

DESCRIPTION

Transformers reduce line voltage to 12 volts for use with Lumière low voltage fixtures.

Transformers are available in four basic types:

- Hard wire installation – Standard outdoor low voltage lighting transformer for hard wiring direct to conduit.
- Cord and plug – Plug in directly to existing outlets, for ease of installation. Also available with a built in timer.
- Inground – Low profile inground installation for reduced visual impact and increased flexibility.
- Compact solid state electronic transformers – For use in approved housings or boxes.

Transformer Selection

The total wattage of all lamps used must not exceed the rating of the transformer selected for the installation. For example, a 150VA (VA = watts) transformer cannot power four fixtures with 50 watt lamps.

The transformer selected should match the total lamp wattage as closely as possible. It is good practice to use at least 33 to 50 percent, and no more than 85 to 90 percent, of the transformer's rated capacity.

Voltage Drop

Resistance to electricity passing through electrical wiring causes the voltage at the end of a run of wire to be lower than the voltage at the transformer. This will cause fixtures at the end of a run to be noticeably dimmer than those closer to the transformer.

The factors affecting voltage drop are the total wattage of lamps on the run, the length of the run and the gauge of the wire.

VOLTAGE DROP FORMULA

$$\frac{\text{Total watts on cable} \times \text{length of run}}{\text{Cable size constant}^*} = \text{Voltage Drop}$$

Voltage drop is not always bad.

For example, dropping voltage at the lamp to 11.5 volts will give 80% of the lamp's rated candlepower, and double the rated life of the lamp. This is acceptable in most applications, and will result in lower maintenance costs.

The accompanying chart demonstrates how voltage at the lamp affects rated lamp life and rated candlepower:

Sample Landscape Lighting Installation

We recommend using 12/2 or larger inground stranded cable. To control voltage drop, for each 100 watts allowed, use 100 feet of wire, maximum, to stay at approximately 10 volts at the end of the run. For example, a 300 watt (300VA) transformer may have three separate runs with 100' maximum on each run. This is standard procedure for low voltage installations. Any setup within these parameters will maintain sufficient lumen output. (Provided as an example only — output requirements may vary depending on individual situations and preferences.)

Make sure that the transformer selected reduces the appropriate line voltage. For example, do not use a 120 to 12 volt transformer with a 277 volt system. Lumière Atlantis series fixtures (model 1407 - 1409) must be used with model T300, which is approved for use in pool and spa type applications.

Transformers must be installed in accordance with local and national electrical codes and other rules, regulations and requirements.

There are several ways to minimize the impact of voltage drop:

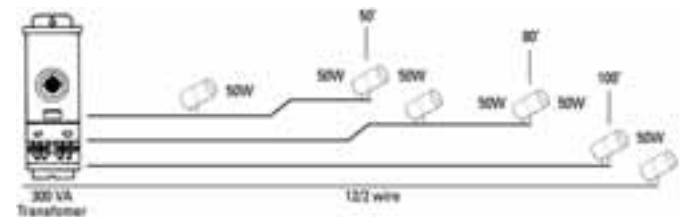
- Use larger gauge cable
- Shorten cable runs
- Use lower wattage lamps
- Reduce the number of fixtures on the run
- Divide the fixtures over more runs from the transformer
- Use multiple transformers

CABLE SIZE CONSTANT CHART*

Cable size	#18	#16	#14	#12	#10	#8	#6
Cable constant	1380	2200	3500	7500	11,920	18,960	30,150

VOLTAGE DROP CHART

Voltage at lamp	Life expectancy of lamp	% of rated candlepower
13.2	2/3 rated life	350
12.6	3/4 rated life	180
12.0	as rated	100
11.5	2X rated life	80
11.0	3X rated life	74
10.5	5X rated life	65
10.0	9X rated life	50



ORDERING INFORMATION

SAMPLE NUMBER: TR900T

Order transformers and low voltage cable as separate line items.