POWER-PLUS

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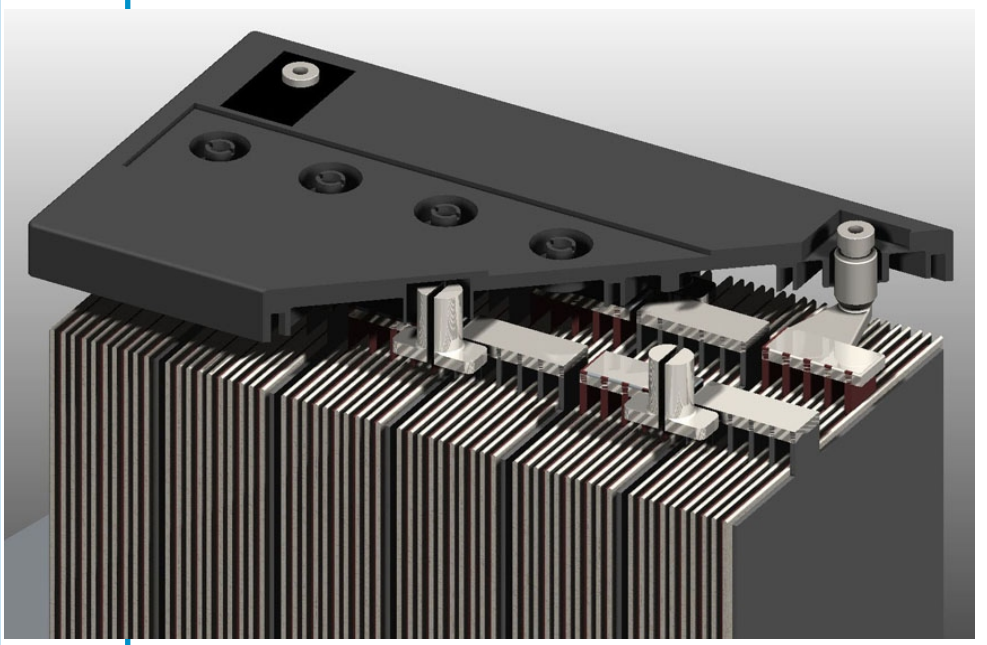
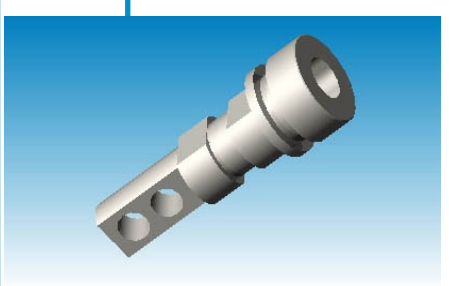
Sealed Lead Acid 6 & 12 Volt
Monobloc
AGM Range

CONSTRUCTION - AGM battery construction is as shown in the diagram below. The positive and negative grids are cast from a calcium / tin lead alloy to reduce grid growth and corrosion. The active material is manufactured from high purity lead (99.9999%) to minimise the negative effects of impurities.
Separator is a mat of random woven acid resistant glass fibres, which acts as a sponge - soaking up and immobilising the electrolyte whilst maintaining good acid to plate contact and availability during discharge. "S wrapping" is employed to eliminate the risk of short circuits due to mossing and debris at the bottom of the cell.
The purpose of the separator is to maintain a constant distance between the positive and negative plates, thus removing the possibility of short circuits whilst allowing the active material to fully react with the electrolyte. The random weaving also results in an open structure, which offers minimal resistance to the flow of electrolyte during filling.



AGM construction with case removed and cover cut away to show internal battery parts.

ELECTROLYTE FILLING -Special production and QC systems are utilised to ensure the electrolyte saturation is optimised for each battery. The battery design and construction negates the need for electrolyte addition and the battery remains maintenance free throughout its design life.



SAFETY RELEASE VALVE- The battery will operate above atmospheric pressure under normal operating conditions, however the maximum pressure is governed by the safety release valve. Open is activated by pressures in excess of approx. 2 psi (14 Kpa), resealing at approx 1.2 psi (8.4 Kpa).

GAS RECOMBINATION - The gasses generated during normal operation of the battery are internally recombined. In fact more than 99% of the gas achieves recombination.

TERMINAL CONSTRUCTION - The contact quality between the insert terminal and the lead post is of vital importance during short duration / high Amp discharges. Elevated terminal temperatures are the result of poor contact, eventually causing seal degradation and electrolyte leaks. Power Plus design and assembly technique for terminal casting ensures trouble free operation for the design life of the battery.

AGM Vs Gel

Each battery has advantages and disadvantages, it is therefore important to choose the right battery for the application.

Advantages of AGM Batteries:

- Lower initial cost when compared to Gelled Electrolyte cells.
- Ideal for starting and stationary applications.
- Superior performancefor shorter duration / higher current discharges.
- Smaller size battery can be used for higher rate discharges.

Applications

- Float service
- Uninterruptible Power Supplies
- Medical
- Telecommunications
- Switch Gear
- Photovoltaic
- Solar
- Wind
- Control Systems
- Cellular Radio Stations
- Cathodic Protection
- Navigation Aids
- Marine equipment
- Electric Power Systems

	Capacity temperature correction Factor to be applied to Data at 20 Degrees C								
Discharge Time	0 °C	5 °C	10 °C	15 °C	20 °C	25 °C	30 °C	35 °C	40 °C
5 minutes to 59 minutes	0.8	0.86	0.91	0.96	1	1.037	1.063	1.085	1.1
1 Hour to 100 Hours	0.86	0.9	0.93	0.97	1	1.028	1.05	1.063	1.07

CHEMICAL REACTION- The chemical reaction for the Discharge / Recharge process is represented by the following formula:

PbO_2	+	$2H_2SO_4$	+	Pb	Discharging ⇌ Charging	$PbSO_4$	+	$2H_2O$
Lead Dioxide		Sulfuric Acid		Sponge Lead		Lead Sulphate Pos & Neg Plates		Water

Under normal float charge conditions the oxygen passes through the separator from the positive to the negative plate where it reacts with the negative active material to form lead oxide.

$$2Pb + O_2 \longrightarrow 2PbO$$

In the acid conditions the lead oxide reacts with the sulfuric acid to form lead sulphate.

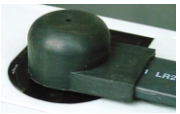
$$2PbO + 2H_2SO_4 \longrightarrow 2PbSO_4 + 2H_2O$$

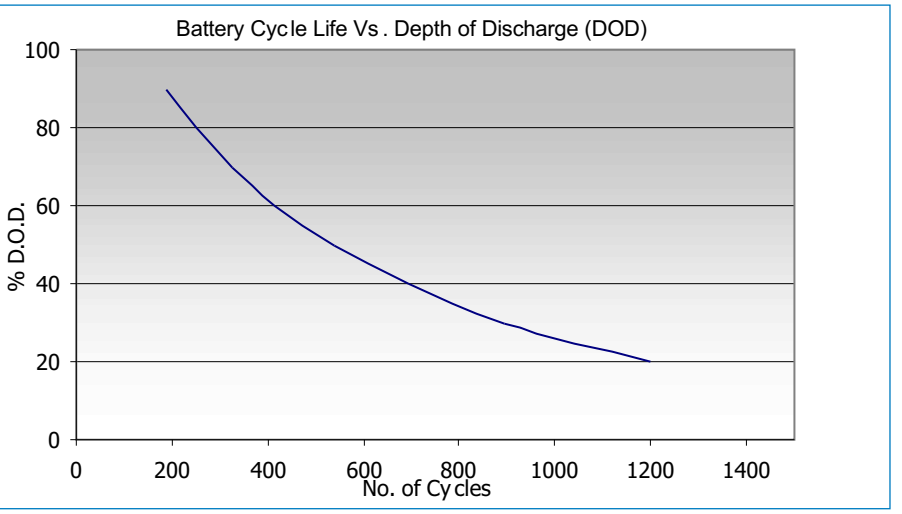
The lead suphate formed on the negative is then reduced to lead and sulfuric acid by the evolving hydrogen.

$$2PbSO_4 + 2H_2 \longrightarrow 2Pb + 2H_2SO_4$$

If the equations are resolved and like terms cancelled out on both sides of the equation the result is:

$$2H_2 + O_2 \longrightarrow 2H_2O$$





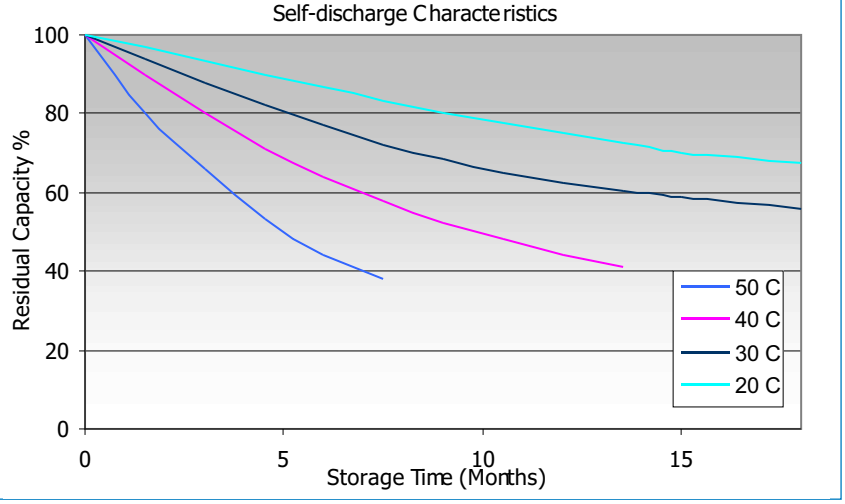
Innovative Features

- Completely maintenance free, sealed construction eliminates the need for watering
- Increased durability and deep cycle ability for heavy demand applications
- Fully tank formed plates
- Analytical Grade electrolyte
- Spill proof / leak proof
- Valve regulated Max internal pressure 2.5 psi
- Multi-position usage
- ABS Case and cover - V0 on request
- Low self discharge
- FAA and IATA approved as non-hazardous
- Built to comply with IEC 896-2, DIN 43534, BS 6290 Pt4, Eurobat.

