



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 39-4-L84-835-A-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 19011.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 08-NOV-2019

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO

[LUMINAIRE] 2-56 LED 22" ARRAYS 4' PENDANT MOUNT LUMINAIRE

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC RIBBED LENS

[LUMCAT] 39-4-L84-835-A-DIM-UNV

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Architectural, Commercial, Direct, Linear

[\_SEARCH\_MOUNTING] Pendant, Surface

### CHARACTERISTICS

|                                 |                     |
|---------------------------------|---------------------|
| Lumens Per Lamp                 | N.A. (absolute)     |
| Total Lamp Lumens               | N.A. (absolute)     |
| Luminaire Lumens                | 8398                |
| Total Luminaire Efficiency      | N.A.                |
| Luminaire Efficacy Rating (LER) | 127                 |
| Total Luminaire Watts           | 66                  |
| Ballast Factor                  | 1.00                |
| CIE Type                        | Direct              |
| Spacing Criterion (0-180)       | 1.18                |
| Spacing Criterion (90-270)      | 1.18                |
| Spacing Criterion (Diagonal)    | 1.30                |
| Basic Luminous Shape            | Rectangular w/Sides |
| Luminous Length (0-180)         | 4.01 ft             |
| Luminous Width (90-270)         | 0.79 ft             |
| Luminous Height                 | 0.18 ft             |

### LUMINANCE DATA (cd/sq.m)

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 8326             | 7533              | 7443              |
| 55                  | 6946             | 6190              | 6223              |
| 65                  | 5747             | 5067              | 5405              |
| 75                  | 4191             | 4018              | 4664              |
| 85                  | 2471             | 3348              | 4345              |

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**CANDELA TABULATION**

|            | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|------------|------------|-------------|-------------|-------------|-------------|
| <b>0</b>   | 3210.191   | 3210.191    | 3210.191    | 3210.191    | 3210.191    |
| <b>5</b>   | 3228.016   | 3226.396    | 3224.775    | 3224.775    | 3226.396    |
| <b>10</b>  | 3156.714   | 3155.094    | 3155.094    | 3156.714    | 3159.955    |
| <b>15</b>  | 3044.901   | 3048.142    | 3053.003    | 3056.244    | 3059.485    |
| <b>20</b>  | 2952.533   | 2954.153    | 2963.876    | 2965.497    | 2965.497    |
| <b>25</b>  | 2704.598   | 2711.080    | 2719.182    | 2724.044    | 2724.044    |
| <b>30</b>  | 2498.796   | 2506.898    | 2518.241    | 2524.723    | 2526.344    |
| <b>35</b>  | 2325.403   | 2338.367    | 2356.192    | 2364.295    | 2369.156    |
| <b>40</b>  | 2040.197   | 2056.402    | 2080.709    | 2095.294    | 2101.775    |
| <b>45</b>  | 1813.328   | 1836.015    | 1868.425    | 1891.112    | 1899.214    |
| <b>50</b>  | 1515.158   | 1537.845    | 1581.598    | 1615.628    | 1628.592    |
| <b>55</b>  | 1249.398   | 1276.946    | 1330.422    | 1370.935    | 1388.760    |
| <b>60</b>  | 996.601    | 1025.770    | 1082.487    | 1142.445    | 1166.753    |
| <b>65</b>  | 784.317    | 815.106     | 888.028     | 970.673     | 996.601     |
| <b>70</b>  | 570.412    | 607.684     | 703.293     | 792.420     | 828.070     |
| <b>75</b>  | 372.713    | 418.086     | 523.418     | 619.027     | 653.057     |
| <b>80</b>  | 218.766    | 277.104     | 392.159     | 489.388     | 523.418     |
| <b>85</b>  | 95.609     | 158.808     | 272.242     | 364.610     | 397.020     |
| <b>90</b>  | 0.000      | 69.681      | 162.049     | 236.592     | 265.760     |
| <b>95</b>  | 0.000      | 29.169      | 103.711     | 170.151     | 196.079     |
| <b>100</b> | 0.000      | 0.000       | 63.199      | 115.055     | 132.880     |
| <b>105</b> | 0.000      | 0.000       | 40.512      | 76.163      | 92.368      |
| <b>110</b> | 0.000      | 0.000       | 0.000       | 51.856      | 63.199      |
| <b>115</b> | 0.000      | 0.000       | 0.000       | 38.892      | 46.994      |
| <b>120</b> | 0.000      | 0.000       | 0.000       | 32.410      | 35.651      |
| <b>125</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>130</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>135</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>140</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>145</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>150</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>155</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>160</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>165</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>170</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>175</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| <b>180</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 1169.1  | N.A.  | 13.90  |
| 0-30    | 2426.81 | N.A.  | 28.90  |
| 0-40    | 3882.2  | N.A.  | 46.20  |
| 0-60    | 6493.81 | N.A.  | 77.30  |
| 0-80    | 7936.43 | N.A.  | 94.50  |
| 0-90    | 8223.6  | N.A.  | 97.90  |
| 10-90   | 7918.36 | N.A.  | 94.30  |
| 20-40   | 2713.1  | N.A.  | 32.30  |
| 20-50   | 4137.44 | N.A.  | 49.30  |
| 40-70   | 3494.56 | N.A.  | 41.60  |
| 60-80   | 1442.61 | N.A.  | 17.20  |
| 70-80   | 559.66  | N.A.  | 6.70   |
| 80-90   | 287.18  | N.A.  | 3.40   |
| 90-110  | 155.83  | N.A.  | 1.90   |
| 90-120  | 171.91  | N.A.  | 2.00   |
| 90-130  | 174.81  | N.A.  | 2.10   |
| 90-150  | 174.81  | N.A.  | 2.10   |
| 90-180  | 174.81  | N.A.  | 2.10   |
| 110-180 | 18.98   | N.A.  | 0.20   |
| 0-180   | 8398.42 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 305.25  |
| 10-20   | 863.85  |
| 20-30   | 1257.71 |
| 30-40   | 1455.4  |
| 40-50   | 1424.34 |
| 50-60   | 1187.26 |
| 60-70   | 882.96  |
| 70-80   | 559.66  |
| 80-90   | 287.18  |
| 90-100  | 112.47  |
| 100-110 | 43.36   |
| 110-120 | 16.08   |
| 120-130 | 2.90    |
| 130-140 | 0.00    |
| 140-150 | 0.00    |
| 150-160 | 0.00    |
| 160-170 | 0.00    |
| 170-180 | 0.00    |

