



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : MX4D-8-00-P7-835-F-POE\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM BALLABS TEST NO. 29653.0  
 [TESTLABV] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC  
 [ISSUEDATE] 03-24-2020  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO 64836  
 [LUMINAIRE] 8' DIRECT SUSPENDED LUMINAIRE  
 [MORE] WITH FROSTED ACRYLIC LENS  
 [LUMCAT] MX4D-8-00-P7-835-F-A-PoE  
 [LAMPCAT] HLM 80 CRI, 3500K CCT  
 [SEARCH\_SOURCETYPE] LED  
 [SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Direct  
 [SEARCH\_MOUNTING] Suspended

### CHARACTERISTICS

|                                 |                 |
|---------------------------------|-----------------|
| Lumens Per Lamp                 | N.A. (absolute) |
| Total Lamp Lumens               | N.A. (absolute) |
| Luminaire Lumens                | 5655            |
| Total Luminaire Efficiency      | N.A.            |
| Luminaire Efficacy Rating (LER) | 118             |
| Total Luminaire Watts           | 48              |
| Ballast Factor                  | 1.00            |
| CIE Type                        | Direct          |
| Spacing Criterion (0-180)       | 1.22            |
| Spacing Criterion (90-270)      | 1.16            |
| Spacing Criterion (Diagonal)    | 1.28            |
| Basic Luminous Shape            | Rectangular     |
| Luminous Length (0-180)         | 8.00 ft         |
| Luminous Width (90-270)         | 0.32 ft         |
| Luminous Height                 | 0.00 ft         |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 8120             | 7874              | 7751              |
| 55                  | 7457             | 7154              | 6951              |
| 65                  | 6347             | 6244              | 6038              |
| 75                  | 4818             | 5042              | 4762              |
| 85                  | 2329             | 2994              | 2828              |

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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>  | 2301.501   | 2301.501    | 2301.501    | 2301.501    | 2301.501    |
| <b>5</b>  | 2311.791   | 2287.781    | 2277.491    | 2270.631    | 2270.631    |
| <b>10</b> | 2270.631   | 2246.622    | 2236.332    | 2229.472    | 2222.612    |
| <b>15</b> | 2191.742   | 2174.593    | 2157.443    | 2150.583    | 2140.293    |
| <b>20</b> | 2099.134   | 2075.124    | 2061.404    | 2040.824    | 2033.964    |
| <b>25</b> | 1979.085   | 1951.645    | 1937.926    | 1913.916    | 1910.486    |
| <b>30</b> | 1859.037   | 1828.167    | 1800.727    | 1793.867    | 1776.718    |
| <b>35</b> | 1690.969   | 1670.389    | 1646.379    | 1622.370    | 1622.370    |
| <b>40</b> | 1533.191   | 1512.611    | 1481.741    | 1474.881    | 1450.872    |
| <b>45</b> | 1358.263   | 1337.683    | 1317.103    | 1296.524    | 1296.524    |
| <b>50</b> | 1193.625   | 1166.185    | 1149.036    | 1135.316    | 1118.166    |
| <b>55</b> | 1011.837   | 987.828     | 970.678     | 953.528     | 943.238     |
| <b>60</b> | 823.190    | 809.470     | 799.180     | 785.460     | 775.170     |
| <b>65</b> | 634.542    | 631.112     | 624.252     | 607.102     | 603.672     |
| <b>70</b> | 469.904    | 466.474     | 456.184     | 449.324     | 442.464     |
| <b>75</b> | 294.976    | 305.266     | 308.696     | 298.406     | 291.546     |
| <b>80</b> | 150.918    | 157.778     | 157.778     | 161.208     | 164.638     |
| <b>85</b> | 48.019     | 51.449      | 61.739      | 54.879      | 58.309      |
| <b>90</b> | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  | %Lamp | %Fixt  |
|---------|---------|-------|--------|
| 0-20    | 825.71  | N.A.  | 14.60  |
| 0-30    | 1719.24 | N.A.  | 30.40  |
| 0-40    | 2752.38 | N.A.  | 48.70  |
| 0-60    | 4643.16 | N.A.  | 82.10  |
| 0-80    | 5582.21 | N.A.  | 98.70  |
| 0-90    | 5655.48 | N.A.  | 100.00 |
| 10-90   | 5438.94 | N.A.  | 96.20  |
| 20-40   | 1926.68 | N.A.  | 34.10  |
| 20-50   | 2946.33 | N.A.  | 52.10  |
| 40-70   | 2508.48 | N.A.  | 44.40  |
| 60-80   | 939.05  | N.A.  | 16.60  |
| 70-80   | 321.34  | N.A.  | 5.70   |
| 80-90   | 73.28   | N.A.  | 1.30   |
| 90-110  | 0.00    | N.A.  | 0.00   |
| 90-120  | 0.00    | N.A.  | 0.00   |
| 90-130  | 0.00    | N.A.  | 0.00   |
| 90-150  | 0.00    | N.A.  | 0.00   |
| 90-180  | 0.00    | N.A.  | 0.00   |
| 110-180 | 0.00    | N.A.  | 0.00   |
| 0-180   | 5655.48 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 216.54  |
| 10-20   | 609.16  |
| 20-30   | 893.54  |
| 30-40   | 1033.14 |
| 40-50   | 1019.65 |
| 50-60   | 871.12  |
| 60-70   | 617.71  |
| 70-80   | 321.34  |
| 80-90   | 73.28   |
| 90-100  | 0.00    |
| 100-110 | 0.00    |
| 110-120 | 0.00    |
| 120-130 | 0.00    |
| 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  | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1  | 109 | 105 | 101 | 97  | 107 | 103 | 99  | 96  | 98  | 95  | 93  | 94  | 92  | 90  | 91  | 89  | 87  | 85  |
| 2  | 100 | 92  | 85  | 80  | 97  | 90  | 84  | 79  | 87  | 82  | 77  | 83  | 79  | 75  | 80  | 77  | 74  | 72  |
| 3  | 91  | 81  | 73  | 67  | 89  | 80  | 72  | 67  | 77  | 70  | 65  | 74  | 69  | 64  | 71  | 67  | 63  | 61  |
| 4  | 84  | 72  | 64  | 57  | 82  | 71  | 63  | 57  | 68  | 62  | 56  | 66  | 60  | 55  | 64  | 59  | 55  | 53  |
| 5  | 77  | 65  | 56  | 50  | 75  | 64  | 56  | 49  | 62  | 54  | 49  | 60  | 53  | 48  | 58  | 52  | 48  | 46  |
| 6  | 72  | 59  | 50  | 44  | 70  | 58  | 49  | 43  | 56  | 48  | 43  | 54  | 48  | 43  | 53  | 47  | 42  | 40  |
| 7  | 66  | 53  | 45  | 39  | 65  | 52  | 44  | 39  | 51  | 44  | 38  | 49  | 43  | 38  | 48  | 42  | 38  | 36  |
| 8  | 62  | 49  | 40  | 35  | 60  | 48  | 40  | 35  | 47  | 39  | 34  | 45  | 39  | 34  | 44  | 38  | 34  | 32  |
| 9  | 58  | 45  | 37  | 31  | 57  | 44  | 36  | 31  | 43  | 36  | 31  | 42  | 36  | 31  | 41  | 35  | 31  | 29  |
| 10 | 54  | 41  | 34  | 28  | 53  | 41  | 33  | 28  | 40  | 33  | 28  | 39  | 33  | 28  | 38  | 32  | 28  | 26  |

