

Scaled data based on original data using
LM-46-04 Photometric Testing of Indoor Luminaires Using High Intensity Discharge or
Incandescent Filament Lamps (Reaffirmed 2012)

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: H20062

Luminaire Tested: **L3239EP-LVR3239MB**

Issue Date: 3/3/2020



Test Information

Test Method: LM-46-04
Report Number: H20062
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: L3239EP-LVR3239MB
Description: HALO 18" RECTANGULAR TRACK FIXTURE
SPECULAR REFLECTOR WITH BLACK LOUVER
Light Source: (2) 39W TT 39 WATTS 2850 LUMENS EACH
TWIN TUBE COMPACT FLUORESCENT
Ballast/Driver: -

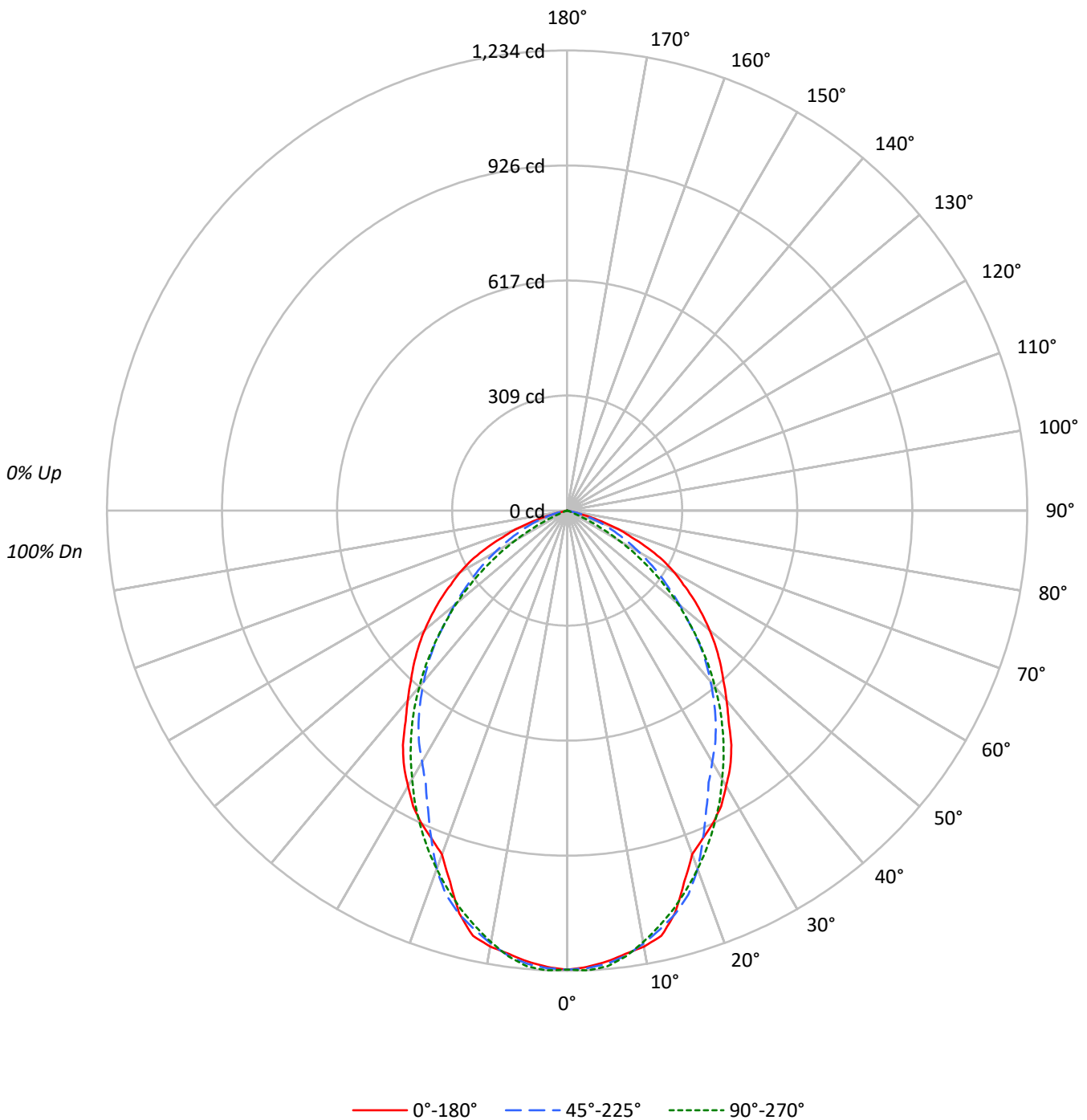
Summary

Lumens per Lamp: 2850 (2 lamps)
Luminaire Lumens: 2164.4 lumens
Efficiency: 38.0%
Efficacy: 33.8 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.04 / 1.11
Luminous Opening: Rectangular (W 1.52' x L: 0.47' x H: 0')
CIE Type: Direct

