



STRYTEN ENERGY

E-SERIES

Absolyte® AGP >>>



PHOTOVOLTAIC AND ALTERNATIVE ENERGY SPECIFICATIONS

THE ENERGY TO CHALLENGE

A WORLD LEADER IN VALVE REGULATED LEAD ACID (VRLA) BATTERY POWER FOR PHOTOVOLTAIC AND ALTERNATIVE ENERGY APPLICATIONS

- Proven Field Experience Since 1983.
- The Absolyte AGP was developed by Stryten Energy in conjunction with Sandia National Laboratories, as the first VRLA, large capacity, deep-cycle battery for photovoltaic applications.
- Lead-calcium-tin 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.
- Housed in protective steel trays designed for maximum installation flexibility.
- Single cell modules are available that simplify transport to remote locations.
- Eliminates the need for periodic water additions as found in flooded cells. Periodic visual inspections, voltage readings, and connection retorquing is all that is required.
- Enhanced Post Access for maintenance and battery health assessment.
- Absolyte AGP is seismic qualified to 1997 UBC, 2005 IEEE-693, and 2018 IBC/2016 CBC. (See back cover for applicable configurations.)
- UL Recognized, ISO 9001:2000, NEBS Level 3 (in certain configurations)

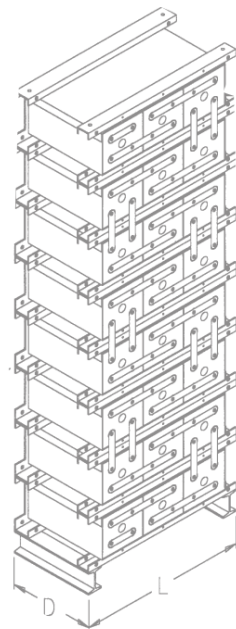
APPLICATIONS

Absolyte AGP 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%
- Globally recyclable design
- Single cell and stackable modules are available
- Simple cell replacement capability



ASSEMBLY CONFIGURATIONS

Horizontal Stack Assembly

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

ABSOLYTE AGP STACKABLE MODULE WEIGHTS AND DIMENSIONS

MODULE TYPE	VOLTS	NOM AH CAP (100 HR)	STACKING DIMENSIONS								DOMESTIC PACKED WEIGHT		EXPORT PACKED WEIGHT	
			LENGTH		HEIGHT		DEPTH		UNPACKED WEIGHT		LB	KG	LB	KG
			IN	MM	IN	MM	IN	LB	LB	KG				
50G														
6-50G05	12	140	17.19	437	8.53	217	16.22	412	157	71	176	80	228	104
6-50G07	12	210	21.69	551	8.53	217	16.22	412	209	95	228	104	280	127
6-50G09	12	290	26.19	665	8.53	217	16.22	412	252	114	271	123	323	147
6-50G13	12	430	35.19	894	8.53	217	16.22	412	356	162	381	173	433	197
90G														
6-90G07	12	360	21.69	551	8.53	217	23.56	599	316	143	335	152	413	187
6-90G09	12	480	26.19	665	8.53	217	23.56	599	396	180	415	188	493	224
6-90G11	12	600	30.69	780	8.53	217	23.56	599	477	216	502	228	581	264
6-90G13	12	720	35.19	894	8.53	217	23.56	599	557	253	582	264	661	300
6-90G15	12	840	39.69	1008	8.59	218	23.56	599	637	289	668	303	747	339
100G														
3-100G13	6	790	19.93	506	8.53	217	26.38	670	328	149	356	162	436	198
3-100G15	6	920	22.18	563	8.59	218	26.38	670	374	170	408	185	489	222
3-100G17	6	1000	24.50	622	8.59	218	26.38	670	424	192	446	202	528	240
3-100G19	6	1100	26.75	679	8.59	218	26.38	670	470	213	491	223	574	260
3-100G21	6	1300	29.00	737	8.59	218	26.38	670	515	234	539	245	623	283
3-100G23	6	1400	31.25	794	8.59	218	26.38	670	561	255	589	267	674	306
3-100G25	6	1500	33.50	851	8.59	218	26.38	670	608	276	637	289	723	328
3-100G27	6	1700	35.75	908	8.59	218	26.38	670	653	296	684	310	772	350
3-100G29	6	1800	38.00	965	8.59	218	26.38	670	704	319	736	334	824	374
3-100G31	6	1900	40.25	1022	8.59	218	26.38	670	750	340	783	355	873	396
3-100G33	6	2100	42.50	1080	8.59	218	26.38	670	795	361	829	376	920	417
1-100G39	2	2370	19.93	506	8.53	217	26.38	670	328	149	356	162	436	198
1-100G45	2	2760	22.18	563	8.59	218	26.38	670	374	170	408	185	489	222
1-100G51	2	3000	24.50	622	8.59	218	26.38	670	424	192	446	202	528	240
1-100G57	2	3300	26.75	679	8.59	218	26.38	670	470	213	491	223	574	260
1-100G63	2	3900	29.00	737	8.59	218	26.38	670	515	234	539	245	623	283
1-100G69	2	4200	31.25	794	8.59	218	26.38	670	561	255	589	267	674	306
1-100G75	2	4500	33.50	851	8.59	218	26.38	670	608	276	637	289	723	328
1-100G81	2	5100	35.75	908	8.59	218	26.38	670	653	296	684	310	772	350
1-100G87	2	5400	38.00	965	8.59	218	26.38	670	704	319	736	334	824	374
1-100G93	2	5700	40.25	1022	8.59	218	26.38	670	750	340	783	355	873	396
1-100G99	2	6300	42.50	1080	8.59	218	26.38	670	795	361	829	376	920	417

