

HELPFUL TIPS - ELECTRICAL CALCULATIONS & ESTIMATING CONNECTIVITY

Based on current UL Standards, the maximum number of watts you can plug End-to-End, is 216 Watts. Use the chart below to easily find Power Draw and Maximum End-to-End (in-line) Connectivity:

Type of Product	Size	Watts/Amps	Maximum End-to-End (in-line) Connectivity
Premium Grade LED Sets	70ct. 5MM, M5, G12, or C6	4.8W/0.04A	45 Sets End-to-End
	50ct. 5MM Red, Gold, Orange, or Multi	2.4W/0.02A	90 Sets End-to-End
	50ct. 5MM Blue, Green, Purple, Pink, Teal, or White	4.8W/0.04A	45 Sets End-to-End
	25ct. C7 or C9	2.4W/0.02A	90 Sets End-to-End
Color-Rite LED Sets	50ct. 5MM, M5, or C5	7.2W/0.06A	30 Sets End-to-End
	26ct. C9	6.0W/0.05A	36 Sets End-to-End
Commercial Grade LED Sets	25ct. All Bulb Styles	3.6W/0.03A	60 Sets End-to-End on one C05065RY Plug
LED Trunk Wraps/Net Lights	100ct. Red, Gold, Orange, or Multi	4.8W/0.04A	45 Sets End-to-End
	100ct. Blue, Green, Purple, Pink, Teal, or White	8.4W/0.07A	25 Sets End-to-End
Incandescent Mini Lights	50ct. set	24W/0.20A	9 Sets End-to-End
	100ct. set	48W/0.40A	4 Sets End-to-End

Individual Bulbs (LED or Incandescent), using 18g Wire

Use the chart below to easily find Power Draw and Maximum End-to-End (in-line) Connectivity:

Type of Product	Size	Watts/Amps	Maximum End-to-End (in-line) Connectivity
LED Retrofit Bulbs	C7, C9, G-Series, or Plastic S14	0.96W/0.008A	Mfg. recommends no more than 400 Bulbs In-Line
	Glass S14 (non-dimmable)	1.1W/0.0092A	Varies based on Wire Used - Please check wire for Max Watts
Incandescent C7 & C9 Bulbs		7.0W/0.06A	100 Bulbs In-Line

ESTIMATING TREES -Determining how many sets of lights you need.

PREMIUM GRADE LED SETS

Estimating Outdoor Trees (Evergreen or Deciduous) Using Premium Grade LED Sets

HEIGHT of Tree (ground-to-tippy top) X WIDTH of Tree (at widest point) = SQUARE FEET

Example: Tree is 10' Tall x 5' Wide = 50 Square Feet

SQUARE FEET X .18 = TOTAL # Premium LED sets needed (70 light set @ 24' long -or- 50 light set @ 25' long)

Example: 50 Square Feet x .18 = 9 sets of Premium Grade LEDs needed

* Experienced Installers can install an average of 20 Premium Grade sets per hour

COMMERCIAL GRADE LED SETS

Estimating Outdoor Trees (Evergreen or Deciduous) Using Commercial Grade LED Sets

HEIGHT of Tree (ground-to-tippy top) X WIDTH of Tree (at widest point) = SQUARE FEET

Example: Tree is 10' Tall x 5' Wide = 50 Square Feet

SQUARE FEET X .5 = TOTAL # Commercial LED sets needed (25 light set @ 9' or 13' long)

EX: 50 Square Feet x .5 = 25 sets of Commercial Grade LEDs needed

* Experienced Installers can install an average of 40 Commercial Grade sets per hour

INCANDESCENT MINI LIGHTS

Estimating Outdoor Trees (Evergreen or Deciduous) Using Incandescent Mini Lights

HEIGHT of Tree (ground-to-tippy top) X WIDTH of Tree (at widest point) = SQUARE FEET

Example: Tree is 10' Tall x 5' Wide = 50 Square Feet

SQUARE FEET X .25 = TOTAL # of 50 count Incandescent Mini Light sets needed (25' long)

Example: 50 Square Feet x .25 = 12.5 - Always Round Up - 13 sets of 50ct. Incandescent Mini Lights needed

* Experienced Installers can install an average 20 strands per hour

SQUARE FEET X .13 = TOTAL # of 100 count Incandescent Mini Light sets needed (50' long)

Example: 50 Square Feet x .13 = 6.5 - Always Round Up - 7 sets of 100ct. Incandescent Mini Lights needed

* Experienced Installers can install an average 10 strands per hour

Height - Measure from Ground to the very top

Width - Measure the widest part of the tree

HEIGHT x WIDTH = SQUARE FEET

Remember trees grow, so plan on adding sets every year

OTHER HANDY NUMBERS/FORMULAS

Electrical - Max Watt/Amp Ratings

18 Gauge Wire	1200 Watts -or- 10 Amps
16 Gauge Wire	1560 Watts -or- 13 Amps
14 Gauge Wire	2160 Watts -or- 18 Amps
Triple Taps & Timers	1800 Watts -or- 15 Amps

Converting Watts to Amps

Watts ÷ Volts (this is a constant = 120V) = Amps
Example 4.8 watts ÷ 120 Volts = 0.04 Amps

Converting Amps to Watts

Amps × Volts (this is a constant = 120V) = Watts
Example 0.04 Amps × 120 Volts = 4.8 Watts