



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-14-P16-8TW-D-POE 4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 19432.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 26-JUN-2020

[MANUFAC] WILLIAMS INDOOR

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

[LUMINAIRE] 22" LED ARRAYS 1x4' RECESSED LUMINAIRE

[MORE] WHITE REFLECTOR w/2 PIECE FROSTED ACRLIC LENS IN DOOR

[LUMCAT] AT1-14-P16-8TW-D-PoE 4000k

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 1605 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 104 |
| Total Luminaire Watts | 15.4 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.14 |
| Spacing Criterion (90-270) | 1.10 |
| Spacing Criterion (Diagonal) | 1.22 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.76 ft |
| Luminous Width (90-270) | 0.77 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 1986 | 1949 | 1922 |
| 55 | 1666 | 1662 | 1621 |
| 65 | 1469 | 1469 | 1178 |
| 75 | 1158 | 966 | 866 |
| 85 | 921 | 569 | 406 |

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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 | 728.389 | 728.389 | 728.389 | 728.389 | 728.389 |
| 5 | 734.114 | 733.478 | 733.478 | 733.478 | 732.842 |
| 10 | 713.121 | 711.849 | 710.577 | 709.304 | 709.304 |
| 15 | 685.131 | 685.131 | 681.314 | 678.769 | 678.769 |
| 20 | 657.140 | 655.232 | 650.779 | 645.690 | 644.417 |
| 25 | 596.070 | 594.162 | 587.800 | 585.256 | 582.075 |
| 30 | 541.998 | 539.453 | 533.092 | 528.002 | 526.730 |
| 35 | 494.923 | 492.378 | 486.653 | 482.200 | 479.655 |
| 40 | 431.308 | 428.127 | 423.674 | 419.221 | 417.313 |
| 45 | 378.508 | 374.055 | 371.510 | 368.329 | 366.421 |
| 50 | 321.254 | 318.710 | 316.165 | 314.893 | 314.257 |
| 55 | 257.640 | 257.640 | 257.004 | 254.459 | 250.642 |
| 60 | 209.929 | 210.565 | 210.565 | 201.659 | 195.297 |
| 65 | 167.307 | 168.579 | 167.307 | 146.314 | 134.227 |
| 70 | 122.140 | 124.049 | 114.507 | 94.150 | 92.241 |
| 75 | 80.791 | 83.971 | 67.432 | 61.706 | 60.434 |
| 80 | 47.711 | 45.166 | 38.169 | 31.807 | 29.263 |
| 85 | 21.629 | 17.812 | 13.359 | 10.178 | 9.542 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 261.55 | N.A. | 16.30 |
| 0-30 | 533.67 | N.A. | 33.30 |
| 0-40 | 835.98 | N.A. | 52.10 |
| 0-60 | 1353.73 | N.A. | 84.30 |
| 0-80 | 1586.81 | N.A. | 98.90 |
| 0-90 | 1605.01 | N.A. | 100.00 |
| 10-90 | 1535.87 | N.A. | 95.70 |
| 20-40 | 574.43 | N.A. | 35.80 |
| 20-50 | 860.82 | N.A. | 53.60 |
| 40-70 | 674.29 | N.A. | 42.00 |
| 60-80 | 233.09 | N.A. | 14.50 |
| 70-80 | 76.54 | N.A. | 4.80 |
| 80-90 | 18.20 | N.A. | 1.10 |
| 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 | 1605.01 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 69.14 |
| 10-20 | 192.41 |
| 20-30 | 272.11 |
| 30-40 | 302.32 |
| 40-50 | 286.39 |
| 50-60 | 231.35 |
| 60-70 | 156.55 |
| 70-80 | 76.54 |
| 80-90 | 18.20 |
| 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 | 116 | 116 | 116 | 116 | 113 | 113 | 113 | 113 | 108 | 108 | 108 | 104 | 104 | 104 | 99 | 99 | 99 | 97 |
| 1 | 107 | 103 | 99 | 96 | 104 | 100 | 97 | 94 | 96 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 86 | 84 |
| 2 | 98 | 91 | 85 | 79 | 96 | 89 | 83 | 78 | 85 | 81 | 77 | 82 | 78 | 75 | 79 | 76 | 73 | 71 |
| 3 | 90 | 80 | 73 | 67 | 88 | 79 | 72 | 67 | 76 | 70 | 65 | 73 | 68 | 64 | 71 | 67 | 63 | 61 |
| 4 | 83 | 72 | 64 | 58 | 81 | 71 | 63 | 57 | 68 | 62 | 57 | 66 | 60 | 56 | 64 | 59 | 55 | 53 |
| 5 | 77 | 65 | 56 | 50 | 75 | 64 | 56 | 50 | 62 | 55 | 50 | 60 | 54 | 49 | 58 | 53 | 49 | 47 |
| 6 | 71 | 59 | 50 | 44 | 69 | 58 | 50 | 44 | 56 | 49 | 44 | 54 | 48 | 44 | 53 | 47 | 43 | 41 |
| 7 | 66 | 53 | 45 | 40 | 64 | 53 | 45 | 40 | 51 | 44 | 39 | 50 | 44 | 39 | 49 | 43 | 39 | 37 |
| 8 | 62 | 49 | 41 | 36 | 60 | 48 | 41 | 36 | 47 | 40 | 35 | 46 | 40 | 35 | 45 | 39 | 35 | 33 |
| 9 | 58 | 45 | 38 | 32 | 56 | 45 | 37 | 32 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 32 | 30 |
| 10 | 54 | 42 | 34 | 30 | 53 | 41 | 34 | 29 | 40 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 29 | 27 |

