



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : RND-3-L150-840-FXA-(L120)-DIM-UNV\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM BALLABS TEST NO. 18642.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 15 APRIL 2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 8-32LED 22"ARRAYS 3x3'SQ HOUSING w/34"DIA APERATURE

[MORE] ARRAYS ON WHITE INTERNAL REFLS & WHITE ACRYLIC DROP LENS

[LUMCAT] RND-3-L150-840-FXA-(L120)-DIM-UNV

[LAMPCAT] HLM 80 CRI 4000K CCT

### CHARACTERISTICS

|                                 |                    |
|---------------------------------|--------------------|
| Lumens Per Lamp                 | N.A. (absolute)    |
| Total Lamp Lumens               | N.A. (absolute)    |
| Luminaire Lumens                | 12372              |
| Total Luminaire Efficiency      | N.A.               |
| Luminaire Efficacy Rating (LER) | 99                 |
| Total Luminaire Watts           | 125                |
| Ballast Factor                  | 1.00               |
| CIE Type                        | Direct             |
| Spacing Criterion (0-180)       | 1.16               |
| Spacing Criterion (90-270)      | 1.16               |
| Spacing Criterion (Diagonal)    | 1.32               |
| Basic Luminous Shape            | Circular w/ Sides  |
| Luminous Length (0-180)         | 2.80 ft (Diameter) |
| Luminous Width (90-270)         | 2.80 ft (Diameter) |
| Luminous Height                 | 0.17 ft            |

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

| Angle In<br>Degrees | Average<br>0-Deg | Average<br>45-Deg | Average<br>90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45                  | 6471             | 6479              | 6471              |
| 55                  | 5958             | 5984              | 5948              |
| 65                  | 5284             | 5284              | 5298              |
| 75                  | 4302             | 4302              | 4302              |
| 85                  | 3162             | 3122              | 3162              |

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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> |
|-----|------------|-------------|-------------|-------------|-------------|
| 0   | 4627.563   | 4627.563    | 4627.563    | 4627.563    | 4627.563    |
| 5   | 4565.131   | 4572.698    | 4565.131    | 4572.698    | 4565.131    |
| 10  | 4476.212   | 4479.996    | 4479.996    | 4479.996    | 4485.671    |
| 15  | 4353.239   | 4353.239    | 4362.698    | 4362.698    | 4370.266    |
| 20  | 4167.834   | 4173.509    | 4173.509    | 4177.293    | 4177.293    |
| 25  | 3965.402   | 3974.861    | 3974.861    | 3974.861    | 3974.861    |
| 30  | 3556.753   | 3556.753    | 3560.537    | 3556.753    | 3556.753    |
| 35  | 3307.024   | 3312.699    | 3320.267    | 3320.267    | 3312.699    |
| 40  | 3049.727   | 3055.402    | 3055.402    | 3049.727    | 3049.727    |
| 45  | 2822.700   | 2826.484    | 2826.484    | 2822.700    | 2822.700    |
| 50  | 2489.727   | 2497.295    | 2501.079    | 2497.295    | 2497.295    |
| 55  | 2171.890   | 2181.349    | 2181.349    | 2181.349    | 2168.106    |
| 60  | 1818.106   | 1818.106    | 1821.890    | 1821.890    | 1821.890    |
| 65  | 1488.917   | 1481.350    | 1488.917    | 1488.917    | 1492.701    |
| 70  | 1165.404   | 1169.188    | 1165.404    | 1165.404    | 1169.188    |
| 75  | 819.188    | 813.513     | 819.188     | 813.513     | 819.188     |
| 80  | 527.837    | 527.837     | 524.054     | 527.837     | 527.837     |
| 85  | 295.135    | 295.135     | 291.351     | 291.351     | 295.135     |
| 90  | 122.973    | 122.973     | 117.297     | 122.973     | 122.973     |
| 95  | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 100 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 105 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 110 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 115 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 120 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 125 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 130 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 135 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 140 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 145 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 150 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 155 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 160 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 165 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 170 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 175 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |
| 180 | 0.000      | 0.000       | 0.000       | 0.000       | 0.000       |

