

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: P242425

Luminaire Tested: S123DRP-S1000D927-X4F0-XX-UDD-F-W

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-2024
Report Number: P242425
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-S1000D927-X4F0-XX-UDD-F-W
Description: DEFINE 3 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 2700K CCT, 90 CRI LEDS
Ballast/Driver: -

Summary

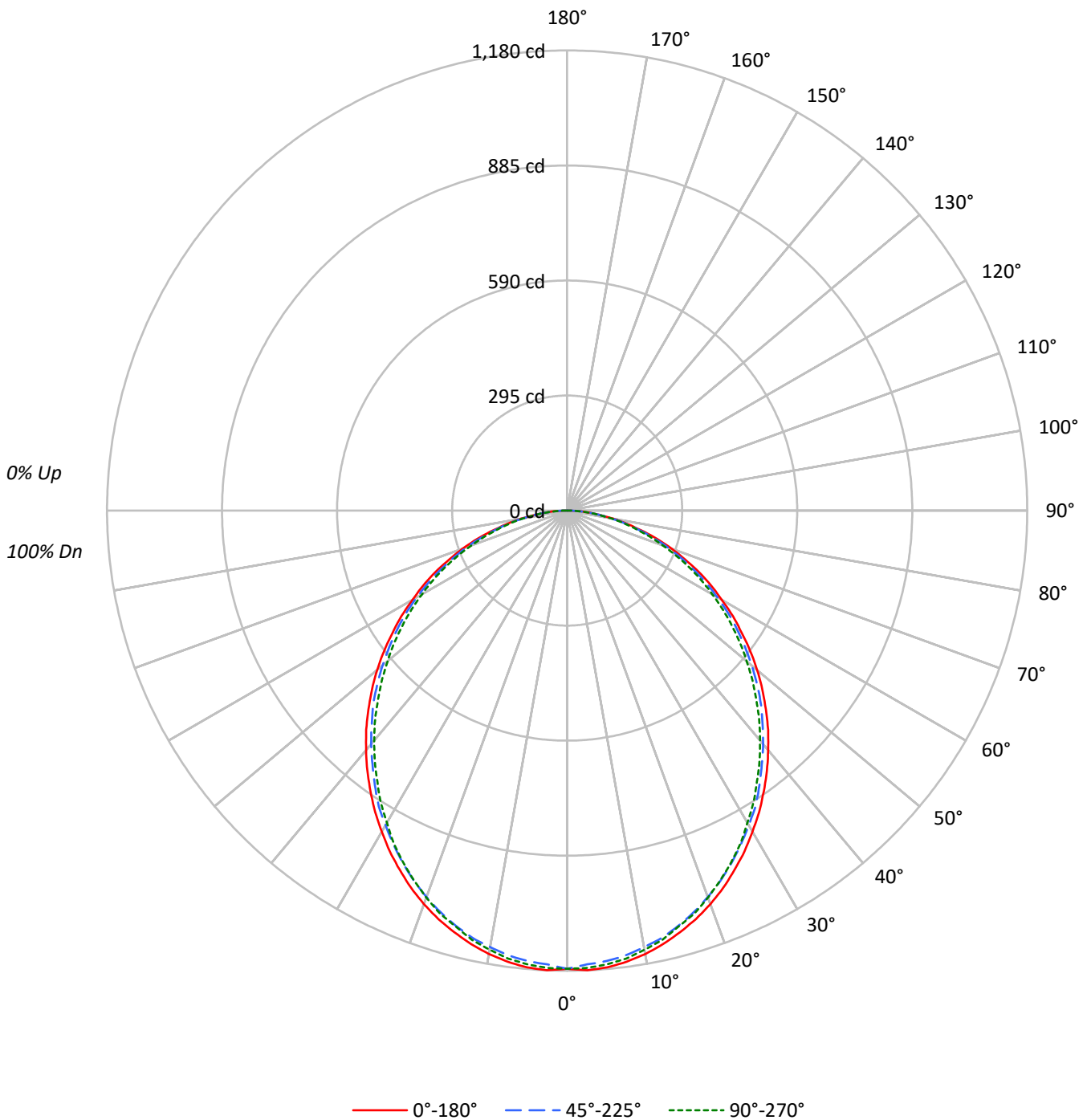
Lumens per Lamp: N/A
Luminaire Lumens: 3057.7 lumens
Efficiency: N/A
Efficacy: 87.9 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.3
Luminous Opening: Rectangular (W 0.23' x L: 3.88' x H: 0')
CIE Type: Direct

