

Freedom⁺V²

CPAP BATTERY



Can I take the Freedom V² on an airplane? Yes. The Freedom V² CPAP Battery meets current FAA requirements for spare lithium-ion batteries (batteries not installed in a device) taken in carry-on baggage:

- **Capacity must be 100 Wh or less per battery:** The FreedomTM CPAP Battery is a 99.9 Wh battery and this is noted on the back of the battery case. There is not a limit to the number of spare lithium-ion batteries under 100 Wh you can carry for personal use.
- **Battery must be protected from damage and short circuit:** The cells of the Freedom V² CPAP Battery are protected inside of the aluminum alloy shell (case). The internal circuitry of the battery also protects against thermal runaway and overheating.

*Please note that TSA security, individual airline, and international rules may, at times, be more restrictive.

Can I take the Freedom V² in my checked baggage? No. Spare lithium-ion batteries (batteries not installed in a device) are not allowed in checked baggage. The Freedom V² CPAP Battery must only be taken in carry-on baggage.

Can I use the Freedom V² to power my PAP device or other small electronics during flight? While the Freedom V² CPAP Battery complies with current guidelines regarding lithium-ion batteries taken in carry-on baggage, it is recommended that you check with your airline prior to your departure as they may have specific requirements regarding the use of PAP devices and/or external lithium-ion batteries during flight.

Specifications

Cell Type: Rechargeable Lithium-ion

Capacity: 99.9 Wh

Output Current: 8A (maximum)

Output Voltage: 12V-24V (via DC output cable)

Size: 7.5" x 4.8" x 0.8" (L x W x H)

Weight: 1.7 lbs.



The information above is intended as guidance material only. Visit www.faa.gov for current FAA regulations and www.tsa.gov for current TSA security restrictions.



Battery Power Solutions

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Batteries Carried by Airline Passengers

Frequently Asked Questions

Q1. What kinds of batteries does the FAA allow in carry-on baggage (in the aircraft cabin)?

A1. For carry-on baggage checked at the gate or planeside, see Q2, below. Passengers can carry most consumer-type batteries and portable battery-powered electronic devices for their own personal use in carry-on baggage. Spare batteries must be protected from damage and short circuit. Battery-powered devices must be protected from accidental activation and heat generation. Damaged or recalled batteries, including when in a device, must not be carried. **Batteries allowed in carry-on baggage include:**

- **Dry cell alkaline batteries:** typical AA, AAA, C, D, 9-volt, button-sized cells, etc.
- **Dry cell rechargeable batteries** such as Nickel Metal Hydride (NiMH) and Nickel Cadmium (NiCad). For rechargeable lithium ion batteries; see next paragraph.
- **Lithium ion batteries** (a.k.a.: rechargeable lithium, lithium polymer, LIPO, secondary lithium). Passengers may carry all consumer-sized lithium ion batteries (up to 100 watt hours per battery). This size covers AA, AAA, cell phone, PDA, camera, camcorder, handheld game, tablet, portable drill, and standard laptop computer batteries. The watt hours (Wh) rating is marked on newer lithium ion batteries and is explained in #3 below. External chargers are also considered to be a battery.

With airline approval, devices can contain larger lithium ion batteries (101-160 watt hours per battery), but spares of this size are limited to two batteries in carry-on baggage only. This size covers the largest aftermarket extended-life laptop batteries and most lithium ion batteries for professional-grade audio/visual equipment.

- **Lithium metal batteries** (a.k.a.: non-rechargeable lithium, primary lithium). These batteries are often used with cameras and other small personal electronics. Consumer-sized batteries (up to 2 grams of lithium per battery) may be carried. This includes all the typical non-rechargeable lithium batteries used in cameras (AA, AAA, 123, CR123A, CR1, CR2, CRV3, CR22, 2CR5, etc.) as well as the flat round lithium button cells.
- **Nonspillable wet batteries (absorbed electrolyte)**, limited to 12 volts and 100 watt hours per battery. These batteries must be the absorbed electrolyte type (gel cells, AGM, etc.) that meet the requirements of 49 CFR 173.159a(d); i.e., no electrolyte will flow from a cracked battery case. Batteries must be in strong outer packagings or installed in equipment. Passengers are also limited to two (2) spare (uninstalled) batteries. Spare batteries' terminals must be protected (non-conductive caps, tape, etc.) within the outer packaging. Batteries and outer packaging must be marked "nonspillable" or "nonspillable battery." *Note: This exception is for portable electronic devices, not for vehicle batteries. There are separate exceptions for powered wheelchairs.*

Q2. What kinds of batteries does the FAA allow in checked baggage (including gate-checked bags)?

