

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: LUMARK

Report Number: E429-107

Luminaire Tested: **MHQP-S4/16/GL-175**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: E429-107
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: MHQP-S4/16/GL-175
Description: RECESSED COMMERCIAL W/SPECULAR LOUVERS
Light Source: 175 WATT MH COATED ED-28
Ballast/Driver: -

Summary

Lumens per Lamp: 15000 (1 lamp)
Luminaire Lumens: 7990.9 lumens
Efficiency: 53.3%
Efficacy: 38.1 lumens/watt
Luminous Opening: Rectangular (W 1.75' x L: 1.75' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B3 - U0 - G0

Input Watts (W): 210
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

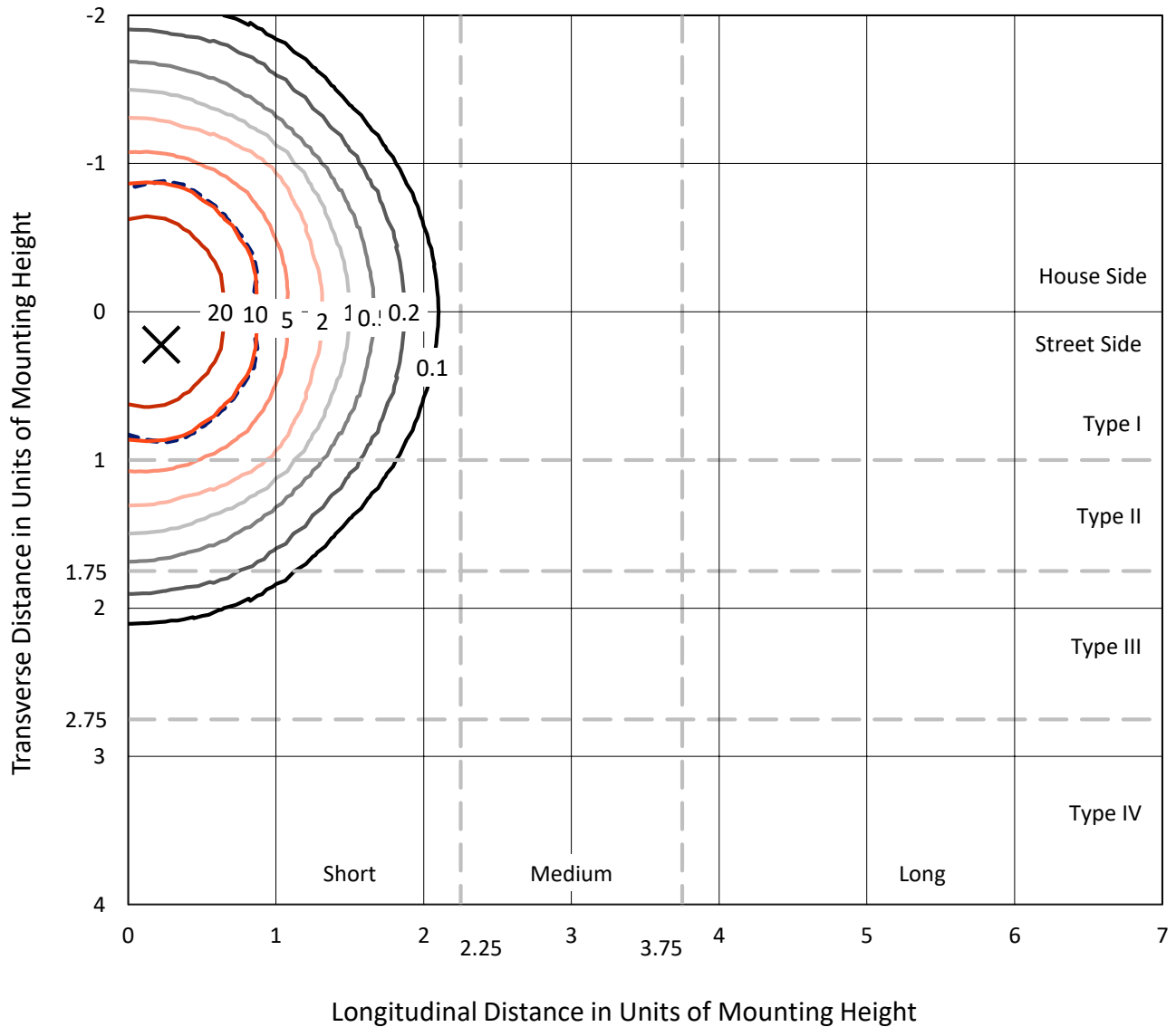


REPORT NUMBER: E429-107

CATALOG NUMBER: MHQP-S4/16/GL-175

Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

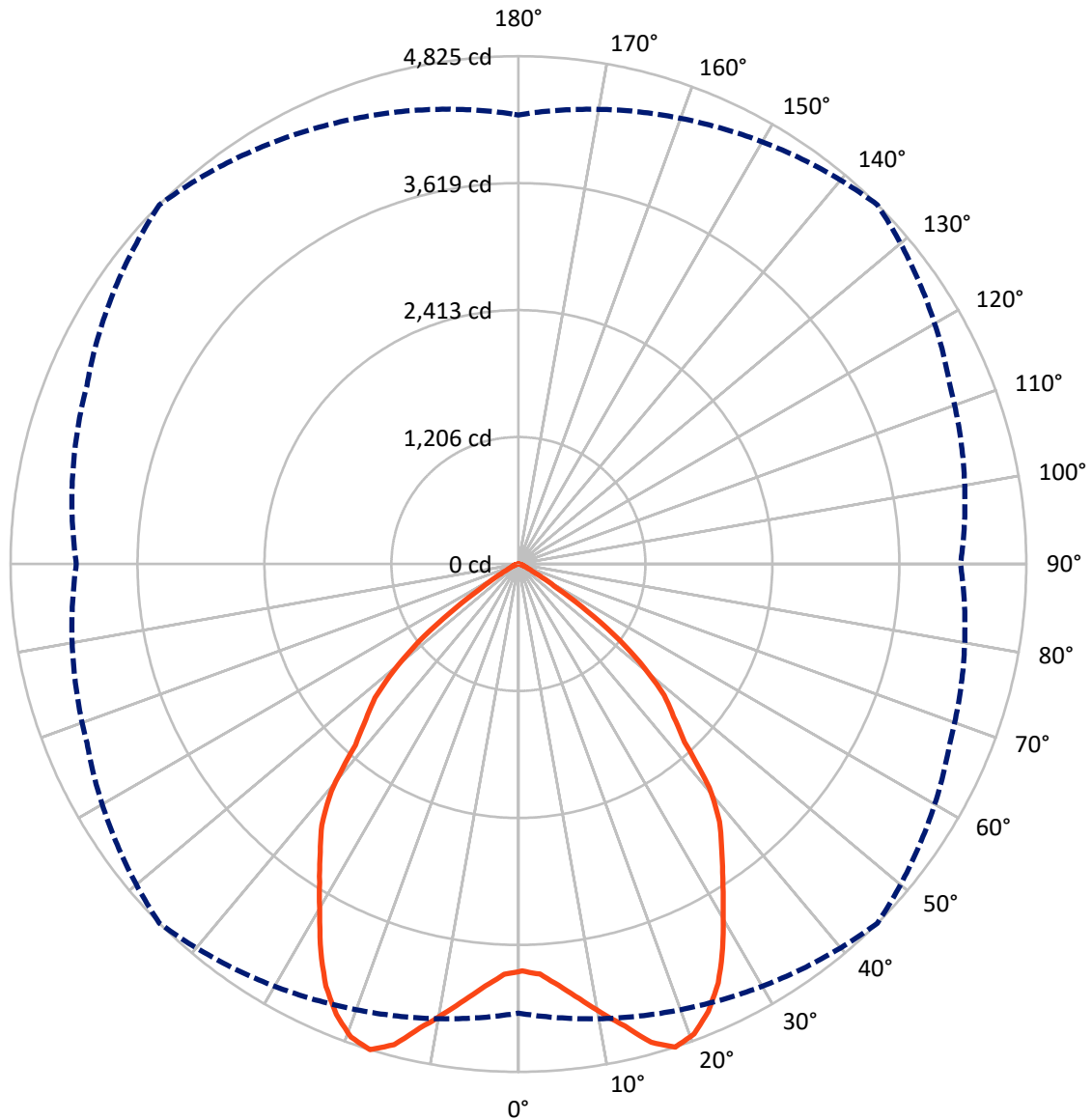


Based on 10 foot mounting height. Maximum calculated value = 41.4 fc
 Type V - Short - Full Cutoff

