

REMOTE DRIVERS:

LEDs require a minimum current to properly illuminate. LEDs can flicker, dim, or color shift if the minimum current is not available. When remote mounting a driver long distances from the fixture, it is important to properly specify the correct wire gauge (AWG/ or thickness of wire) for the distance of wire required between the LED driver to the fixture. A general guideline is that a 3 to 4% voltage drop is acceptable and will still allow the LED to perform normally.

The chart below (Maximum Cable Length from Driver to Fixture) shows the suggested distance and the required wire gauge to allow for a maximum 3% voltage drop for a 24V current at the end of the wire length at the fixture.

HOW TO USE THE CHART:

1. Calculate the total wattage of the LED lighting system (round up to the nearest 10 Watts)
2. Find the wattage in the top row and follow the column down to maximum length (round up) of wiring between the LEDs and the power supply.
3. Look to the left column for the wire gauge size required to prevent voltage drop over 3%.

Maximum Cable Length from Driver to Fixture												
24V DC Driver												
Wire Gauge	Total Fixture Wattage											
	10W	20W	30W	40W	50W	60W	70W	80W	90W	100W	200W	300W
18 AWG	134' (40.8m)	68' (20.7m)	45' (20.7m)	33' (10.1m)	27' 8.2m)	22' (6.7m)	19' (5.8m)	17' (5.2m)	15' (4.5m)	14' (4.3m)	7' (2.1m)	5' (1.5m)
16 AWG	215' (65.5m)	109' (33.2m)	72' (22.0m)	54' (16.5m)	43' (13.1m)	36' (11.0m)	31' (9.5m)	27' (8.2m)	24' (7.3m)	22' (6.7m)	11' (3.4m)	7' (2.1m)
14 AWG	345' (105.2m)	174' (53.0m)	115' (35.1m)	86' (26.2m)	69' (21.0m)	57' (17.4m)	49' (14.9m)	43' (13.1m)	39' (11.9m)	36' (10.9m)	17' (5.2m)	12' (3.7m)
12 AWG	539' (164.3m)	272' (82.9m)	181' (55.2m)	135' (41.2m)	108' (32.9m)	90' (27.5m)	77' (23.5m)	68' (20.7m)	62' (18.9m)	56' (17.1m)	27' (8.2m)	18' (5.5m)
10 AWG	784' (239.0m)	397' (121.0m)	263' (80.2m)	197' (60.1m)	158' (48.2m)	131' (39.9m)	112' (34.1m)	98' (29.9m)	95' (28.9m)	82' (25.0m)	43' (13.1m)	29' (8.8m)

Remote Driver to Fixture Example:

Calculate Total Load: A fixture with 18 x 2W pendants is 36 watts. Round up to the nearest load of 40 watts.

Find Distance from Driver to Load: Let's assume the distance is 50 ft. from the driver to the fixture. Round up to the nearest distance of 54 ft.

Choose Wire Gauge: It's recommended to install 16 AWG wire between the driver and fixture to eliminate noticeable voltage drop.

PENDANT CABLE- with Integral Driver:

Fixtures with long pendant lengths that are suspended by a standard coaxial cable (26-gauge wire) will also encounter some degree of voltage drop. The Maximum Cable Length chart to the right shows the acceptable length of coaxial cable to allow for only a 3% voltage drop at each socket when using an integral driver.

HOW TO USE THE CHART:

1. Find the wattage of a single LED pendant
2. Below the wattage header is the maximum run of coaxial cable that will allow a minimal voltage drop for that pendant

Maximum Cable Length from Fixture to Pendant				
With Integral 24V DC Driver				
	Pendant Wattage (single pendant)			
Wire Gauge	2W/ Integral Driver	3W/ Integral Driver	5W/ Integral Driver	12W/ Integral Driver
26 AWG (coaxial cable)	90' (27.4m)	60' (18.3m)	35' (10.7m)	14' (4.3m)

PENDANT CABLE- with Remote Driver:

When drivers are mounted remotely, there may be a voltage drop of up to 3% at the point the cable comes into the fixture. This voltage drop has to be added to the potential voltage drop between the fixture and the single pendant.

The Maximum Cable Length chart to the right shows the acceptable length of coaxial cable to allow for only a 4% voltage drop (total) at each socket when using a remotely mounted driver.

Maximum Cable Length from Fixture to Pendant				
With Remote 24V DC Driver				
	Pendant Wattage (single pendant)			
Wire Gauge	2W/ Remote Driver	3W/ Remote Driver	5W/ Remote Driver	12W/ Remote Driver
26 AWG (coaxial cable)	30' (9.1m)	20' (6.1m)	12' (3.7m)	7' (2.1m)

Pendant Cable Length with Remote Driver Example:

Find Pendant Wattage: This is the pendant wattage for a single pendant; assume 2W
Look below for Maximum Suggested Cable Length: The suggested cable length for this pendant is 30 feet.