

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: METALUX

Report Number: P860030

Luminaire Tested: **SPHB-24SE-N-L850-CD**

Issue Date: 7/11/2024

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P860030
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2404-343-7)
Test Lab: INNOVATION CENTER
Issue Date: 7/11/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: SPHB-24SE-N-L850-CD
Description: 24000 Lumen Standard Efficacy Select Pro High Bay with Narrow Lens
and, 5000K 80CRI LEDs
Light Source: -
Ballast/Driver: -

Luminaire Equipment: Sample No. Condition Description

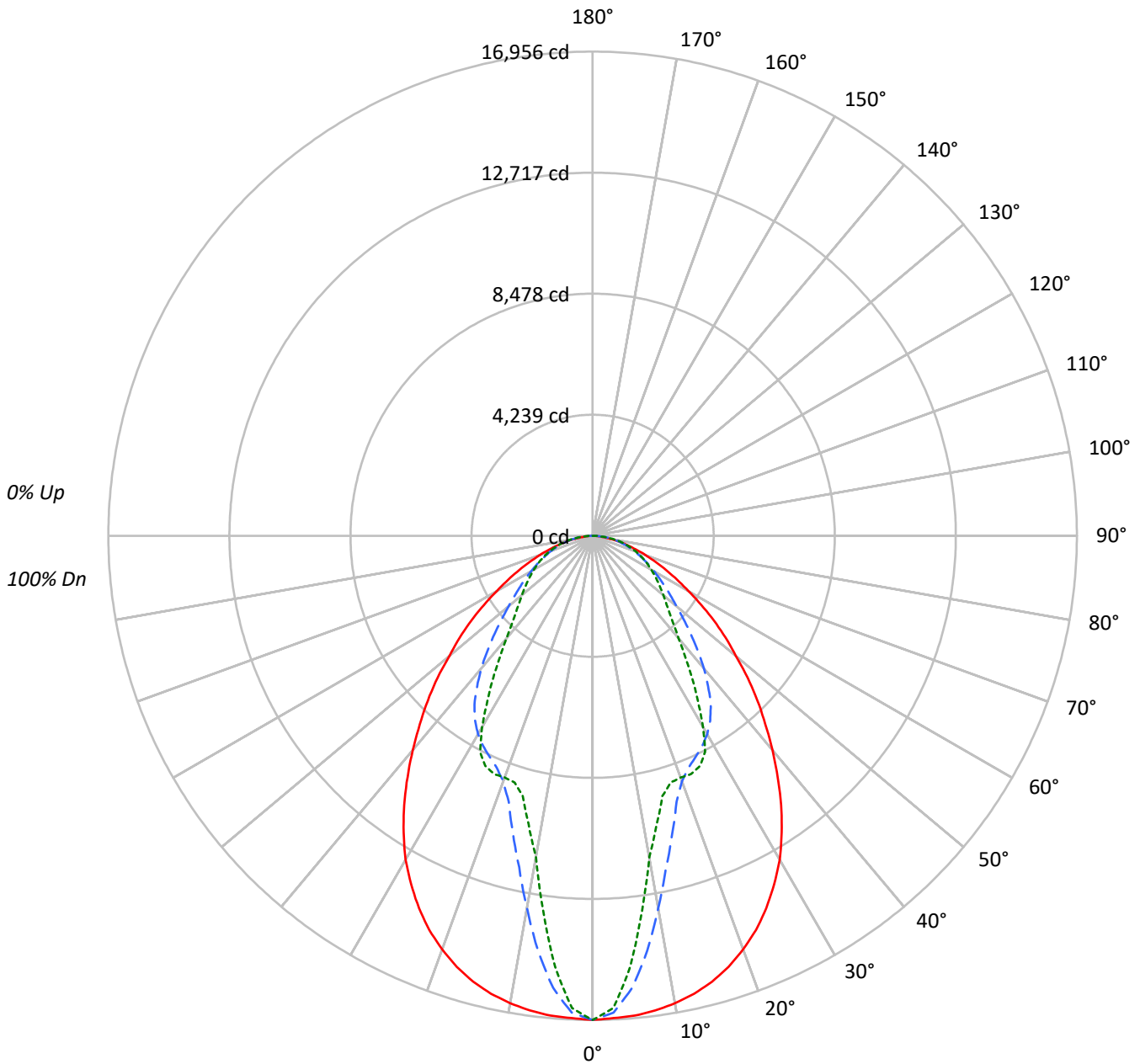
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24851.0 lumens
Efficiency: N/A
Efficacy: 156.7 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 0.54 / 0.94
Luminous Opening: Rectangular (W 1' x L: 1.38' x H: 0')
CIE Type: Direct

Input Watts (W): 158.6
Input Voltage (V): NR
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