Input Watts (W): 64
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 | | | | | | | | | |
| 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 | 50 | 30 | 10 | 0 | | | | | | | | | | | | | |
| RCR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 45 | 45 | 45 | 45 | 44 | 44 | 44 | 44 | 42 | 42 | 42 | 40 | 40 | 40 | 39 | 39 | 39 | 38 | | | | | | 38 | | | | | | | | | | | | | |
| 1 | 42 | 41 | 40 | 38 | 41 | 40 | 39 | 38 | 38 | 37 | 37 | 37 | 36 | 36 | 36 | 35 | 34 | 34 | | | | | | 34 | | | | | | | | | | | | | |
| 2 | 39 | 37 | 34 | 33 | 38 | 36 | 34 | 32 | 35 | 33 | 32 | 33 | 32 | 31 | 32 | 31 | 30 | 29 | | | | | | 29 | | | | | | | | | | | | | |
| 3 | 36 | 33 | 30 | 28 | 35 | 32 | 30 | 28 | 31 | 29 | 27 | 30 | 28 | 27 | 29 | 28 | 27 | 26 | | | | | | 26 | | | | | | | | | | | | | |
| 4 | 34 | 30 | 27 | 25 | 33 | 29 | 26 | 24 | 28 | 26 | 24 | 27 | 25 | 24 | 27 | 25 | 23 | 23 | | | | | | 23 | | | | | | | | | | | | | |
| 5 | 31 | 27 | 24 | 22 | 30 | 26 | 24 | 22 | 26 | 23 | 21 | 25 | 23 | 21 | 24 | 22 | 21 | 20 | | | | | | 20 | | | | | | | | | | | | | |
| 6 | 29 | 24 | 21 | 19 | 28 | 24 | 21 | 19 | 23 | 21 | 19 | 23 | 21 | 19 | 22 | 20 | 19 | 18 | | | | | | 18 | | | | | | | | | | | | | |
| 7 | 27 | 22 | 19 | 17 | 26 | 22 | 19 | 17 | 22 | 19 | 17 | 21 | 19 | 17 | 21 | 19 | 17 | 16 | | | | | | 16 | | | | | | | | | | | | | |
| 8 | 25 | 21 | 18 | 16 | 25 | 20 | 18 | 16 | 20 | 17 | 16 | 19 | 17 | 15 | 19 | 17 | 15 | 15 | | | | | | 15 | | | | | | | | | | | | | |
| 9 | 24 | 19 | 16 | 14 | 23 | 19 | 16 | 14 | 18 | 16 | 14 | 18 | 16 | 14 | 18 | 16 | 14 | 13 | | | | | | 13 | | | | | | | | | | | | | |
| 10 | 22 | 18 | 15 | 13 | 22 | 18 | 15 | 13 | 17 | 15 | 13 | 17 | 15 | 13 | 17 | 14 | 13 | 12 | | | | | | 12 | | | | | | | | | | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 18548 | 18548 | 18548 |
| 5° | 18361 | 18452 | 18558 |
| 10° | 18161 | 18038 | 17977 |
| 15° | 17439 | 17470 | 17236 |
| 20° | 15729 | 16403 | 16403 |
| 25° | 15378 | 14680 | 15494 |
| 30° | 14840 | 13536 | 14458 |
| 35° | 14126 | 12783 | 13390 |
| 40° | 13080 | 11762 | 12116 |
| 45° | 12380 | 10611 | 10675 |
| 50° | 11697 | 9235 | 9071 |
| 55° | 10875 | 7986 | 7145 |
| 60° | 10035 | 6720 | 4821 |
| 65° | 8556 | 5419 | 2210 |
| 70° | 6432 | 4185 | 264 |
| 75° | 2620 | 2387 | 175 |
| 80° | 174 | 607 | 174 |
| 85° | 173 | 173 | 173 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 115.2 | 5.3 | 2.0 |
| 10°-20° | 311.5 | 14.4 | 5.5 |
| 20°-30° | 420.2 | 19.4 | 7.4 |
| 30°-40° | 450.5 | 20.8 | 7.9 |
| 40°-50° | 393.1 | 18.2 | 6.9 |
| 50°-60° | 286.0 | 13.2 | 5.0 |
| 60°-70° | 150.8 | 7.0 | 2.6 |
| 70°-80° | 36.0 | 1.7 | 0.6 |
| 80°-90° | 1.1 | 0.1 | 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° | 846.8 | 39.1 | 14.9 |
| 0°-40° | 1297.4 | 59.9 | 22.8 |
| 0°-60° | 1976.5 | 91.3 | 34.7 |
| 0°-90° | 2164.4 | 100.0 | 38.0 |
| 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° | 2164.4 | 100.0 | 38.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 1231 | 1231 | 1231 | 1231 | 1231 | |
| 5° | 1214 | 1218 | 1220 | 1224 | 1227 | 115 |
| 15° | 1118 | 1130 | 1120 | 1103 | 1105 | 310 |
