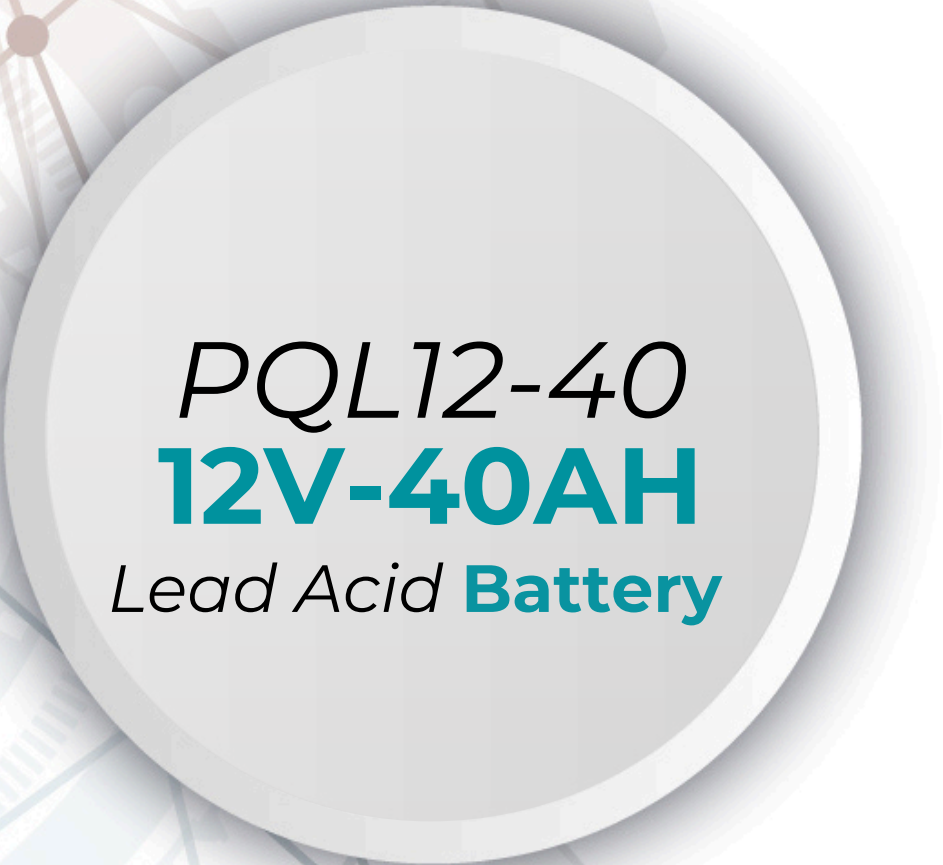




POWERQ
never will be dark



PQL12-40
12V-40AH
Lead Acid Battery



The PQL12-40 is a 12V-40Ah lead-acid battery designed for solar, UPS, and backup power. It delivers reliable performance, long service life, and stable energy storage.

DIMENSIONS

Length (L)	$198 \pm \frac{2}{1} (7.80 \pm \frac{0.08}{0.04})$
Width (W)	$166 \pm \frac{2}{1} (6.54 \pm \frac{0.08}{0.04})$
Height (H)	$171 \pm \frac{2}{1} (6.73 \pm \frac{0.08}{0.04})$
Overall Height (HT)	$171 \pm \frac{2}{1} (6.73 \pm \frac{0.08}{0.04})$

Description of torque value of hardware for the terminals

Recommended torque value:

M6: 7 N·m (71 Kgf·cm)

Maximum allowable torque value:

M6: 10 N·m (102 Kgf·cm)

SPECIFICATIONS

(Units: mm (inch))

Nominal Voltage (V) (numbers of cells: 6)

12v

Nominal Capacity at 25°C (77°F)

20 hour rate	(2A to 10.50V)	40Ah
10 hour rate	(3.8A to 10.50V)	38Ah
5 hour rate	(6.8A to 10.20V)	34Ah
1 C	(40A to 9.60V)	25.33Ah
3 C	(120A to 9.60V)	16Ah

Weight

Approx. 13.4kg (29.5 Lbs.)

Internal Resistance (at 1 KHz)

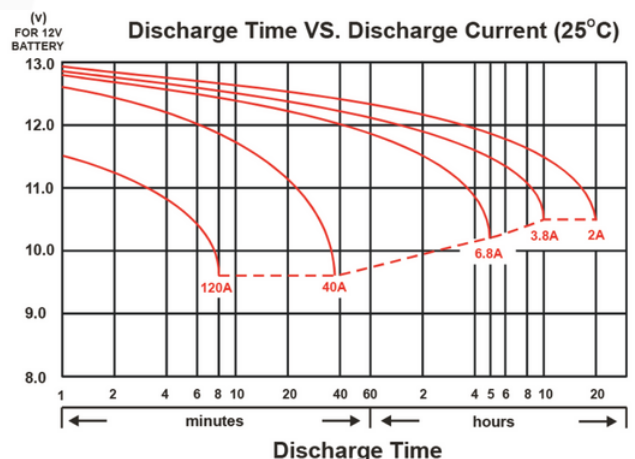
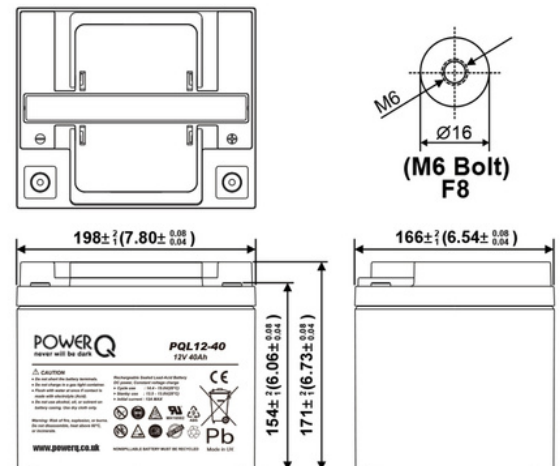
Approx. 7.5 mΩ