CELL SPECIFICATIONS

140-6300 AH @ 100 Hour Rate

Container and Cover — Flame retardant UL94 V-0/28% L.O.I. polypropylene is standard for multi-cell modules; non-flame retardant is optional. Single cell modules are only available in non-flame retardant.

Separators – Spun glass, microporous matrix. Safety Vent – 3.5-9 psi opening pressure, self-resealing.

Terminals – Solid copper insert.

Positive Plate – Lead-Calcium-Tin grid alloy.

Negative Plate – Lead-Calcium grid alloy.

Operating Temperature – Temperature excursions between -40°C (-40°F) to +55°C (131°F) allowed (battery performance and life will be affected).

Cycle Life – 1200 cycles at 80% D.O.D. [at 25°C (77°F)] when operated per the I&O Manual.

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 C100 Amp-hour rating.

2.28 ± 0.02 V.P.C. @ 0-2% D.O.D.

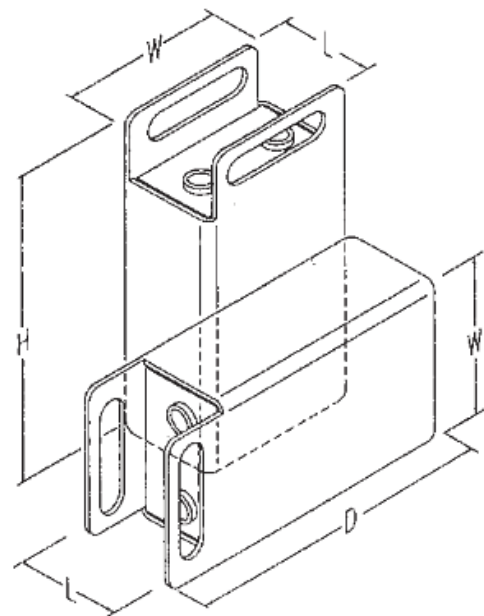
2.33 ± 0.02 V.P.C. @ 3-5% D.O.D.

2.38 ± 0.02 V.P.C. @ >5% D.O.D.

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

Absolyte AGP 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
50G													
50G05	140	3.80	97	6.49	165	16.00	406	32	15	35	16	44	20
50G07	210	3.80	97	6.49	165	16.00	406	39	18	41	19	51	23
50G11	370	4.55	116	6.49	165	16.00	406	50	23	53	24	61	28
50G13	430	5.30	135	6.49	165	16.00	406	58	26	61	28	69	31
50G15	510	6.05	154	6.55	166	16.00	406	66	30	69	31	77	35
50G19	660	7.67	195	6.67	169	16.00	406	91	41	95	43	112	51
50G27	950	10.67	271	6.67	169	16.00	406	124	56	130	59	147	67



NOTE:

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

Absolyte AGP 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
50G										
50G05	1.2	1.4	1.9	2.8	3.6	5.1	6	9.3	11	13
50G07	1.8	2.1	2.9	4.2	5.5	7.7	9.1	14	16	19
50G09	2.4	2.9	3.9	5.6	7.3	10	12	18	22	26
50G11	3.1	3.7	5.0	7.1	9.2	13	15	23	27	33
50G13	3.7	4.3	5.9	8.5	11	15	18	28	33	39
50G15	4.3	5.1	6.9	10	13	18	21	33	38	46
50G19	5.6	6.6	8.9	13	17	23	27	42	49	59
50G27	8.0	9.5	13	19	24	34	39	61	71	85
90G										
90G07	3.0	3.6	4.9	7.0	9.1	12	15	23	27	32
90G09	4.0	4.8	6.5	9.4	12	17	20	31	36	43
90G11	5.0	6.0	8.1	11	15	21	25	39	46	54
90G13	6.1	7.2	9.8	14	18	25	30	47	55	65
90G15	7.1	8.4	11	16	21	30	35	55	64	76
100G										
100G13	6.7	7.9	10	15	20	29	34	54	62	75
100G15	7.8	9.2	12	18	23	33	40	63	73	87
100G17	8.9	10.6	14	20	26	38	45	72	83	100
100G19	10.0	11.9	16	23	30	43	51	81	94	112
100G21	11.2	13.2	17	25	33	48	57	90	104	125
100G23	12.3	14.5	19	28	36	53	63	99	115	137
100G25	13.4	15.9	21	31	40	58	68	108	125	150
100G27	14.5	17.2	23	33	43	62	74	117	135	162
100G29	15.7	18.5	25	36	46	67	80	127	146	175
100G31	16.8	19.9	26	38	50	72	85	136	156	187
100G33	17.9	21.2	28	41	53	77	91	145	167	200
100G39	20.1	23.7	30	45	60	87	102	162	186	225
100G45	23.4	27.6	36	54	69	99	120	189	219	261
100G51	26.7	31.8	42	60	78	114	135	216	249	300
100G57	30.0	35.7	48	69	90	129	153	243	282	336
100G63	33.6	39.6	51	75	99	144	171	270	312	375
100G69	36.9	43.5	57	84	108	159	189	297	345	411
100G75	40.2	47.7	63	93	120	174	204	324	375	450
100G81	43.5	51.6	69	99	129	186	222	351	405	486
100G87	47.1	55.5	75	108	138	201	240	381	438	525
100G93	50.4	59.7	78	114	150	216	255	408	468	561
100G99	53.7	63.6	84	123	159	231	273	435	501	600

