5	5.3	8.3	9	11
50A07	1.6	1.9	2.6	3.7	4.8	6.8	8.0	12	14	16
50A09	2.2	2.6	3.4	4.9	6.3	9.1	10	16	18	22
50A11	2.8	3.3	4.4	6.2	8.0	11	13	21	23	28
50A13	3.3	3.9	5.2	7.4	9.6	13	16	25	28	33
50A15	3.9	4.6	6.1	9	11	16	19	29	33	39
50A19	5.0	5.9	7.8	11	14	21	24	38	42	50
50A27	7.3	8.5	11	16	21	30	35	55	61	73
<b>90A</b>										
90A07	2.8	3.2	4.3	6.2	8.0	11	13	21	24	28
90A09	3.7	4.3	5.8	8.3	10	15	18	28	32	38
90A11	4.6	5.4	7.3	10	13	19	22	35	40	47
90A13	5.6	6.5	8.7	12	16	23	27	42	48	57
90A15	6.5	7.6	10	14	18	27	31	49	56	67
<b>100A</b>										
100A13	5.9	7.0	9.4	13	17	25	30	47	54	63
100A15	6.9	8.1	11	15	20	29	35	55	63	74
100A17	7.9	9.3	12	18	23	33	40	63	72	85
100A19	8.9	10	14	20	26	38	45	71	81	95
100A21	9.9	11	15	22	29	42	50	79	90	106
100A23	10	12	17	24	32	46	55	87	99	117
100A25	11	14	18	27	35	50	60	95	108	127
100A27	12	15	20	29	38	55	65	103	117	138
100A29	13	16	22	31	41	59	70	110	126	149
100A31	14	17	23	34	44	63	75	118	135	159
100A33	15	18	25	36	47	67	80	126	144	170
100A39	17	21	28	39	51	75	90	141	162	189
100A45	20	24	33	45	60	87	105	165	189	222
100A51	23	27	36	54	69	99	120	189	216	255
100A57	26	30	42	60	78	114	135	213	243	285
100A63	29	33	45	66	87	126	150	237	270	318
100A69	30	36	51	72	96	138	165	261	297	351
100A75	33	42	54	81	105	150	180	285	324	381
100A81	36	45	60	87	114	165	195	309	351	414
100A87	39	48	66	93	123	177	210	330	378	447
100A93	42	51	69	102	132	189	225	354	405	477
100A99	45	54	75	108	141	201	240	378	432	510

For Additional Ratings, refer to section 26.10B

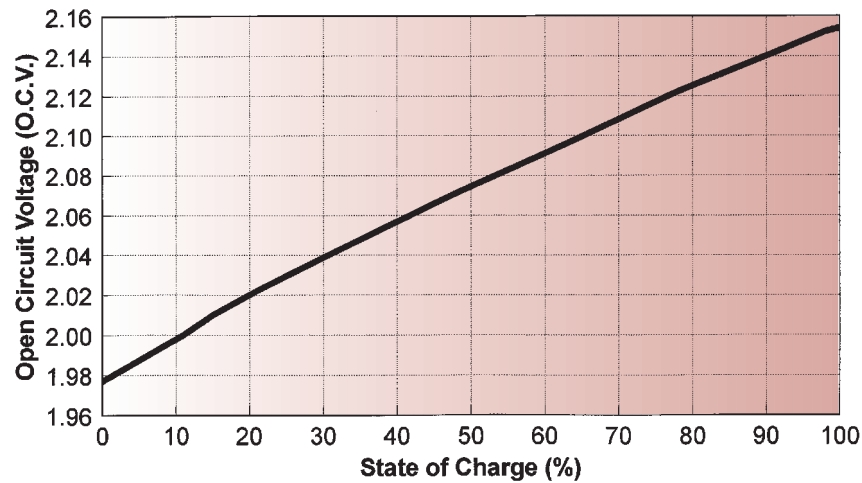
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## Absolyte IIP Performance Characteristics