Maximum Discharge Current For

5 seconds: 480A

Charging Methods at 25°C (77°F)

Cycle use:	
Charging Voltage	14.4 to 15.0V
Coefficient	-5.0mV/°C/cell
Maximum Charging Current	12A
Standby use:	
Float Charging Voltage	13.5 to 13.8V
Coefficient	-3.0mV/°C/cell



(Units: mm (inch))

Operating Temperature Range

Charge	-15°C (5°F) to	40°C (104°F)
Discharge	-15°C (5°F) to	50°C (122°F)
Storage	-15°C (5°F) to	40°C (104°F)

Charge Retention (Shelf life)

1 month	97%
3 months	92%
6 months	85%

Case Material

ABS UL94 HB
Optional: Flammability resistance of (UL94-V-0)

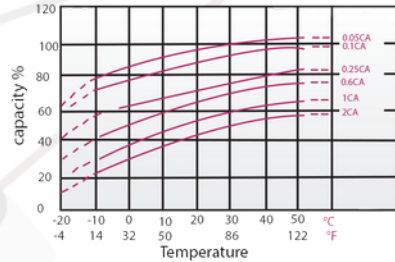
Design Life & Standard

EUROBAT (20°C) : 10/12 YEARS VERY LONG LIFE

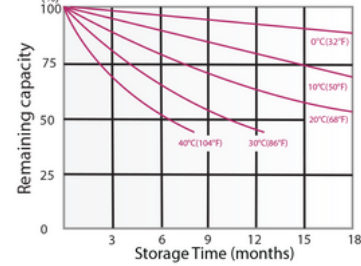
Terminal

F8

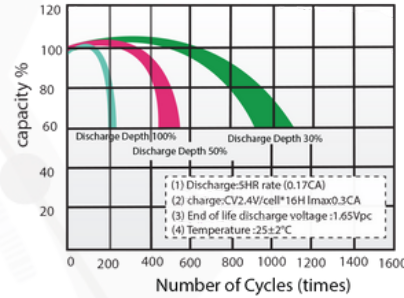
Effect of Temperature on Capacity 25°C(77°)



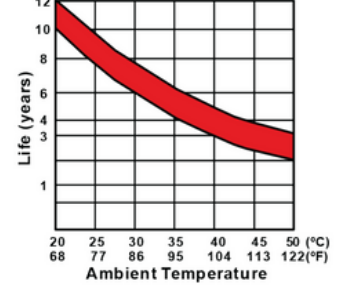
Capacity retention Characteristic



Cycle Service Life



Influence of Temperature on Trickle(Float) Design Life



PERFORMANCE DATA

Discharge Rates in **Watts** to Various End Voltages at 25°C (77°F)

Time (min)	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	204	215	227	230	232	235	237
10	166	178	196	198	200	203	205
15	134	140	147	149	151	153	154
20	111	116	122	123	123	124	125
30	83.9	87.0	90.8	92.0	93.1	93.8	94.5
60	54.8	55.7	56.8	58.0	59.3	60.0	60.8
90	41.4	41.7	42.4	43.3	44.5	44.6	44.9
120	32.5	32.8	33.6	33.8	34.0	34.1	34.3
180	22.8	23.0	23.4	23.6	23.8	23.9	24.1
240	17.3	17.6	17.9	18.3	18.4	18.6	19.0
300	14.4	15.0	15.2	15.3	15.4	15.4	15.5
480	9.46	9.67	9.89	9.94	10.0	10.0	10.1
600	6.86	7.05	7.27	7.40	7.50	7.57	7.74
1200	3.51	3.70	3.89	4.01	4.11	4.19	4.30

Discharge Rates in **Amperes** to Various End Voltages at 25°C (77°F)

Time (min)	1.85V	1.80V	1.75V	1.70V	1.67V	1.65V	1.60V
5	113	121	126	127	129	130	133
10	95.0	101	104	106	107	107	108
15	69.0	73.5	79.1	80.0	81.0	82.0	82.9
20	57.8	59.7	62.1	62.4	62.9	63.4	63.9
30	42.9	44.7	46.6	47.0	47.4	47.9	48.5
60	29.7	30.2	30.9	31.3	31.8	32.2	32.8
90	20.7	21.0	21.4	21.6	21.8	22.0	22.3
120	16.8	16.9	17.0	17.1	17.2	17.3	17.4
180	11.3	11.4	11.6	11.7	11.8	11.9	12.1
240	8.75	8.84	9.03	9.13	9.22	9.32	9.37
300	7.28	7.39	7.50	7.54	7.56	7.58	7.64
480	4.74	4.79	4.88	4.90	4.91	4.92	4.95
600	3.91	3.96	4.01	4.03	4.04	4.05	4.08
1200	2.03	2.06	2.12	2.13	2.14	2.15	2.15

All data on the spec.sheet is an average value:

The tolerance range: $x < 6\text{min}$ (+15%~-15%), $6\text{min} \leq x < 10\text{min}$ (+12%~-12%), $10\text{min} \leq x < 60\text{min}$ (+8%~-8%), $x \geq 60\text{min}$ (+5%~-5%)

PQL12-40 12V-40AH

Lead-Acid Battery

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