



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : FREESTYLE 41 90 DEGREE LOUVER.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
 [TEST] L051807202  
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
 [ISSUEDATE] 5/31/2018  
 [MANUFAC] Kino Flo Lighting Systems  
 [LUMCAT] CFX-F41 or CFX-F41T  
 [LUMINAIRE] FreeStyle 41 w 90 degree louver  
 [BALLASTCAT] Kino Flo LED-151X  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [INPUT] 120VAC, 119.16W  
 [TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

|                                 |                 |
|---------------------------------|-----------------|
| Lumens Per Lamp                 | N.A. (absolute) |
| Total Lamp Lumens               | N.A. (absolute) |
| Luminaire Lumens                | 1319            |
| Total Luminaire Efficiency      | N.A.            |
| Luminaire Efficacy Rating (LER) | 11              |
| Total Luminaire Watts           | 119.16          |
| Ballast Factor                  | 1.00            |
| CIE Type                        | Direct          |
| Spacing Criteria (0-180)        | 0.66            |
| Spacing Criteria (90-270)       | 0.66            |
| Spacing Criteria (Diagonal)     | 0.72            |
| Basic Luminous Shape            | Rectangular     |
| Luminous Length (0-180)         | 0.58 ft         |
| Luminous Width (90-270)         | 4.04 ft         |
| Luminous Height                 | 0.00 ft         |



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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|------------------|---------------|----------------|----------------|
| 45               | 458           | 461            | 461            |
| 55               | 120           | 120            | 128            |
| 65               | 22            | 22             | 22             |
| 75               | 18            | 18             | 18             |
| 85               | 0             | 53             | 53             |

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**CANDELA TABULATION**

|             | <u>0</u> | <u>5</u> | <u>10</u> | <u>15</u> | <u>20</u> | <u>25</u> | <u>30</u> | <u>35</u> | <u>40</u> | <u>45</u> |
|-------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0.0</b>  | 2304     | 2304     | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      |
| <b>1.0</b>  | 2289     | 2289     | 2291      | 2292      | 2291      | 2289      | 2289      | 2292      | 2294      | 2296      |
| <b>3.0</b>  | 2221     | 2222     | 2224      | 2225      | 2224      | 2223      | 2224      | 2226      | 2230      | 2232      |
| <b>5.0</b>  | 2133     | 2134     | 2135      | 2137      | 2136      | 2136      | 2137      | 2140      | 2144      | 2146      |
| <b>7.0</b>  | 2026     | 2027     | 2029      | 2030      | 2030      | 2030      | 2031      | 2035      | 2038      | 2041      |
| <b>9.0</b>  | 1906     | 1849     | 1854      | 1860      | 1868      | 1877      | 1886      | 1895      | 1908      | 1918      |
| <b>11.0</b> | 1779     | 1781     | 1782      | 1784      | 1784      | 1784      | 1786      | 1790      | 1793      | 1797      |
| <b>13.0</b> | 1651     | 1653     | 1654      | 1655      | 1656      | 1656      | 1658      | 1661      | 1664      | 1668      |
| <b>15.0</b> | 1523     | 1525     | 1526      | 1527      | 1527      | 1528      | 1530      | 1532      | 1535      | 1538      |
| <b>17.0</b> | 1394     | 1396     | 1398      | 1399      | 1400      | 1401      | 1402      | 1404      | 1407      | 1409      |
| <b>19.5</b> | 1232     | 1233     | 1234      | 1237      | 1238      | 1240      | 1242      | 1244      | 1246      | 1247      |
| <b>22.5</b> | 1038     | 1040     | 1041      | 1044      | 1046      | 1048      | 1050      | 1052      | 1053      | 1054      |
| <b>25.5</b> | 848      | 849      | 851       | 854       | 856       | 858       | 860       | 862       | 863       | 864       |
| <b>29.0</b> | 635      | 636      | 638       | 640       | 642       | 644       | 646       | 648       | 649       | 650       |
| <b>33.0</b> | 412      | 413      | 414       | 416       | 417       | 418       | 419       | 421       | 423       | 425       |
| <b>37.5</b> | 208      | 208      | 208       | 207       | 207       | 207       | 208       | 210       | 212       | 214       |
| <b>42.5</b> | 90       | 90       | 90        | 90        | 89        | 89        | 89        | 89        | 90        | 91        |
| <b>47.5</b> | 51       | 51       | 51        | 51        | 51        | 51        | 51        | 50        | 50        | 51        |
| <b>55.0</b> | 15       | 15       | 15        | 15        | 15        | 15        | 16        | 16        | 15        | 15        |
| <b>65.0</b> | 2        | 2        | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         |
| <b>75.0</b> | 1        | 1        | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| <b>85.0</b> | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 1         | 0         | 1         |
| <b>90.0</b> | 0        | 0        | 0         | 0         | 0         | 0         | 0         | 0         | 0         | 0         |

