## Indoor Distribution Test Report

# Spectrum Lighting Inc.

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## Spectrum Lighting Photometric Lab

**Luminaire**

LD2405PX 120L 35K xx xx MW FO

Nom 24 inch diameter LightDisc with 4 drivers

**Test Number**

SP-01437_4

**Test Date**

11/11/2021

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

## Summary of Results

### Power

| | |
|---|---|
| **Input Watts** | 101 W |

### Lumen Output

| | |
|---|---|
| **Output Lumens** | 9853 |
| **Efficacy** | 97.55 lm/W |

### Luminous Dimensions

| | |
|---|---|
| **0° - 180° Size** | -2 |
| **90° - 270° Size** | -2 |
| **Height** | 0 |

### Spacing Criterion

| | |
|---|---|
| **Two luminaires, plane 0°** | 1.23 |
| **Two luminaires, plane 90°** | 1.23 |
| **Four luminaires** | 1.35 |

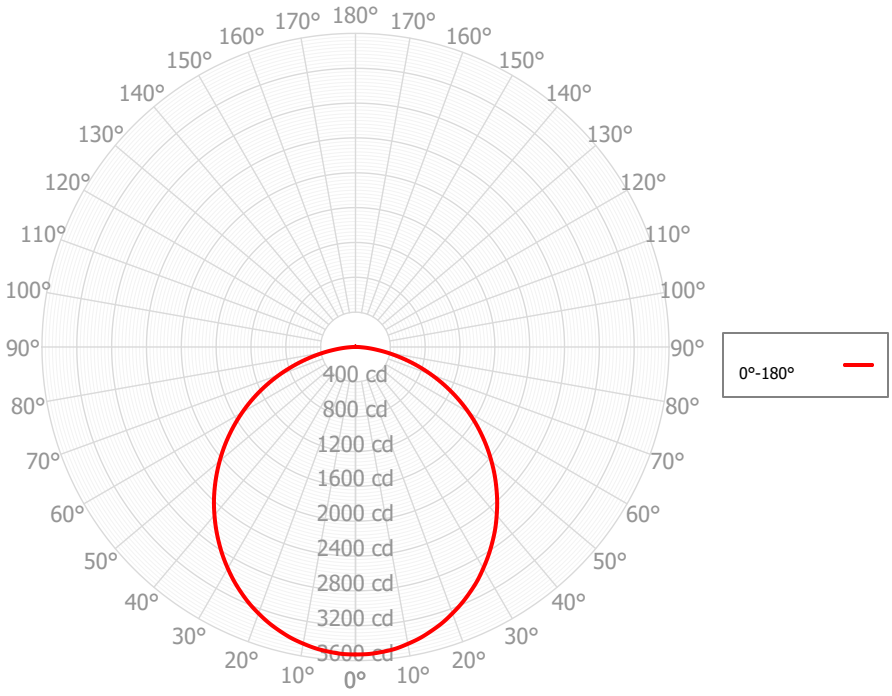
### Full Beam Angle

| | |
|---|---|
| **0° - 180°** | 110° |
| **90° - 270°** | N/A° |

## IES File Header Contents

| Keyword | Value |
|---|---|
| TEST | SP-01437_4 |
| TESTLAB | Spectrum Lighting Photometric Lab, VLS-245-981 |
| MANUFAC | Spectrum Lighting |
| TESTDATE | 11/11/2021 |
| ISSUEDATE | 11/29/2022 |
| LUMCAT | LD2405PX 120L 35K xx xx MW FO |
| LUMINAIRE | Nom 24 inch diameter LightDisc with 4 drivers |
| OTHER | Beam Angle: 110 degrees |
| OTHER | Reference project SL84 |
| LAMPCAT | N/A |
| LAMP | N/A; PX PIE BOARDS |
| OTHER | CCT Output Multipliers: 27K x 0.95, 30K x 0.98, 40K x 1.0 |
| OTHER | Total luminaire wattage is approximate |
| OTHER | This report prepared by Spectrum Lighting |