Specifications

Nominal Voltage	6 & 12 Volts
Design Life	12 Years @ 20 ˚C
Operating Temperature	-10 ˚C to 45 ˚C
Grid alloy	Calcium / Tin lead alloy
Plates	Flat Pasted
Separator	Absorbant Glass Mat
Active material	Very high purity lead
Case and cover	ABS (VO on request)
Charge Voltage	Float 2.27 - 2.30 VPC @25 ˚C Cycliing 2.35 @25 ˚C
	Max. 2.4 VPC Max ripple 0.05C (A)
Electrolyte	Sulphuric acid Analytical grade purity
Venting Valve	EPDM Rubber 1.5 to 2 psi (10.5 - 14 KPa) release pressure. Resealing at 1 psi (7 KPa)
Terminal	Various types Epoxy sealed by extended mechanical paths
Torque setting	The recommended torque value for all types is 5-7 Nm
Cables	Insulated cables / connectors supplied on request.

Power Plus keenly encourages environmental awareness; PLEASE follow guidelines for the recycling /disposal of lead.



QUALITY ASSURED FIRM ISO 9001 SGS

UKAS QUALITY MANAGEMENT 005

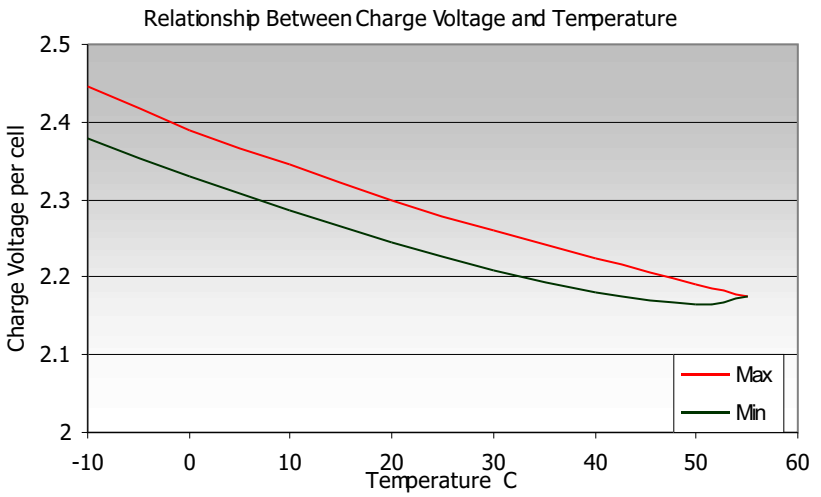
CE

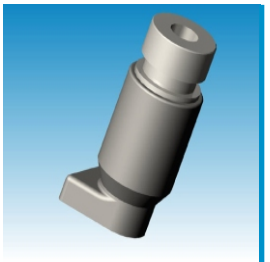
ETS Germany EMC tested

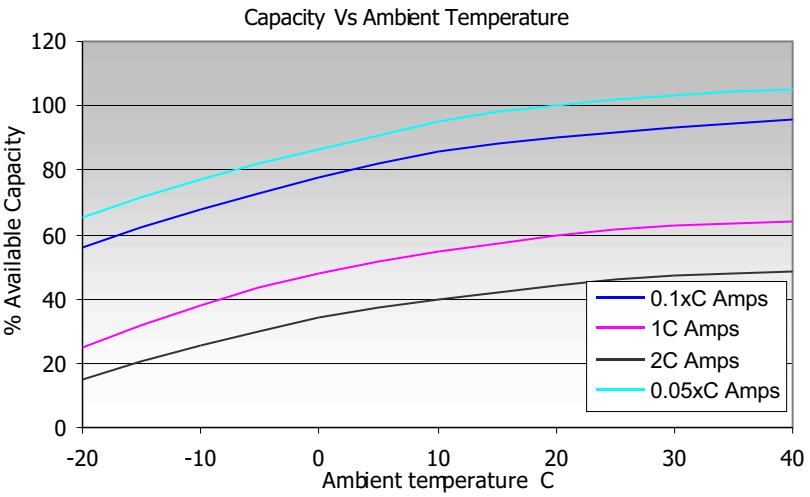
LEAD RETURN RECYCLE

®

Pb







CHARGING CHARACTERISTICS

Floating - The optimum float voltage for a battery is temperature dependant, at 15 - 24°C the recommended value is 2.27 - 2.30V. It is recommended that battery installation sites are temperature controlled, however float voltage can be increased or decreased to compensate for temperature variations. Adjustment is calculated at +/- 3 mV per degree C.

Operating Temperature	Recommended Applied Float Voltage VPC
0-9	2.33 - 2.35
10-14	2.30 - 2.33
15-19	2.27 - 2.30
20-24	2.27 - 2.30
25-29	2.25 - 2.27
30-34	2.23 - 2.25
35-40	2.21 - 2.23

The most suitable charging method for battery life and performance is the constant voltage method with a limited initial current, usually limited to a maximum of $C_{20}/4$.

Terminal Options (left to right)

- Lead Flag
- Automotive
- J Type
- Copper Flag
- J Type Adapter
- Insert

Insert are made from brass with copper, nickel and silver plating giving excellent mechanical, electrical and corrosion resistant properties.






Amps & Ampere Hour Data

Battery Model	Time in Minutes - Amps to **1.85 VPC**											
	5	10	15	20	25	30	35	40	45	50	60	90
PB12-15T	46.0	33.8	27.3	23.3	19.9	17.4	15.5	14.0	12.7	11.6	10.1	7.6
PB12-18	46.3	34.4	28.1	23.6	20.4	17.9	15.8	14.2	12.8	11.8	10.2	7.7
PB12-26	71.1	58.4	47.1	39.7	34.8	31.2	27.5	24.3	21.8	19.8	16.6	11.5
PB12-28	73.2	60.1	48.5	40.8	35.9	32.1	28.3	25.1	22.5	20.3	17.1	11.8
PB12-33	95.8	72.8	57.1	46.7	40.3	35.6	31.5	28.5	25.9	23.8	20.3	14.2
PB12-44	118	94	75.5	62.4	53.2	46.3	41.3	37.2	34.0	31.4	27.1	19.0
PB12-55	142	114	92	74.7	62.4	54.3	48.7	44.3	40.9	38.1	33.2	23.6
PB12-70J	164	132	109	93.3	80.2	71.2	64.0	58.7	54.4	51.3	45.0	31.4
PB12-70	168	134	111	95.2	81.8	72.6	65.3	59.9	55.6	52.3	45.9	32.0
PB12-80	184	142	116	100	88.3	77.9	71.2	66.2	61.3	58.1	50.9	36.5
PB12-90	206	161	133	114	99.2	89.1	80.2	73.1	67.2	62.4	55.4	40.1
PB12-100	227	182	151	129	111	102	91.7	82.7	76.0	70.2	61.3	43.5
PB12-110	248	201	166	142	124	112	99.4	89.9	81.3	74.6	64.6	47.5
PB12-120	265	217	182	155	138	123	110	102	92.2	84.8	75.2	54.3
PB12-135	278	238	204	180	161	145	132	120	111	102	89.7	63.9
PB12-150	284	246	210	186	166	152	137	126	115	106	93.3	68.0
PB12-160	292	254	222	196	180	163	147	135	125	116	104	75.3
PB12-200	325	284	246	217	196	181	168	156	144	135	119	85.6
PB12-230	359	310	265	238	218	202	186	175	161	153	139	100
PB6-110	252	205	169	145	127	114	101	92	82.9	76.1	65.9	48.4
PB6-160	304	264	231	204	187	169	153	140	130	120	108	78.3
PB6-200	325	284	246	217	196	181	168	156	144	135	119	85.6

Battery Model	Time in Hours				
	2	3	4	5	6
PB12-15T	6.0	4.2	3.3	2.8	2.3
PB12-18	6.1	4.4	3.3	2.8	2.3
PB12-26	8.9	6.2	4.9	4.1	3.5
PB12-28	9.1	6.4	5.1	4.2	3.6
PB12-33	10.8	7.3	5.8	4.8	4.2
PB12-44	14.7	9.9	7.5	6.2	5.3
PB12-55	18.2	12.6	9.7	8.0	6.8
PB12-70J	23.8	16.1	12.3	10.0	8.5
PB12-70	24.3	16.4	12.5	10.2	8.7
PB12-80	27.9	18.8	14.5	12.0	10.2
PB12-90	31.3	21.7	16.6	13.5	11.5
PB12-100	33.7	23.4	18.1	14.9	12.7
PB12-110	37.1	25.6	19.6	16.0	13.9
PB12-120	42.0	29.1	22.0	17.9	15.3
PB12-135	48.9	32.8	24.7	20.2	17.0
PB12-150	52.2	35.4	27.2	22.3	19.1
PB12-160	58.8	40.4	31.2	25.6	21.8
PB12-200	67.0	47.1	36.7	30.0	25.6
PB12-230	78.6	54.5	42.2	34.8	30.0
PB6-110	37.8	26.1	20.0	16.3	14.2
PB6-160	61.2	42.0	32.4	26.6	22.7
PB6-200	67.0	47.1	36.7	30.0	25.6

Battery Model	Time in Minutes - Amps to **1.80 VPC**											
	5	10	15	20	25	30	35	40	45	50	60	90
PB12-15T	51.9	36.6	29.1	24.5	20.8	18.3	16.1	14.4	13.1	12.0	10.3	7.8
PB12-18	52.2	36.9	30.0	25.2	21.3	18.5	16.2	14.5	13.1	12.0	10.5	7.9
PB12-26	82.8	63.8	51.9	43.3	36.7	32.7	28.6	25.3	22.6	20.4	17.1	11.7
PB12-28	85.3	65.8	53.4	44.6	37.8	33.6	29.4	26.1	23.3	21.0	17.6	12.1
PB12-33	107	79.3	59.8	49.8	42.1	36.8	32.8	29.3	26.7	24.5	21.0	14.5
PB12-44	128	105	83.0	67.3	57.1	49.2	43.6	38.9	35.2	32.4	28.0	19.5
PB12-55	157	132	104	81.2	67.2	57.8	51.6	46.6	43.0	39.4	34.4	24.0
PB12-70J	183	151	122	100	84.4	74.5	66.7	60.7	56.9	53.2	45.4	31.5
PB12-70	187	154	124	102	86.1	76.0	68.1	62.0	58.1	54.3	46.3	32.1
PB12-80	195	162	134	113	95.8	84.5	77.1	70.5	65.7	60.7	53.2	37.1
PB12-90	236	198	160	134	112	97.5	85.9	77.6	71.1	65.5	57.2	41.1
PB12-100	276	219	171	142	123	108	96.0	86.1	78.9	72.9	63.5	44.6
PB12-110	311	242	191	158	137	120	105	95.4	86.9	79.4	68.2	48.5
PB12-120	329	260	207	173	149	131	117	106	97.9	90.0	78.0	55.7
PB12-135	350	276	234	203	178	158	145	132	121	111	95.3	65.7
PB12-150	356	284	240	207	184	164	149	136	124	114	99.4	69.4
PB12-160	395	318	259	225	198	179	164	150	139	127	111	77.9
PB12-200	408	335	277	246	218	200	184	172	159	151	134	93.9
PB12-230	430	351	293	265	237	217	199	183	172	162	144	103
PB6-110	317	247	194	161	140	123	108	97.3	88.6	81.0	69.6	49.5
PB6-160	403	324	269	234	206	186	171	156	144	132	115	81.1
PB6-200	408	335	277	246	218	200	184	172	159	151	134	93.9

