

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P242438

Luminaire Tested: S123DRP-S775D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2024  
Report Number: P242438  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-11)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DRP-S775D840-X4F0-XX-UDD-F-W  
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER  
STANDARD LIGHT ENGINE  
Light Source: (92) 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

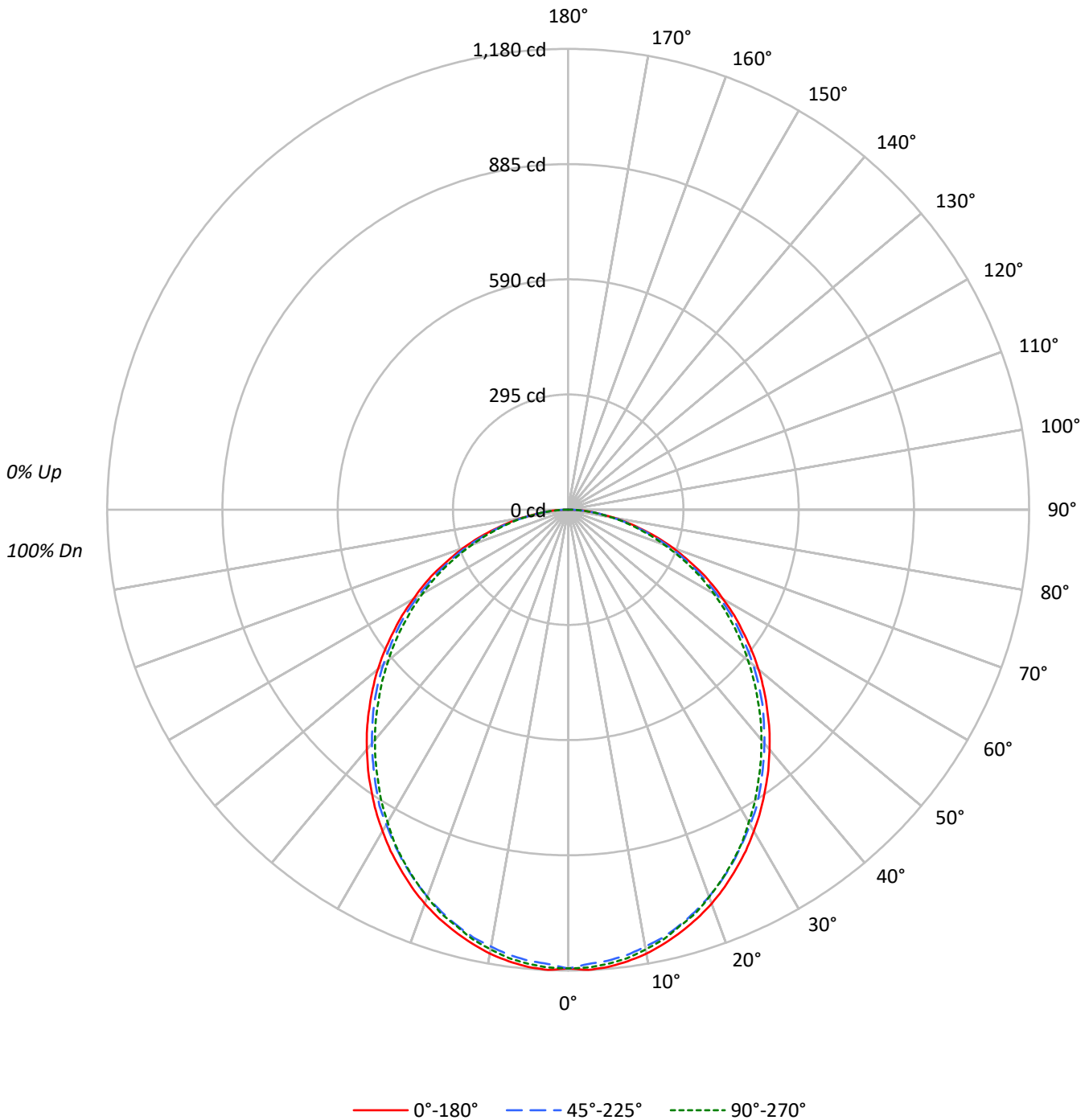
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3056.6 lumens  
Efficiency: N/A  
Efficacy: 115.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3  
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 26.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|-----|---|--|---|
| RF  | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |     |     | 20  |     |     |    |    | 20 |    |     |   |  |   |
| RC  | 80  |     |     |     |     | 70  |     |     |     |     | 50  |     |     |     |     | 30  |     |     |    |    | 10 |    |     |   |  | 0 |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30  | 10  | 50  | 30 | 10 | 50 | 30 | 10  | 0 |  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |     |   |  |   |
| 0   | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |    |    |    |    | 100 |   |  |   |
| 1   | 109 | 104 | 100 | 96  | 106 | 102 | 98  | 95  | 98  | 94  | 92  | 94  | 91  | 89  | 90  | 88  | 86  | 84  |    |    |    |    | 84  |   |  |   |
