

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: P242530

Luminaire Tested: S123RDRP-S340D830-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242530
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-25)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDRP-S340D830-X4F0-XX-UDD-F-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 80 CRI LEDS
Ballast/Driver: -

Summary

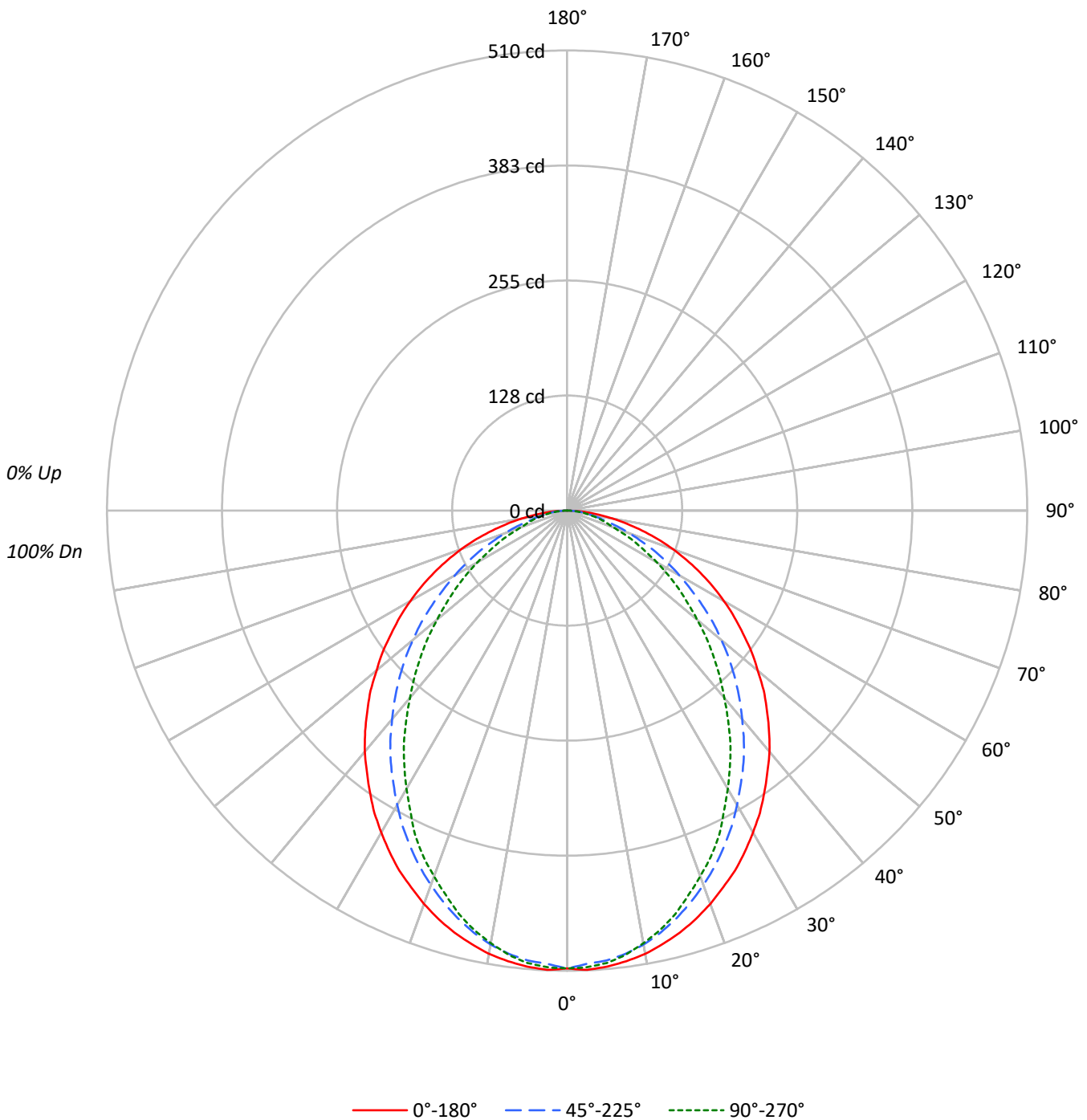
Lumens per Lamp: N/A
Luminaire Lumens: 1146.4 lumens
Efficiency: N/A
Efficacy: 98.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.07 / 1.22
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): 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 | 110 | 105 | 101 | 98 | 107 | 103 | 99 | 96 | 99 | 96 | 93 | 95 | 93 | 90 | 91 | 89 | 88 | | | | | 86 | | | | |
| 2 | 100 | 93 | 86 | 81 | 98 | 91 | 85 | 80 | 87 | 83 | 78 | 84 | 80 | 77 | 81 | 78 | 75 | | | | | 73 | | | | |
| 3 | 92 | 82 | 75 | 68 | 90 | 81 | 74 | 68 | 78 | 72 | 67 | 75 | 70 | 66 | 73 | 68 | 64 | | | | | 62 | | | | |
| 4 | 85 | 73 | 65 | 59 | 83 | 72 | 64 | 58 | 70 | 63 | 58 | 67 | 62 | 57 | 65 | 60 | 56 | | | | | 54 | | | | |
| 5 | 78 | 66 | 57 | 51 | 76 | 65 | 57 | 51 | 63 | 56 | 50 | 61 | 55 | 50 | 59 | 54 | 49 | | | | | 47 | | | | |
| 6 | 73 | 60 | 51 | 45 | 71 | 59 | 51 | 45 | 57 | 50 | 45 | 55 | 49 | 44 | 54 | 48 | 44 | | | | | 42 | | | | |
| 7 | 67 | 54 | 46 | 40 | 66 | 54 | 46 | 40 | 52 | 45 | 40 | 51 | 44 | 39 | 49 | 44 | 39 | | | | | 37 | | | | |
| 8 | 63 | 50 | 42 | 36 | 61 | 49 | 41 | 36 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | | | | | 34 | | | | |
| 9 | 59 | 46 | 38 | 33 | 58 | 45 | 38 | 33 | 44 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 32 | | | | | 30 | | | | |
