



### 1. What is the IDX ENDURA ELITE battery?

The ENDURA ELITE is a unique twin cartridge, high capacity Lithium Ion battery for use with most professional ENG/EFP cameras and other video and audio equipment. It has a nominal rated capacity of 136 Wh and is very light—weighing less than 2.75 lbs. It is also the highest capacity Lithium Ion battery designed to meet all IATA requirements for safe air travel. Each cartridge is in full compliance with the IATA air transport regulations for carrying lithium based products aboard an aircraft.

### 2. What are the unique features of the ELITE?

This battery is packed with features. It has all the advantages of the Lithium Ion chemistry, V-Mount engineering, can be rapidly charged on all existing IDX V-Mount chargers and is rugged for typical field use. The most unique feature is the removable power cartridges (Model# PC-14), which house the actual battery cells.

### 3. Why use removable battery cartridges?

Removable cell cartridges provide many benefits. After years of long use, the cells naturally diminish in capacity; operators can replace the cartridge set without having to replace the entire battery and at much less cost than that of a new battery. This provides a substantial cost saving in the long run. Additionally, the removable twin cartridges allow the ENDURA ELITE to be in full compliance with IATA and DOT regulations for all forms of transportation. Disengage the cartridges quickly and easily for hassle-free travel.

### 4. How many cartridges are in each ENDURA ELITE battery?

There are two (2) cartridges in each battery.



### 5. Are the two cartridges physically identical?

Yes, and they operate as a matched pair. Each cartridge set is identified by its own serial number. Each of the two matched cartridges has this identical serial number.





## 6. Why does the ELITE battery use matched sets of cartridges?

Balance.

All professional level batteries are constructed from individual battery cells that are connected internally in series and in parallel. The series and parallel connections are arranged to achieve the required battery output voltage and the battery watt hour. But in manufacturing the cells, all the cells have slight variations in their voltage and current characteristics. This is a common issue in battery cell manufacturing

In assembling batteries, IDX carefully selects individual cells to minimize these slight variations. We select a set of cells that have the closest matching individual voltage and current characteristics. When assembled, this creates a battery with the longest possible lifespan, as no cell is noticeably “weaker” than any other cell. IDX constantly strives to enhance overall product performance, and the use of matched cartridges in the ENDURA ELITE battery is another way we do this.

## 7. How do you install the cartridges?

The battery housing (Model# BH-2) has an access door which is easily removable. Just remove the two (2) screws that hold the door secure and unlock the door’s latch; slide down the door and remove it. Then insert the cartridge set. Once the cartridges are in place, reposition the door; secure the door with the two (2) screws. The 60% LED display will turn green and Mode display will turn red. The battery must be fully charged before initial use.

## 8. How do you initiate new cartridges in an existing ENDURA ELITE housing?

Install the new cartridge set to the existing battery housing. The 80% LED will turn green while the Mode LED turns red. Initialize the battery by holding the LED display button for about 15 seconds. Once initialized, the 60% LED will briefly flash green. Fully charge the battery to finalize the initiation before use.

## 9. Must each cartridge be inserted into a particular slot in the ELITE housing?

There are two slots in the housing, and either cartridge can be inserted in either slot.

## 10. If I drop one of the cartridges and break it can I simply install another single cartridge?

The cartridges operate as a matched set. In the event of a single cartridge failure, both cartridges must be replaced with a new matched set.

## 11. What is the maximum load I can put on the ENDURA ELITE?

The maximum load is 114 watts. The maximum discharge current is 9.6 amps.

## 12. Does ENDURA ELITE have an external display showing the current level of charge?

Yes. The LED display on the side of the battery housing shows current capacity level—from 100% down to 0% and in increments of 10%.





### 13. Can the ENDURA ELITE display the battery charge level in a camera viewfinder?

Yes. The ELITE battery stores the current level of charge in the battery electronics. It can be sent to the camera viewfinder via one of two industry standard serial data protocols, the I2C or the SMBus (Smart Battery Bus) protocol. For example, the I2C protocol is used to display the battery charge level on Panasonic cameras. The SMBus is used with Sony cameras. ELITE battery data can be read on RED ONE cameras with accessory item EL-BAPIDX while in SMBus protocol mode.

### 14. How can I switch the data protocols to match my camera?

The ENDURA ELITE battery uses the I2C protocol as the default setting. To change to the SM Bus protocol, simply press the Capacity Display Button on the side of the battery for approximately 5 seconds. The Mode Display LED will flash amber. While the LED is flashing amber, tap the Capacity Display Button to initiate the change in protocol. Follow the same procedure to revert back to default settings.

### 15. Does the ENDURA ELITE have any error monitoring features?

Yes. The ENDURA ELITE battery is very fool proof. It will indicate the following errors:

- Error 1: **If the voltage difference between the two power cartridges is abnormally large.**
- Error 2: **If only one power cartridge is inserted or mismatched power cartridge serial numbers**
- Error 3: **If the two power cartridge serial numbers are different from the ones which are registered with the housing or if the cartridges are not properly initiated.**
- Error 4: **If the cell temperature during charge is -20 °C and below, or 60 °C and above.**

100%	○	○	○	●
80%	○	○	●	○
60%	○	●	○	○
40%	●	○	○	○
20%	○	○	○	○
MODE	●	●	●	●
	Error 1	Error 2	Error 3	Error 4

### 16. Is ELITE compatible with the IDX Battery Management System (BMS)?

Yes. Once the cartridge set is initialized with the ENDURA ELITE battery housing, the electronics in the housing and the electronics in the cartridges record all the typical battery usage parameters that can be displayed on the BMS system. Historical data, diagnostics and more can all be displayed and printed via USB connection to a PC. This is an important feature for managers of fleets of batteries, to maximize their lifetime usage and Return on Investment (ROI) of the batteries and associated chargers.

