

Indoor Distribution Test Report

Spectrum Lighting Inc.

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Spectrum Lighting Photometric Lab

Luminaire

SGE12LEDOS 45L 35K XX AR1223OS MW FG
Nom 12 inch diam, AR1223 trim, MW interior finish, frosted glass lens

Test Number

SP-01197

Test Date

11/5/2020

The results contained in this report pertain only to this IES file.

Summary of Results

Power

| | |
|-------------|------|
| Input Watts | 40 W |
|-------------|------|

Lumen Output

| | |
|---------------|------------|
| Output Lumens | 3903 |
| Efficacy | 97.57 lm/W |

Luminous Dimensions

| | |
|-----------------|----|
| 0° - 180° Size | -1 |
| 90° - 270° Size | -1 |
| Height | 0 |

Spacing Criterion

| | |
|---------------------------|------|
| Two luminaires, plane 0° | 1.17 |
| Two luminaires, plane 90° | 1.15 |
| Four luminaires | 1.23 |

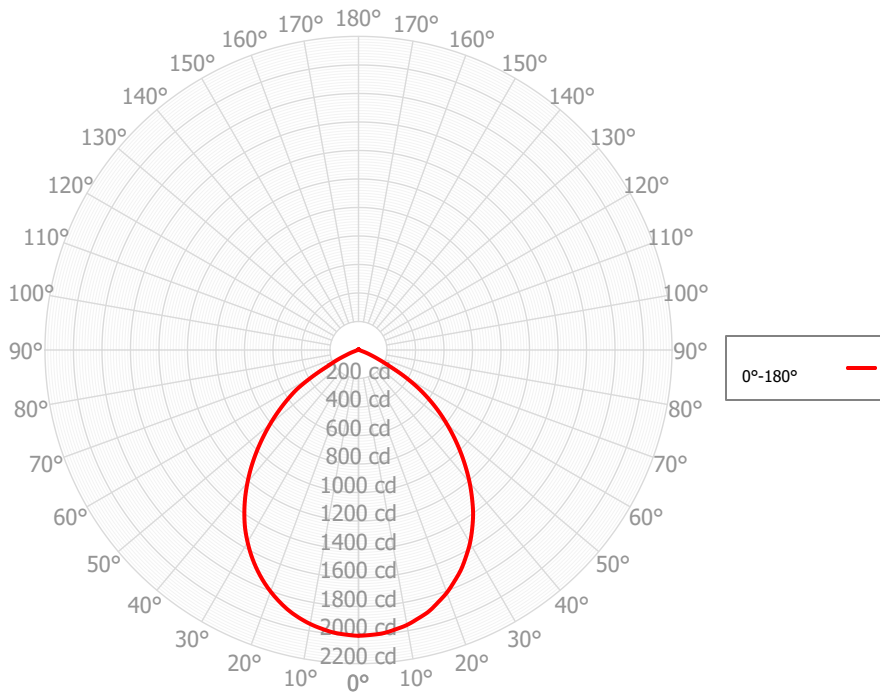
Full Beam Angle

| | |
|------------|------|
| 0° - 180° | 90° |
| 90° - 270° | N/A° |

IES File Header Contents

| Keyword | Value |
|-----------|---|
| TEST | SP-01197 |
| TESTLAB | Spectrum Lighting Photometric Lab, VLS-245-981 |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 11/5/2020 |
| ISSUEDATE | 12/28/2020 |
| LUMCAT | SGE12LEDOS 45L 35K XX AR1223OS MW FG |
| LUMINAIRE | Nom 12 inch diam, AR1223 trim, MW interior finish, frosted glass lens |
| OTHER | Beam angle: 90.5 deg |
| LAMPCAT | N/A |
| LAMP | N/A, G4 |
| OTHER | CCT Output Multiplier: 27K x 0.96, 30K x 0.99, 40K x 1.03 |
| OTHER | Total luminaire wattage is approximate |
| OTHER | This report prepared by Spectrum Lighting |
| _CRI | 80+ |
| _CCTMULT | 27K x 0.96, 30K x 0.99, 40K x 1.03 |
| _LAMPMULT | 10L x 0.23, 15L x 0.32, 20L x 0.42, 30L x 0.6 |

