

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: HALO COMMERCIAL

Report Number: P252952

Luminaire Tested: **PRS440D010-S4M24-41SWDH**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P252952
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1805-776-2)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PRS440D010-S4M24-41SWDH
Description: HALO COMMERCIAL 4" SQUARE, NEW CONSTRUCTION FRAME, WITH 4" WIDE DISTRIBUTION, DEEP TRIM HAZE
Light Source: ARRAYS OF HIGH LUMEN LEDS 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3259.3 lumens
Efficiency: N/A
Efficacy: 85.8 lumens/watt
Spacing Criteria (0/90/45): 1.11 / 1.1 / 1.15
Luminous Opening: Rectangular (W 0.38' x L: 0.38' x H: 0')
CIE Type: Direct

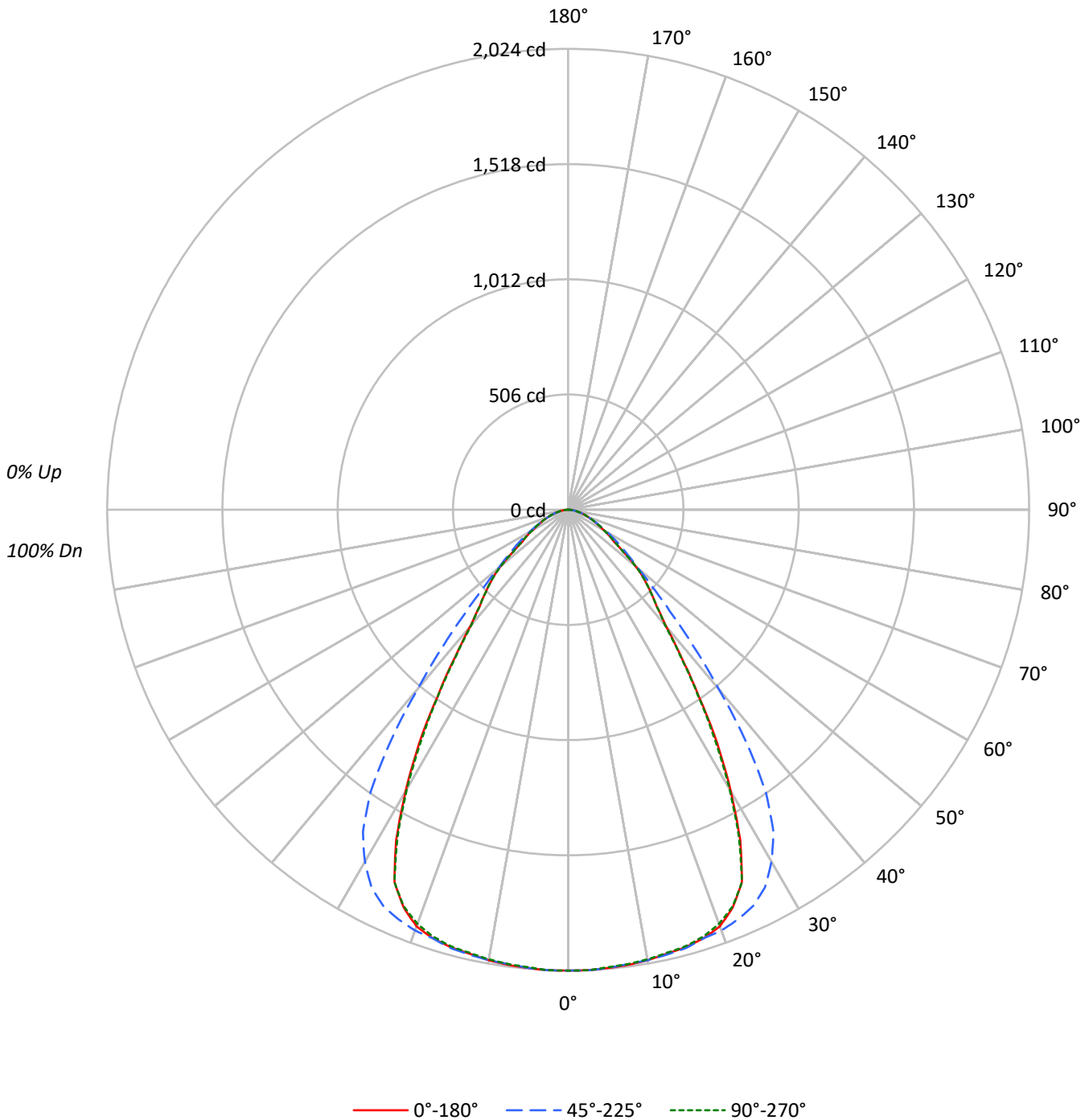
Input Watts (W): 38
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 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 | | | | | 100 | | | |
| 1 | 112 | 108 | 105 | 102 | 109 | 106 | 103 | 100 | 102 | 99 | 97 | 98 | 96 | 94 | 95 | 93 | 92 | | | | | 90 | | | | |
| 2 | 104 | 98 | 93 | 88 | 102 | 96 | 91 | 87 | 93 | 89 | 86 | 90 | 86 | 84 | 87 | 84 | 82 | | | | | 80 | | | | |
| 3 | 97 | 89 | 83 | 78 | 95 | 88 | 82 | 77 | 85 | 80 | 76 | 82 | 78 | 75 | 80 | 76 | 73 | | | | | 72 | | | | |
| 4 | 91 | 81 | 74 | 69 | 89 | 80 | 74 | 69 | 78 | 72 | 68 | 76 | 71 | 67 | 74 | 70 | 66 | | | | | 64 | | | | |
| 5 | 85 | 75 | 67 | 62 | 83 | 74 | 67 | 62 | 72 | 66 | 61 | 70 | 65 | 60 | 68 | 64 | 60 | | | | | 58 | | | | |
| 6 | 80 | 69 | 61 | 56 | 78 | 68 | 61 | 56 | 66 | 60 | 55 | 65 | 59 | 55 | 63 | 58 | 55 | | | | | 53 | | | | |
| 7 | 75 | 63 | 56 | 51 | 73 | 63 | 56 | 51 | 61 | 55 | 51 | 60 | 54 | 50 | 59 | 54 | 50 | | | | | 48 | | | | |
| 8 | 70 | 59 | 52 | 47 | 69 | 58 | 51 | 47 | 57 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 46 | | | | | 44 | | | | |
