

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: P243470

Luminaire Tested: S124DRP-H795D840-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P243470
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-84)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124DRP-H795D840-X4F0-XX-UDD-F-W
Description: DEFINE 4 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 4000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

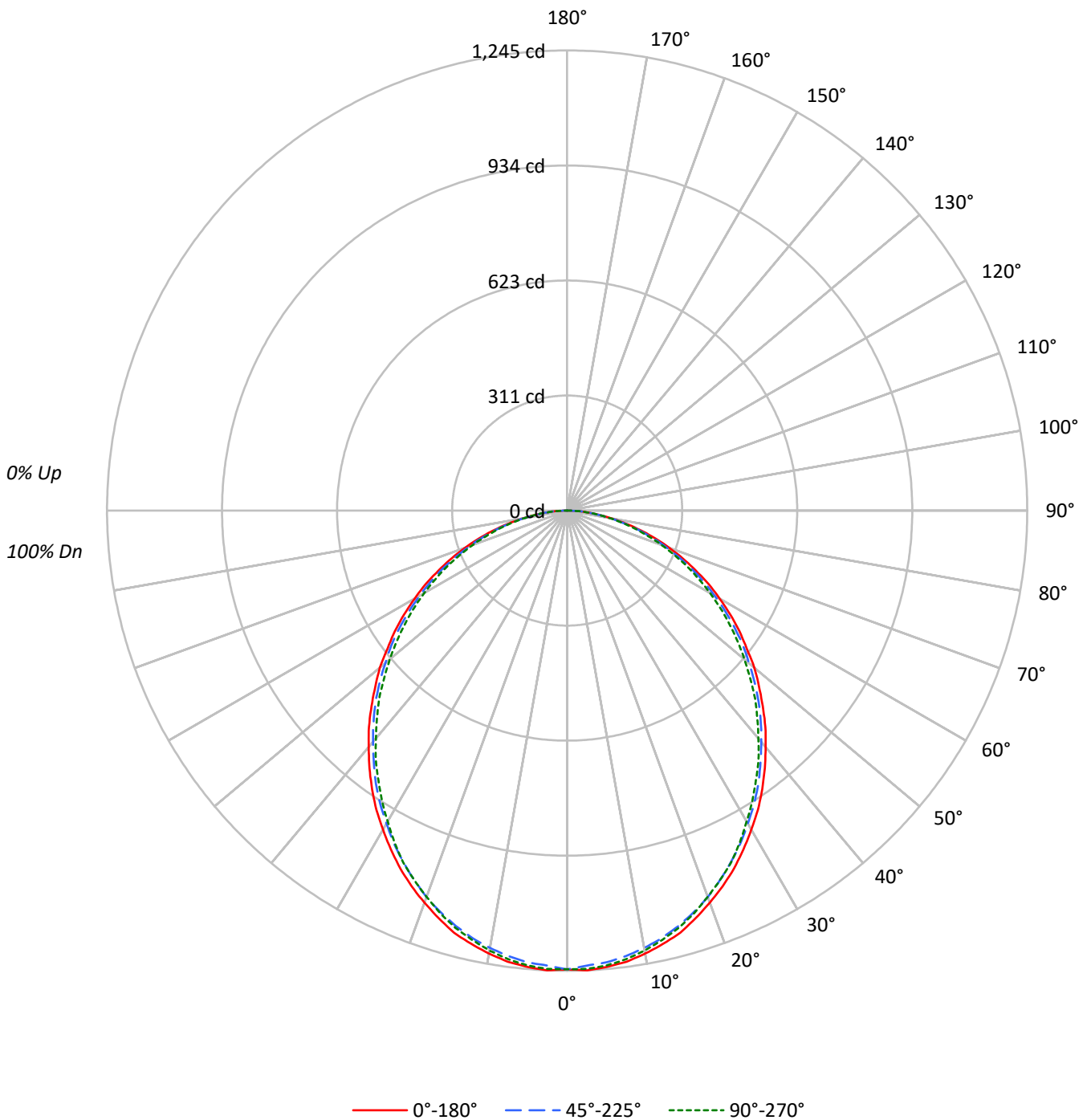
Lumens per Lamp: N/A
Luminaire Lumens: 3195.1 lumens
Efficiency: N/A
Efficacy: 135.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.31' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 23.6
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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 109 | 104 | 100 | 96 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 84 | 79 | 97 | 89 | 83 | 78 | 86 | 80 | 76 | 82 | 78 | 74 | 79 | 76 | 73 | 70 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 60 |
| 4 | 83 | 71 | 63 | 56 | 81 | 70 | 62 | 56 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 77 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 61 | 53 | 48 | 59 | 52 | 47 | 57 | 51 | 47 | 44 |
| 6 | 71 | 58 | 49 | 42 | 69 | 57 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 52 | 46 | 41 | 39 |
| 7 | 66 | 52 | 44 | 38 | 64 | 51 | 43 | 37 | 50 | 43 | 37 | 48 | 42 | 37 | 47 | 41 | 37 | 35 |
| 8 | 61 | 48 | 39 | 34 | 60 | 47 | 39 | 33 | 46 | 38 | 33 | 45 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 52 | 40 | 33 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 11032 | 11032 | 11032 |
| 5° | 11056 | 10948 | 11021 |
| 10° | 10984 | 10847 | 10911 |
| 15° | 10883 | 10706 | 10752 |
| 20° | 10680 | 10527 | 10518 |
| 25° | 10479 | 10291 | 10301 |
| 30° | 10230 | 10033 | 9972 |
| 35° | 9983 | 9786 | 9665 |
| 40° | 9691 | 9480 | 9340 |
| 45° | 9407 | 9217 | 9038 |
| 50° | 9148 | 8882 | 8658 |
| 55° | 8812 | 8576 | 8310 |
| 60° | 8475 | 8187 | 7936 |
| 65° | 8070 | 7795 | 7540 |
| 70° | 7638 | 7295 | 7061 |
| 75° | 7041 | 6762 | 6556 |
| 80° | 6204 | 6102 | 5943 |
| 85° | 5456 | 5456 | 5354 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 9407 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 117.0 | 3.7 |
| 10°-20° | 329.9 | 10.3 |