Absolyte AGP 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
50G										
50G05	1.2	1.4	1.9	2.8	3.6	5.1	6.0	9.2	10	12
50G07	1.8	2.1	2.9	4.2	5.4	7.7	9.0	13	16	19
50G09	2.4	2.8	3.9	5.6	7.2	10	12	18	21	25
50G11	3.1	3.6	4.9	7.0	9.1	13	15	23	26	31
50G13	3.6	4.3	5.8	8.4	10	15	18	27	32	38
50G15	4.3	5.1	6.8	10	13	18	21	32	37	44
50G19	5.5	6.5	8.8	13	16	23	27	42	48	57
50G27	8.0	9.4	13	18	24	34	39	60	69	82
90G										
90G07	3.0	3.5	4.8	6.9	9.0	12	14	23	27	32
90G09	4.0	4.7	6.4	9.3	12	17	19	31	36	43
90G11	5.0	5.9	8.0	11	15	21	24	39	45	53
90G13	6.0	7.1	9.7	13	18	25	29	46	54	64
90G15	7.0	8.3	11	16	21	29	34	54	63	75
100G										
100G13	6.6	7.8	10	15	19	28	33	53	62	73
100G15	7.7	9.1	12	17	23	33	39	62	72	85
100G17	8.8	10.4	14	20	26	38	45	71	82	97
100G19	9.9	11.8	15	22	29	42	50	80	93	110
100G21	11.1	13.1	17	25	32	47	56	89	103	122
100G23	12.2	14.4	19	28	36	52	62	98	113	134
100G25	13.3	15.7	21	30	39	57	67	107	124	146
100G27	14.4	17.0	22	33	42	61	73	116	134	159
100G29	15.5	18.3	24	35	46	66	78	125	144	171
100G31	16.6	19.6	26	38	49	71	84	134	155	183
100G33	17.7	20.9	28	40	52	76	90	143	165	195
100G39	19.8	23.4	30	45	57	84	99	159	186	219
100G45	23.1	27.3	36	51	69	99	117	186	216	255
100G51	26.4	31.2	42	60	78	114	135	213	246	291
100G57	29.7	35.4	45	66	87	126	150	240	279	330
100G63	33.3	39.3	51	75	96	141	168	267	309	366
100G69	36.6	43.2	57	84	108	156	186	294	339	402
100G75	39.9	47.1	63	90	117	171	201	321	372	438
100G81	43.2	51.0	66	99	126	183	219	348	402	477
100G87	46.5	54.9	72	105	138	198	234	375	432	513
100G93	49.8	58.8	78	114	147	213	252	402	465	549
100G99	53.1	62.7	84	120	156	228	270	429	495	585

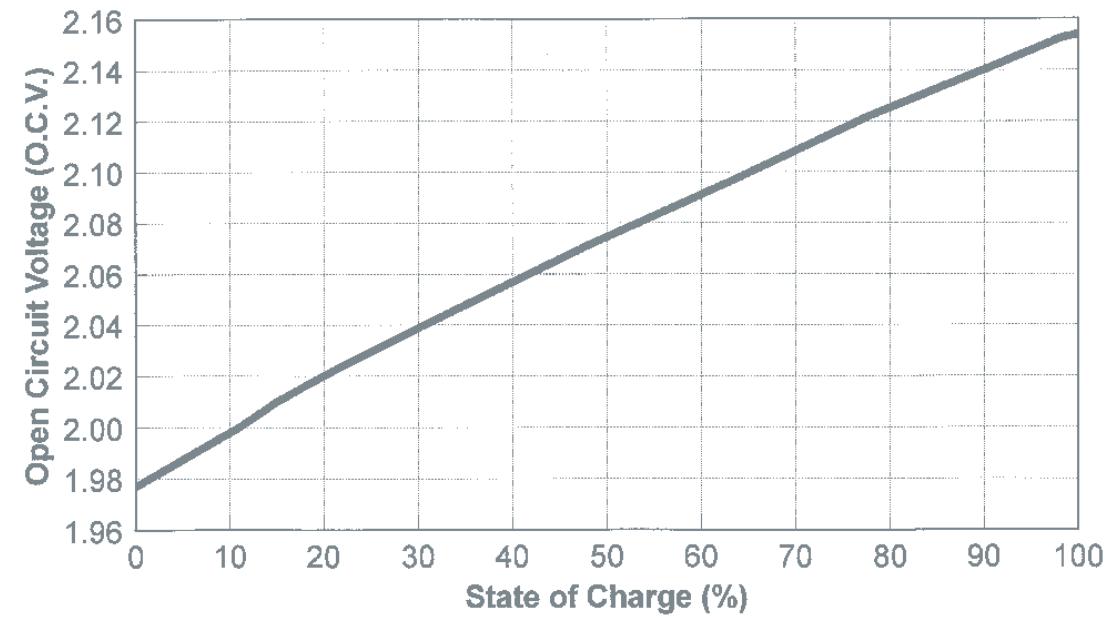
Absolyte AGP Performance Characteristics – Constant Current