TEST NUMBER: P860030
CATALOG NUMBER: SPHB-24SE-N-L850-CD

Luminous Intensity Polar Plot





TEST NUMBER: P860030

CATALOG NUMBER: SPHB-24SE-N-L850-CD

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|---|--|--|--|--|--|--|----|--|--|--|--|--|--|--|--|---|
| RF | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | 20 | | | | | | | | | |
| RC | 80 | | | | | | | | | 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | | | | | | | | | | | | | | | | |
| 1 | 110 | 106 | 102 | 98 | 107 | 103 | 100 | 97 | 99 | 96 | 94 | 95 | 93 | 91 | 92 | 90 | 88 | 86 | | | | | | | | | | | | | | | | | | | |
| 2 | 101 | 94 | 88 | 83 | 99 | 92 | 86 | 82 | 88 | 84 | 80 | 85 | 81 | 78 | 82 | 79 | 76 | 74 | | | | | | | | | | | | | | | | | | | |
| 3 | 93 | 84 | 76 | 71 | 91 | 82 | 75 | 70 | 79 | 73 | 69 | 77 | 72 | 68 | 74 | 70 | 66 | 64 | | | | | | | | | | | | | | | | | | | |
| 4 | 86 | 75 | 67 | 61 | 84 | 74 | 67 | 61 | 72 | 65 | 60 | 69 | 64 | 59 | 67 | 62 | 58 | 56 | | | | | | | | | | | | | | | | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 54 | 65 | 58 | 53 | 63 | 57 | 53 | 61 | 56 | 52 | 50 | | | | | | | | | | | | | | | | | | | |
| 6 | 74 | 62 | 54 | 48 | 73 | 61 | 54 | 48 | 60 | 53 | 47 | 58 | 52 | 47 | 56 | 51 | 47 | 45 | | | | | | | | | | | | | | | | | | | |
| 7 | 70 | 57 | 49 | 43 | 68 | 56 | 49 | 43 | 55 | 48 | 43 | 53 | 47 | 43 | 52 | 46 | 42 | 40 | | | | | | | | | | | | | | | | | | | |
| 8 | 65 | 53 | 45 | 39 | 64 | 52 | 44 | 39 | 51 | 44 | 39 | 49 | 43 | 39 | 48 | 43 | 38 | 37 | | | | | | | | | | | | | | | | | | | |
| 9 | 61 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 36 | 46 | 40 | 35 | 45 | 39 | 35 | 34 | | | | | | | | | | | | | | | | | | | |
| 10 | 58 | 45 | 38 | 33 | 56 | 45 | 38 | 33 | 44 | 37 | 33 | 43 | 37 | 33 | 42 | 37 | 33 | 31 | | | | | | | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 132258 | 132258 | 132258 |
| 5° | 132104 | 124442 | 118553 |
| 10° | 131653 | 104894 | 90427 |
| 15° | 130557 | 87073 | 76202 |
| 20° | 127928 | 75901 | 74805 |
| 25° | 123816 | 73438 | 76558 |
| 30° | 117964 | 72261 | 69673 |
| 35° | 109528 | 68668 | 57735 |
| 40° | 99737 | 61644 | 47674 |
| 45° | 90029 | 53489 | 41852 |
| 50° | 79450 | 46511 | 39191 |
| 55° | 70502 | 41948 | 37723 |
| 60° | 60420 | 38792 | 36955 |
| 65° | 52298 | 36458 | 36768 |
| 70° | 44754 | 35070 | 36724 |
| 75° | 37568 | 34057 | 36396 |
| 80° | 28667 | 32911 | 35642 |
| 85° | 18767 | 29193 | 27457 |



TEST NUMBER: P860030

CATALOG NUMBER: SPHB-24SE-N-L850-CD

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 1445.7 | 5.8 |
| 10°-20° | 3319.4 | 13.4 |
| 20°-30° | 4486.1 | 18.1 |
| 30°-40° | 4721.3 | 19.0 |
| 40°-50° | 4006.2 | 16.1 |
| 50°-60° | 3103.4 | 12.5 |
| 60°-70° | 2161.4 | 8.7 |
| 70°-80° | 1237.7 | 5.0 |
| 80°-90° | 360.2 | 1.4 |
| 90°-100° | 9.6 | 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° | 9251.2 | 37.2 |
| 0°-40° | 13972.5 | 56.2 |
| 0°-60° | 21082.1 | 84.8 |
| 0°-90° | 24841.4 | 100.0 |
| 90°-120° | 9.6 | 0.0 |
| 90°-150° | 9.6 | 0.0 |
| 90°-180° | 10.0 | 0.0 |
| 0°-180° | 24851.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-------|-------|-------|-------|-------|------|
| 0° | 16956 | 16956 | 16956 | 16956 | 16956 | |
| 5° | 16872 | 16563 | 15894 | 15284 | 15141 | ### |
| 15° | 16168 | 13723 | 10783 | 9706 | 9437 | 4549 |
| 25° | 14387 | 10163 | 8533 | 8780 | 8896 | 6604 |
| 35° | 11503 | 7816 | 7212 | 6514 | 6063 | 7170 |
| 45° | 8162 | 5869 | 4849 | 3984 | 3794 | 6286 |
| 55° | 5184 | 3953 | 3085 | 2804 | 2774 | 4635 |
| 65° | 2834 | 2320 | 1975 | 1975 | 1992 | 2830 |
| 75° | 1247 | 1108 | 1130 | 1201 | 1208 | 1329 |
| 85° | 210 | 272 | 326 | 307 | 307 | 267 |
| 90° | 1 | 25 | 48 | 61 | 63 | 12 |
| 95° | 1 | 4 | 8 | 8 | 6 | 1 |
| 105° | 0 | 0 | 0 | 0 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 0 | 0 | 0 | 0 | 0 |
| 135° | 0 | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 | 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: P860030