Battery Model	Time in Hours				
	2	3	4	5	6
PB12-15T	6.2	4.4	3.4	2.8	2.4
PB12-18	6.3	4.4	3.4	2.8	2.4
PB12-26	9.1	6.4	5.0	4.2	3.6
PB12-28	9.3	6.6	5.2	4.3	3.7
PB12-33	11.1	7.6	6.0	5.0	4.3
PB12-44	15.2	10.2	7.8	6.4	5.4
PB12-55	18.5	12.9	10.0	8.2	7.1
PB12-70J	24.1	16.5	12.5	10.2	8.7
PB12-70	24.6	16.8	12.8	10.4	8.9
PB12-80	28.3	19.1	14.8	12.1	10.4
PB12-90	31.9	22.1	16.9	13.8	11.7
PB12-100	34.5	23.9	18.4	15.1	13.0
PB12-110	37.9	26.1	20.1	16.6	14.4
PB12-120	43.3	29.7	22.6	18.4	15.7
PB12-135	50.2	34.0	25.7	20.8	17.6
PB12-150	53.5	36.2	27.8	22.8	19.6
PB12-160	60.8	41.3	31.7	26.1	22.6
PB12-200	72.0	49.8	38.7	31.2	26.5
PB12-230	80.0	55.2	42.9	35.6	30.7
PB6-110	38.6	26.6	20.5	16.9	14.7
PB6-160	63.2	43.0	33.0	27.1	23.5
PB6-200	72.0	49.8	38.7	31.2	26.5

Battery Model	Time in Minutes - Amps to **1.75 VPC**											
	5	10	15	20	25	30	35	40	45	50	60	90
PB12-15T	55.0	39.3	30.3	25.4	21.6	18.7	16.6	14.8	13.5	12.3	10.7	8.0
PB12-18	55.9	39.9	30.8	26.0	21.9	18.8	16.6	14.8	13.4	12.2	10.7	8.0
PB12-26	85.5	66.6	53.8	45.9	38.7	34.0	29.6	26.3	23.4	21.1	17.6	12.0
PB12-28	88.0	68.6	55.4	47.3	39.9	35.0	30.5	27.1	24.1	21.7	18.1	12.3
PB12-33	112	81.9	62.4	51.1	42.9	37.6	33.1	29.6	26.9	24.8	21.2	14.7
PB12-44	135	111	87.2	69.3	58.5	50.5	44.2	39.3	35.6	32.8	28.1	19.7
PB12-55	165	137	107	84.0	69.3	59.8	52.6	47.7	43.6	40.2	34.5	24.1
PB12-70J	195	163	131	106	89.7	77.6	69.2	63.2	58.3	54.2	46.2	32.0
PB12-70	199	166	134	108	91.5	79.2	70.6	64.5	59.4	55.3	47.1	32.7
PB12-80	208	176	147	123	104	90.5	80.8	73.5	68.5	63.7	54.8	37.6
PB12-90	251	206	167	139	116	100	87.7	79.4	73.0	67.2	58.4	41.3
PB12-100	294	236	182	151	128	110	98.4	88.2	80.5	74.4	64.0	44.9
PB12-110	321	259	202	167	142	123	108	97.4	88.3	80.6	69.0	48.9
PB12-120	339	276	215	179	154	135	119	108	100	91.6	78.9	56.0
PB12-135	376	306	249	214	184	163	148	136	124	114	96.6	66.3
PB12-150	389	310	259	225	197	175	156	142	129	118	101.7	70.1
PB12-160	423	340	275	238	209	187	170	156	143	131	113.3	79.3
PB12-200	444	366	306	268	237	213	194	179	167	156	137.9	94.7
PB12-230	458	377	313	279	250	226	206	188	177	166	146.7	104.9
PB6-110	328	264	206	170	145	125	110	99	90	82	70.4	49.9
PB6-160	432	354	280	248	217	194	177	162	149	137	117.8	82.5
PB6-200	444	366	306	268	237	213	194	179	167	156	137.9	94.7

Battery Model	Time in Hours				
	2	3	4	5	6
PB12-15T	6.4	4.5	3.5	2.9	2.4
PB12-18	6.3	4.5	3.5	2.9	2.4
PB12-26	9.2	6.5	5.2	4.3	3.6
PB12-28	9.5	6.7	5.3	4.4	3.8
PB12-33	11.2	7.7	6.0	5.0	4.3
PB12-44	15.3	10.3	7.9	6.4	5.5
PB12-55	18.6	13.0	10.1	8.3	7.1
PB12-70J	24.3	16.6	12.6	10.3	8.8
PB12-70	24.8	17.0	12.8	10.5	9.0
PB12-80	28.5	19.3	14.9	12.2	10.5
PB12-90	32.2	22.3	17.1	14.0	11.9
PB12-100	35.0	24.2	18.6	15.2	13.1
PB12-110	38.2	26.2	20.2	16.7	14.5
PB12-120	43.8	30.0	22.8	18.6	15.8
PB12-135	51.0	34.4	25.9	21.0	17.7
PB12-150	53.9	36.5	27.9	23.0	19.8
PB12-160	61.1	41.7	31.8	26.2	22.7
PB12-200	72.8	50.2	38.9	31.6	26.7
PB12-230	80.6	55.6	43.2	35.8	30.9
PB6-110	39.0	26.8	20.6	17.0	14.8
PB6-160	63.5	43.4	33.1	27.3	23.6
PB6-200	72.8	50.2	38.9	31.6	26.7

Battery Model	Time in Minutes - Amps to **1.70 VPC**											
	5	10	15	20	25	30	35	40	45	50	60	90
PB12-15T	57.7	40.6	31.3	26.0	21.9	19.0	16.9	15.2	13.8	12.6	11.0	8.1
PB12-18	58.9	41.4	32.0	26.5	22.3	19.2	16.9	15.1	13.7	12.6	11.0	8.2
PB12-26	88.6	67.8	55.9	47.2	39.6	34.7	30.2	26.8	23.8	21.6	18.1	12.3
PB12-28	91.2	69.8	57.6	48.6	40.8	35.7	31.1	27.6	24.6	22.2	18.6	12.7
PB12-33	114	83.4	63.4	52.5	44.0	38.5	33.6	30.1	27.2	25.0	21.5	14.8
PB12-44	141	114	89.1	71.2	59.3	51.0	44.6	39.7	36.2	33.3	28.7	20.0
PB12-55	175	142	109	85.9	70.2	60.4	53.2	48.2	44.5	41.0	35.5	24.7
PB12-70J	206	174	136	111	92.6	80.6	71.1	64.0	59.0	54.6	46.8	32.5
PB12-70	210	178	139	113	94.5	82.2	72.6	65.3	60.2	55.7	47.8	33.1
PB12-80	224	190	156	129	107	93.0	82.3	74.9	69.3	64.4	55.6	38.2
PB12-90	268	216	171	143	119	101.7	89.1	80.6	73.9	68.2	59.2	42.4
PB12-100	311	243	188	154	131	112	100	89.7	82.1	75.8	65.0	45.9
PB12-110	336	262	206	171	145	125	110	98.7	89.3	81.8	69.8	49.9
PB12-120	357	281	222	182	157	137	122	111	102	93	80.7	57.1
PB12-135	397	323	265	222	189	168	153	140	128	117	100	69.3
PB12-150	418	338	277	237	204	180	161	146	133	121	104	72.0
PB12-160	443	358	292	247	212	189	173	158	145	133	115	80.2
PB12-200	460	378	315	279	248	221	198	182	168	158	140	96.3
PB12-230	479	393	326	290	257	230	210	191	179	167	147	106
PB6-110	342	268	210	174	148	127	112	101	91.1	83.5	71.2	50.9
PB6-160	452	365	297	257	221	197	180	165	150	138	119	83.4
PB6-200	460	378	315	279	248	221	198	182	168	158	140	96.3

Battery Model	Time in Hours				
	2	3	4	5	6
PB12-15T	6.5	4.6	3.5	2.9	2.5
PB12-18	6.5	4.6	3.6	3.0	2.5
PB12-26	9.5	6.7	5.3	4.4	3.7
PB12-28	9.8	6.9	5.4	4.5	3.8
PB12-33	11.3	7.8	6.2	5.1	4.4
PB12-44	15.5	10.6	8.0	6.6	5.6
PB12-55	19.0	13.4	10.4	8.6	7.3
PB12-70J	24.6	16.8	12.8	10.5	9.0
PB12-70	25.2	17.1	13.1	10.7	9.2
PB12-80	29.0	19.7	15.1	12.4	10.7
PB12-90	33.2	23.0	17.7	14.4	12.3
PB12-100	35.9	24.5	18.9	15.6	13.5
PB12-110	39.0	27.0	20.8	17.1	14.9
PB12-120	44.2	30.3	23.2	19.0	16.3
PB12-135	52.8	35.3	26.7	21.6	18.2
PB12-150	55.2	37.2	28.8	23.7	20.3
PB12-160	62.0	42.6	33.2	27.2	23.4
PB12-200	73.7	50.9	39.2	32.1	27.3
PB12-230	81.8	56.4	44.1	36.5	31.5
PB6-110	39.8	27.6	21.3	17.5	15.2
PB6-160	64.5	44.3	34.5	28.3	24.3
PB6-200	73.7	50.9	39.2	32.1	27.3

Amps to **1.85 VPC**					
7	8	9	10	12	20
2.0	1.8	1.6	1.5	1.3	0.85
2.0	1.8	1.6	1.5	1.2	0.86
3.1	2.8	2.5	2.3	2.0	1.3
3.2	2.9	2.6	2.3	2.0	1.3
3.7	3.3	3.0	2.8	2.4	1.6
4.6	4.2	3.8	3.5	3.0	1.9
6.0	5.4	4.8	4.4	3.8	2.5
7.5	6.7	6.0	5.5	4.7	3.1
7.6	6.8	6.2	5.6	4.8	3.2
8.9	7.9	7.0	6.4	5.5	3.7
10.0	8.9	8.0	7.3	6.3	4.1
11.2	10.0	9.0	8.2	7.1	4.6
12.4	11.0	9.9	9.0	7.7	5.1
13.4	12.1	11.0	10.0	8.6	5.6
15.0	13.4	12.2	11.1	9.5	6.2
16.8	15.0	13.6	12.4	10.6	6.9
19.3	17.1	15.4	14.1	12.0	7.7
22.4	20.0	18.1	16.6	14.2	9.3
26.2	23.3	21.1	19.4	16.5	10.7
12.6	11.2	10.1	9.2	7.9	5.2
20.1	17.8	16.0	14.7	12.5	8.0
22.4	20.0	18.1	16.6	14.2	9.3

