



IES INDOOR REPORT

PHOTOMETRIC FILENAME : AT1-24-P27-835-D-POE_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from BALLABS TEST NO. 18876.0

[TESTLAB] BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC

[ISSUEDATE] 26-JUN-2020

[MANUFAC] WILLIAMS LINEAR

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

[LUMINAIRE] 22" LED ARRAYS-SERIES 2x4' RECESSED LUMINAIRE w/WHITE

[MORE] REFL, FROST CONCAVE ACRYLIC LENS w/SHALLOW ACRYLIC CENTER

[MORE] DIFFUSER

[LUMCAT] AT1-24-P27-835-D-PoE

[SEARCH_SOURCETYPE] LED

[SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Educational, Office, Direct

[SEARCH_MOUNTING] Ceiling, Recessed

[SEARCH_CERTIFICATION] DLC

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 2743 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 126 |
| Total Luminaire Watts | 21.7 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.12 |
| Spacing Criterion (90-270) | 1.28 |
| Spacing Criterion (Diagonal) | 1.32 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 3.76 ft |
| Luminous Width (90-270) | 1.77 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 1252 | 1465 | 1589 |
| 55 | 1086 | 1330 | 1433 |
| 65 | 966 | 1266 | 1369 |
| 75 | 825 | 1226 | 1259 |
| 85 | 695 | 745 | 761 |

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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 | 1055.343 | 1055.343 | 1055.343 | 1055.343 | 1055.343 |
| 5 | 1056.233 | 1055.343 | 1058.014 | 1058.014 | 1058.905 |
| 10 | 1027.734 | 1028.625 | 1034.859 | 1040.203 | 1042.874 |
| 15 | 992.111 | 997.455 | 1009.032 | 1021.500 | 1028.625 |
| 20 | 929.770 | 943.129 | 962.722 | 986.768 | 997.455 |
| 25 | 855.852 | 868.320 | 900.381 | 935.114 | 950.254 |
| 30 | 782.824 | 799.745 | 844.274 | 888.803 | 905.724 |
| 35 | 718.702 | 739.185 | 792.620 | 841.602 | 859.414 |
| 40 | 624.300 | 648.345 | 708.015 | 756.106 | 769.465 |
| 45 | 546.819 | 572.646 | 639.440 | 680.406 | 693.765 |
| 50 | 463.104 | 492.493 | 553.053 | 588.676 | 598.473 |
| 55 | 384.732 | 415.012 | 471.119 | 499.618 | 507.633 |
| 60 | 316.157 | 346.437 | 397.201 | 421.246 | 428.371 |
| 65 | 252.035 | 284.987 | 330.407 | 350.890 | 357.124 |
| 70 | 190.585 | 225.318 | 264.504 | 279.644 | 282.315 |
| 75 | 131.806 | 167.430 | 195.929 | 203.053 | 201.272 |
| 80 | 82.824 | 114.885 | 125.572 | 96.183 | 87.277 |
| 85 | 37.405 | 52.544 | 40.076 | 40.076 | 40.967 |
| 90 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

