



IES INDOOR REPORT

PHOTOMETRIC FILENAME : LT-22-L27-827-AF-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM BALLABS TEST NO. 20203.0
 [TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
 [ISSUEDATE] 2023-07-21
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC - CARTHAGE, MO
 [LUMINAIRE] 2x2 RECESSED LED LUMINAIRE
 [MORE] WHITE REFLECTOR w/FROSTED ACRYLIC CENTER LENS
 [MORE] 0-10V DIMMING DRIVER
 [LUMCAT] LT-22-L27-827-AF-DIM-UNV
 [LAMPCAT] 22 INCH LED ARRAY
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Classroom, Office, Direct
 [_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2640 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 124 |
| Total Luminaire Watts | 21.3 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.22 |
| Spacing Criterion (90-270) | 1.30 |
| Spacing Criterion (Diagonal) | 1.40 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 1.92 ft |
| Luminous Width (90-270) | 1.92 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 2283 | 2452 | 2640 |
| 55 | 2069 | 2413 | 2722 |
| 65 | 1824 | 2389 | 2950 |
| 75 | 1403 | 2533 | 3448 |
| 85 | 610 | 2058 | 2007 |

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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 | 878.600 | 878.600 | 878.600 | 878.600 | 878.600 |
| 5 | 877.843 | 874.059 | 873.303 | 870.276 | 872.546 |
| 10 | 862.708 | 858.924 | 861.951 | 858.924 | 861.194 |
| 15 | 840.005 | 838.492 | 843.032 | 844.546 | 846.816 |
| 20 | 803.681 | 808.978 | 815.789 | 823.356 | 824.870 |
| 25 | 762.059 | 772.653 | 782.491 | 794.599 | 797.626 |
| 30 | 717.410 | 729.518 | 743.896 | 762.059 | 768.113 |
| 35 | 668.220 | 678.815 | 696.220 | 723.464 | 729.518 |
| 40 | 612.220 | 622.815 | 647.031 | 675.788 | 685.626 |
| 45 | 551.679 | 561.517 | 592.544 | 622.815 | 637.950 |
| 50 | 480.543 | 493.408 | 532.760 | 563.787 | 585.733 |
| 55 | 405.624 | 423.786 | 472.976 | 507.030 | 533.517 |
| 60 | 334.489 | 354.921 | 411.678 | 454.814 | 480.543 |
| 65 | 263.353 | 285.299 | 345.083 | 403.354 | 426.057 |
| 70 | 193.731 | 217.190 | 283.785 | 347.353 | 370.813 |
| 75 | 124.109 | 152.866 | 224.001 | 286.813 | 304.975 |
| 80 | 61.298 | 96.109 | 154.379 | 211.136 | 205.082 |
| 85 | 18.162 | 37.081 | 61.298 | 103.676 | 59.784 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 320.61 | N.A. | 12.10 |
| 0-30 | 681.45 | N.A. | 25.80 |
| 0-40 | 1118.97 | N.A. | 42.40 |
| 0-60 | 1995.54 | N.A. | 75.60 |
| 0-80 | 2566.95 | N.A. | 97.20 |
| 0-90 | 2640.23 | N.A. | 100.00 |
| 10-90 | 2557.27 | N.A. | 96.90 |
| 20-40 | 798.36 | N.A. | 30.20 |
| 20-50 | 1255.31 | N.A. | 47.50 |
| 40-70 | 1218.17 | N.A. | 46.10 |
| 60-80 | 571.41 | N.A. | 21.60 |
| 70-80 | 229.80 | N.A. | 8.70 |
| 80-90 | 73.28 | N.A. | 2.80 |
| 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 | 2640.23 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 82.96 |
| 10-20 | 237.65 |
| 20-30 | 360.84 |
| 30-40 | 437.53 |
| 40-50 | 456.94 |
| 50-60 | 419.63 |
| 60-70 | 341.60 |
| 70-80 | 229.80 |
| 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 | 108 | 103 | 98 | 94 | 105 | 101 | 96 | 93 | 96 | 93 | 90 | 92 | 90 | 87 | 89 | 86 | 84 | 82 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 81 | 75 | 84 | 78 | 73 | 80 | 76 | 71 | 77 | 73 | 70 | 68 |
| 3 | 89 | 78 | 69 | 63 | 86 | 76 | 68 | 62 | 73 | 66 | 61 | 70 | 65 | 60 | 68 | 63 | 59 | 56 |
| 4 | 81 | 69 | 60 | 53 | 79 | 67 | 59 | 52 | 65 | 57 | 52 | 62 | 56 | 51 | 60 | 55 | 50 | 48 |
| 5 | 75 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 58 | 50 | 44 | 56 | 49 | 44 | 54 | 48 | 43 | 41 |
| 6 | 69 | 55 | 46 | 39 | 67 | 54 | 45 | 39 | 52 | 45 | 39 | 51 | 44 | 38 | 49 | 43 | 38 | 36 |
| 7 | 64 | 50 | 41 | 35 | 62 | 49 | 41 | 35 | 48 | 40 | 34 | 46 | 39 | 34 | 45 | 38 | 34 | 32 |
| 8 | 59 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 43 | 36 | 31 | 42 | 35 | 30 | 41 | 35 | 30 | 28 |
| 9 | 55 | 42 | 33 | 28 | 54 | 41 | 33 | 28 | 40 | 33 | 27 | 39 | 32 | 27 | 38 | 32 | 27 | 25 |
| 10 | 52 | 39 | 30 | 25 | 51 | 38 | 30 | 25 | 37 | 30 | 25 | 36 | 29 | 25 | 35 | 29 | 25 | 23 |

