



MOTOTRBO™ BATTERIES AND CHARGERS

BUYER'S GUIDE



MOTOTRBO ENERGY

WHEN IT COMES TO MISSION-CRITICAL SITUATIONS, YOUR RADIO IS ONLY AS RELIABLE AS THE BATTERY THAT POWERS IT. BY CHOOSING THE RIGHT BATTERY AND CHARGER TO PAIR WITH YOUR RADIO, YOU CAN PROVIDE A COMPLETE, CUSTOMISED SOLUTION THAT EVERYONE CAN RELY ON.

THIS GUIDE WILL HELP YOU UNDERSTAND THE OPTIONS AND SELECT THE SOLUTION THAT IS RIGHT FOR YOU.



Many factors affect the choice of charging and battery solution, including temperature, duty-cycle, shift length, and even accessories.

RELIABILITY YOU CAN TRUST

Motorola Solutions original batteries are proven tough for reliability and performance. Our design engineers draw on their vast experience from radio user feedback, thousands of hours of simulation and testing, and years of real-life usage that enables them to design energy solutions you can trust to perform when needed.

QUALITY IN EVERY PART

Motorola Solutions radios feature heavy duty casings, sturdy internal circuitry, engineered shock absorbing materials and premium quality cells which all add up to reliable, high-performing energy solutions that can withstand the inevitable knocks and drops they will encounter in every-day use.

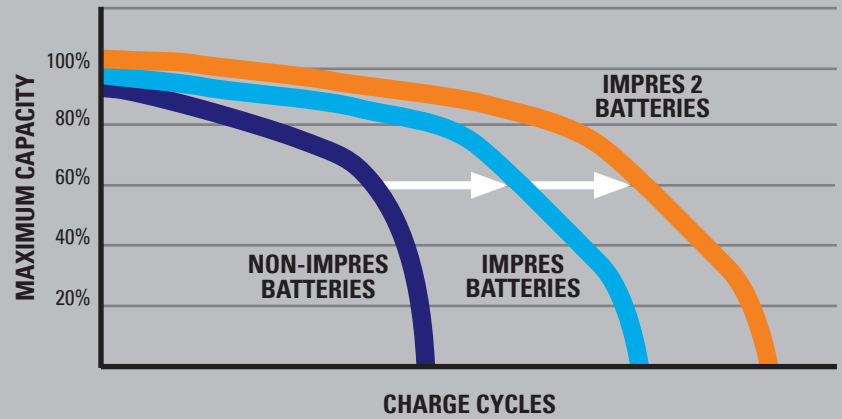
DESIGNED TO COMPLY

In addition to Motorola Solution's exceptional design, all our batteries and chargers are tested with our radios as a complete system to ensure they comply with all the relevant regulatory standards set out by ETSI, the European Union and local laws. These tests include RF energy exposure, conducted emissions and Restriction of Hazardous Substances (RoHS).

IMPRES™ TECHNOLOGY

As batteries age, they will hold less and less charge, which can be a big problem if shifts are long and batteries come back depleted. Motorola Solutions' innovative IMPRES battery charging and reconditioning system streamlines and automates battery maintenance using intelligent batteries and chargers. IMPRES radio batteries and chargers communicate with each other to help lengthen battery life by up to 43%*, reducing costs over the lifetime of the system as fewer battery replacements will be required. IMPRES 2 improves performance even further with a 60% increase over standard batteries.

IMPRES BATTERIES HAVE A LONGER LIFE



IMPRES FLEET MANAGEMENT

Eliminate the guesswork in managing batteries across your radio fleet with IMPRES Fleet Management. This software application allows you to remotely monitor and analyse the status of batteries to maximise performance and minimise replacement costs.