| 20°-30° | 485.9 | 15.2 |
| 30°-40° | 565.3 | 17.7 |
| 40°-50° | 565.5 | 17.7 |
| 50°-60° | 494.6 | 15.5 |
| 60°-70° | 367.3 | 11.5 |
| 70°-80° | 209.3 | 6.6 |
| 80°-90° | 60.3 | 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° | 932.8 | 29.2 |
| 0°-40° | 1498.0 | 46.9 |
| 0°-60° | 2558.2 | 80.1 |
| 0°-90° | 3195.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3195.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1241 | 1241 | 1241 | 1241 | 1241 | |
| 5° | 1239 | 1237 | 1227 | 1236 | 1235 | 118 |
| 15° | 1183 | 1176 | 1163 | 1170 | 1168 | 333 |
| 25° | 1068 | 1063 | 1049 | 1052 | 1050 | 492 |
| 35° | 920 | 912 | 902 | 894 | 891 | 575 |
| 45° | 748 | 745 | 733 | 722 | 719 | 578 |
| 55° | 569 | 564 | 553 | 541 | 536 | 508 |
| 65° | 384 | 381 | 371 | 362 | 358 | 381 |
| 75° | 205 | 201 | 197 | 193 | 191 | 217 |
| 85° | 54 | 52 | 54 | 52 | 52 | 61 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P243470

CATALOG NUMBER: S124DRP-H795D840-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1241.1 | 1241.1 | 1241.1 | 1241.1 | 1241.1 |
| 2.5° | 1245.2 | 1242.1 | 1232.0 | 1242.1 | 1241.1 |
| 5° | 1239.1 | 1237.1 | 1227.0 | 1236.1 | 1235.1 |
| 7.5° | 1231.0 | 1227.0 | 1215.9 | 1225.0 | 1224.0 |
| 10° | 1216.9 | 1213.9 | 1201.7 | 1210.8 | 1208.8 |
| 12.5° | 1200.7 | 1197.7 | 1184.6 | 1191.6 | 1189.6 |
| 15° | 1182.6 | 1176.5 | 1163.4 | 1170.4 | 1168.4 |
| 17.5° | 1156.3 | 1152.3 | 1139.1 | 1145.2 | 1142.2 |
| 20° | 1129.0 | 1124.0 | 1112.9 | 1113.9 | 1111.9 |
| 22.5° | 1099.7 | 1094.7 | 1081.6 | 1085.6 | 1081.6 |
| 25° | 1068.4 | 1063.4 | 1049.3 | 1052.3 | 1050.3 |
| 27.5° | 1033.1 | 1028.0 | 1014.9 | 1015.9 | 1011.9 |
| 30° | 996.7 | 990.7 | 977.5 | 976.5 | 971.5 |
| 32.5° | 960.4 | 954.3 | 941.2 | 937.2 | 932.1 |
| 35° | 920.0 | 911.9 | 901.8 | 893.7 | 890.7 |
| 37.5° | 878.6 | 874.5 | 859.4 | 854.3 | 850.3 |
| 40° | 835.2 | 831.1 | 817.0 | 809.9 | 804.9 |
| 42.5° | 793.8 | 788.7 | 775.6 | 765.5 | 761.4 |
| 45° | 748.3 | 745.3 | 733.2 | 722.1 | 719.0 |
| 47.5° | 703.9 | 702.9 | 687.7 | 676.6 | 671.6 |
| 50° | 661.5 | 655.4 | 642.3 | 632.2 | 626.1 |
| 52.5° | 612.0 | 611.0 | 599.9 | 586.7 | 581.7 |
| 55° | 568.6 | 564.5 | 553.4 | 541.3 | 536.2 |
| 57.5° | 523.1 | 521.1 | 507.0 | 496.9 | 491.8 |
| 60° | 476.7 | 472.6 | 460.5 | 451.4 | 446.4 |
