

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: P31431

Luminaire Tested: **PD6H113E-62H1GC_13DTT**

Issue Date: 03/03/2020



Test Information

Test Method: LM-79-08
Report Number: P31431
Test Lab: INNOVATION CENTER-P3
Issue Date: 03/03/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO COMMERCIAL
Catalog Number: PD6H113E-62H1GC_13DTT
Description: HALO 6-INCH APERTURE LENSED DOWNLIGHT, HORIZONTAL LAMP.
PRISMATIC GLASS LENS WITH SPECULAR CLEAR TRIM, SLOTS COVERED.
Light Source: (1) GE G24Q-1 SINGLE END FOUR PIN BASE DTT CFL LAMP 2700K
F13DBX/SPX827/4P 13 WATTS
Ballast/Driver: (1) SYLVANIA ELECTRONIC BALLAST
Sylvania QTP 1/2x13CF/UNV/DM

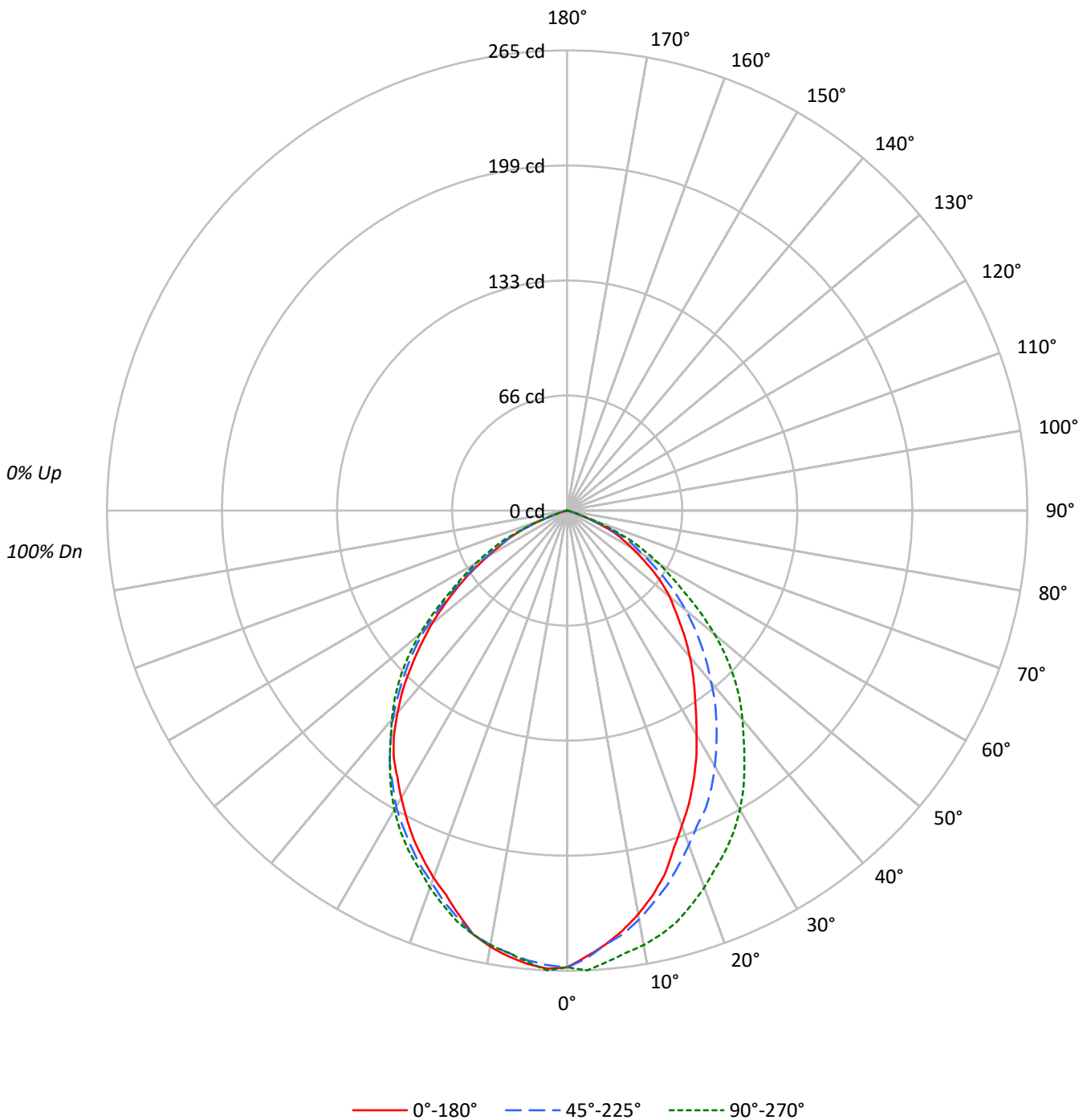
Summary

Lumens per Lamp: 900 (1 lamp)
Luminaire Lumens: 484.8 lumens
Efficiency: 53.9%
Efficacy: 31.3 lumens/watt
Spacing Criteria (0/90/45): 1 / 1.14 / 1.17
Luminous Opening: Vertical Cylinder (Dia: 0.53' x H: 0.1')
CIE Type: Direct