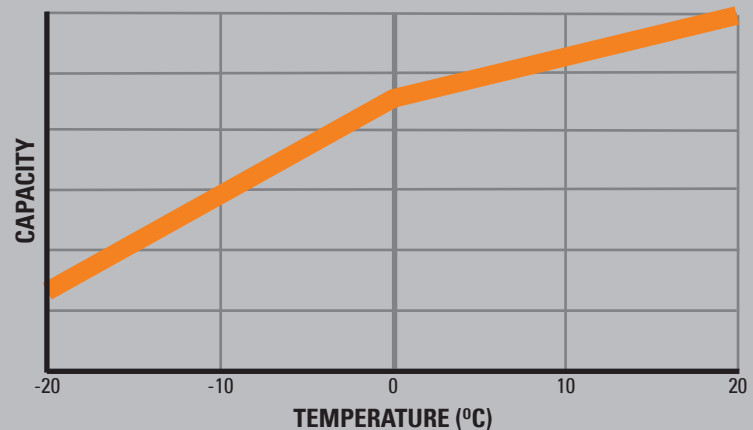
The IMPRES Battery Fleet Management application software is scalable from a single site to a multi-site system and can be networked to support up to 25,000 batteries in the same location or over geographically dispersed areas. IMPRES Fleet Management software gives you the power to create detailed reports about your entire battery fleet, including performance levels of your batteries, lost battery reports, and even notifications when a battery is nearing the end of its life.

Our latest multi-unit chargers are ready to connect directly to the IMPRES Fleet Management software simply by connecting to your PC through a USB cable.

TEMPERATURE

Temperature can seriously affect the runtime and lifetime of batteries if not properly specified. Will your radios be used inside or outside? Will the environment be heated, ambient, or refrigerated? Lower temperatures will cause a battery's capacity to drop, so in cold outside conditions or refrigerated environments a low-temperature battery should be specified for use with your Motorola Solutions radios.

TYPICAL CHANGES IN BATTERY CAPACITY WITH TEMPERATURE



MOISTURE

Wet environments will always pose a risk to most electronics, whether it is rain during outside use, steam in production environments, or high humidity environments such as swimming pools. Within our wide portfolio, Motorola Solutions offers batteries with IP ratings suitable for any environment, including total submersion in water.









IP (INGRESS PROTECTION) RATINGS GUIDE

SOLIDS

- 1.  Protected against a solid object greater than 50 mm such as a hand.
- 2.  Protected against a solid object greater than 12.5 mm such as a finger.
- 3.  Protected against a solid object greater than 2.5 mm such as a screwdriver.
- 4.  Protected against a solid object greater than 1 mm such as a wire.
- 5.  Dust Protected. Limited ingress of dust permitted. Will not interfere with operation of the equipment. Two to eight hours.
- 6.  Dust tight. No ingress of dust. Two to eight hours.

IP 67
RATING EXAMPLE

WATER

- 1.  Protected against vertically falling drops of water. Limited ingress protected.
- 2.  Protected against vertically falling drops of water with enclosure tilted up to 15 degrees from the vertical. Limited ingress permitted.
- 3.  Protected against sprays of water up to 60 degrees from the vertical. Limited ingress permitted for three minutes.
- 4.  Protected against water splashed from all directions. Limited ingress permitted.
- 5.  Protected against jets of water. Limited ingress permitted.
- 6.  Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities.
- 7.  Protection against the effects of immersion in water between 15 cm and 1 m for 30 minutes.
- 8.  Protection against the effects of immersion in water under pressure for long periods. Manufacturers must state the test criteria used.





HAZARDOUS ENVIRONMENTS

If your radio operatives will be visiting potentially explosive and hazardous environments then they will need intrinsically safe certified radios to keep themselves safe and in contact at all times. DP4000 Ex series radios from Motorola Solutions work with our ATEX-certified batteries and are approved for explosive environments.

BATTERY CAPACITY

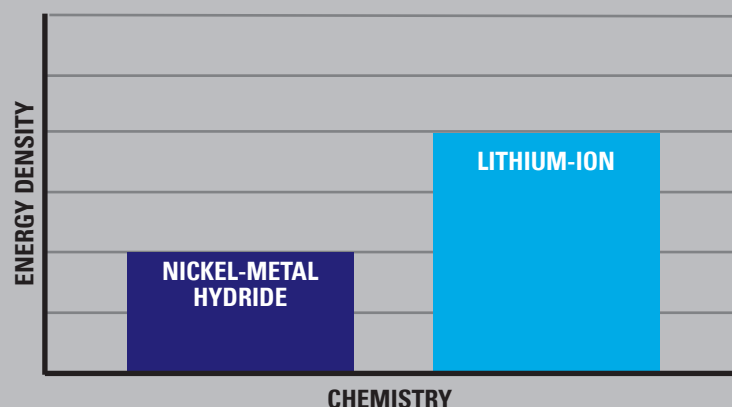
When choosing a battery, special attention should be paid to the way the radio will be used. Are your operatives only using the radios for a few minutes at a time or could they be away from a charging point for many hours? The longer the period between chargers the higher the battery capacity should be.

