

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: P242729

Luminaire Tested: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242729
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-26)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S124RDRP-S1020D940-X4F0-XX-UDD-F-W
Description: DEFINE 4 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 4000K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

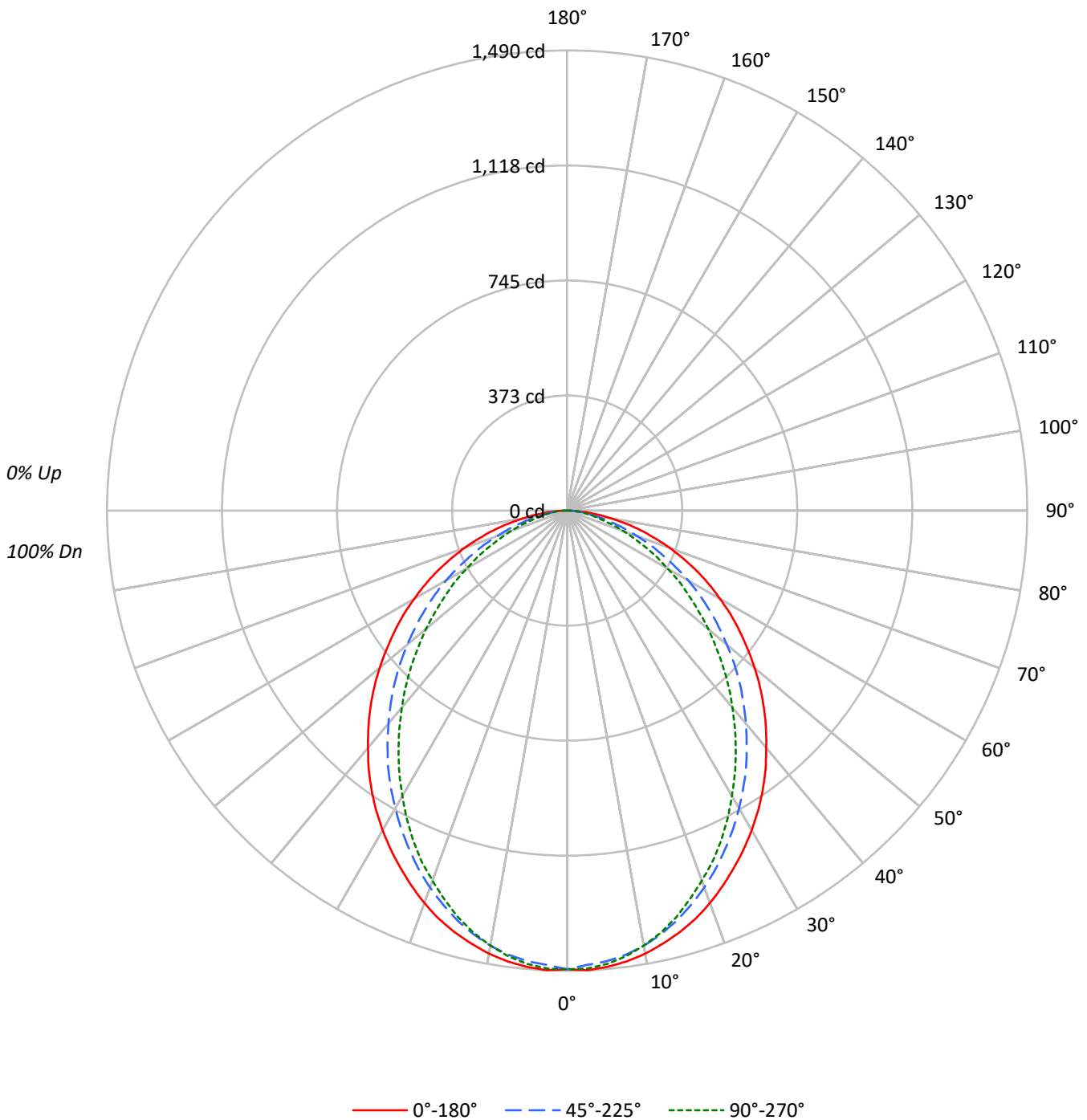
Lumens per Lamp: N/A
Luminaire Lumens: 3431.5 lumens
Efficiency: N/A
Efficacy: 98.6 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.31' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 34.8
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