Input Watts (W): 15.5
Input Voltage (V): 120.09
Input Current (Ain): 0.1295
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 | 64 | 64 | 64 | 64 | 63 | 63 | 63 | 63 | 60 | 60 | 60 | 57 | 57 | 57 | 55 | 55 | 55 | 54 |
| 1 | 60 | 58 | 56 | 55 | 59 | 57 | 55 | 54 | 55 | 53 | 52 | 52 | 51 | 50 | 51 | 50 | 49 | 48 |
| 2 | 56 | 52 | 49 | 46 | 54 | 51 | 48 | 46 | 49 | 47 | 45 | 47 | 46 | 44 | 46 | 44 | 43 | 42 |
| 3 | 51 | 47 | 43 | 40 | 50 | 46 | 42 | 40 | 44 | 41 | 39 | 43 | 40 | 38 | 42 | 39 | 38 | 37 |
| 4 | 47 | 42 | 38 | 35 | 46 | 41 | 37 | 35 | 40 | 37 | 34 | 39 | 36 | 34 | 38 | 35 | 33 | 32 |
| 5 | 44 | 38 | 34 | 31 | 43 | 37 | 33 | 30 | 36 | 33 | 30 | 35 | 32 | 30 | 34 | 32 | 30 | 28 |
| 6 | 41 | 35 | 30 | 27 | 40 | 34 | 30 | 27 | 33 | 30 | 27 | 32 | 29 | 27 | 31 | 29 | 26 | 25 |
| 7 | 38 | 32 | 27 | 24 | 37 | 31 | 27 | 24 | 30 | 27 | 24 | 30 | 26 | 24 | 29 | 26 | 24 | 23 |
| 8 | 36 | 29 | 25 | 22 | 35 | 29 | 25 | 22 | 28 | 24 | 22 | 27 | 24 | 22 | 27 | 24 | 22 | 21 |
| 9 | 33 | 27 | 23 | 20 | 33 | 26 | 23 | 20 | 26 | 22 | 20 | 25 | 22 | 20 | 25 | 22 | 20 | 19 |
| 10 | 31 | 25 | 21 | 18 | 31 | 25 | 21 | 18 | 24 | 21 | 18 | 24 | 20 | 18 | 23 | 20 | 18 | 17 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° |
|-----|-------|-------|-------|
| 0° | 12771 | 12771 | 12771 |
| 5° | 11984 | 12461 | 12509 |
| 10° | 11165 | 12017 | 12064 |
| 15° | 10251 | 11574 | 11385 |
| 20° | 9173 | 10980 | 10694 |
| 25° | 8289 | 10410 | 10073 |
| 30° | 7339 | 9802 | 9408 |
| 35° | 6498 | 9036 | 8833 |
| 40° | 5806 | 8286 | 8022 |
| 45° | 5097 | 7534 | 7036 |
| 50° | 4525 | 6523 | 5994 |
| 55° | 3784 | 5235 | 4857 |
| 60° | 2951 | 4186 | 3637 |
| 65° | 2277 | 3036 | 2656 |
| 70° | 856 | 1199 | 1113 |
| 75° | 99 | 198 | 198 |
| 80° | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 |



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ZONAL LUMENS:

CANDELA DISTRIBUTION:

| Zone | Lumens | % Fixture | % Lamp | | 0° | 45° | 90° | 135° | 180° | Flux |
|-----------|--------|-----------|--------|-----|-----|-----|-----|------|------|------|
| 0°-10° | 24.3 | 5.0 | 2.7 | 0° | 263 | 263 | 263 | 263 | 263 | |
| 10°-20° | 66.1 | 13.6 | 7.3 | 5° | 251 | 251 | 261 | 260 | 262 | 24 |
| 20°-30° | 93.0 | 19.2 | 10.3 | 15° | 217 | 223 | 245 | 243 | 241 | 60 |
| 30°-40° | 102.5 | 21.1 | 11.4 | 25° | 172 | 189 | 216 | 213 | 209 | 79 |
| 40°-50° | 93.8 | 19.4 | 10.4 | 35° | 128 | 150 | 178 | 178 | 174 | 80 |
| 50°-60° | 67.5 | 13.9 | 7.5 | 45° | 92 | 109 | 136 | 132 | 127 | 71 |
| 60°-70° | 33.7 | 7.0 | 3.7 | 55° | 60 | 69 | 83 | 80 | 77 | 54 |
| 70°-80° | 3.9 | 0.8 | 0.4 | 65° | 30 | 34 | 40 | 36 | 35 | 27 |
| 80°-90° | 0.0 | 0.0 | 0.0 | 75° | 1 | 2 | 2 | 2 | 2 | 3 |
| 90°-100° | 0.0 | 0.0 | 0.0 | 85° | 0 | 0 | 0 | 0 | 0 | 0 |
| 100°-110° | 0.0 | 0.0 | 0.0 | 90° | 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° | 183.4 | 37.8 | 20.4 | | | | | | | |
| 0°-40° | 285.8 | 59.0 | 31.8 | | | | | | | |
| 0°-60° | 447.2 | 92.2 | 49.7 | | | | | | | |
| 0°-90° | 484.8 | 100.0 | 53.9 | | | | | | | |
| 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° | 484.8 | 100.0 | 53.9 | | | | | | | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|-----|-------|-----|-------|-----|--------|------|--------|------|
| 0° | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 |
| 2.5° | 257 | 257 | 258 | 263 | 265 | 265 | 262 | 263 | 264 |
| 5° | 251 | 251 | 251 | 258 | 261 | 262 | 260 | 262 | 262 |
| 7.5° | 244 | 244 | 246 | 253 | 257 | 259 | 257 | 258 | 259 |
| 10° | 236 | 236 | 239 | 248 | 254 | 256 | 254 | 255 | 255 |
| 12.5° | 227 | 228 | 231 | 243 | 250 | 253 | 250 | 249 | 250 |
| 15° | 217 | 218 | 223 | 236 | 245 | 247 | 243 | 241 | 241 |
| 17.5° | 204 | 208 | 214 | 228 | 238 | 240 | 236 | 233 | 232 |
| 20° | 193 | 198 | 205 | 220 | 231 | 233 | 228 | 225 | 225 |
| 22.5° | 183 | 188 | 196 | 212 | 223 | 225 | 221 | 217 | 217 |
| 25° | 172 | 177 | 189 | 205 | 216 | 219 | 213 | 209 | 209 |
| 27.5° | 161 | 166 | 180 | 197 | 208 | 212 | 205 | 200 | 200 |
| 30° | 149 | 155 | 170 | 188 | 199 | 203 | 197 | 191 | 191 |
| 32.5° | 138 | 144 | 160 | 179 | 189 | 194 | 187 | 181 | 182 |
| 35° | 128 | 134 | 150 | 169 | 178 | 183 | 178 | 170 | 174 |
| 37.5° | 119 | 124 | 140 | 157 | 167 | 172 | 167 | 160 | 164 |
| 40° | 110 | 116 | 129 | 146 | 157 | 161 | 156 | 150 | 152 |
| 42.5° | 101 | 107 | 119 | 136 | 147 | 150 | 144 | 140 | 140 |
| 45° | 92 | 98 | 109 | 125 | 136 | 138 | 132 | 128 | 127 |
| 47.5° | 84 | 90 | 99 | 114 | 124 | 125 | 120 | 116 | 114 |
| 50° | 77 | 81 | 89 | 102 | 111 | 112 | 107 | 103 | 102 |
| 52.5° | 69 | 72 | 79 | 90 | 97 | 97 | 93 | 91 | 89 |
| 55° | 60 | 63 | 69 | 79 | 83 | 82 | 80 | 77 | 77 |
| 57.5° | 51 | 54 | 59 | 68 | 71 | 69 | 67 | 65 | 65 |
| 60° | 43 | 46 | 50 | 58 | 61 | 58 | 55 | 54 | 53 |
| 62.5° | 36 | 38 | 43 | 49 | 50 | 48 | 44 | 43 | 43 |
| 65° | 30 | 32 | 34 | 39 | 40 | 38 | 36 | 34 | 35 |
| 67.5° | 19 | 21 | 22 | 25 | 26 | 25 | 25 | 24 | 25 |
| 70° | 10 | 11 | 12 | 14 | 14 | 13 | 14 | 12 | 13 |
| 72.5° | 4 | 5 | 6 | 6 | 6 | 6 | 6 | 6 | 6 |
| 75° | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 2 | 2 |
| 77.5° | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 80° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 82.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 85° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 87.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)