

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: NEO-RAY

Report Number: P333971

Luminaire Tested: **S123DS-S560D930-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
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 (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DS-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

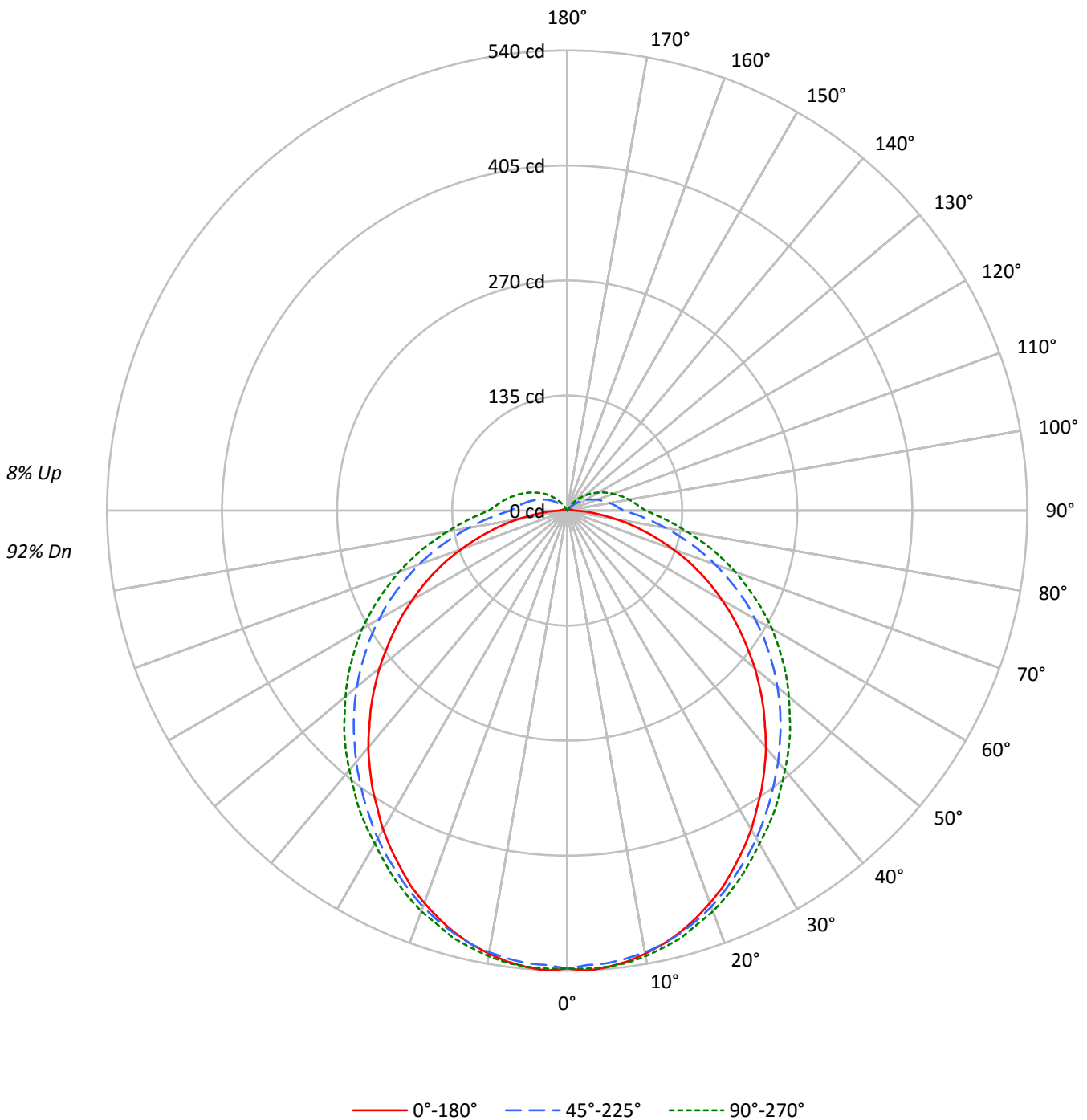
Lumens per Lamp: N/A
Luminaire Lumens: 1806.1 lumens
Efficiency: N/A
Efficacy: 96.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.25 / 1.37
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Direct

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: 25 FT



TEST NUMBER: P333971
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Luminous Intensity Polar Plot





TEST NUMBER: P333971

CATALOG NUMBER: S123DS-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° | 5813 | 5762 | 5807 |
| 10° | 5771 | 5752 | 5804 |
| 15° | 5708 | 5721 | 5780 |
| 20° | 5613 | 5667 | 5733 |
| 25° | 5493 | 5583 | 5673 |
| 30° | 5369 | 5522 | 5609 |
| 35° | 5231 | 5455 | 5600 |
| 40° | 5101 | 5413 | 5585 |
| 45° | 4955 | 5392 | 5632 |
| 50° | 4813 | 5392 | 5685 |
| 55° | 4658 | 5416 | 5801 |
| 60° | 4512 | 5483 | 5974 |
| 65° | 4368 | 5606 | 6202 |
| 70° | 4145 | 5822 | 6596 |
| 75° | 3872 | 6234 | 7328 |
| 80° | 3595 | 7259 | 8852 |
| 85° | 3545 | 10992 | 14166 |



TEST NUMBER: P333971

CATALOG NUMBER: S123DS-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: S123DS-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: S123DS-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)