

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: P333971

Luminaire Tested: S123DP-S560D930-4F0-1E-UDD-D

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-2019  
Report Number: P333971  
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-S560D930-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT LED LUMINAIRE, DROP SATIN WHITE DIFFUSER  
PENDANT/SURFACE/WALL MOUNT, 560 LUMENS PER FOOT  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1806.1 lumens  
Efficiency: N/A  
Efficacy: 96.1 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

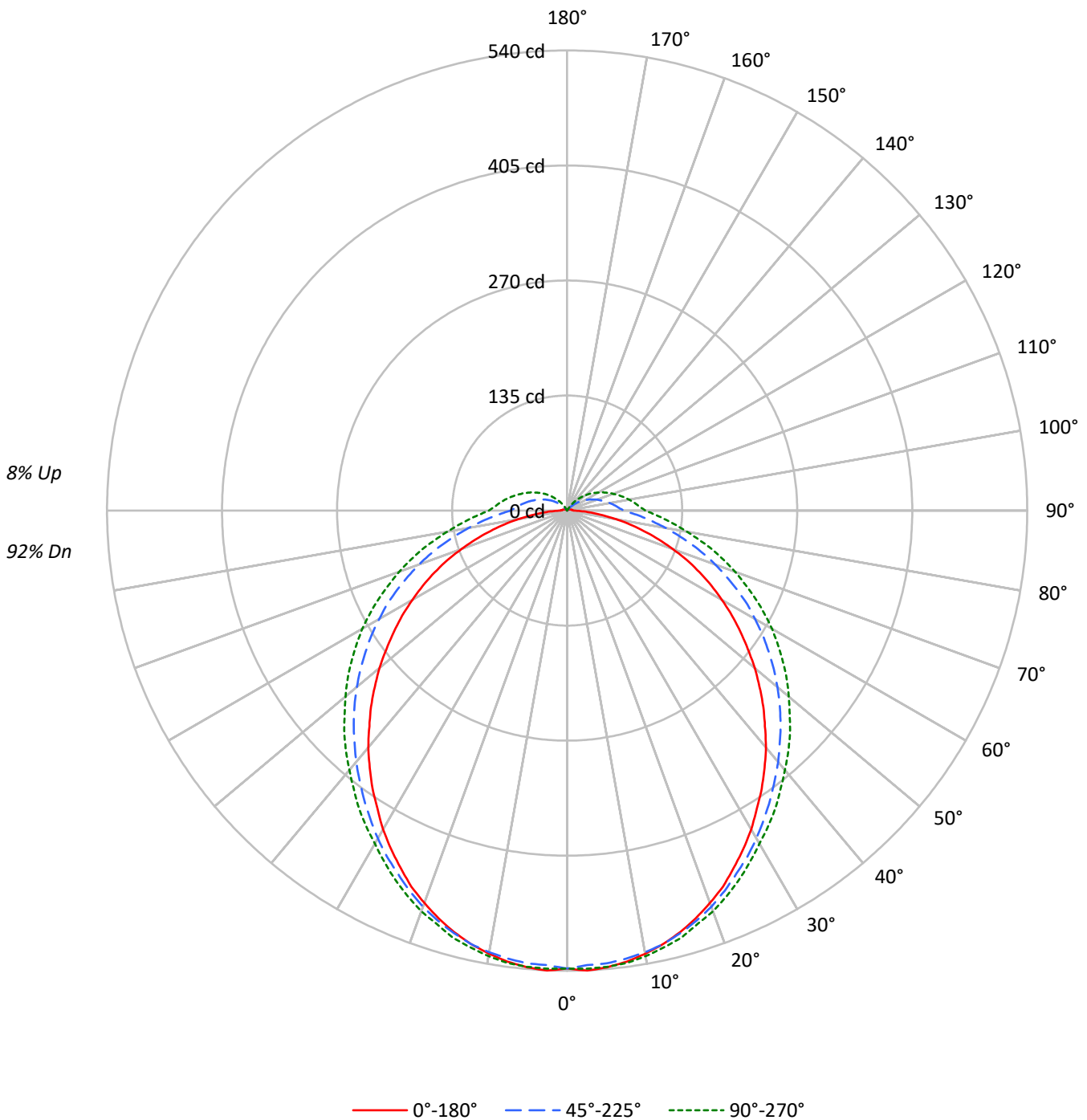
Input Watts (W): 18.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