## Candela Polar Plot




## Zonal Lumen Summary

| Zone | Lumens | % Fixture | Zone | Lumens | % Fixture |
|---|---|---|---|---|---|
| 0.00° - 10.00° | 338.76 | 3.44% | 90.00° - 100.00° | 5.57 | 0.06% |
| 10.00° - 20.00° | 951.05 | 9.65% | 100.00° - 110.00° | 1.50 | 0.02% |
| 20.00° - 30.00° | 1431.31 | 14.53% | 100.00° - 120.00° | 3.23 | 0.03% |
| 30.00° - 40.00° | 1711.15 | 17.37% | 120.00° - 130.00° | 1.59 | 0.02% |
| 40.00° - 50.00° | 1762.32 | 17.89% | 130.00° - 140.00° | 1.44 | 0.01% |
| 50.00° - 60.00° | 1583.89 | 16.08% | 140.00° - 150.00° | 1.34 | 0.01% |
| 60.00° - 70.00° | 1201.17 | 12.19% | 150.00° - 160.00° | 1.11 | 0.01% |
| 70.00° - 80.00° | 676.13 | 6.86% | 160.00° - 170.00° | 0.72 | 0.01% |
| 80.00° - 90.00° | 181.54 | 1.84% | 170.00° - 180.00° | 0.27 | 0.00% |
| 0.00° - 90.00° | 9837.32 | 99.84% | 0.00° - 180.00° | 9852.60 | 100.00% |

## Candela Distribution

| | 0.00° | 180.00° |
|---|---|---|
| **0.00°** | 3530.55 | 3530.55 |
| **2.50°** | 3528.52 | 3527.85 |
| **5.00°** | 3514.85 | 3512.07 |
| **7.50°** | 3495.44 | 3490.84 |
| **10.00°** | 3461.55 | 3458.68 |
| **12.50°** | 3423.40 | 3421.77 |
| **15.00°** | 3373.99 | 3373.15 |
| **17.50°** | 3320.25 | 3319.29 |
| **20.00°** | 3254.69 | 3255.61 |
| **22.50°** | 3186.08 | 3187.42 |
| **25.00°** | 3108.88 | 3108.97 |
| **27.50°** | 3027.67 | 3025.62 |
| **30.00°** | 2934.63 | 2934.10 |
| **32.50°** | 2839.62 | 2838.59 |
| **35.00°** | 2738.65 | 2736.20 |
| **37.50°** | 2634.88 | 2630.36 |
| **40.00°** | 2522.33 | 2519.54 |
| **42.50°** | 2407.93 | 2406.11 |
| **45.00°** | 2287.43 | 2286.10 |
| **47.50°** | 2165.17 | 2162.55 |
| **50.00°** | 2036.96 | 2035.63 |
| **52.50°** | 1907.56 | 1906.85 |
| **55.00°** | 1773.96 | 1774.05 |
| **57.50°** | 1638.88 | 1638.93 |
| **60.00°** | 1498.32 | 1500.88 |
| **62.50°** | 1357.16 | 1361.12 |
| **65.00°** | 1213.69 | 1218.01 |
| **67.50°** | 1069.85 | 1072.90 |
| **70.00°** | 924.50 | 927.31 |
| **72.50°** | 779.64 | 781.40 |
| **75.00°** | 636.89 | 640.05 |
| **77.50°** | 496.95 | 501.61 |
| **80.00°** | 369.19 | 373.34 |
| **82.50°** | 247.27 | 251.73 |
| **85.00°** | 151.66 | 152.25 |
| **87.50°** | 66.40 | 67.87 |
| **90.00°** | 30.82 | 23.63 |
| **92.50°** | 1.18 | 7.39 |
| **95.00°** | 1.27 | 0.60 |
| **97.50°** | 1.37 | 0.55 |
| **100.00°** | 1.54 | 0.70 |