| 9 | 66 | 55 | 48 | 43 | 65 | 54 | 47 | 43 | 53 | 47 | 43 | 52 | 47 | 42 | 51 | 46 | 42 | | | | | 41 | | | | |
| 10 | 63 | 51 | 44 | 40 | 61 | 51 | 44 | 40 | 50 | 44 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | | | | | 38 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|--------|--------|--------|
| 0° | 154962 | 154962 | 154962 |
| 5° | 155254 | 155254 | 154962 |
| 10° | 156156 | 156156 | 155853 |
| 15° | 157679 | 157980 | 157370 |
| 20° | 158627 | 160191 | 157682 |
| 25° | 152418 | 162190 | 152418 |
| 30° | 126107 | 157802 | 125082 |
| 35° | 93321 | 141247 | 92601 |
| 40° | 66657 | 102878 | 65887 |
| 45° | 55521 | 68456 | 55521 |
| 50° | 46382 | 47751 | 46382 |
| 55° | 32935 | 38086 | 33456 |
| 60° | 27739 | 30112 | 27739 |
| 65° | 23744 | 24451 | 23744 |
| 70° | 20701 | 20701 | 20701 |
| 75° | 18247 | 18247 | 18247 |
| 80° | 15296 | 15296 | 15296 |
| 85° | 13525 | 13525 | 13525 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 192.4 | 5.9 |
| 10°-20° | 562.2 | 17.2 |
| 20°-30° | 840.1 | 25.8 |
| 30°-40° | 747.8 | 22.9 |
| 40°-50° | 445.0 | 13.7 |
| 50°-60° | 252.1 | 7.7 |
| 60°-70° | 135.2 | 4.1 |
| 70°-80° | 66.2 | 2.0 |
| 80°-90° | 18.4 | 0.6 |
| 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° | 1594.7 | 48.9 |
| 0°-40° | 2342.5 | 71.9 |
| 0°-60° | 3039.6 | 93.3 |
| 0°-90° | 3259.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3259.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 2024 | 2024 | 2024 | 2024 | 2024 | |
| 5° | 2021 | 2021 | 2021 | 2021 | 2017 | 193 |
| 15° | 1990 | 1990 | 1994 | 1986 | 1986 | 562 |
| 25° | 1805 | 1855 | 1920 | 1851 | 1805 | 805 |
| 35° | 999 | 1168 | 1512 | 1165 | 991 | 631 |
| 45° | 513 | 551 | 632 | 548 | 513 | 398 |
| 55° | 247 | 274 | 285 | 274 | 251 | 235 |
| 65° | 131 | 135 | 135 | 135 | 131 | 132 |
| 75° | 62 | 62 | 62 | 62 | 62 | 67 |
| 85° | 15 | 15 | 15 | 15 | 15 | 18 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P252952