TEST NUMBER: P333971

CATALOG NUMBER: S123DP-S560D930-4F0-1E-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 | 113 | 113 | 113 | 113 | 106 | 106 | 106 | 100 | 100 | 100 | 94 | 94 | 94 | 92 |
| 1   | 105 | 100 | 95  | 90  | 102 | 97  | 92  | 88  | 91  | 87  | 84  | 85  | 82  | 80  | 80 | 78 | 76 | 73 |
| 2   | 95  | 86  | 79  | 72  | 92  | 83  | 77  | 71  | 79  | 73  | 68  | 74  | 69  | 65  | 70 | 66 | 63 | 60 |
| 3   | 86  | 75  | 67  | 60  | 83  | 73  | 65  | 59  | 69  | 62  | 56  | 65  | 59  | 54  | 61 | 56 | 52 | 50 |
| 4   | 79  | 66  | 57  | 50  | 76  | 64  | 56  | 49  | 61  | 54  | 48  | 57  | 51  | 46  | 54 | 49 | 45 | 42 |
| 5   | 72  | 59  | 50  | 43  | 70  | 58  | 49  | 42  | 54  | 47  | 41  | 52  | 45  | 40  | 49 | 43 | 39 | 36 |
| 6   | 67  | 53  | 44  | 37  | 64  | 52  | 43  | 37  | 49  | 42  | 36  | 47  | 40  | 35  | 44 | 38 | 34 | 32 |
| 7   | 62  | 48  | 39  | 33  | 60  | 47  | 38  | 32  | 45  | 37  | 32  | 42  | 36  | 31  | 40 | 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  | 37  | 30  | 25  | 36  | 29  | 25  | 34 | 28 | 24 | 22 |
| 10  | 50  | 37  | 29  | 24  | 49  | 36  | 29  | 24  | 35  | 28  | 23  | 33  | 27  | 23  | 32 | 26 | 22 | 20 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5785 | 5785 | 5785 |
| 5°  | 5803 | 5639 | 5642 |
| 10° | 5750 | 5509 | 5482 |
| 15° | 5676 | 5362 | 5306 |
| 20° | 5571 | 5193 | 5113 |
| 25° | 5440 | 5000 | 4911 |
| 30° | 5306 | 4825 | 4704 |
| 35° | 5156 | 4641 | 4541 |
| 40° | 5013 | 4473 | 4365 |
| 45° | 4854 | 4312 | 4225 |
| 50° | 4696 | 4153 | 4069 |
| 55° | 4523 | 3990 | 3930 |
| 60° | 4355 | 3825 | 3788 |
| 65° | 4181 | 3648 | 3617 |
| 70° | 3920 | 3450 | 3444 |
| 75° | 3593 | 3223 | 3266 |
| 80° | 3215 | 3000 | 3063 |
| 85° | 2863 | 2847 | 2946 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4854 cd/sqm