Battery Model	Time in Hours Ah to **1.85 VPC**										
	2	3	4	5	6	7	8	9	10	12	20
PB12-15T	12.1	12.7	13.3	13.8	14.0	14.2	14.5	14.7	14.9	15.5	17.0
PB12-18	12.2	13.1	13.4	13.8	13.9	14.2	14.4	14.6	14.9	15.0	17.2
PB12-26	17.7	18.7	19.7	20.4	21.1	21.8	22.2	22.5	22.8	23.4	26.0
PB12-28	18.2	19.3	20.3	21.0	21.7	22.4	22.9	23.2	23.5	24.1	26.7
PB12-33	21.6	22.0	23.0	24.0	24.9	25.8	26.7	27.1	27.6	28.8	32.0
PB12-44	29.3	29.8	30.0	30.8	31.5	32.2	33.3	34.2	34.9	35.9	38.9
PB12-55	36.4	37.7	38.9	40.0	41.0	42.2	43.1	43.6	44.3	45.5	50.9
PB12-70J	47.5	48.3	49.0	49.9	51.3	52.4	53.3	54.3	55.3	56.6	62.9
PB12-70	48.5	49.3	50.0	50.9	52.3	53.5	54.4	55.4	56.4	57.8	64.2
PB12-80	55.8	56.4	58.0	59.8	61.0	62.5	63.0	63.4	64.0	66.0	73.1
PB12-90	62.6	65.1	66.5	67.6	68.9	70.0	71.0	71.9	73.1	75.3	82.9
PB12-100	67.3	70.2	72.5	74.7	76.3	78.6	80.2	81.4	82.3	84.7	91.9
PB12-110	74.1	76.8	78.4	80.1	83.2	86.6	88.0	89.1	90.0	92.4	102
PB12-120	84.0	87.2	87.8	89.6	91.6	94.0	97.0	98.9	100	103	112
PB12-135	97.7	98.3	98.9	101	102	105	107	110	111	114	123
PB12-150	104	106	109	111	114	117	120	122	124	127	139
PB12-160	118	121	125	128	131	135	137	139	141	144	154
PB12-200	134	141	147	150	154	157	160	163	166	170	186
PB12-230	157	164	169	174	180	183	186	190	194	198	214
PB6-110	76	78	80	82	85	88	90	91	92	94	104
PB6-160	122	126	130	133	136	141	142	144	147	150	160
PB6-200	134	141	147	150	154	157	160	163	166	170	186

Amps to **1.80 VPC**					
7	8	9	10	12	20
2.1	1.9	1.7	1.5	1.3	0.87
2.1	1.9	1.7	1.5	1.3	0.88
3.2	2.9	2.6	2.3	2.0	1.3
3.3	2.9	2.7	2.4	2.0	1.4
3.8	3.5	3.1	2.8	2.5	1.6
4.7	4.3	3.9	3.6	3.1	2.0
6.2	5.5	5.0	4.6	3.9	2.6
7.6	6.8	6.1	5.6	4.8	3.2
7.8	6.9	6.2	5.7	4.9	3.3
9.1	8.1	7.3	6.6	5.7	3.8
10.3	9.2	8.3	7.6	6.5	4.3
11.5	10.3	9.3	8.5	7.3	4.8
12.7	11.3	10.2	9.3	8.0	5.3
13.9	12.5	11.4	10.4	8.9	5.8
15.4	13.9	12.6	11.5	9.8	6.4
17.2	15.4	14.1	12.8	10.9	7.2
19.9	17.8	16.0	14.6	12.4	8.0
22.9	20.7	18.8	17.2	14.7	9.6
27.0	24.1	21.8	20.0	17.1	11.1
13.0	11.5	10.4	9.5	8.1	5.4
20.7	18.5	16.6	15.2	12.9	8.3
22.9	20.7	18.8	17.2	14.7	9.6

Battery Model	Time in Hours Ah to **1.80 VPC**										
	2	3	4	5	6	7	8	9	10	12	20
PB12-15T	12.4	13.2	13.6	14.1	14.4	14.7	14.9	15.0	15.2	15.9	17.4
PB12-18	12.5	13.3	13.7	14.2	14.5	14.7	15.0	15.0	15.3	15.4	17.7
PB12-26	18.2	19.1	20.1	20.9	21.6	22.3	22.9	23.2	23.4	23.9	26.7
PB12-28	18.7	19.7	20.7	21.5	22.2	23.0	23.6	23.9	24.1	24.6	27.4
PB12-33	22.1	22.7	23.9	24.8	25.7	26.7	27.7	28.1	28.3	29.5	32.7
PB12-44	30.3	30.6	31.1	31.9	32.5	33.2	34.5	35.2	35.9	37.0	40.3
PB12-55	36.9	38.8	39.9	41.2	42.4	43.6	44.3	45.0	45.8	47.0	52.7
PB12-70J	48.1	49.4	50.0	51.2	52.3	53.4	54.1	54.9	56.0	57.8	64.1
PB12-70	49.1	50.4	51.0	52.2	53.4	54.5	55.2	56.0	57.2	59.0	65.4
PB12-80	56.6	57.4	59.0	60.7	62.2	64.0	64.5	65.3	65.9	68.3	75.7
PB12-90	63.7	66.4	67.7	69.2	70.3	72.0	73.4	74.7	75.7	78.1	86.1
PB12-100	69.0	71.8	73.6	75.5	78.2	80.5	82.4	84.0	85.1	87.7	95.4
PB12-110	75.7	78.3	80.2	82.8	86.2	89.1	90.3	92.0	93.1	95.5	106.2
PB12-120	86.5	89.0	90.4	92.0	94.0	97.1	100	102	104	107	116
PB12-135	100	102	103	104	106	108	111	114	115	118	128
PB12-150	107	109	111	114	118	121	123	127	128	130	144
PB12-160	122	124	127	131	136	139	142	144	146	149	159
PB12-200	144	149	155	156	159	161	165	169	172	177	193
PB12-230	160	166	172	178	184	189	193	196	200	205	222
PB6-110	77.2	79.9	81.8	84.5	87.9	90.9	92.1	93.8	94.9	97.4	108
PB6-160	126	129	132	136	141	145	148	149	152	155	166
PB6-200	144	149	155	156	159	161	165	169	172	177	193

Amps to **1.75 VPC**					
7	8	9	10	12	20
2.1	1.9	1.7	1.5	1.3	0.88
2.1	1.9	1.7	1.5	1.3	0.89
3.2	2.9	2.6	2.4	2.0	1.3
3.3	3.0	2.7	2.4	2.1	1.4
3.8	3.5	3.1	2.8	2.5	1.6
4.8	4.4	4.0	3.6	3.1	2.0
6.3	5.6	5.0	4.6	3.9	2.7
7.7	6.8	6.2	5.6	4.9	3.2
7.8	7.0	6.3	5.8	5.0	3.3
9.2	8.2	7.3	6.7	5.7	3.8
10.4	9.2	8.3	7.6	6.5	4.3
11.6	10.3	9.4	8.6	7.3	4.8
12.8	11.4	10.3	9.4	8.0	5.3
13.9	12.6	11.4	10.4	8.9	5.8
15.6	14.0	12.8	11.5	9.9	6.4
17.4	15.5	14.1	12.9	10.9	7.3
20.1	17.9	16.1	14.7	12.5	8.0
23.2	20.8	18.8	17.3	14.8	9.7
27.2	24.2	21.9	20.2	17.2	11.2
13.0	11.6	10.5	9.5	8.2	5.4
20.9	18.6	16.8	15.3	13.0	8.3
23.2	20.8	18.8	17.3	14.8	9.7

Battery Model	Time in Hours Ah to **1.75 VPC**										
	2	3	4	5	6	7	8	9	10	12	20
PB12-15T	12.7	13.4	13.8	14.3	14.6	14.8	15.1	15.3	15.4	16.0	17.6
PB12-18	12.6	13.5	13.9	14.3	14.6	14.8	15.1	15.2	15.4	15.5	17.8
PB12-26	18.4	19.6	20.6	21.3	21.9	22.6	23.1	23.4	23.6	24.1	26.7
PB12-28	19.0	20.2	21.2	21.9	22.5	23.3	23.8	24.1	24.3	24.9	27.4
PB12-33	22.3	23.0	24.0	25.0	25.8	26.8	27.8	28.2	28.5	29.7	32.8
PB12-44	30.5	31.0	31.5	32.2	32.9	33.8	34.9	35.6	36.3	37.3	40.6
PB12-55	37.2	39.1	40.5	41.6	42.6	43.8	44.7	45.2	46.1	47.3	53.0
PB12-70J	48.5	49.9	50.3	51.5	52.8	53.8	54.6	55.4	56.4	58.4	64.8
PB12-70	49.5	50.9	51.3	52.5	53.8	54.9	55.7	56.5	57.5	59.6	66.1
PB12-80	56.9	58.0	59.4	61.2	62.9	64.5	65.3	65.5	66.6	68.6	76.1
PB12-90	64.3	66.8	68.5	70.0	71.5	72.8	73.8	74.9	76.1	78.4	86.3
PB12-100	70.0	72.5	74.3	75.8	78.8	80.9	82.7	84.2	85.6	88.1	95.7
PB12-110	76.4	78.7	80.8	83.3	87.2	89.5	91.1	93.0	93.6	96.1	107
PB12-120	87.5	90.0	91.0	93.0	94.8	97.6	101	103	104	107	116
PB12-135	102	103	103	105	106	109	112	115	115	119	128
PB12-150	108	110	111	115	119	122	124	127	129	131	145
PB12-160	122	125	127	131	136	141	143	145	147	150	160
PB12-200	146	151	156	158	160	163	167	169	173	177	193
PB12-230	161	167	173	179	186	191	194	197	202	206	223
PB6-110	77.9	80.3	82.4	84.9	88.9	91.3	92.9	94.9	95.5	98.0	109
PB6-160	127	130	132	136	142	147	149	151	153	156	167
PB6-200	146	151	156	158	160	163	167	169	173	177	193