Amperes to 1.90 Volts Per Cell @ 25°C (77°F)

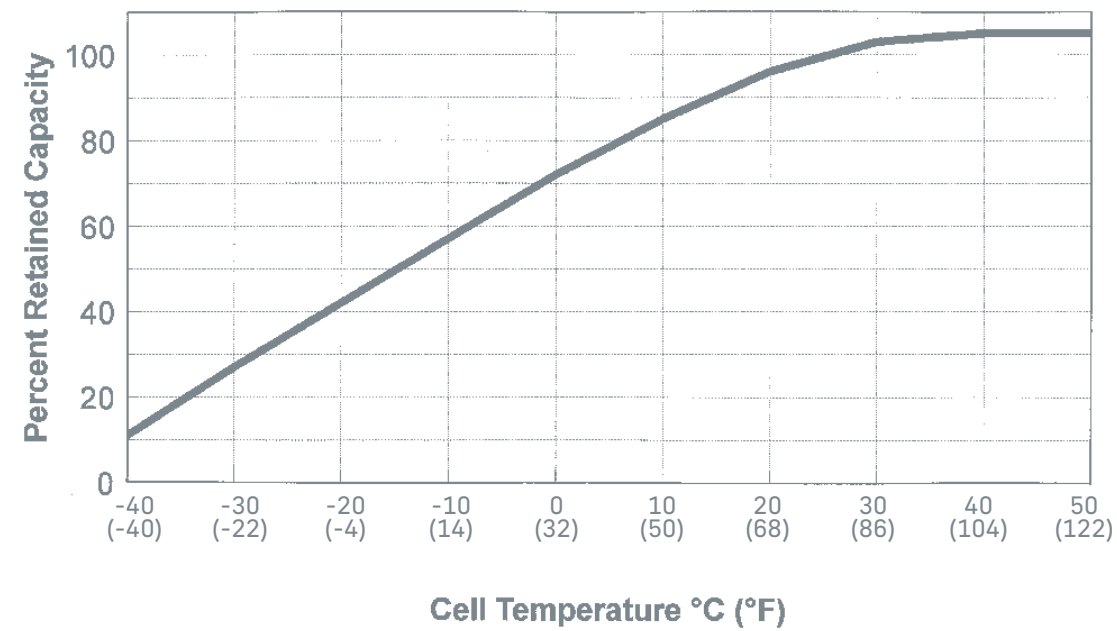
CELL TYPE	HOURS									
	120	100	72	48	36	24	20	12	10	8
50G										
50G05	1.1	1.3	1.7	2.4	3.1	4.5	5.3	8.3	9	11
50G07	1.6	1.9	2.6	3.7	4.8	6.8	8.0	12	14	16
50G09	2.2	2.6	3.4	4.9	6.3	9.1	10	16	18	22
50G11	2.8	3.3	4.4	6.2	8.0	11	13	21	23	28
50G13	3.3	3.9	5.2	7.4	9.6	13	16	25	28	33
50G15	3.9	4.6	6.1	9	11	16	19	29	33	39
50G19	5.0	5.9	7.8	11	14	21	24	38	42	50
50G27	7.3	8.5	11	16	21	30	35	55	61	73
90G										
90G07	2.8	3.2	4.3	6.2	8.0	11	13	21	24	28
90G09	3.7	4.3	5.8	8.3	10	15	18	28	32	38
90G11	4.6	5.4	7.3	10	13	19	22	35	40	47
90G13	5.6	6.5	8.7	12	16	23	27	42	48	57
90G15	6.5	7.6	10	14	18	27	31	49	56	67
100G										
100G13	5.9	7.0	9.4	13	17	25	30	47	54	63
100G15	6.9	8.1	11	15	20	29	35	55	63	74
100G17	7.9	9.3	12	18	23	33	40	63	72	85
100G19	8.9	10.5	14	20	26	38	45	71	81	95
100G21	9.9	11.6	15	22	29	42	50	79	90	106
100G23	10.9	12.8	17	24	32	46	55	87	99	117
100G25	11.9	14.0	18	27	35	50	60	95	108	127
100G27	12.8	15.1	20	29	38	55	65	103	117	138
100G29	13.8	16.3	22	31	41	59	70	110	126	149
100G31	14.8	17.5	23	34	44	63	75	118	135	159
100G33	15.8	18.7	25	36	47	67	80	126	144	170
100G39	17.7	21.0	28	39	51	75	90	141	162	189
100G45	20.7	24.3	33	45	60	87	105	165	189	222
100G51	23.7	27.9	36	54	69	99	120	189	216	255
100G57	26.7	31.5	42	60	78	114	135	213	243	285
100G63	29.7	34.8	45	66	87	126	150	237	270	318
100G69	32.7	38.4	51	72	96	138	165	261	297	351
100G75	35.7	42.0	54	81	105	150	180	285	324	381
100G81	38.4	45.3	60	87	114	165	195	309	351	414
100G87	41.4	48.9	66	93	123	177	210	330	378	447
100G93	44.4	52.5	69	102	132	189	225	354	405	477
100G99	47.7	56.1	75	108	141	201	240	378	432	510

