Resistor Colour Code Calculator (4 Band)

Resistance and tolerance of a four-band resistor from its colour bands, with the lowest and highest values the tolerance allows (IEC 60062 code).

Method: IEC 60062 (marking codes for resistors and capacitors)

Input parameters

Unit system: SI

Parameter	Value	Unit
First band (first digit)	Yellow (4)	
Second band (second digit)	Violet (7)	
Third band (multiplier)	Red (×10^2)	
Fourth band (tolerance)	Gold (±5 %)	

Calculated results

Parameter	Value	Unit
Resistance	4,700.0	Ω
Lowest value within tolerance	4,465.0	Ω
Highest value within tolerance	4,935.0	Ω

Formula and method

$$R = (10d_1 + d_2) \times 10^m \pm t$$

Variables

d_1	First band (first digit)	-
d_2	Second band (second digit)	-
m	Third band (multiplier)	-
t	Fourth band (tolerance)	-
R	Resistance	Ω
R_{min}	Lowest value within tolerance	Ω
R_{max}	Highest value within tolerance	Ω

Method and standards

Digits, multiplier and tolerance by colour.

Assumptions and limits

- Four-band resistors, with the common tolerance colours listed. Grey and the tighter tolerance colours are left out because editions of IEC 60062 assign them differently; read them from the maker's data.

References

- IEC 60062 (marking codes for resistors and capacitors)

Report details

Report reference	FCC-4811-FG6Q (the same inputs always give the same reference)
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Release checks	3 reference cases of this calculator, computed independently, are checked on every release

Results are for engineering estimation. Verify critical designs against the referenced standards and your own data.

This calculator online

https://calc.firecad.com/electrical/circuits/resistor-colour-code

Open this case on calc.firecad.com →

Reopens the calculator with the inputs of this report.