| 25° | 925 | 903 | 883 | 936 | 932 | 425 |
| 35° | 768 | 738 | 695 | 718 | 728 | 477 |
| 45° | 581 | 534 | 498 | 463 | 501 | 448 |
| 55° | 414 | 365 | 304 | 266 | 272 | 370 |
| 65° | 240 | 209 | 152 | 95 | 62 | 236 |
| 75° | 45 | 48 | 41 | 5 | 3 | 58 |
| 85° | 1 | 1 | 1 | 1 | 1 | 1 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 |
| 95° | 0 | 0 | 0 | 0 | 0 | 0 |
| 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 |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|------|-------|------|-------|------|
| 0° | 1231 | 1231 | 1231 | 1231 | 1231 |
| 2.5° | 1225 | 1227 | 1228 | 1231 | 1234 |
| 5° | 1214 | 1218 | 1220 | 1224 | 1227 |
| 7.5° | 1199 | 1202 | 1204 | 1205 | 1206 |
| 10° | 1187 | 1188 | 1179 | 1175 | 1175 |
| 12.5° | 1168 | 1171 | 1150 | 1141 | 1141 |
| 15° | 1118 | 1130 | 1120 | 1103 | 1105 |
| 17.5° | 1044 | 1063 | 1080 | 1064 | 1065 |
| 20° | 981 | 989 | 1023 | 1023 | 1023 |
| 22.5° | 951 | 934 | 952 | 980 | 979 |
| 25° | 925 | 903 | 883 | 936 | 932 |
| 27.5° | 894 | 868 | 822 | 890 | 884 |
| 30° | 853 | 827 | 778 | 837 | 831 |
| 32.5° | 814 | 780 | 739 | 779 | 781 |
| 35° | 768 | 738 | 695 | 718 | 728 |
| 37.5° | 711 | 687 | 647 | 651 | 675 |
| 40° | 665 | 628 | 598 | 585 | 616 |
| 42.5° | 621 | 580 | 550 | 520 | 560 |
| 45° | 581 | 534 | 498 | 463 | 501 |
| 47.5° | 541 | 491 | 442 | 413 | 442 |
| 50° | 499 | 449 | 394 | 366 | 387 |
| 52.5° | 456 | 406 | 347 | 316 | 329 |
| 55° | 414 | 365 | 304 | 266 | 272 |
| 57.5° | 370 | 323 | 263 | 220 | 216 |
| 60° | 333 | 283 | 223 | 175 | 160 |
| 62.5° | 290 | 247 | 187 | 133 | 109 |
| 65° | 240 | 209 | 152 | 95 | 62 |
| 67.5° | 187 | 162 | 121 | 61 | 20 |
| 70° | 146 | 120 | 95 | 32 | 6 |
| 72.5° | 97 | 90 | 66 | 13 | 4 |
| 75° | 45 | 48 | 41 | 5 | 3 |
| 77.5° | 7 | 14 | 22 | 3 | 3 |
| 80° | 2 | 2 | 7 | 2 | 2 |
| 82.5° | 1 | 1 | 1 | 1 | 1 |
| 85° | 1 | 1 | 1 | 1 | 1 |
| 87.5° | 0 | 0 | 1 | 1 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 |
| 92.5° | 0 | 0 | 0 | 0 | 0 |
| 95° | 0 | 0 | 0 | 0 | 0 |
| 97.5° | 0 | 0 | 0 | 0 | 0 |
| 100° | 0 | 0 | 0 | 0 | 0 |
| 102.5° | 0 | 0 | 0 | 0 | 0 |
| 105° | 0 | 0 | 0 | 0 | 0 |
| 107.5° | 0 | 0 | 0 | 0 | 0 |
| 110° | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|----|-------|-----|-------|-----|
| 112.5° | 0 | 0 | 0 | 0 | 0 |
| 115° | 0 | 0 | 0 | 0 | 0 |
| 117.5° | 0 | 0 | 0 | 0 | 0 |
| 120° | 0 | 0 | 0 | 0 | 0 |
| 122.5° | 0 | 0 | 0 | 0 | 0 |
| 125° | 0 | 0 | 0 | 0 | 0 |
| 127.5° | 0 | 0 | 0 | 0 | 0 |
| 130° | 0 | 0 | 0 | 0 | 0 |
| 132.5° | 0 | 0 | 0 | 0 | 0 |
| 135° | 0 | 0 | 0 | 0 | 0 |
| 137.5° | 0 | 0 | 0 | 0 | 0 |
| 140° | 0 | 0 | 0 | 0 | 0 |
| 142.5° | 0 | 0 | 0 | 0 | 0 |
| 145° | 0 | 0 | 0 | 0 | 0 |
| 147.5° | 0 | 0 | 0 | 0 | 0 |
| 150° | 0 | 0 | 0 | 0 | 0 |
| 152.5° | 0 | 0 | 0 | 0 | 0 |
| 155° | 0 | 0 | 0 | 0 | 0 |
| 157.5° | 0 | 0 | 0 | 0 | 0 |
| 160° | 0 | 0 | 0 | 0 | 0 |
| 162.5° | 0 | 0 | 0 | 0 | 0 |
| 165° | 0 | 0 | 0 | 0 | 0 |
| 167.5° | 0 | 0 | 0 | 0 | 0 |
| 170° | 0 | 0 | 0 | 0 | 0 |
| 172.5° | 0 | 0 | 0 | 0 | 0 |
| 175° | 0 | 0 | 0 | 0 | 0 |
| 177.5° | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)