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ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|---------|-------|--------|
| 0-20 | 384.02 | N.A. | 14.00 |
| 0-30 | 800.66 | N.A. | 29.20 |
| 0-40 | 1290.5 | N.A. | 47.00 |
| 0-60 | 2185.11 | N.A. | 79.70 |
| 0-80 | 2690.76 | N.A. | 98.10 |
| 0-90 | 2742.85 | N.A. | 100.00 |
| 10-90 | 2642.76 | N.A. | 96.40 |
| 20-40 | 906.48 | N.A. | 33.00 |
| 20-50 | 1389.14 | N.A. | 50.60 |
| 40-70 | 1209.4 | N.A. | 44.10 |
| 60-80 | 505.65 | N.A. | 18.40 |
| 70-80 | 190.87 | N.A. | 7.00 |
| 80-90 | 52.09 | N.A. | 1.90 |
| 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 | 2742.85 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 100.09 |
| 10-20 | 283.92 |
| 20-30 | 416.64 |
| 30-40 | 489.84 |
| 40-50 | 482.66 |
| 50-60 | 411.96 |
| 60-70 | 314.78 |
| 70-80 | 190.87 |
| 80-90 | 52.09 |
| 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 | 41 | 41 | 41 | 41 | 40 | 40 | 40 | 40 | 38 | 38 | 38 | 36 | 36 | 36 | 35 | 35 | 35 | 34 |
| 1 | 37 | 36 | 34 | 33 | 36 | 35 | 34 | 32 | 33 | 32 | 31 | 32 | 31 | 30 | 31 | 30 | 29 | 29 |
| 2 | 34 | 31 | 29 | 27 | 33 | 30 | 28 | 27 | 29 | 27 | 26 | 28 | 27 | 25 | 27 | 26 | 25 | 24 |
| 3 | 31 | 27 | 25 | 22 | 30 | 27 | 24 | 22 | 26 | 24 | 22 | 25 | 23 | 21 | 24 | 22 | 21 | 20 |
| 4 | 28 | 24 | 21 | 19 | 28 | 24 | 21 | 19 | 23 | 21 | 19 | 22 | 20 | 18 | 21 | 20 | 18 | 17 |
| 5 | 26 | 22 | 19 | 17 | 25 | 21 | 19 | 16 | 21 | 18 | 16 | 20 | 18 | 16 | 19 | 17 | 16 | 15 |
| 6 | 24 | 20 | 17 | 14 | 24 | 19 | 16 | 14 | 19 | 16 | 14 | 18 | 16 | 14 | 18 | 16 | 14 | 13 |
| 7 | 22 | 18 | 15 | 13 | 22 | 18 | 15 | 13 | 17 | 15 | 13 | 17 | 14 | 13 | 16 | 14 | 12 | 12 |
| 8 | 21 | 16 | 13 | 11 | 20 | 16 | 13 | 11 | 16 | 13 | 11 | 15 | 13 | 11 | 15 | 13 | 11 | 11 |
| 9 | 20 | 15 | 12 | 10 | 19 | 15 | 12 | 10 | 14 | 12 | 10 | 14 | 12 | 10 | 14 | 12 | 10 | 10 |
| 10 | 18 | 14 | 11 | 9 | 18 | 14 | 11 | 9 | 13 | 11 | 9 | 13 | 11 | 9 | 13 | 11 | 9 | 9 |

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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 | 15.7 | 17.3 | 16.0 | 17.6 | 17.9 | 17.1 | 18.7 | 17.5 | 19.0 | 19.4 |
| | 3H | 17.4 | 18.8 | 17.8 | 19.2 | 19.5 | 19.1 | 20.5 | 19.5 | 20.9 | 21.2 |
| | 4H | 18.0 | 19.4 | 18.4 | 19.7 | 20.1 | 19.8 | 21.2 | 20.2 | 21.6 | 21.9 |
| | 6H | 18.5 | 19.8 | 18.9 | 20.2 | 20.6 | 20.2 | 21.5 | 20.7 | 21.9 | 22.3 |
| | 8H | 18.7 | 19.9 | 19.1 | 20.3 | 20.7 | 20.3 | 21.5 | 20.8 | 21.9 | 22.3 |
| | 12H | 18.8 | 20.0 | 19.2 | 20.4 | 20.8 | 20.4 | 21.6 | 20.8 | 21.9 | 22.4 |

