

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: P333974

Luminaire Tested: S123DP-S1165D930-4F0-1E-UDD-D

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P333974  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: NEO-RAY  
Catalog Number: S123DP-S1165D930-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT LED LUMINAIRE, DROP SATIN WHITE DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 1165 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3728.0 lumens  
Efficiency: N/A  
Efficacy: 90.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Direct

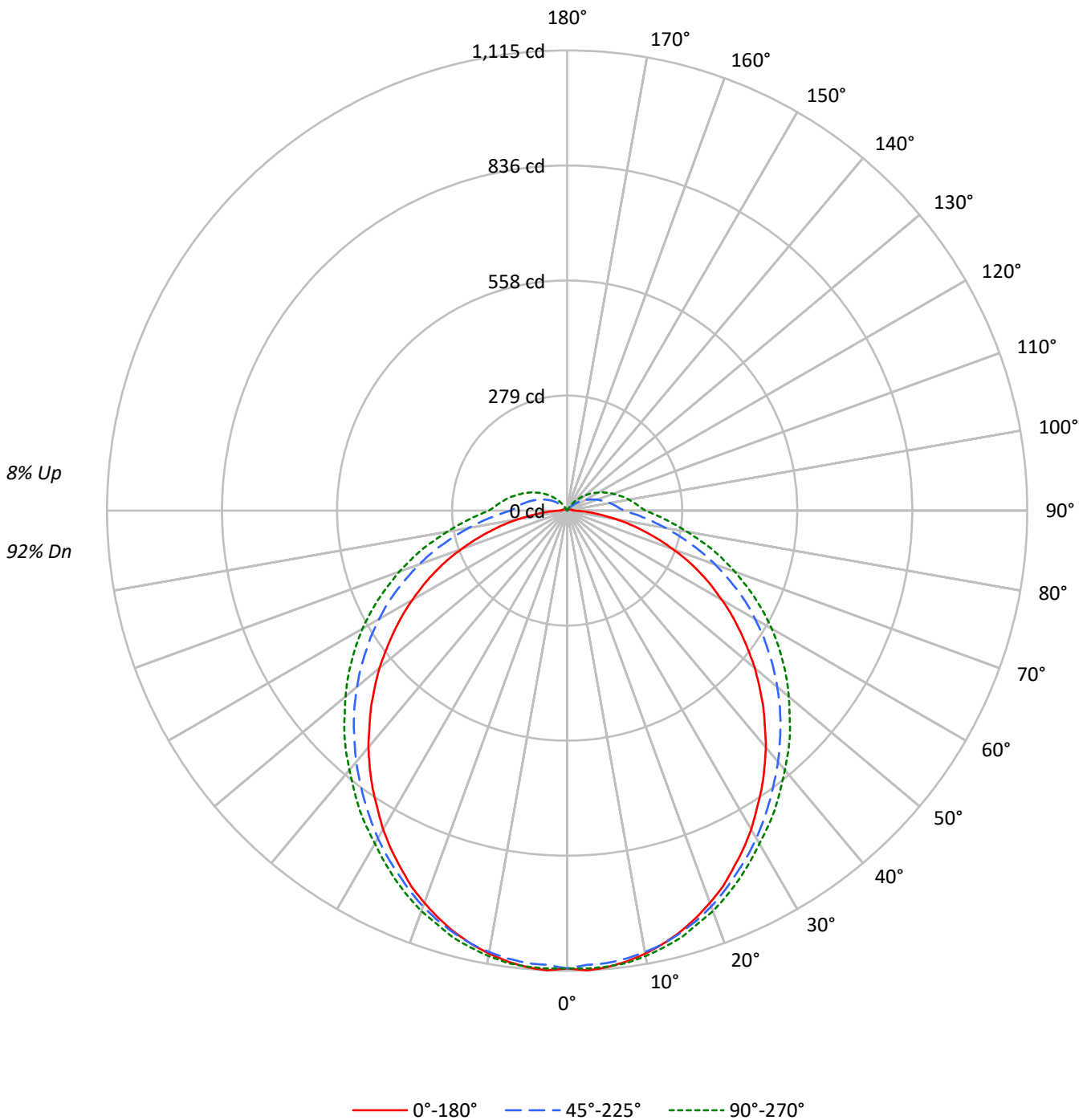
Input Watts (W): 41.1  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P333974

