

HOW TO DETERMINE WHICH THINKGROW DAISY-CHAIN POWER CABLES YOU WILL NEED

ThinkGrow offers **3** different cable gauges for the Daisy-chain power cables. Selecting the correct cables is easy if you follow the process below.

- First you must determine the voltage the LEDs will be operating at, the amperage of the power branch-circuit that will be powering the lights, and also which of the LEDs you will be using.
- 2 Next look at the 3 pages that break down each power circuit's voltage and amperage into groups on the pages. Now find the group that matches your facilities configuration for lighting.
- **3** When you find the correct group, look down the list to find the LEDs you will be installing.
- Once you find the LEDs you are installing, look at the column that provides the Max # of LED in a string. That is the maximum number of those LEDs that can be connecting into a single branch-circuit, and also the Maximum number of LEDs that can be wired together using the daisy-chain cables. You cannot exceed the number of LEDs listed there. These charts are set-up to not exceed 84% of the Maximum capacity of the branch circuit.
- Next you need to confirm if you DO HAVE the ability to connect the Max # of LEDs within your facility. If you do not require the Max # of LEDs, that is ok too, just skip to step 7 below.
- If you want to connect the Max number to each branch circuit, look at the chart which will clearly identify which of the cables you can use. The normal set-up would consist of larger gauge cables at the start of the string (LEDs closest to the power source), going down to smaller gauge cables as you get farther away from the power source. Since those cables farther away from the power source will not be carrying such a high electrical load (amperage), those cables can be smaller gauge. The chart will show which cables to use, and what positions those cables will be installed.
- If you will NOT be using the Max # of LEDs on a particular branch circuit, you can select the proper cables and quantities you will need by working from left to right. The normal set-up would consist of larger gauge cables at the start of the string (LEDs closest to the power source), going down to smaller gauge cables as you get farther away from the power source. Since those cables farther away from the power source will not be carrying such a high electrical load (amperage), those cables can be smaller gauge. For example, let's look at the 277 volt / 30-amp chart for the Model I. There it says you can have a Max # of 9 Model I connected. Let's say you have tables or rows that only have 8 LEDs in each row. You would still use 4 of the #14 AWG cables, 2 of the #12 AWG cables, and then you would only use 2 of the #10 AWG cables to wire all 8 LEDs to a single 30-amp / 277 volt circuit.



