



# LUMINAIRE TESTING LABORATORY, INC.

SUSTAINING MEMBER of the IESNA

905 Harrison Street · Allentown, PA 18103 · 610-770-1044 · Fax 610-770-8912 · www.LuminaireTesting.com

LTL NUMBER: 13911 DATE: 10-27-2008  
 PREPARED FOR: USA ILLUMINATION  
 CATALOG NUMBER: 1656-TRIM/BL150X-HOUSING/39W CMHMR16 MAX TILT  
 LUMINAIRE: FORMED STEEL HOUSING, CAST WHITE ENAMEL ALUMINUM AND STEEL TRIM WITH FROSTED GLASS ENCLOSURE.  
 LAMP: ONE VBU M130 39 WATT CERAMIC METAL HALIDE MR16 LAMP RATED AT 2100 LUMENS.  
 LAMP CATALOG NUMBER: GE CMH39MR16/930/FL  
 BALLAST: ONE METROLIGHT SUPER HID 39  
 MOUNTING: RECESSED  
 TOTAL INPUT WATTS = 43.1 AT 120.0 VOLTS

| CANDELA DISTRIBUTION |      |      |      |      |      |       |       |       |       | FLUX |
|----------------------|------|------|------|------|------|-------|-------|-------|-------|------|
|                      | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 | 112.5 | 135.0 | 157.5 | 180.0 |      |
| 0                    | 280  | 280  | 280  | 280  | 280  | 280   | 280   | 280   | 280   |      |
| 5                    | 351  | 344  | 325  | 300  | 278  | 257   | 242   | 234   | 230   | 27   |
| 15                   | 612  | 551  | 432  | 326  | 255  | 209   | 183   | 170   | 166   | 90   |
| 25                   | 1220 | 926  | 528  | 313  | 215  | 168   | 148   | 141   | 139   | 182  |
| 35                   | 2013 | 1291 | 528  | 256  | 167  | 136   | 129   | 127   | 124   | 288  |
| 45                   | 1820 | 1114 | 377  | 168  | 117  | 108   | 108   | 104   | 100   | 291  |
| 55                   | 758  | 490  | 192  | 88   | 75   | 76    | 77    | 70    | 64    | 167  |
| 65                   | 139  | 109  | 63   | 42   | 42   | 43    | 40    | 37    | 34    | 60   |
| 75                   | 9    | 12   | 14   | 19   | 22   | 22    | 20    | 19    | 17    | 19   |
| 85                   | 0    | 0    | 2    | 4    | 5    | 6     | 5     | 5     | 4     | 4    |
| 90                   | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     |      |

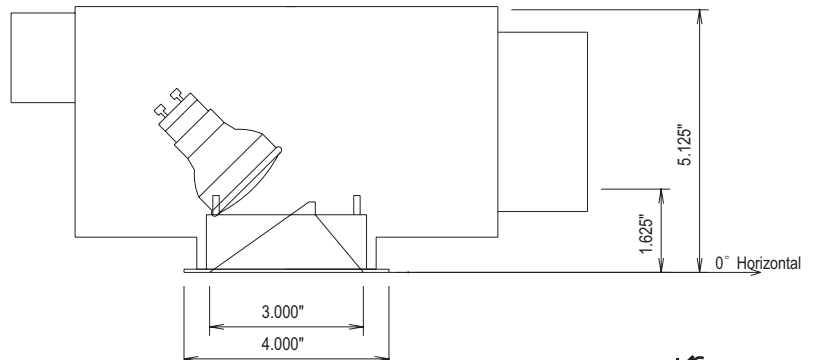
| ZONAL LUMEN SUMMARY |        |       |       |  |
|---------------------|--------|-------|-------|--|
| ZONE                | LUMENS | %LAMP | %FIXT |  |
| 0- 30               | 299    | 14.2  | 26.5  |  |
| 0- 40               | 587    | 27.9  | 52.0  |  |
| 0- 60               | 1045   | 49.8  | 92.6  |  |
| 0- 90               | 1129   | 53.7  | 100.0 |  |
| 90-180              | 0      | 0.0   | 0.0   |  |
| 0-180               | 1129   | 53.7  | 100.0 |  |