CATALOG NUMBER: SPHB-24SE-N-L850-CD

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|---------|---------|---------|---------|---------|
| 0° | 16956.3 | 16956.3 | 16956.3 | 16956.3 | 16956.3 |
| 2.5° | 16907.1 | 16851.4 | 16715.5 | 16627.5 | 16558.9 |
| 5° | 16872.1 | 16562.7 | 15893.5 | 15283.8 | 15141.4 |
| 7.5° | 16767.3 | 16087.7 | 14657.3 | 13529.8 | 13245.0 |
| 10° | 16622.3 | 15405.5 | 13243.7 | 11831.5 | 11417.2 |
| 12.5° | 16429.4 | 14676.7 | 11889.7 | 10559.0 | 10355.8 |
| 15° | 16167.9 | 13722.7 | 10782.9 | 9705.9 | 9436.7 |
| 17.5° | 15828.8 | 12736.3 | 9761.6 | 9139.0 | 9063.9 |
| 20° | 15412.0 | 11831.5 | 9144.1 | 8931.8 | 9012.1 |
| 22.5° | 14943.4 | 10952.5 | 8785.6 | 8874.9 | 9025.0 |
| 25° | 14386.7 | 10162.9 | 8533.1 | 8780.4 | 8895.6 |
| 27.5° | 13761.5 | 9449.6 | 8301.4 | 8528.0 | 8528.0 |
| 30° | 13097.5 | 8855.5 | 8023.1 | 8002.4 | 7735.8 |
| 32.5° | 12322.1 | 8350.6 | 7659.4 | 7249.0 | 6852.9 |
| 35° | 11502.7 | 7816.0 | 7211.5 | 6513.8 | 6063.3 |
| 37.5° | 10643.1 | 7318.9 | 6644.5 | 5724.1 | 5304.7 |
| 40° | 9795.3 | 6828.3 | 6054.2 | 5014.8 | 4682.1 |
| 42.5° | 8951.3 | 6328.7 | 5439.4 | 4440.0 | 4177.3 |
| 45° | 8161.6 | 5869.1 | 4849.1 | 3984.4 | 3794.1 |
| 47.5° | 7359.1 | 5381.1 | 4304.1 | 3618.0 | 3486.0 |
| 50° | 6547.4 | 4886.6 | 3832.9 | 3326.8 | 3229.7 |
| 52.5° | 5864.0 | 4425.8 | 3432.9 | 3051.1 | 2992.8 |
| 55° | 5184.4 | 3953.3 | 3084.7 | 2803.8 | 2774.0 |
| 57.5° | 4509.9 | 3513.2 | 2766.3 | 2577.3 | 2570.8 |
| 60° | 3873.1 | 3101.6 | 2486.7 | 2383.1 | 2368.9 |
| 62.5° | 3330.7 | 2692.5 | 2221.3 | 2172.1 | 2178.6 |
| 65° | 2833.6 | 2319.7 | 1975.4 | 1975.4 | 1992.2 |
| 67.5° | 2372.8 | 1976.7 | 1750.1 | 1779.9 | 1803.2 |
| 70° | 1962.4 | 1666.0 | 1537.8 | 1589.6 | 1610.3 |
| 72.5° | 1574.1 | 1377.3 | 1334.6 | 1391.6 | 1408.4 |
| 75° | 1246.6 | 1108.1 | 1130.1 | 1201.3 | 1207.7 |
| 77.5° | 924.3 | 872.5 | 929.4 | 1007.1 | 1021.3 |
| 80° | 638.2 | 643.4 | 732.7 | 787.0 | 793.5 |
| 82.5° | 411.6 | 449.2 | 548.9 | 577.3 | 567.0 |
| 85° | 209.7 | 271.8 | 326.2 | 306.8 | 306.8 |
| 87.5° | 80.3 | 117.8 | 138.5 | 163.1 | 172.2 |
| 90° | 1.3 | 24.6 | 47.9 | 60.8 | 63.4 |
| 92.5° | 1.3 | 6.5 | 10.4 | 11.7 | 10.4 |
| 95° | 1.3 | 3.9 | 7.8 | 7.8 | 6.5 |
| 97.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P860030

CATALOG NUMBER: SPHB-24SE-N-L850-CD

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 112.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.0 | 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 |



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - - 90°-270°







| | | | | | |
|--------|-----|-----|-----|-----|-----|
| 107.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



(END OF REPORT)