Absolyte AGP Performance Characteristics

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

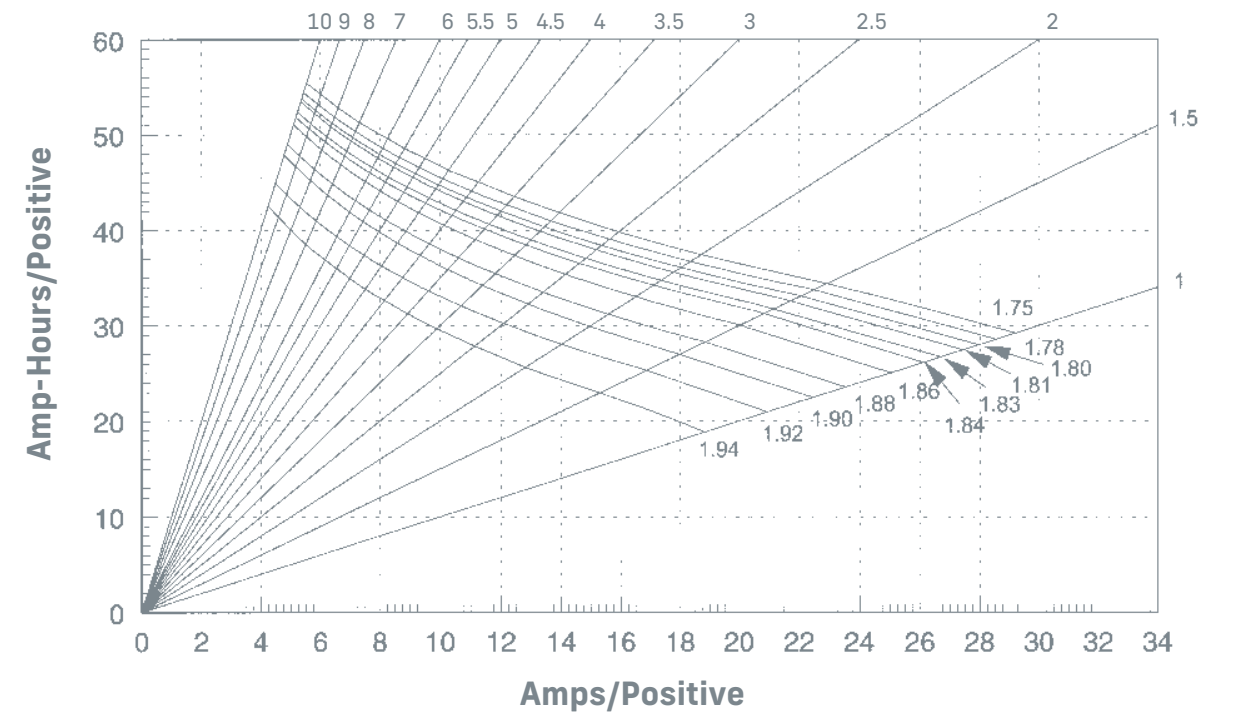


Capacity Retention vs. Temperature

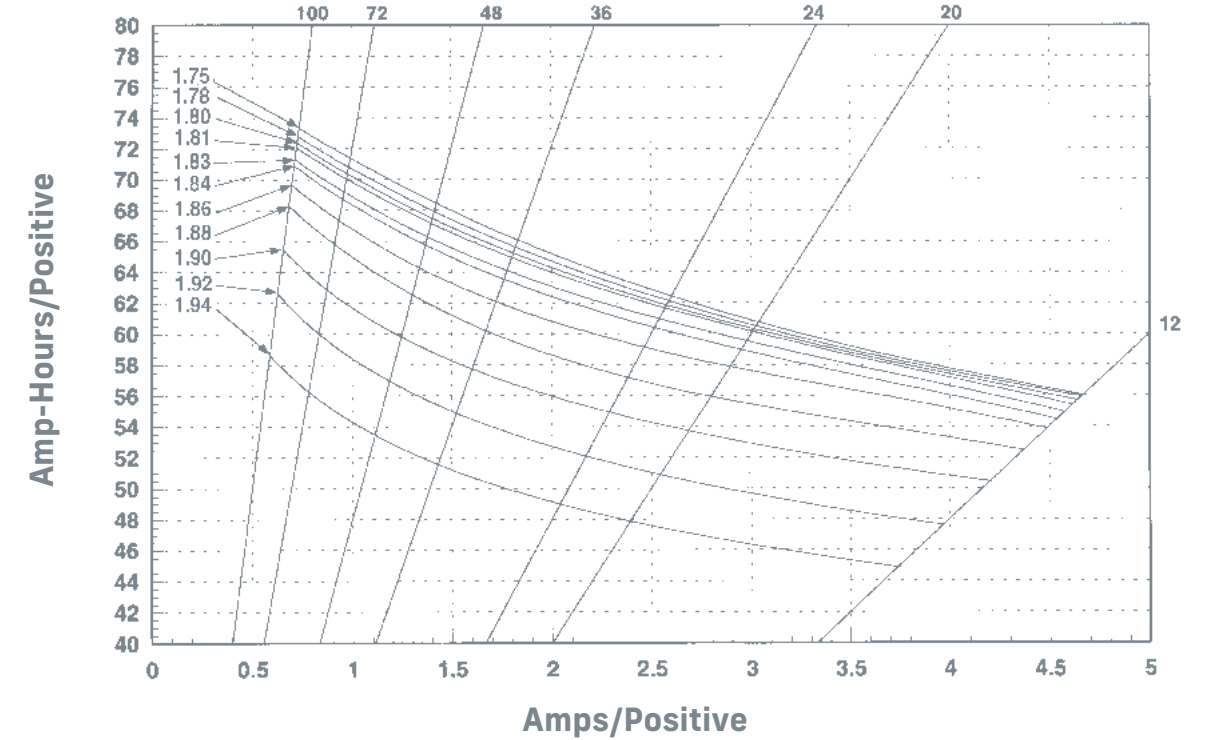


Absolyte AGP Performance Curves @ 25°C (77°F)