Input Watts (W): 34.8
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 | 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 | 94 | 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 | 72 | 70 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 65 | 76 | 69 | 64 | 73 | 67 | 63 | 70 | 66 | 62 | 59 |
| 4 | 83 | 71 | 62 | 56 | 81 | 70 | 62 | 55 | 67 | 60 | 55 | 65 | 59 | 54 | 63 | 58 | 53 | 51 |
| 5 | 76 | 64 | 55 | 48 | 74 | 63 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 57 | 51 | 46 | 44 |
| 6 | 71 | 57 | 49 | 42 | 69 | 56 | 48 | 42 | 55 | 47 | 42 | 53 | 46 | 41 | 51 | 46 | 41 | 39 |
| 7 | 66 | 52 | 43 | 37 | 64 | 51 | 43 | 37 | 50 | 42 | 37 | 48 | 42 | 37 | 47 | 41 | 36 | 34 |
| 8 | 61 | 48 | 39 | 33 | 60 | 47 | 39 | 33 | 46 | 38 | 33 | 44 | 38 | 33 | 43 | 37 | 33 | 31 |
| 9 | 57 | 44 | 36 | 30 | 56 | 43 | 35 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 40 | 33 | 27 | 52 | 40 | 32 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 27 | 25 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 14241 | 14241 | 14241 |
| 5° | 14308 | 14111 | 14209 |
| 10° | 14212 | 13988 | 14076 |
| 15° | 14046 | 13831 | 13856 |
| 20° | 13852 | 13605 | 13618 |
| 25° | 13592 | 13336 | 13309 |
| 30° | 13305 | 13036 | 12938 |
| 35° | 13005 | 12721 | 12557 |
| 40° | 12692 | 12372 | 12181 |
| 45° | 12347 | 12053 | 11758 |
| 50° | 12001 | 11659 | 11335 |
| 55° | 11549 | 11251 | 10909 |
| 60° | 11093 | 10776 | 10434 |
| 65° | 10692 | 10256 | 9938 |
| 70° | 10097 | 9668 | 9236 |
| 75° | 9226 | 8894 | 8514 |
| 80° | 8321 | 7972 | 7895 |
| 85° | 7301 | 7023 | 6745 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 12347 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 110.8 | 3.6 |
| 10°-20° | 312.8 | 10.2 |
| 20°-30° | 461.9 | 15.1 |
| 30°-40° | 539.5 | 17.6 |
| 40°-50° | 542.3 | 17.7 |
| 50°-60° | 476.4 | 15.6 |
| 60°-70° | 354.8 | 11.6 |
| 70°-80° | 201.9 | 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° | 885.4 | 29.0 |
| 0°-40° | 1424.9 | 46.6 |
| 0°-60° | 2443.6 | 79.9 |
| 0°-90° | 3057.7 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3057.7 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 1175 | 1175 | 1175 | 1175 | 1175 | |
| 5° | 1176 | 1171 | 1160 | 1170 | 1168 | 112 |
| 15° | 1119 | 1115 | 1102 | 1110 | 1104 | 316 |
| 25° | 1016 | 1010 | 997 | 998 | 995 | 468 |
| 35° | 879 | 873 | 860 | 854 | 849 | 550 |
| 45° | 720 | 716 | 703 | 691 | 686 | 556 |
| 55° | 546 | 546 | 532 | 521 | 516 | 490 |
| 65° | 373 | 368 | 358 | 350 | 346 | 368 |
| 75° | 197 | 193 | 190 | 185 | 182 | 210 |
| 85° | 52 | 50 | 50 | 48 | 48 | 60 |
| 90° | 0 | 0 | 0 | 0 | 0 | |