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UGR TABLE - CORRECTED

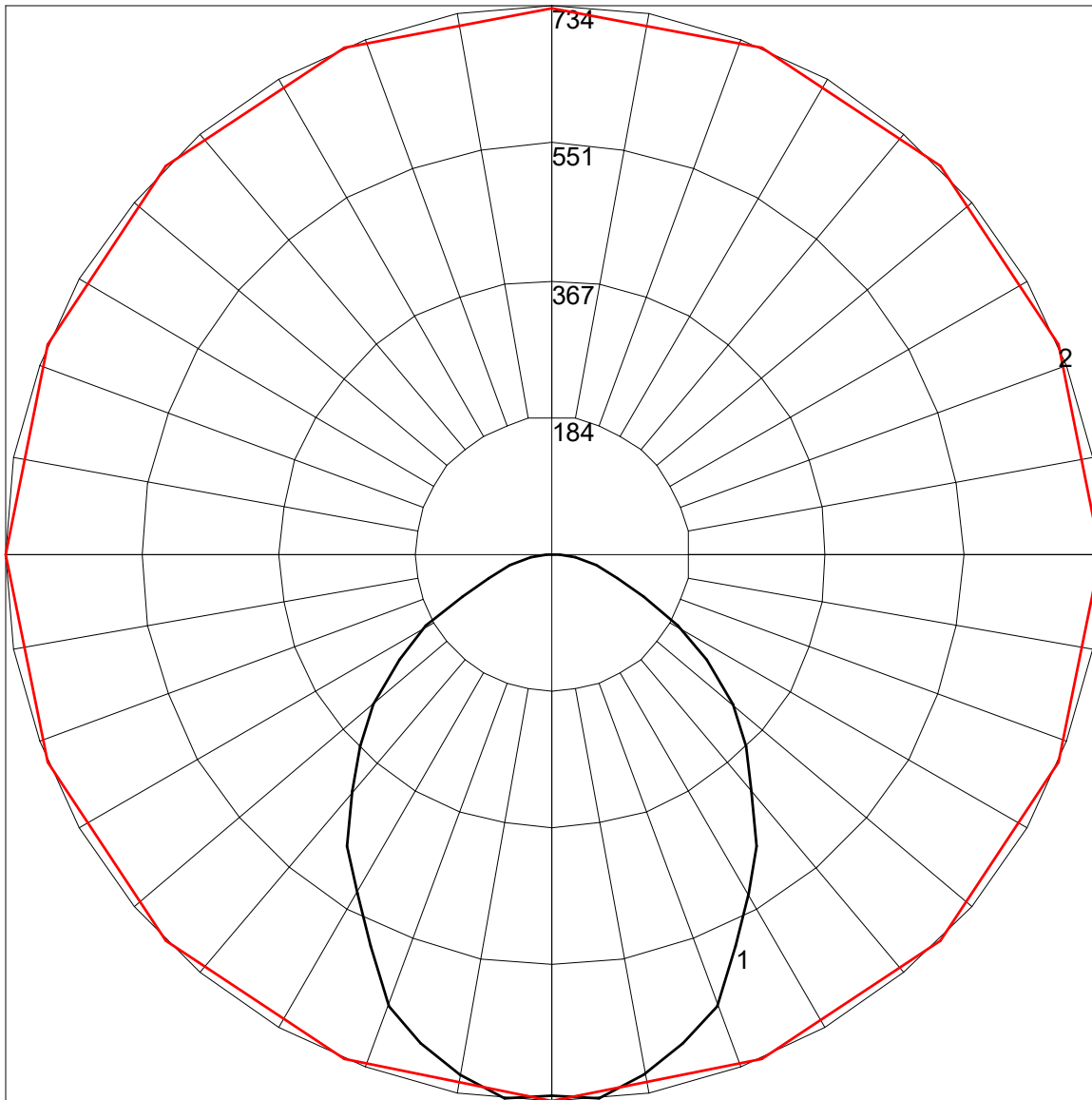
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| 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 | 13.6 | 15.1 | 13.9 | 15.4 | 15.7 | 13.4 | 14.9 | 13.7 | 15.2 | 15.5 |
| | 3H | 15.2 | 16.6 | 15.6 | 16.9 | 17.3 | 14.5 | 15.9 | 14.9 | 16.2 | 16.5 |
| | 4H | 15.8 | 17.1 | 16.2 | 17.4 | 17.8 | 14.8 | 16.1 | 15.2 | 16.5 | 16.9 |
| | 6H | 16.1 | 17.3 | 16.6 | 17.7 | 18.1 | 15.1 | 16.3 | 15.5 | 16.6 | 17.0 |
| | 8H | 16.3 | 17.4 | 16.7 | 17.8 | 18.2 | 15.1 | 16.2 | 15.5 | 16.6 | 17.0 |
| | 12H | 16.4 | 17.4 | 16.8 | 17.8 | 18.3 | 15.1 | 16.2 | 15.5 | 16.6 | 17.0 |
| 4H | 2H | 14.2 | 15.5 | 14.6 | 15.8 | 16.2 | 14.0 | 15.3 | 14.4 | 15.6 | 16.0 |
| | 3H | 16.0 | 17.0 | 16.4 | 17.4 | 17.8 | 15.3 | 16.4 | 15.7 | 16.8 | 17.2 |
| | 4H | 16.6 | 17.6 | 17.1 | 18.0 | 18.5 | 15.7 | 16.7 | 16.2 | 17.1 | 17.5 |