| 10 | 55 | 43 | 35 | 30 | 54 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 29 | 39 | 34 | 29 | | | | | 28 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 6150 | 6150 | 6150 |
| 5° | 6174 | 6089 | 6124 |
| 10° | 6139 | 6013 | 5992 |
| 15° | 6074 | 5872 | 5810 |
| 20° | 5983 | 5696 | 5563 |
| 25° | 5889 | 5498 | 5323 |
| 30° | 5765 | 5271 | 4983 |
| 35° | 5639 | 5043 | 4670 |
| 40° | 5522 | 4774 | 4285 |
| 45° | 5369 | 4508 | 3936 |
| 50° | 5199 | 4207 | 3547 |
| 55° | 5027 | 3861 | 3183 |
| 60° | 4868 | 3491 | 2783 |
| 65° | 4664 | 3092 | 2383 |
| 70° | 4405 | 2598 | 1924 |
| 75° | 4028 | 2042 | 1812 |
| 80° | 3588 | 1808 | 1668 |
| 85° | 3032 | 1599 | 1488 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 5369 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 47.7 | 4.2 |
| 10°-20° | 132.7 | 11.6 |
| 20°-30° | 191.1 | 16.7 |
| 30°-40° | 215.2 | 18.8 |
| 40°-50° | 205.8 | 18.0 |
| 50°-60° | 168.5 | 14.7 |
| 60°-70° | 113.6 | 9.9 |
| 70°-80° | 57.0 | 5.0 |
| 80°-90° | 14.9 | 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° | 371.5 | 32.4 |
| 0°-40° | 586.6 | 51.2 |
| 0°-60° | 960.9 | 83.8 |
| 0°-90° | 1146.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1146.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 507 | 507 | 507 | 507 | 507 | |
| 5° | 507 | 505 | 500 | 504 | 503 | 48 |
| 15° | 484 | 479 | 468 | 466 | 463 | 136 |
| 25° | 440 | 430 | 411 | 402 | 398 | 203 |
| 35° | 381 | 366 | 341 | 323 | 316 | 239 |
| 45° | 313 | 295 | 263 | 240 | 230 | 242 |
| 55° | 238 | 218 | 183 | 159 | 151 | 213 |
| 65° | 163 | 140 | 108 | 88 | 83 | 161 |
| 75° | 86 | 66 | 44 | 40 | 39 | 92 |
| 85° | 22 | 13 | 12 | 11 | 11 | 25 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P242530