| 2   | 99  | 91  | 84  | 79  | 97  | 89  | 83  | 78  | 86  | 80  | 76  | 82  | 78  | 74  | 79  | 76  | 72  | 70  |    |    |    |    | 70  |   |  |   |
| 3   | 91  | 80  | 72  | 66  | 88  | 79  | 71  | 65  | 76  | 69  | 64  | 73  | 67  | 63  | 70  | 66  | 62  | 59  |    |    |    |    | 59  |   |  |   |
| 4   | 83  | 71  | 62  | 56  | 81  | 70  | 62  | 55  | 67  | 60  | 55  | 65  | 59  | 54  | 63  | 58  | 53  | 51  |    |    |    |    | 51  |   |  |   |
| 5   | 76  | 64  | 55  | 48  | 74  | 63  | 54  | 48  | 60  | 53  | 47  | 58  | 52  | 47  | 57  | 51  | 46  | 44  |    |    |    |    | 44  |   |  |   |
| 6   | 71  | 57  | 49  | 42  | 69  | 56  | 48  | 42  | 55  | 47  | 42  | 53  | 46  | 41  | 51  | 46  | 41  | 39  |    |    |    |    | 39  |   |  |   |
| 7   | 66  | 52  | 43  | 37  | 64  | 51  | 43  | 37  | 50  | 42  | 37  | 48  | 42  | 37  | 47  | 41  | 36  | 34  |    |    |    |    | 34  |   |  |   |
| 8   | 61  | 48  | 39  | 33  | 60  | 47  | 39  | 33  | 46  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 31  |    |    |    |    | 31  |   |  |   |
| 9   | 57  | 44  | 36  | 30  | 56  | 43  | 35  | 30  | 42  | 35  | 30  | 41  | 34  | 30  | 40  | 34  | 30  | 28  |    |    |    |    | 28  |   |  |   |
| 10  | 54  | 40  | 33  | 27  | 52  | 40  | 32  | 27  | 39  | 32  | 27  | 38  | 32  | 27  | 37  | 31  | 27  | 25  |    |    |    |    | 25  |   |  |   |