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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 | 0  |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |   |
| 0   | 117 | 117 | 117 | 117 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 | 94 | 94 | 94 | 92 |   |
| 1   | 105 | 100 | 95  | 90  | 102 | 97  | 92  | 88  | 91  | 87  | 84  | 85  | 82  | 80  | 80 | 78 | 76 | 76 | 76 | 76 | 73 |   |
| 2   | 95  | 86  | 79  | 72  | 92  | 83  | 77  | 71  | 79  | 73  | 68  | 74  | 69  | 65  | 70 | 66 | 63 | 63 | 63 | 63 | 60 |   |
| 3   | 86  | 75  | 67  | 60  | 83  | 73  | 65  | 59  | 69  | 62  | 56  | 65  | 59  | 54  | 61 | 56 | 52 | 52 | 52 | 52 | 50 |   |
| 4   | 79  | 66  | 57  | 50  | 76  | 64  | 56  | 49  | 61  | 54  | 48  | 57  | 51  | 46  | 54 | 49 | 45 | 45 | 45 | 45 | 42 |   |
| 5   | 72  | 59  | 50  | 43  | 70  | 58  | 49  | 42  | 54  | 47  | 41  | 52  | 45  | 40  | 49 | 43 | 39 | 39 | 39 | 39 | 36 |   |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 42  | 36  | 47  | 40  | 35  | 44 | 38 | 34 | 34 | 34 | 34 | 32 |   |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 42  | 36  | 31  | 40 | 35 | 30 | 30 | 30 | 30 | 28 |   |
| 8   | 58  | 44  | 35  | 29  | 56  | 43  | 35  | 29  | 41  | 33  | 28  | 39  | 32  | 28  | 37 | 31 | 27 | 27 | 27 | 27 | 25 |   |
| 9   | 54  | 40  | 32  | 26  | 52  | 39  | 31  | 26  | 37  | 30  | 25  | 36  | 29  | 25  | 34 | 28 | 24 | 24 | 24 | 24 | 22 |   |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 24  | 35  | 28  | 23  | 33  | 27  | 23  | 32 | 26 | 22 | 22 | 22 | 22 | 20 |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 11940 | 11940 | 11940 |
| 5°  | 11977 | 11639 | 11647 |
| 10° | 11869 | 11371 | 11314 |
| 15° | 11717 | 11067 | 10953 |
| 20° | 11498 | 10719 | 10554 |
| 25° | 11228 | 10319 | 10136 |
| 30° | 10953 | 9959  | 9711  |
| 35° | 10642 | 9578  | 9373  |
| 40° | 10346 | 9233  | 9010  |
| 45° | 10018 | 8900  | 8720  |
| 50° | 9695  | 8572  | 8400  |
| 55° | 9336  | 8235  | 8113  |
| 60° | 8989  | 7893  | 7819  |
| 65° | 8631  | 7529  | 7468  |
| 70° | 8094  | 7119  | 7108  |
| 75° | 7413  | 6650  | 6742  |
| 80° | 6631  | 6192  | 6324  |
| 85° | 5906  | 5876  | 6082  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 10018 cd/sqm



