

# cells

## internal resistance

All you need is a 4 ohm 5W power resistor or similar and a multimeter.

- First, measure the battery's voltage when charged. This is V1
- Next, connect your multimeter leads to each side of the resistor and briefly connect the resistor across the battery. Note the voltage reading, this is V2.
- Measure your resistor to get its precise resistance, this is R

The battery's internal resistance ( $R_i$ ) is calculated with the formula:

$$R_i = (V_1 - V_2) * R / V_2$$

18650  $R_i$  values:

- 75-150 mOhm - Excellent
- 150-250 mOhm - Good
- 250-350 mOhm - Marginal
- 350-Up mOhm - Bad

From:

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Last update: **2021/10/10 09:37**

