

24 VDC WIRE GAUGE CHART

Maximum Wire Run Length

Pick the wire gauge from the tape load and the one-way distance from the power supply or controller to the start of the tape. Every distance keeps voltage drop at 5% (1.2 V) or less, so the far end of the run stays as bright as the feed end.

LED load (W)	Current at 24 V (A)	18 AWG (ft)	16 AWG (ft)	14 AWG (ft)
24	1	93	149	237
48	2	46	74	118
72	3	31	49	79
96 (max per controller channel)	4	23	37	59
120	5	18	29	47
144	6	15	24	39
192	8	11	18	29

One-way distance, both conductors counted, solid copper (18 AWG 6.39, 16 AWG 4.02, 14 AWG 2.53 ohms per 1000 ft). Rounded down. Stranded wire runs a few percent shorter.

How to use it

1. Multiply tape length by watts per foot. Example: 64 ft of IC-24NB301.5 at 1.5 W/ft = 96 W.
2. Find that load in the left column.
3. Read across to the first gauge longer than your wire run.
4. Run too long? Move the power supply closer, split the load across more feeds, or step up the gauge.

Know the limits

- The chart sizes the leader wire, not the tape. Max continuous tape run: 16 ft for most series, 33 ft for IC Series.
- RF-WIFI-CNTRL-5CH-4A terminals take 20 to 16 AWG, 4 A max per channel. Splice heavier wire down to 16 AWG at the controller.
- 24 VDC downlights: 16 AWG minimum, voltage at the fixture within 4%.
- Follow local code. Use CL2 or CL3 rated cable in walls.

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