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 2024.5 | 2024.5 | 2024.5 | 2024.5 | 2024.5 |
| 2.5° | 2024.5 | 2024.5 | 2024.5 | 2024.5 | 2024.5 |
| 5° | 2020.6 | 2020.6 | 2020.6 | 2020.6 | 2016.8 |
| 7.5° | 2016.8 | 2012.9 | 2012.9 | 2012.9 | 2012.9 |
| 10° | 2009.1 | 2009.1 | 2009.1 | 2005.2 | 2005.2 |
| 12.5° | 1997.5 | 1997.5 | 2001.4 | 1997.5 | 1993.6 |
| 15° | 1989.8 | 1989.8 | 1993.6 | 1985.9 | 1985.9 |
| 17.5° | 1974.4 | 1978.2 | 1974.4 | 1974.4 | 1966.6 |
| 20° | 1947.4 | 1958.9 | 1966.6 | 1955.1 | 1935.8 |
| 22.5° | 1889.5 | 1920.4 | 1947.4 | 1916.5 | 1885.7 |
| 25° | 1804.7 | 1854.8 | 1920.4 | 1851.0 | 1804.7 |
| 27.5° | 1635.0 | 1762.3 | 1870.2 | 1750.7 | 1623.5 |
| 30° | 1426.8 | 1581.0 | 1785.4 | 1569.5 | 1415.2 |
| 32.5° | 1218.6 | 1372.8 | 1677.4 | 1365.1 | 1199.3 |
| 35° | 998.7 | 1168.4 | 1511.6 | 1164.6 | 991.0 |
| 37.5° | 813.7 | 967.9 | 1280.3 | 960.2 | 805.9 |
| 40° | 667.1 | 786.7 | 1029.6 | 782.8 | 659.4 |
| 42.5° | 574.6 | 640.1 | 813.7 | 636.3 | 574.6 |
| 45° | 512.9 | 551.4 | 632.4 | 547.6 | 512.9 |
| 47.5° | 455.0 | 485.9 | 497.4 | 482.0 | 455.0 |
| 50° | 389.5 | 424.2 | 401.0 | 424.2 | 389.5 |
| 52.5° | 308.5 | 350.9 | 335.5 | 354.8 | 304.6 |
| 55° | 246.8 | 273.8 | 285.4 | 273.8 | 250.7 |
| 57.5° | 215.9 | 223.7 | 239.1 | 223.7 | 215.9 |
| 60° | 181.2 | 189.0 | 196.7 | 189.0 | 181.2 |
| 62.5° | 154.2 | 162.0 | 162.0 | 162.0 | 158.1 |
| 65° | 131.1 | 135.0 | 135.0 | 135.0 | 131.1 |
| 67.5° | 111.8 | 111.8 | 111.8 | 111.8 | 111.8 |
| 70° | 92.5 | 92.5 | 92.5 | 92.5 | 92.5 |
| 72.5° | 77.1 | 77.1 | 77.1 | 77.1 | 77.1 |
| 75° | 61.7 | 61.7 | 61.7 | 61.7 | 61.7 |
| 77.5° | 50.1 | 50.1 | 46.3 | 50.1 | 46.3 |
| 80° | 34.7 | 34.7 | 34.7 | 34.7 | 34.7 |
| 82.5° | 27.0 | 27.0 | 27.0 | 27.0 | 27.0 |
| 85° | 15.4 | 15.4 | 15.4 | 15.4 | 15.4 |
| 87.5° | 7.7 | 7.7 | 7.7 | 7.7 | 7.7 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)