50G Series 1 to 10 Hours



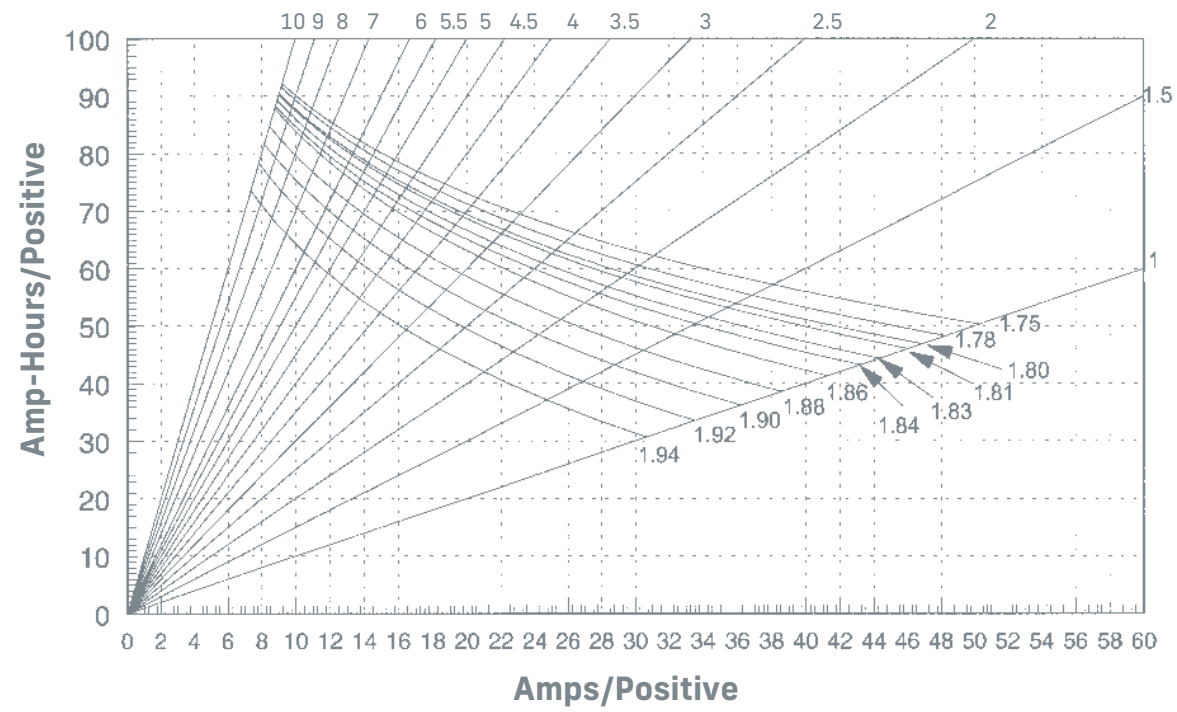
50G Series 12 to 100 Hours



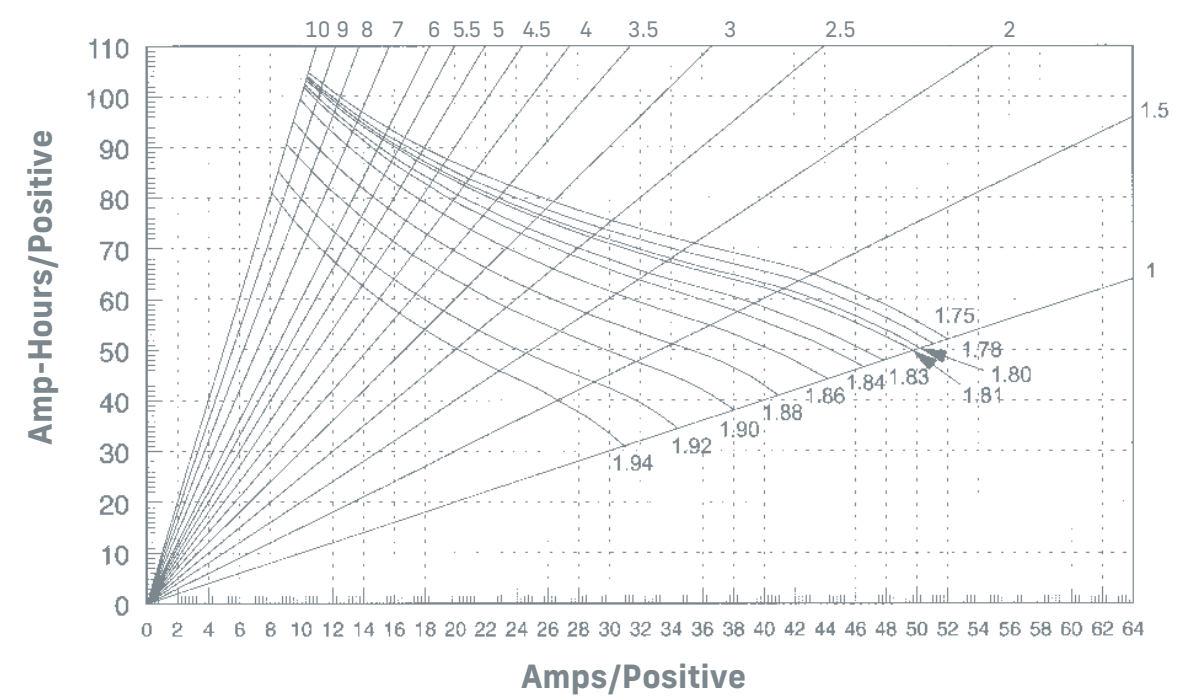
Absolyte AGP Performance Curves @ 25°C (77°F)