TEST NUMBER: P242729

CATALOG NUMBER: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

Luminous Intensity Polar Plot





TEST NUMBER: P242729

CATALOG NUMBER: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

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 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 92 | 90 | 91 | 89 | 87 | 85 |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 82 | 78 | 84 | 80 | 76 | 81 | 78 | 74 | 72 |
| 3 | 92 | 82 | 74 | 68 | 89 | 80 | 73 | 67 | 77 | 71 | 66 | 75 | 69 | 65 | 72 | 68 | 64 | 62 |
| 4 | 84 | 73 | 65 | 58 | 82 | 72 | 64 | 58 | 69 | 62 | 57 | 67 | 61 | 56 | 65 | 60 | 56 | 54 |
| 5 | 78 | 66 | 57 | 51 | 76 | 65 | 56 | 50 | 62 | 55 | 50 | 61 | 54 | 49 | 59 | 53 | 49 | 47 |
| 6 | 72 | 59 | 51 | 45 | 70 | 58 | 50 | 44 | 57 | 49 | 44 | 55 | 49 | 44 | 53 | 48 | 43 | 41 |
| 7 | 67 | 54 | 46 | 40 | 65 | 53 | 45 | 40 | 52 | 45 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 |
| 8 | 63 | 50 | 41 | 36 | 61 | 49 | 41 | 36 | 48 | 40 | 35 | 46 | 40 | 35 | 45 | 39 | 35 | 33 |
| 9 | 59 | 46 | 38 | 32 | 57 | 45 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 30 |
| 10 | 55 | 42 | 35 | 29 | 54 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 27 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 13201 | 13201 | 13201 |
| 5° | 13231 | 13068 | 13150 |
| 10° | 13148 | 12912 | 12912 |
| 15° | 12997 | 12641 | 12547 |
| 20° | 12790 | 12284 | 12058 |
| 25° | 12525 | 11866 | 11565 |
| 30° | 12267 | 11427 | 10948 |
| 35° | 11982 | 10970 | 10328 |
| 40° | 11638 | 10450 | 9659 |
| 45° | 11321 | 9935 | 8977 |
| 50° | 10961 | 9341 | 8256 |
| 55° | 10574 | 8723 | 7473 |
| 60° | 10148 | 8046 | 6672 |
| 65° | 9759 | 7200 | 5883 |
| 70° | 9192 | 6266 | 4995 |
| 75° | 8476 | 5193 | 4063 |
| 80° | 7392 | 3957 | 3727 |
| 85° | 6262 | 3600 | 3366 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 11321 cd/sqm



TEST NUMBER: P242729

CATALOG NUMBER: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 139.7 | 4.1 |
| 10°-20° | 389.4 | 11.3 |
| 20°-30° | 562.2 | 16.4 |
| 30°-40° | 637.1 | 18.6 |
| 40°-50° | 615.1 | 17.9 |
| 50°-60° | 511.4 | 14.9 |
| 60°-70° | 353.0 | 10.3 |
| 70°-80° | 178.4 | 5.2 |
| 80°-90° | 45.3 | 1.3 |
| 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° | 1091.2 | 31.8 |
| 0°-40° | 1728.3 | 50.4 |
| 0°-60° | 2854.9 | 83.2 |
| 0°-90° | 3431.5 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3431.5 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1485 | 1485 | 1485 | 1485 | 1485 | |
| 5° | 1483 | 1478 | 1465 | 1476 | 1474 | 141 |
| 15° | 1412 | 1402 | 1374 | 1371 | 1363 | 398 |
| 25° | 1277 | 1257 | 1210 | 1191 | 1179 | 588 |
| 35° | 1104 | 1068 | 1011 | 972 | 952 | 690 |
| 45° | 901 | 858 | 790 | 735 | 714 | 694 |
| 55° | 682 | 637 | 563 | 504 | 482 | 610 |
| 65° | 464 | 415 | 342 | 293 | 280 | 458 |
| 75° | 247 | 205 | 151 | 125 | 118 | 260 |
| 85° | 61 | 39 | 35 | 33 | 33 | 71 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P242729