TEST NUMBER: P242425

CATALOG NUMBER: S123DRP-S1000D927-X4F0-XX-UDD-F-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 1174.9 | 1174.9 | 1174.9 | 1174.9 | 1174.9 |
| 2.5° | 1179.9 | 1175.9 | 1164.8 | 1174.9 | 1173.9 |
| 5° | 1175.9 | 1170.9 | 1159.7 | 1169.8 | 1167.8 |
| 7.5° | 1166.8 | 1161.8 | 1150.6 | 1159.7 | 1158.7 |
| 10° | 1154.7 | 1149.6 | 1136.5 | 1145.6 | 1143.6 |
| 12.5° | 1138.5 | 1134.5 | 1122.4 | 1128.4 | 1127.4 |
| 15° | 1119.3 | 1115.3 | 1102.2 | 1110.2 | 1104.2 |
| 17.5° | 1098.1 | 1093.1 | 1079.9 | 1086.0 | 1084.0 |
| 20° | 1073.9 | 1067.8 | 1054.7 | 1058.7 | 1055.7 |
| 22.5° | 1046.6 | 1040.5 | 1027.4 | 1030.4 | 1026.4 |
| 25° | 1016.3 | 1010.2 | 997.1 | 998.1 | 995.1 |
| 27.5° | 985.0 | 978.9 | 964.8 | 965.8 | 962.7 |
| 30° | 950.6 | 945.6 | 931.4 | 931.4 | 924.4 |
| 32.5° | 916.3 | 909.2 | 899.1 | 892.0 | 889.0 |
| 35° | 878.9 | 872.8 | 859.7 | 853.6 | 848.6 |
| 37.5° | 841.5 | 833.4 | 820.3 | 813.2 | 810.2 |
| 40° | 802.1 | 796.1 | 781.9 | 773.8 | 769.8 |
| 42.5° | 762.7 | 755.6 | 741.5 | 733.4 | 729.4 |
| 45° | 720.3 | 716.3 | 703.1 | 691.0 | 685.9 |
| 47.5° | 678.9 | 672.8 | 660.7 | 648.6 | 644.5 |
| 50° | 636.4 | 631.4 | 618.3 | 607.1 | 601.1 |
| 52.5° | 592.0 | 589.0 | 574.8 | 565.7 | 559.7 |
| 55° | 546.5 | 545.5 | 532.4 | 521.3 | 516.2 |
| 57.5° | 504.1 | 500.1 | 490.0 | 479.9 | 473.8 |
| 60° | 457.6 | 456.6 | 444.5 | 435.4 | 430.4 |
| 62.5° | 416.2 | 413.2 | 401.1 | 392.0 | 388.9 |
| 65° | 372.8 | 367.7 | 357.6 | 349.5 | 346.5 |
| 67.5° | 326.3 | 322.3 | 314.2 | 307.1 | 303.1 |
| 70° | 284.9 | 278.8 | 272.8 | 265.7 | 260.6 |
| 72.5° | 241.4 | 237.4 | 230.3 | 224.3 | 222.2 |
| 75° | 197.0 | 193.0 | 189.9 | 184.9 | 181.8 |
| 77.5° | 157.6 | 155.6 | 151.5 | 147.5 | 147.5 |
| 80° | 119.2 | 116.2 | 114.2 | 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 | 22.21 | 20.95 | 22.52 | 22.83 | 20.27 | 21.89 | 20.64 | 22.20 | 22.52 |
| | 3H | 22.36 | 23.82 | 22.73 | 24.15 | 24.51 | 21.99 | 23.45 | 22.36 | 23.78 | 24.14 |
| | 4H | 23.01 | 24.39 | 23.41 | 24.74 | 25.12 | 22.62 | 24.00 | 23.02 | 24.35 | 24.73 |
| | 6H | 23.50 | 24.78 | 23.91 | 25.14 | 25.53 | 23.11 | 24.39 | 23.52 | 24.75 | 25.14 |
| | 8H | 23.66 | 24.87 | 24.08 | 25.26 | 25.66 | 23.27 | 24.49 | 23.70 | 24.88 | 25.28 |
| | 12H | 23.76 | 24.93 | 24.19 | 25.31 | 25.74 | 23.38 | 24.54 | 23.81 | 24.93 | 25.35 |
| 4H | 2H | 21.17 | 22.54 | 21.56 | 22.89 | 23.27 | 20.92 | 22.29 | 21.31 | 22.64 | 23.02 |
| | 3H | 23.16 | 24.31 | 23.57 | 24.71 | 25.11 | 22.85 | 24.01 | 23.26 | 24.40 | 24.80 |
| | 4H | 23.94 | 24.99 | 24.37 | 25.40 | 25.84 | 23.61 | 24.66 | 24.05 | 25.07 | 25.51 |
| | 6H | 24.56 | 25.47 | 25.02 | 25.91 | 26.37 | 24.23 | 25.14 | 24.68 | 25.58 | 26.04 |
| | 8H | 24.76 | 25.62 | 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 | 26.63 | 24.58 | 25.35 | 25.06 | 25.83 | 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 | 25.88 | 25.75 | 26.38 | 26.87 | 24.95 | 25.59 | 25.46 | 26.10 | 26.58 |
| | 12H | 25.47 | 26.03 | 25.97 | 26.52 | 27.08 | 25.18 | 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 | 25.22 | 25.68 |
| | 6H | 25.02 | 25.65 | 25.52 | 26.16 | 26.65 | 24.73 | 25.37 | 25.24 | 25.88 | 26.36 |
| | 8H | 25.35 | 25.91 | 25.85 | 26.40 | 26.96 | 25.07 | 25.64 | 25.58 | 26.13 | 26.69 |