

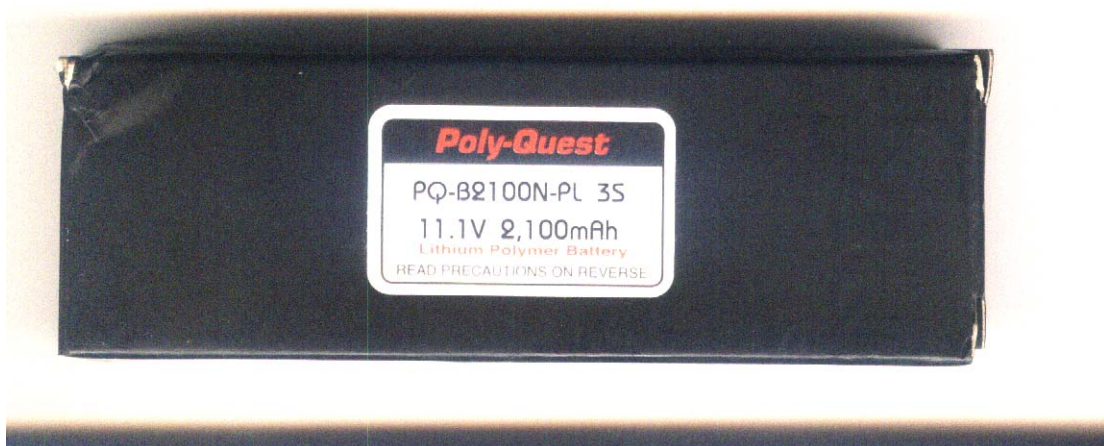
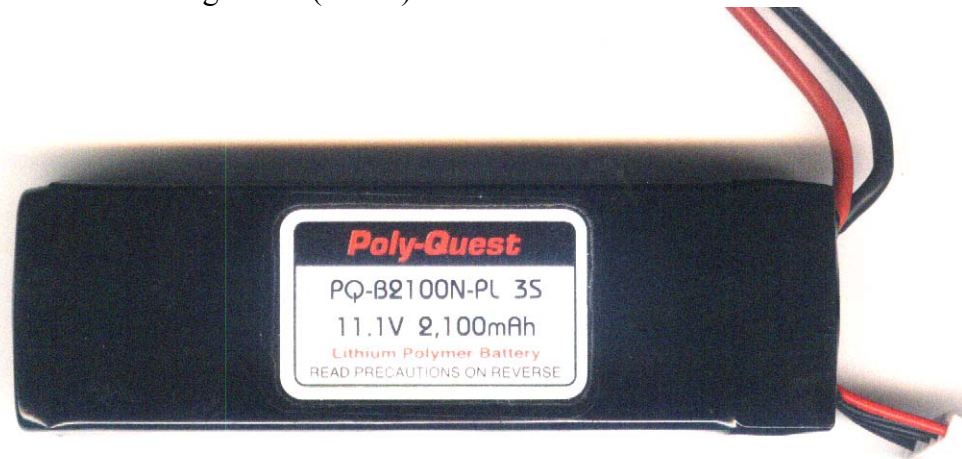
‘PolyQuest’ / ‘PolyTronics’ / ‘PowerQuest’ / Saehan 3S 2100 mAh ‘16C’ LiPo (SPB653496)

The Saehan 2100 ProLite V2 3S pack came with a standard ‘PolyQuest’ type tap connector, with what looks like 14 AWG leads, and a PCB terminating the cells but no power connector fitted. The silicone leads were subsequently terminated in a Deans Ultra. Good protection of the cell ends was apparent with ~ 5mm thick foam buffers at each end. The PCB was additionally protected with a solid plastic shroud, and the whole pack housed in a durable black shrink-wrap. The pack was shipped in its own protective box.

NOTE: this cell is NOT an Enerland ‘PolyQuest’ pack.

Key Information

- Pack capacity: 2100 mAh
- Pack configuration: 3S
- Dimensions: 21.25 (D) x 32.65 (W) x 107.6 mm (L)
- Mass: 142 g (with Deans Ultra)
- Max Cont. Discharge: 16C (33.6A)





Testing

All testing was carried out using:

- Charging with a Hyperion EOS7i charger and LBA6 balancer at 1C.
- Camlight High Power CC discharger with National Instruments DAQ running LabView to measure a calibrated J-type thermocouple and record individual cell voltages at 1, 6, 10 and 15C

Prior to testing the individual cell voltages were measured in the 'as shipped' condition. These voltages were:

Cell 1: 3.973 V

Cell 2: 3.971 V

Cell 3: 3.976 V

Which shows the pack was relatively well in-balance.