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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

Effective Floor Cavity Reflectance 0.20

| 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   |
| 0  | 191 | 191 | 191 | 191 | 186 | 186 | 186 | 186 | 177 | 177 | 177 | 169 | 169 | 169 | 162 | 162 | 162 | 158 |
| 1  | 174 | 166 | 159 | 153 | 169 | 162 | 156 | 150 | 155 | 149 | 144 | 148 | 143 | 139 | 141 | 138 | 135 | 131 |
| 2  | 159 | 145 | 134 | 125 | 154 | 142 | 132 | 123 | 136 | 127 | 120 | 130 | 123 | 117 | 124 | 119 | 113 | 110 |
| 3  | 145 | 128 | 115 | 105 | 141 | 125 | 113 | 103 | 120 | 110 | 101 | 115 | 106 | 99  | 111 | 103 | 97  | 93  |
| 4  | 133 | 114 | 100 | 89  | 129 | 112 | 98  | 88  | 107 | 96  | 87  | 103 | 93  | 85  | 99  | 91  | 84  | 80  |
| 5  | 123 | 102 | 88  | 77  | 119 | 100 | 87  | 77  | 96  | 85  | 76  | 93  | 82  | 74  | 90  | 81  | 73  | 70  |
| 6  | 114 | 92  | 78  | 68  | 110 | 91  | 77  | 67  | 87  | 75  | 67  | 84  | 74  | 66  | 81  | 72  | 65  | 61  |
| 7  | 105 | 84  | 70  | 60  | 102 | 82  | 69  | 60  | 80  | 68  | 59  | 77  | 66  | 59  | 75  | 65  | 58  | 55  |
| 8  | 98  | 77  | 63  | 54  | 96  | 75  | 63  | 54  | 73  | 61  | 53  | 71  | 60  | 53  | 69  | 59  | 52  | 49  |
| 9  | 92  | 71  | 58  | 49  | 90  | 70  | 57  | 48  | 67  | 56  | 48  | 65  | 55  | 48  | 64  | 54  | 47  | 44  |
| 10 | 86  | 65  | 53  | 44  | 84  | 64  | 52  | 44  | 62  | 51  | 44  | 61  | 51  | 43  | 59  | 50  | 43  | 40  |

