



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300

Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
Auroralight Inc

2742 Loker Ave W
#100
Carlsbad, CA 92010-6619
United States

Catalog Number
H2O-P-UF-27 (75° OPTIC, 2700K)

Order Number
12250114
Test Number
12250114.115

Report Date

2018-05-09

Prepared By

Sean Gregory, Project Handler

Approved By

Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Cylindrical brass housing with clear glass lens.
Lamp: One (1) Cree MHD-E 2700K LED with 75°, ultra flood optic
Mounting: Flood
Ballast/Driver: Integrated
Note: This report has been pro-rated using data from report numbers 11912334.04, 12250114.01, 12250114.02, 12250114.03, 12250114.04, 12250114.05, and 12250114.06 to account for differences in color temperature.

Luminaire



Luminaire Characteristics
Luminous Diameter: 1.25 in.

Summary of Results

| | |
|-------------------------|--------------------|
| Roadway Classification: | Type V, Very Short |
| Cutoff Classification: | Full Cutoff |
| BUG Rating: | B0 U0 G0 |

Test Conditions

| | |
|-------------------|-----------|
| Test Temperature: | 25.7 °C |
| Voltage: | 11.85 VAC |
| Current: | 0.3737 A |
| Power: | 4.347 W |
| Power Factor: | 0.981 |
| Frequency: | 60 Hz |
| Current THD: | 10.3 % |

Tested in 30 planes left side, 30 planes right side, left and right averaged
Vertical test increments are 2.5 degrees
Test distance exceeds five times the greatest luminous opening of luminaire

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 25.7 °C | 11.85 VAC | 0.3737 A | 4.347 W | 0.981 | 60 Hz | 10.3 % |

Summary of Results

Spacing Criteria

0-180: 1.20
90-270: 1.20

Total Lumen Output:

255.3 Lumens

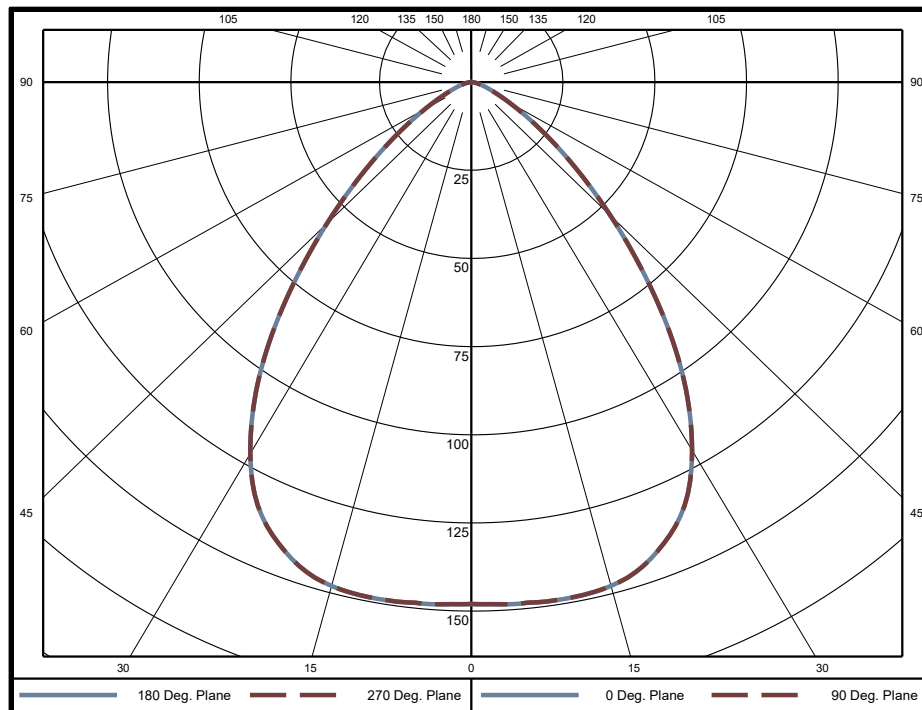
Luminaire Efficacy:

58.7 lm/w

Maximum Candela:

149 Candela

Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5 | 3.55 | 1.4% | 60-65 | 4.94 | 1.9% | 120-125 | 0 | 0.0% |
| 5-10 | 10.63 | 4.2% | 65-70 | 2.95 | 1.2% | 125-130 | 0 | 0.0% |
| 10-15 | 17.61 | 6.9% | 70-75 | 1.78 | 0.7% | 130-135 | 0 | 0.0% |
| 15-20 | 24.10 | 9.4% | 75-80 | 1.02 | 0.4% | 135-140 | 0 | 0.0% |
| 20-25 | 29.38 | 11.5% | 80-85 | 0.45 | 0.2% | 140-145 | 0.00 | 0.0% |
| 25-30 | 32.66 | 12.8% | 85-90 | 0.07 | 0.0% | 145-150 | 0.00 | 0.0% |
| 30-35 | 32.81 | 12.9% | 90-95 | 0 | 0.0% | 150-155 | 0.00 | 0.0% |
| 35-40 | 29.81 | 11.7% | 95-100 | 0 | 0.0% | 155-160 | 0.00 | 0.0% |
| 40-45 | 24.38 | 9.5% | 100-105 | 0 | 0.0% | 160-165 | 0.00 | 0.0% |
| 45-50 | 18.30 | 7.2% | 105-110 | 0 | 0.0% | 165-170 | 0.00 | 0.0% |
| 50-55 | 12.71 | 5.0% | 110-115 | 0 | 0.0% | 170-175 | 0.00 | 0.0% |
| 55-60 | 8.17 | 3.2% | 115-120 | 0 | 0.0% | 175-180 | 0.00 | 0.0% |

| Zone | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40 | 181 | 70.7% |
| 0-60 | 244 | 95.6% |
| 0-90 | 255 | 100.0% |
| 90-180 | 0 | 0.0% |



Candela Tabulation
Horizontal Angle (Degrees)

| Vertical Angle (Degrees) | 0 | 22.5 | 45 | 67.5 | 90 | 112.5 | 135 | 157.5 | 180 | 202.5 | 225 | 247.5 | 270 | 292.5 | 315 | 337.5 |
|--------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 | 148.0 |
| | 5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 | 148.5 |
| | 10 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 | 148.7 |
| | 15 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 | 147.9 |
| | 20 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 | 143.9 |
| | 25 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 | 135.9 |
| | 30 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 | 121.3 |
| | 35 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 | 101.3 |
| | 40 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 | 77.6 |
| | 45 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 | 55.0 |
| | 50 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 | 36.5 |
| | 55 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 | 22.8 |
| | 60 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 | 13.3 |
| | 65 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 | 7.6 |
| | 70 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 | 4.4 |
| | 75 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 | 2.6 |
| | 80 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| | 85 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| | 90 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 95 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 100 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 105 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 110 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 115 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 120 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 125 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 130 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 135 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 140 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 145 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 150 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 155 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 160 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 165 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 170 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 175 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 180 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

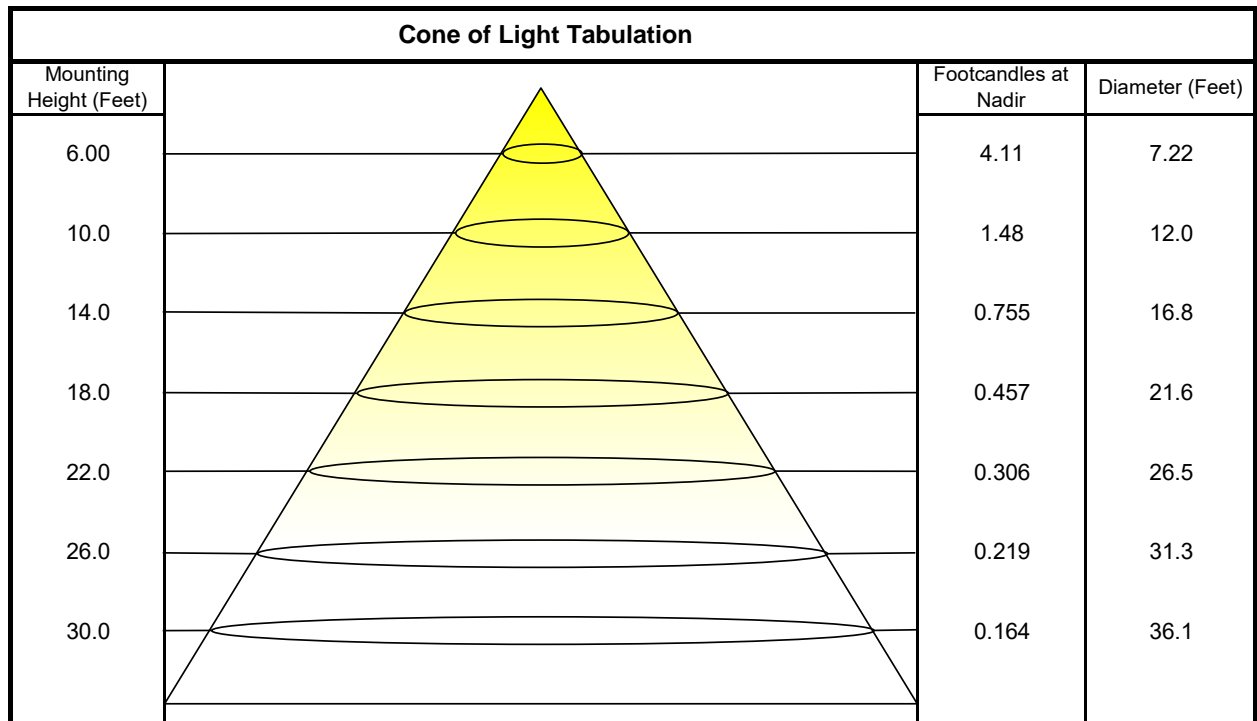
| Vertical Angle (Degrees) | 0 | 45 | 90 |
|--------------------------|----|--------|--------|
| | 0 | 186900 | 186900 |
| | 45 | 98250 | 98250 |
| | 55 | 50120 | 50120 |
| | 65 | 22590 | 22590 |
| | 75 | 12450 | 12450 |
| | 85 | 5652 | 5652 |



