

Evil Mad Scientist Laboratories LED Resistor Calculator

- * Cut out both pieces & Sections labeled "[REMOVE]"
- * Fold at hard crease lines & tape down small flap
- * Insert slider & crease fold lines

<http://www.evilmadscientist.com/go/ledcalc>

Evil Mad Scientist Laboratories LED RESISTOR CALCULATOR

Use the subtractor on this side to figure out the voltage across the load resistor. Once you know that, use the other side to find the resistance and power rating that your resistor will need.

Example: Suppose $V_{cc} = 12\text{ V}$ and $V_f = 3.5\text{ V}$.
From this side, find $V_R = 8.5\text{ V}$.
Pick current $I = 20\text{ mA}$.
Then, from the other side, $R \sim 425\text{ }\Omega$,
and a $1/4\text{ W}$ resistor is needed.

www.evilmadscientist.com

System Input Voltage (V_{cc})

LED Forward Voltage (V_f)

Voltage across load resistor: $V_R =$

"Typical" V_f for low-power LEDs: $\sim 2\text{ V}$ for red, yellow, orange, and yellowish green
 $\sim 3.5\text{ V}$ for blue, white, UV, and pure green

Resistor should be rated for at least... $1/8\text{ W}$

The load resistor power consumption is then indicated directly below your chosen current value:

2. Dial your value of V_R into the center of this box:

1. Line up your desired current below your V_R . The resistance value is then indicated by the arrow.

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This slider thingy is backwards, can't you tell?

- FOLD -

- FOLD -

5 mA 6 7 10 mA 15 20 30 40 50 60 70 0.1 A 15 2 3 4 5 6 7 1 A

50 V 40 30 20 V 15 10 V 7 6 5 4 3 2 V 1.5 1 V 0.7 0.5 0.2 V 0.1 V

5 mA 6 7 10 mA 15 20 30 40 50 60 70 0.1 A 15 2 3 4 5 6 7 1 A (Sure hope you know what you're doing...)