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

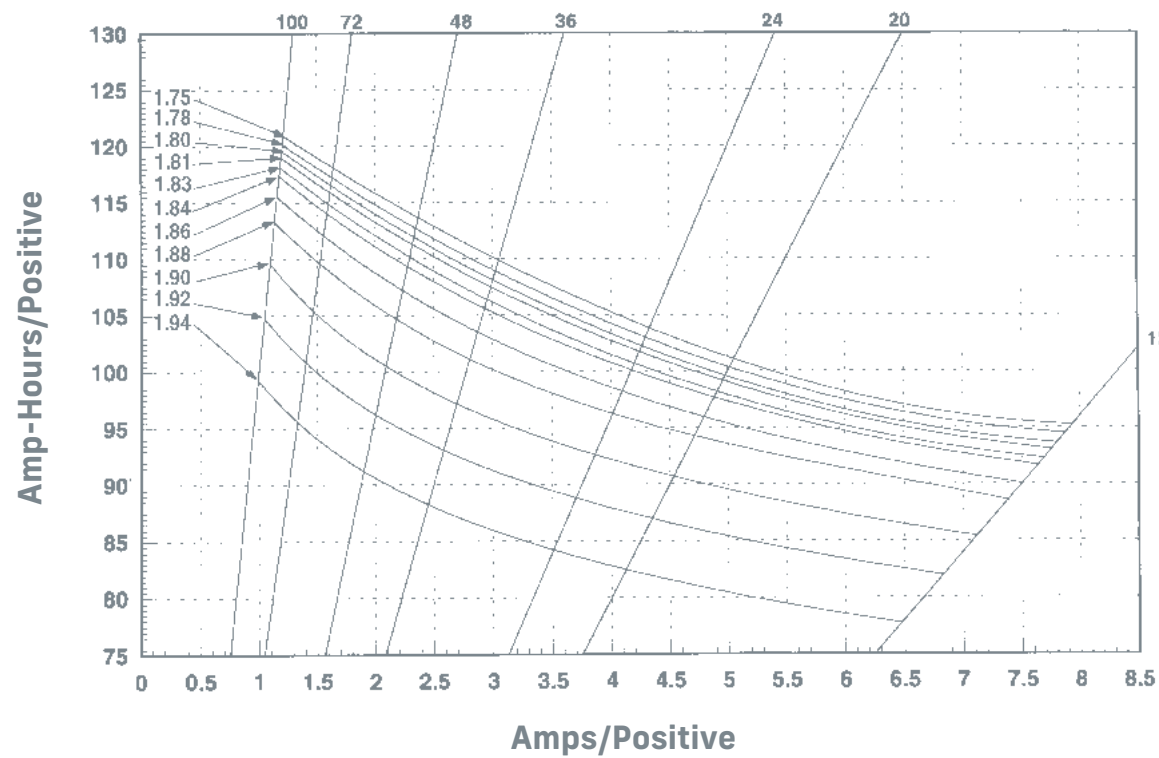
90G Series 1 to 10 Hours



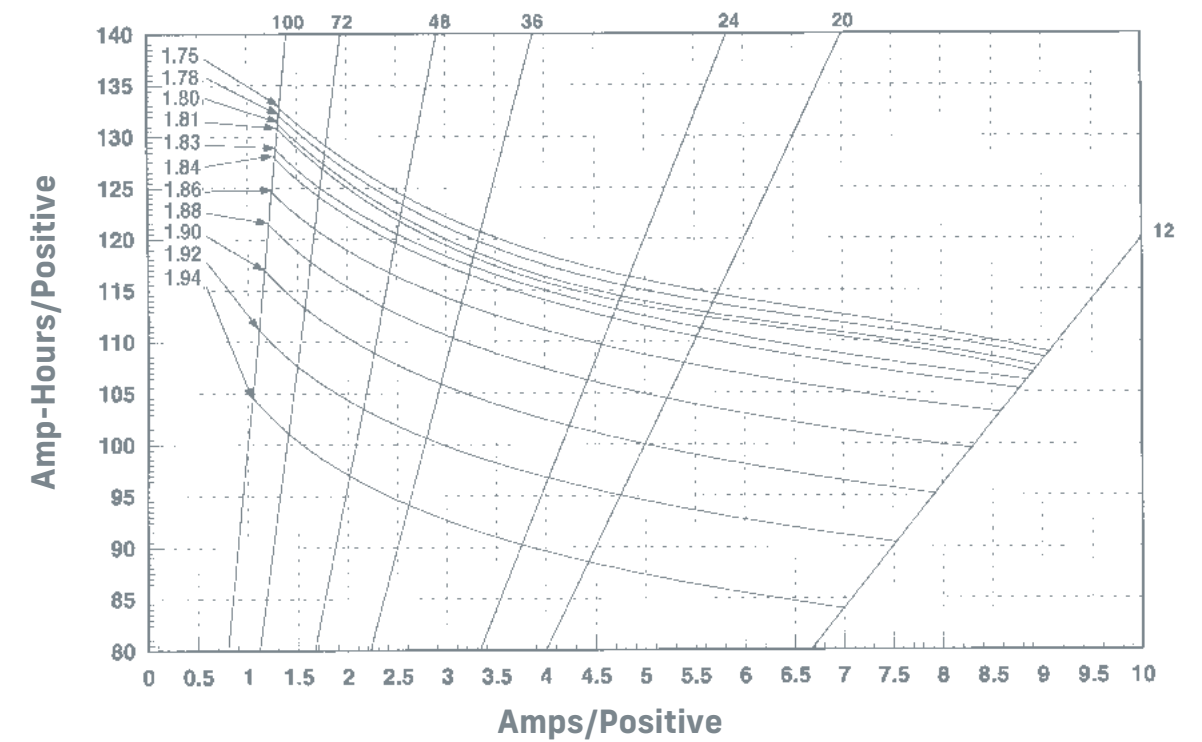
100G Series 1 to 10 Hours



90G Series 12 to 100 Hours



100G Series 12 to 100 Hours



1997 UBC Ground Level Zone					
Series	Height	1	2B	3	4
100G	10 high	100G33	100G33	100G31	100G17
	9 high	100G33	100G33	100G33	100G23
	8 high	100G33	100G33	100G33	100G33
90G	10 high	90G15	90G15	90G15	90G09
	9 high	90G15	90G15	90G15	90G11
	8 high	90G15	90G15	90G15	90G15
50G	10 high	50G09	50G09	50G09	50G09
	9 high	50G11	50G11	50G11	50G11
	8 high	50G15	50G15	50G15	50G15

IEEE 693-2005 Certification Level			
Series	Height	High	Moderate
100G	10 high		
	8 high		X
	5 high		X
90G	10 high		
	8 high		X
	5 high	X	
50G	10 high		
	8 high		X
	5 high	X	

IBC 2018 Certification			
Series	Height	S _{DS} at/below grade	S _{DS} above grade
100G*	10 high		
	8 high	0.81	0.51
	5 high	0.81	0.51
90G	10 high		
	8 high	0.81	0.51
	5 high	2.50	1.56
50G	10 high		
	8 high	0.81	0.51
	5 high	2.50	1.56

*For higher SDS design, contact Stryten Energy

The Energy to Challenge

Stryten Energy helps solve the world's most pressing energy challenges with a broad range of energy storage solutions and components across the Essential Power, Motive Power, Transportation, Military and Government sectors. Headquartered in Alpharetta, Georgia, we partner with some of the world's most recognized companies to meet the growing demand for reliable and sustainable energy storage capacity. Stryten powers everything from submarines to subcompacts, microgrids, warehouses, distribution centers, cars, trains and trucks. Our stored energy technologies include advanced lead, lithium and vanadium redox flow batteries, intelligent chargers and energy performance management software that keep people on the move and supply chains running.

Learn more at www.stryten.com