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**ZONAL LUMEN SUMMARY**

| Zone    | Lumens   | %Lamp | %Fixt  |
|---------|----------|-------|--------|
| 0-20    | 1661.41  | N.A.  | 13.40  |
| 0-30    | 3469.07  | N.A.  | 28.00  |
| 0-40    | 5543.75  | N.A.  | 44.80  |
| 0-60    | 9648.35  | N.A.  | 78.00  |
| 0-80    | 12002.4  | N.A.  | 97.00  |
| 0-90    | 12338.82 | N.A.  | 99.70  |
| 10-90   | 11905.16 | N.A.  | 96.20  |
| 20-40   | 3882.34  | N.A.  | 31.40  |
| 20-50   | 6045.91  | N.A.  | 48.90  |
| 40-70   | 5580.86  | N.A.  | 45.10  |
| 60-80   | 2354.05  | N.A.  | 19.00  |
| 70-80   | 877.78   | N.A.  | 7.10   |
| 80-90   | 336.42   | N.A.  | 2.70   |
| 90-110  | 33.28    | N.A.  | 0.30   |
| 90-120  | 33.28    | N.A.  | 0.30   |
| 90-130  | 33.28    | N.A.  | 0.30   |
| 90-150  | 33.28    | N.A.  | 0.30   |
| 90-180  | 33.28    | N.A.  | 0.30   |
| 110-180 | 0.00     | N.A.  | 0.00   |
| 0-180   | 12372.1  | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens  |
|---------|---------|
| 0-10    | 433.66  |
| 10-20   | 1227.75 |
| 20-30   | 1807.67 |
| 30-40   | 2074.68 |
| 40-50   | 2163.57 |
| 50-60   | 1941.03 |
| 60-70   | 1476.26 |
| 70-80   | 877.78  |
| 80-90   | 336.42  |
| 90-100  | 33.28   |
| 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  | 108 | 103 | 99  | 95  | 106 | 101 | 97  | 93  | 97  | 94  | 90  | 93  | 90  | 88  | 89  | 87  | 85  | 83  |
| 2  | 99  | 90  | 83  | 77  | 96  | 88  | 82  | 76  | 85  | 79  | 75  | 81  | 77  | 73  | 78  | 74  | 71  | 69  |
| 3  | 90  | 79  | 71  | 64  | 87  | 78  | 70  | 64  | 75  | 68  | 63  | 72  | 66  | 61  | 69  | 64  | 60  | 58  |
| 4  | 82  | 70  | 61  | 55  | 80  | 69  | 61  | 54  | 66  | 59  | 53  | 64  | 58  | 53  | 62  | 56  | 52  | 50  |
| 5  | 76  | 63  | 54  | 47  | 74  | 62  | 53  | 47  | 59  | 52  | 46  | 57  | 51  | 46  | 56  | 50  | 45  | 43  |
| 6  | 70  | 57  | 48  | 41  | 68  | 56  | 47  | 41  | 54  | 46  | 41  | 52  | 45  | 40  | 50  | 44  | 40  | 38  |
| 7  | 65  | 51  | 43  | 36  | 63  | 51  | 42  | 36  | 49  | 41  | 36  | 47  | 41  | 36  | 46  | 40  | 35  | 33  |
| 8  | 60  | 47  | 38  | 33  | 59  | 46  | 38  | 32  | 45  | 37  | 32  | 44  | 37  | 32  | 42  | 36  | 32  | 30  |
| 9  | 57  | 43  | 35  | 29  | 55  | 42  | 35  | 29  | 41  | 34  | 29  | 40  | 34  | 29  | 39  | 33  | 29  | 27  |
| 10 | 53  | 40  | 32  | 27  | 52  | 39  | 32  | 27  | 38  | 31  | 26  | 37  | 31  | 26  | 36  | 30  | 26  | 24  |

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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

