

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P334128

Luminaire Tested: S124DP-S1020D830-4F0-1E-UDD-D

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P334128  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-16)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S124DP-S1020D830-4F0-1E-UDD-D  
Description: DEFINE 4 DIRECT LED LUMINAIRE, DROP SATIN WHITE DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 1020 LUMENS PER FOOT  
Light Source: 3000K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

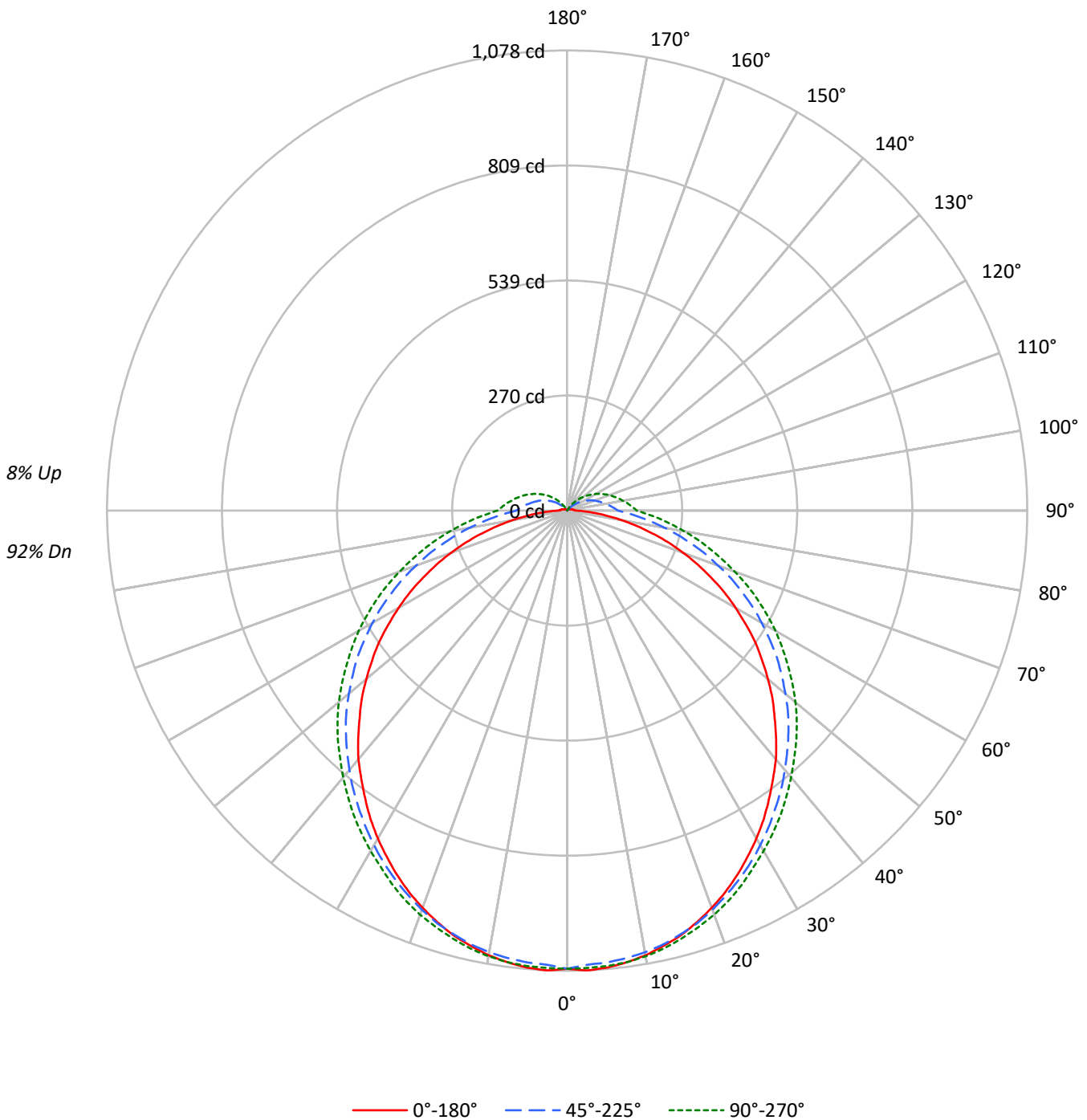
Lumens per Lamp: N/A  
Luminaire Lumens: 3659.5 lumens  
Efficiency: N/A  
Efficacy: 105.2 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Direct