| | 6H | 17.1 | 18.0 | 17.6 | 18.4 | 18.9 | 16.0 | 16.9 | 16.5 | 17.3 | 17.8 |
| | 8H | 17.3 | 18.1 | 17.8 | 18.5 | 19.0 | 16.1 | 16.9 | 16.5 | 17.3 | 17.8 |
| | 12H | 17.4 | 18.1 | 17.9 | 18.6 | 19.1 | 16.1 | 16.8 | 16.6 | 17.3 | 17.8 |
| 8H | 4H | 16.8 | 17.6 | 17.3 | 18.0 | 18.5 | 16.0 | 16.8 | 16.4 | 17.2 | 17.7 |
| | 6H | 17.4 | 18.0 | 17.9 | 18.5 | 19.0 | 16.3 | 17.0 | 16.8 | 17.5 | 18.0 |
| | 8H | 17.6 | 18.2 | 18.1 | 18.7 | 19.2 | 16.4 | 17.0 | 17.0 | 17.5 | 18.0 |
| | 12H | 17.8 | 18.3 | 18.3 | 18.8 | 19.4 | 16.5 | 17.0 | 17.0 | 17.5 | 18.1 |
| 12H | 4H | 16.8 | 17.5 | 17.3 | 18.0 | 18.4 | 16.0 | 16.7 | 16.5 | 17.2 | 17.6 |
| | 6H | 17.4 | 18.0 | 17.9 | 18.4 | 19.0 | 16.4 | 17.0 | 16.9 | 17.4 | 18.0 |
| | 8H | 17.7 | 18.2 | 18.2 | 18.7 | 19.2 | 16.5 | 17.0 | 17.0 | 17.5 | 18.1 |

Maximum UGR = 19.4

POLAR GRAPH



Maximum Candela = 734.114 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.)