TOTAL LUMINAIRE EFFICIENCY: 53.7%  
 CIE TYPE: DIRECT  
 PLANE: 0-DEG 90-DEG 180-DEG  
 SPACING CRITERIA: 2.9 1.1 0.6  
 LUMINOUS LENGTH: 3.000 3.000

### LUMINANCE IN CANDELA PER SQUARE METER

| ANGLE IN DEG | AVERAGE 0-DEG | AVERAGE 45-DEG | AVERAGE 90-DEG |
|--------------|---------------|----------------|----------------|
| 0            | 48219.        | 48219.         | 48219.         |
| 45           | 443245.       | 91815.         | 28494.         |
| 55           | 227581.       | 57646.         | 22518.         |
| 65           | 56640.        | 25671.         | 17114.         |
| 75           | 5988.         | 9315.          | 14638.         |
| 85           | 0.            | 3952.          | 9879.          |

#13911



Approved By: MG



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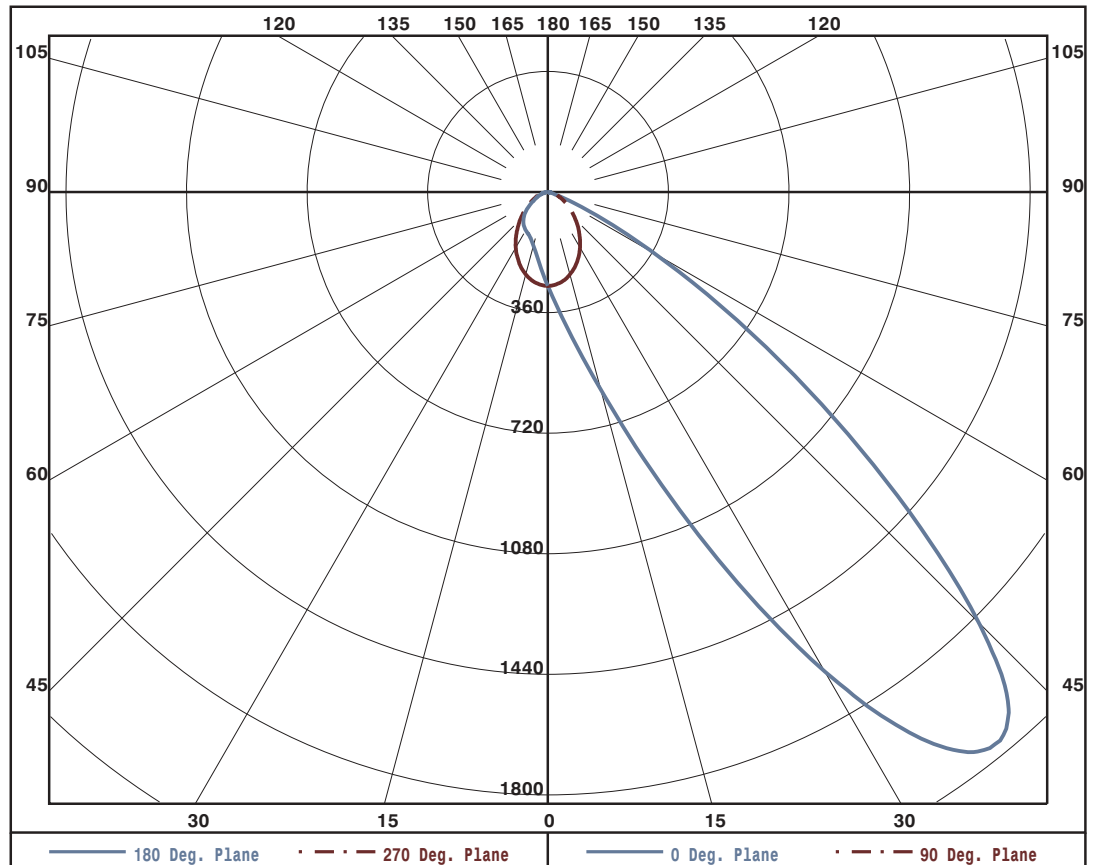
DATE: 10-27-2008

