

8 GAUGE CABLE Voltage Drop Matrix

CABLE LENGTH IN FEET

| | | 10' | 20' | 30' | 40' | 50' | 60' | 70' | 80' | 90' | 100' | 120' | 140' | 160' | 180' | 200' | 250' | 300' |
|-----------------|------|------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| WATTAGE LOAD | 5 | 0.00 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.10 | 0.12 |
| | 10 | 0.01 | 0.02 | 0.02 | 0.03 | 0.04 | 0.05 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.11 | 0.12 | 0.14 | 0.15 | 0.19 | 0.23 |
| | 15 | 0.01 | 0.02 | 0.03 | 0.05 | 0.06 | 0.07 | 0.08 | 0.09 | 0.10 | 0.12 | 0.14 | 0.16 | 0.18 | 0.21 | 0.23 | 0.29 | 0.35 |
| | 20 | 0.02 | 0.03 | 0.05 | 0.06 | 0.08 | 0.09 | 0.11 | 0.12 | 0.14 | 0.15 | 0.18 | 0.22 | 0.25 | 0.28 | 0.31 | 0.38 | 0.46 |
| | 25 | 0.02 | 0.04 | 0.06 | 0.08 | 0.10 | 0.12 | 0.13 | 0.15 | 0.17 | 0.19 | 0.23 | 0.27 | 0.31 | 0.35 | 0.38 | 0.48 | 0.58 |
| | 30 | 0.02 | 0.05 | 0.07 | 0.09 | 0.12 | 0.14 | 0.16 | 0.18 | 0.21 | 0.23 | 0.28 | 0.32 | 0.37 | 0.42 | 0.46 | 0.58 | 0.69 |
| | 35 | 0.03 | 0.05 | 0.08 | 0.11 | 0.13 | 0.16 | 0.19 | 0.22 | 0.24 | 0.27 | 0.32 | 0.38 | 0.43 | 0.48 | 0.54 | 0.67 | 0.81 |
| | 40 | 0.03 | 0.06 | 0.09 | 0.12 | 0.15 | 0.18 | 0.22 | 0.25 | 0.28 | 0.31 | 0.37 | 0.43 | 0.49 | 0.55 | 0.62 | 0.77 | 0.92 |
| | 45 | 0.03 | 0.07 | 0.10 | 0.14 | 0.17 | 0.21 | 0.24 | 0.28 | 0.31 | 0.35 | 0.42 | 0.48 | 0.55 | 0.62 | 0.69 | 0.87 | 1.04 |
| | 50 | 0.04 | 0.08 | 0.12 | 0.15 | 0.19 | 0.23 | 0.27 | 0.31 | 0.35 | 0.38 | 0.46 | 0.54 | 0.62 | 0.69 | 0.77 | 0.96 | 1.15 |
| | 55 | 0.04 | 0.08 | 0.13 | 0.17 | 0.21 | 0.25 | 0.30 | 0.34 | 0.38 | 0.42 | 0.51 | 0.59 | 0.68 | 0.76 | 0.85 | 1.06 | 1.27 |
| | 60 | 0.05 | 0.09 | 0.14 | 0.18 | 0.23 | 0.28 | 0.32 | 0.37 | 0.42 | 0.46 | 0.55 | 0.65 | 0.74 | 0.83 | 0.92 | 1.15 | 1.38 |
| | 65 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.25 | 1.50 |
| | 70 | 0.05 | 0.11 | 0.16 | 0.22 | 0.27 | 0.32 | 0.38 | 0.43 | 0.48 | 0.54 | 0.65 | 0.75 | 0.86 | 0.97 | 1.08 | 1.35 | 1.62 |
| | 75 | 0.06 | 0.12 | 0.17 | 0.23 | 0.29 | 0.35 | 0.40 | 0.46 | 0.52 | 0.58 | 0.69 | 0.81 | 0.92 | 1.04 | 1.15 | 1.44 | 1.73 |
| | 80 | 0.06 | 0.12 | 0.18 | 0.25 | 0.31 | 0.37 | 0.43 | 0.49 | 0.55 | 0.62 | 0.74 | 0.86 | 0.98 | 1.11 | 1.23 | 1.54 | 1.85 |
| | 85 | 0.07 | 0.13 | 0.20 | 0.26 | 0.33 | 0.39 | 0.46 | 0.52 | 0.59 | 0.65 | 0.78 | 0.92 | 1.05 | 1.18 | 1.31 | 1.63 | 1.96 |
| | 90 | 0.07 | 0.14 | 0.21 | 0.28 | 0.35 | 0.42 | 0.48 | 0.55 | 0.62 | 0.69 | 0.83 | 0.97 | 1.11 | 1.25 | 1.38 | 1.73 | 2.08 |
