



# BA0X: 1U HIGH CAPACITY BATTERY ARRAYS

As thin as 7 millimeters, the EXA BA0x High Capacity Battery Array is a family of power store/delivery devices designed to provide the highest energy density and redundancy for your cubesat mission

From a minimum of 19.9 Whr to a maximum of 44.4 Whr per bank. For missions like 1U Cubesats, the BA0x enables your system to perform longer and better than even a 3U mission.



BA01/S

**Why settle for less when you can have the best?**

## PROPERTIES

### Mass (depends on configuration)

Model	Simple	w/MT01	# of Cells
BA01/S	115g	132.5g	4
BA01/D	215g	N/A	8

## PERFORMANCE

Performance:			@BOL
Model	Voltage	Current	Power
BA01/S	3.7V	6000 mAh	22.2Whr
BA01/D	3.7/7.4V	12000mAh	44.4Whr

## FLIGHT HERITAGE

Our batteries have flight heritage since 2013 in 4 missions in orbit and have been selected to fly in 10 more upcoming U.S. missions from 2019 to 2029. Almost 6 years now our first batteries are still in service.

## SUPER THIN AND COMPACT

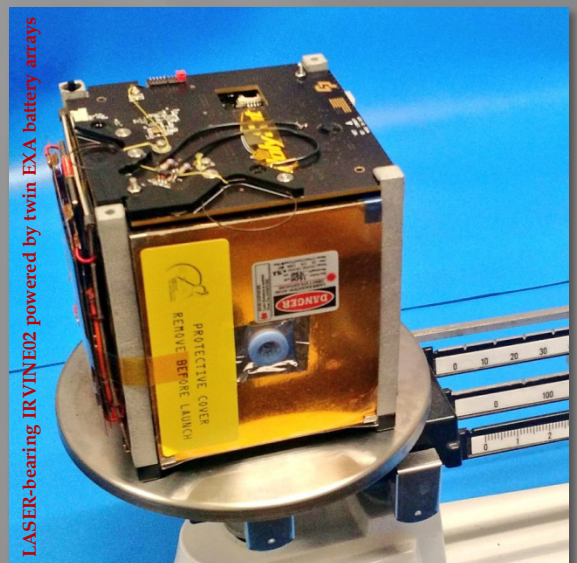
Fully compatible with ISIS and Pumpkin structures, at an impressive 7 mm thickness, they are the thinnest batteries available.

## SCALABLE AND USER CONFIGURABLE

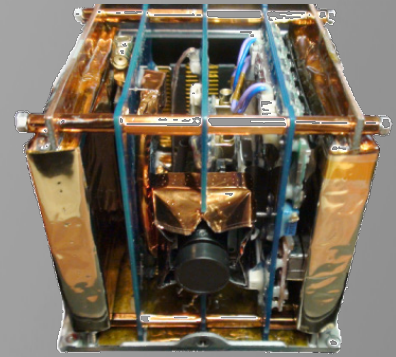
Our batteries can be connected in series or parallel between them and the output is user configurable on each battery to supply 3.7V or 7.4V depending on the user needs

## REUSE YOUR OWN HEAT

Our unique Thermal Transfer Bus based on carbon nanotubes and graphite allows you to route the waste heat from your electronics and use it to warm your batteries without using active heaters and at the same time cooling your payload. The combination of graphite and lithium in the batteries also turns them into an excellent radiation shields, protecting your electronics from harsh radiation environment, allowing a 10-fold cost reduction on your mission's financial budget.



# BA0X: TECHNICAL INFORMATION (1)



Two BA01/D shown installed  
on NEE02 KRYSAOR

## HIGHLIGHTS

- Very thin: Only 7 mm single sided and 14 mm double sided
- Powerful: Can power from 1U to 27U missions
- Unique containment technology prevents swelling in vacuum
- Configurable: As serial or parallel (3.7V or 7.4V) user configurable
- Perfectly coupled with our DSA Deployable Solar Arrays
- Multiple redundant cells ensures mission survivability
- Multiple BA0x can be connected in series or parallel enabling ultra high power missions
- Designed for LEO missions and requirements
- Stand alone charge port, overcharge and undercharge built-in protection
- **Flight heritage** from NEE-01 PEGASUS, NEE-02 KRYSAOR, IRVINE01 and IRVINE02
- Manufactured with space grade materials according to space standards and custom mission design
- Functional, performance, thermal bake out and vibration tests provided with documentation.
- Compatible with ISIS and Pumpkin Structures and compliant to CubeSat Standard
- Charging cables provided by default and custom Interface available

## FEATURES

### Typical internal resistance:

1 to 7 milliohms @ 25°C

### High discharge rate:

20 times the nominal capacity within 2 seconds

### High speed charge rate:

3 times the nominal capacity

### Operating Temperature:

-30 to +80°C w/o CN/TTB option

-60 to +120°C w/ CN/TTB option

### Radiation Tolerance:

2 years minimum in LEO

4 years minimum if S/C has NEMEA shielding

**Interface:** Normally Molex PicoBlade/PicoSpox inline 2 pin/4 pin connector with gold plated contacts or Samtec multi pin gold coated interface, PTFE (Teflon) space grade cables, single strand, silver plated copper (AWG22 to AWG24)

## QUALITY CONTROL

TESTS	QT	AT
Functional	✓	✓
Vibration	✗	✓
Thermal Cycling	✗	✓
Thermal Vacuum	✗	✓
Cable/Conn. Integrity	✓	✓
Conn. polarity	✓	✓
Freezing/Overheating	✓	✓
Performance	✓	✓

QT and AT are performed on the unit to be shipped

## CUSTOMIZATION

Each BA0x is tailored to the mission needs with customer's choice of cables, connectors, harness, shielding and output. Detailed blueprints, 3D PDFs, STEP and SolidWorks files can be provided on demand.

## CONTACT US:

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