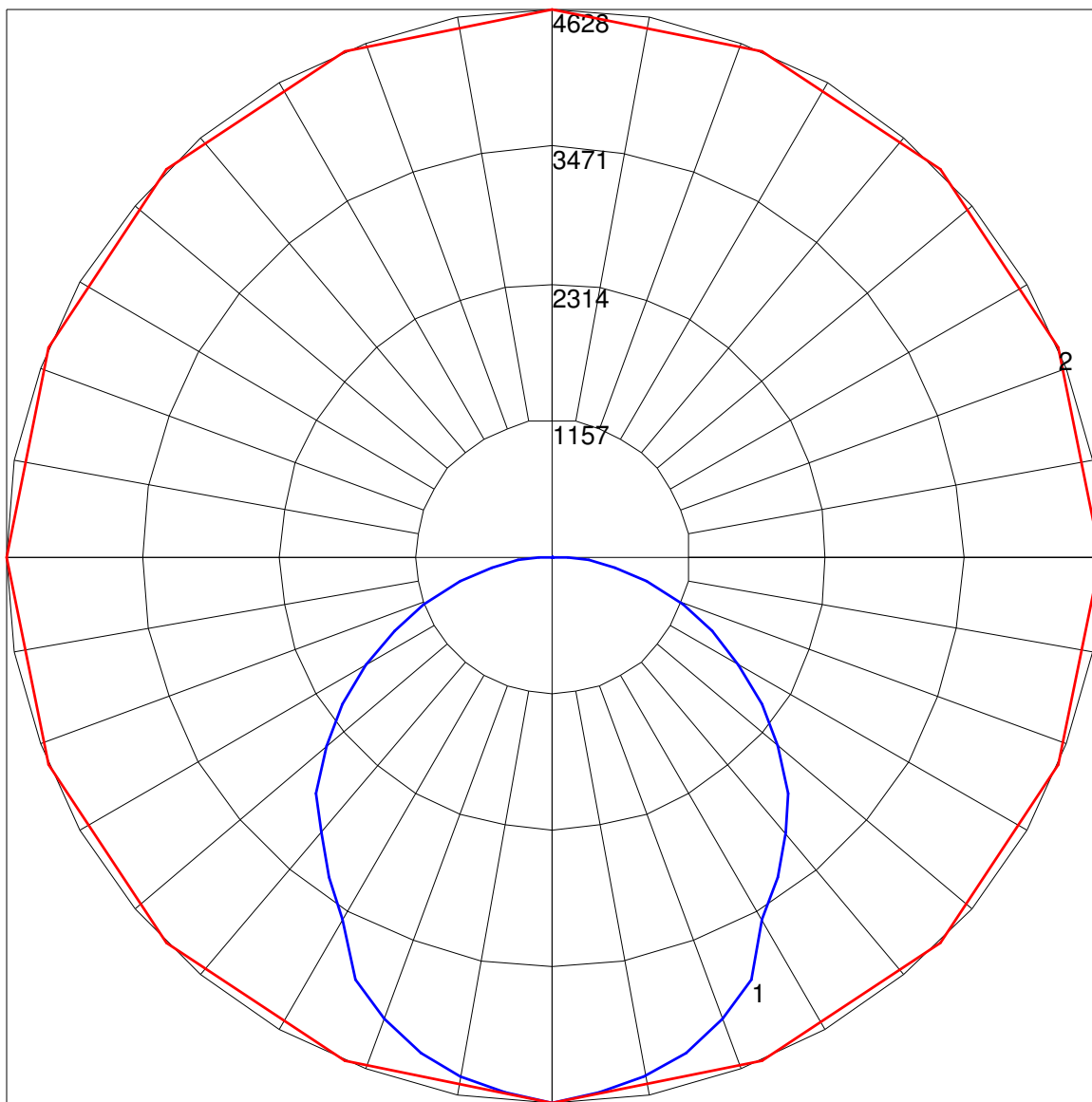
|      |      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|------|
| X=2H | Y=2H | 17.3 | 19.0 | 17.7 | 19.3 | 19.6 | 17.3 | 19.0 | 17.7 | 19.3 | 19.6 |
|      | 3H   | 19.1 | 20.6 | 19.5 | 20.9 | 21.3 | 19.1 | 20.6 | 19.5 | 20.9 | 21.3 |
|      | 4H   | 19.7 | 21.1 | 20.1 | 21.5 | 21.9 | 19.7 | 21.1 | 20.1 | 21.5 | 21.9 |
|      | 6H   | 20.2 | 21.5 | 20.6 | 21.9 | 22.3 | 20.2 | 21.5 | 20.6 | 21.9 | 22.3 |
|      | 8H   | 20.4 | 21.6 | 20.8 | 22.0 | 22.4 | 20.4 | 21.7 | 20.8 | 22.0 | 22.4 |
|      | 12H  | 20.6 | 21.7 | 21.0 | 22.1 | 22.5 | 20.6 | 21.7 | 21.0 | 22.1 | 22.6 |

### UGR Viewed Endwise

|     |     |      |      |      |      |      |      |      |      |      |      |
|-----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H  | 2H  | 17.9 | 19.3 | 18.3 | 19.7 | 20.0 | 17.9 | 19.3 | 18.3 | 19.7 | 20.0 |
|     | 3H  | 19.9 | 21.1 | 20.3 | 21.5 | 21.9 | 19.9 | 21.1 | 20.3 | 21.5 | 21.9 |
|     | 4H  | 20.7 | 21.7 | 21.1 | 22.2 | 22.6 | 20.7 | 21.7 | 21.1 | 22.2 | 22.6 |
|     | 6H  | 21.3 | 22.2 | 21.7 | 22.7 | 23.1 | 21.3 | 22.2 | 21.7 | 22.7 | 23.1 |
|     | 8H  | 21.5 | 22.4 | 22.0 | 22.8 | 23.3 | 21.5 | 22.4 | 22.0 | 22.8 | 23.3 |
|     | 12H | 21.7 | 22.5 | 22.2 | 23.0 | 23.4 | 21.7 | 22.5 | 22.2 | 23.0 | 23.5 |
| 8H  | 4H  | 20.9 | 21.8 | 21.4 | 22.3 | 22.7 | 20.9 | 21.8 | 21.4 | 22.3 | 22.7 |
|     | 6H  | 21.7 | 22.4 | 22.2 | 22.9 | 23.4 | 21.7 | 22.4 | 22.2 | 22.9 | 23.4 |
|     | 8H  | 22.0 | 22.7 | 22.5 | 23.2 | 23.7 | 22.0 | 22.7 | 22.5 | 23.2 | 23.7 |
|     | 12H | 22.3 | 22.9 | 22.8 | 23.4 | 23.9 | 22.3 | 22.9 | 22.8 | 23.4 | 23.9 |
| 12H | 4H  | 21.0 | 21.8 | 21.5 | 22.3 | 22.7 | 21.0 | 21.8 | 21.5 | 22.3 | 22.7 |
|     | 6H  | 21.8 | 22.4 | 22.3 | 22.9 | 23.4 | 21.8 | 22.4 | 22.3 | 22.9 | 23.4 |
|     | 8H  | 22.1 | 22.7 | 22.6 | 23.2 | 23.8 | 22.1 | 22.7 | 22.6 | 23.2 | 23.8 |

Maximum UGR = 23.9

POLAR GRAPH



Maximum Candela = 4627.563 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)