| | 95 | 0.07 | 0.15 | 0.22 | 0.29 | 0.37 | 0.44 | 0.51 | 0.58 | 0.66 | 0.73 | 0.88 | 1.02 | 1.17 | 1.32 | 1.46 | 1.83 | 2.19 |
| | 100 | 0.08 | 0.15 | 0.23 | 0.31 | 0.38 | 0.46 | 0.54 | 0.62 | 0.69 | 0.77 | 0.92 | 1.08 | 1.23 | 1.38 | 1.54 | 1.92 | 2.31 |
| 110 | 0.08 | 0.17 | 0.25 | 0.34 | 0.42 | 0.51 | 0.59 | 0.68 | 0.76 | 0.85 | 1.02 | 1.18 | 1.35 | 1.52 | 1.69 | 2.12 | 2.54 | |
| 120 | 0.09 | 0.18 | 0.28 | 0.37 | 0.46 | 0.55 | 0.65 | 0.74 | 0.83 | 0.92 | 1.11 | 1.29 | 1.48 | 1.66 | 1.85 | 2.31 | 2.77 | |
| 130 | 0.10 | 0.20 | 0.30 | 0.40 | 0.50 | 0.60 | 0.70 | 0.80 | 0.90 | 1.00 | 1.20 | 1.40 | 1.60 | 1.80 | 2.00 | 2.50 | 3.00 | |
| 140 | 0.11 | 0.22 | 0.32 | 0.43 | 0.54 | 0.65 | 0.75 | 0.86 | 0.97 | 1.08 | 1.29 | 1.51 | 1.72 | 1.94 | 2.15 | 2.69 | 3.23 | |
| 150 | 0.12 | 0.23 | 0.35 | 0.46 | 0.58 | 0.69 | 0.81 | 0.92 | 1.04 | 1.15 | 1.38 | 1.62 | 1.85 | 2.08 | 2.31 | 2.88 | 3.46 | |
| 160 | 0.12 | 0.25 | 0.37 | 0.49 | 0.62 | 0.74 | 0.86 | 0.98 | 1.11 | 1.23 | 1.48 | 1.72 | 1.97 | 2.22 | 2.46 | 3.08 | 3.69 | |
| 170 | 0.13 | 0.26 | 0.39 | 0.52 | 0.65 | 0.78 | 0.92 | 1.05 | 1.18 | 1.31 | 1.57 | 1.83 | 2.09 | 2.35 | 2.62 | 3.27 | 3.92 | |
| 180 | 0.14 | 0.28 | 0.42 | 0.55 | 0.69 | 0.83 | 0.97 | 1.11 | 1.25 | 1.38 | 1.66 | 1.94 | 2.22 | 2.49 | 2.77 | 3.46 | 4.15 | |
| 190 | 0.15 | 0.29 | 0.44 | 0.58 | 0.73 | 0.88 | 1.02 | 1.17 | 1.32 | 1.46 | 1.75 | 2.05 | 2.34 | 2.63 | 2.92 | 3.65 | 4.38 | |
| 200 | 0.15 | 0.31 | 0.46 | 0.62 | 0.77 | 0.92 | 1.08 | 1.23 | 1.38 | 1.54 | 1.85 | 2.15 | 2.46 | 2.77 | 3.08 | 3.85 | 4.62 | |
| 250 | 0.19 | 0.38 | 0.58 | 0.77 | 0.96 | 1.15 | 1.35 | 1.54 | 1.73 | 1.92 | 2.31 | 2.69 | 3.08 | 3.46 | 3.85 | 4.81 | 5.77 | |
| 300 | 0.23 | 0.46 | 0.69 | 0.92 | 1.15 | 1.38 | 1.62 | 1.85 | 2.08 | 2.31 | 2.77 | 3.23 | 3.69 | 4.15 | 4.62 | 5.77 | 6.92 | |

- How to use this Matrix: Find the load and length of the planned run. In the intersecting box is the voltage drop for that section of cable.
 - To find the total voltage drop of a run, add up the individual sections voltage drop (from transformer to 1st lite + 1st lite to 2nd lite + 2nd to 3rd + etc).
 - The goal is to have the voltage drop at any light on the run be within the white zone — you should loose at least .50 volts but no more than 2.50 volts to have the system perform safely and properly. Low voltage lamps are designed to operate between 10.5 - 11.5 volts.
- Use the voltage tap on the PX transformer that will provide each lamp 10.5 - 11.5 volts.

NOTE: Shaded Areas Not Recommended. Use Next Gauge Cable Size or Increase/Reduce Load.