



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 75R-4-L65-940-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 19750.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 28-FEB-2020

[MANUFAC] WILLIAMS INDOOR

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

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

[MORE] WHITE REFLECTOR w/FROSTED ACRYLIC ROUND LENS

[LUMCAT] 75R-4-L65-940-DIM-UNV

[LAMPCAT] HLM 90 CRI 4000K CCT

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Commercial, Industrial, Manufacturing, Utility, Warehouse, Linear

[\_SEARCH\_MOUNTING] Surface, Suspended

### CHARACTERISTICS

|                                 |                     |
|---------------------------------|---------------------|
| Lumens Per Lamp                 | N.A. (absolute)     |
| Total Lamp Lumens               | N.A. (absolute)     |
| Luminaire Lumens                | 5654                |
| 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)      | 1.28                |
| Spacing Criterion (Diagonal)    | 1.36                |
| Basic Luminous Shape            | Rectangular w/Sides |
| Luminous Length (0-180)         | 3.72 ft             |
| Luminous Width (90-270)         | 0.21 ft             |
| Luminous Height                 | 0.10 ft             |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 19772            | 16718             | 16688             |
| 55                  | 16318            | 14307             | 14692             |
| 65                  | 13439            | 12017             | 12377             |
| 75                  | 9081             | 9874              | 10141             |
| 85                  | 5328             | 8481              | 8316              |

