

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: P242097

Luminaire Tested: **S121DR-S305D930-X4F0-XX-UDD-F-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242097
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-9)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S121DR-S305D930-X4F0-XX-UDD-F-W
Description: DEFINE 1 DIRECT RECESSED WITH SATIN FLUSH DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 979.1 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.29
Luminous Opening: Rectangular (W 0.09' x L: 3.88' x H: 0')
CIE Type: Direct

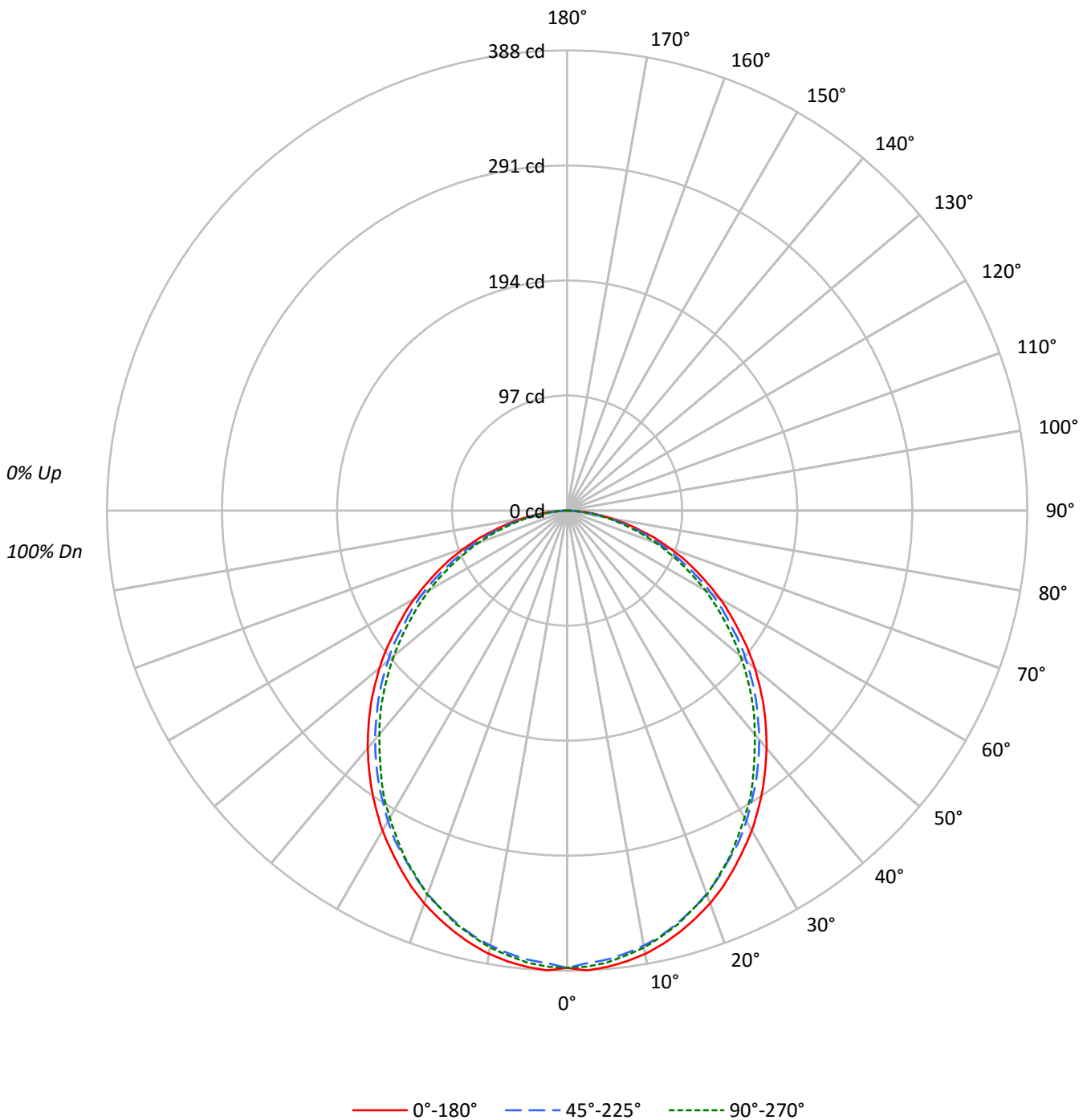
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 99 | 91 | 85 | 79 | 97 | 89 | 83 | 78 | 86 | 81 | 76 | 83 | 78 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 80 | 72 | 66 | 88 | 79 | 71 | 66 | 76 | 70 | 64 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 72 | 63 | 56 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 65 | 59 | 54 | 63 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 48 | 61 | 54 | 48 | 59 | 52 | 47 | 57 | 51 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 42 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 41 | 39 |
| 7 | 66 | 53 | 44 | 38 | 64 | 52 | 44 | 38 | 50 | 43 | 37 | 49 | 42 | 37 | 47 | 41 | 37 | 35 |
| 8 | 61 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 33 | 44 | 38 | 33 | 31 |
| 9 | 57 | 44 | 36 | 31 | 56 | 44 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 53 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 27 | 37 | 32 | 27 | 26 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 11422 | 11422 | 11422 |
| 5° | 11487 | 11308 | 11383 |
| 10° | 11418 | 11204 | 11255 |
| 15° | 11279 | 11040 | 11074 |
| 20° | 11112 | 10844 | 10866 |
| 25° | 10880 | 10589 | 10566 |
| 30° | 10657 | 10339 | 10230 |
| 35° | 10392 | 10045 | 9889 |
| 40° | 10118 | 9747 | 9527 |
| 45° | 9830 | 9428 | 9189 |
| 50° | 9519 | 9090 | 8795 |
| 55° | 9138 | 8679 | 8369 |
| 60° | 8818 | 8356 | 7976 |
| 65° | 8385 | 7838 | 7439 |
| 70° | 7892 | 7312 | 6905 |
| 75° | 7258 | 6640 | 6193 |
| 80° | 6433 | 5836 | 5409 |
| 85° | 5337 | 4352 | 3876 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 36.3 | 3.7 |
| 10°-20° | 102.2 | 10.4 |
| 20°-30° | 150.4 | 15.4 |
| 30°-40° | 174.6 | 17.8 |
| 40°-50° | 174.2 | 17.8 |
| 50°-60° | 151.6 | 15.5 |
| 60°-70° | 111.6 | 11.4 |
| 70°-80° | 62.2 | 6.4 |
| 80°-90° | 16.0 | 1.6 |
| 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° | 288.9 | 29.5 |
| 0°-40° | 463.5 | 47.3 |
| 0°-60° | 789.2 | 80.6 |
| 0°-90° | 979.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 979.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 386 | 386 | 386 | 386 | 386 | |
| 5° | 386 | 384 | 380 | 383 | 383 | 37 |
| 15° | 368 | 365 | 360 | 362 | 361 | 104 |
| 25° | 333 | 329 | 324 | 325 | 323 | 153 |
| 35° | 287 | 284 | 278 | 275 | 273 | 180 |
| 45° | 235 | 231 | 225 | 221 | 219 | 181 |
| 55° | 177 | 175 | 168 | 165 | 162 | 159 |
| 65° | 120 | 117 | 112 | 108 | 106 | 119 |
| 75° | 63 | 62 | 58 | 56 | 54 | 68 |
| 85° | 16 | 15 | 13 | 12 | 11 | 19 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P242097

