**IES INDOOR REPORT**
**PHOTOMETRIC FILENAME : PTDC-22-L43-840-RA-DIM-UNV_.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002
[TEST] GEN FROM BALLABS TEST NO.  19562.0
[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
[ISSUEDATE] 2022-05-03
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
[LUMINAIRE] 1-72 LED 22"ARRAY 2x2'RECESSED LUMINAIRE
[MORE] WHITE REFLECTOR w/CENTER FROSTED RIBBED ACRYLIC LENS
[MORE] ELECTRONIC 0-10V LED DRIVER
[LUMCAT] PTDC-22-L43-840-RA-DIM-UNV
[LAMPCAT] HLM 80 CRI 4000K CCT
[SEARCH_SOURCETYPE] LED
[SEARCH_APPLICATION] INDOOR
[SEARCH_MOUNTING] RECESSED

**CHARACTERISTICS**

| | |
|---|---|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 4473 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 129 |
| Total Luminaire Watts | 34.7 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.24 |
| Spacing Criterion (90-270) | 1.24 |
| Spacing Criterion (Diagonal) | 1.34 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 1.92 ft |
| Luminous Width (90-270) | 1.93 ft |
| Luminous Height | 0.00 ft |

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

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---|---|---|---|
| 45 | 4203 | 4359 | 4501 |
| 55 | 3553 | 3915 | 4178 |
| 65 | 2716 | 3397 | 3777 |
| 75 | 1888 | 3013 | 3724 |
| 85 | 1075 | 2458 | 3072 |

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**CANDELA TABULATION**

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|---|---|---|---|---|---|
| **0** | 1709.530 | 1709.530 | 1709.530 | 1709.530 | 1709.530 |
| **5** | 1715.278 | 1704.931 | 1702.632 | 1696.883 | 1696.883 |
| **10** | 1692.285 | 1681.938 | 1680.788 | 1675.040 | 1673.890 |
| **15** | 1652.047 | 1640.551 | 1639.401 | 1637.102 | 1635.952 |
| **20** | 1594.565 | 1584.218 | 1583.068 | 1584.218 | 1584.218 |
| **25** | 1514.089 | 1503.742 | 1510.640 | 1515.239 | 1510.640 |
| **30** | 1415.219 | 1410.621 | 1417.518 | 1425.566 | 1419.818 |
| **35** | 1301.404 | 1300.254 | 1315.200 | 1320.948 | 1326.696 |
| **40** | 1170.344 | 1170.344 | 1195.636 | 1205.983 | 1215.180 |
| **45** | 1020.889 | 1020.889 | 1058.828 | 1082.970 | 1093.317 |
| **50** | 863.387 | 864.537 | 915.121 | 947.312 | 962.257 |
| **55** | 700.137 | 712.783 | 771.415 | 805.905 | 823.149 |
| **60** | 540.335 | 565.628 | 624.260 | 662.198 | 680.593 |
| **65** | 394.330 | 427.670 | 493.200 | 534.587 | 548.383 |
| **70** | 265.569 | 306.957 | 372.487 | 415.024 | 431.119 |
| **75** | 167.849 | 208.087 | 267.868 | 310.405 | 331.099 |
| **80** | 90.822 | 125.312 | 178.196 | 208.087 | 228.780 |
| **85** | 32.190 | 56.333 | 73.578 | 73.578 | 91.972 |
| **90** | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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**ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---|---|---|---|
| 0-20 | 624.60 | N.A. | 14.00 |
| 0-30 | 1319.86 | N.A. | 29.50 |
| 0-40 | 2139.68 | N.A. | 47.80 |
| 0-60 | 3634.99 | N.A. | 81.30 |
| 0-80 | 4391.23 | N.A. | 98.20 |
| 0-90 | 4473.06 | N.A. | 100.00 |
| 10-90 | 4311.26 | N.A. | 96.40 |
| 20-40 | 1515.08 | N.A. | 33.90 |
| 20-50 | 2328.00 | N.A. | 52.00 |
| 40-70 | 1975.39 | N.A. | 44.20 |
| 60-80 | 756.24 | N.A. | 16.90 |
| 70-80 | 276.17 | N.A. | 6.20 |
| 80-90 | 81.83 | N.A. | 1.80 |
| 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 | 4473.06 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

