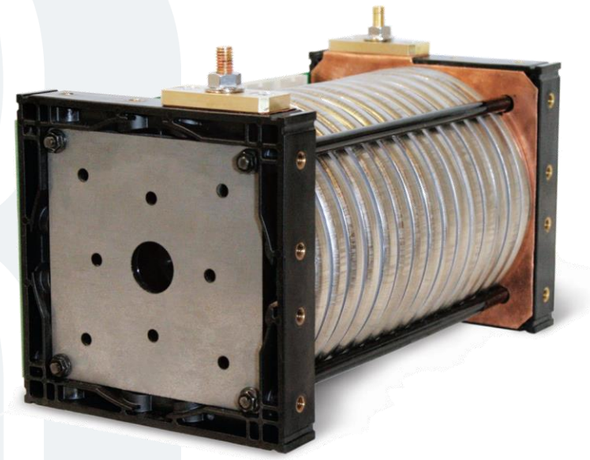
Rolled-Ribbon Battery Modules

Don’t see what you need?

The Rolled-Ribbon Battery Module design is very flexible. As a result, many more product variations are possible than can be shown in this product brief. Further, custom battery modules can easily be created for alternative cell sizes and stack-ups. Please contact the Rolled-Ribbon Battery Company for assistance with any battery module requirements that you might have.

RRBC_RR_BATTERIES_20180820

Rolled-Ribbon® Battery Modules



Rolled-Ribbon Battery Modules have a flexible design that enables the packaging of Rolled-Ribbon cells into modules for scalable battery systems.

The unique Rolled-Ribbon cell design enables Battery Modules to be constructed as stacked-cell batteries that do not require welding of any kind. As a result, Battery Modules can be disassembled and serviced. Bad cells no longer have to result in the discarding of entire modules. Cells can be harvested and repurposed. The large terminal surface areas of Rolled-Ribbon cells provide high rate capability and high thermal conductivity, resulting in cool operation with minimal temperature gradients. Battery Modules, like Rolled-Ribbon cells, have designs that provide for rugged durable construction.

Rolled-Ribbon Advantages

- **Flexible, Modular, Scalable**
- **Stacked-Cell Design**
- **No Welding – Serviceable**
- **High Rate Capability**
- **High Thermal Conductivity**
- **Rugged, Durable Construction**

Applications

- **Industrial Equipment**
- **Utility Vehicles**
- **Electric Vehicles**
- **Marine Vessels**
- **Transportable Power Systems**
- **Microgrids – Grid Energy Storage**
- **Uninterruptible Power Systems**

Rolled-Ribbon BATTERY COMPANY

14141 W. Highway 290, Building #400
Austin, TX 78737 USA
+1 (512) 387-2553

sales@rolled-ribbon.com

www.rolled-ribbon.com

Rolled-Ribbon Li-ion LFP Battery Modules

Characteristic/Battery Module	Units	48V-S	24V-M	48V-M	36V-L	48V-L
Series-Parallel Configuration		1C15S1P	1C08S1P	1C15S1P	1C12S1P	1C15S1P
Cell Package		136-15	165-15	165-15	165-28	165-28
Li-ion Formulation		LFPE04A	LFPE04A	LFPE04A	LFPE04A	LFPE04A
Nominal Voltage	V	48.0	25.6	48.0	38.4	48.0
Capacity (@23°C, 1C)						
Coulombic	Ah	14	21	21	43	43
Energy	Wh	672	537	1,008	1,651	2,064
Voltage Range	V	37.5-54.7	20.0-29.2	37.5-54.7	30.0-43.8	37.5-54.7
Ambient Operating Temperatures						
Discharging	°C	-20 to +45	-20 to +45	-20 to +45	-20 to +45	-20 to +45
Charging	°C	0 to +45	0 to +45	0 to +45	0 to +45	0 to +45
Storage	°C	-20 to +45	-20 to +45	-20 to +45	-20 to +45	-20 to +45
Discharging Characteristics (@23°C)						
Standard (1C)	A	14	21	21	43	43
Maximum Continuous (5C)	A	70	105	105	215	215
Peak < 15 sec (10C)	A	140	210	210	430	430
Charging Characteristics (@23°C)						
Charge Mode		CC-CV	CC-CV	CC-CV	CC-CV	CC-CV
Standard (1C)	A	14	21	21	43	43
Maximum Continuous (2C)	A	28	42	42	86	86
Peak < 15 sec (4C)	A	56	84	84	172	172
Power/Energy (@23°C)						
Peak Power (10C)	kW	6.72	5.37	10.08	16.51	20.64
Volumetric Densities						
Standard Energy (1C)	Wh/L	107	97	114	131	135
Standard Power (1C)	W/L	107	97	114	131	135
Peak Power (10C)	W/L	1,078	977	1,142	1,319	1,353
Gravimetric Densities						
Standard Energy (1C)	Wh/kg	69	55	69	88	93
Standard Power (1C)	W/kg	69	55	69	88	93
Peak Power (10C)	W/kg	692	550	687	889	930
DCIR (@50% DOD)	mΩ	< 51.0	< 19.6	< 36.6	< 15.0	< 18.8
Physical Characteristics						
Endcap Dimensions	mm	149x156	178x185	178x185	178x185	178x185
Length Overall	mm	268	167	268	380	463
Battery Weight	kg	9.7	9.8	14.7	18.6	22.2

NOTE: The above are just a few examples of Battery Modules based on a few select Rolled-Ribbon cell sizes with the LFPE04A electrochemical formulation. The Battery Module design, itself, is based solely on cell sizes and the number of cells per cell stack, which can be from four to sixteen. It is independent of the electrochemical formulations used in the Rolled-Ribbon cells.

Rolled-Ribbon Battery Modules