



Monster LED Presumption of Life Data



Lifetimes Example: L90(17k) = 68,900 hrs; L90 = 90% of original output after 68,900 hrs/ 7.8 years (17k) = 17,000 hours tested to calculate LED life.
L70(15k) > 90,700 hrs; L70 = 70% of original output after greater than 90,700 hrs/ 10.3 years (15k) = 15,000 hours tested.

| LED Color | Dash Number | Case Temp. [T _s] | Ambient Temp. [T _A] | Junction Temp. [T _J] | Drive Current [I _F] | Sample Count | Test Duration | Reported TM-21 Lifetimes |
|--------------------------------------|----------------------|------------------------------|---------------------------------|----------------------------------|---------------------------------|--------------|---------------|--|
| White Neutral White Warm White | -WHI -NWH -WWH | 85 °C | 85 °C | | 350 mA | 25 | 15,120 hrs | L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs |
| | | 105 °C | 105 °C | | 350 mA | 25 | 15,120 hrs | L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs |
| | | 120 °C | 120 °C | | 350 mA | 25 | 8,568 hrs | L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs |
| | | 85 °C | 85 °C | | 700 mA | 25 | 24,192 hrs | L90(24k) > 145,000 hrs L80(24k) > 145,000 hrs L70(24k) > 145,000 hrs |
| | | 105 °C | 105 °C | | 700 mA | 25 | 15,120 hrs | L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs |
| | | 120 °C | 120 °C | | 700 mA | 25 | 8,568 hrs | L90(9k) = 39,600 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs |
| | | 85 °C | 85 °C | | 1050 mA | 25 | 15,120 hrs | L90(15k) > 90,700 hrs L80(15k) > 90,700 hrs L70(15k) > 90,700 hrs |
| | | 105 °C | 105 °C | | 1050 mA | 25 | 12,096 hrs | L90(12k) > 72,600 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs |
| Far Red | -730 | 85 °C | 85 °C | | 1000 mA | 20 | 6,048hrs | Q90(6k) > 36,300 hrs # Q80(6k) > 36,300 hrs # Q70(6k) > 36,300 hrs # |
| | | 105 °C | 105 °C | | 1000 mA | 20 | 6,048 hrs | Q90(6k) > 36,300 hrs # Q80(6k) > 36,300 hrs # Q70(6k) > 36,300 hrs # |
| Photo Red | -660 | 85 °C | 85 °C | | 1000 mA | 20 | 7,560 hrs | Q90(8k) > 45,400 hrs # Q80(8k) > 45,400 hrs # Q70(8k) > 45,400 hrs # |
| | | 105 °C | 105 °C | | 1000 mA | 25 | 6,048 hrs | Q90(6k) > 36,300 hrs # Q80(6k) > 36,300 hrs # Q70(6k) > 36,300 hrs # |
| Red, Red-Orange | -630 | 85 °C | 85 °C | | 1000 mA | 20 | 17,136 hrs | L90(17k) = 68,900 hrs L80(17k) > 103,000 hrs L70(17k) > 103,000 hrs |
| | | 105 °C | 105 °C | | 1000 mA | 25 | 12,096 hrs | L90(12k) = 55,700 hrs L80(12k) > 72,600 hrs L70(12k) > 72,600 hrs |
| Amber | -590 | 85 °C | 85 °C | | 1000 mA | 14 | 12,096 hrs | L90(12k) > 66,500 hrs L80(12k) > 66,500 hrs L70(12k) > 66,500 hrs |
| | | 105 °C | 105 °C | | 1000 mA | 13 | 6,048 hrs | L90(6k) > 33,300 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs |
| | | | | | | | | # = PFM _p Lifetimes |

| LED Color | Dash Number | Case Temp. [Ts] | Ambient Temp. [Ta] | Junction Temp. [Tj] | Drive Current [If] | Sample Count | Test Duration | Reported TM-21 Lifetimes |
|------------|-------------|-----------------|--------------------|---------------------|--------------------|--------------|---------------|---|
| Green | -530 | 105 °C | 105 °C | | 500 mA | 20 | 8,568 hrs | L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs |
| | | 85 °C | 85 °C | | 1000 mA | 20 | 8,568 hrs | L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs |
| Blue | -470 | 105 °C | 105 °C | | 500 mA | 20 | 7,560 hrs | L90(8k) > 45,400 hrs L80(8k) > 45,400 hrs L70(8k) > 45,400 hrs |
| | | 85 °C | 85 °C | | 1000 mA | 20 | 8,568 hrs | L90(9k) > 51,400 hrs L80(9k) > 51,400 hrs L70(9k) > 51,400 hrs |
| Royal Blue | -450 | 85 °C | 85 °C | | 350 mA | 20 | 6,048 hrs | L90(6k) > 36,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs |
| | | 105 °C | 105 °C | | 700 mA | 20 | 6,048 hrs | L90(6k) = 30,300 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs |
| | | 85 °C | 85 °C | | 700 mA | 20 | 10,080 hrs | L90(10k) > 60,500 hrs L80(10k) > 60,500 hrs L70(10k) > 60,500 hrs |
| | | 105 °C | 105 °C | | 700 mA | 20 | 6,048 hrs | L90(6k) = 26,400 hrs L80(6k) > 36,300 hrs L70(6k) > 36,300 hrs |
| | | 85 °C | 85 °C | | 1500 mA | 16 | 10,080 hrs | L90(10k) > 55,400 hrs L80(10k) > 55,400 hrs L70(10k) > 55,400 hrs |
| | | 105 °C | 105 °C | | 2000 mA | 16 | 6,048 hrs | L90(6k) = 27,700 hrs L80(6k) > 33,300 hrs L70(6k) > 33,300 hrs |
| UV | -395 | | | 75 °C | 750 mA | - | 4,000 hrs | L70(4k) > 40,000 hrs |
| | | | | 85 °C | 750 mA | - | 4,000 hrs | L70(4k) = 28,480 hrs |
| UV | -365 | 33 °C | | | 350 mA | 10 | 1,008 hrs | L70(1k) = 50,000 hrs |

Spectrum Illumination standard drive current is 350mA per LED, higher currents in table above are provided for reference. Manufacturer data may not provide 350mA data leaving only higher current data available. Drive currents lower than listed result in longer lifetimes. Cooler junction temperatures extends the life of LED's. Spectrum Illumination always recommends strobing when possible to extend life of LED's. Strobing keeps the light and LED junction temperature cooler, but also results in higher light output as light output is based on junction temperature as well.

If light is operated in continuous mode, LED life can be improved by mounting methods. Use brackets that conduct heat away from the light such as aluminum.

Notes:

1. This data is the presumption value, hence cannot make a guarantee of these characteristics. Please treat this data as reference.
2. This data may differ depending on conditions and environments.