**Vert. Angles**      **Horizontal Angles**

|             | <u>50</u> | <u>55</u> | <u>60</u> | <u>65</u> | <u>70</u> | <u>75</u> | <u>80</u> | <u>85</u> | <u>90</u> |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>0.0</b>  | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      | 2304      |
| <b>1.0</b>  | 2294      | 2290      | 2285      | 2281      | 2281      | 2284      | 2286      | 2286      | 2287      |
| <b>3.0</b>  | 2231      | 2228      | 2225      | 2223      | 2224      | 2227      | 2229      | 2230      | 2230      |
| <b>5.0</b>  | 2146      | 2143      | 2140      | 2137      | 2139      | 2141      | 2144      | 2145      | 2145      |
| <b>7.0</b>  | 2041      | 2039      | 2037      | 2035      | 2036      | 2038      | 2041      | 2042      | 2042      |
| <b>9.0</b>  | 1928      | 1936      | 1942      | 1949      | 1957      | 1965      | 1974      | 1982      | 1926      |
| <b>11.0</b> | 1798      | 1797      | 1796      | 1795      | 1796      | 1799      | 1801      | 1802      | 1802      |
| <b>13.0</b> | 1669      | 1669      | 1668      | 1668      | 1669      | 1672      | 1674      | 1675      | 1676      |
| <b>15.0</b> | 1539      | 1539      | 1540      | 1539      | 1541      | 1544      | 1546      | 1548      | 1548      |
| <b>17.0</b> | 1410      | 1410      | 1410      | 1410      | 1412      | 1415      | 1419      | 1421      | 1421      |
| <b>19.5</b> | 1248      | 1248      | 1248      | 1249      | 1251      | 1254      | 1258      | 1260      | 1261      |
| <b>22.5</b> | 1055      | 1054      | 1054      | 1055      | 1058      | 1061      | 1065      | 1068      | 1069      |
| <b>25.5</b> | 864       | 864       | 864       | 865       | 868       | 871       | 875       | 878       | 879       |
| <b>29.0</b> | 650       | 650       | 651       | 652       | 654       | 657       | 660       | 662       | 662       |
| <b>33.0</b> | 426       | 426       | 426       | 427       | 429       | 431       | 432       | 433       | 434       |
| <b>37.5</b> | 217       | 218       | 219       | 219       | 219       | 219       | 219       | 219       | 219       |
| <b>42.5</b> | 92        | 92        | 93        | 93        | 92        | 92        | 91        | 91        | 91        |
| <b>47.5</b> | 51        | 51        | 51        | 51        | 51        | 51        | 51        | 51        | 51        |
| <b>55.0</b> | 15        | 15        | 15        | 15        | 15        | 15        | 16        | 16        | 16        |
| <b>65.0</b> | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         | 2         |
| <b>75.0</b> | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| <b>85.0</b> | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |
| <b>90.0</b> | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         | 1         |

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**ZONAL LUMEN SUMMARY**

| Zone   | Lumens  | %Lamp | %Fixt  |
|--------|---------|-------|--------|
| 0-30   | 994.52  | N.A.  | 75.40  |
| 0-40   | 1206.25 | N.A.  | 91.40  |
| 0-60   | 1308.5  | N.A.  | 99.20  |
| 0-90   | 1319.37 | N.A.  | 100.00 |
| 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   |
| 0-180  | 1319.37 | N.A.  | 100.00 |