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**UGR TABLE - CORRECTED**

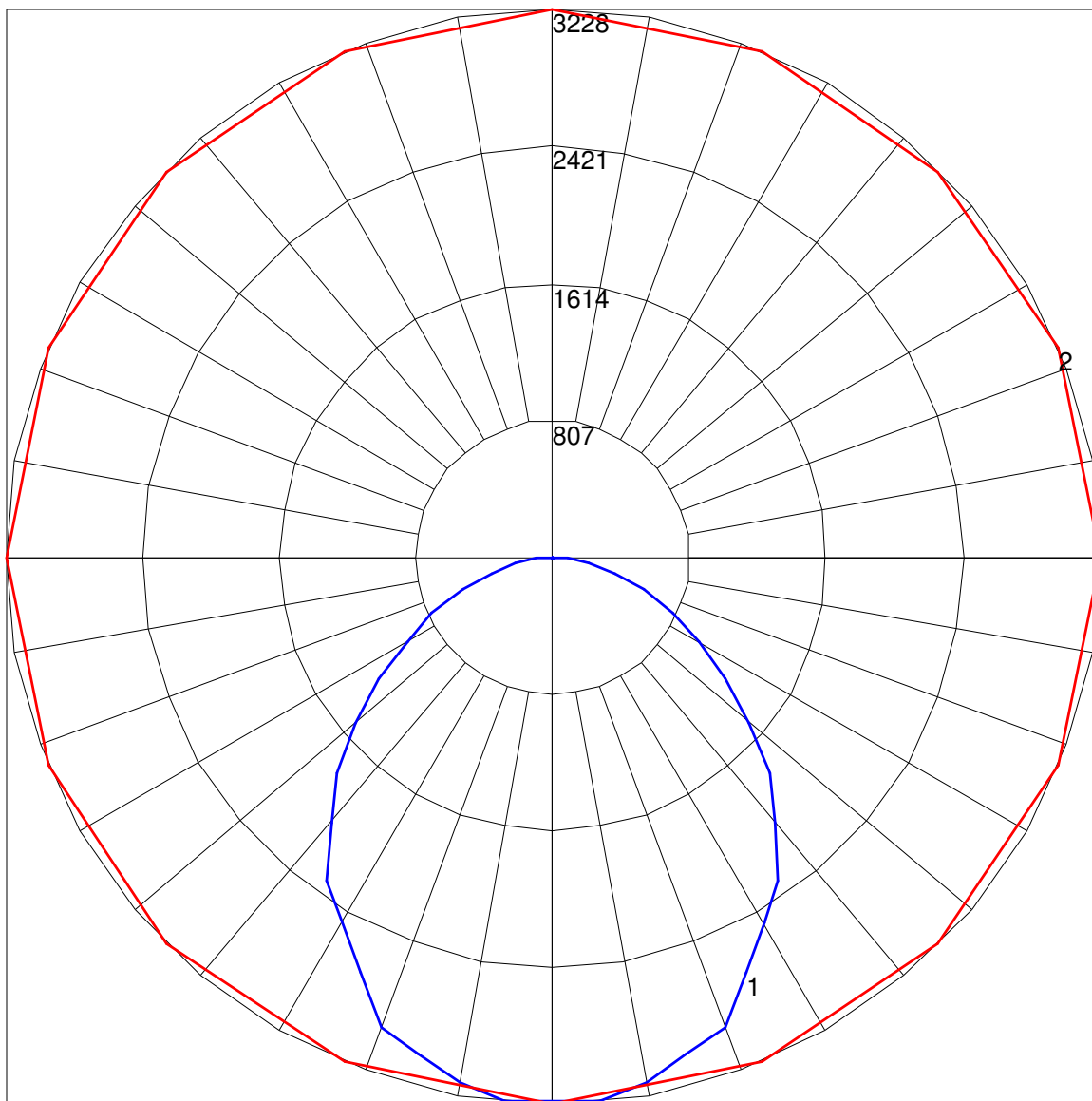
Reflectances

|                |    |    |    |    |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|----|----|----|----|
| Ceiling Cavity | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Walls          | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Floor Cavity   | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