TEST NUMBER: P333974

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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 105.2  | 2.8       |
| 10°-20°   | 300.0  | 8.0       |
| 20°-30°   | 448.6  | 12.0      |
| 30°-40°   | 535.6  | 14.4      |
| 40°-50°   | 560.4  | 15.0      |
| 50°-60°   | 525.9  | 14.1      |
| 60°-70°   | 439.2  | 11.8      |
| 70°-80°   | 314.1  | 8.4       |
| 80°-90°   | 186.9  | 5.0       |
| 90°-100°  | 117.4  | 3.2       |
| 100°-110° | 86.3   | 2.3       |
| 110°-120° | 57.6   | 1.5       |
| 120°-130° | 32.9   | 0.9       |
| 130°-140° | 14.7   | 0.4       |
| 140°-150° | 3.1    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 853.8  | 22.9      |
| 0°-40°    | 1389.4 | 37.3      |
| 0°-60°    | 2475.6 | 66.4      |
| 0°-90°    | 3415.8 | 91.6      |
| 90°-120°  | 261.4  | 7.0       |
| 90°-150°  | 312.1  | 8.4       |
| 90°-180°  | 312.0  | 8.4       |
| 0°-180°   | 3728.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1109 | 1109  | 1109 | 1109  | 1109 |      |
| 5°   | 1110 | 1108  | 1101 | 1110  | 1109 | 105  |
| 15°  | 1057 | 1061  | 1060 | 1072  | 1071 | 298  |
| 25°  | 955  | 967   | 970  | 986   | 986  | 440  |
| 35°  | 822  | 841   | 857  | 875   | 880  | 514  |
| 45°  | 672  | 701   | 731  | 754   | 764  | 518  |
| 55°  | 512  | 552   | 596  | 628   | 638  | 459  |
| 65°  | 354  | 401   | 454  | 491   | 503  | 350  |
| 75°  | 192  | 249   | 309  | 349   | 364  | 205  |
| 85°  | 59   | 120   | 184  | 225   | 237  | 61   |
| 90°  | 16   | 75    | 136  | 178   | 190  | 11   |
| 95°  | 13   | 60    | 120  | 157   | 169  | 10   |
| 105° | 10   | 39    | 91   | 124   | 135  | 10   |
| 115° | 6    | 20    | 64   | 93    | 103  | 6    |
| 125° | 4    | 4     | 39   | 64    | 72   | 4    |
| 135° | 2    | 1     | 14   | 36    | 42   | 2    |
| 145° | 1    | 0     | 0    | 10    | 14   | 0    |
| 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: P333974