Amps to **1.70 VPC**					
7	8	9	10	12	20
2.2	1.9	1.7	1.6	1.4	0.9
2.2	1.9	1.7	1.6	1.3	0.9
3.3	2.9	2.6	2.4	2.0	1.4
3.4	3.0	2.7	2.5	2.1	1.4
3.9	3.6	3.2	2.9	2.5	1.7
5.0	4.5	4.1	3.7	3.2	2.1
6.4	5.7	5.2	4.7	4.1	2.7
7.9	7.0	6.3	5.8	5.0	3.3
8.0	7.1	6.4	5.9	5.1	3.4
9.3	8.3	7.5	6.9	5.9	3.9
10.7	9.5	8.5	7.8	6.7	4.4
11.8	10.6	9.6	8.8	7.6	4.9
13.2	11.7	10.6	9.6	8.2	5.5
14.3	12.9	11.7	10.8	9.2	6.0
16.0	14.3	13.0	11.9	10.2	6.6
17.8	16.0	14.5	13.2	11.3	7.4
20.6	18.4	16.5	15.0	12.9	8.2
23.8	21.3	19.3	17.8	15.2	10.0
27.8	24.8	22.4	20.6	17.7	11.5
13.5	11.9	10.8	9.8	8.4	5.6
21.5	19.2	17.2	15.6	13.4	8.6
23.8	21.3	19.3	17.8	15.2	10.0

Battery Model	Time in Hours Ah to **1.70 VPC**										
	2	3	4	5	6	7	8	9	10	12	20
PB12-15T	13.1	13.8	14.1	14.6	14.9	15.1	15.4	15.6	15.9	16.3	17.8
PB12-18	13.0	13.9	14.3	14.8	14.9	15.1	15.4	15.5	15.8	16.0	18.0
PB12-26	19.1	20.2	21.1	21.8	22.4	23.0	23.4	23.8	24.1	24.5	27.0
PB12-28	19.6	20.8	21.7	22.4	23.0	23.7	24.1	24.5	24.8	25.3	27.9
PB12-33	22.6	23.5	24.8	25.7	26.5	27.5	28.5	28.9	29.1	30.3	33.3
PB12-44	31.0	31.7	32.1	33.0	33.9	34.7	35.8	36.5	37.4	38.4	41.8
PB12-55	38.0	40.3	41.7	42.8	43.9	44.8	45.6	46.4	47.2	48.7	54.6
PB12-70J	49.3	50.4	51.2	52.4	53.9	55.0	55.9	56.5	58.1	59.8	66.3
PB12-70	50.3	51.4	52.2	53.5	55.0	56.1	57.0	57.7	59.2	61.1	67.7
PB12-80	58.0	59.0	60.3	62.0	64.0	65.4	66.5	67.2	68.6	70.7	78.4
PB12-90	66.4	69.0	70.7	71.8	73.6	74.6	75.6	76.8	78.4	80.7	88.9
PB12-100	71.8	73.6	75.8	78.1	80.8	82.9	84.8	86.3	88.2	90.8	98.6
PB12-110	78.0	81.1	83.4	85.7	89.4	92.4	93.7	95.1	96.4	99.0	109.8
PB12-120	88.3	91.0	92.6	95.1	97.6	100	103	106	108	111	120
PB12-135	106	106	107	108	109	112	114	117	119	122	132
PB12-150	110	112	115	118	122	125	128	130	132	135	149
PB12-160	124	128	133	136	140	145	147	149	150	154	165
PB12-200	147	153	157	161	164	167	170	174	178	183	199
PB12-230	164	169	176	182	189	195	199	202	206	213	230
PB6-110	80	83	85	87	91	94	96	97	98	101	112
PB6-160	129	133	138	142	146	150	153	155	156	160	172
PB6-200	147	153	157	161	164	167	170	174	178	183	199

Watts Per Cell Data

Battery Model	Time in Minutes - Watts per cell to **1.85 VPC**													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	85.7	63.2	51.2	43.9	37.5	32.9	29.5	26.7	24.2	22.3	19.3	14.6	11.7	8.3
PB12-18	86.2	64.2	52.7	44.4	38.4	33.8	30.0	27.0	24.5	22.5	19.6	14.9	11.8	8.5
PB12-26	132	109	88.2	74.6	65.7	59.0	52.1	46.3	41.6	37.8	31.9	22.1	17.2	12.2
PB12-28	136	112	90.9	76.9	67.6	60.8	53.7	47.7	42.9	38.9	32.8	22.8	17.7	12.5
PB12-33	178	136	107	87.9	76.0	67.4	59.8	54.2	49.4	45.5	38.9	27.4	20.9	14.3
PB12-44	220	176	142	117	100.3	87.7	78.5	70.8	64.9	60.0	52.0	36.7	28.4	19.4
PB12-55	265	214	172	141	118	102.8	92.4	84.3	78.1	72.9	63.6	45.5	35.3	24.5
PB12-70J	306	246	205	175	151	135	121	112	104	98.0	86.2	60.5	46.1	31.4
PB12-70	312	251	209	179	154	137	124	114	106	100	88.0	61.7	47.0	32.1
PB12-80	342	266	218	188	167	147	135	126	117	111	98	70.4	54.1	36.7
PB12-90	383	301	249	214	187	169	152	139	128	119	106	77.4	60.7	42.3
PB12-100	422	339	283	242	210	193	174	157	145	134	118	83.9	65.2	45.7
PB12-110	461	376	311	268	234	212	189	171	155	143	124	91.6	71.8	50.0
PB12-120	493	406	341	292	261	233	209	193	176	162	144	105	81.4	56.7
PB12-135	518	444	383	338	303	275	251	229	212	195	172	123	95	63.9
PB12-150	529	460	394	350	314	287	260	239	220	203	179	131	101	69.1
PB12-160	544	474	416	369	339	308	279	257	238	221	199	145	114	78.8
PB12-200	606	530	461	409	369	343	318	296	275	258	229	165	130	92
PB12-230	669	580	497	448	411	381	354	332	308	292	266	194	152	106
PB6-110	470	384	317	273	239	216	193	174	158	146	126	93	73	51.0
PB6-160	566	493	432	383	353	320	290	267	248	230	207	151	119	82.0
PB6-200	606	530	461	409	369	343	318	296	275	258	229	165	130	91.9

Battery Model	Time in Hours - Watts per cell to 1.85 VPC								
	4	5	6	7	8	9	10	12	20
PB12-15T	6.5	5.4	4.6	4.0	3.6	3.2	3.0	2.6	1.7
PB12-18	6.6	5.4	4.6	4.0	3.6	3.2	3.0	2.5	1.7
PB12-26	9.7	8.0	6.9	6.2	5.5	5.0	4.5	3.9	2.6
PB12-28	10.0	8.3	7.2	6.3	5.7	5.1	4.7	4.0	2.7
PB12-33	11.3	9.5	8.2	7.3	6.6	6.0	5.5	4.8	3.2
PB12-44	14.7	12.1	10.4	9.1	8.3	7.6	7.0	6.0	3.9
PB12-55	19.1	15.8	13.5	12.0	10.7	9.6	8.8	7.6	5.1
PB12-70J	24.0	19.7	16.9	14.8	13.2	12.0	11.0	9.4	6.3
PB12-70	24.5	20.1	17.2	15.2	13.5	12.3	11.3	9.6	6.4
PB12-80	28.4	23.6	20.1	17.7	15.6	14.0	12.8	11.0	7.3
PB12-90	32.6	26.6	22.7	19.8	17.6	15.9	14.6	12.6	8.3
PB12-100	35.6	29.4	25.1	22.3	19.9	18.0	16.4	14.1	9.2
PB12-110	38.5	31.5	27.4	24.5	21.9	19.7	17.9	15.4	10.3
PB12-120	43.1	35.3	30.2	26.6	24.1	21.9	20.0	17.2	11.2
PB12-135	48.5	39.7	33.6	29.7	26.7	24.3	22.1	19.0	12.4
PB12-150	53.3	43.9	37.7	33.2	29.8	27.1	24.7	21.1	13.9
PB12-160	61.2	50.4	43.1	38.3	34.0	30.6	28.1	24.0	15.4
PB12-200	72.0	59.1	50.6	44.4	39.6	36.0	33.1	28.4	18.6
PB12-230	82.7	68.6	59.3	51.9	46.3	42.0	38.6	33.1	21.5
PB6-110	39.2	32.2	28.0	25.0	22.3	20.1	18.3	15.7	10.5
PB6-160	63.7	52.4	44.8	39.8	35.3	31.9	29.2	24.9	16.0
PB6-200	72.0	59.1	50.6	44.4	39.6	36.0	33.1	28.4	18.6

Battery Model	Time in Minutes - Watts per cell to 1.80 VPC													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	95.2	67.3	53.8	45.4	38.8	34.2	30.3	27.2	24.8	22.7	19.6	15.0	12.0	8.5
PB12-18	95.7	67.8	55.5	46.7	39.6	34.5	30.5	27.4	24.8	22.8	19.9	15.2	12.1	8.6
PB12-26	152	117	95.8	80.4	68.4	61.1	53.7	47.8	42.8	38.7	32.6	22.5	17.5	12.4
PB12-28	156	121	98.7	82.8	70.4	63.0	55.3	49.2	44.0	39.8	33.6	23.2	18.0	12.8
PB12-33	197	146	110	92.5	78.5	68.9	61.7	55.2	50.5	46.5	40.0	27.9	21.3	14.7
PB12-44	234	192	153	125	106	92.1	82.0	73.3	66.7	61.4	53.3	37.5	29.2	19.8
PB12-55	288	243	192	151	125	108	97.0	88.0	81.4	74.8	65.5	46.0	35.6	25.1
PB12-70J	335	278	225	186	157	139	125	115	108	101	86.5	60.4	46.4	32.0
PB12-70	342	284	230	190	160	142	128	117	110	103	88.2	61.6	47.3	32.6
PB12-80	357	299	248	209	179	158	145	133	124	115	101	71.2	54.6	37.1
PB12-90	432	365	297	249	210	182	161	146	135	124	109	78.8	61.4	43.0
PB12-100	506	403	316	264	229	202	180	163	149	139	121	85.5	66.5	46.5
PB12-110	570	446	352	292	256	225	198	180	165	151	130	93	73.0	50.7
PB12-120	603	478	382	322	277	246	220	201	185	171	149	107	83	57.6
PB12-135	642	508	432	377	331	296	272	250	229	211	182	126	97	65.9
PB12-150	652	523	443	385	343	307	281	257	235	216	189	133	103	70.3
PB12-160	724	585	478	417	369	334	309	284	263	241	211	149	117	80.2
PB12-200	749	616	511	457	406	374	346	324	302	287	255	180	139	97
PB12-230	788	646	541	492	441	405	374	345	327	308	274	197	154	107
PB6-110	581	454	359	298	261	230	202	184	168	154	133	95	74.4	51.7
PB6-160	739	597	497	434	383	348	321	295	273	251	219	155	122	83.5
PB6-200	749	616	511	457	406	374	346	324	302	287	255	180	139	97