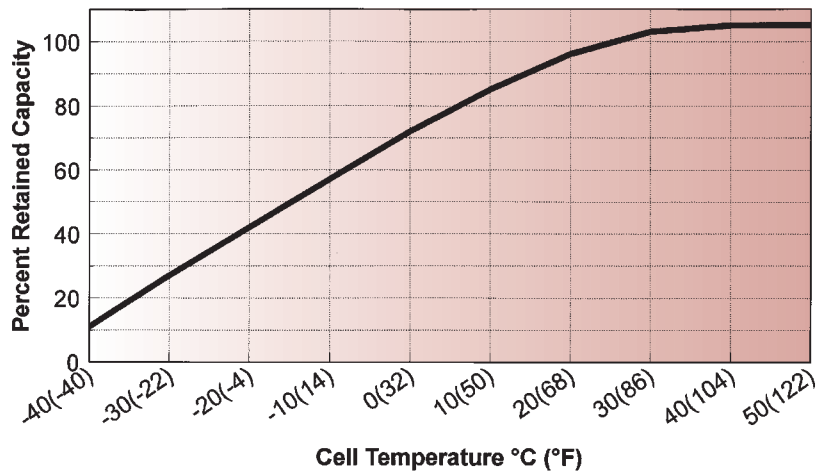
### Cycle Life vs. Depth of Discharge [at 25°C (77°F)]



