

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: P256298

Luminaire Tested: **HC4R20D010-HM412835-42RMDC**

Issue Date: 03/03/2020

Test Information

Test Method: LM-79-08
Report Number: P256298
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-1805-779-41)
Test Lab: INNOVATION CENTER(G1)
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: HC4R20D010-HM412835-42RMDC
Description: HALO COMMERCIAL 4" ROUND, RETROFIT FRAME, WITH 4" MEDIUM DISTRIBUTION, SPECULAR TRIM
Light Source: (1) HIGH LUMEN LED 80CRI / 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1866.3 lumens
Efficiency: N/A
Efficacy: 93.3 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.15 / 1.03
Luminous Opening: Circular (Dia: 0.38' x H: 0')
CIE Type: Direct

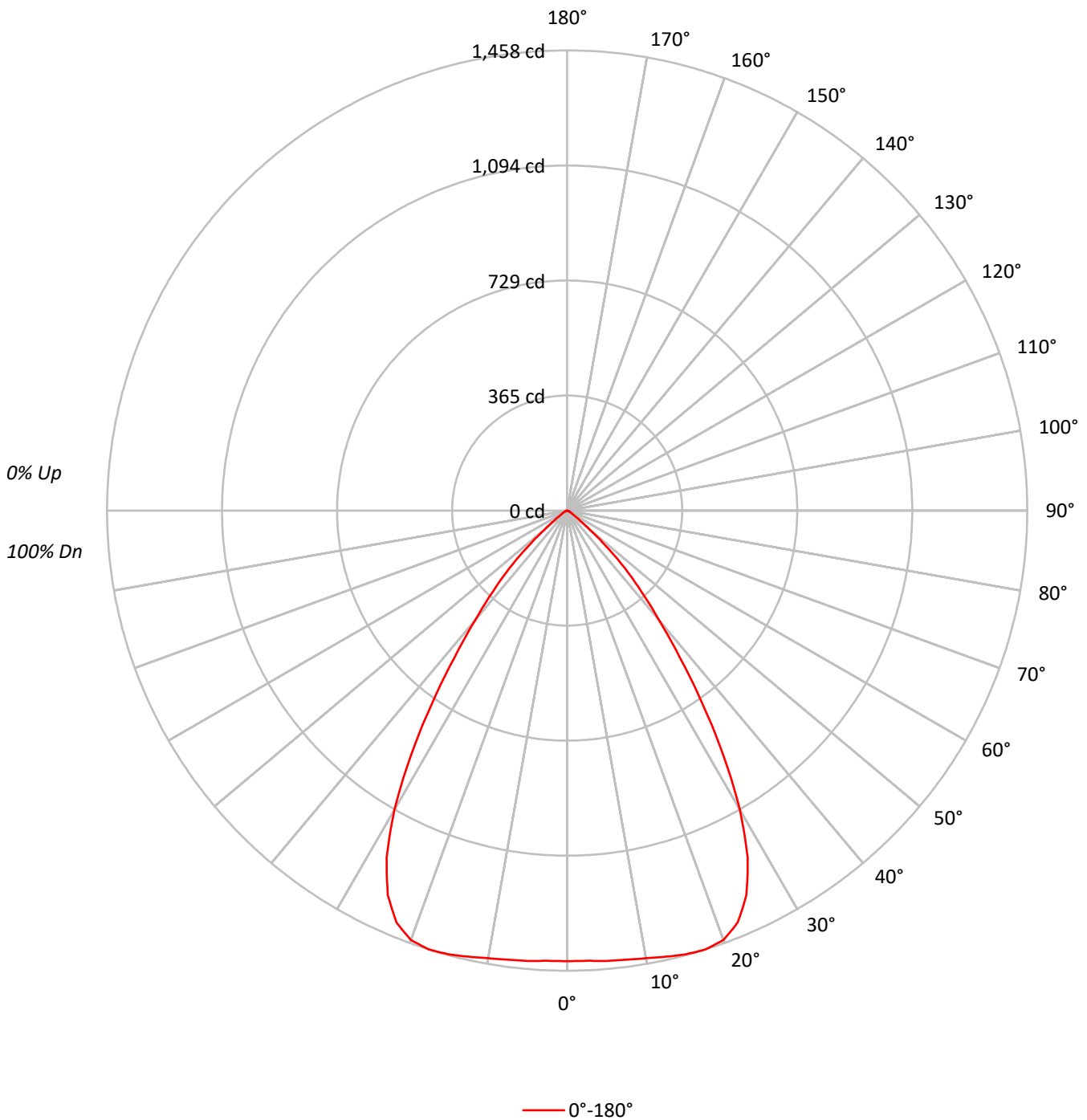
Input Watts (W): 20
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 0 |
| RCR | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | | 106 | 106 | 106 | | 102 | 102 | 102 | 100 |
| 1 | 113 | 110 | 108 | 105 | 111 | 108 | 106 | 103 | 104 | 102 | 100 | | 100 | 99 | 97 | | 97 | 96 | 94 | 93 |
| 2 | 107 | 102 | 97 | 94 | 105 | 100 | 96 | 93 | 97 | 94 | 91 | | 94 | 91 | 89 | | 91 | 89 | 87 | 85 |
| 3 | 101 | 94 | 89 | 84 | 99 | 93 | 88 | 84 | 90 | 86 | 82 | | 88 | 84 | 81 | | 85 | 82 | 80 | 78 |
| 4 | 95 | 87 | 81 | 77 | 93 | 86 | 80 | 76 | 84 | 79 | 75 | | 82 | 78 | 74 | | 80 | 76 | 74 | 72 |
| 5 | 90 | 81 | 75 | 70 | 88 | 80 | 74 | 70 | 78 | 73 | 69 | | 76 | 72 | 68 | | 75 | 71 | 68 | 66 |
| 6 | 85 | 75 | 69 | 64 | 83 | 74 | 68 | 64 | 73 | 67 | 63 | | 71 | 67 | 63 | | 70 | 66 | 63 | 61 |
| 7 | 80 | 70 | 64 | 59 | 79 | 69 | 63 | 59 | 68 | 63 | 59 | | 67 | 62 | 58 | | 66 | 61 | 58 | 56 |
| 8 | 76 | 66 | 59 | 55 | 75 | 65 | 59 | 55 | 64 | 58 | 54 | | 63 | 58 | 54 | | 62 | 57 | 54 | 52 |
| 9 | 72 | 61 | 55 | 51 | 71 | 61 | 55 | 51 | 60 | 54 | 50 | | 59 | 54 | 50 | | 58 | 53 | 50 | 49 |