Candela Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % Fixture | Zone | Lumens | % Fixture |
|-----------------|---------|-----------|-------------------|---------|-----------|
| 0.00° - 10.00° | 191.77 | 4.91% | 90.00° - 100.00° | 1.55 | 0.04% |
| 10.00° - 20.00° | 533.01 | 13.66% | 100.00° - 110.00° | 1.62 | 0.04% |
| 20.00° - 30.00° | 778.78 | 19.95% | 100.00° - 120.00° | 3.14 | 0.08% |
| 30.00° - 40.00° | 870.40 | 22.30% | 120.00° - 130.00° | 1.57 | 0.04% |
| 40.00° - 50.00° | 778.33 | 19.94% | 130.00° - 140.00° | 1.53 | 0.04% |
| 50.00° - 60.00° | 537.68 | 13.78% | 140.00° - 150.00° | 1.17 | 0.03% |
| 60.00° - 70.00° | 174.93 | 4.48% | 150.00° - 160.00° | 0.98 | 0.03% |
| 70.00° - 80.00° | 22.43 | 0.57% | 160.00° - 170.00° | 0.63 | 0.02% |
| 80.00° - 90.00° | 4.85 | 0.12% | 170.00° - 180.00° | 0.20 | 0.01% |
| 0.00° - 90.00° | 3892.19 | 99.72% | 0.00° - 180.00° | 3902.96 | 100.00% |

Candela Distribution

| | 0.00° | 180.00° |
|---------|---------|---------|
| 0.00° | 2005.13 | 2005.13 |
| 2.50° | 2001.27 | 1999.51 |
| 5.00° | 1994.95 | 1990.65 |
| 7.50° | 1977.97 | 1973.11 |
| 10.00° | 1959.24 | 1952.30 |
| 12.50° | 1930.28 | 1924.92 |
| 15.00° | 1900.46 | 1891.91 |
| 17.50° | 1856.72 | 1850.37 |
| 20.00° | 1812.23 | 1803.71 |
| 22.50° | 1757.65 | 1751.13 |
| 25.00° | 1701.61 | 1692.24 |
| 27.50° | 1634.06 | 1627.58 |
| 30.00° | 1564.43 | 1556.64 |
| 32.50° | 1485.03 | 1481.32 |
| 35.00° | 1402.14 | 1396.49 |
| 37.50° | 1308.30 | 1306.65 |
| 40.00° | 1212.62 | 1211.24 |
| 42.50° | 1112.73 | 1113.59 |
| 45.00° | 1012.37 | 1012.45 |
| 47.50° | 911.18 | 910.33 |
| 50.00° | 810.46 | 809.90 |
| 52.50° | 710.36 | 709.77 |
| 55.00° | 606.32 | 611.14 |
| 57.50° | 498.27 | 512.67 |
| 60.00° | 376.83 | 375.08 |
| 62.50° | 244.77 | 238.76 |
| 65.00° | 157.47 | 164.38 |
| 67.50° | 97.13 | 93.73 |
| 70.00° | 56.48 | 57.90 |
| 72.50° | 24.83 | 26.49 |
| 75.00° | 14.45 | 17.86 |
| 77.50° | 11.19 | 10.68 |
| 80.00° | 8.74 | 8.35 |
| 82.50° | 6.46 | 6.06 |
| 85.00° | 4.44 | 3.82 |
| 87.50° | 2.44 | 2.19 |
| 90.00° | 1.84 | 1.63 |
| 92.50° | 1.33 | 1.34 |
| 95.00° | 1.30 | 1.41 |
| 97.50° | 1.27 | 1.50 |
| 100.00° | 1.42 | 1.60 |
| 102.50° | 1.58 | 1.56 |
| 105.00° | 1.79 | 1.39 |
| 107.50° | 1.89 | 1.24 |
| 110.00° | 1.51 | 1.10 |
| 112.50° | 1.32 | 1.26 |

Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

| | | | | | | | | | | | | | | | | | | |
|------------|------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| RCR | pfc | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 0% |
| | pcc | 80% | 80% | 80% | 80% | 70% | 70% | 70% | 70% | 50% | 50% | 50% | 30% | 30% | 30% | 10% | 10% | 0% |
| | pw | 70% | 50% | 30% | 10% | 70% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 30% |
| | 0 | 4644 | 4644 | 4644 | 4644 | 4535 | 4535 | 4535 | 4535 | 4331 | 4331 | 4331 | 4144 | 4144 | 4144 | 3973 | 3973 | 3892 |
| | 1 | 4350 | 4209 | 4083 | 3970 | 4249 | 4122 | 4008 | 3905 | 3959 | 3866 | 3781 | 3809 | 3734 | 3665 | 3671 | 3612 | 3557 |
| | 2 | 4039 | 3785 | 3575 | 3399 | 3943 | 3713 | 3521 | 3359 | 3579 | 3419 | 3281 | 3456 | 3323 | 3207 | 3341 | 3233 | 3136 |
| | 3 | 3741 | 3405 | 3145 | 2938 | 3652 | 3346 | 3105 | 2912 | 3234 | 3030 | 2861 | 3131 | 2958 | 2813 | 3036 | 2890 | 2766 |
| | 4 | 3467 | 3073 | 2785 | 2565 | 3384 | 3024 | 2755 | 2547 | 2930 | 2697 | 2513 | 2843 | 2643 | 2480 | 2762 | 2590 | 2448 |
| | 5 | 3217 | 2785 | 2483 | 2260 | 3141 | 2743 | 2460 | 2248 | 2664 | 2415 | 2225 | 2591 | 2373 | 2202 | 2522 | 2332 | 2179 |
| | 6 | 2992 | 2535 | 2229 | 2010 | 2922 | 2500 | 2211 | 2001 | 2433 | 2176 | 1984 | 2370 | 2142 | 1968 | 2311 | 2109 | 1951 |
| | 7 | 2789 | 2319 | 2014 | 1801 | 2726 | 2289 | 2000 | 1795 | 2231 | 1972 | 1782 | 2177 | 1944 | 1770 | 2127 | 1918 | 1758 |
| | 8 | 2607 | 2131 | 1832 | 1626 | 2550 | 2105 | 1820 | 1621 | 2055 | 1797 | 1612 | 2009 | 1774 | 1603 | 1965 | 1753 | 1594 |
| | 9 | 2444 | 1967 | 1675 | 1477 | 2392 | 1944 | 1665 | 1474 | 1902 | 1646 | 1467 | 1861 | 1627 | 1460 | 1823 | 1609 | 1453 |
| | 10 | 2297 | 1823 | 1539 | 1351 | 2250 | 1804 | 1531 | 1348 | 1766 | 1515 | 1342 | 1731 | 1500 | 1337 | 1697 | 1485 | 1331 |

Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|------------|-------------|---------------|
| 5.5 ft | 66.3 fc | 5.5 ft |
| 6.5 ft | 47.5 fc | 6.6 ft |
| 7.5 ft | 35.6 fc | 7.6 ft |
| 8.0 ft | 31.3 fc | 8.1 ft |
| 10.0 ft | 20.1 fc | 10.1 ft |
| 12.0 ft | 13.9 fc | 12.1 ft |
| 14.0 ft | 10.2 fc | 14.1 ft |
| 16.0 ft | 7.8 fc | 16.1 ft |
| 20.0 ft | 5.0 fc | 20.2 ft |
| 24.0 ft | 3.5 fc | 24.2 ft |
| 28.0 ft | 2.6 fc | 28.2 ft |

Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|---------------|-------|--------|--------|
| 0.00° | 27480 | 27480 | 27480 |
| 45.00° | 19622 | 19622 | 19622 |
| 55.00° | 14487 | 14516 | 14545 |
| 65.00° | 5107 | 5163 | 5219 |
| 75.00° | 765 | 810 | 855 |
| 85.00° | 698 | 674 | 649 |

UGR CIE 190:2010

| Ceiling reflectance | | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 | 0.7 | 0.7 | 0.5 | 0.5 | 0.3 |
|---------------------|-----|------------------|------|------|------|------|----------------|------|------|------|------|
| Wall reflectance | | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 | 0.5 | 0.3 | 0.5 | 0.3 | 0.3 |
| Plane reflectance | | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Room dimensions | | Viewed crosswise | | | | | Viewed endwise | | | | |
| 2H | 2H | 19.5 | 20.9 | 19.9 | 21.2 | 21.5 | 19.6 | 21.0 | 20.0 | 21.3 | 21.6 |
| | 3H | 19.5 | 20.8 | 19.9 | 21.1 | 21.5 | 19.6 | 20.9 | 20.0 | 21.2 | 21.6 |
| | 4H | 19.5 | 20.6 | 19.9 | 21.0 | 21.4 | 19.6 | 20.7 | 20.0 | 21.1 | 21.5 |
| | 6H | 19.4 | 20.5 | 19.8 | 20.8 | 21.2 | 19.5 | 20.5 | 19.9 | 20.9 | 21.3 |
| | 8H | 19.4 | 20.4 | 19.8 | 20.8 | 21.2 | 19.5 | 20.5 | 19.9 | 20.8 | 21.3 |
| | 12H | 19.3 | 20.3 | 19.8 | 20.7 | 21.1 | 19.4 | 20.4 | 19.9 | 20.8 | 21.2 |
| 4H | 2H | 19.5 | 20.6 | 19.9 | 21.0 | 21.4 | 19.6 | 20.7 | 20.0 | 21.1 | 21.5 |
| | 3H | 19.5 | 20.5 | 20.0 | 20.9 | 21.3 | 19.6 | 20.6 | 20.0 | 21.0 | 21.4 |
| | 4H | 19.5 | 20.3 | 19.9 | 20.7 | 21.2 | 19.6 | 20.4 | 20.0 | 20.8 | 21.3 |
| | 6H | 19.4 | 20.1 | 19.9 | 20.6 | 21.0 | 19.5 | 20.2 | 20.0 | 20.7 | 21.1 |
| | 8H | 19.4 | 20.0 | 19.8 | 20.5 | 21.0 | 19.4 | 20.1 | 19.9 | 20.6 | 21.0 |
| | 12H | 19.3 | 19.9 | 19.8 | 20.4 | 20.9 | 19.4 | 20.0 | 19.9 | 20.5 | 21.0 |
| 8H | 4H | 19.4 | 20.0 | 19.8 | 20.5 | 20.9 | 19.4 | 20.1 | 19.9 | 20.6 | 21.0 |
| | 6H | 19.3 | 19.8 | 19.8 | 20.3 | 20.8 | 19.4 | 19.9 | 19.9 | 20.4 | 20.9 |
| | 8H | 19.2 | 19.7 | 19.7 | 20.2 | 20.7 | 19.3 | 19.8 | 19.8 | 20.3 | 20.8 |
| | 12H | 19.2 | 19.6 | 19.7 | 20.1 | 20.7 | 19.3 | 19.7 | 19.8 | 20.2 | 20.8 |
| 12H | 4H | 19.3 | 19.9 | 19.8 | 20.4 | 20.9 | 19.4 | 20.0 | 19.9 | 20.5 | 21.0 |
| | 6H | 19.2 | 19.7 | 19.7 | 20.2 | 20.7 | 19.3 | 19.8 | 19.8 | 20.3 | 20.8 |
| | 8H | 19.2 | 19.6 | 19.7 | 20.1 | 20.7 | 19.3 | 19.7 | 19.8 | 20.2 | 20.8 |

Corrected UGR values based on total output energy
 SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0