Battery Model	Time in Hours - Watts per cell to 1.80 VPC								
	4	5	6	7	8	9	10	12	20
PB12-15T	6.7	5.5	4.7	4.1	3.7	3.3	3.0	2.6	1.7
PB12-18	6.7	5.6	4.7	4.1	3.7	3.3	3.0	2.5	1.8
PB12-26	9.8	8.2	7.1	6.3	5.7	5.1	4.6	4.0	2.7
PB12-28	10.1	8.4	7.3	6.5	5.8	5.3	4.8	4.1	2.7
PB12-33	11.6	9.7	8.4	7.5	6.8	6.2	5.6	4.9	3.3
PB12-44	15.2	12.5	10.6	9.4	8.5	7.7	7.1	6.1	4.0
PB12-55	19.5	16.1	13.9	12.3	10.9	9.9	9.1	7.8	5.3
PB12-70J	24.4	20.0	17.1	15.0	13.4	12.1	11.1	9.6	6.4
PB12-70	24.9	20.5	17.5	15.4	13.6	12.3	11.3	9.8	6.5
PB12-80	28.8	23.8	20.4	18.0	15.9	14.4	13.1	11.3	7.5
PB12-90	33.0	27.1	23.0	20.3	18.1	16.4	15.0	12.9	8.6
PB12-100	35.9	29.6	25.6	22.7	20.4	18.5	16.9	14.5	9.5
PB12-110	39.1	32.4	28.2	25.1	22.3	20.2	18.5	15.8	10.6
PB12-120	44.1	36.0	30.8	27.3	24.7	22.5	20.6	17.7	11.6
PB12-135	50.1	40.7	34.6	30.4	27.4	25.0	22.7	19.5	12.7
PB12-150	54.1	44.7	38.6	34.0	30.5	27.9	25.4	21.6	14.4
PB12-160	61.9	51.1	44.4	39.2	35.2	31.6	28.9	24.7	15.9
PB12-200	75.4	61.1	52.0	45.2	40.8	37.2	34.0	29.2	19.2
PB12-230	83.6	69.7	60.3	53.3	47.6	43.1	39.7	34.0	22.1
PB6-110	39.9	33.1	28.8	25.6	22.8	20.6	18.8	16.1	10.8
PB6-160	64.4	53.2	46.2	40.7	36.6	32.9	30.1	25.6	16.5
PB6-200	75.4	61.1	52.0	45.2	40.8	37.2	34.0	29.2	19.2

Battery Model	Time in Minutes - Watts per cell to 1.75 VPC													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	99.6	71.5	55.5	46.8	40.0	34.9	31.0	27.8	25.3	23.2	20.2	15.2	12.3	8.7
PB12-18	101	72.6	56.3	47.9	40.6	35.1	31.0	27.8	25.2	23.1	20.3	15.3	12.1	8.7
PB12-26	155	121	98.5	84.5	71.6	63.3	55.3	49.3	44.0	39.8	33.4	22.9	17.7	12.6
PB12-28	159	125	101.4	87.0	73.8	65.2	57.0	50.8	45.3	41.0	34.4	23.6	18.2	13.0
PB12-33	202	149	114	94.1	79.4	70.0	61.8	55.5	50.7	46.8	40.3	28.0	21.5	14.8
PB12-44	245	202	160	128	108	94.0	82.6	73.8	67.0	62.0	53.3	37.6	29.3	20.0
PB12-55	298	250	195	155	128	111	98.4	89.5	82.1	75.9	65.5	46.1	35.7	25.2
PB12-70J	353	296	240	195	166	144	129	119	110	102	87.6	61.2	46.6	32.2
PB12-70	360	302	245	199	169	147	132	121	112	104	89.4	62.4	47.6	32.8
PB12-80	377	320	268	226	193	168	151	138	129	120	104	71.9	54.7	37.4
PB12-90	454	375	305	255	214	185	164	149	138	127	111	79.0	61.8	43.1
PB12-100	532	429	333	277	236	205	184	166	152	141	121	85.9	67.3	46.7
PB12-110	581	471	370	307	263	228	202	183	166	152	131	94	73.4	50.7
PB12-120	613	502	394	329	285	250	223	203	188	173	150	107	84	58.0
PB12-135	680	557	455	393	341	304	277	255	234	215	183	127	98	66.5
PB12-150	704	564	475	414	364	326	292	267	243	223	193	134	103	70.7
PB12-160	766	619	503	438	386	348	318	292	269	248	215	152	117	80.6
PB12-200	804	666	560	494	439	396	363	336	314	294	262	181	140	97
PB12-230	829	686	572	514	462	421	385	352	333	313	278	201	155	107
PB6-110	593	480	377	313	269	233	206	186	170	155	134	95	75	51.7
PB6-160	781	643	513	456	402	361	330	304	280	258	224	158	122	84
PB6-200	804	666	560	494	439	396	363	336	314	294	262	181	140	97

Battery Model	Time in Hours - Watts per cell to 1.75 VPC								
	4	5	6	7	8	9	10	12	20
PB12-15T	6.7	5.6	4.7	4.1	3.7	3.3	3.0	2.6	1.7
PB12-18	6.8	5.6	4.8	4.1	3.7	3.3	3.0	2.6	1.8
PB12-26	10.0	8.3	7.1	6.3	5.7	5.1	4.7	4.0	2.6
PB12-28	10.3	8.6	7.4	6.5	5.9	5.3	4.8	4.1	2.7
PB12-33	11.6	9.7	8.4	7.5	6.8	6.2	5.6	4.9	3.3
PB12-44	15.3	12.6	10.7	9.5	8.6	7.8	7.2	6.1	4.0
PB12-55	19.7	16.2	13.9	12.3	11.0	9.9	9.1	7.8	5.3
PB12-70J	24.4	20.1	17.2	15.1	13.4	12.1	11.1	9.6	6.4
PB12-70	24.9	20.5	17.6	15.4	13.7	12.4	11.3	9.8	6.6
PB12-80	28.9	23.9	20.5	18.1	16.0	14.3	13.1	11.3	7.5
PB12-90	33.3	27.3	23.3	20.4	18.1	16.4	15.0	12.9	8.6
PB12-100	36.1	29.6	25.7	22.7	20.3	18.4	16.9	14.5	9.5
PB12-110	39.2	32.5	28.4	25.1	22.4	20.4	18.5	15.8	10.6
PB12-120	44.2	36.3	30.9	27.4	24.8	22.5	20.6	17.7	11.5
PB12-135	50.2	40.9	34.7	30.6	27.5	25.2	22.7	19.5	12.7
PB12-150	54.1	44.8	38.8	34.1	30.5	27.9	25.4	21.6	14.4
PB12-160	61.8	51.1	44.5	39.5	35.2	31.8	28.9	24.7	15.9
PB12-200	75.6	61.7	52.2	45.6	41.0	37.1	34.1	29.2	19.2
PB12-230	83.9	69.9	60.6	53.5	47.6	43.1	39.8	34.0	22.1
PB6-110	40.0	33.1	29.0	25.6	22.8	20.8	18.8	16.1	10.8
PB6-160	64.3	53.2	46.2	41.1	36.7	33.1	30.1	25.7	16.5
PB6-200	75.6	61.7	52.2	45.6	41.0	37.1	34.1	29.2	19.2

Battery Model	Time in Minutes - Watts per cell to 1.70 VPC													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	104	73.3	57.0	47.6	40.2	35.1	31.5	28.3	25.9	23.7	20.8	15.5	12.5	8.8
PB12-18	106	74.8	58.1	48.6	41.1	35.5	31.4	28.3	25.8	23.7	20.8	15.6	12.4	8.9
PB12-26	159	123	102	86.4	72.9	64.1	56.1	50.1	44.7	40.7	34.2	23.5	18.3	13.0
PB12-28	164	126	105	89.0	75.1	66.1	57.8	51.6	46.1	41.9	35.3	24.2	18.8	13.4
PB12-33	206	151	115	96.2	81.0	71.1	62.5	56.3	51.1	47.1	40.6	28.3	21.7	15.1
PB12-44	253	206	162	130	109	94.4	83.0	74.2	68.0	62.6	54.3	38.1	29.7	20.4
PB12-55	314	257	199	157	129	112	98.9	90.1	83.6	77.2	67.2	47.0	36.4	25.9
PB12-70J	370	315	248	203	170	149	132	120	111	103	88.6	61.9	47.2	32.4
PB12-70	378	321	253	207	174	152	135	122	113	105	90.4	63.2	48.2	33.1
PB12-80	403	344	284	235	197	172	153	140	130	121	105	72.8	55.6	37.9
PB12-90	483	390	312	262	219	188	166	151	139	128	112	80.8	63.6	44.4
PB12-100	559	439	342	283	241	208	186	168	154	143	123	87	68.8	47.3
PB12-110	603	474	375	313	267	231	205	184	168	154	132	95	74.8	52.1
PB12-120	641	507	403	333	289	254	227	207	191	175	153	109	85	58.5
PB12-135	714	583	481	406	349	310	284	261	240	221	190	132	101	68.1
PB12-150	751	611	504	434	376	332	300	273	250	228	196	137	106	71.8
PB12-160	797	648	530	453	391	350	322	296	272	250	217	153	119	82.1
PB12-200	826	683	572	510	456	408	369	340	316	298	264	183	141	98
PB12-230	860	710	593	531	473	425	391	358	335	315	279	201	157	109
PB6-110	616	484	382	319	273	236	209	188	171	157	135	97	76	53.2
PB6-160	813	661	541	471	406	364	335	308	282	260	226	159	124	85.4
PB6-200	826	683	572	510	456	408	369	340	316	298	264	183	141	98