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

| Zone    | Lumens |
|---------|--------|
| 0-10    | 161.01 |
| 10-20   | 437.08 |
| 20-30   | 396.43 |
| 30-40   | 211.73 |
| 40-50   | 81.05  |
| 50-60   | 21.20  |
| 60-70   | 8.18   |
| 70-80   | 1.54   |
| 80-90   | 1.14   |
| 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   |

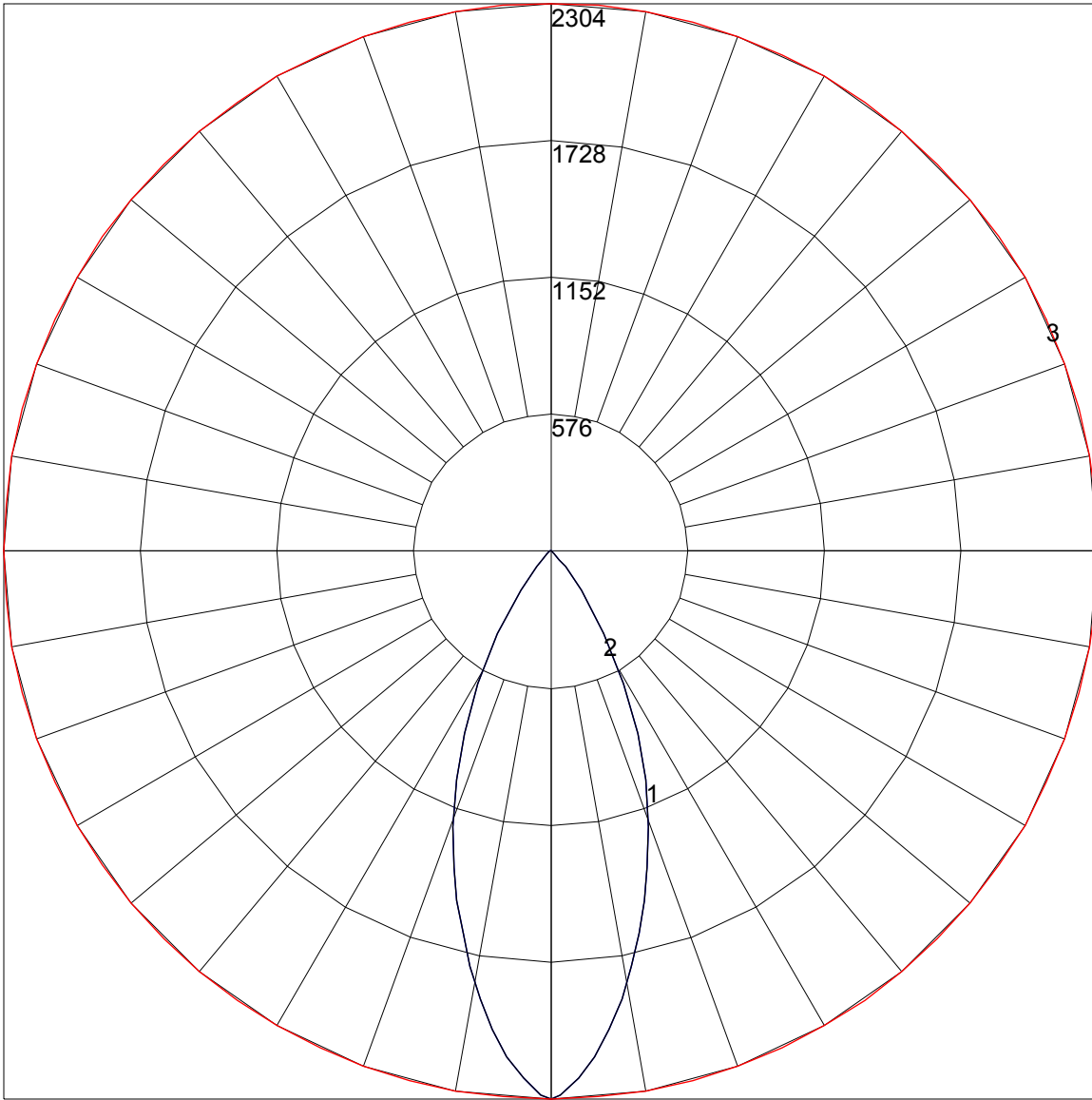
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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  | 114 | 111 | 109 | 106 | 111 | 109 | 107 | 105 | 105 | 103 | 101 | 101 | 100 | 98  | 98  | 97  | 96  | 94  |
| 2  | 108 | 103 | 100 | 96  | 106 | 102 | 98  | 95  | 99  | 96  | 93  | 96  | 93  | 91  | 93  | 91  | 89  | 88  |
| 3  | 103 | 97  | 92  | 88  | 101 | 95  | 91  | 87  | 93  | 89  | 86  | 90  | 87  | 85  | 88  | 86  | 83  | 82  |
| 4  | 98  | 91  | 85  | 81  | 96  | 90  | 85  | 81  | 87  | 83  | 80  | 85  | 82  | 79  | 84  | 81  | 78  | 77  |
| 5  | 93  | 85  | 80  | 75  | 92  | 84  | 79  | 75  | 83  | 78  | 74  | 81  | 77  | 74  | 79  | 76  | 73  | 72  |
| 6  | 89  | 80  | 75  | 70  | 87  | 80  | 74  | 70  | 78  | 73  | 70  | 77  | 72  | 69  | 75  | 72  | 69  | 67  |
| 7  | 85  | 76  | 70  | 66  | 83  | 75  | 70  | 66  | 74  | 69  | 65  | 73  | 68  | 65  | 72  | 68  | 65  | 63  |
| 8  | 81  | 72  | 66  | 62  | 80  | 71  | 66  | 62  | 70  | 65  | 62  | 69  | 65  | 61  | 68  | 64  | 61  | 60  |
| 9  | 77  | 68  | 62  | 58  | 76  | 68  | 62  | 58  | 67  | 62  | 58  | 66  | 61  | 58  | 65  | 61  | 58  | 57  |
| 10 | 74  | 65  | 59  | 55  | 73  | 64  | 59  | 55  | 63  | 58  | 55  | 63  | 58  | 55  | 62  | 58  | 55  | 54  |