Is your system always busy? The higher the volume of calls, the faster the battery will be depleted because receiving and transmitting uses more power than when in standby. Do some of your users have accessories such as Bluetooth® headsets and GPS location updates enabled? These features will require more power and therefore may need a higher capacity battery to get through a whole shift.















BATTERY CHEMISTRY

Advances in battery chemistry have allowed devices to get smaller and more powerful as more energy is available. With Motorola Solutions batteries, you can choose between Nickel-Metal Hydride (NiMH) or Lithium-Ion (Li-Ion) technology. NiMH is ideal for users who won't be using their radio extensively, or who don't work long shifts. Li-Ion chemistry offers an energy density that is nearly double that of NiMH, allowing users to choose lighter batteries or batteries of the same weight that offer a longer runtime between charges.

BATTERY CHEMISTRY Vs ENERGY DENSITY




BATTERIES DP1400 / DP2000e SERIES / DP3000e SERIES

| RADIO FAMILY | DESCRIPTION | TYPICAL CAPACITY (mAh) | IMPRES | IP RATING | CHEMISTRY | CE APPROVED | INTRINSIC SAFETY | MIN TEMPERATURE (°C) |
|-----------------------|--|------------------------|--------|-----------|-----------|-------------|------------------|----------------------|
| DP1400 | | | | | | | | |
| PMNN4251 |  1400mAh NiMH Battery | 1400 | No | IP54 | NiMH | Yes | No | -20 |
| PMNN4253 |  1600mAh Li-Ion Battery | 1600 | No | IP54 | Li-Ion | Yes | No | -10 |
| PMNN4259 |  2075mAh Li-Ion Battery | 2075 | No | IP54 | Li-Ion | Yes | No | -10 |
| PMNN4254 |  2300mAh Li-Ion Battery | 2300 | No | IP54 | Li-Ion | Yes | No | -10 |
| PMNN4258 |  2900mAh Li-Ion Battery | 2900 | No | IP54 | Li-Ion | Yes | No | -10 |
| DP2000e SERIES | | | | | | | | |
| PMNN4412 |  IP68 1400mAh Li-Ion Battery | 1400 | No | IP68 | NiMH | Yes | No | -20 |
| PMNN4525 |  IMPRES IP68 1950mAh Li-Ion Battery | 1950 | Yes | IP68 | Li-Ion | Yes | No | -30 |
| PMNN4491 |  IMPRES IP68 2100mAh Li-Ion Battery | 2100 | Yes | IP68 | Li-Ion | Yes | No | -10 |
| PMNN4544 |  IMPRES IP68 2450mAh Li-Ion Battery | 2450 | Yes | IP68 | Li-Ion | Yes | No | -10 |
| PMNN4490 |  IMPRES IP68 2900mAh Li-Ion Battery | 2900 | Yes | IP68 | Li-Ion | Yes | UL TIA4950 | -10 |
| PMNN4488 |  IMPRES IP67 3000mAh Li-Ion Battery | 3000 | Yes | IP67 | Li-Ion | Yes | No | -10 |
| DP3000e SERIES | | | | | | | | |
| PMNN4440 |  IP68 1700mAh Li-Ion Battery | 1700 | No | IP68 | Li-Ion | Yes | No | -10 |
| PMNN4511 |  IMPRES IP68 2900mAh Li-Ion Battery | 2900 | Yes | IP68 | Li-Ion | Yes | UL TIA4950 | -20 |
| PMNN4502 |  IMPRES IP67 3000mAh Li-Ion Battery | 3000 | Yes | IP67 | Li-Ion | Yes | No | -10 |

