

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.

- 1** 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.
- 4** 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.
- 5** 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.
- 6** 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.
- 7** 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

120 volt / 30-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Cables closest to the power source	Max # LED in a string	LED Amps	Total Circuit amps	% circuit load
		#14 awg	#12 awg	#10 awg				
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 branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Cables closest to the power source	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg	#10 awg				
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%
Model-V		8	3	5	16	1.52	24.32	82%

240 volt / 30-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Cables closest to the power source	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg	#10 awg				
Model-I		4	1	3	8	3.09	24.72	82%
Model-I Plus		4	1	3	8	3.09	24.72	82%
Model-H Plus		4	1	3	8	3.09	24.72	82%
Model-H		4	2	3	9	2.68	24.12	80%
Model-W		4	2	3	9	2.68	24.12	80%
Model-V		9	3	6	18	1.34	24.12	80%

277 volt / 30-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Cables closest to the power source	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg	#10 awg				
Model-I		4	2	3	9	2.71	24.39	81%
Model-I Plus		4	2	3	9	2.71	24.39	81%
Model-H Plus		4	2	3	9	2.71	24.39	81%
Model-H		5	2	3	10	2.38	23.8	79%
Model-W		5	2	3	10	2.38	23.8	79%
Model-V		10	4	6	20	1.2	24	80%

480 volt / 30-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Cables closest to the power source	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg	#10 awg				
Model-I		8	2	6	16	1.54	24.64	82%
Model-I Plus		8	2	6	16	1.54	24.64	82%
Model-H Plus		8	2	6	16	1.54	24.64	82%
Model-H		9	3	6	18	1.34	24.12	80%
Model-W		9	3	6	18	1.34	24.12	80%
Model-V		18	6	12	36	0.67	24.12	80%

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

120 volt / 20-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Max # LED in a string	LED Amps	Total Circuit amps	% circuit load
		#14 awg	#12 awg				
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 branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg				
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%

240 volt / 20-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg				
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%

277 volt / 20-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg				
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%

480 volt / 20-amp branch circuit

LED model	Cable Type	Cables at the end of the string	Middle set of cables	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg	#12 awg				
Model-I		8	2	10	1.54	15.4	77%
Model-I Plus		8	2	10	1.54	15.4	77%
Model-H Plus		8	2	10	1.54	15.4	77%
Model-H		9	3	12	1.34	16.08	80%
Model-W		9	3	12	1.34	16.08	80%
Model-V		18	6	24	0.67	16.08	80%

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

120 volt / 15-amp branch circuit

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

LED model	Cable Type	Cables at the end of the string		Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg					
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

LED model	Cable Type	Cables at the end of the string		Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg					
Model-I	12VDC	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%
Model-V Plus		9		9	1.34	12.06	80%

277 volt / 15-amp branch circuit

Cable Type					
LED model	#14 awg	Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
Model-I	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

LED model	Cable Type	Cables at the end of the string		Max # LED in a string	LED Amps	Total Circuit Amps	% Circuit load
		#14 awg					
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%