CATALOG NUMBER: S123RDRP-S340D830-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 507.4 | 507.4 | 507.4 | 507.4 | 507.4 |
| 2.5° | 509.5 | 507.8 | 502.9 | 507.4 | 506.6 |
| 5° | 507.4 | 505.4 | 500.4 | 504.1 | 503.3 |
| 7.5° | 503.7 | 501.7 | 495.5 | 498.0 | 496.7 |
| 10° | 498.8 | 495.9 | 488.5 | 488.9 | 486.8 |
| 12.5° | 491.8 | 488.5 | 479.0 | 478.6 | 476.1 |
| 15° | 484.0 | 479.4 | 467.9 | 465.9 | 463.0 |
| 17.5° | 474.5 | 469.6 | 455.2 | 451.0 | 446.9 |
| 20° | 463.8 | 457.2 | 441.6 | 436.2 | 431.3 |
| 22.5° | 451.9 | 444.0 | 427.2 | 420.2 | 415.7 |
| 25° | 440.3 | 430.1 | 411.1 | 402.5 | 398.0 |
| 27.5° | 426.4 | 415.2 | 394.7 | 383.1 | 376.1 |
| 30° | 411.9 | 399.6 | 376.6 | 362.6 | 356.0 |
| 32.5° | 397.5 | 383.1 | 358.4 | 342.8 | 335.8 |
| 35° | 381.1 | 366.3 | 340.8 | 323.1 | 315.6 |
| 37.5° | 364.6 | 348.6 | 321.8 | 302.1 | 293.0 |
| 40° | 349.0 | 330.9 | 301.7 | 280.3 | 270.8 |
| 42.5° | 331.3 | 313.2 | 282.7 | 258.9 | 250.6 |
| 45° | 313.2 | 294.7 | 263.0 | 239.5 | 229.6 |
| 47.5° | 295.5 | 274.9 | 243.6 | 218.1 | 209.5 |
| 50° | 275.7 | 256.4 | 223.1 | 197.5 | 188.1 |
| 52.5° | 258.0 | 236.6 | 203.7 | 177.0 | 168.7 |
| 55° | 237.9 | 217.7 | 182.7 | 158.9 | 150.6 |
| 57.5° | 219.8 | 197.9 | 162.6 | 139.9 | 132.9 |
| 60° | 200.8 | 178.2 | 144.0 | 121.8 | 114.8 |
| 62.5° | 181.9 | 159.3 | 125.1 | 104.5 | 97.1 |
| 65° | 162.6 | 139.9 | 107.8 | 87.7 | 83.1 |
| 67.5° | 143.2 | 120.2 | 88.9 | 73.7 | 68.7 |
| 70° | 124.3 | 102.1 | 73.3 | 58.8 | 54.3 |
| 72.5° | 105.4 | 83.5 | 58.0 | 46.9 | 45.7 |
| 75° | 86.0 | 66.3 | 43.6 | 39.5 | 38.7 |
| 77.5° | 68.3 | 50.2 | 34.2 | 31.7 | 30.9 |
| 80° | 51.4 | 34.6 | 25.9 | 24.7 | 23.9 |
| 82.5° | 35.4 | 21.4 | 18.5 | 17.3 | 17.3 |
| 85° | 21.8 | 12.8 | 11.5 | 10.7 | 10.7 |
| 87.5° | 9.9 | 5.3 | 5.3 | 4.9 | 4.5 |
| 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 | 17.76 | 19.31 | 18.12 | 19.63 | 19.94 | 15.13 | 16.68 | 15.49 | 17.00 | 17.31 |
| | 3H | 19.54 | 20.93 | 19.91 | 21.26 | 21.62 | 16.24 | 17.64 | 16.62 | 17.97 | 18.33 |
| | 4H | 20.20 | 21.51 | 20.60 | 21.86 | 22.23 | 16.64 | 17.95 | 17.04 | 18.30 | 18.67 |
| | 6H | 20.68 | 21.89 | 21.09 | 22.26 | 22.65 | 16.96 | 18.17 | 17.37 | 18.53 | 18.93 |
| | 8H | 20.83 | 21.98 | 21.25 | 22.37 | 22.77 | 17.07 | 18.22 | 17.49 | 18.61 | 19.01 |
| | 12H | 20.93 | 22.04 | 21.36 | 22.42 | 22.85 | 17.14 | 18.25 | 17.57 | 18.63 | 19.06 |
| 4H | 2H | 18.02 | 19.33 | 18.42 | 19.68 | 20.06 | 15.84 | 17.16 | 16.24 | 17.50 | 17.88 |
| | 3H | 19.98 | 21.07 | 20.39 | 21.47 | 21.87 | 17.12 | 18.21 | 17.53 | 18.61 | 19.01 |
| | 4H | 20.75 | 21.73 | 21.18 | 22.15 | 22.59 | 17.60 | 18.58 | 18.03 | 19.00 | 19.44 |
| | 6H | 21.35 | 22.20 | 21.80 | 22.65 | 23.10 | 18.02 | 18.87 | 18.48 | 19.32 | 19.78 |
| | 8H | 21.54 | 22.34 | 22.00 | 22.78 | 23.25 | 18.17 | 18.97 | 18.63 | 19.41 | 19.88 |
| | 12H | 21.69 | 22.40 | 22.17 | 22.88 | 23.35 | 18.28 | 18.99 | 18.76 | 19.47 | 19.94 |
| 8H | 4H | 20.81 | 21.61 | 21.27 | 22.05 | 22.52 | 17.92 | 18.72 | 18.38 | 19.17 | 19.63 |
| | 6H | 21.47 | 22.13 | 21.96 | 22.62 | 23.10 | 18.43 | 19.10 | 18.93 | 19.59 | 20.06 |
| | 8H | 21.70 | 22.30 | 22.21 | 22.80 | 23.29 | 18.64 | 19.23 | 19.15 | 19.74 | 20.23 |
| | 12H | 21.90 | 22.43 | 22.41 | 22.92 | 23.48 | 18.81 | 19.34 | 19.32 | 19.83 | 20.39 |
| 12H | 4H | 20.80 | 21.51 | 21.28 | 21.99 | 22.46 | 17.96 | 18.68 | 18.45 | 19.16 | 19.63 |
| | 6H | 21.46 | 22.05 | 21.97 | 22.56 | 23.05 | 18.50 | 19.09 | 19.01 | 19.60 | 20.09 |
| | 8H | 21.73 | 22.25 | 22.24 | 22.74 | 23.31 | 18.75 | 19.28 | 19.26 | 19.77 | 20.33 |