TEST NUMBER: P333971

CATALOG NUMBER: S123DP-S560D930-4F0-1E-UDD-D

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 51.0   | 2.8       |
| 10°-20°   | 145.3  | 8.0       |
| 20°-30°   | 217.3  | 12.0      |
| 30°-40°   | 259.5  | 14.4      |
| 40°-50°   | 271.5  | 15.0      |
| 50°-60°   | 254.8  | 14.1      |
| 60°-70°   | 212.8  | 11.8      |
| 70°-80°   | 152.2  | 8.4       |
| 80°-90°   | 90.5   | 5.0       |
| 90°-100°  | 56.9   | 3.2       |
| 100°-110° | 41.8   | 2.3       |
| 110°-120° | 27.9   | 1.5       |
| 120°-130° | 15.9   | 0.9       |
| 130°-140° | 7.2    | 0.4       |
| 140°-150° | 1.5    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 413.6  | 22.9      |
| 0°-40°    | 673.1  | 37.3      |
| 0°-60°    | 1199.4 | 66.4      |
| 0°-90°    | 1654.9 | 91.6      |
| 90°-120°  | 126.7  | 7.0       |
| 90°-150°  | 151.2  | 8.4       |
| 90°-180°  | 151.0  | 8.4       |
| 0°-180°   | 1806.1 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 537 | 537   | 537 | 537   | 537 |      |
| 5°   | 538 | 537   | 533 | 538   | 537 | 51   |
| 15°  | 512 | 514   | 513 | 519   | 519 | 144  |
| 25°  | 462 | 468   | 470 | 478   | 478 | 213  |
| 35°  | 398 | 407   | 415 | 424   | 426 | 249  |
| 45°  | 326 | 340   | 354 | 365   | 370 | 251  |
| 55°  | 248 | 268   | 289 | 304   | 309 | 222  |
| 65°  | 172 | 194   | 220 | 238   | 244 | 170  |
| 75°  | 93  | 121   | 150 | 169   | 176 | 99   |
| 85°  | 29  | 58    | 89  | 109   | 115 | 30   |
| 90°  | 8   | 36    | 66  | 86    | 92  | 5    |
| 95°  | 6   | 29    | 58  | 76    | 82  | 5    |
| 105° | 5   | 19    | 44  | 60    | 66  | 5    |
| 115° | 3   | 10    | 31  | 45    | 50  | 3    |
| 125° | 2   | 2     | 19  | 31    | 35  | 2    |
| 135° | 1   | 1     | 7   | 18    | 20  | 1    |
| 145° | 1   | 0     | 0   | 5     | 7   | 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: P333971

CATALOG NUMBER: S123DP-S560D930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