ThinkGrow Daisy-chain power cable configuration using 30-amp branch circuits

100 walk / 20							
120 volt / 30-amp	Cables at the end	Middle set	Cables closest to				
branch circuit	of the string	of cables	the power source				
Cable Type LED model	#14 awg	#12 awg	#10 awg	Max # LED in a string	LED Amps	Total Circuit amps	% circuit
Model-I	2	0	2	4	6.23	24.92	83%
Model-I Plus	2	0	2	4	6.23	24.92	83%
Model-H Plus	2	0	2	4	6.23	24.92	83%
Model-H	2	1	1	4	5.26	21.04	70%
Model-W	2	1	1	4	5.26	21.04	70%
Model-V	4	2	3	9	2.63	23.67	79%
208 volt / 30-amp	Cables at the end	Middle set	Cables closest to				
branch circuit	of the string	of cables	the power source				
Cable Type LED model	#14 awg	#12 awg	#10 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit
Model-I	3	2	2	7	3.56	24.92	83%
Model-I Plus	3	2	2	7	3.56	24.92	83%
Model-H Plus	3	2	2	7	3.56	24.92	83%
Model-H	4	3	1	8	3.09	24.72	82%
Model-W	4	3	1	8	3.09	24.72	82%
			•		1.52	24.72	82%
Model-V	8	3	5	16	1.52	24.32	02%
240 volt / 30-amp branch circuit	Cables at the end	Middle set	Cables closest to				
	of the string	of cables	the power source	M #150	150	T . 10: "	01 0 1
Cable Type LED model	#14 awg	#12 awg	#10 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circui load
Model-I	4	1	3	8	3.09	24.72	82%
Model-I Plus	4	1	3	8	3.09	24.72	82%
Madal II Diva							02,0
iviodel-H Pius	4	1	3	8	3.09	24.72	82%
	4	1 2	3		3.09 2.68	24.72 24.12	
Model-H				8			82%
Model-H Plus Model-H Model-W Model-V	4	2	3	8 9	2.68	24.12	82% 80%
Model-H Model-W Model-V	4 4 9	2 2 3	3 3 6	8 9 9	2.68 2.68	24.12 24.12	82% 80% 80%
Model-H Model-W Model-V 277 volt / 30-amp	4 4	2 2	3	8 9 9	2.68 2.68	24.12 24.12	82% 80% 80%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type	4 4 9 Cables at the end	2 2 3 Middle set	3 3 6 Cables closest to	8 9 9	2.68 2.68	24.12 24.12	82% 80% 80% 80%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model	4 4 9 Cables at the end of the string	2 2 3 Middle set of cables #12 awg	3 3 6 Cables closest to the power source #10 awg	8 9 9 18	2.68 2.68 1.34	24.12 24.12 24.12 Total Circuit	82% 80% 80% 80%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type Model-I	Cables at the end of the string #14 awg	2 2 3 Middle set of cables #12 awg	3 3 6 Cables closest to the power source #10 awg 3	8 9 18 Max # LED in a string	2.68 2.68 1.34 LED Amps 2.71	24.12 24.12 24.12 Total Circuit Amps 24.39	82% 80% 80% 80% ** Circui load 81%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type Model-I Model-I Plus	Cables at the end of the string #14 awg 4 4	2 2 3 Middle set of cables #12 awg 2 2	3 3 6 Cables closest to the power source #10 awg 3 3	8 9 9 18 18 Max # LED in a string 9 9	2.68 2.68 1.34 LED Amps 2.71 2.71	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39	82% 80% 80% 80% % Circu load 81% 81%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Model-I Plus Model-H Plus	Cables at the end of the string #14 awg 4 4 4 4	2 2 3 Middle set of cables #12 awg 2 2 2	3 3 6 Cables closest to the power source #10 awg 3 3 3 3	8 9 9 18 Max # LED in a string 9 9	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39	82% 80% 80% 80% % Circu load 81% 81% 81%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Model-I Plus Model-H Plus Model-H	Cables at the end of the string #14 awg 4 4 4 5	2 2 3 Middle set of cables #12 awg 2 2 2 2 2	3 3 6 Cables closest to the power source #10 awg 3 3 3 3 3	8 9 9 18 Max # LED in a string 9 9 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Model-I Plus Model-H Plus Model-H Model-H Model-H Model-W	Cables at the end of the string #14 awg 4 4 4 5 5	2 2 3 Middle set of cables #12 awg 2 2 2 2 2 2	3 3 6 Cables closest to the power source #10 awg 3 3 3 3 3 3 3	8 9 9 18 Max # LED in a string 9 9 10 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79% 79%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Model-I Plus Model-H Plus Model-H Model-H Model-W	Cables at the end of the string #14 awg 4 4 4 5	2 2 3 Middle set of cables #12 awg 2 2 2 2 2	3 3 6 Cables closest to the power source #10 awg 3 3 3 3 3	8 9 9 18 Max # LED in a string 9 9 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Model-I Plus Model-H Plus Model-H Model-H Model-W Model-V	Cables at the end of the string #14 awg 4 4 4 5 5 10	2 2 3 Middle set of cables #12 awg 2 2 2 2 4	Cables closest to the power source #10 awg 3 3 3 3 6	8 9 9 18 Max # LED in a string 9 9 10 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79% 79%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-W Model-V 480 volt / 30-amp branch circuit	Cables at the end of the string #14 awg 4 4 4 5 5	2 2 3 Middle set of cables #12 awg 2 2 2 2 2 2	3 3 6 Cables closest to the power source #10 awg 3 3 3 3 3 3 3	8 9 9 18 Max # LED in a string 9 9 10 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79% 79%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Plus Model-W Model-V 480 volt / 30-amp branch circuit Cable Type	Cables at the end of the string #14 awg 4 4 4 5 5 10	2 2 3 Middle set of cables #12 awg 2 2 2 4 Middle set	3 3 6 Cables closest to the power source #10 awg 3 3 3 6 Cables closest to	8 9 9 18 Max # LED in a string 9 9 10 10	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2 LED Amps	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8	82% 80% 80% 80% ** Circui load 81% 81% 79% 80%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-V 480 volt / 30-amp branch circuit Cable Type	Cables at the end of the string #14 awg 4 4 4 5 5 10 Cables at the end of the string	2 2 3 Middle set of cables #12 awg 2 2 2 2 4 Middle set of cables	Cables closest to the power source #10 awg 3 3 3 3 6 Cables closest to the power source	8 9 9 18 Max # LED in a string 9 9 10 10 20	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8 24	82% 80% 80% 80% ** Circui load 81% 81% 79% 80%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-V 480 volt / 30-amp branch circuit Cable Type LED model Model-W	4 4 9 Cables at the end of the string #14 awg 4 4 4 5 5 10 Cables at the end of the string #14 awg	2 2 3 Middle set of cables #12 awg 2 2 2 2 4 Middle set of cables #12 awg 2 2 2 2 2 2 4	3 3 6 Cables closest to the power source #10 awg 3 3 3 6 Cables closest to the power source #10 awg	8 9 9 18 Max # LED in a string 9 9 10 10 20 Max # LED in a string	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2 LED Amps	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8 24 Total Circuit Amps	82% 80% 80% 80% 80% ** Circui load ** Circui load
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-V 480 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-I Plus Model-I Plus	4 4 9 Cables at the end of the string #14 awg 4 4 4 5 5 10 Cables at the end of the string #14 awg #14 awg 8 8	2 2 3 Middle set of cables #12 awg 2 2 2 2 4 Middle set of cables #12 awg 4	3 3 6 Cables closest to the power source #10 awg 3 3 3 6 Cables closest to the power source #10 awg 6 6	8 9 9 18 Max # LED in a string 9 9 10 10 20 Max # LED in a string 16 16	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2 LED Amps 1.54 1.54	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8 24 Total Circuit Amps 24.64	82% 80% 80% 80% 80% ** Circui load 81% 79% 80% ** Circui load 82% 82%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-V 480 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-I Plus	Cables at the end of the string #14 awg 4 4 4 5 5 5 10 Cables at the end of the string #14 awg #14 awg 8 8 8	2 2 3 Middle set of cables #12 awg 2 2 2 2 4 Middle set of cables #12 awg 2 2 4	Cables closest to the power source #10 awg 3 3 3 3 6 Cables closest to the power source #10 awg 6 6 6 6	8 9 9 18 Max # LED in a string 9 9 10 10 20 Max # LED in a string 16 16 16	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2 LED Amps 1.54 1.54 1.54	24.12 24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8 24 Total Circuit Amps 24.64 24.64 24.64	82% 80% 80% 80% 80% ** Circui load 81% 79% 80% ** Circui load 82% 82% 82%
Model-H Model-W Model-V 277 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-H Plus Model-H Model-W Model-V 480 volt / 30-amp branch circuit Cable Type LED model Model-I Plus Model-I Plus	4 4 9 Cables at the end of the string #14 awg 4 4 4 5 5 10 Cables at the end of the string #14 awg #14 awg 8 8	2 2 3 Middle set of cables #12 awg 2 2 2 2 4 Middle set of cables #12 awg 4	3 3 6 Cables closest to the power source #10 awg 3 3 3 6 Cables closest to the power source #10 awg 6 6	8 9 9 18 Max # LED in a string 9 9 10 10 20 Max # LED in a string 16 16	2.68 2.68 1.34 LED Amps 2.71 2.71 2.71 2.38 2.38 1.2 LED Amps 1.54 1.54	24.12 24.12 24.12 Total Circuit Amps 24.39 24.39 24.39 23.8 23.8 24 Total Circuit Amps 24.64	82% 80% 80% 80% 81% 81% 79% 80% Circui load 82% 82%