Battery Model	Time in Hours - Watts per cell to 1.70 VPC								
	4	5	6	7	8	9	10	12	20
PB12-15T	6.8	5.7	4.9	4.2	3.8	3.4	3.1	2.7	1.8
PB12-18	6.9	5.7	4.9	4.2	3.8	3.4	3.1	2.6	1.8
PB12-26	10.2	8.5	7.3	6.4	5.7	5.2	4.7	4.0	2.7
PB12-28	10.5	8.7	7.5	6.6	5.9	5.3	4.9	4.1	2.7
PB12-33	12.0	10.0	8.6	7.7	7.0	6.3	5.7	5.0	3.3
PB12-44	15.6	12.8	11.0	9.7	8.8	7.9	7.3	6.3	4.1
PB12-55	20.2	16.7	14.3	12.5	11.2	10.1	9.3	8.0	5.4
PB12-70J	24.8	20.4	17.5	15.4	13.7	12.3	11.4	9.8	6.5
PB12-70	25.3	20.8	17.9	15.7	14.0	12.6	11.6	10.0	6.7
PB12-80	29.2	24.1	20.8	18.3	16.3	14.6	13.5	11.6	7.7
PB12-90	34.3	27.9	23.9	20.8	18.5	16.7	15.4	13.2	8.8
PB12-100	36.7	30.4	26.3	23.2	20.8	18.8	17.3	14.9	9.7
PB12-110	40.4	33.4	29.1	25.8	22.9	20.7	18.9	16.2	10.8
PB12-120	44.9	37.0	31.8	28.0	25.3	23.0	21.1	18.1	11.8
PB12-135	51.7	42.0	35.6	31.3	28.0	25.5	23.3	20.0	13.0
PB12-150	55.7	46.0	39.7	34.8	31.3	28.4	26.0	22.2	14.7
PB12-160	64.2	53.0	45.7	40.4	36.1	32.4	29.5	25.3	16.3
PB12-200	75.9	62.5	53.3	46.6	41.7	37.9	34.9	30.0	19.7
PB12-230	85.4	70.9	61.4	54.4	48.7	44.0	40.6	34.9	22.7
PB6-110	41.2	34.0	29.7	26.3	23.4	21.1	19.3	16.6	11.0
PB6-160	66.8	55.1	47.5	42.0	37.5	33.7	30.7	26.3	16.9
PB6-200	75.9	62.5	53.3	46.6	41.7	37.9	34.9	30.0	20

Amps & Ampere Hour Data

Battery Model	Time in Minutes - Amps to **1.65 VPC**													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	58.8	41.2	32.2	26.3	22.2	19.3	17.2	15.4	14.0	12.8	11.1	8.3	6.6	4.6
PB12-18	60.0	42.0	32.9	26.9	22.6	19.5	17.2	15.4	14.0	12.9	11.2	8.3	6.6	4.7
PB12-26	90.3	69.6	56.3	47.7	40.1	35.0	30.5	27.0	24.1	21.7	18.3	12.4	9.6	6.8
PB12-28	93.1	71.7	58.0	49.1	41.3	36.1	31.4	27.8	24.8	22.4	18.8	12.8	9.9	7.0
PB12-33	116	84.6	64.1	53.2	44.6	38.8	34.0	30.3	27.6	25.4	21.7	15.0	11.4	7.9
PB12-44	144	116	90.9	71.8	59.9	51.5	45.0	40.2	36.6	33.5	28.9	20.2	15.6	10.6
PB12-55	180	146	112	88.3	72.0	61.5	53.9	48.8	44.9	41.5	35.8	25.0	19.2	13.5
PB12-70J	214	180	142	114	95.4	81.3	71.8	64.6	59.6	55.5	47.4	32.9	24.9	16.9
PB12-70	219	184	145	117	97.3	82.9	73.3	66.0	60.9	56.6	48.4	33.5	25.4	17.2
PB12-80	247	199	162	132	110	93.8	83.6	75.8	69.9	65.5	56.3	38.5	29.2	19.8
PB12-90	278	220	177	145	120	104	90.7	81.4	74.9	69.7	60.2	43.3	33.6	23.2
PB12-100	328	249	192	156	132	113	100.8	90.3	82.8	76.6	65.8	46.7	36.3	24.7
PB12-110	355	268	209	173	147	127	111	100	90.8	82.8	70.4	50.5	39.3	27.1
PB12-120	374	286	224	184	159	139	123	112	103	94.0	82.1	58.0	44.5	30.5
PB12-135	405	327	268	225	192	170	154	142	129	118	101	70.5	53.5	35.8
PB12-150	435	354	287	242	207	182	162	148	135	123	105	72.9	55.5	37.4
PB12-160	456	364	296	250	214	191	175	160	146	134	115	81.3	62.5	42.9
PB12-200	474	389	329	288	253	222	201	183	172	160	142	98	74.9	51.3
PB12-230	494	399	335	296	259	232	213	194	181	169	150	108	82.9	56.7
PB6-110	362	273	213	176	150	129	114	102	92.6	84.5	71.9	51.5	40.0	27.7
PB6-160	466	371	302	260	223	198	182	166	151	139	120	84.6	65.0	44.6
PB6-200	474	389	329	288	253	222	201	183	172	160	142	98	74.9	51.3

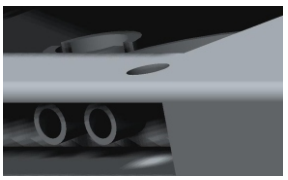
Battery Model	Time in Minutes - Amps to **1.60 VPC**													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	59.5	41.6	32.6	26.9	22.5	19.4	17.5	15.4	13.5	12.5	11.3	8.4	6.7	4.7
PB12-18	60.6	42.4	33.2	27.4	22.9	19.8	17.8	15.6	14.0	12.9	11.7	8.6	6.6	4.7
PB12-26	95.5	71.3	57.5	48.3	40.4	35.3	30.8	27.4	24.1	21.3	18.0	12.2	9.7	6.9
PB12-28	98	73.5	59.2	49.7	41.6	36.3	31.7	28.0	25.0	22.6	18.9	12.9	9.9	7.1
PB12-33	121	86.4	65.2	53.8	44.7	39.3	34.3	30.3	27.3	25.6	22.3	16.3	11.5	8.0
PB12-44	149	118	92.9	72.4	60.6	52.1	45.9	40.8	36.9	33.8	30.0	22.1	15.7	10.7
PB12-55	189	151	116	89.5	72.6	61.9	54.0	49.4	45.4	41.0	36.1	26.6	19.4	13.6
PB12-70J	226	186	151	119	97.3	82.4	72.5	65.3	60.2	56.4	49.7	39.2	25.2	17.0
PB12-70	230	190	154	121	99.3	84.1	74.0	66.6	61.5	57.5	50.7	40.0	25.7	17.3
PB12-80	264	206	166	133	112	95.0	84.8	76.3	70.6	65.8	58.9	43.8	29.5	19.8
PB12-90	301	231	182	147	122	105	92.5	82.6	75.5	70.3	61.0	48.6	34.1	23.4
PB12-100	347	256	196	159	133	115.6	101	89.8	82.1	77.5	66.3	53.4	36.5	24.8
PB12-110	371	277	216	176	148	129	112	102	91.4	83.0	71.0	56.8	39.5	27.3
PB12-120	393	297	232	188	160	141	125	113	104	94.8	82.7	65.3	44.8	30.6
PB12-135	424	341	275	229	193	169	157	143	132	120	102	77.9	54.0	36.2
PB12-150	455	369	295	247	209	184	165	149	136	124	106	79.5	56.0	37.6
PB12-160	477	379	305	255	219	193	178	161	147	134	117	87.9	63.0	43.1
PB12-200	501	401	333	293	258	226	204	187	175	161	148	114	76.3	51.7
PB12-230	517	406	338	299	262	234	215	196	183	170	155	119	83.3	57.0
PB6-110	371	277	216	176	148	129	112	102	91.4	83.0	71.0	56.8	40.3	27.8
PB6-160	483	384	308	258	221	195	180	163	149	135	118	88.9	65.5	44.9
PB6-200	501	401	333	293	258	226	204	187	175	161	148	114	76.3	51.7

Watts Per Cell Data

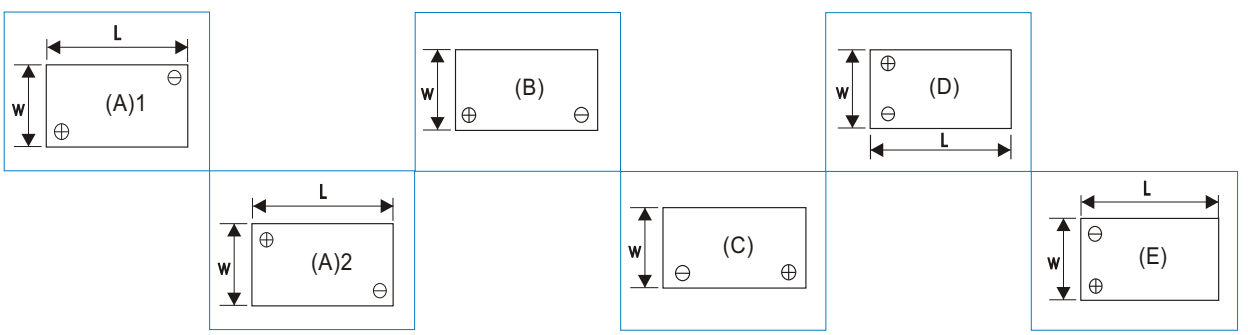
Battery Model	Time in Minutes - Watts per cell to 1.65 VPC													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	105	74.2	58.4	48.1	40.7	35.5	31.9	28.8	26.1	24.0	21.1	15.7	12.7	8.9
PB12-18	107	75.7	59.6	49.0	41.5	36.0	31.9	28.7	26.2	24.1	21.2	15.8	12.6	9.0
PB12-26	162	125	102	87.1	73.5	64.6	56.5	50.4	45.2	40.8	34.5	23.6	18.4	13.1
PB12-28	166	129	105	89.7	75.8	66.6	58.2	51.9	46.5	42.1	35.5	24.4	18.9	13.5
PB12-33	208	152	116	97.1	81.8	71.6	63.0	56.6	51.6	47.7	40.9	28.6	21.9	15.2
PB12-44	257	209	165	131	110	95.0	83.5	75.0	68.5	63.0	54.6	38.5	29.8	20.5
PB12-55	322	264	204	161	132	113	99.9	91.0	84.1	77.9	67.5	47.6	36.8	26.0
PB12-70J	384	324	257	209	175	150	133	121	112	104	89.6	62.5	47.7	32.5
PB12-70	391	331	263	213	179	153	136	123	114	106	91.4	63.8	48.6	33.2
PB12-80	442	359	294	240	201	173	155	141	131	123	106	73.3	55.9	38.1
PB12-90	497	397	321	265	221	191	168	152	140	131	114	82.3	64.2	44.7
PB12-100	587	448	347	285	242	209	187	168	155	144	124	88.8	69.3	47.5
PB12-110	634	482	380	315	270	234	207	187	170	156	133	96.0	75.1	52.3
PB12-120	669	514	407	336	292	257	229	209	193	177	155	110	85.0	58.7
PB12-135	725	590	486	410	352	314	286	264	242	222	191	134	102	68.9
PB12-150	778	638	521	442	379	336	301	276	252	230	198	139	106	72.1
PB12-160	816	655	537	457	393	352	324	298	273	251	218	155	120	82.6
PB12-200	848	700	596	525	464	410	372	342	322	300	268	187	143	98.9
PB12-230	884	718	608	540	476	428	395	362	339	318	282	205	159	109
PB6-110	647	492	387	322	276	239	211	191	173	159	136	97.9	76.6	53.3
PB6-160	833	668	548	475	409	366	337	310	284	261	227	161	124	85.9
PB6-200	848	700	596	525	464	410	372	342	322	300	268	187	143	99