### Open Circuit Voltage vs. State of Charge [at 25°C (77°F)]



### Capacity Retention vs. Temperature

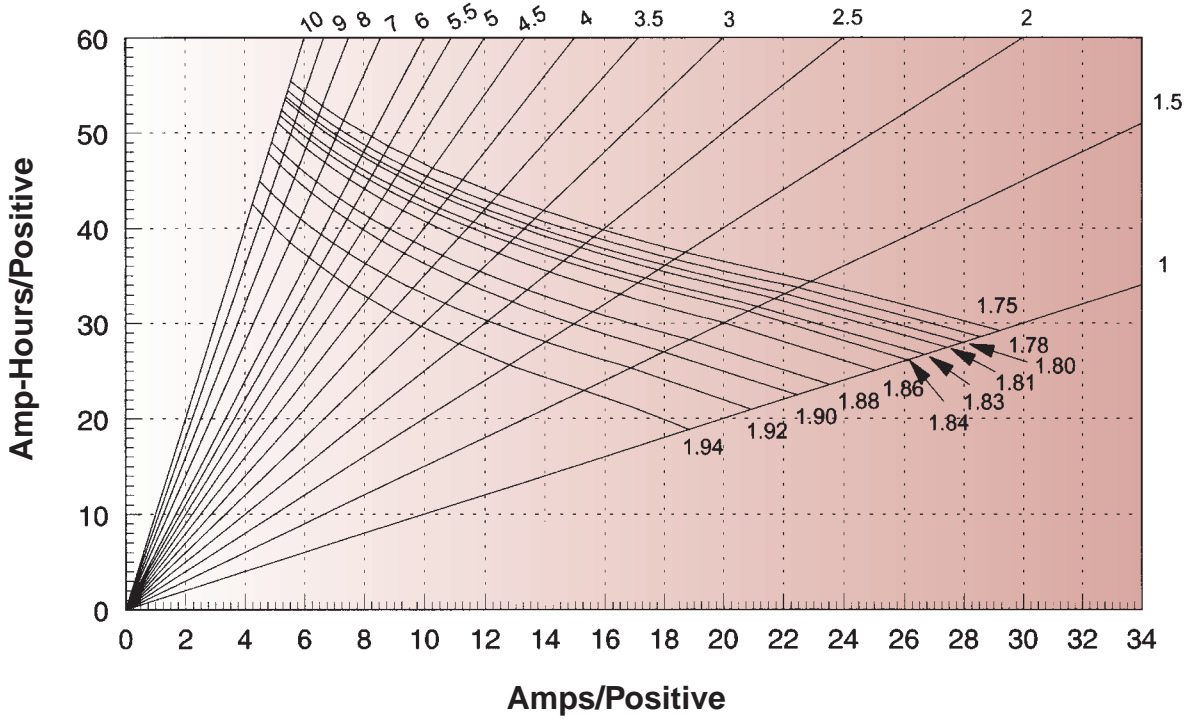




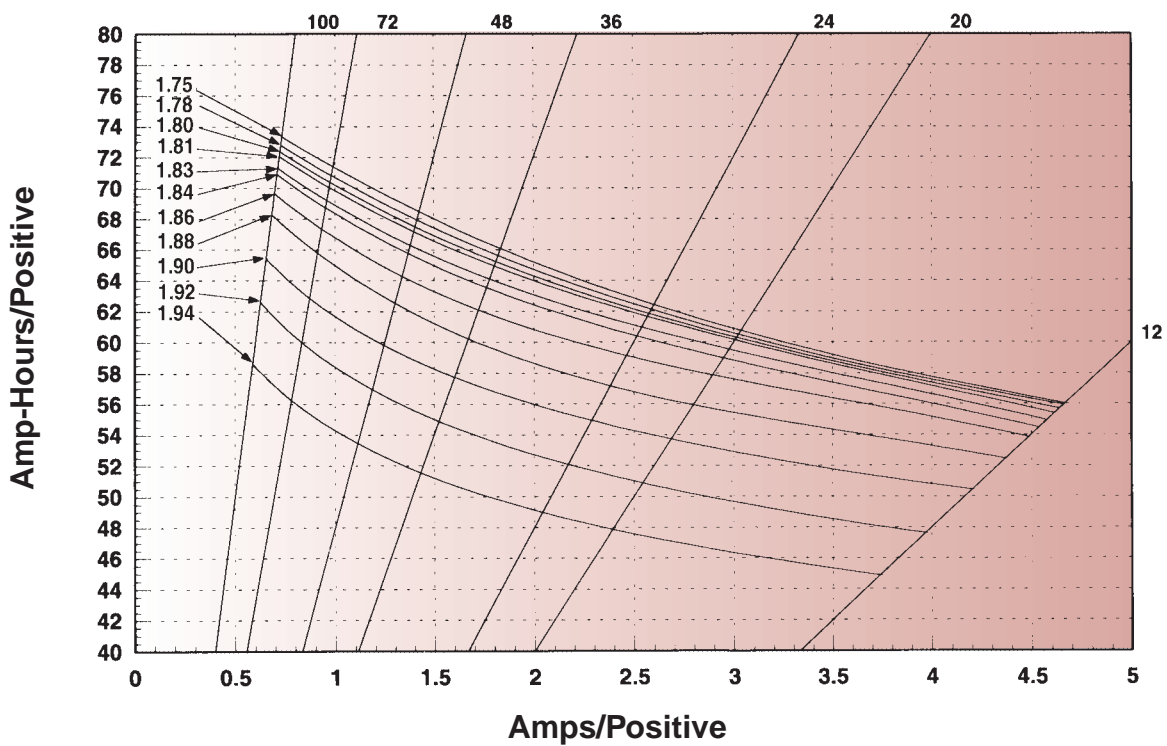
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Absolyte IIP Performance Curves @ 25°C (77°F)

