Charger Voltage & Charge Time Chart

Nominal voltage, series count, full-charge voltage and charge time — one page · Updated November 2026

LILON
liloncharger.com
info@liloncharger.com

1 · VOLTAGE CONVERSION

Pack described as	Cells (series)	Nominal	Full charge	Charger label
12V	3S	11.1V	12.6V	12.6V
24V	7S	25.2V	29.4V	29.4V
36V	10S	36.0V	42.0V	42V
48V	13S	46.8V	54.6V	54.6V
52V	14S	50.4V	58.8V	58.8V
60V	16S	57.6V	67.2V	67.2V
72V	20S	72.0V	84.0V	84V

Lithium-ion: 3.6V nominal / 4.2V full charge per cell. A “36V” pack therefore uses a **42V** charger — searching for a “36V charger” returns the wrong product.

2 · CURRENT ↔ POWER

Charger	Voltage	Current	Power	Typical use
29.4V 2A	29.4V	2A	58.8W	24V class, small packs
29.4V 3A	29.4V	3A	88.2W	Wheelchairs, mobility scooters
42V 2A	42V	2A	84W	36V e-bikes (most common)
42V 4A	42V	4A	168W	36V, faster charging
54.6V 2A	54.6V	2A	109.2W	48V commuter e-bikes
67.2V 4A	67.2V	4A	268.8W	60V scooters
84V 2A	84V	2A	168W	72V scooters

A “168W charger” is 4A at 42V but 2A at 84V. Divide the wattage by the charge voltage before comparing listings.

3 · CHARGE TIME FROM EMPTY

Pack capacity	2A	3A	4A	5A
10Ah	5.8 h	3.8 h	2.9 h	2.3 h
15Ah	8.6 h	5.8 h	4.3 h	3.5 h
20Ah	11.5 h	7.7 h	5.8 h	4.6 h
30Ah	17.3 h	11.5 h	8.6 h	6.9 h

Formula: hours ≈ (Ah ÷ A) × 1.15. The 1.15 allows for the falling-current taper at the end of a lithium charge.

> **Do not match by number alone.** 29.4V is both a 7S lithium full-charge voltage and close to the finish voltage of a 24V lead-acid charger. The two profiles are not interchangeable — a lead-acid float stage must never be applied to a lithium

> pack.

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Shenzhen Liankelilong
Electronic Technology Co., Ltd.
Lithium battery chargers & power adapters