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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>   | 1810.905   | 1810.905    | 1810.905    | 1810.905    | 1810.905    |
| <b>5</b>   | 1830.786   | 1803.990    | 1804.854    | 1800.532    | 1782.380    |
| <b>10</b>  | 1800.532   | 1778.058    | 1782.380    | 1779.787    | 1763.363    |
| <b>15</b>  | 1747.804   | 1731.381    | 1743.482    | 1748.669    | 1731.381    |
| <b>20</b>  | 1668.280   | 1663.958    | 1684.703    | 1693.347    | 1682.975    |
| <b>25</b>  | 1574.925   | 1580.976    | 1610.366    | 1630.247    | 1622.467    |
| <b>30</b>  | 1467.741   | 1476.385    | 1526.519    | 1556.773    | 1555.044    |
| <b>35</b>  | 1337.217   | 1352.776    | 1425.385    | 1467.741    | 1473.791    |
| <b>40</b>  | 1198.050   | 1209.287    | 1300.913    | 1364.878    | 1379.572    |
| <b>45</b>  | 1033.815   | 1062.340    | 1167.796    | 1252.507    | 1273.252    |
| <b>50</b>  | 863.529    | 909.342     | 1038.137    | 1130.627    | 1156.559    |
| <b>55</b>  | 700.159    | 759.802     | 905.020     | 1001.832    | 1039.001    |
| <b>60</b>  | 563.585    | 618.906     | 777.090     | 873.902     | 912.800     |
| <b>65</b>  | 433.061    | 493.569     | 657.804     | 745.972     | 779.683     |
| <b>70</b>  | 303.402    | 384.655     | 544.568     | 621.499     | 654.346     |
| <b>75</b>  | 186.709    | 290.436     | 439.976     | 512.586     | 541.111     |
| <b>80</b>  | 103.727    | 200.539     | 350.944     | 418.367     | 436.519     |
| <b>85</b>  | 44.084     | 138.303     | 280.064     | 337.978     | 350.079     |
| <b>90</b>  | 6.051      | 95.083      | 216.963     | 267.962     | 284.386     |
| <b>95</b>  | 0.864      | 64.830      | 173.743     | 212.641     | 229.929     |
| <b>100</b> | 0.000      | 42.355      | 134.845     | 173.743     | 187.573     |
| <b>105</b> | 0.000      | 30.254      | 104.592     | 141.761     | 152.998     |
| <b>110</b> | 0.000      | 20.745      | 80.389      | 115.829     | 125.337     |
| <b>115</b> | 0.000      | 17.288      | 65.694      | 96.812      | 103.727     |
| <b>120</b> | 0.000      | 12.966      | 50.135      | 79.524      | 86.439      |
| <b>125</b> | 0.000      | 7.780       | 37.169      | 63.101      | 70.880      |
| <b>130</b> | 0.000      | 5.186       | 26.796      | 49.270      | 56.186      |
| <b>135</b> | 0.000      | 2.593       | 19.881      | 38.898      | 44.084      |
| <b>140</b> | 0.000      | 2.593       | 13.830      | 30.254      | 34.576      |
| <b>145</b> | 0.000      | 0.000       | 8.644       | 19.017      | 24.203      |
| <b>150</b> | 0.000      | 0.000       | 6.051       | 13.830      | 17.288      |