Input Watts (W): 34.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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: P334128  
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### Luminous Intensity Polar Plot





TEST NUMBER: P334128

CATALOG NUMBER: S124DP-S1020D830-4F0-1E-UDD-D

**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   | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 101 | 101 | 101 | 95 | 95 | 95 | 92 |
| 1   | 105 | 100 | 95  | 91  | 102 | 97  | 93  | 89  | 91  | 88  | 84  | 86  | 83  | 80  | 81 | 79 | 77 | 74 |
| 2   | 95  | 86  | 79  | 73  | 92  | 84  | 77  | 71  | 79  | 73  | 68  | 74  | 70  | 66  | 70 | 67 | 63 | 60 |
| 3   | 87  | 75  | 67  | 60  | 83  | 73  | 65  | 59  | 69  | 62  | 57  | 65  | 60  | 55  | 62 | 57 | 53 | 50 |
| 4   | 79  | 66  | 57  | 50  | 76  | 65  | 56  | 49  | 61  | 54  | 48  | 58  | 52  | 47  | 55 | 49 | 45 | 43 |
| 5   | 73  | 59  | 50  | 43  | 70  | 58  | 49  | 42  | 55  | 47  | 41  | 52  | 45  | 40  | 49 | 44 | 39 | 37 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 42  | 36  | 47  | 40  | 35  | 45 | 39 | 34 | 32 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 43  | 36  | 31  | 41 | 35 | 30 | 28 |
| 8   | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  | 41  | 33  | 28  | 39  | 32  | 28  | 37 | 31 | 27 | 25 |
| 9   | 54  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 38  | 30  | 25  | 36  | 29  | 25  | 34 | 29 | 24 | 22 |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 23  | 35  | 28  | 23  | 33  | 27  | 23  | 32 | 26 | 22 | 20 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8665 | 8665 | 8665 |
| 5°  | 8692 | 8468 | 8493 |
| 10° | 8639 | 8330 | 8323 |
| 15° | 8562 | 8170 | 8125 |
| 20° | 8445 | 7993 | 7932 |
| 25° | 8313 | 7795 | 7719 |
| 30° | 8171 | 7597 | 7500 |
| 35° | 8010 | 7396 | 7309 |
| 40° | 7880 | 7203 | 7110 |
| 45° | 7689 | 7026 | 6938 |
| 50° | 7527 | 6822 | 6758 |
| 55° | 7360 | 6630 | 6545 |
| 60° | 7098 | 6384 | 6352 |
| 65° | 6813 | 6120 | 6114 |
| 70° | 6468 | 5819 | 5837 |
| 75° | 5982 | 5489 | 5587 |
| 80° | 5447 | 5171 | 5341 |
| 85° | 4766 | 4890 | 5198 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7689 cd/sqm