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UGR TABLE - CORRECTED

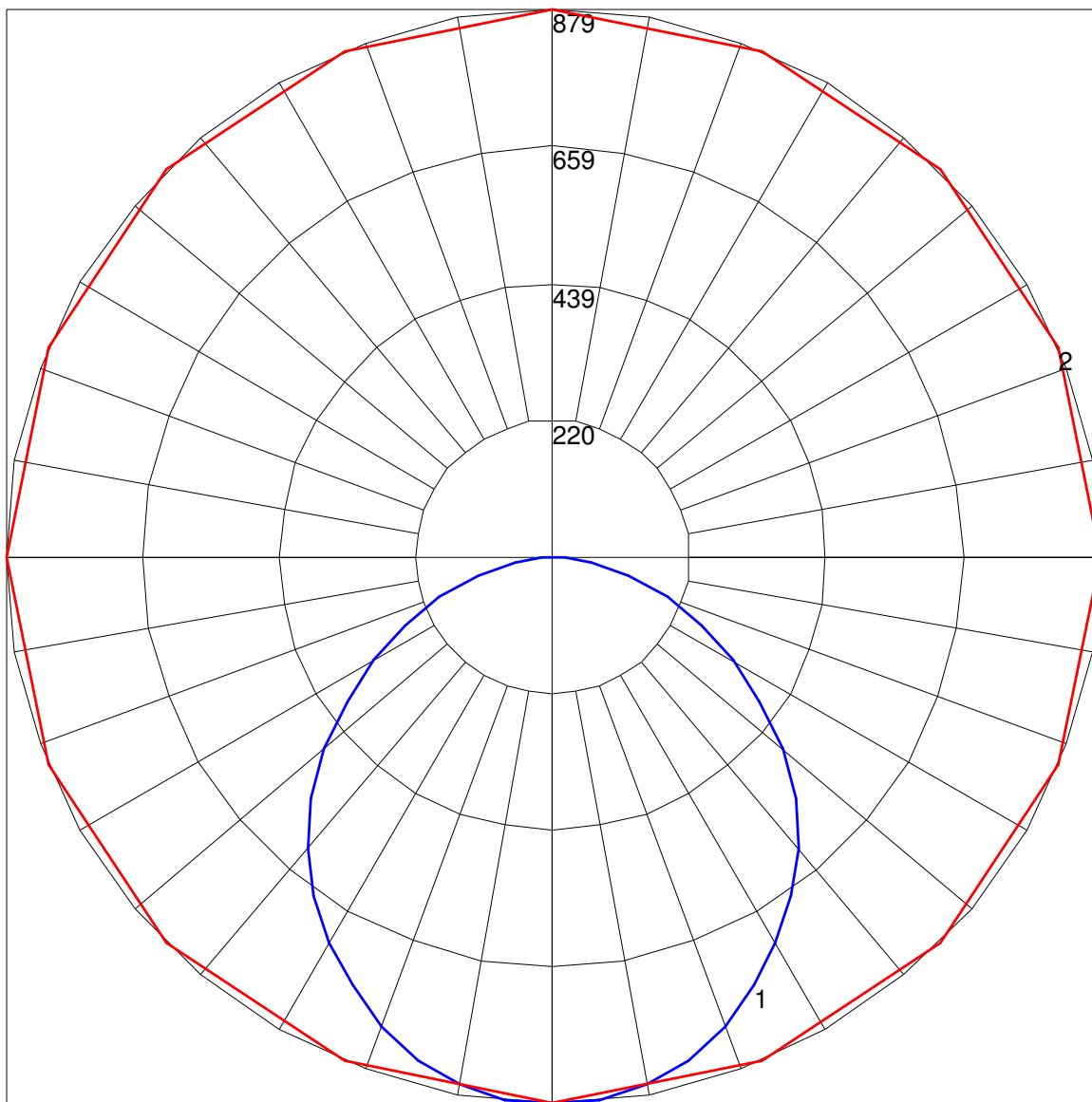
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 14.3 | 16.0 | 14.7 | 16.3 | 16.6 | 15.9 | 17.6 | 16.3 | 17.9 | 18.2 |
| | 3H | 15.9 | 17.5 | 16.3 | 17.8 | 18.1 | 18.5 | 20.0 | 18.8 | 20.3 | 20.7 |
| | 4H | 16.5 | 17.9 | 16.9 | 18.3 | 18.7 | 19.6 | 21.1 | 20.0 | 21.4 | 21.8 |
| | 6H | 16.8 | 18.2 | 17.2 | 18.5 | 18.9 | 20.6 | 21.9 | 21.0 | 22.3 | 22.7 |
| | 8H | 16.9 | 18.2 | 17.3 | 18.6 | 19.0 | 20.9 | 22.2 | 21.3 | 22.6 | 23.0 |
| | 12H | 16.9 | 18.2 | 17.4 | 18.5 | 19.0 | 21.0 | 22.3 | 21.5 | 22.7 | 23.1 |
| 4H | 2H | 15.2 | 16.7 | 15.6 | 17.0 | 17.4 | 16.5 | 17.9 | 16.9 | 18.3 | 18.6 |
| | 3H | 17.1 | 18.3 | 17.5 | 18.7 | 19.1 | 19.3 | 20.5 | 19.7 | 20.9 | 21.3 |
| | 4H | 17.8 | 18.9 | 18.2 | 19.3 | 19.8 | 20.6 | 21.8 | 21.1 | 22.2 | 22.6 |