BATTERIES

DP4000e SERIES / DP4000 Ex SERIES / MOTOTRBO ION / SL1000 SERIES / SL2000 SERIES / SL4000e SERIES

| RADIO FAMILY | DESCRIPTION | TYPICAL CAPACITY (mAh) | IMPRES | IP RATING | CHEMISTRY | CE APPROVED | INTRINSIC SAFETY | MIN TEMPERATURE (°C) |
|-------------------------|---|------------------------|----------|-----------|-----------|-------------|------------------|----------------------|
| DP4000e SERIES | | | | | | | | |
| PMNN4412 |  IP68 1400mAh Li-Ion Battery | 1400 | No | IP68 | NiMH | Yes | No | -20 |
| PMNN4525 |  IMPRES IP68 1950mAh Li-Ion Battery | 1950 | Yes | IP68 | Li-Ion | Yes | No | -30 |
| PMNN4491 |  IMPRES IP68 2100mAh Li-Ion Battery | 2100 | Yes | IP68 | Li-Ion | Yes | No | -10 |
| PMNN4544 |  IMPRES IP68 2450mAh Li-Ion Battery | 2450 | Yes | IP68 | Li-Ion | Yes | No | -10 |
| PMNN4489 |  IMPRES IP68 2900mAh Li-Ion Battery | 2900 | Yes | IP68 | Li-Ion | Yes | UL TIA4950 | -10 |
| PMNN4488 |  IMPRES IP67 3000mAh Li-Ion Battery | 3000 | Yes | IP67 | Li-Ion | Yes | No | -10 |
| DP4000 Ex SERIES | | | | | | | | |
| NNTN8840 |  IMPRES ATEX IP67 2000mAh Li-Ion Battery | 2000 | Yes | IP67 | Li-Ion | Yes | ATEX MA | -10 |
| NNTN8359 |  IMPRES ATEX IP67 2075mAh Li-Ion Battery | 2075 | Yes | IP67 | Li-Ion | Yes | ATEX | -10 |
| MOTOTRBO ION | | | | | | | | |
| PMNN4803 |  IMPRES 2 IP68 2820mAh Li-Ion Battery | 2820 | IMPRES 2 | IP68 | Li-Ion | Yes | No | -20 |
| PMNN4804 |  IMPRES 2 TIA IP68 2900mAh Li-Ion Battery | 2900 | IMPRES 2 | IP68 | Li-Ion | Yes | UL TIA4950 | -20 |
| PMNN4805 |  IMPRES 2 UL TIA4950 IP68 4400mAh Li-Ion Battery | 4400 | IMPRES 2 | IP68 | Li-Ion | Yes | UL TIA4950 | -20 |
| SL1000 SERIES | | | | | | | | |
| PMNN4468 |  2300mAh Li-Ion Battery | 2300 | No | IP54 | Li-Ion | Yes | No | -20 |
| SL2000 SERIES | | | | | | | | |
| PMNN4468 |  2300mAh Li-Ion Battery | 2300 | No | IP54 | Li-Ion | Yes | No | -20 |
| SL4000e SERIES | | | | | | | | |
| PMNN4468 |  2300mAh Li-Ion Battery | 2300 | No | IP54 | Li-Ion | Yes | No | -20 |

CHARGERS DP1400 / DP2000e SERIES / DP3000e SERIES

| RADIO FAMILY | DESCRIPTION | IMPRES | CHARGING SLOTS | POWER CORD | DISPLAY | INTEGRATED FLEET MANAGEMENT | REQUIRES ADAPTER |
|-----------------------|--|--------|----------------|------------|---------|-----------------------------|------------------|
| DP1400 | | | | | | | |
| PMLN5192 |  Rapid Single Unit Charger (Euro) | No | 1 | Euro | None | No | None |
| PMLN5191 |  Rapid Single Unit Charger (UK) | No | 1 | UK | None | No | None |
| PMLN5193 |  Rapid Single Unit Charger (USA) | No | 1 | USA | None | No | None |
| PMLN7089 |  Travel Single Unit Charger (Car) | No | 1 | Car | None | No | None |
| PMLN6598 |  Multi-Unit Charger (Euro) | No | 6 | Euro | None | No | None |
| PMLN6600 |  Multi-Unit Charger (UK) | No | 6 | UK | None | No | None |
| DP2000e SERIES | | | | | | | |
| NNTN8273 |  Core Single Unit Charger (Euro) | No | 1 | Euro | None | No | None |
| NNTN8274 |  Core Single Unit Charger (UK) | No | 1 | UK | None | No | None |
| WPLN4255 |  IMPRES Single Unit Charger (Euro) | Yes | 1 | Euro | None | No | None |
| WPLN4254 |  IMPRES Single Unit Charger (UK) | Yes | 1 | UK | None | No | None |
| WPLN4253 |  IMPRES Single Unit Charger (USA) | Yes | 1 | USA | None | No | None |
| PMPN4289 |  IMPRES Multi Unit Charger with Single Display (Euro) | Yes | 6 | Euro | 1 | Yes | None |
| PMPN4290 |  IMPRES Multi Unit Charger with Single Display (UK) | Yes | 6 | UK | 1 | Yes | None |
| PMPN4284 |  IMPRES Multi Unit Charger with Single Display (USA) | Yes | 6 | USA | 1 | Yes | None |
| DP3000e SERIES | | | | | | | |
| PMLN5188 |  IMPRES Single Unit Charger (Euro) | Yes | 1 | Euro | None | No | None |
| PMLN5194 |  IMPRES Single Unit Charger (UK) | Yes | 1 | UK | None | No | None |
| PMLN5198 |  IMPRES Single Unit Charger (USA) | Yes | 1 | USA | None | No | None |
| PMPN4297 |  IMPRES Multi Unit Charger with Single Display (Euro) | Yes | 6 | Euro | 1 | No | None |
| PMPN4298 |  IMPRES Multi Unit Charger with Single Display (UK) | Yes | 6 | UK | 1 | No | None |
| PMPN4285 |  IMPRES Multi Unit Charger with Single Display (USA) | Yes | 6 | USA | 1 | No | None |