TEST NUMBER: P334128

CATALOG NUMBER: S124DP-S1020D830-4F0-1E-UDD-D

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 101.7  | 2.8       |
| 10°-20°   | 291.4  | 8.0       |
| 20°-30°   | 440.6  | 12.0      |
| 30°-40°   | 533.0  | 14.6      |
| 40°-50°   | 563.5  | 15.4      |
| 50°-60°   | 530.3  | 14.5      |
| 60°-70°   | 440.1  | 12.0      |
| 70°-80°   | 308.8  | 8.4       |
| 80°-90°   | 174.1  | 4.8       |
| 90°-100°  | 103.7  | 2.8       |
| 100°-110° | 76.8   | 2.1       |
| 110°-120° | 51.5   | 1.4       |
| 120°-130° | 29.0   | 0.8       |
| 130°-140° | 12.5   | 0.3       |
| 140°-150° | 2.5    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 833.7  | 22.8      |
| 0°-40°    | 1366.7 | 37.3      |
| 0°-60°    | 2460.6 | 67.2      |
| 0°-90°    | 3383.6 | 92.5      |
| 90°-120°  | 231.9  | 6.3       |
| 90°-150°  | 275.9  | 7.5       |
| 90°-180°  | 276.0  | 7.5       |
| 0°-180°   | 3659.5 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1073 | 1073  | 1073 | 1073  | 1073 |      |
| 5°   | 1075 | 1071  | 1062 | 1072  | 1071 | 102  |
| 15°  | 1030 | 1031  | 1028 | 1038  | 1037 | 290  |
| 25°  | 942  | 950   | 953  | 966   | 968  | 434  |
| 35°  | 825  | 839   | 851  | 868   | 871  | 516  |
| 45°  | 688  | 710   | 733  | 754   | 760  | 531  |
| 55°  | 538  | 564   | 600  | 624   | 631  | 480  |
| 65°  | 373  | 411   | 452  | 482   | 492  | 369  |
| 75°  | 207  | 251   | 302  | 335   | 346  | 220  |
| 85°  | 64   | 114   | 168  | 204   | 216  | 66   |
| 90°  | 19   | 67    | 119  | 154   | 164  | 13   |
| 95°  | 16   | 55    | 105  | 137   | 148  | 12   |
| 105° | 11   | 35    | 79   | 109   | 119  | 12   |
| 115° | 7    | 18    | 56   | 83    | 91   | 8    |
| 125° | 5    | 4     | 34   | 56    | 64   | 5    |
| 135° | 2    | 2     | 11   | 30    | 37   | 2    |
| 145° | 1    | 0     | 0    | 7     | 12   | 1    |
| 155° | 0    | 0     | 0    | 0     | 0    | 0    |
| 165° | 0    | 0     | 0    | 0     | 0    | 0    |
| 175° | 0    | 0     | 0    | 0     | 0    | 0    |
| 180° | 0    | 0     | 0    | 0     | 0    | 0    |