Utilization of Lumens - Zonal Cavity Method

| Effective Floor Cavity Reflectance 20% | | | | | | | | | | | | | | | | | | |
|--|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Ceiling Cavity Reflectance | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
| Wall Reflectance | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| Room Cavity Ratio (RCR) | ** Values are expressed as Lumens delivered to the task surface ** | | | | | | | | | | | | | | | | | |
| 0 | 304 | 304 | 304 | 304 | 297 | 297 | 297 | 297 | 284 | 284 | 284 | 272 | 272 | 272 | 261 | 261 | 261 | 255 |
| 1 | 286 | 277 | 269 | 262 | 279 | 271 | 264 | 258 | 261 | 255 | 250 | 251 | 247 | 242 | 242 | 239 | 235 | 231 |
| 2 | 267 | 251 | 238 | 228 | 261 | 247 | 235 | 225 | 238 | 228 | 220 | 230 | 222 | 215 | 223 | 216 | 211 | 206 |
| 3 | 249 | 228 | 213 | 200 | 243 | 225 | 210 | 198 | 218 | 205 | 195 | 211 | 201 | 192 | 205 | 196 | 189 | 184 |
| 4 | 232 | 208 | 191 | 177 | 227 | 205 | 189 | 176 | 199 | 185 | 174 | 194 | 182 | 172 | 189 | 178 | 170 | 165 |
| 5 | 217 | 190 | 172 | 158 | 212 | 188 | 170 | 158 | 183 | 168 | 156 | 178 | 165 | 154 | 174 | 162 | 153 | 148 |
| 6 | 203 | 175 | 156 | 143 | 199 | 173 | 155 | 142 | 168 | 153 | 141 | 165 | 151 | 140 | 161 | 148 | 139 | 134 |
| 7 | 190 | 161 | 142 | 129 | 186 | 159 | 141 | 129 | 156 | 140 | 128 | 152 | 138 | 127 | 149 | 136 | 126 | 122 |
| 8 | 178 | 149 | 130 | 118 | 175 | 147 | 130 | 117 | 144 | 128 | 117 | 141 | 127 | 116 | 139 | 125 | 116 | 111 |
| 9 | 168 | 138 | 120 | 108 | 165 | 137 | 119 | 108 | 134 | 118 | 107 | 132 | 117 | 107 | 129 | 116 | 106 | 102 |
| 10 | 158 | 129 | 111 | 99 | 155 | 127 | 111 | 99 | 125 | 110 | 99 | 123 | 109 | 98 | 121 | 108 | 98 | 94 |

| Beam and Field Information | |
|----------------------------|---------------|
| CIE Type: | Direct |
| Center Beam Intensity: | 148.0 Candela |
| Central Cone Intensity: | 148 Candela |
| Beam Flux: | 184.6 Lumens |
| Beam Angle (0-180): | 81.5 Degrees |
| Beam Angle (90-270): | 81.5 Degrees |
| Field Angle (0-180): | 118.1 Degrees |
| Field Angle (90-270): | 118.1 Degrees |





IES "BUG" Rating
(Back Light, Uplight, Glare)
Per IES TM-15-11



Luminaire Classification System (LCS)

| LCS | Zone | Lumens | Luminaire % |
|-------------------|-----------------|--------|-------------|
| FL | (0-30) | 59.0 | 23.1% |
| FM | (30-60) | 63.1 | 24.7% |
| FH | (60-80) | 5.3 | 2.1% |
| FVH | (80-90) | 0.2 | 0.1% |
| BL | (0-30) | 59.0 | 23.1% |
| BM | (30-60) | 63.1 | 24.7% |
| BH | (60-80) | 5.3 | 2.1% |
| BVH | (80-90) | 0.2 | 0.1% |
| UL | (90-100) | 0.0 | 0.0% |
| UH | (100-180) | 0.0 | 0.0% |
| Total | | 255.5 | 100.0% |
| BUG Rating | B0 U0 G0 | | |