A2. Except for spare (uninstalled) lithium metal and lithium-ion batteries, all the batteries allowed in carry-on baggage are also allowed in checked baggage. The batteries must be protected from damage and short circuit or installed in a device. Battery-powered devices—particularly those with moving parts or those that could heat up—must be protected from accidental activation. **Spare lithium metal and lithium ion/polymer batteries are prohibited in checked baggage—this includes external battery packs. Electronic cigarettes and vaporizers are also prohibited in checked baggage.** "Checked baggage" includes bags checked at the gate or planeside.

Q3. How do I determine the watt hours (Wh) rating of a battery?

A3. To determine watt hours (Wh), multiply the volts (V) by the ampere hours (Ah). Example: A 12-volt battery rated to 8 Amp hours is rated at 96 watt hours (12 x 8 = 96). For milliamp hours (mAh), divide by 1000 (to get to Ah) and then multiply by the volts.

Q4. Is there a limit to the number of batteries or devices I can carry?

A4. The main limit is that the batteries and devices must be for personal use (includes professional use). Batteries and battery-powered devices carried for resale or for distribution by a vendor do not qualify for these exceptions. There is a two-spare limit on the large lithium-ion (101-160 Wh) and nonspillable batteries (see the chart on the next page).

Q5. What does "protected from short circuit" mean?









A5. When metal objects such as keys, coins, tools or other batteries come in contact with both terminals of a battery it can create a "circuit" or path for electricity to flow through. Electrical current flowing through this unprotected short circuit can cause extreme heat and sparks and even start a fire. To prevent short circuits, keep spare batteries in their original packaging, a battery case, or a separate pouch or pocket. Make sure loose batteries can't move around. Placing tape over the terminals of unpackaged batteries also helps to insulate them from short circuit.

For a quick reference guide, see illustrated table on next page...

Batteries Allowed in Airline Passenger Baggage in the US

Sep 9, 2016

Based on US DOT regulations (49 CFR, Sec. 175.10). TSA security, individual airline, and international rules may, at times, be more restrictive.

Type of Battery There is no limit to the number of batteries or devices carried for personal use unless specified below.	Allowed in <u>carry-on</u> baggage? 		Allowed in <u>checked</u>¹ baggage? 	
	In equipment ²	Spares	In equipment	Spares
Dry alkaline batteries 	YES	YES When protected from damage and short circuit	YES	YES When protected from damage and short circuit
Dry rechargeable – Nickel Metal Hydride (NiMH), Nickel Cadmium (NiCad), etc.  For lithium ion, see below.	YES	YES When protected from damage and short circuit	YES	YES When protected from damage and short circuit
Lithium ion (rechargeable lithium, lithium polymer, LIPO) as used in small consumer electronics, such as cell phones, tablets, tools, cameras, PDAs, and laptops. Limited to 100 watt hours ³ or less per battery. 	YES	YES When protected from damage and short circuit	YES <i>E-cigarettes and vaporizers are prohibited in checked baggage.</i>	NO
Larger lithium ion, 101-160 watt hours³ per battery—<u>with airline approval</u>. Limits: Two spare batteries per passenger—<u>with airline approval</u>. 	YES <i>Airline approval required</i>	YES When protected from damage and short circuit, and... <i>Airline approval required</i>	YES <i>Airline approval required</i>	NO
Lithium metal (non-rechargeable) as used in small consumer electronics such as cameras, LED flashlights, watches, etc. (2 grams or less lithium per battery). 	YES	YES When protected from damage and short circuit	YES <i>E-cigarettes and vaporizers are prohibited in checked baggage.</i>	NO
Nonspillable wet batteries (absorbed electrolyte) for portable electronic devices, 12 volts and 100 watt hours ³ per battery. Limits: Two spare batteries per passenger. 	YES	YES When protected from damage and short circuit and in strong packaging. Battery and outer packaging must be marked "nonspillable."	YES	YES When protected from damage and short circuit and in strong packaging. Battery and outer packaging must be marked "nonspillable."

¹Note: "Checked baggage" includes carry-on-bags checked at the gate or planeside. ²Note: TSA security rules prohibit some power tools in carry-on baggage.

³Note: Watt hours (Wh) = Volts (V) x Amp hour (Ah) or for milliamp hours Wh = V x (mAh ÷ 1000)



Travel Letter for Battery Power Solutions Freedom V² CPAP Battery

- September 2020 -

Battery Power Solutions is the manufacturer of the Freedom V² CPAP Battery. This portable lithium-ion battery provides power to Positive Airway Pressure (PAP) devices like CPAP machines.

CPAP machines and other PAP devices are used by those diagnosed with Obstructive Sleep Apnea during sleep to keep their airway from collapsing which causes temporary cessation of breathing (apnea).

We hereby certify that:

- the Watt Hour rating of the Freedom V² CPAP Battery is 99.9 Wh
 - this information is printed on the bottom of the battery
- the Freedom V² CPAP Battery has been UN 38.3 certified
- the Freedom V² CPAP Battery meets UL2056 testing standards

For more information, please refer to the User Manual or call customer service at 1-877-445-5228.

Sincerely,
Battery Power Solutions

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