ThinkGrow Daisy-chain power cable configuration using 20-amp branch circuits

Cable Type ED model		of cables				
4 1 1 1	#14 awg	#12 awg	Max # LED in a string	LED Amps	Total Circuit amps	% circuit
Model-I	1	1	2	6.23	12.46	62%
Model-I Plus	1	1	2	6.23	12.46	62%
Model-H Plus	1	1	2	6.23	12.46	62%
Model-H	2	1	3	5.26	15.78	79%
Model-W	2	1	3	5.26	15.78	79%
Model-V	4	2	6	2.63	15.78	79%
208 volt / 20-amp	Cables at the end of the string	Middle set				
Cable Type		of cables	Max # LED	LED	Total Circuit	% Circui
LED model	#14 awg	#12 awg	in a string	Amps	Amps	load
Model-I	3	1	4	3.56	14.24	71%
Model-I Plus	3	1	4	3.56	14.24	71%
Model-H Plus	3	1	4	3.56	14.24	71%
Model-H	4	1	5	3.09	15.45	77%
Model-W	4	1	5	3.09	15.45	77%
Model-V	8	3	11	1.52	16.72	83%
40 volt / 20-amp ranch circuit	Cables at the end of the string	Middle set of cables				
Cable Type ED model	#14 awg	#12 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circui
Model-I	4	1	5	3.09	15.45	77%
Model-I Plus	4	1	5	3.09	15.45	77%
Model-H Plus	4	1	5	3.09	15.45	77%
Model-H	4	2	6	2.68	16.08	80%
Model-W	4	2	6	2.68	16.08	80%
Model-V	9	3	12	1.34	16.08	80%
77 volt / 20-amp	Cables at the end	Middle oot				
oranch circuit	of the string	Middle set of cables				
Cable Type .ED model	#14 awg	#12 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circui load
Model-I	4	2	6	2.71	16.26	81%
Model-I Plus	4	2	6	2.71	16.26	81%
Model-H Plus	4	2	6	2.71	16.26	81%
Model-H	5	2	7	2.38	16.66	83%
Model-W	5	2	7	2.38	16.66	83%
Model-V	9	4	13	1.2	15.6	78%



ThinkGrow Daisy-chain power cable configuration using 15-amp branch circuits

1	20	vol	t /	15	-am	p
h	ran	ch	ci	rcu	it	-

Cables at the end
of the string

Cable Type LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit amps	% circuit load
Model-I	2	2	6.23	12.46	83%
Model-I Plus	2	2	6.23	12.46	83%
Model-H Plus	2	2	6.23	12.46	83%
Model-H	2	2	5.26	10.52	70%
Model-W	2	2	5.26	10.52	70%
Model-V	4	4	2.63	10.52	70%

208 volt / 15-amp branch circuit

Cables at the end of the string

Cable Type LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
Model-I	3	3	3.56	10.68	71%
Model-I Plus	3	3	3.56	10.68	71%
Model-H Plus	3	3	3.56	10.68	71%
Model-H	4	4	3.09	12.36	82%
Model-W	4	4	3.09	12.36	82%
Model-V	8	8	1.52	12.16	81%

240 volt / 15-amp branch circuit

Cables at the end of the string

Cable Type LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
Model-I	4	4	3.09	12.36	82%
Model-I Plus	4	4	3.09	12.36	82%
Model-H Plus	4	4	3.09	12.36	82%
Model-H	4	4	2.68	10.72	71%
Model-W	4	4	2.68	10.72	71%
Model-V	9	9	1.34	12.06	80%

277 volt / 15-amp branch circuit

Cables at the end of the string

Cable Type LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
Model-l	4	4	2.71	10.84	72%
Model-I Plus	4	4	2.71	10.84	72%
Model-H Plus	4	4	2.71	10.84	72%
Model-H	5	5	2.38	11.9	79%
Model-W	5	5	2.38	11.9	79%
Model-V	9	9	1.2	10.8	72%

480 volt / 15-amp branch circuit

Cables at the end of the string

Cable Type LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
Model-I	8	8	1.54	12.32	82%
Model-I Plus	8	8	1.54	12.32	82%
Model-H Plus	8	8	1.54	12.32	82%
Model-H	9	9	1.34	12.06	80%
Model-W	9	9	1.34	12.06	80%
Model-V	18	18	0.67	12.06	80%