|        | 0°    | 22.5° | 45°   | 67.5° | 90°   |
|--------|-------|-------|-------|-------|-------|
| 0°     | 537.4 | 537.4 | 537.4 | 537.4 | 537.4 |
| 2.5°   | 540.3 | 538.6 | 533.9 | 538.6 | 538.0 |
| 5°     | 538.0 | 536.8 | 533.3 | 538.0 | 537.4 |
| 7.5°   | 533.9 | 533.9 | 530.4 | 536.2 | 535.6 |
| 10°    | 528.0 | 529.2 | 526.3 | 532.1 | 531.0 |
| 12.5°  | 521.0 | 522.8 | 521.0 | 526.3 | 525.1 |
| 15°    | 512.2 | 514.0 | 513.4 | 519.3 | 518.7 |
| 17.5°  | 501.7 | 505.2 | 504.6 | 509.9 | 508.7 |
| 20°    | 490.0 | 493.5 | 494.7 | 499.9 | 500.5 |
| 22.5°  | 477.7 | 481.2 | 483.0 | 490.0 | 489.4 |
| 25°    | 462.5 | 468.3 | 470.1 | 477.7 | 477.7 |
| 27.5°  | 447.8 | 454.3 | 457.8 | 464.2 | 464.8 |
| 30°    | 432.0 | 439.6 | 444.3 | 451.3 | 451.3 |
| 32.5°  | 414.5 | 423.2 | 429.7 | 437.3 | 439.1 |
| 35°    | 398.1 | 407.4 | 415.1 | 423.8 | 426.2 |
| 37.5°  | 380.5 | 391.1 | 399.8 | 409.8 | 411.5 |
| 40°    | 363.0 | 373.5 | 385.2 | 395.1 | 397.5 |
| 42.5°  | 343.6 | 357.1 | 369.4 | 380.5 | 384.0 |
| 45°    | 325.5 | 339.5 | 354.2 | 365.3 | 370.0 |
| 47.5°  | 306.2 | 322.0 | 338.4 | 350.7 | 354.2 |
| 50°    | 287.4 | 303.8 | 322.0 | 335.4 | 339.5 |
| 52.5°  | 267.5 | 285.1 | 305.6 | 319.6 | 324.9 |
| 55°    | 248.2 | 267.5 | 288.6 | 304.4 | 309.1 |
| 57.5°  | 229.5 | 249.4 | 272.2 | 288.0 | 293.3 |
| 60°    | 209.6 | 230.7 | 254.7 | 271.0 | 277.5 |
| 62.5°  | 190.8 | 212.5 | 238.3 | 254.7 | 260.5 |
| 65°    | 171.5 | 194.4 | 220.1 | 237.7 | 243.5 |
| 67.5°  | 152.2 | 176.2 | 202.0 | 221.3 | 226.0 |
| 70°    | 131.7 | 156.9 | 185.0 | 203.7 | 209.6 |
| 72.5°  | 113.0 | 138.2 | 167.4 | 186.7 | 192.6 |
| 75°    | 93.1  | 120.6 | 149.9 | 169.2 | 176.2 |
| 77.5°  | 76.1  | 103.6 | 132.9 | 153.4 | 158.6 |
| 80°    | 58.0  | 86.6  | 117.1 | 137.0 | 142.8 |
| 82.5°  | 42.1  | 71.4  | 102.4 | 122.3 | 128.2 |
| 85°    | 28.7  | 58.0  | 89.0  | 108.9 | 114.7 |
| 87.5°  | 17.6  | 46.8  | 76.7  | 96.6  | 102.4 |
| 90°    | 7.6   | 36.3  | 66.2  | 86.1  | 91.9  |
| 92.5°  | 7.0   | 32.2  | 61.5  | 80.8  | 86.1  |
| 95°    | 6.4   | 29.3  | 58.0  | 76.1  | 82.0  |
| 97.5°  | 5.9   | 26.9  | 54.4  | 72.0  | 77.9  |
| 100°   | 5.3   | 24.0  | 50.9  | 67.9  | 73.8  |
| 102.5° | 4.7   | 21.1  | 47.4  | 63.8  | 69.7  |
| 105°   | 4.7   | 18.7  | 43.9  | 60.3  | 65.6  |
| 107.5° | 4.1   | 16.4  | 40.4  | 56.2  | 61.5  |
| 110°   | 3.5   | 14.0  | 37.5  | 52.7  | 57.4  |



TEST NUMBER: P333971

CATALOG NUMBER: S123DP-S560D930-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

|        | 0°  | 22.5° | 45°  | 67.5° | 90°  |
|--------|-----|-------|------|-------|------|
| 112.5° | 3.5 | 11.7  | 34.0 | 48.6  | 53.9 |
| 115°   | 2.9 | 10.0  | 31.0 | 45.1  | 49.8 |
| 117.5° | 2.9 | 7.6   | 27.5 | 41.6  | 46.2 |
| 120°   | 2.3 | 5.3   | 24.6 | 38.1  | 42.1 |
| 122.5° | 2.3 | 3.5   | 21.7 | 34.5  | 38.6 |
| 125°   | 1.8 | 1.8   | 18.7 | 31.0  | 35.1 |
| 127.5° | 1.8 | 1.2   | 15.8 | 27.5  | 31.6 |
| 130°   | 1.8 | 1.2   | 12.9 | 24.0  | 27.5 |
| 132.5° | 1.2 | 1.2   | 10.0 | 20.5  | 24.6 |
| 135°   | 1.2 | 0.6   | 7.0  | 17.6  | 20.5 |
| 137.5° | 1.2 | 0.6   | 4.7  | 14.0  | 17.0 |
| 140°   | 0.6 | 0.6   | 2.3  | 11.1  | 14.0 |
| 142.5° | 0.6 | 0.0   | 0.0  | 7.6   | 10.5 |
| 145°   | 0.6 | 0.0   | 0.0  | 4.7   | 7.0  |
| 147.5° | 0.0 | 0.0   | 0.0  | 1.8   | 4.1  |
| 150°   | 0.0 | 0.0   | 0.0  | 0.0   | 1.2  |
| 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)