## 50A Series 1 to 10 Hours



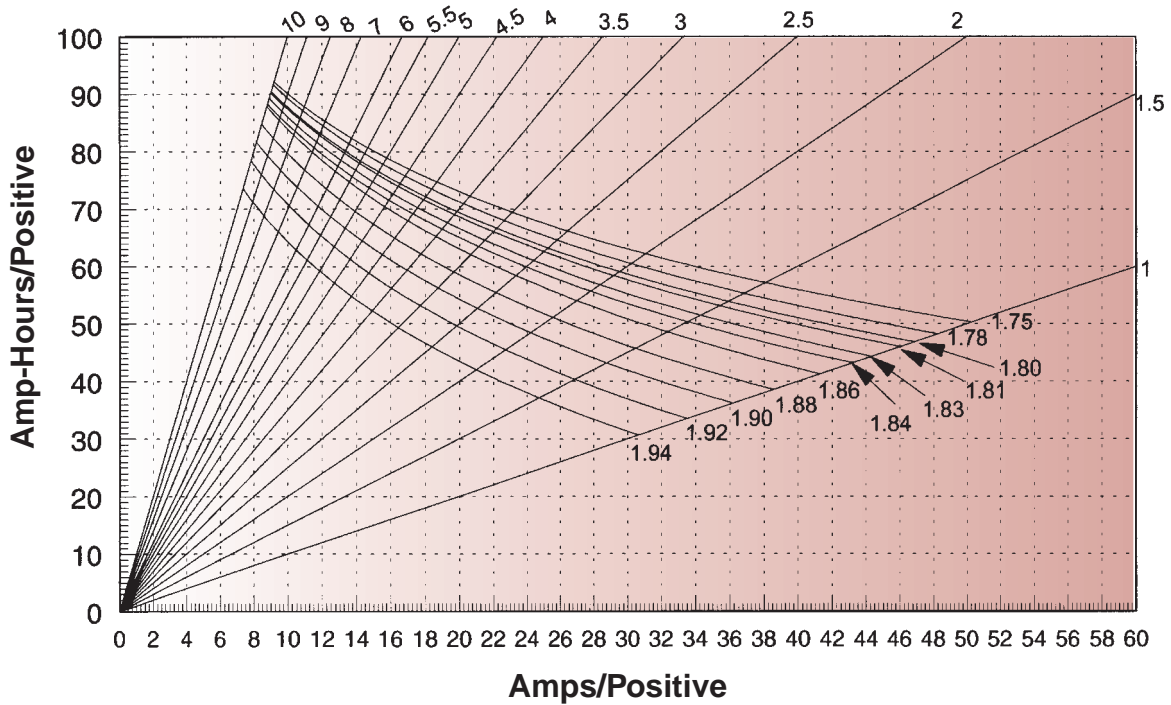
## 50A Series 12 to 100 Hours



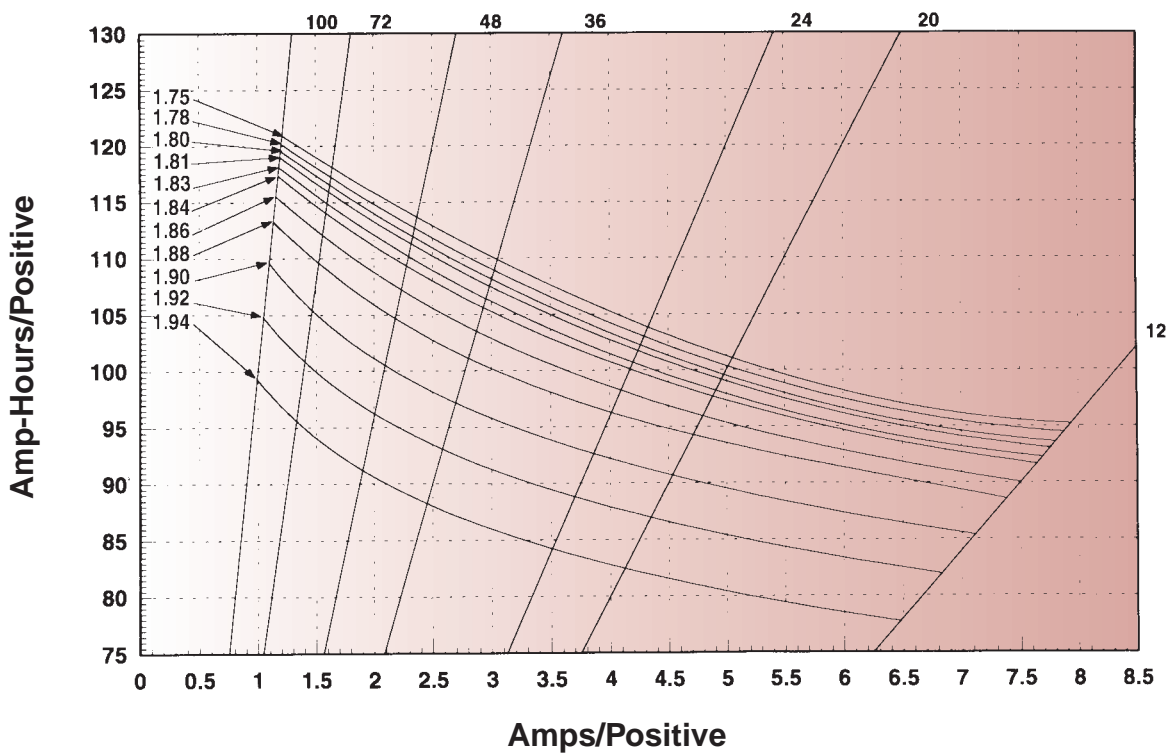
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Absolyte IIP Performance Curves @ 25°C (77°F)