| 62.5° | 432.2 | 427.2 | 416.1 | 407.0 | 401.9 |
| 65° | 383.7 | 380.7 | 370.6 | 362.5 | 358.5 |
| 67.5° | 338.3 | 334.3 | 324.2 | 317.1 | 313.1 |
| 70° | 293.9 | 287.8 | 280.7 | 274.7 | 271.7 |
| 72.5° | 249.4 | 244.4 | 238.3 | 234.3 | 230.2 |
| 75° | 205.0 | 201.0 | 196.9 | 192.9 | 190.9 |
| 77.5° | 162.6 | 158.5 | 156.5 | 155.5 | 153.5 |
| 80° | 121.2 | 119.2 | 119.2 | 118.2 | 116.1 |
| 82.5° | 85.8 | 83.8 | 83.8 | 83.8 | 82.8 |
| 85° | 53.5 | 52.5 | 53.5 | 51.5 | 52.5 |
| 87.5° | 25.2 | 25.2 | 26.3 | 25.2 | 26.3 |
| 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 | 19.64 | 21.25 | 20.00 | 21.57 | 21.88 | 19.29 | 20.91 | 19.66 | 21.22 | 21.54 |
| | 3H | 21.39 | 22.85 | 21.77 | 23.18 | 23.54 | 21.00 | 22.46 | 21.38 | 22.79 | 23.15 |
| | 4H | 22.05 | 23.42 | 22.45 | 23.77 | 24.15 | 21.65 | 23.03 | 22.05 | 23.37 | 23.75 |
| | 6H | 22.52 | 23.80 | 22.93 | 24.16 | 24.55 | 22.14 | 23.41 | 22.55 | 23.78 | 24.17 |
| | 8H | 22.68 | 23.89 | 23.10 | 24.28 | 24.68 | 22.30 | 23.52 | 22.73 | 23.91 | 24.31 |
| | 12H | 22.78 | 23.95 | 23.21 | 24.33 | 24.76 | 22.42 | 23.58 | 22.84 | 23.96 | 24.39 |
| 4H | 2H | 20.21 | 21.59 | 20.61 | 21.93 | 22.31 | 19.94 | 21.31 | 20.33 | 21.66 | 22.03 |
| | 3H | 22.19 | 23.34 | 22.60 | 23.73 | 24.13 | 21.87 | 23.02 | 22.28 | 23.42 | 23.82 |
| | 4H | 22.97 | 24.01 | 23.40 | 24.43 | 24.86 | 22.64 | 23.68 | 23.07 | 24.10 | 24.53 |
| | 6H | 23.57 | 24.48 | 24.03 | 24.92 | 25.38 | 23.26 | 24.17 | 23.71 | 24.61 | 25.07 |
| | 8H | 23.77 | 24.62 | 24.23 | 25.07 | 25.53 | 23.47 | 24.32 | 23.93 | 24.76 | 25.23 |
| | 12H | 23.92 | 24.69 | 24.40 | 25.16 | 25.63 | 23.63 | 24.39 | 24.11 | 24.87 | 25.34 |
| 8H | 4H | 23.25 | 24.11 | 23.71 | 24.55 | 25.01 | 22.96 | 23.82 | 23.42 | 24.26 | 24.72 |
| | 6H | 23.97 | 24.68 | 24.47 | 25.17 | 25.65 | 23.71 | 24.41 | 24.20 | 24.90 | 25.38 |
| | 8H | 24.25 | 24.88 | 24.76 | 25.39 | 25.87 | 23.99 | 24.63 | 24.50 | 25.13 | 25.62 |
| | 12H | 24.47 | 25.03 | 24.98 | 25.52 | 26.09 | 24.23 | 24.79 | 24.73 | 25.28 | 25.84 |
| 12H | 4H | 23.28 | 24.05 | 23.76 | 24.52 | 24.99 | 23.00 | 23.76 | 23.48 | 24.24 | 24.71 |
| | 6H | 24.02 | 24.66 | 24.53 | 25.17 | 25.65 | 23.76 | 24.40 | 24.27 | 24.91 | 25.39 |
| | 8H | 24.35 | 24.92 | 24.86 | 25.41 | 25.97 | 24.11 | 24.67 | 24.62 | 25.16 | 25.72 |