### CANDELA DISTRIBUTION

|    | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 | 112.5 | 135.0 | 157.5 | 180.0 |
|----|------|------|------|------|------|-------|-------|-------|-------|
| 0  | 280  | 280  | 280  | 280  | 280  | 280   | 280   | 280   | 280   |
| 5  | 351  | 344  | 325  | 300  | 278  | 257   | 242   | 234   | 230   |
| 10 | 454  | 431  | 376  | 317  | 269  | 232   | 209   | 197   | 192   |
| 15 | 612  | 551  | 432  | 326  | 255  | 209   | 183   | 170   | 166   |
| 20 | 861  | 716  | 486  | 324  | 237  | 187   | 163   | 152   | 149   |
| 25 | 1220 | 926  | 528  | 313  | 215  | 168   | 148   | 141   | 139   |
| 30 | 1654 | 1142 | 547  | 290  | 192  | 151   | 138   | 134   | 132   |
| 35 | 2013 | 1291 | 528  | 256  | 167  | 136   | 129   | 127   | 124   |
| 40 | 2116 | 1291 | 468  | 214  | 141  | 123   | 120   | 117   | 114   |
| 45 | 1820 | 1114 | 377  | 168  | 117  | 108   | 108   | 104   | 100   |
| 50 | 1271 | 799  | 280  | 124  | 95   | 93    | 94    | 89    | 84    |
| 55 | 758  | 490  | 192  | 88   | 75   | 76    | 77    | 70    | 64    |
| 60 | 370  | 257  | 119  | 61   | 57   | 59    | 59    | 49    | 45    |
| 65 | 139  | 109  | 63   | 42   | 42   | 43    | 40    | 37    | 34    |
| 70 | 36   | 38   | 31   | 29   | 31   | 31    | 29    | 27    | 25    |
| 75 | 9    | 12   | 14   | 19   | 22   | 22    | 20    | 19    | 17    |
| 80 | 3    | 5    | 7    | 11   | 13   | 14    | 12    | 11    | 10    |
| 85 | 0    | 0    | 2    | 4    | 5    | 6     | 5     | 5     | 4     |
| 90 | 0    | 0    | 0    | 0    | 0    | 0     | 0     | 0     | 0     |

### ZONAL LUMEN SUMMARY

|        |      |
|--------|------|
| 0- 5   | 7.   |
| 5- 10  | 21.  |
| 10- 15 | 36.  |
| 15- 20 | 54.  |
| 20- 25 | 77.  |
| 25- 30 | 105. |
| 30- 35 | 133. |
| 35- 40 | 154. |
| 40- 45 | 156. |
| 45- 50 | 135. |
| 50- 55 | 101. |
| 55- 60 | 67.  |
| 60- 65 | 39.  |
| 65- 70 | 21.  |
| 70- 75 | 12.  |
| 75- 80 | 7.   |
| 80- 85 | 4.   |
| 85- 90 | 1.   |





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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

Table with 19 columns (RC, RW, and 17 numerical values) and 11 rows (0-10). Values represent coefficients of utilization for different room cavity ratios and reflectance levels.

NOTE: THE ZONAL CAVITY CALCULATION TECHNIQUE IS ACCURATE WHEN LUMINAIRES WITH SYMMETRIC CANDELA DISTRIBUTIONS ARE EMPLOYED AND WHEN THE LUMINAIRES ARE LOCATED SYMMETRICALLY THROUGHOUT THE ROOM. THIS UNIT HAS SPECIAL CHARACTERISTICS AND THEREFORE THESE COEFFICIENTS SHOULD BE USED WITH CAUTION.

THIS TEST WAS CONDUCTED USING RELATIVE PHOTOMETRY TECHNIQUES ACCORDING TO STANDARD IESNA PROCEDURES. THE USER MUST THEREFORE USE CAUTION IN THE FOLLOWING SITUATIONS: 1) ACCORDING TO IESNA PROCEDURES, THE BALLAST(S) AND LAMP(S) ARE PRESUMED TO PRODUCE 100% OF RATED OUTPUT. AN APPROPRIATE BALLAST FACTOR MUST BE APPLIED TO THE LUMEN OUTPUT RATINGS AND LUMINOUS INTENSITY VALUES GIVEN. 2) THIS TEST WAS CONDUCTED IN A CONTROLLED LABORATORY ENVIRONMENT, FIELD PERFORMANCE MAY DIFFER.