90A Series 1 to 10 Hours



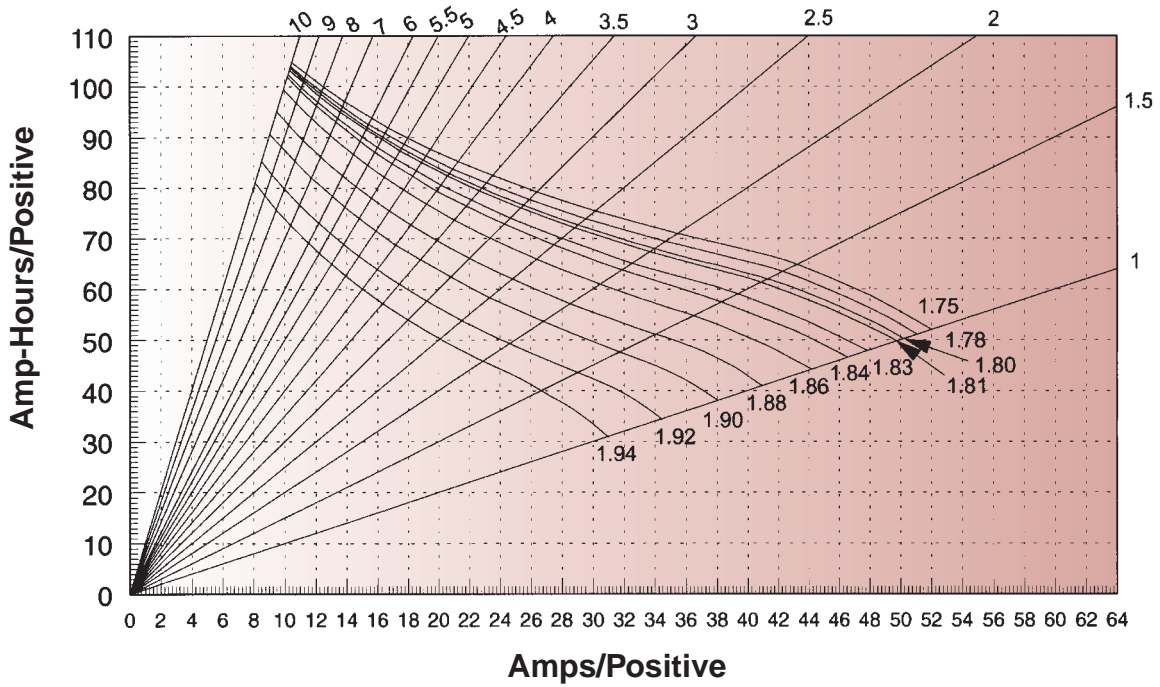
90A Series 12 to 100 Hours



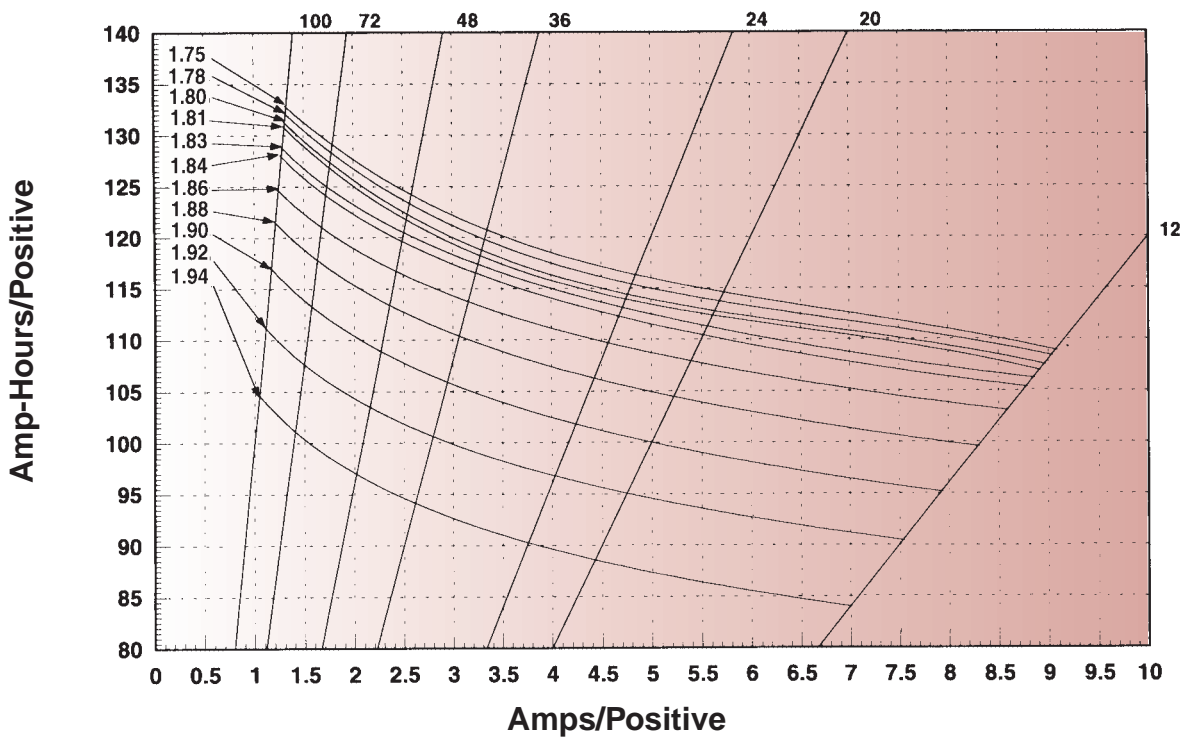
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Absolyte IIP Performance Curves @ 25°C (77°F)

