

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P20173

Luminaire Tested: **ML712840TUNVD010-493HS06**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P20173
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML712840TUNVD010-493HS06
Description: HALO 6" RECESSED LED DOWNLIGHT WITH HAZE LOWER
TRIM REFLECTOR, SPECULAR UPPER TRIM REFLECTOR AND SOLITE
GLASS LENS WITH MODULE ML712840TUNVD010
Light Source: (1)SURFACE MOUNT LED ON HEAT SINK MODULE
24 WATTS
Ballast/Driver: ELECTRONIC DRIVER

Summary

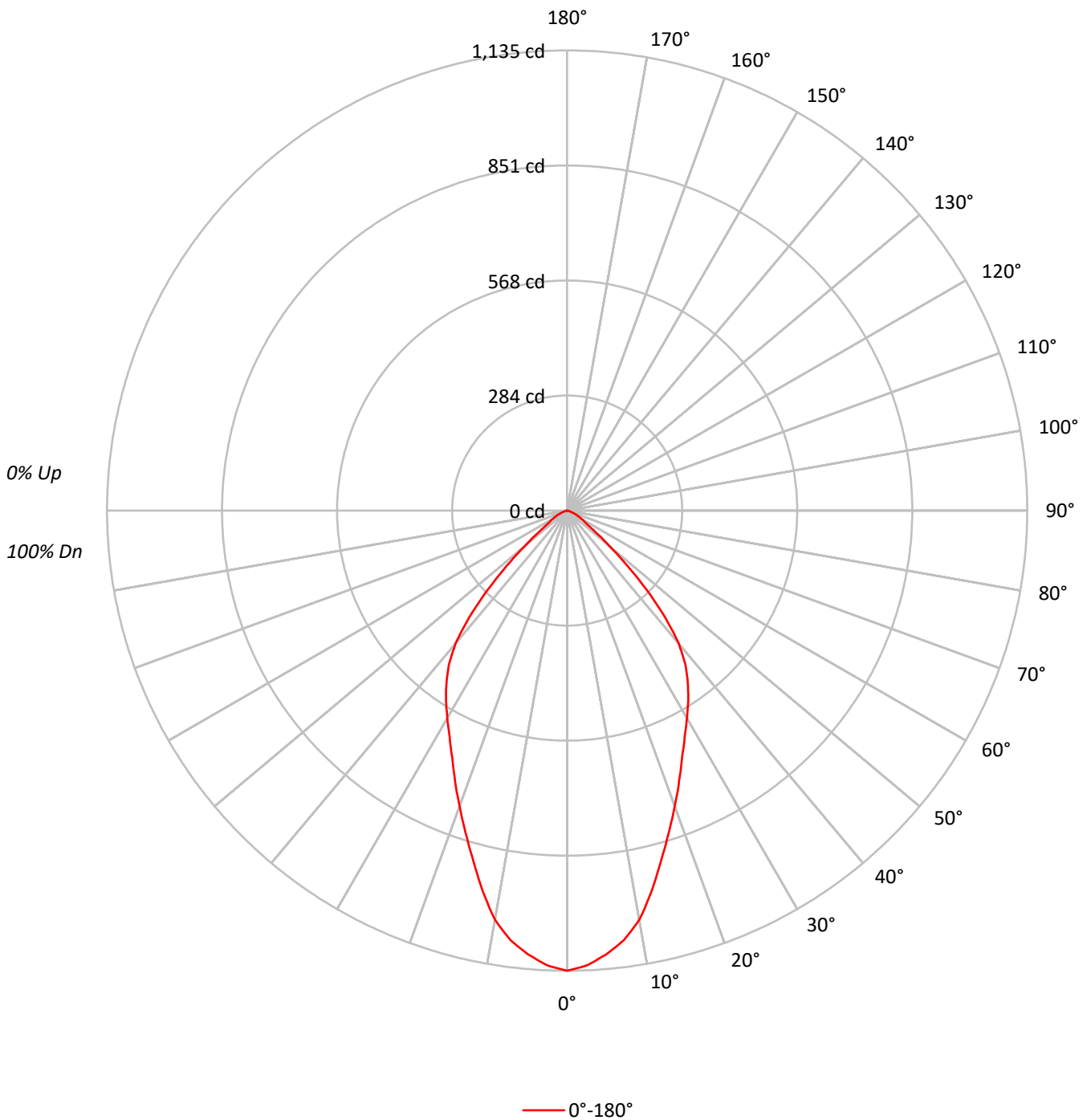
Lumens per Lamp: 1295 (1 lamp)
Luminaire Lumens: 1296.2 lumens
Efficiency: 100.1%
Efficacy: 49.5 lumens/watt
Spacing Criteria (0/90/45): 0.83 / 0.83 / 0.99
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 26.2
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 | 109 | 107 | 104 | 110 | 107 | 105 | 102 | 103 | 101 | 99 | | 99 | 98 | 96 | | 96 | 95 | 93 | 92 |
| 2 | 106 | 100 | 95 | 92 | 104 | 98 | 94 | 90 | 95 | 92 | 88 | | 92 | 89 | 87 | | 89 | 87 | 85 | 83 |
| 3 | 99 | 92 | 86 | 81 | 97 | 90 | 85 | 81 | 88 | 83 | 79 | | 85 | 81 | 78 | | 83 | 80 | 77 | 75 |
| 4 | 93 | 84 | 78 | 73 | 91 | 83 | 77 | 72 | 81 | 76 | 72 | | 79 | 74 | 71 | | 77 | 73 | 70 | 68 |
| 5 | 87 | 78 | 71 | 66 | 86 | 77 | 70 | 66 | 75 | 69 | 65 | | 73 | 68 | 64 | | 71 | 67 | 64 | 62 |
| 6 | 82 | 72 | 65 | 60 | 80 | 71 | 64 | 60 | 69 | 64 | 59 | | 68 | 63 | 59 | | 66 | 62 | 58 | 57 |
| 7 | 77 | 67 | 60 | 55 | 76 | 66 | 59 | 55 | 64 | 59 | 54 | | 63 | 58 | 54 | | 62 | 57 | 54 | 52 |
| 8 | 73 | 62 | 55 | 50 | 71 | 61 | 55 | 50 | 60 | 54 | 50 | | 59 | 54 | 50 | | 58 | 53 | 49 | 48 |
| 9 | 69 | 58 | 51 | 46 | 68 | 57 | 51 | 46 | 56 | 50 | 46 | | 55 | 50 | 46 | | 54 | 49 | 46 | 44 |
| 10 | 65 | 54 | 47 | 43 | 64 | 54 | 47 | 43 | 53 | 47 | 43 | | 52 | 46 | 43 | | 51 | 46 | 43 | 41 |