UGR Viewed Endwise

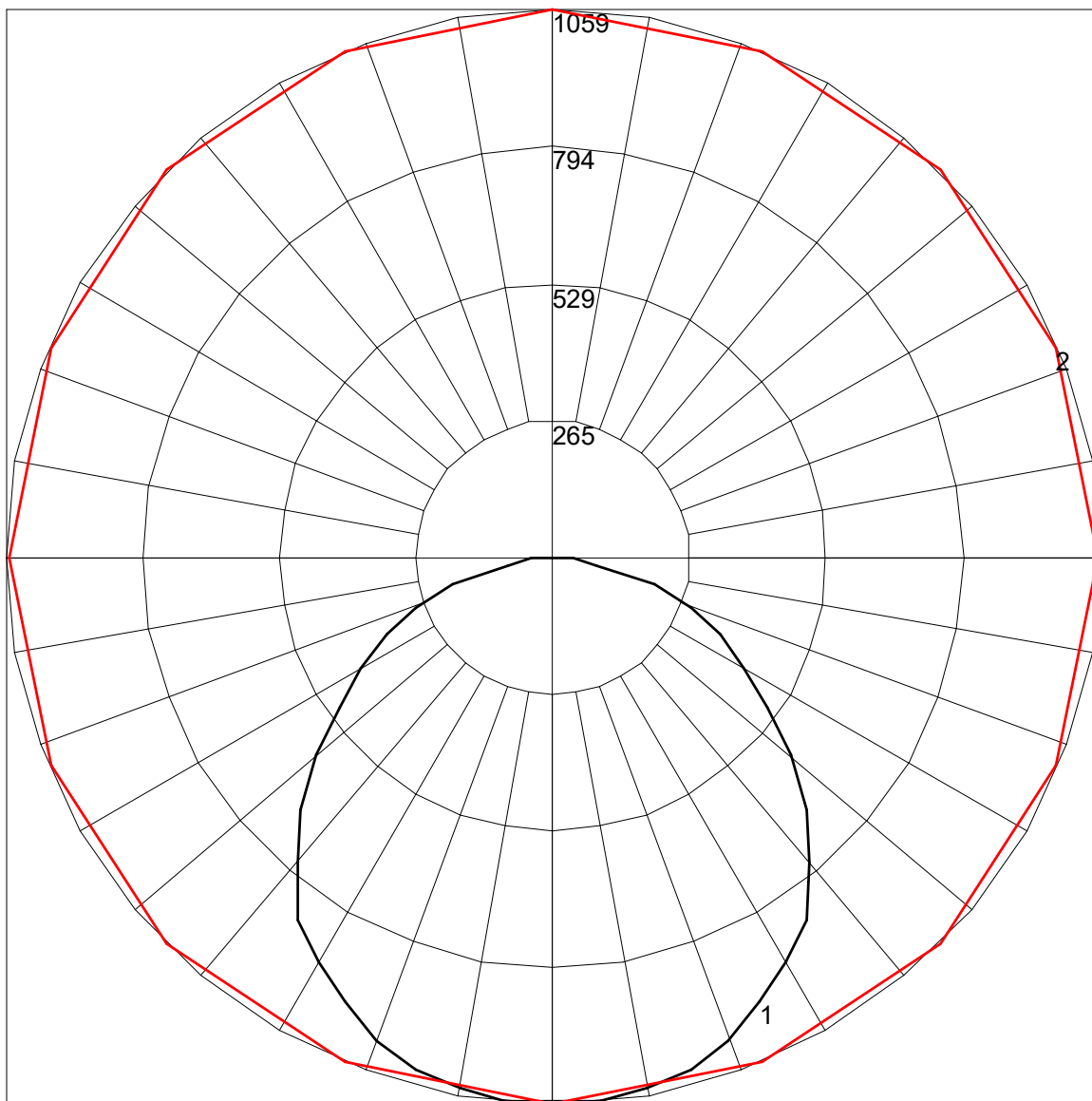
| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 4H | 2H | 16.6 | 18.0 | 17.0 | 18.3 | 18.7 | 17.7 | 19.1 | 18.1 | 19.4 | 19.8 |
| | 3H | 18.6 | 19.7 | 19.0 | 20.1 | 20.5 | 19.9 | 21.1 | 20.3 | 21.5 | 21.9 |
| | 4H | 19.4 | 20.4 | 19.8 | 20.8 | 21.2 | 20.8 | 21.9 | 21.3 | 22.3 | 22.7 |
| | 6H | 20.0 | 20.9 | 20.5 | 21.4 | 21.8 | 21.3 | 22.2 | 21.8 | 22.7 | 23.1 |
| | 8H | 20.2 | 21.1 | 20.7 | 21.5 | 22.0 | 21.5 | 22.3 | 21.9 | 22.7 | 23.2 |
| | 12H | 20.4 | 21.2 | 20.9 | 21.6 | 22.1 | 21.5 | 22.3 | 22.0 | 22.8 | 23.3 |

| | | | | | | | | | | | |
|----|-----|------|------|------|------|------|------|------|------|------|------|
| 8H | 4H | 19.9 | 20.7 | 20.3 | 21.2 | 21.6 | 21.1 | 22.0 | 21.6 | 22.4 | 22.9 |
| | 6H | 20.7 | 21.4 | 21.2 | 21.9 | 22.4 | 21.8 | 22.5 | 22.2 | 22.9 | 23.4 |
| | 8H | 21.0 | 21.7 | 21.5 | 22.2 | 22.7 | 21.9 | 22.6 | 22.4 | 23.1 | 23.6 |
| | 12H | 21.3 | 21.9 | 21.8 | 22.3 | 22.9 | 22.1 | 22.7 | 22.6 | 23.1 | 23.7 |

| | | | | | | | | | | | |
|-----|----|------|------|------|------|------|------|------|------|------|------|
| 12H | 4H | 19.9 | 20.7 | 20.4 | 21.2 | 21.6 | 21.2 | 21.9 | 21.6 | 22.4 | 22.9 |
| | 6H | 20.8 | 21.5 | 21.3 | 21.9 | 22.5 | 21.8 | 22.5 | 22.3 | 22.9 | 23.5 |
| | 8H | 21.2 | 21.8 | 21.7 | 22.3 | 22.8 | 22.1 | 22.6 | 22.6 | 23.1 | 23.7 |

Maximum UGR = 23.7

POLAR GRAPH



Maximum Candela = 1058.905 Located At Horizontal Angle = 90, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)