**AVERAGE LUMINANCE (cd/sqm):**

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 14236 | 14236 | 14236 |
| 5°  | 14303 | 14106 | 14204 |
| 10° | 14207 | 13983 | 14071 |
| 15° | 14041 | 13826 | 13851 |
| 20° | 13847 | 13600 | 13612 |
| 25° | 13587 | 13330 | 13303 |
| 30° | 13301 | 13032 | 12933 |
| 35° | 13001 | 12717 | 12553 |
| 40° | 12687 | 12367 | 12176 |
| 45° | 12342 | 12049 | 11754 |
| 50° | 11997 | 11654 | 11331 |
| 55° | 11545 | 11247 | 10904 |
| 60° | 11091 | 10771 | 10429 |
| 65° | 10687 | 10254 | 9935  |
| 70° | 10093 | 9665  | 9232  |
| 75° | 9221  | 8894  | 8514  |
| 80° | 8321  | 7965  | 7895  |
| 85° | 7301  | 7023  | 6745  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 12342 cd/sqm



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 110.7  | 3.6       |
| 10°-20°   | 312.6  | 10.2      |
| 20°-30°   | 461.7  | 15.1      |
| 30°-40°   | 539.3  | 17.6      |
| 40°-50°   | 542.1  | 17.7      |
| 50°-60°   | 476.2  | 15.6      |
| 60°-70°   | 354.7  | 11.6      |
| 70°-80°   | 201.8  | 6.6       |
| 80°-90°   | 57.4   | 1.9       |
| 90°-100°  | 0.0    | 0.0       |
| 100°-110° | 0.0    | 0.0       |
| 110°-120° | 0.0    | 0.0       |
| 120°-130° | 0.0    | 0.0       |
| 130°-140° | 0.0    | 0.0       |
| 140°-150° | 0.0    | 0.0       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 885.1  | 29.0      |
| 0°-40°    | 1424.4 | 46.6      |
| 0°-60°    | 2442.7 | 79.9      |
| 0°-90°    | 3056.6 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3056.6 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----|------|-------|------|-------|------|------|
| 0°  | 1174 | 1174  | 1174 | 1174  | 1174 |      |
| 5°  | 1176 | 1170  | 1159 | 1169  | 1167 | 111  |
| 15° | 1119 | 1115  | 1102 | 1110  | 1104 | 316  |
| 25° | 1016 | 1010  | 997  | 998   | 995  | 468  |
| 35° | 879  | 872   | 859  | 853   | 848  | 550  |
| 45° | 720  | 716   | 703  | 691   | 686  | 556  |
| 55° | 546  | 545   | 532  | 521   | 516  | 489  |
| 65° | 373  | 368   | 358  | 349   | 346  | 368  |
| 75° | 197  | 193   | 190  | 185   | 182  | 210  |
| 85° | 52   | 50    | 50   | 48    | 48   | 60   |
| 90° | 0    | 0     | 0    | 0     | 0    |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|-------|--------|--------|--------|--------|--------|
| 0°    | 1174.5 | 1174.5 | 1174.5 | 1174.5 | 1174.5 |
| 2.5°  | 1179.5 | 1175.5 | 1164.4 | 1174.5 | 1173.5 |
| 5°    | 1175.5 | 1170.4 | 1159.3 | 1169.4 | 1167.4 |
| 7.5°  | 1166.4 | 1161.3 | 1150.2 | 1159.3 | 1158.3 |
| 10°   | 1154.3 | 1149.2 | 1136.1 | 1145.2 | 1143.2 |
| 12.5° | 1138.1 | 1134.1 | 1122.0 | 1128.0 | 1127.0 |
| 15°   | 1118.9 | 1114.9 | 1101.8 | 1109.8 | 1103.8 |
| 17.5° | 1097.7 | 1092.7 | 1079.5 | 1085.6 | 1083.6 |
| 20°   | 1073.5 | 1067.4 | 1054.3 | 1058.3 | 1055.3 |
| 22.5° | 1046.2 | 1040.2 | 1027.0 | 1030.1 | 1026.0 |
| 25°   | 1015.9 | 1009.9 | 996.7  | 997.7  | 994.7  |
| 27.5° | 984.6  | 978.6  | 964.4  | 965.4  | 962.4  |
| 30°   | 950.3  | 945.2  | 931.1  | 931.1  | 924.0  |
| 32.5° | 915.9  | 908.9  | 898.8  | 891.7  | 888.7  |
| 35°   | 878.6  | 872.5  | 859.4  | 853.3  | 848.3  |
| 37.5° | 841.2  | 833.1  | 820.0  | 812.9  | 809.9  |
| 40°   | 801.8  | 795.8  | 781.6  | 773.6  | 769.5  |
| 42.5° | 762.4  | 755.4  | 741.2  | 733.2  | 729.1  |
| 45°   | 720.0  | 716.0  | 702.9  | 690.7  | 685.7  |
| 47.5° | 678.6  | 672.6  | 660.5  | 648.3  | 644.3  |
| 50°   | 636.2  | 631.2  | 618.0  | 606.9  | 600.9  |
| 52.5° | 591.8  | 588.8  | 574.6  | 565.5  | 559.5  |
| 55°   | 546.3  | 545.3  | 532.2  | 521.1  | 516.0  |
| 57.5° | 503.9  | 499.9  | 489.8  | 479.7  | 473.6  |
| 60°   | 457.5  | 456.5  | 444.3  | 435.3  | 430.2  |
| 62.5° | 416.1  | 413.0  | 400.9  | 391.8  | 388.8  |
| 65°   | 372.6  | 367.6  | 357.5  | 349.4  | 346.4  |
| 67.5° | 326.2  | 322.1  | 314.1  | 307.0  | 303.0  |
| 70°   | 284.8  | 278.7  | 272.7  | 265.6  | 260.5  |
| 72.5° | 241.4  | 237.3  | 230.2  | 224.2  | 222.2  |
| 75°   | 196.9  | 192.9  | 189.9  | 184.8  | 181.8  |
| 77.5° | 157.5  | 155.5  | 151.5  | 147.4  | 147.4  |
| 80°   | 119.2  | 116.1  | 114.1  | 113.1  | 113.1  |
| 82.5° | 81.8   | 81.8   | 81.8   | 79.8   | 78.8   |
| 85°   | 52.5   | 50.5   | 50.5   | 48.5   | 48.5   |
| 87.5° | 26.3   | 23.2   | 22.2   | 21.2   | 21.2   |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