CHARGERS DP4000e SERIES

| RADIO FAMILY | DESCRIPTION | IMPRES | CHARGING SLOTS | POWER CORD | DISPLAY | INTEGRATED FLEET MANAGEMENT | REQUIRES ADAPTER |
|-----------------------|--|--------|----------------|------------|---------|-----------------------------|------------------|
| DP4000e SERIES | | | | | | | |
| NNTN8273 | Core Single Unit Charger (Euro) | No | 1 | Euro | None | No | None |
| NNTN8274 | Core Single Unit Charger (UK) | No | 1 | UK | None | No | None |
| NNTN7616 | IMPRES Single Unit Charger (Car) | Yes | 1 | Car | None | No | None |
| WPLN4255 | IMPRES Single Unit Charger (Euro) | Yes | 1 | Euro | None | No | None |
| WPLN4254 | IMPRES Single Unit Charger (UK) | Yes | 1 | UK | None | No | None |
| WPLN4253 | IMPRES Single Unit Charger (USA) | Yes | 1 | USA | None | No | None |
| NNTN8525 | Travel Single Unit Charger (Car) | No | 1 | Car | None | No | None |
| PMPN4289 | IMPRES Multi Unit Charger with Single Display (Euro) | Yes | 6 | Euro | 1 | Yes | None |
| PMPN4290 | IMPRES Multi Unit Charger with Single Display (UK) | Yes | 6 | UK | 1 | Yes | None |
| PMPN4284 | IMPRES Multi Unit Charger with Single Display (USA) | Yes | 6 | USA | 1 | Yes | None |