| <b>155</b> | 0.000      | 0.000       | 4.322       | 6.915       | 11.237      |
| <b>160</b> | 0.000      | 0.000       | 1.729       | 5.186       | 6.051       |
| <b>165</b> | 0.000      | 0.000       | 0.000       | 1.729       | 2.593       |
| <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    | 662.20  | N.A.  | 11.70  |
| 0-30    | 1401.88 | N.A.  | 24.80  |
| 0-40    | 2284.55 | N.A.  | 40.40  |
| 0-60    | 3971.53 | N.A.  | 70.20  |
| 0-80    | 5021.55 | N.A.  | 88.80  |
| 0-90    | 5285.45 | N.A.  | 93.50  |
| 10-90   | 5114.01 | N.A.  | 90.50  |
| 20-40   | 1622.35 | N.A.  | 28.70  |
| 20-50   | 2516.71 | N.A.  | 44.50  |
| 40-70   | 2308.93 | N.A.  | 40.80  |
| 60-80   | 1050.02 | N.A.  | 18.60  |
| 70-80   | 428.07  | N.A.  | 7.60   |
| 80-90   | 263.91  | N.A.  | 4.70   |
| 90-110  | 251.85  | N.A.  | 4.50   |
| 90-120  | 309.59  | N.A.  | 5.50   |
| 90-130  | 342.36  | N.A.  | 6.10   |
| 90-150  | 365.76  | N.A.  | 6.50   |
| 90-180  | 368.21  | N.A.  | 6.50   |
| 110-180 | 116.36  | N.A.  | 2.10   |
| 0-180   | 5653.66 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 171.45 |
| 10-20   | 490.75 |
| 20-30   | 739.68 |
| 30-40   | 882.67 |
| 40-50   | 894.36 |
| 50-60   | 792.62 |
| 60-70   | 621.95 |
| 70-80   | 428.07 |
| 80-90   | 263.91 |
| 90-100  | 157.13 |
| 100-110 | 94.72  |
| 110-120 | 57.74  |
| 120-130 | 32.77  |
| 130-140 | 16.56  |
| 140-150 | 6.84   |
| 150-160 | 2.14   |
| 160-170 | 0.31   |
| 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  | 117 | 117 | 117 | 117 | 114 | 114 | 114 | 114 | 107 | 107 | 107 | 102 | 102 | 102 | 96 | 96 | 96 | 93 |
| 1  | 106 | 101 | 96  | 92  | 103 | 98  | 94  | 90  | 92  | 89  | 86  | 87  | 84  | 82  | 83 | 80 | 78 | 76 |
| 2  | 96  | 87  | 80  | 74  | 93  | 85  | 78  | 73  | 80  | 75  | 70  | 76  | 72  | 68  | 72 | 68 | 65 | 62 |
| 3  | 88  | 77  | 68  | 61  | 84  | 75  | 67  | 60  | 71  | 64  | 59  | 67  | 61  | 57  | 64 | 59 | 55 | 52 |
| 4  | 80  | 68  | 59  | 52  | 77  | 66  | 58  | 51  | 63  | 56  | 50  | 60  | 53  | 48  | 57 | 51 | 47 | 45 |
| 5  | 74  | 61  | 51  | 45  | 71  | 59  | 51  | 44  | 56  | 49  | 43  | 54  | 47  | 42  | 51 | 45 | 41 | 39 |
| 6  | 68  | 55  | 46  | 39  | 66  | 53  | 45  | 39  | 51  | 43  | 38  | 48  | 42  | 37  | 46 | 41 | 36 | 34 |
| 7  | 63  | 49  | 41  | 34  | 61  | 48  | 40  | 34  | 46  | 39  | 33  | 44  | 38  | 33  | 42 | 36 | 32 | 30 |
| 8  | 59  | 45  | 37  | 31  | 57  | 44  | 36  | 30  | 42  | 35  | 30  | 41  | 34  | 29  | 39 | 33 | 29 | 27 |
| 9  | 55  | 41  | 33  | 28  | 53  | 41  | 33  | 27  | 39  | 32  | 27  | 37  | 31  | 26  | 36 | 30 | 26 | 24 |
| 10 | 51  | 38  | 30  | 25  | 50  | 37  | 30  | 25  | 36  | 29  | 24  | 35  | 28  | 24  | 33 | 28 | 24 | 22 |