REPORT NUMBER: E429-107

CATALOG NUMBER: MHQP-S4/16/GL-175

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 17.5-Deg Vertical

REPORT NUMBER: E429-107

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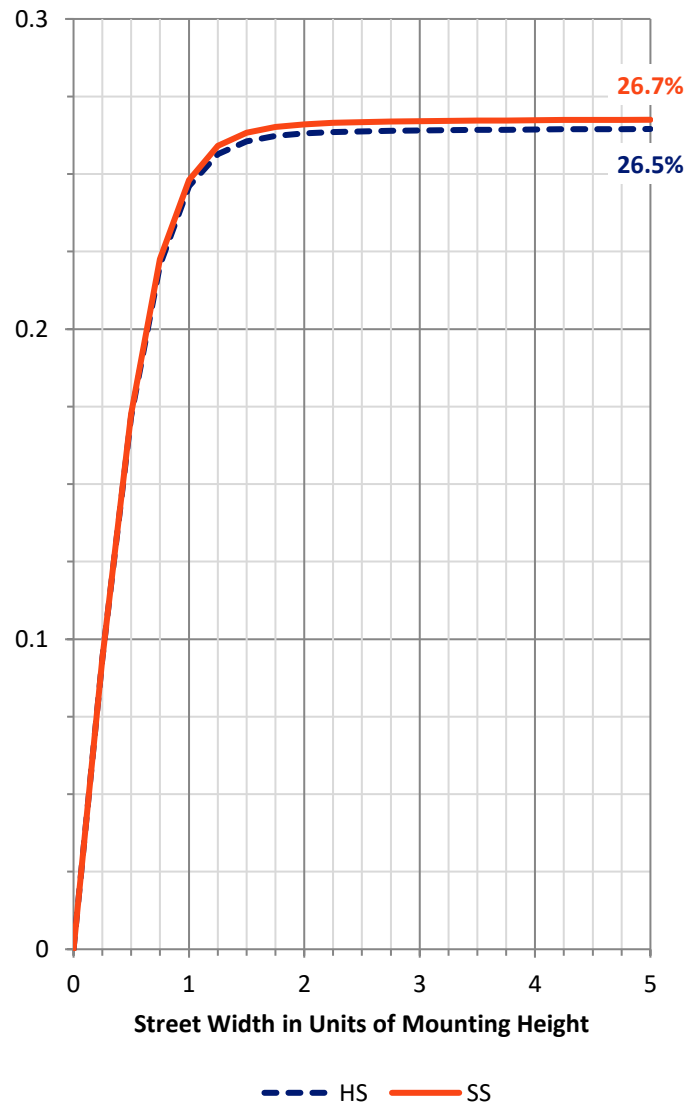
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|--------|----------|--------|--------|
| House Side | Lumens | 3995.5 | 0.0 | 3995.5 |
| | % Lamp | 26.6 | 0.0 | 26.6 |
| Street Side | Lumens | 3995.5 | 0.0 | 3995.5 |
| | % Lamp | 26.6 | 0.0 | 26.6 |
| Total | Lumens | 7990.9 | 0.0 | 7990.9 |
| | % Lamp | 53.3 | 0.0 | 53.3 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 391.4 | 4.9 | 2.6 |
| 10°-20° | 1265.0 | 15.8 | 8.4 |
| 20°-30° | 1947.3 | 24.4 | 13.0 |
| 30°-40° | 2018.5 | 25.3 | 13.5 |
| 40°-50° | 1547.4 | 19.4 | 10.3 |
| 50°-60° | 648.8 | 8.1 | 4.3 |
| 60°-70° | 128.8 | 1.6 | 0.9 |
| 70°-80° | 37.2 | 0.5 | 0.2 |
| 80°-90° | 6.5 | 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°-90° | 7990.9 | 100.0 | 53.3 |
| 0°-180° | 7990.9 | 100.0 | 53.3 |