## Coefficients of Utilization – Zonal Cavity Method

Values are lumens delivered to the workplane.

| | ρfc | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 20% | 0% |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | ρcc | 80% | 80% | 80% | 80% | 70% | 70% | 70% | 70% | 50% | 50% | 50% | 30% | 30% | 30% | 10% | 10% | 10% | 0% |
| | ρw | 70% | 50% | 30% | 10% | 70% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 50% | 30% | 10% | 30% |
| | 0 | 11726 | 11726 | 11726 | 11726 | 11451 | 11451 | 11451 | 11451 | 10939 | 10939 | 10939 | 10470 | 10470 | 10470 | 10040 | 10040 | 10040 | 9837 |
| | 1 | 10712 | 10241 | 9818 | 9438 | 10441 | 10015 | 9631 | 9282 | 9593 | 9276 | 8986 | 9205 | 8946 | 8707 | 8847 | 8640 | 8446 | 8454 |
| | 2 | 9737 | 8923 | 8250 | 7685 | 9476 | 8735 | 8116 | 7591 | 8382 | 7861 | 7411 | 8056 | 7621 | 7239 | 7755 | 7395 | 7074 | 7231 |
| | 3 | 8876 | 7834 | 7029 | 6387 | 8629 | 7677 | 6930 | 6327 | 7380 | 6739 | 6212 | 7105 | 6560 | 6101 | 6851 | 6389 | 5994 | 6246 |
| | 4 | 8126 | 6941 | 6073 | 5410 | 7897 | 6808 | 5998 | 5371 | 6558 | 5853 | 5294 | 6326 | 5715 | 5220 | 6110 | 5583 | 5147 | 5459 |
| RCR | 5 | 7473 | 6202 | 5314 | 4658 | 7263 | 6090 | 5255 | 4631 | 5878 | 5142 | 4578 | 5681 | 5034 | 4526 | 5497 | 4930 | 4475 | 4823 |
| | 6 | 6902 | 5584 | 4700 | 4066 | 6711 | 5490 | 4654 | 4047 | 5310 | 4565 | 4009 | 5142 | 4478 | 3972 | 4984 | 4396 | 3935 | 4303 |
| | 7 | 6400 | 5064 | 4198 | 3591 | 6228 | 4984 | 4161 | 3577 | 4830 | 4089 | 3549 | 4686 | 4019 | 3522 | 4551 | 3952 | 3495 | 3872 |
| | 8 | 5959 | 4622 | 3782 | 3204 | 5803 | 4553 | 3751 | 3193 | 4421 | 3692 | 3172 | 4297 | 3635 | 3151 | 4181 | 3580 | 3131 | 3510 |
| | 9 | 5568 | 4244 | 3432 | 2883 | 5427 | 4184 | 3407 | 2875 | 4070 | 3358 | 2859 | 3963 | 3311 | 2843 | 3861 | 3265 | 2827 | 3204 |
| | 10 | 5221 | 3916 | 3135 | 2615 | 5094 | 3865 | 3114 | 2609 | 3766 | 3074 | 2596 | 3672 | 3034 | 2583 | 3584 | 2996 | 2571 | 2942 |

## Cone of Light

| Mtg Height | Light Level | Beam Diameter |
|---|---|---|
| 5.5 ft | 116.7 fc | 15.8 ft |
| 6.5 ft | 83.6 fc | 18.7 ft |
| 7.5 ft | 62.8 fc | 21.6 ft |
| 8.0 ft | 55.2 fc | 23.0 ft |
| 10.0 ft | 35.3 fc | 28.7 ft |
| 12.0 ft | 24.5 fc | 34.5 ft |
| 14.0 ft | 18.0 fc | 40.2 ft |
| 16.0 ft | 13.8 fc | 46.0 ft |
| 20.0 ft | 8.8 fc | 57.5 ft |
| 24.0 ft | 6.1 fc | 69.0 ft |
| 28.0 ft | 4.5 fc | 80.5 ft |