100A Series 1 to 10 Hours



100A Series 12 to 100 Hours



# ABSOLYTE<sup>®</sup> IIP

## GLOBAL OPERATIONS

### NORTH AMERICA

GNB Industrial Power  
Chicago, Illinois U.S.A.  
TEL: 1.630.629.5200  
FAX: 1.630.629.2635

GNB Industrial Power  
Maple, Ontario Canada  
TEL: 1.905.669.9326  
FAX: 1.905.669.7688

### EUROPE

Exide Technologies  
Büdingen, Germany  
TEL: 49.6042.8170  
FAX: 49.6042.81233

### MIDDLE EAST/AFRICA

Exide Technologies  
Abu Dhabi, U.A.E.  
TEL: 971.2.226235  
FAX: 971.2.227644

### JAPAN

GNB Industrial Power Japan  
Tokyo, Japan/Pacific Rim  
TEL: 81.3.5325.6281  
FAX: 81.3.5325.2063

### AUSTRALIA/NEW ZEALAND

Exide Technologies  
Padstow, N.S.W. Australia  
TEL: 61.2.9722.5700  
FAX: 61.2.9774.2966

### SOUTH EAST ASIA

Exide Technologies S.E. Asia  
Singapore  
TEL: 65.546.2866  
FAX: 65.546.2966

### CHINA

Exide Technologies  
Hong Kong, China  
TEL: 852.3106.2668  
FAX: 852.3106.0260

Exide Technologies  
Beijing, China  
TEL: 86.10.6510.2910  
FAX: 86.10.6510.2912

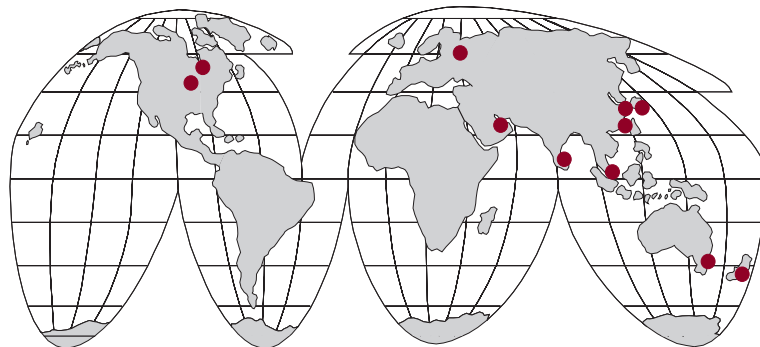
### LATIN AMERICA

GNB Industrial Power  
Chicago, Illinois U.S.A.  
TEL: 1.630.629.5200  
FAX: 1.630.629.2635

### INDIA

GNB Industrial Power  
Bangalore, India  
TEL: 91.80.550.0581  
FAX: 91.80.550.0582

## Industry Leader in Network Power...



The Network Power Division of Exide Technologies is *the* global leader in stored electrical energy solutions for all major critical reserve power applications and needs. Such network power applications include communication/data networks, UPS systems for computers and control systems, and electrical power generation and distribution systems. With a strong manufacturing base in both North America and Europe and a truly global reach (operations in greater than 80 countries) in sales and service, the Network Power Division has all of the tools necessary to satisfy your power needs.

## Global Brands...

ABSOLYTE<sup>®</sup>

MARATHON<sup>™</sup>

Sprinter<sup>®</sup>

GNB Flooded  
Classic

Sonnenschein

Based on over 100 years of technological innovation, the Network Power Division continues to lead the industry with such recognized global brands as Absolyte, Sonnenschein, Marathon, Sprinter, and Flooded Classic. These products and brands are synonymous with quality, reliability, performance and excellence in all markets served.

## Total Battery Management...



In addition to being the leader in delivering premium products to the market, Exide Technologies takes pride in its commitment to the environment. As part of a complete approach to manufacturing, distributing, and recycling lead acid batteries, the Total Battery Management program has been developed to ensure a safe and responsible life cycle for all of our products.

[www.gnb.com](http://www.gnb.com)

**G N B**

**INDUSTRIAL POWER**

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