AVERAGE LUMINANCE (cd/sqm):

| | |
|-----|-------|
| | 0° |
| 0° | 62221 |
| 5° | 60478 |
| 10° | 57058 |
| 15° | 50738 |
| 20° | 45271 |
| 25° | 40587 |
| 30° | 37411 |
| 35° | 34733 |
| 40° | 30629 |
| 45° | 21630 |
| 50° | 11684 |
| 55° | 6021 |
| 60° | 4386 |
| 65° | 3373 |
| 70° | 2084 |
| 75° | 847 |
| 80° | 316 |
| 85° | 0 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 102.7 | 7.9 | 7.9 |
| 10°-20° | 250.7 | 19.3 | 19.4 |
| 20°-30° | 310.4 | 23.9 | 24.0 |
| 30°-40° | 322.1 | 24.9 | 24.9 |
| 40°-50° | 214.0 | 16.5 | 16.5 |
| 50°-60° | 64.6 | 5.0 | 5.0 |
| 60°-70° | 25.8 | 2.0 | 2.0 |
| 70°-80° | 5.5 | 0.4 | 0.4 |
| 80°-90° | 0.4 | 0.0 | 0.0 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-30° | 663.8 | 51.2 | 51.3 |
| 0°-40° | 986.0 | 76.1 | 76.1 |
| 0°-60° | 1264.5 | 97.6 | 97.6 |
| 0°-90° | 1296.2 | 100.0 | 100.1 |
| 90°-120° | 0.0 | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 | 0.0 |
| 0°-180° | 1296.2 | 100.0 | 100.1 |

CANDELA DISTRIBUTION:

| | 0° | Flux |
|-----|------|------|
| 0° | 1135 | |
| 5° | 1099 | 103 |
| 15° | 894 | 251 |
| 25° | 671 | 310 |
| 35° | 519 | 322 |
| 45° | 279 | 214 |
| 55° | 63 | 65 |
| 65° | 26 | 26 |
| 75° | 4 | 6 |
| 85° | 0 | 0 |
| 90° | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° |
|-------|------|
| 0° | 1135 |
| 2.5° | 1123 |
| 5° | 1099 |
| 7.5° | 1069 |
| 10° | 1025 |
| 12.5° | 962 |
| 15° | 894 |
| 17.5° | 833 |
| 20° | 776 |
| 22.5° | 722 |
| 25° | 671 |
| 27.5° | 628 |
| 30° | 591 |
| 32.5° | 556 |
| 35° | 519 |
| 37.5° | 479 |
| 40° | 428 |
| 42.5° | 358 |
| 45° | 279 |
| 47.5° | 202 |
| 50° | 137 |
| 52.5° | 91 |
| 55° | 63 |
| 57.5° | 49 |
| 60° | 40 |
| 62.5° | 33 |
| 65° | 26 |
| 67.5° | 19 |
| 70° | 13 |
| 72.5° | 8 |
| 75° | 4 |
| 77.5° | 2 |
| 80° | 1 |
| 82.5° | 1 |
| 85° | 0 |
| 87.5° | 0 |
| 90° | 0 |

(END OF REPORT)