## Average Luminaire Luminance [cd/m²]

| | 0.00° | 45.00° | 90.00° |
|---|---|---|---|
| 0.00° | 12097 | 12097 | 12097 |
| 45.00° | 11084 | 11082 | 11080 |
| 55.00° | 10597 | 10597 | 10597 |
| 65.00° | 9840 | 9848 | 9857 |
| 75.00° | 8431 | 8442 | 8452 |
| 85.00° | 5962 | 5968 | 5974 |

## 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 | 21.1 | 19.9 | 21.5 | 21.8 | 19.5 | 21.1 | 19.9 | 21.5 | 21.8 |
| | 3H | 21.3 | 22.8 | 21.7 | 23.1 | 23.5 | 21.3 | 22.8 | 21.7 | 23.1 | 23.5 |
| | 4H | 21.9 | 23.3 | 22.3 | 23.7 | 24.1 | 21.9 | 23.3 | 22.3 | 23.7 | 24.1 |
| | 6H | 22.4 | 23.7 | 22.8 | 24.0 | 24.4 | 22.4 | 23.7 | 22.8 | 24.1 | 24.5 |
| | 8H | 22.5 | 23.8 | 22.9 | 24.1 | 24.5 | 22.5 | 23.8 | 23.0 | 24.2 | 24.6 |
| | 12H | 22.6 | 23.8 | 23.0 | 24.2 | 24.6 | 22.6 | 23.8 | 23.0 | 24.2 | 24.6 |
| 4H | 2H | 20.1 | 21.5 | 20.5 | 21.9 | 22.3 | 20.1 | 21.5 | 20.5 | 21.9 | 22.3 |
| | 3H | 22.1 | 23.3 | 22.5 | 23.7 | 24.1 | 22.1 | 23.3 | 22.6 | 23.7 | 24.1 |
| | 4H | 22.9 | 24.0 | 23.3 | 24.4 | 24.8 | 22.9 | 24.0 | 23.4 | 24.4 | 24.8 |
| | 6H | 23.5 | 24.4 | 23.9 | 24.8 | 25.3 | 23.5 | 24.4 | 23.9 | 24.9 | 25.3 |
| | 8H | 23.7 | 24.5 | 24.1 | 25.0 | 25.4 | 23.7 | 24.5 | 24.1 | 25.0 | 25.4 |
| | 12H | 23.8 | 24.6 | 24.3 | 25.0 | 25.5 | 23.8 | 24.6 | 24.3 | 25.0 | 25.5 |
| 8H | 4H | 23.2 | 24.1 | 23.7 | 24.5 | 25.0 | 23.2 | 24.1 | 23.7 | 24.5 | 25.0 |
| | 6H | 23.9 | 24.6 | 24.4 | 25.1 | 25.6 | 23.9 | 24.6 | 24.4 | 25.1 | 25.6 |
| | 8H | 24.1 | 24.8 | 24.6 | 25.3 | 25.8 | 24.1 | 24.8 | 24.7 | 25.3 | 25.8 |
| | 12H | 24.3 | 24.9 | 24.8 | 25.4 | 25.9 | 24.3 | 24.9 | 24.8 | 25.4 | 26.0 |
| 12H | 4H | 23.2 | 24.0 | 23.7 | 24.5 | 25.0 | 23.2 | 24.0 | 23.7 | 24.5 | 25.0 |
| | 6H | 23.9 | 24.6 | 24.5 | 25.1 | 25.6 | 24.0 | 24.6 | 24.5 | 25.1 | 25.6 |
| | 8H | 24.2 | 24.8 | 24.7 | 25.3 | 25.9 | 24.2 | 24.8 | 24.8 | 25.3 | 25.9 |

Corrected UGR values based on total output energy
SHR = 1.0

Corrected UGR values based on total output lumens

SHR = 1.0