

### **LIGHT OUTPUT CALCULATIONS**

Lux = candela / distance in meters \* distance in meters  
Foot-candles = candela / distance in feet \* distance in feet  
Foot-candles = Lux / 10.764 = lumens/sq. meter  
Lumens/sq. ft. \* 1 = foot-candles  
Lumens/sq. ft. \* 10.764 = lumens/sq. meter  
Lumens \* 0.07958 = spherical candle power  
Lux \* 0.0929 = foot-candles  
Lambert \* 0.3183 = candles/sq. cm  
Lambert \* 295.720 = candles sq. ft.  
Lambert \* 1 = lumens/sq. cm

### **LIGHT BEAM CALCULATIONS**

Beam diameter = distance \* (2 \* tan (beam angle / 2))  
Throw distance = Square root ((horizontal dist. \* horizontal dist.) + (vertical dist. \* vertical dist.))

### **POWER CALCULATIONS**

Power = Voltage \* current (Watts = Volts \* Amps)  
Current = Power / Voltage (Amps = Watts / Volts)  
RMS Volts = 0.707 \* Peak Volts RMS Volts = 1.11 \* Average Volts

### **LIGHT ICAL CALCULATIONS**

Foot-candles \* 10.764 = lumens/sq. meter = lux  
Lumens/sq. ft. \* 1 = foot-candles  
Lumens/sq. ft. \* 10.764 = lumens/sq. meter  
Lumens \* 0.07958 = spherical candle power  
Lux \* 0.0929 = foot-candles  
Lambert \* 0.3183 = candles/sq. cm  
Lambert \* 295.720 = candles sq. ft.  
Lambert \* 1 = lumens/sq. cm

### **DC VOLTAGE DROP OF CONDUCTOR (cable) OF L LENGTH**

V = voltage drop, I = current  
R = resistance of conductor per 1000 feet  
L = length of conductor in feet  
R for 18awg = 6.51, 16awg = 4.09, 14awg = 2.58  
12awg = 1.62, 10awg = 1.02, 8awg = 0.64  
 $V = I * L * (R / 1000) * 1.004$

### **UNIT CONVERSIONS**

Inches = millimeters / 25.4

Millimeters = inches \* 25.4

Feet = meters / 0.3048

Meters = feet \* 0.3048

Centigrade = 0.556 \* (Fahrenheit - 32)

Fahrenheit = 1.8 \* (Centigrade + 32)

Pounds = kilograms \* 2.205

Kilograms = pounds \* 0.454

Degrees = 180 \* radians / PI

Radians = PI \* degrees / 180