CATALOG NUMBER: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1485.1 | 1485.1 | 1485.1 | 1485.1 | 1485.1 |
| 2.5° | 1489.7 | 1485.1 | 1472.6 | 1485.1 | 1484.0 |
| 5° | 1482.8 | 1478.3 | 1464.6 | 1476.0 | 1473.7 |
| 7.5° | 1472.6 | 1468.1 | 1451.0 | 1459.0 | 1455.6 |
| 10° | 1456.7 | 1451.0 | 1430.5 | 1435.1 | 1430.5 |
| 12.5° | 1436.2 | 1429.4 | 1404.4 | 1406.7 | 1399.8 |
| 15° | 1412.3 | 1402.1 | 1373.7 | 1371.4 | 1363.4 |
| 17.5° | 1385.0 | 1370.3 | 1337.3 | 1331.6 | 1320.2 |
| 20° | 1352.1 | 1337.3 | 1298.6 | 1289.5 | 1274.7 |
| 22.5° | 1315.7 | 1298.6 | 1256.6 | 1241.8 | 1230.4 |
| 25° | 1277.0 | 1256.6 | 1209.9 | 1190.6 | 1179.2 |
| 27.5° | 1237.2 | 1212.2 | 1163.3 | 1140.6 | 1124.6 |
| 30° | 1195.1 | 1166.7 | 1113.3 | 1084.8 | 1066.6 |
| 32.5° | 1150.8 | 1117.8 | 1062.1 | 1028.0 | 1010.9 |
| 35° | 1104.2 | 1067.8 | 1010.9 | 972.3 | 951.8 |
| 37.5° | 1055.3 | 1017.7 | 955.2 | 913.1 | 892.7 |
| 40° | 1003.0 | 965.4 | 900.6 | 852.9 | 832.4 |
| 42.5° | 952.9 | 913.1 | 844.9 | 796.0 | 774.4 |
| 45° | 900.6 | 858.5 | 790.3 | 734.6 | 714.1 |
| 47.5° | 847.2 | 804.0 | 733.5 | 675.5 | 652.7 |
| 50° | 792.6 | 748.2 | 675.5 | 618.6 | 597.0 |
| 52.5° | 736.9 | 693.7 | 618.6 | 560.6 | 537.9 |
| 55° | 682.3 | 636.8 | 562.9 | 503.8 | 482.2 |
| 57.5° | 628.8 | 581.1 | 508.3 | 448.0 | 432.1 |
| 60° | 570.8 | 525.4 | 452.6 | 393.5 | 375.3 |
| 62.5° | 518.5 | 470.8 | 395.7 | 342.3 | 328.6 |
| 65° | 464.0 | 415.1 | 342.3 | 293.4 | 279.7 |
| 67.5° | 407.1 | 360.5 | 292.2 | 249.0 | 233.1 |
| 70° | 353.7 | 305.9 | 241.1 | 203.5 | 192.2 |
| 72.5° | 296.8 | 254.7 | 194.5 | 163.7 | 153.5 |
| 75° | 246.8 | 204.7 | 151.2 | 125.1 | 118.3 |
| 77.5° | 194.5 | 158.1 | 112.6 | 94.4 | 92.1 |
| 80° | 144.4 | 111.4 | 77.3 | 73.9 | 72.8 |
| 82.5° | 101.2 | 71.6 | 55.7 | 53.4 | 52.3 |
| 85° | 61.4 | 38.7 | 35.3 | 33.0 | 33.0 |
| 87.5° | 26.2 | 17.1 | 15.9 | 14.8 | 15.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P242729
 CATALOG NUMBER: S124RDRP-S1020D940-X4F0-XX-UDD-F-W

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 | 20.31 | 21.87 | 20.67 | 22.19 | 22.50 | 18.34 | 19.90 | 18.70 | 20.22 | 20.53 |
| | 3H | 22.08 | 23.49 | 22.46 | 23.81 | 24.18 | 19.59 | 21.00 | 19.97 | 21.33 | 21.69 |
| | 4H | 22.74 | 24.06 | 23.14 | 24.41 | 24.79 | 19.97 | 21.29 | 20.37 | 21.64 | 22.02 |
| | 6H | 23.22 | 24.44 | 23.63 | 24.80 | 25.20 | 20.23 | 21.45 | 20.64 | 21.82 | 22.21 |
| | 8H | 23.36 | 24.53 | 23.79 | 24.92 | 25.32 | 20.32 | 21.49 | 20.75 | 21.88 | 22.28 |
| | 12H | 23.46 | 24.58 | 23.89 | 24.96 | 25.39 | 20.39 | 21.50 | 20.82 | 21.89 | 22.32 |
| 4H | 2H | 20.64 | 21.97 | 21.04 | 22.32 | 22.69 | 19.03 | 20.36 | 19.43 | 20.70 | 21.08 |
| | 3H | 22.61 | 23.71 | 23.02 | 24.11 | 24.51 | 20.47 | 21.57 | 20.88 | 21.97 | 22.37 |
| | 4H | 23.39 | 24.39 | 23.82 | 24.80 | 25.24 | 20.92 | 21.91 | 21.35 | 22.33 | 22.77 |
| | 6H | 23.99 | 24.85 | 24.45 | 25.30 | 25.75 | 21.27 | 22.13 | 21.73 | 22.58 | 23.03 |
| | 8H | 24.18 | 24.99 | 24.64 | 25.43 | 25.90 | 21.40 | 22.20 | 21.86 | 22.65 | 23.11 |
| | 12H | 24.32 | 25.05 | 24.80 | 25.52 | 25.99 | 21.49 | 22.22 | 21.98 | 22.70 | 23.17 |
| 8H | 4H | 23.49 | 24.30 | 23.95 | 24.74 | 25.21 | 21.24 | 22.04 | 21.70 | 22.49 | 22.95 |
| | 6H | 24.16 | 24.83 | 24.66 | 25.32 | 25.80 | 21.67 | 22.34 | 22.16 | 22.83 | 23.30 |
| | 8H | 24.40 | 25.00 | 24.91 | 25.51 | 26.00 | 21.85 | 22.45 | 22.36 | 22.95 | 23.44 |
| | 12H | 24.60 | 25.13 | 25.11 | 25.62 | 26.18 | 22.00 | 22.53 | 22.51 | 23.02 | 23.59 |
| 12H | 4H | 23.48 | 24.20 | 23.96 | 24.68 | 25.15 | 21.27 | 22.00 | 21.76 | 22.48 | 22.95 |
| | 6H | 24.15 | 24.75 | 24.66 | 25.26 | 25.75 | 21.72 | 22.32 | 22.23 | 22.83 | 23.32 |
| | 8H | 24.43 | 24.96 | 24.94 | 25.45 | 26.02 | 21.95 | 22.48 | 22.46 | 22.97 | 23.53 |