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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

|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| X=2H | Y=2H | 18.9 | 20.5 | 19.3 | 20.8 | 21.1 | 18.6 | 20.2 | 19.0 | 20.5 | 20.8 |
|      | 3H   | 20.5 | 21.9 | 20.8 | 22.2 | 22.6 | 20.2 | 21.6 | 20.6 | 21.9 | 22.3 |
|      | 4H   | 21.0 | 22.3 | 21.4 | 22.7 | 23.1 | 20.7 | 22.1 | 21.1 | 22.4 | 22.8 |
|      | 6H   | 21.3 | 22.5 | 21.7 | 22.9 | 23.3 | 21.1 | 22.3 | 21.5 | 22.7 | 23.1 |
|      | 8H   | 21.4 | 22.6 | 21.8 | 22.9 | 23.3 | 21.2 | 22.4 | 21.6 | 22.8 | 23.2 |
|      | 12H  | 21.4 | 22.5 | 21.8 | 22.9 | 23.3 | 21.2 | 22.4 | 21.7 | 22.7 | 23.2 |

UGR Viewed Endwise

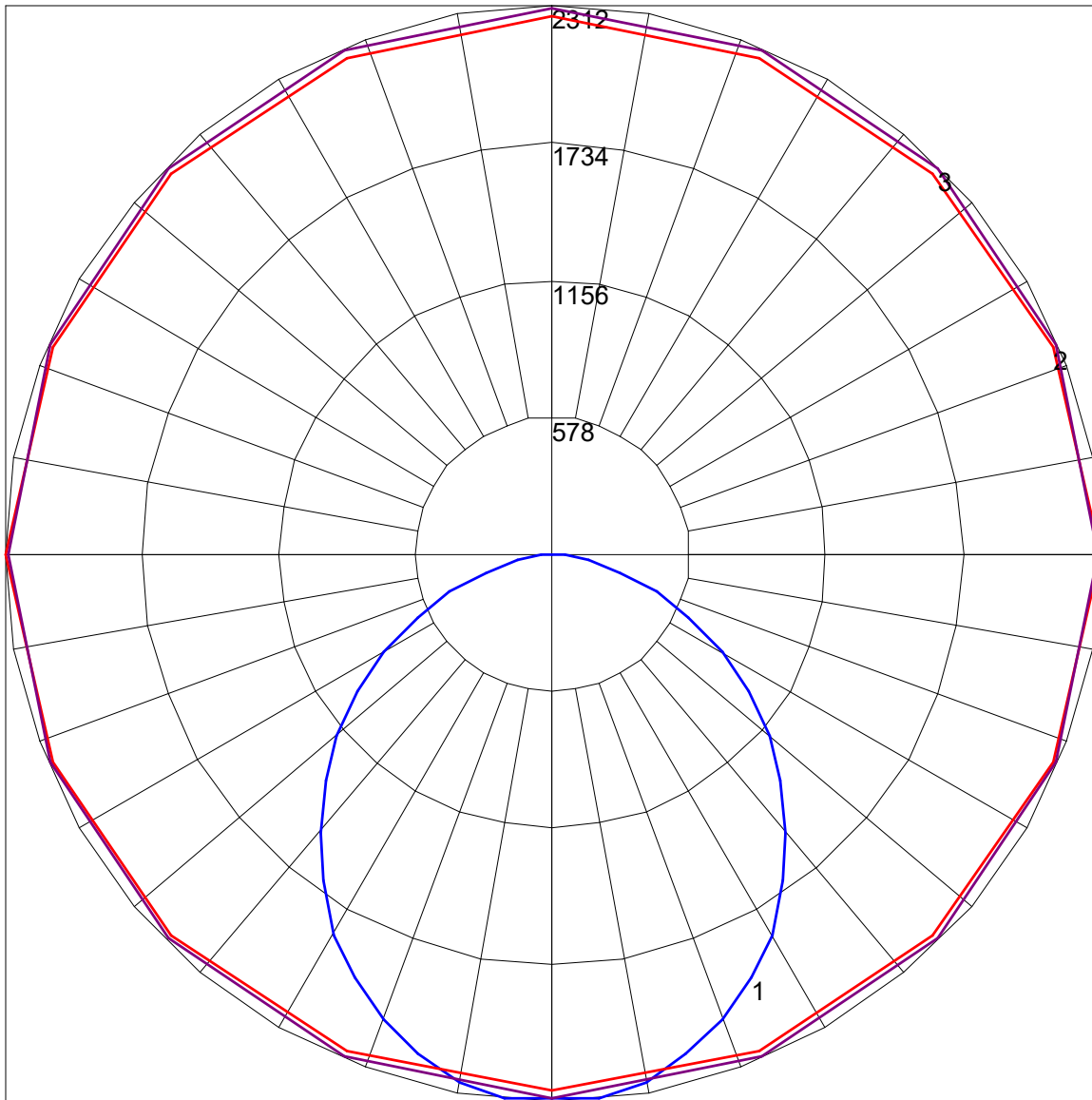
|    |     |      |      |      |      |      |      |      |      |      |      |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H  | 19.4 | 20.8 | 19.8 | 21.1 | 21.5 | 19.2 | 20.6 | 19.6 | 20.9 | 21.3 |
|    | 3H  | 21.2 | 22.3 | 21.6 | 22.7 | 23.1 | 21.0 | 22.1 | 21.4 | 22.5 | 22.9 |
|    | 4H  | 21.9 | 22.9 | 22.3 | 23.3 | 23.7 | 21.6 | 22.6 | 22.1 | 23.1 | 23.5 |
|    | 6H  | 22.3 | 23.2 | 22.7 | 23.6 | 24.0 | 22.1 | 23.0 | 22.5 | 23.4 | 23.9 |
