TPR ENTERPRISES, LTD.

Voltage Loss Calculator for 12 Volt DC Products

When calculating acceptable gauges of wire at specific lengths, you will want to use the table below. To be safe, round up on the Wattage, and round up on the distance from power supply to the fixture.

Example: Our Covemax X product is 2 Watts per foot (from the cutsheet), so a 10' run would use 20 total Watts. If the distance from the power supply to this 10' run has to be 50-60' we consult the table below and find: 20W, 56' = 18awg wire needed.

Example: Our SMD RGB tape light uses 4.3 Watts per foot (from the cutsheet), so an 8' run would use 34.4 total Watts (we round up to 40 Watts). If the distance from the power supply to this 8' run has to be 45', we consult the table below and find: 40W, 28' = 16awg wire needed.

***These Examples are shown in Figure 1 below.**

12Volt DC or AC Table (3% loss max)

POWER WIRE GAUGE

W(VA)/Amps	8awg	10awg	12awg	14awg	16awg	18awg	20awg	22awg	24awg	26awg
3W/.25A	3,733	2,396	1,508	947	595	376	234	146	93	59
4W/.33A	2,828	1,815	1,142	717	451	285	177	111	70	44
5W/.42A	2,222	1,426	898	564	354	224	139	87	55	35
10W/.83A	1,124	722	454	285	179	113	71	44	28	18
20W/1.67A	559	359	226	142	89	56	35	22	14	9
30W/2.50A	373	240	151	95	60	38	23	15	N/A	N/A
40W/3.33A	280	180	113	71	45	28	18	11	N/A	N/A
50W/4.17A	224	144	90	57	36	23	14	N/A	N/A	N/A
60W/5.00A	187	120	75	47	30	19	12	N/A	N/A	N/A
70W/5.83A	160	103	65	41	26	16	10	N/A	N/A	N/A
80W/6.67A	140	90	57	35	22	14	N/A	N/A	N/A	N/A
90W/7.50A	124	80	50	32	20	13	N/A	N/A	N/A	N/A
100W/8.33A	112	72	45	28	18	11	N/A	N/A	N/A	N/A
110W/9.17A	102	65	41	26	16	10	N/A	N/A	N/A	N/A
120W/10.00A	93	60	38	24	15	N/A	N/A	N/A	N/A	N/A

*Numbers in Red are in Feet.

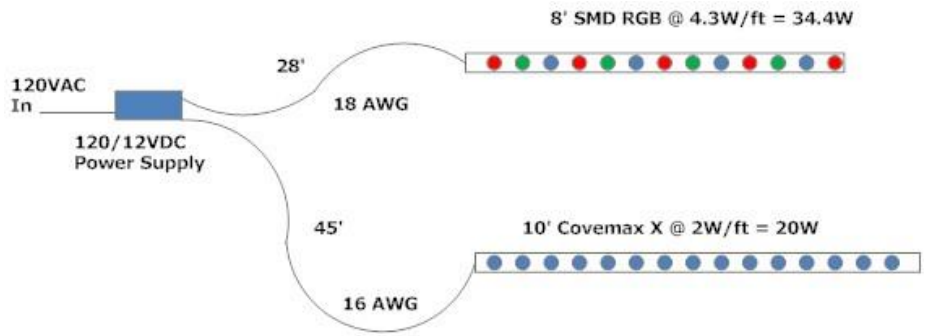

Fig. 1 Examples from above.