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**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 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 |       |       |       |       |
| X=2H            | Y=2H | 20.59            | 22.20 | 20.95 | 22.52 | 22.83 | 20.27          | 21.89 | 20.64 | 22.20 | 22.52 |
|                 | 3H   | 22.35            | 23.82 | 22.73 | 24.14 | 24.50 | 21.99          | 23.45 | 22.36 | 23.78 | 24.14 |
|                 | 4H   | 23.01            | 24.39 | 23.41 | 24.74 | 25.11 | 22.62          | 24.00 | 23.02 | 24.35 | 24.72 |
|                 | 6H   | 23.50            | 24.78 | 23.91 | 25.14 | 25.53 | 23.11          | 24.39 | 23.52 | 24.75 | 25.14 |
|                 | 8H   | 23.65            | 24.87 | 24.08 | 25.26 | 25.66 | 23.27          | 24.49 | 23.69 | 24.88 | 25.28 |
|                 | 12H  | 23.76            | 24.93 | 24.19 | 25.31 | 25.74 | 23.38          | 24.54 | 23.80 | 24.92 | 25.35 |
| 4H              | 2H   | 21.16            | 22.54 | 21.56 | 22.89 | 23.26 | 20.91          | 22.29 | 21.31 | 22.64 | 23.02 |
|                 | 3H   | 23.16            | 24.31 | 23.57 | 24.71 | 25.11 | 22.85          | 24.00 | 23.26 | 24.40 | 24.80 |
|                 | 4H   | 23.94            | 24.99 | 24.37 | 25.40 | 25.83 | 23.61          | 24.66 | 24.04 | 25.07 | 25.51 |
|                 | 6H   | 24.56            | 25.47 | 25.01 | 25.91 | 26.37 | 24.23          | 25.14 | 24.68 | 25.58 | 26.03 |
|                 | 8H   | 24.76            | 25.61 | 25.22 | 26.06 | 26.52 | 24.43          | 25.29 | 24.89 | 25.73 | 26.19 |
|                 | 12H  | 24.91            | 25.68 | 25.39 | 26.16 | 26.62 | 24.58          | 25.35 | 25.06 | 25.82 | 26.29 |
| 8H              | 4H   | 24.23            | 25.08 | 24.69 | 25.52 | 25.99 | 23.94          | 24.79 | 24.40 | 25.23 | 25.70 |
|                 | 6H   | 24.96            | 25.67 | 25.46 | 26.16 | 26.64 | 24.67          | 25.38 | 25.16 | 25.87 | 26.34 |
|                 | 8H   | 25.24            | 25.87 | 25.75 | 26.38 | 26.87 | 24.95          | 25.59 | 25.46 | 26.09 | 26.58 |
|                 | 12H  | 25.46            | 26.03 | 25.97 | 26.52 | 27.08 | 25.17          | 25.74 | 25.68 | 26.23 | 26.79 |
| 12H             | 4H   | 24.26            | 25.02 | 24.74 | 25.50 | 25.97 | 23.97          | 24.74 | 24.45 | 25.21 | 25.68 |
|                 | 6H   | 25.01            | 25.65 | 25.52 | 26.16 | 26.64 | 24.73          | 25.37 | 25.24 | 25.88 | 26.36 |
|                 | 8H   | 25.35            | 25.91 | 25.85 | 26.40 | 26.96 | 25.07          | 25.63 | 25.58 | 26.12 | 26.69 |