REPORT NUMBER: E429-107

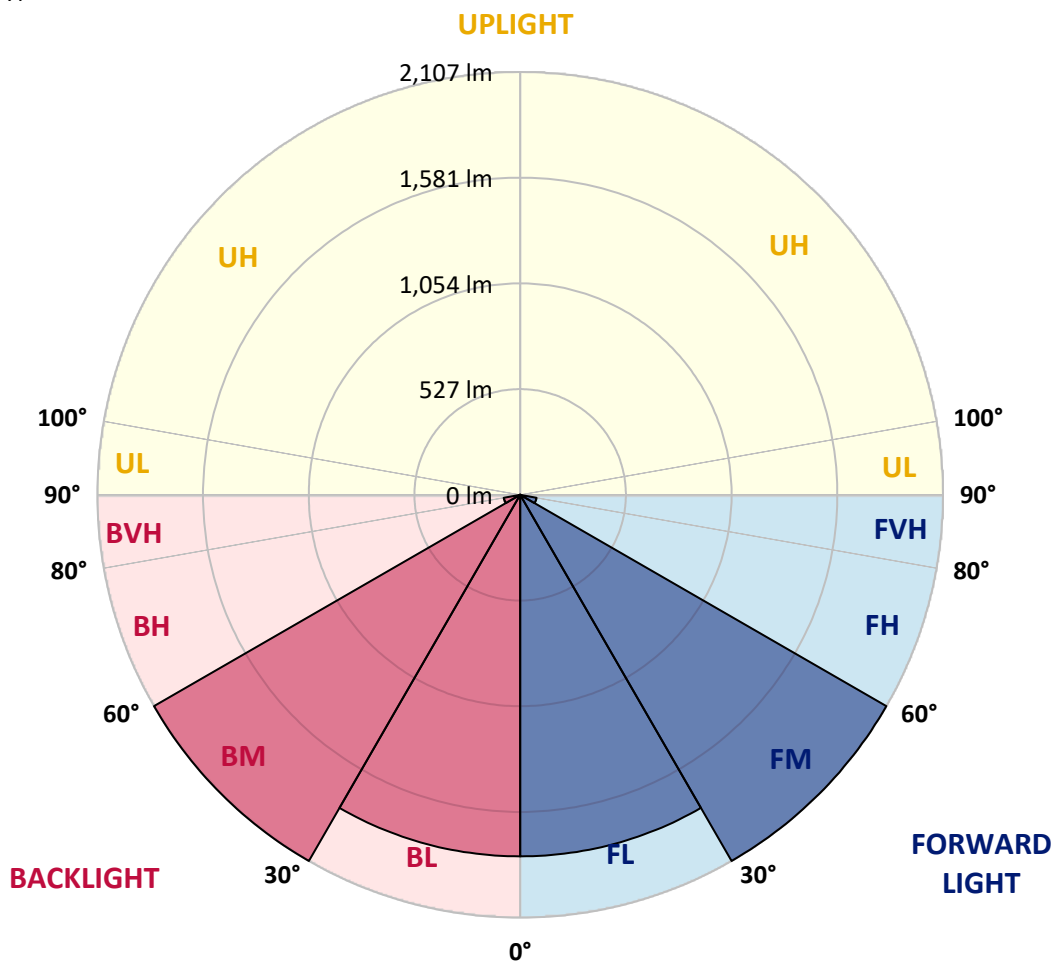
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Lamp | Zone Rating/Lumen Limit | | |
|---------------|-------------|--------|--------|-------------------------|------|--------|
| | | | | B | U | G |
| FL | (0°-30°) | 1801.9 | 12.0 | | | |
| FM | (30°-60°) | 2107.4 | 14.0 | | | |
| FH | (60°-80°) | 83.0 | 0.6 | | | G0/660 |
| FVH | (80°-90°) | 3.2 | 0.0 | | | G0/10 |
| BL | (0°-30°) | 1801.9 | 12.0 | B3/2500 | | |
| BM | (30°-60°) | 2107.4 | 14.0 | B2/2500 | | |
| BH | (60°-80°) | 83.0 | 0.6 | B0/110 | | G0/660 |
| BVH | (80°-90°) | 3.2 | 0.0 | | | G0/10 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |
| Trapped Light | | 7009.1 | 46.7 | | | |

