

**OUR STORY**

Right from the onset, LUXA2 has constantly strived to push the boundaries of new portable battery technology, and to meet the constantly changing power demands of the modern day lifestyle. In doing so, our core ethos has always been that of **Quality, Performance and Reliability**.



# Quality, Performance, Reliability

LUXA2 achieves this by utilizing high-quality components, with aesthetic appeal and maintaining competitive pricing without compromising any aspect of quality, performance or reliability.

**Quality**

Achieved by use of LG, Samsung and hi-grade battery cells, world-class circuit boards (figure 1), hand craftsmanship and undertaking of all relevant quality certifications.

**Performance**

Use of the most up-to-date circuitry and chipsets to ensure high energy power transfer, resulting in optimal power conversion efficiency, maximized input/output to ensure best charging performance, and longer lasting charge cycles for preserved battery life and performance.

**Reliability**

Achieved through vigorous testing for reliability that includes: battery burning, environmental, durability, reliability and regulatory conformity tests.

In fact, we are so confident about reliability that LUXA2 offer a standard two-year warranty on all our portable battery banks.



Figure 1: Use of latest circuit board, chipset technology and LG, Samsung battery cells for maximum performance.

**QUALITY**

**1. Battery Cell**

Use of premium lithium-ion and lithium-polymer battery cells (figure 2) from LG, Samsung, together with hi-grade cells ensure that our battery pack provides that extra bit of juice to your device than that of a standard portable battery bank.



Figure 2: Use of quality battery cells from LG and Samsung.

**2. Printed Circuit Board (PCB) Design**

By using world-class circuit boards and chips (figure 3), our battery banks are able to offer additional safety, protection and improve efficiency.

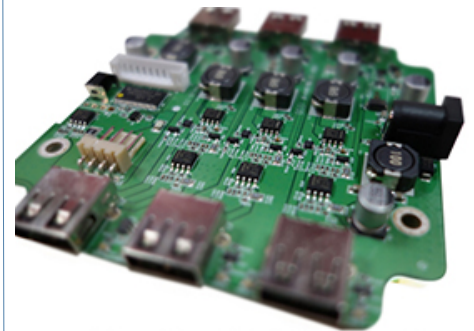


Figure 3: Use of world-class circuitry and chipset that offer extra layers of protection.

**3. Hand Craftsmanship**

LUXA2's leather PL fashion series power banks are all hand stitched (figure 4) and put together with skilled craftsmanship and care to provide that classic finishing touch that only a human can provide.



Figure 4: PL leather series hand stitched with skill craftsmanship and care.

#### 4. Restriction of Hazardous Substances Directive (RoHS) Certification

All LUXA2 battery packs are fully compliant with the RoHS directive (figure 5) to ensure certain substances of high concern such as lead and mercury have not been used in any of our components.



Figure 5: RoHS certifications are labeled on all LUXA2 battery pack products.

### PERFORMANCE

#### 1. Power Transfer Efficiency

Our battery packs are designed to provide high power conversion rates which is achieved by the use of high-class board circuitry and chipsets (figure 6) that enable them to optimize efficiency and durability.



Figure 6: LUXA2 power banks provide up to 90% energy efficiency compared to the average 75% offered by standard power banks

#### 2. Input/Output Performance

LUXA2's power bank circuit boards goes through rigorous input/output testing (figure 6.1) to ensure that devices are charged at the optimized state, meaning that whatever the stated input/output performance (figure 6.2), you're guaranteed to know that the performance is constant to ensure fastest possible charging times.



Figure 6.1: Input testing in progress.



Figure 6.2: 1A Output testing confirming 1.3A output.

#### 3. Charge Cycles

LUXA2 battery packs are designed to last for up to 1000 charge cycles before it reaches 80% of its original capacity (figure 7) compared to the average 500 charge cycles from the standard portable battery bank for maximized performance.

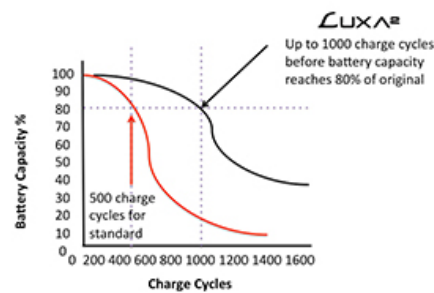


Figure 7: LUXA2 charge cycle comparison graph.

### RELIABILITY

#### 1. Battery Burn Test

LUXA2's lithium-ion and lithium-polymer batteries go through vigorous testing procedures to ensure safe and reliable performance.

Each and every battery is tested and conditioned for three full cycles (figure 8) to ensure utmost reliability.



Figure 8: LUXA2 batteries under going battery-burning test

#### 2. Environmental Test

All battery banks are tested at high and low temperature ranges (figure 9) to ensure they are capable of handling the majority of environmental conditions that a conventional user may encounter from the lightest to the most extreme (figure 9.1).

Table 1 highlights the various temperature conditions that all our portable battery banks are tested. These ranges are based on their specific material characteristics and their testing range limits.

Tests	Details
High Temperature	70 degrees
Low Temperature	-20 degrees
Temperature Cycle	70 ~ -20 degrees

Table 1: Battery testing in high and low temperature ranges.



Figure 9: Batteries are tested in hi-tech temperature/humidity chambers.



Figure 9.1: Batteries tested to extreme 70°C max and -20° low temperatures ranges.

### 3. Durability Test

LUXA2 power banks also go through a variety of durability tests to ensure they are able to withstand the occasional knocks, bumps, drops and any other mishap that might befall it during its life cycle.

#### Drop Test

LUXA2 undertake standard drop tests (figure 10) on all our power banks to ensure they are able to withstand the most common of drops from varying heights. This ranges from heights that cover power banks falling out of your hands, pockets, desk or any other real life situation.



Figure 10: Portable battery bank drop testing machinery with adjustable height.

#### Hammer Test

In addition, we also undertake hammer tests (figure 11) to ensure our portable battery banks are able to withstand the adequate pressures that directly relate to its reliability.



Figure 11: Hammer testing

#### 4. Reliability Test

All LUXA2 power banks go through intense micro USB and USB insertion and removal tests to ensure reliability of connections and connectors for long lasting longevity. Table 2 below highlights the frequency of these tests that have been undertaken.

Test	Details (times)
Micro USB Charging Port (insertion/removal)	3000
USB Port (insertion/removal)	6000

Table 2: Insertion/removal testing

### 5. Regulation Conformity

All LUXA2 battery banks conform to the appropriate Government regulatory body (figure 12) with formally received certifications. These include the CE mark certification for portable battery products in the European Economic Area (EEA), FCC Declaration of conformity for electronic products sold in the United States, and the Bureau of Standards, Metrology and Inspection (BSMI) for Taiwan.



Figure 12: All LUXA2 battery banks conform to the Government specified regulations per required region.

END