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**UGR TABLE - CORRECTED**

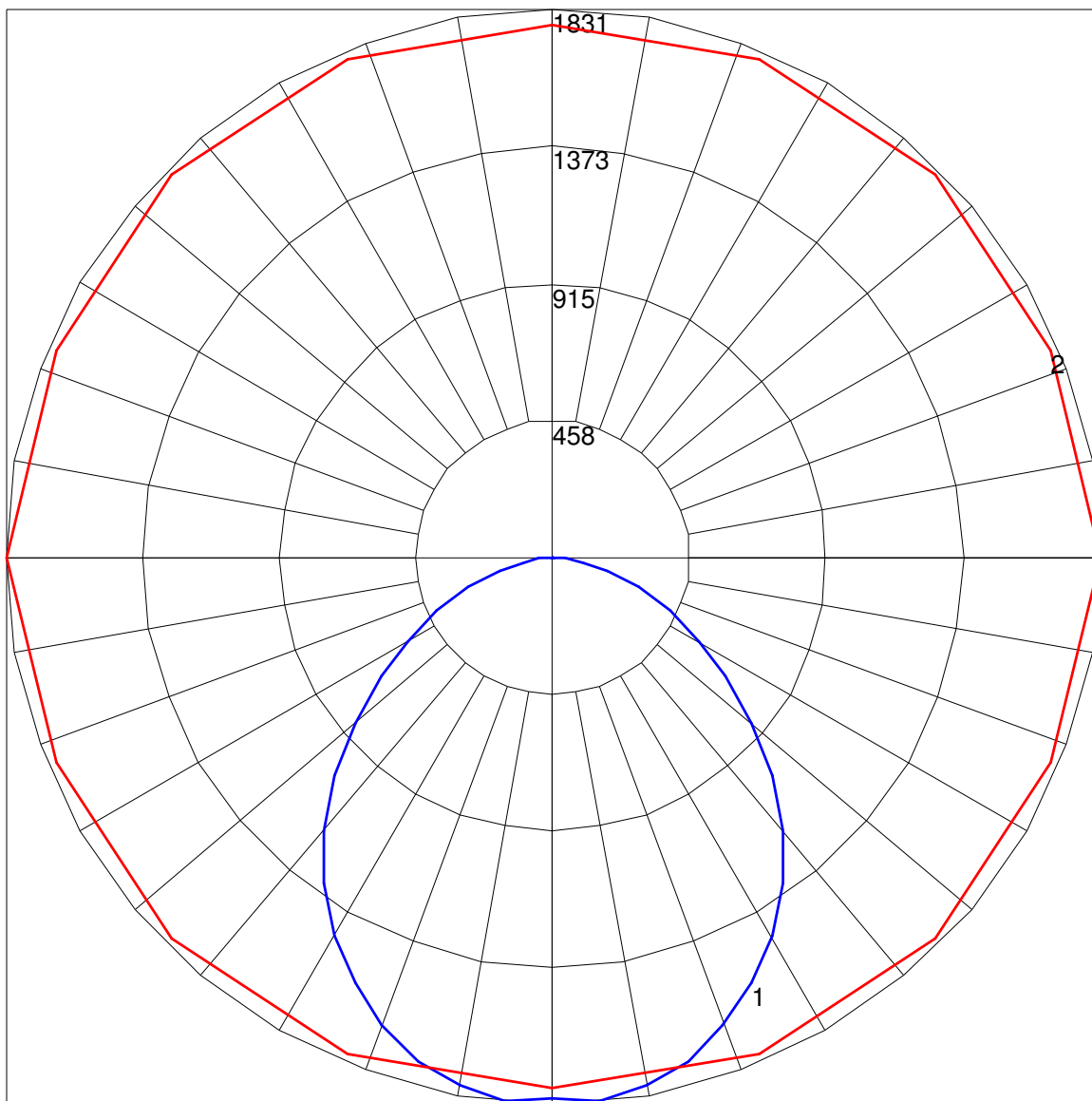
Reflectances

|                |    |    |    |    |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 18.8                 | 20.3 | 19.2 | 20.7 | 21.2 | 22.2               | 23.7 | 22.6 | 24.1 | 24.6 |
|           | 3H   | 20.0                 | 21.3 | 20.4 | 21.8 | 22.3 | 24.4               | 25.7 | 24.8 | 26.2 | 26.7 |
|           | 4H   | 20.3                 | 21.6 | 20.8 | 22.1 | 22.6 | 25.4               | 26.7 | 25.9 | 27.2 | 27.7 |
|           | 6H   | 20.5                 | 21.7 | 21.0 | 22.2 | 22.7 | 26.4               | 27.6 | 27.0 | 28.1 | 28.7 |
|           | 8H   | 20.5                 | 21.6 | 21.0 | 22.2 | 22.7 | 27.0               | 28.1 | 27.5 | 28.6 | 29.2 |
|           | 12H  | 20.5                 | 21.6 | 21.0 | 22.1 | 22.7 | 27.5               | 28.6 | 28.1 | 29.1 | 29.7 |
| 4H        | 2H   | 19.8                 | 21.1 | 20.3 | 21.6 | 22.1 | 22.5               | 23.8 | 23.0 | 24.3 | 24.8 |
|           | 3H   | 21.3                 | 22.4 | 21.8 | 22.9 | 23.4 | 24.9               | 26.0 | 25.4 | 26.5 | 27.1 |
|           | 4H   | 21.7                 | 22.7 | 22.3 | 23.3 | 23.9 | 26.1               | 27.1 | 26.6 | 27.6 | 28.2 |
|           | 6H   | 22.0                 | 22.9 | 22.6 | 23.4 | 24.1 | 27.3               | 28.2 | 27.9 | 28.8 | 29.4 |
|           | 8H   | 22.1                 | 22.9 | 22.6 | 23.5 | 24.1 | 27.9               | 28.8 | 28.5 | 29.3 | 29.9 |
|           | 12H  | 22.1                 | 22.8 | 22.7 | 23.4 | 24.1 | 28.6               | 29.4 | 29.2 | 30.0 | 30.6 |
| 8H        | 4H   | 22.5                 | 23.3 | 23.1 | 23.9 | 24.5 | 26.3               | 27.1 | 26.8 | 27.6 | 28.3 |
|           | 6H   | 23.0                 | 23.7 | 23.6 | 24.3 | 24.9 | 27.6               | 28.3 | 28.2 | 28.9 | 29.5 |
|           | 8H   | 23.1                 | 23.7 | 23.7 | 24.4 | 25.0 | 28.4               | 29.0 | 29.0 | 29.6 | 30.3 |
|           | 12H  | 23.2                 | 23.8 | 23.8 | 24.4 | 25.1 | 29.2               | 29.8 | 29.8 | 30.4 | 31.1 |
| 12H       | 4H   | 22.7                 | 23.4 | 23.3 | 24.0 | 24.7 | 26.2               | 27.0 | 26.8 | 27.6 | 28.2 |
|           | 6H   | 23.3                 | 23.9 | 23.9 | 24.5 | 25.2 | 27.7               | 28.3 | 28.3 | 28.9 | 29.6 |
|           | 8H   | 23.5                 | 24.1 | 24.1 | 24.7 | 25.4 | 28.4               | 29.0 | 29.1 | 29.6 | 30.3 |

Maximum UGR = 31.1

POLAR GRAPH



Maximum Candela = 1830.786 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.)