| Room Size |      | UGR Viewed Crosswise |      |      |      |      | UGR Viewed Endwise |      |      |      |      |
|-----------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| X=2H      | Y=2H | 16.1                 | 17.6 | 16.5 | 18.0 | 18.4 | 16.7               | 18.3 | 17.1 | 18.7 | 19.0 |
|           | 3H   | 17.6                 | 19.0 | 18.0 | 19.4 | 19.8 | 18.8               | 20.2 | 19.2 | 20.6 | 21.0 |
|           | 4H   | 18.1                 | 19.4 | 18.5 | 19.8 | 20.2 | 19.7               | 21.0 | 20.1 | 21.4 | 21.8 |
|           | 6H   | 18.4                 | 19.7 | 18.9 | 20.1 | 20.5 | 20.6               | 21.8 | 21.0 | 22.2 | 22.7 |
|           | 8H   | 18.5                 | 19.7 | 19.0 | 20.1 | 20.6 | 21.0               | 22.2 | 21.5 | 22.6 | 23.1 |
|           | 12H  | 18.6                 | 19.7 | 19.0 | 20.2 | 20.6 | 21.4               | 22.6 | 21.9 | 23.0 | 23.5 |
| 4H        | 2H   | 16.6                 | 18.0 | 17.1 | 18.4 | 18.8 | 17.2               | 18.5 | 17.6 | 18.9 | 19.3 |
|           | 3H   | 18.3                 | 19.5 | 18.8 | 19.9 | 20.4 | 19.4               | 20.6 | 19.9 | 21.0 | 21.4 |
|           | 4H   | 19.0                 | 20.0 | 19.4 | 20.4 | 20.9 | 20.5               | 21.5 | 21.0 | 22.0 | 22.4 |
|           | 6H   | 19.4                 | 20.3 | 19.9 | 20.8 | 21.3 | 21.6               | 22.5 | 22.0 | 22.9 | 23.4 |
|           | 8H   | 19.6                 | 20.4 | 20.1 | 20.9 | 21.4 | 22.1               | 22.9 | 22.6 | 23.4 | 23.9 |
|           | 12H  | 19.7                 | 20.4 | 20.2 | 21.0 | 21.5 | 22.6               | 23.4 | 23.2 | 23.9 | 24.4 |
| 8H        | 4H   | 19.3                 | 20.1 | 19.8 | 20.6 | 21.1 | 20.7               | 21.5 | 21.2 | 22.0 | 22.5 |
|           | 6H   | 19.9                 | 20.6 | 20.4 | 21.1 | 21.7 | 21.9               | 22.6 | 22.4 | 23.1 | 23.7 |
|           | 8H   | 20.1                 | 20.8 | 20.7 | 21.3 | 21.8 | 22.5               | 23.2 | 23.1 | 23.7 | 24.3 |
|           | 12H  | 20.3                 | 20.9 | 20.8 | 21.4 | 22.0 | 23.3               | 23.8 | 23.8 | 24.4 | 25.0 |
| 12H       | 4H   | 19.4                 | 20.1 | 19.9 | 20.6 | 21.2 | 20.7               | 21.4 | 21.2 | 22.0 | 22.5 |
|           | 6H   | 20.0                 | 20.7 | 20.6 | 21.2 | 21.7 | 21.9               | 22.6 | 22.5 | 23.1 | 23.7 |
|           | 8H   | 20.3                 | 20.9 | 20.9 | 21.4 | 22.0 | 22.6               | 23.2 | 23.2 | 23.7 | 24.3 |

Maximum UGR = 25.0

POLAR GRAPH



Maximum Candela = 3228.016 Located At Horizontal Angle = 0, Vertical Angle = 5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)