| 10 | 68 | 58 | 51 | 47 | 67 | 57 | 51 | 47 | 56 | 51 | 47 | | 55 | 50 | 47 | | 55 | 50 | 47 | 45 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|--------|
| | 0° |
| 0° | 139131 |
| 5° | 140152 |
| 10° | 142524 |
| 15° | 146834 |
| 20° | 150155 |
| 25° | 144578 |
| 30° | 123259 |
| 35° | 88969 |
| 40° | 57657 |
| 45° | 35738 |
| 50° | 14131 |
| 55° | 5131 |
| 60° | 2943 |
| 65° | 1753 |
| 70° | 1425 |
| 75° | 941 |
| 80° | 0 |
| 85° | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 136.9 | 7.3 |
| 10°-20° | 411.6 | 22.1 |
| 20°-30° | 604.8 | 32.4 |
| 30°-40° | 468.3 | 25.1 |
| 40°-50° | 198.7 | 10.6 |
| 50°-60° | 34.7 | 1.9 |
| 60°-70° | 8.7 | 0.5 |
| 70°-80° | 2.6 | 0.1 |
| 80°-90° | 0.0 | 0.0 |
| 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° | 1153.3 | 61.8 |
| 0°-40° | 1621.5 | 86.9 |
| 0°-60° | 1854.9 | 99.4 |
| 0°-90° | 1866.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1866.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|------|------|
| 0° | 1428 | |
| 5° | 1433 | 137 |
| 15° | 1455 | 412 |
| 25° | 1344 | 605 |
| 35° | 748 | 468 |
| 45° | 259 | 199 |
| 55° | 30 | 35 |
| 65° | 8 | 9 |
| 75° | 2 | 3 |
| 85° | 0 | 0 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|--------|
| 0° | 1427.6 |
| 2.5° | 1427.6 |
| 5° | 1432.6 |
| 7.5° | 1435.2 |
| 10° | 1440.2 |
| 12.5° | 1447.8 |
| 15° | 1455.3 |
| 17.5° | 1457.8 |
| 20° | 1447.8 |
| 22.5° | 1412.5 |
| 25° | 1344.5 |
| 27.5° | 1238.8 |
| 30° | 1095.3 |
| 32.5° | 924.0 |
| 35° | 747.8 |
| 37.5° | 586.7 |
| 40° | 453.2 |
| 42.5° | 347.5 |
| 45° | 259.3 |
| 47.5° | 166.2 |
| 50° | 93.2 |
| 52.5° | 52.9 |
| 55° | 30.2 |
| 57.5° | 20.1 |
| 60° | 15.1 |
| 62.5° | 10.1 |
| 65° | 7.6 |
| 67.5° | 7.6 |
| 70° | 5.0 |
| 72.5° | 2.5 |
| 75° | 2.5 |
| 77.5° | 2.5 |
| 80° | 0.0 |
| 82.5° | 0.0 |
| 85° | 0.0 |
| 87.5° | 0.0 |
| 90° | 0.0 |

(END OF REPORT)