| Zone | Lumens |
|---|---|
| 0-10 | 161.81 |
| 10-20 | 462.79 |
| 20-30 | 695.26 |
| 30-40 | 819.81 |
| 40-50 | 812.92 |
| 50-60 | 682.39 |
| 60-70 | 480.07 |
| 70-80 | 276.17 |
| 80-90 | 81.83 |
| 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 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 91 | 89 | 90 | 88 | 86 | 84 |
| 2 | 100 | 91 | 85 | 79 | 97 | 90 | 83 | 78 | 86 | 81 | 76 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 66 | 89 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 63 | 71 | 66 | 62 | 60 |
| 4 | 83 | 72 | 63 | 57 | 81 | 70 | 62 | 56 | 68 | 61 | 55 | 66 | 60 | 55 | 63 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 54 | 47 | 42 | 52 | 46 | 42 | 40 |
| 7 | 66 | 53 | 44 | 38 | 64 | 52 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 37 | 48 | 42 | 37 | 35 |
| 8 | 62 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 33 | 44 | 38 | 33 | 31 |
| 9 | 58 | 44 | 36 | 31 | 56 | 44 | 36 | 31 | 43 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 53 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 28 | 38 | 32 | 27 | 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 | | | | | UGR Viewed Endwise | | | | |
| X=2H | Y=2H | 16.0 | 17.6 | 16.3 | 17.9 | 18.2 | 17.0 | 18.6 | 17.4 | 18.9 | 19.2 |
| | 3H | 17.3 | 18.7 | 17.6 | 19.0 | 19.4 | 18.8 | 20.3 | 19.2 | 20.6 | 21.0 |
| | 4H | 17.7 | 19.0 | 18.1 | 19.4 | 19.8 | 19.6 | 21.0 | 20.0 | 21.3 | 21.7 |
| | 6H | 17.9 | 19.2 | 18.4 | 19.6 | 20.0 | 20.3 | 21.6 | 20.7 | 21.9 | 22.3 |
| | 8H | 18.0 | 19.2 | 18.4 | 19.6 | 20.0 | 20.5 | 21.7 | 21.0 | 22.1 | 22.5 |
| | 12H | 18.0 | 19.2 | 18.5 | 19.6 | 20.0 | 20.7 | 21.8 | 21.1 | 22.2 | 22.7 |
| 4H | 2H | 16.7 | 18.0 | 17.1 | 18.4 | 18.8 | 17.5 | 18.9 | 17.9 | 19.2 | 19.6 |
| | 3H | 18.2 | 19.3 | 18.6 | 19.7 | 20.1 | 19.6 | 20.7 | 20.0 | 21.1 | 21.5 |
| | 4H | 18.8 | 19.8 | 19.2 | 20.2 | 20.6 | 20.5 | 21.5 | 20.9 | 21.9 | 22.4 |
| | 6H | 19.1 | 20.0 | 19.6 | 20.5 | 20.9 | 21.4 | 22.3 | 21.8 | 22.7 | 23.2 |
| | 8H | 19.2 | 20.1 | 19.7 | 20.5 | 21.0 | 21.7 | 22.5 | 22.1 | 22.9 | 23.4 |
| | 12H | 19.3 | 20.1 | 19.8 | 20.5 | 21.0 | 21.9 | 22.6 | 22.3 | 23.1 | 23.6 |
| 8H | 4H | 19.2 | 20.0 | 19.7 | 20.5 | 21.0 | 20.8 | 21.6 | 21.2 | 22.0 | 22.5 |
| | 6H | 19.7 | 20.4 | 20.2 | 20.9 | 21.4 | 21.7 | 22.4 | 22.2 | 22.9 | 23.4 |
| | 8H | 19.9 | 20.5 | 20.4 | 21.1 | 21.5 | 22.1 | 22.8 | 22.7 | 23.3 | 23.8 |
| | 12H | 20.0 | 20.6 | 20.5 | 21.1 | 21.6 | 22.4 | 23.0 | 22.9 | 23.4 | 24.0 |
| 12H | 4H | 19.3 | 20.0 | 19.8 | 20.5 | 21.0 | 20.8 | 21.5 | 21.2 | 22.0 | 22.5 |
| | 6H | 19.9 | 20.5 | 20.4 | 21.0 | 21.5 | 21.8 | 22.4 | 22.3 | 22.9 | 23.4 |
| | 8H | 20.1 | 20.7 | 20.6 | 21.2 | 21.7 | 22.2 | 22.8 | 22.7 | 23.3 | 23.8 |