Battery Model	Time in Minutes - Watts per cell to **1.60 VPC**													
	5	10	15	20	25	30	35	40	45	50	60	90	120	180
PB12-15T	106	74.6	58.9	49.1	41.2	35.8	32.4	28.6	25.3	23.4	21.3	16.0	12.8	9.0
PB12-18	108	76.0	60.0	50.0	42.0	36.5	33.0	29.0	26.2	24.2	22.0	16.3	12.7	9.0
PB12-26	170	128	104	88.0	74.0	65.0	57.0	51.0	45.0	40.0	34.0	23.1	18.4	13.2
PB12-28	175	132	107	90.6	76.2	67.0	58.7	52.2	46.8	42.4	35.7	24.5	19.0	13.6
PB12-33	215	155	118	98.0	82.0	72.5	63.5	56.5	51.0	48.0	42.0	31.0	22.0	15.3
PB12-44	265	211	168	132	111	96.0	85.0	76.0	69.0	63.5	56.6	41.9	30.0	20.6
PB12-55	336	270	210	163	133	114	100	92.0	85.0	77.0	68.0	50.5	37.0	26.1
PB12-70J	402	333	272	217	178	152	134	122	113	106	93.8	74.5	48.2	32.7
PB12-70	410	340	278	221	182	155	137	124	115	108	95.7	76.0	49.2	33.3
PB12-80	470	370	301	242	205	175	157	142	132	124	111	83.3	56.4	38.2
PB12-90	536	414	329	268	223	194	171	154	141	132	115	92.4	65.1	45.0
PB12-100	617	460	355	289	244	213	186	167	154	146	125	102	69.7	47.7
PB12-110	661	497	391	320	272	237	208	189	171	156	134	108	75.5	52.5
PB12-120	700	533	420	343	294	260	232	211	194	178	156	124	86	58.8
PB12-135	755	612	498	417	354	311	290	266	247	226	192	148	103	69.6
PB12-150	810	662	534	450	384	340	306	278	254	232	200	151	107	72.3
PB12-160	850	680	551	465	401	356	329	300	275	251	220	167	120	83.0
PB12-200	893	719	603	534	472	416	377	348	327	303	280	216	146	99
PB12-230	920	729	612	545	480	432	399	365	342	320	292	226	159	110
PB6-110	661	497	391	320	272	237	208	189	171	156	134	108	77.0	53.6
PB6-160	860	688	557	471	406	360	333	304	278	254	223	169	125	86
PB6-200	893	719	603	534	472	416	377	348	327	303	280	216	146	99

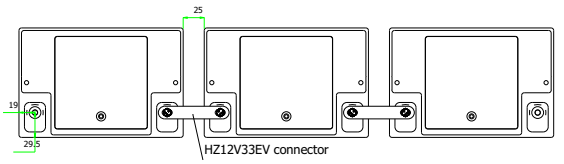
Central Gassing - Power Plus produce some models with a integral central gassing system. This system is a useful feature when batteries are installed in an IP66 cabinet. Sealing prevents any escaping gas from exiting the enclosure.
Central gassing allows a tube carrying the emissions to pass through a seal to atmosphere.
Power Plus are adding this feature to a number of sizes, if you require this feature please contact us for an up-to-date list of models included.



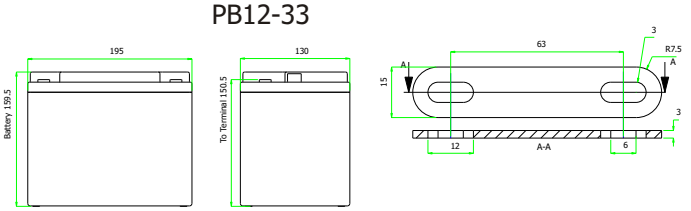
Battery Model	Qty Per Box	Dimensions **(mm)** & weight **(kg)**				Dimensions **(Inches)** & weight **(lbs)**				Terminal Layout	BCI Group Size	Internal Resistance mOhms	Maximum Charge Current	CCA at 0 °C	Short Circuit Amps
		Length	Width	Height	Weight	Length	Width	Height	Weight						
PB12-15T	2	200	76	123	5.14	7.87	2.99	4.84	11.4	C - M5	-	18	4	265	750
PB12-18	2	181	76	167	6.25	7.13	2.99	6.57	13.8	C - M5	-	17.1	4.5	270	732
PB12-26	1	166	176	126	9.2	6.54	6.93	4.96	20.3	C - M5	-	11	6.5	300	900
PB12-28	1	166	125	175	9.4	6.54	4.92	6.89	20.8	C - M5	-	11	7	305	910
PB12-33	1	195	130	160	10.9	7.68	5.12	6.30	24.1	B - M6	U1	8.5	8	320	1100
PB12-44	1	197	165	170	13.6	7.76	6.50	6.69	30.1	C - M6	-	7.5	11	350	1400
PB12-55	1	228	137	207	17.5	8.98	5.39	8.15	38.7	B - M6	22NF	6.5	14	380	1700
PB12-70J	1	350	167	179	22.1	13.78	6.57	7.05	48.8	Flag 1/4" C - M6	-	5	18	550	2100
PB12-70	1	259	168	208	21.5	10.20	6.61	8.19	47.5	B - M6	24	5	18	550	2100
PB12-80	1	259	168	208	23.7	10.20	6.61	8.19	52.4	B - M6	24	5	20	620	2400
PB12-90	1	305	168	208	29	12.01	6.61	8.19	64.1	B - M6	27	4	22	680	2650
PB12-100	1	305	168	208	30	12.01	6.61	8.19	66.3	B - M6	27	4	25	780	2900
PB12-110	1	332	174	213	32.2	13.07	6.85	8.39	71.2	B - M6	31	4	27	960	3000
PB12-120	1	408	176	227	35	16.06	6.93	8.94	77.4	B - M6	-	4	30	1020	3300
PB12-135	1	340	173	280	39.6	13.39	6.81	11.02	87.5	C - M6	-	3.73	35	1160	3750
PB12-150	1	482	170	242	44.2	18.98	6.69	9.53	97.7	B - M6	-	3.5	38	1300	4200
PB12-160	1	530	209	214	52.2	20.87	8.23	8.43	115.4	E - M8	4D	3	40	1440	4700
PB12-200	1	520	240	220	66	20.47	9.45	8.66	145.9	E - M8	-	<3	50	1670	5400
PB12-230	1	521	269	203	70	20.51	10.59	7.99	154.7	E - M8	8D	<3	57	1870	5900
PB6-110	1	193	168	205	16	7.60	6.61	8.07	35.4	A - M6	-	4	27	1010	3200
PB6-160	1	298	171	226	26	11.73	6.73	8.90	57.5	A - M6	-	3	40	1290	4600
PB6-200	1	318	170	225	31	12.52	6.69	8.86	68.5	A - M8	-	<3	50	1600	5000



Terminal Layout details



PB12-33

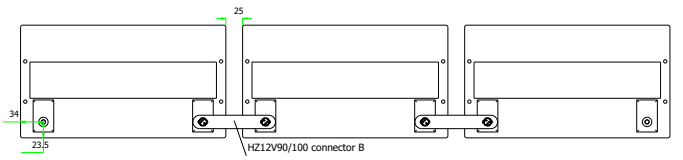


Battery installations have many variables : space available, autonomy times, load carrying requirements etc.

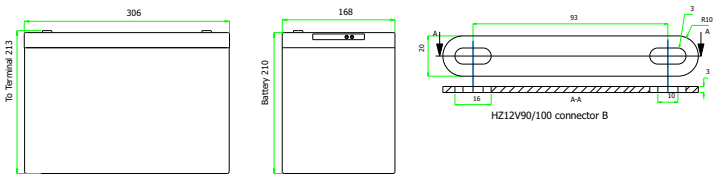
Power Plus Engineering department is at the customers disposal to find the best solution, provide dimensioned layout drawings and wiring diagrams.

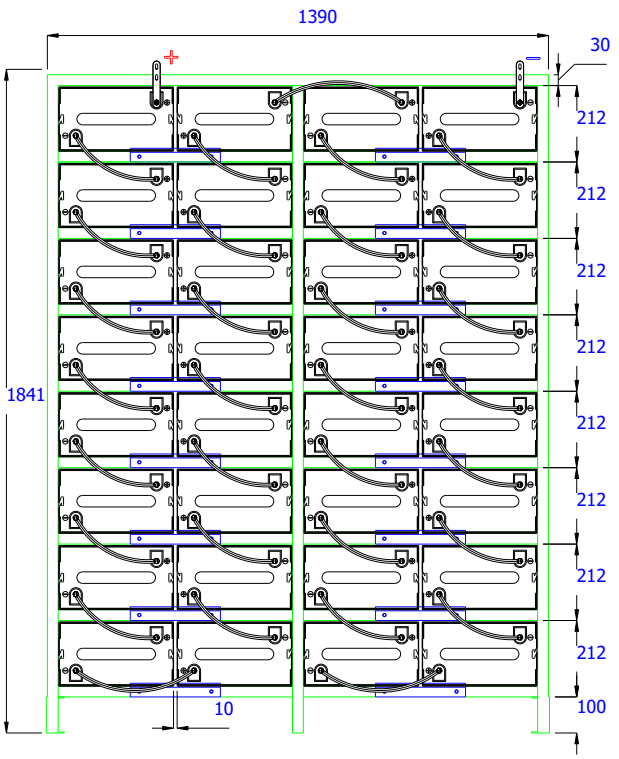
A tailor made solution to meet the customers requirements.

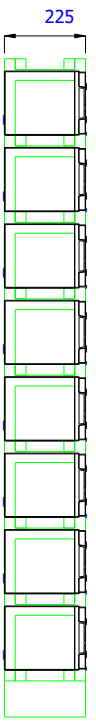
All drawings are submitted for customer approval to ensure trouble free installation.



PB12-90/100







Racking is available to suit available space and required configuration.

Special cables and / or standard connectors can be provided on request along with wiring diagrams.

A range of terminal covers are available to cover large and small batteries and cables or connectors.

The example rack shown is for PB6-200.