

DEFENCE AND SPACE
Space Products

LAUNCHER-BATT

A battery product line made
for Launchers



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Based on Airbus Space's expertise and flight-proven heritage with lithium-ion batteries, this product line is geared towards the **launcher market**.

Composed of **two different electrical configurations**, it offers the best compromise between mechanical performance, safety and reliability, all necessary for the success of launcher missions. The modules can be used to power the launcher or to power the pyrotechnics, for example. Each module can operate stand-alone or in series/parallel with other modules.

The module is based on a simple design, using **COTS lithium-ion cells**, fully qualified by Airbus for launcher applications, resulting in a **very competitive** price proposal. Each module incorporates fuses welded to a PCB to ensure safety in the event of an external short circuit, for example.

LAUNCHER-BATT was selected by ArianeGroup, the European leader of space launchers, for the future **Ariane 6**.

To date, more than **160 modules** have been successfully manufactured and tested at the Airbus Battery Assembly Line in Toulouse (France). The first launch **successfully happened** in July 2024, embedding more than 25 battery modules.

		SMALL (-S)	LARGE (-L)
Electrical	Battery type	COTS Li-ion	
	Voltage range	21.6 to 33.6 V	40.5 to 63 V
	Nominal capacity ¹	9 Ah	30 Ah
	Nominal energy ¹	259 Wh	1,620 Wh
	Energy density	115 Wh/kg	165 Wh/kg
	Max. continuous charge current	3 A	10 A
	Max. continuous discharge current	9 A	33 A
	Max. pulse discharge current	50 A (< 20 ms)	62 A (< 600 ms) 230 A (< 15 ms)
Physical characteristics	Dimensions (L x W x H)	220 x 130 x 110 mm	365 x 270 x 110 mm
	Weight	2.2 kg	9.8 kg
Environment	Mounting configuration	Internal to the S/C	Internal to the S/C
	Thermal control	Insulated modules	Insulated modules
	Vibrations	<u>Sine</u> : 22.5 g <u>Random</u> : 25 g RMS	<u>Sine</u> : 22.5 g <u>Random</u> : 17.6 g RMS
	Shock	100 g 100 Hz, 1,800 g 2 kHz, 5,000 g 3.5 kHz	100 g 100 Hz, 1,000 g 1 kHz, 1,000 g 10 kHz
	Radiation	N/A	
Embedded functions	Thermal hardware	No hardware in baseline	No hardware in baseline
	Electronics	Protection fuses	Protection fuses
Use case <u>example</u>	Mission type	Launcher missions (Pyrotechnics order)	Launcher missions (Auxiliary Power Unit supply Power conditioning and distribution units supply)
	Typical cycle life	<u>On ground</u> : 3 years storage at +5°C, 30% SoC 11.5 months at +25°C, 40% SoC 2 months at +40°C, 40% SoC 1 month at +28°C, 100% SoC 10 days at +50°C, 100% SoC <u>In operation</u> : 1 cycle, avg. C/2, max. 5C, 15% DoD	<u>On ground</u> : 3 years storage at +5°C, 30% SoC 11.5 months at +25°C, 40% SoC 2 months at +40°C, 40% SoC 1 month at +28°C, 100% SoC 10 days at +50°C, 100% SoC <u>In operation</u> : 1 cycle, avg. C/6, max. 1.5C, 70% DoD
	Nominal temperature range (at cell level)	+0 to +60°C	+0 to +60°C
	Failure	1 cell failure compatible at least	1 cell failure compatible at least

¹ At C/5, 25°C, on 2.5-4.2 V range at cell level