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 385.5 | 385.5 | 385.5 | 385.5 | 385.5 |
| 2.5° | 388.0 | 385.9 | 382.0 | 385.2 | 384.8 |
| 5° | 386.2 | 384.5 | 380.2 | 383.4 | 382.7 |
| 7.5° | 383.4 | 381.3 | 376.6 | 379.5 | 378.4 |
| 10° | 379.5 | 377.3 | 372.4 | 374.5 | 374.1 |
| 12.5° | 374.1 | 371.6 | 367.0 | 368.8 | 367.7 |
| 15° | 367.7 | 364.9 | 359.9 | 362.4 | 361.0 |
| 17.5° | 360.3 | 357.0 | 352.4 | 353.8 | 352.4 |
| 20° | 352.4 | 348.9 | 343.9 | 345.3 | 344.6 |
| 22.5° | 343.2 | 340.0 | 334.3 | 335.0 | 333.6 |
| 25° | 332.8 | 329.3 | 323.9 | 324.7 | 323.2 |
| 27.5° | 322.2 | 319.0 | 314.0 | 312.9 | 311.1 |
| 30° | 311.5 | 307.6 | 302.2 | 300.8 | 299.0 |
| 32.5° | 299.4 | 295.8 | 289.8 | 288.3 | 287.3 |
| 35° | 287.3 | 283.7 | 277.7 | 274.8 | 273.4 |
| 37.5° | 274.5 | 270.9 | 264.8 | 261.6 | 259.5 |
| 40° | 261.6 | 257.7 | 252.0 | 248.8 | 246.3 |
| 42.5° | 248.1 | 244.6 | 238.1 | 234.9 | 233.2 |
| 45° | 234.6 | 230.7 | 225.0 | 220.7 | 219.3 |
| 47.5° | 220.4 | 216.8 | 211.1 | 206.5 | 205.0 |
| 50° | 206.5 | 202.6 | 197.2 | 192.6 | 190.8 |
| 52.5° | 192.2 | 188.7 | 183.7 | 179.1 | 176.2 |
| 55° | 176.9 | 174.8 | 168.0 | 164.8 | 162.0 |
| 57.5° | 163.0 | 160.5 | 155.2 | 149.9 | 148.1 |
| 60° | 148.8 | 146.0 | 141.0 | 136.3 | 134.6 |
| 62.5° | 133.8 | 131.7 | 126.7 | 122.5 | 120.0 |
| 65° | 119.6 | 117.1 | 111.8 | 108.2 | 106.1 |
| 67.5° | 106.4 | 103.2 | 97.9 | 94.3 | 92.6 |
| 70° | 91.1 | 88.6 | 84.4 | 81.5 | 79.7 |
| 72.5° | 78.0 | 75.1 | 71.2 | 68.3 | 66.6 |
| 75° | 63.4 | 61.6 | 58.0 | 55.5 | 54.1 |
| 77.5° | 50.5 | 48.1 | 45.6 | 43.8 | 42.7 |
| 80° | 37.7 | 36.0 | 34.2 | 32.4 | 31.7 |
| 82.5° | 26.3 | 24.9 | 23.1 | 22.1 | 21.0 |
| 85° | 15.7 | 15.0 | 12.8 | 12.1 | 11.4 |
| 87.5° | 7.5 | 6.4 | 4.3 | 3.9 | 3.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)