CHARGERS DP4000 Ex SERIES / MOTOTRBO ION / SL1000 SERIES

| RADIO FAMILY | DESCRIPTION | IMPRES | CHARGING SLOTS | POWER CORD | DISPLAY | INTEGRATED FLEET MANAGEMENT | REQUIRES ADAPTER |
|-------------------------|--|----------|----------------|------------|---------|-----------------------------|------------------|
| DP4000 Ex SERIES | | | | | | | |
| NNTN7616 | IMPRES Single Unit Charger (Car) | Yes | 1 | Car | None | No | None |
| WPLN4255 | IMPRES Single Unit Charger (Euro) | Yes | 1 | Euro | None | No | None |
| WPLN4254 | IMPRES Single Unit Charger (UK) | Yes | 1 | UK | None | No | None |
| WPLN4253 | IMPRES Single Unit Charger (USA) | Yes | 1 | USA | None | No | None |
| NNTN8525 | Travel Single Unit Charger (Car) | No | 1 | Car | None | No | None |
| PMPN4289 | IMPRES Multi Unit Charger with Single Display (Euro) | Yes | 6 | Euro | 1 | Yes | None |
| PMPN4290 | IMPRES Multi Unit Charger with Single Display (UK) | Yes | 6 | UK | 1 | Yes | None |
| PMPN4284 | IMPRES Multi Unit Charger with Single Display (USA) | Yes | 6 | USA | 1 | Yes | None |
| PMPN4308 | IMPRES ATEX Multi Unit Maintainer with Single Display (Not Charger) (Euro) | Yes | 6 | Euro | 1 | No | None |
| PMPN4319 | IMPRES ATEX Multi Unit Maintainer with Single Display (Not Charger) (UK) | Yes | 6 | UK | 1 | No | None |
| MOTOTRBO ION | | | | | | | |
| PMPN4525 | IMPRES 2 Single Unit Charger (Euro) | IMPRES 2 | 1 | Euro | None | No | None |
| PMPN4510 | IMPRES 2 Single Unit Charger (UK) | IMPRES 2 | 1 | UK | None | No | None |
| PMPN4524 | IMPRES 2 Single Unit Charger (US) | IMPRES 2 | 1 | US | None | No | None |
| PMPN4499 | IMPRES 2 Multi Unit Charger with Single Display (Euro) | IMPRES 2 | 6 | Euro | 1 | No | None |
| PMPN4516 | IMPRES 2 Multi Unit Charger with Single Display (UK) | IMPRES 2 | 6 | UK | 1 | No | None |
| PMPN4498 | IMPRES 2 Multi Unit Charger with Single Display (US) | IMPRES 2 | 6 | US | 1 | No | None |
| SL1000 SERIES | | | | | | | |
| PS000042A12 | USB Charger Adapter (Euro) | No | 1 | Euro | None | No | None |
| PS000042A13 | USB Charger Adapter (UK) | No | 1 | UK | None | No | None |
| PMLN7110 | Single Unit Charger (Euro) | No | 1 | Euro | None | No | None |
| PMLN7163 | Single Unit Charger (UK) | No | 1 | UK | None | No | None |
| PMLN7162 | Multi Unit Charger (UK) | No | 6 | UK | None | No | None |
| PMLN7102 | Multi Unit Charger (Euro) | No | 6 | Euro | None | No | None |

CHARGERS SL2000 SERIES / SL4000e SERIES

| RADIO FAMILY | DESCRIPTION | IMPRES | CHARGING SLOTS | POWER CORD | DISPLAY | INTEGRATED FLEET MANAGEMENT | REQUIRES ADAPTER |
|-----------------------|--|--------|----------------|------------|---------|-----------------------------|------------------|
| SL2000 SERIES | | | | | | | |
| PS000042A12 | USB Charger Adapter (Euro) | No | 1 | Euro | None | No | None |
| PS000042A13 | USB Charger Adapter (UK) | No | 1 | UK | None | No | None |
| PMLN7110 | Single Unit Charger (Euro) | No | 1 | Euro | None | No | None |
| PMLN7163 | Single Unit Charger (UK) | No | 1 | UK | None | No | None |
| PMLN7162 | Multi Unit Charger (UK) | No | 6 | UK | None | No | None |
| PMLN7102 | Multi Unit Charger (Euro) | No | 6 | Euro | None | No | None |
| SL4000e SERIES | | | | | | | |
| PS000042A12 | USB Charger Adapter (Euro) | No | 1 | Euro | None | No | None |
| PS000042A13 | USB Charger Adapter (UK) | No | 1 | UK | None | No | None |
| PMLN6705A | Tri Unit Charger (EU) also includes micro-USB socket | No | 2 | Euro | None | No | None |
| PMLN6704A | Tri Unit Charger (UK) also includes micro-USB socket | No | 2 | UK | None | No | None |
| PMLN6688A | Multi Unit Charger (Euro) | No | 6 | Euro | None | No | None |
| PMLN6686A | Multi Unit Charger (UK) | No | 6 | UK | None | No | None |





To learn more about MOTOTRBO, visit www.motorolasolutions.com/MOTOTRBO

* Motorola Solutions batteries using Li-Ion cells will go through 300 - 500 charging cycles before they degrade to 80% of original capacity.

For IMPRES batteries, charged and maintained with an IMPRES charger, our testing shows that you will increase the number of charge cycles by around 43% (430 - 700 charging cycles).

For storage and proper battery maintenance information, please refer to the **battery care tips** at www.motorolasolutions.com/en_xu/products/two-way-radio-accessories/batteries.html.

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Availability is subject to individual country law and regulations. All specifications shown are typical unless otherwise stated and are subject to change without notice.

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