| | 6H | 18.3 | 19.2 | 18.7 | 19.7 | 20.1 | 21.8 | 22.8 | 22.3 | 23.3 | 23.7 |
| | 8H | 18.4 | 19.3 | 18.8 | 19.7 | 20.2 | 22.2 | 23.1 | 22.7 | 23.6 | 24.0 |
| | 12H | 18.4 | 19.3 | 18.9 | 19.7 | 20.2 | 22.4 | 23.3 | 22.9 | 23.7 | 24.2 |
| 8H | 4H | 18.5 | 19.4 | 19.0 | 19.9 | 20.4 | 20.9 | 21.9 | 21.4 | 22.3 | 22.8 |
| | 6H | 19.2 | 19.9 | 19.7 | 20.4 | 20.9 | 22.3 | 23.1 | 22.8 | 23.6 | 24.1 |
| | 8H | 19.4 | 20.1 | 19.9 | 20.6 | 21.0 | 22.9 | 23.6 | 23.4 | 24.1 | 24.5 |
| | 12H | 19.5 | 20.1 | 20.0 | 20.6 | 21.1 | 23.2 | 23.8 | 23.7 | 24.3 | 24.9 |
| 12H | 4H | 18.7 | 19.5 | 19.2 | 20.0 | 20.5 | 21.0 | 21.8 | 21.4 | 22.3 | 22.7 |
| | 6H | 19.4 | 20.1 | 20.0 | 20.6 | 21.1 | 22.4 | 23.1 | 22.9 | 23.5 | 24.1 |
| | 8H | 19.7 | 20.3 | 20.2 | 20.8 | 21.4 | 23.0 | 23.6 | 23.5 | 24.1 | 24.6 |

Maximum UGR = 24.9

POLAR GRAPH



Maximum Candela = 878.6 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.)