The results from these tests follow:

Discharged capacity, voltage and power

Discharge Rate (C)	Current (A)	Capacity (Ah)	Mean Voltage	Mean Power (W)
1	2.1	2.146	11.367	23.9
6	12.6	2.097	10.905	137.4
10	21	2.118	10.645	223.5
15	31.5	2.091	10.349	326.0

Temperature: Celsius

Discharge Rate (C)	Current (A)	Start Temp. (C)	Finish Temp. (C)	Delta Temp. (C)
1	2.1	23.3	31.1	7.8
6	12.6	23.0	49.7	26.7
10	21	22.9	59.0	36.1
15	31.5	23.0	67.5	44.5

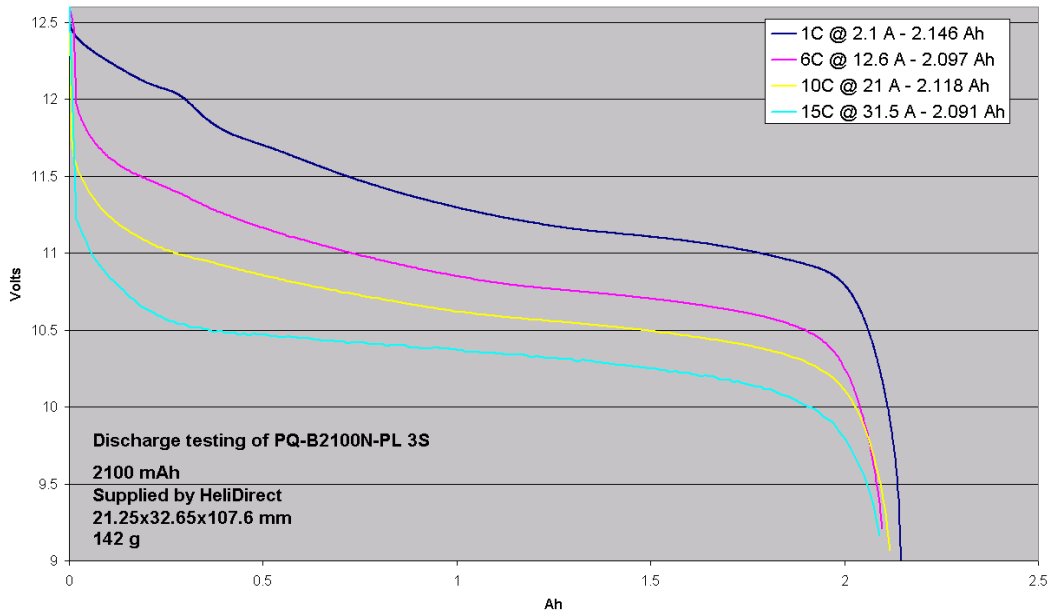
Temperature: Fahrenheit

Discharge Rate (C)	Current (A)	Start Temp. (F)	Finish Temp. (F)	Delta Temp. (F)
1	2.1	74	88	14
6	12.6	73	121	48
10	21	73	138	65
15	31.5	73	153	80

Balance during discharge: individual cells

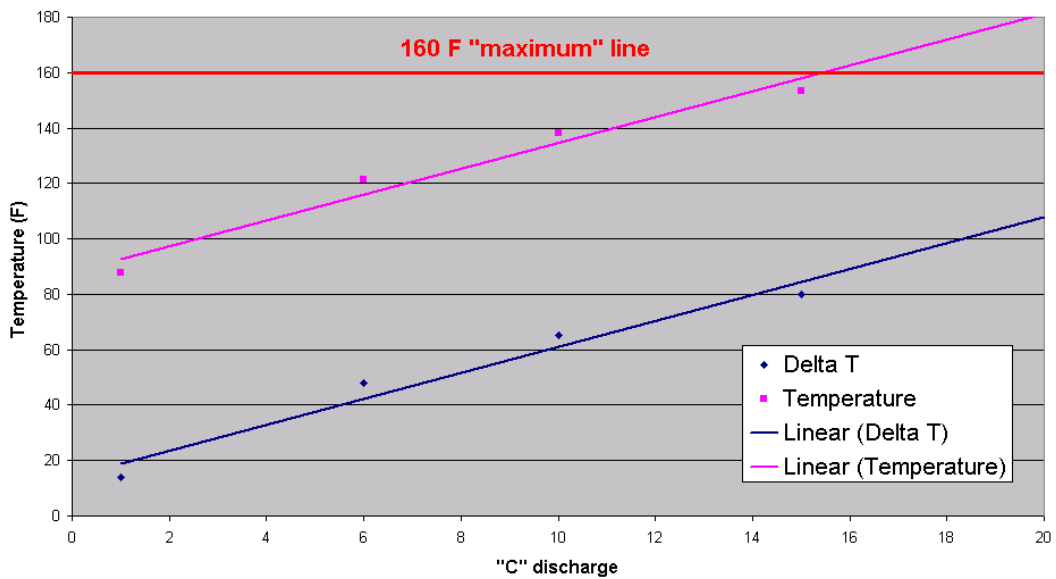
Discharge Rate (C)	Current (A)	Cell 1 Term (V)	Cell 2 Term (V)	Cell 3 Term (V)	Imbalance (V)
1	2.1	2.44	3.28	3.27	0.83
6	12.6	2.81	3.19	3.21	0.40
10	21	2.77	3.14	3.16	0.38
15	31.5	2.87	3.14	3.15	0.28

Discharge testing of PQ-B2100N-PL 3S



The pack temperature with discharge is shown below using a linear fit (worst case).

Discharge testing of PQ-B2100N-PL 3S



Closing notes:

I would recommend utilising a balance charging technique with this pack: one cell showed a reduced capacity with respect to the other two and could lead to cyclic damage if not kept in balance.

This pack is not an Enerland PolyQuest pack as might appear from the label. This is in fact a Saehan pack similar to the 'Impulse' packs distributed by Ripmax in the UK.