Maximum UGR = 24.0

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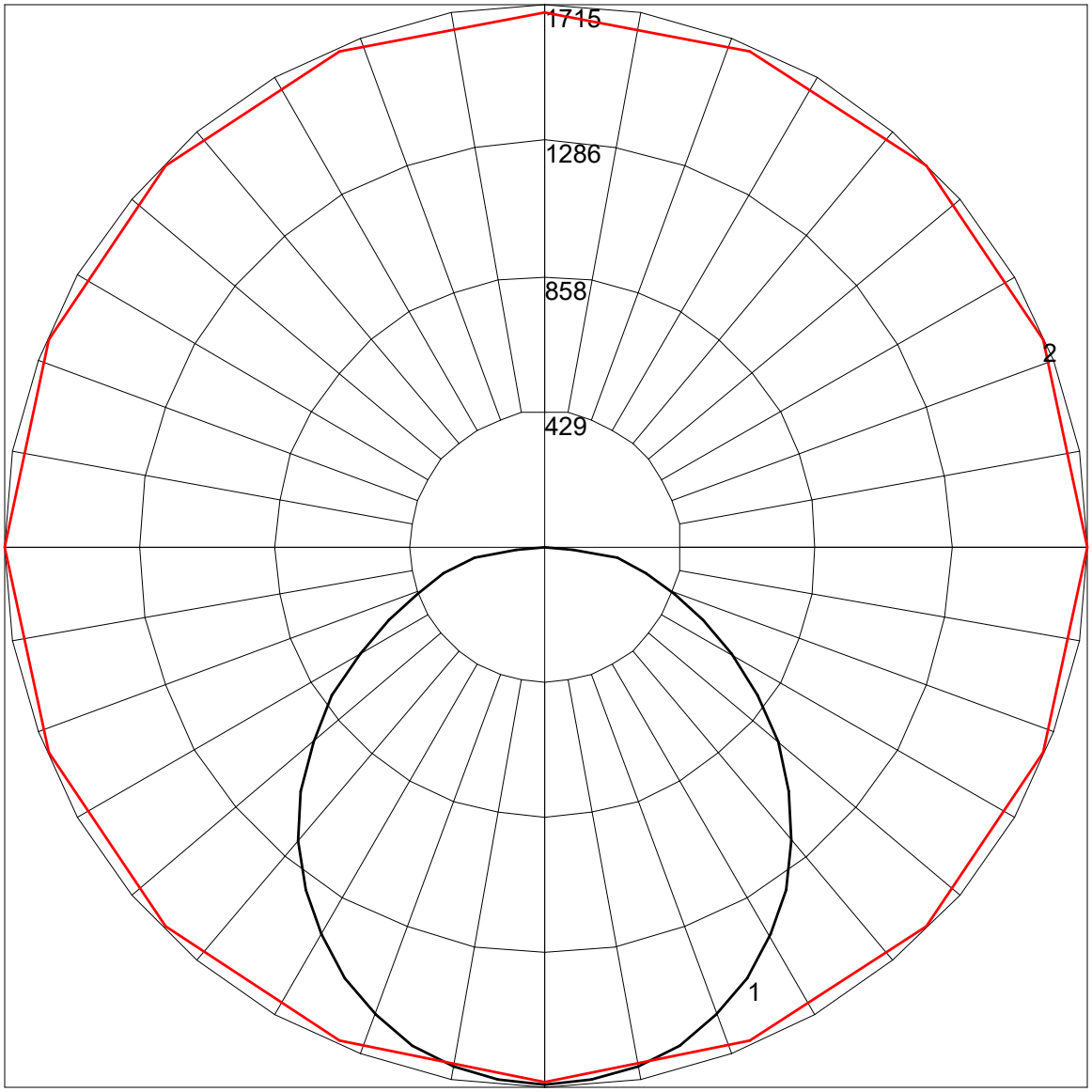
**POLAR GRAPH**




Maximum Candela = 1715.278  Located At Horizontal Angle = 0, Vertical Angle = 5
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)
# 2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)

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