BUG Rating: B3-U0-G0

Type V Short





REPORT NUMBER: E429-107

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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° |
|-------|------|-------|------|-------|------|--------|------|--------|------|
| 0° | 3866 | 3866 | 3866 | 3866 | 3866 | 3866 | 3866 | 3866 | 3866 |
| 2.5° | 3896 | 3893 | 3901 | 3899 | 3898 | 3899 | 3901 | 3893 | 3896 |
| 5° | 3973 | 3995 | 4022 | 4022 | 4025 | 4022 | 4022 | 3995 | 3973 |
| 7.5° | 4076 | 4110 | 4171 | 4165 | 4138 | 4165 | 4171 | 4110 | 4076 |
| 10° | 4218 | 4265 | 4336 | 4315 | 4272 | 4315 | 4336 | 4265 | 4218 |
| 12.5° | 4341 | 4448 | 4507 | 4483 | 4383 | 4483 | 4507 | 4448 | 4341 |
| 15° | 4354 | 4538 | 4716 | 4518 | 4337 | 4518 | 4716 | 4538 | 4354 |
| 17.5° | 4267 | 4536 | 4825 | 4437 | 4200 | 4437 | 4825 | 4536 | 4267 |
| 20° | 4111 | 4429 | 4767 | 4303 | 4033 | 4303 | 4767 | 4429 | 4111 |
| 22.5° | 4016 | 4320 | 4616 | 4217 | 3975 | 4217 | 4616 | 4320 | 4016 |
| 25° | 3973 | 4340 | 4409 | 4256 | 3915 | 4256 | 4409 | 4340 | 3973 |
| 27.5° | 3893 | 4357 | 4134 | 4285 | 3851 | 4285 | 4134 | 4357 | 3893 |
| 30° | 3653 | 4219 | 3832 | 4179 | 3671 | 4179 | 3832 | 4219 | 3653 |
| 32.5° | 3182 | 3845 | 3565 | 3854 | 3181 | 3854 | 3565 | 3845 | 3182 |
| 35° | 2817 | 3333 | 3323 | 3309 | 2761 | 3309 | 3323 | 3333 | 2817 |
| 37.5° | 2565 | 2930 | 3105 | 2862 | 2501 | 2862 | 3105 | 2930 | 2565 |
| 40° | 2371 | 2739 | 2794 | 2664 | 2332 | 2664 | 2794 | 2739 | 2371 |
| 42.5° | 2145 | 2481 | 2313 | 2458 | 2133 | 2458 | 2313 | 2481 | 2145 |
| 45° | 1836 | 2121 | 2066 | 2124 | 1843 | 2124 | 2066 | 2121 | 1836 |
| 47.5° | 1495 | 1706 | 1863 | 1736 | 1477 | 1736 | 1863 | 1706 | 1495 |
| 50° | 1150 | 1270 | 1557 | 1309 | 1170 | 1309 | 1557 | 1270 | 1150 |
| 52.5° | 856 | 890 | 1206 | 912 | 888 | 912 | 1206 | 890 | 856 |
| 55° | 668 | 642 | 798 | 651 | 690 | 651 | 798 | 642 | 668 |
| 57.5° | 502 | 468 | 436 | 467 | 490 | 467 | 436 | 468 | 502 |
| 60° | 319 | 309 | 258 | 268 | 264 | 268 | 258 | 309 | 319 |
| 62.5° | 178 | 189 | 145 | 153 | 165 | 153 | 145 | 189 | 178 |
| 65° | 115 | 113 | 98 | 110 | 116 | 110 | 98 | 113 | 115 |
| 67.5° | 85 | 78 | 75 | 81 | 87 | 81 | 75 | 78 | 85 |
| 70° | 62 | 58 | 54 | 61 | 67 | 61 | 54 | 58 | 62 |
| 72.5° | 45 | 43 | 41 | 48 | 51 | 48 | 41 | 43 | 45 |
| 75° | 34 | 32 | 32 | 35 | 38 | 35 | 32 | 32 | 34 |
| 77.5° | 24 | 23 | 23 | 26 | 28 | 26 | 23 | 23 | 24 |
| 80° | 17 | 16 | 15 | 17 | 19 | 17 | 15 | 16 | 17 |
| 82.5° | 10 | 9 | 9 | 10 | 11 | 10 | 9 | 9 | 10 |
| 85° | 5 | 4 | 4 | 5 | 5 | 5 | 4 | 4 | 5 |
| 87.5° | 1 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)