|    | 8H  | 22.4 | 23.2 | 22.8 | 23.6 | 24.1 | 22.2 | 23.1 | 22.7 | 23.5 | 24.0 |
|    | 12H | 22.4 | 23.2 | 22.9 | 23.6 | 24.1 | 22.3 | 23.0 | 22.8 | 23.5 | 24.0 |

|    |     |      |      |      |      |      |      |      |      |      |      |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H  | 22.1 | 22.9 | 22.5 | 23.4 | 23.8 | 21.9 | 22.7 | 22.3 | 23.2 | 23.6 |
|    | 6H  | 22.6 | 23.3 | 23.1 | 23.8 | 24.2 | 22.4 | 23.1 | 22.9 | 23.6 | 24.1 |
|    | 8H  | 22.7 | 23.3 | 23.2 | 23.9 | 24.3 | 22.6 | 23.2 | 23.1 | 23.7 | 24.2 |
|    | 12H | 22.8 | 23.4 | 23.3 | 23.9 | 24.4 | 22.8 | 23.3 | 23.3 | 23.8 | 24.3 |

|     |    |      |      |      |      |      |      |      |      |      |      |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 22.1 | 22.8 | 22.6 | 23.3 | 23.8 | 21.9 | 22.6 | 22.4 | 23.1 | 23.6 |
|     | 6H | 22.6 | 23.2 | 23.1 | 23.7 | 24.2 | 22.5 | 23.1 | 23.0 | 23.6 | 24.1 |
|     | 8H | 22.8 | 23.3 | 23.3 | 23.8 | 24.4 | 22.7 | 23.2 | 23.2 | 23.7 | 24.3 |

Maximum UGR = 24.4

POLAR GRAPH



Maximum Candela = 2311.791 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.)  
# 3 - Horizontal Cone Through Vertical Angle (0)