TEST NUMBER: P334128

CATALOG NUMBER: S124DP-S1020D830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1073.4 | 1073.4 | 1073.4 | 1073.4 | 1073.4 |
| 2.5°   | 1078.2 | 1074.6 | 1064.9 | 1073.4 | 1072.2 |
| 5°     | 1074.6 | 1071.0 | 1062.5 | 1072.2 | 1071.0 |
| 7.5°   | 1067.4 | 1064.9 | 1057.7 | 1068.6 | 1067.4 |
| 10°    | 1057.7 | 1056.5 | 1050.5 | 1061.3 | 1060.1 |
| 12.5°  | 1044.5 | 1044.5 | 1040.9 | 1050.5 | 1050.5 |
| 15°    | 1030.1 | 1031.3 | 1027.7 | 1038.5 | 1037.3 |
| 17.5°  | 1010.9 | 1014.5 | 1013.3 | 1024.1 | 1022.9 |
| 20°    | 990.4  | 994.0  | 995.2  | 1007.3 | 1007.3 |
| 22.5°  | 967.6  | 972.4  | 974.8  | 986.8  | 989.2  |
| 25°    | 942.3  | 949.6  | 953.2  | 966.4  | 967.6  |
| 27.5°  | 914.7  | 925.5  | 930.3  | 942.3  | 943.5  |
| 30°    | 887.1  | 896.7  | 905.1  | 918.3  | 920.7  |
| 32.5°  | 857.0  | 869.0  | 878.6  | 894.3  | 896.7  |
| 35°    | 824.6  | 839.0  | 851.0  | 867.8  | 871.4  |
| 37.5°  | 792.1  | 808.9  | 823.4  | 840.2  | 843.8  |
| 40°    | 760.8  | 776.5  | 793.3  | 811.3  | 816.1  |
| 42.5°  | 724.8  | 742.8  | 763.3  | 783.7  | 787.3  |
| 45°    | 687.5  | 710.4  | 733.2  | 753.6  | 759.6  |
| 47.5°  | 652.7  | 675.5  | 702.0  | 722.4  | 729.6  |
| 50°    | 614.2  | 640.7  | 667.1  | 691.1  | 698.3  |
| 52.5°  | 575.7  | 602.2  | 633.4  | 657.5  | 664.7  |
| 55°    | 538.5  | 563.7  | 599.8  | 623.8  | 631.0  |
| 57.5°  | 496.4  | 527.7  | 562.5  | 591.4  | 597.4  |
| 60°    | 455.5  | 486.8  | 526.5  | 554.1  | 563.7  |
| 62.5°  | 415.9  | 450.7  | 490.4  | 518.1  | 527.7  |
| 65°    | 372.6  | 411.1  | 451.9  | 482.0  | 491.6  |
| 67.5°  | 331.7  | 372.6  | 415.9  | 445.9  | 455.5  |
| 70°    | 289.7  | 330.5  | 376.2  | 408.7  | 417.1  |
| 72.5°  | 248.8  | 290.9  | 340.2  | 371.4  | 381.0  |
| 75°    | 206.7  | 251.2  | 301.7  | 335.4  | 346.2  |
| 77.5°  | 167.1  | 214.0  | 266.8  | 300.5  | 312.5  |
| 80°    | 131.0  | 179.1  | 232.0  | 268.0  | 277.7  |
| 82.5°  | 95.0   | 145.4  | 198.3  | 235.6  | 246.4  |
| 85°    | 63.7   | 114.2  | 168.3  | 204.3  | 216.4  |
| 87.5°  | 39.7   | 88.9   | 141.8  | 176.7  | 187.5  |
| 90°    | 19.2   | 67.3   | 119.0  | 153.9  | 163.5  |
| 92.5°  | 18.0   | 60.1   | 111.8  | 145.4  | 155.1  |
| 95°    | 15.6   | 55.3   | 104.6  | 137.0  | 147.8  |
| 97.5°  | 14.4   | 49.3   | 98.6   | 129.8  | 140.6  |
| 100°   | 13.2   | 44.5   | 91.3   | 123.8  | 132.2  |
| 102.5° | 13.2   | 39.7   | 85.3   | 116.6  | 126.2  |
| 105°   | 10.8   | 34.9   | 79.3   | 109.4  | 119.0  |
| 107.5° | 10.8   | 31.3   | 73.3   | 103.4  | 111.8  |
| 110°   | 9.6    | 26.4   | 68.5   | 96.2   | 105.8  |



TEST NUMBER: P334128

CATALOG NUMBER: S124DP-S1020D830-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 8.4 | 22.8  | 62.5 | 88.9  | 98.6 |
| 115°   | 7.2 | 18.0  | 56.5 | 82.9  | 91.3 |
| 117.5° | 7.2 | 14.4  | 50.5 | 75.7  | 85.3 |
| 120°   | 6.0 | 9.6   | 44.5 | 68.5  | 78.1 |
| 122.5° | 6.0 | 6.0   | 38.5 | 62.5  | 70.9 |
| 125°   | 4.8 | 3.6   | 33.7 | 56.5  | 63.7 |
| 127.5° | 4.8 | 3.6   | 27.6 | 49.3  | 57.7 |
| 130°   | 3.6 | 2.4   | 21.6 | 43.3  | 50.5 |
| 132.5° | 3.6 | 2.4   | 16.8 | 37.3  | 44.5 |
| 135°   | 2.4 | 2.4   | 10.8 | 30.0  | 37.3 |
| 137.5° | 2.4 | 1.2   | 6.0  | 24.0  | 30.0 |
| 140°   | 2.4 | 1.2   | 2.4  | 18.0  | 24.0 |
| 142.5° | 1.2 | 1.2   | 0.0  | 13.2  | 18.0 |
| 145°   | 1.2 | 0.0   | 0.0  | 7.2   | 12.0 |
| 147.5° | 1.2 | 0.0   | 0.0  | 1.2   | 6.0  |
| 150°   | 1.2 | 0.0   | 0.0  | 0.0   | 0.0  |
| 152.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 155°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 157.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 160°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 162.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 165°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 167.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 170°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 172.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 175°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 177.5° | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |
| 180°   | 0.0 | 0.0   | 0.0  | 0.0   | 0.0  |

(END OF REPORT)