CATALOG NUMBER: S123DP-S1165D930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 22.5°  | 45°    | 67.5°  | 90°    |
|--------|--------|--------|--------|--------|--------|
| 0°     | 1109.3 | 1109.3 | 1109.3 | 1109.3 | 1109.3 |
| 2.5°   | 1115.3 | 1111.7 | 1102.0 | 1111.7 | 1110.5 |
| 5°     | 1110.5 | 1108.0 | 1100.8 | 1110.5 | 1109.3 |
| 7.5°   | 1102.0 | 1102.0 | 1094.8 | 1106.8 | 1105.6 |
| 10°    | 1089.9 | 1092.3 | 1086.3 | 1098.4 | 1096.0 |
| 12.5°  | 1075.4 | 1079.0 | 1075.4 | 1086.3 | 1083.9 |
| 15°    | 1057.3 | 1060.9 | 1059.7 | 1071.8 | 1070.6 |
| 17.5°  | 1035.5 | 1042.8 | 1041.6 | 1052.5 | 1050.0 |
| 20°    | 1011.4 | 1018.6 | 1021.0 | 1031.9 | 1033.1 |
| 22.5°  | 986.0  | 993.3  | 996.9  | 1011.4 | 1010.2 |
| 25°    | 954.6  | 966.7  | 970.3  | 986.0  | 986.0  |
| 27.5°  | 924.4  | 937.7  | 944.9  | 958.2  | 959.4  |
| 30°    | 891.8  | 907.5  | 917.1  | 931.6  | 931.6  |
| 32.5°  | 855.5  | 873.6  | 886.9  | 902.6  | 906.3  |
| 35°    | 821.7  | 841.0  | 856.7  | 874.8  | 879.7  |
| 37.5°  | 785.4  | 807.2  | 825.3  | 845.8  | 849.5  |
| 40°    | 749.2  | 770.9  | 795.1  | 815.6  | 820.5  |
| 42.5°  | 709.3  | 737.1  | 762.5  | 785.4  | 792.7  |
| 45°    | 671.8  | 700.8  | 731.0  | 754.0  | 763.7  |
| 47.5°  | 632.0  | 664.6  | 698.4  | 723.8  | 731.0  |
| 50°    | 593.3  | 627.1  | 664.6  | 692.4  | 700.8  |
| 52.5°  | 552.2  | 588.5  | 630.8  | 659.8  | 670.6  |
| 55°    | 512.3  | 552.2  | 595.7  | 628.3  | 638.0  |
| 57.5°  | 473.7  | 514.8  | 561.9  | 594.5  | 605.4  |
| 60°    | 432.6  | 476.1  | 525.6  | 559.5  | 572.8  |
| 62.5°  | 393.9  | 438.6  | 491.8  | 525.6  | 537.7  |
| 65°    | 354.0  | 401.2  | 454.3  | 490.6  | 502.7  |
| 67.5°  | 314.2  | 363.7  | 416.9  | 456.8  | 466.4  |
| 70°    | 271.9  | 323.8  | 381.8  | 420.5  | 432.6  |
| 72.5°  | 233.2  | 285.2  | 345.6  | 385.5  | 397.5  |
| 75°    | 192.1  | 248.9  | 309.3  | 349.2  | 363.7  |
| 77.5°  | 157.1  | 213.9  | 274.3  | 316.6  | 327.5  |
| 80°    | 119.6  | 178.8  | 241.7  | 282.8  | 294.8  |
| 82.5°  | 87.0   | 147.4  | 211.5  | 252.5  | 264.6  |
| 85°    | 59.2   | 119.6  | 183.7  | 224.8  | 236.8  |
| 87.5°  | 36.3   | 96.7   | 158.3  | 199.4  | 211.5  |
| 90°    | 15.7   | 74.9   | 136.5  | 177.6  | 189.7  |
| 92.5°  | 14.5   | 66.5   | 126.9  | 166.8  | 177.6  |
| 95°    | 13.3   | 60.4   | 119.6  | 157.1  | 169.2  |
| 97.5°  | 12.1   | 55.6   | 112.4  | 148.6  | 160.7  |
| 100°   | 10.9   | 49.5   | 105.1  | 140.2  | 152.3  |
| 102.5° | 9.7    | 43.5   | 97.9   | 131.7  | 143.8  |
| 105°   | 9.7    | 38.7   | 90.6   | 124.5  | 135.3  |
| 107.5° | 8.5    | 33.8   | 83.4   | 116.0  | 126.9  |
| 110°   | 7.3    | 29.0   | 77.3   | 108.8  | 118.4  |



TEST NUMBER: P333974

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**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°   |
|--------|-----|-------|------|-------|-------|
| 112.5° | 7.3 | 24.2  | 70.1 | 100.3 | 111.2 |
| 115°   | 6.0 | 20.5  | 64.0 | 93.0  | 102.7 |
| 117.5° | 6.0 | 15.7  | 56.8 | 85.8  | 95.5  |
| 120°   | 4.8 | 10.9  | 50.8 | 78.5  | 87.0  |
| 122.5° | 4.8 | 7.3   | 44.7 | 71.3  | 79.8  |
| 125°   | 3.6 | 3.6   | 38.7 | 64.0  | 72.5  |
| 127.5° | 3.6 | 2.4   | 32.6 | 56.8  | 65.3  |
| 130°   | 3.6 | 2.4   | 26.6 | 49.5  | 56.8  |
| 132.5° | 2.4 | 2.4   | 20.5 | 42.3  | 50.8  |
| 135°   | 2.4 | 1.2   | 14.5 | 36.3  | 42.3  |
| 137.5° | 2.4 | 1.2   | 9.7  | 29.0  | 35.0  |
| 140°   | 1.2 | 1.2   | 4.8  | 23.0  | 29.0  |
| 142.5° | 1.2 | 0.0   | 0.0  | 15.7  | 21.8  |
| 145°   | 1.2 | 0.0   | 0.0  | 9.7   | 14.5  |
| 147.5° | 0.0 | 0.0   | 0.0  | 3.6   | 8.5   |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 2.4   |
| 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)