POLAR GRAPH



Maximum Candela = 2304 Located At Horizontal Angle = 0, Vertical Angle = 0

# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

# 2 - Vertical Plane Through Horizontal Angles (0 - 180)

# 3 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

ILLUMINATION AT A DISTANCE

| Illuminance at a Distance |                        |                 |            |              |                 |                |            |
|---------------------------|------------------------|-----------------|------------|--------------|-----------------|----------------|------------|
| Distance (Ft)             | Center Beam Footcandle | Beam Width (Ft) |            | Distance (m) | Center Beam Lux | Beam Width (m) |            |
|                           |                        | Vertical        | Horizontal |              |                 | Vertical       | Horizontal |
| 2                         | 576.0                  | 1.52            | 1.55       | 0.5          | 9216.0          | 0.38           | 0.39       |
| 4                         | 144.0                  | 3.03            | 3.10       | 1.0          | 2304.0          | 0.76           | 0.78       |
| 6                         | 64.0                   | 4.55            | 4.65       | 1.5          | 1024.0          | 1.14           | 1.16       |
| 8                         | 36.0                   | 6.06            | 6.21       | 2.0          | 576.0           | 1.52           | 1.55       |
| 10                        | 23.0                   | 7.58            | 7.76       | 2.5          | 368.6           | 1.89           | 1.94       |
| 12                        | 16.0                   | 9.09            | 9.31       | 3.0          | 256.0           | 2.27           | 2.33       |
| 14                        | 11.8                   | 10.61           | 10.86      | 3.5          | 188.1           | 2.65           | 2.72       |
| 16                        | 9.0                    | 12.12           | 12.41      | 4.0          | 144.0           | 3.03           | 3.10       |
| 18                        | 7.1                    | 13.64           | 13.96      | 4.5          | 113.8           | 3.41           | 3.49       |
| 20                        | 5.8                    | 15.15           | 15.51      | 5.0          | 92.2            | 3.79           | 3.88       |
| 22                        | 4.8                    | 16.67           | 17.07      | 5.5          | 76.2            | 4.17           | 4.27       |
| 24                        | 4.0                    | 18.19           | 18.62      | 6.0          | 64.0            | 4.55           | 4.65       |