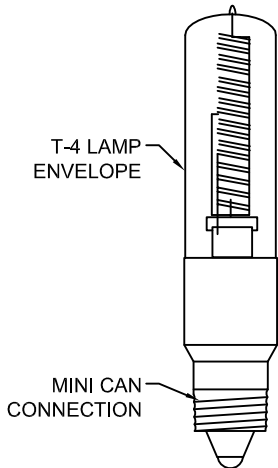




(800) 794-1801

RFL-Q/CL 120V. Q/CL, T-4 'MINI-CAN' QUARTZ LAMP

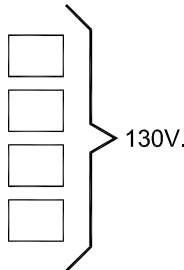


100 WATT QUARTZ LAMP

150 WATT QUARTZ LAMP

250 WATT QUARTZ LAMP

500 WATT QUARTZ LAMP



NOTE: DO NOT HANDLE LAMP ENVELOPE WITH BARE HANDS. SKIN OIL MAY CAUSE LAMP TO FAIL!

GENERAL LIGHTING APPLICATION GUIDELINES

1. A 2" submergence is recommended for all submersible lighting fixtures. This will generally accommodate wave turbulence and water level variation. Submergence below 2" should be avoided as light output is reduced by 10% for every 2" of additional submergence.
2. Daylighting should be incorporated into outdoor displays whenever possible. Proper compass orientation will allow maximum use of sunlight to highlight the display.
3. Water quality is essential to optimum illumination. Dirty water will reduce visible light transmission and render a muddy yellow color to the lighting.
4. Lighting sources should be directed away from the normal line of sight under designed viewing conditions to minimize glare.
5. Primary display brightness should average a minimum of 10 times the surrounding ambient light level. Secondary displays should average 3 times ambient light level. Uniformity ratio (maximum to minimum brightness for a given display) should not exceed 3 to 1.

6. Color lenses decrease visible light transmission, which may be compensated for by using higher wattage, or additional fixtures. The following ratios show the relationship between the number of colored lens fixtures required to equal the light output of an equivalent fixture with a clear lens. Red: 4 to 1; Blue: 7 to 1; Green: 6 to 1; Amber: 2 to 1; Turquoise: 3 to 1.
7. Clear lenses should not be used in conjunction with color lenses, as the white light tends to wash out the color illumination.
8. To maintain uniformity of illumination, a minimum of two fixtures should be used on vertical spray elements. A 3' maximum spacing should be used when lighting waterfalls.
9. In general, spot lamps should be used for small single jet displays, medium flood lamps for large single or multiple jet displays (beam height to width ratio: 2 to 1), and wide flood lamps for multiple jets, waterfalls, spray rings (beam height to width ratio: 1 to 1).
10. If possible, a series of fixtures should be incorporated into the display totaling the required wattage in order to create evenly dispersed illumination.

DEFINITIONS

CANDELA or CANDLEPOWER-Light sources do not project the same amount of light in every direction. The directional characteristic of a lamp is described by the candlepower in specific directions. This directional strength of light or luminous intensity is measured in candelas.

LUMEN-Light quality, irrespective of direction is measured in lumens. Lamp lumens are the quantity of light produced by a lamp. Average light level calculations use total lamp lumens as a basis and then adjust for all factors that lower the quantity. The amount of useful light in a floodlight beam is measured in beam lumens.

FOOTCANDLE-Specifications are usually based on density of light or level of illumination which is measured in footcandles. Footcandles are the ratio of quality of light in lumens divided by the surface area in square feet on which the light is falling.

FOOTLAMBERT-Footcandles of light fall on the surface. That reflected light which we see is measured in footlamberts. Footlamberts are the product of the footcandles times the reflectivity of the surface.

CANDLEPOWER REQUIREMENTS LENS COLORS

| HEIGHT OF WATER EFFECT | CLEAR | AMBER & TURQUOISE | RED | BLUE & GREEN |
|------------------------------|---------|----------------------|---------|-----------------|
| 5' | 4,000 | 6,000 | 8,000 | 14,000 |
| 10' | 11,000 | 16,000 | 22,000 | 38,000 |
| 15' | 21,000 | 31,000 | 42,000 | 73,000 |
| 20' | 34,000 | 51,000 | 68,000 | 119,000 |
| 25' | 50,000 | 75,000 | 100,000 | 175,000 |
| 30' | 69,000 | 103,000 | 138,000 | 241,000 |
| 35' | 91,000 | 136,000 | 182,000 | 318,000 |
| 40' | 115,000 | 174,000 | 230,000 | 406,000 |
| 45' | 144,000 | 216,000 | 288,000 | 504,000 |
| 50' | 170,000 | 256,000 | 340,000 | 595,000 |

SPECIFICATION DATA: 130 Volt T-4 type Quartz lamp for lighting fixture.

NOTE: Due to our continuing product improvement, Roman Fountains reserves the right to change the specifications without notice.

DRAWING NO.
5.27