



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OW-OF-BL_PHOTOPIA.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TESTLAB] Photopia 2021.0.0 see: www.ltiioptics.com/ies
 [ISSUE DATE] 12-10-2021
 [TEST DATE] Fri Dec 10 15:39:06 2021
 [TEST] HEW PHOTOMETRIC REPORT #W00539
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-835-DIM-UNV-OW-OF-BL
 [LUMINAIRE] 4 INCH ROUND RECESSED LED DOWNLIGHT
 [MORE] WITH WIDE DIST OPEN BLACK TRIM
 [LAMP] LED 16.8W Vero COB array (500mA)
 [LAMP CAT] BXRC-30E2000
 [OTHER] THIS DATA IS BASED ON IN-HOUSE COMPUTER
 [OTHER] SIMULATIONS AND IS PROVIDED AS A GOOD-FAITH
 [OTHER] ESTIMATE OF PHOTOMETRIC PERFORMANCE.

CHARACTERISTICS

| | |
|---------------------------------|-----------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 945 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 48 |
| Total Luminaire Watts | 19.8 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.08 |
| Spacing Criterion (90-270) | 1.08 |
| Spacing Criterion (Diagonal) | 0.88 |
| Basic Luminous Shape | Rectangular |
| Luminous Length (0-180) | 0.46 ft |
| Luminous Width (90-270) | 0.46 ft |
| Luminous Height | 0.00 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 579 | 652 | 652 |
| 55 | 446 | 446 | 446 |
| 65 | 363 | 363 | 363 |
| 75 | 198 | 198 | 198 |
| 85 | 0 | 0 | 0 |

CANDELA TABULATION

| | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|-----------|------------|-------------|-------------|-------------|-------------|
| 0 | 1088 | 1088 | 1088 | 1088 | 1088 |
| 5 | 1087 | 1074 | 1101 | 1068 | 1083 |
| 10 | 1099 | 1090 | 1077 | 1075 | 1076 |
| 15 | 1048 | 1061 | 1077 | 1071 | 1047 |
| 20 | 1033 | 1032 | 1032 | 1035 | 1026 |
| 25 | 1006 | 991 | 983 | 1002 | 1005 |
| 30 | 652 | 659 | 649 | 644 | 642 |
| 35 | 26 | 26 | 27 | 26 | 26 |
| 40 | 9 | 9 | 9 | 9 | 9 |
| 45 | 8 | 9 | 9 | 8 | 9 |
| 50 | 7 | 7 | 7 | 7 | 7 |
| 55 | 5 | 5 | 5 | 5 | 5 |
| 60 | 4 | 4 | 4 | 4 | 4 |
| 65 | 3 | 3 | 3 | 3 | 3 |
| 70 | 2 | 2 | 2 | 2 | 2 |
| 75 | 1 | 1 | 1 | 1 | 1 |
| 80 | 1 | 1 | 1 | 1 | 1 |
| 85 | 0 | 0 | 0 | 0 | 0 |
| 90 | 0 | 0 | 0 | 0 | 0 |

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OW-OF-BL_PHOTOPIA.IES****ZONAL LUMEN SUMMARY**

| Zone | Lumens | %Lamp | %Fixt |
|---------|--------|-------|--------|
| 0-20 | 403.46 | N.A. | 42.70 |
| 0-30 | 824.30 | N.A. | 87.20 |
| 0-40 | 929.72 | N.A. | 98.30 |
| 0-60 | 940.83 | N.A. | 99.50 |
| 0-80 | 945.12 | N.A. | 100.00 |
| 0-90 | 945.39 | N.A. | 100.00 |
| 10-90 | 842.02 | N.A. | 89.10 |
| 20-40 | 526.27 | N.A. | 55.70 |
| 20-50 | 532.69 | N.A. | 56.30 |
| 40-70 | 14.08 | N.A. | 1.50 |
| 60-80 | 4.29 | N.A. | 0.50 |
| 70-80 | 1.32 | N.A. | 0.10 |
| 80-90 | 0.27 | N.A. | 0.00 |
| 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 | 945.39 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|--------|
| 0-10 | 103.37 |
| 10-20 | 300.09 |
| 20-30 | 420.84 |
| 30-40 | 105.43 |
| 40-50 | 6.42 |
| 50-60 | 4.69 |
| 60-70 | 2.97 |
| 70-80 | 1.32 |
| 80-90 | 0.27 |
| 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 | 107 | 112 | 109 | 107 | 105 | 105 | 104 | 102 | 101 | 100 | 99 | 98 | 97 | 96 | 94 |
| 2 | 109 | 104 | 101 | 97 | 107 | 103 | 99 | 96 | 99 | 97 | 94 | 96 | 94 | 92 | 94 | 92 | 90 | 89 |
| 3 | 104 | 98 | 93 | 90 | 102 | 97 | 92 | 89 | 94 | 91 | 88 | 92 | 89 | 86 | 89 | 87 | 85 | 83 |
| 4 | 99 | 92 | 87 | 83 | 97 | 91 | 86 | 83 | 89 | 85 | 82 | 87 | 84 | 81 | 85 | 82 | 80 | 79 |
| 5 | 95 | 87 | 82 | 78 | 93 | 86 | 81 | 77 | 84 | 80 | 77 | 83 | 79 | 76 | 81 | 78 | 75 | 74 |
| 6 | 90 | 82 | 77 | 73 | 89 | 81 | 76 | 73 | 80 | 75 | 72 | 79 | 75 | 72 | 77 | 74 | 71 | 70 |
| 7 | 86 | 78 | 72 | 68 | 85 | 77 | 72 | 68 | 76 | 71 | 68 | 75 | 71 | 67 | 74 | 70 | 67 | 66 |
| 8 | 83 | 74 | 68 | 64 | 81 | 73 | 68 | 64 | 72 | 67 | 64 | 71 | 67 | 64 | 70 | 66 | 64 | 62 |
| 9 | 79 | 70 | 65 | 61 | 78 | 70 | 64 | 61 | 69 | 64 | 61 | 68 | 63 | 60 | 67 | 63 | 60 | 59 |
| 10 | 76 | 67 | 61 | 58 | 75 | 66 | 61 | 57 | 65 | 61 | 57 | 65 | 60 | 57 | 64 | 60 | 57 | 56 |

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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

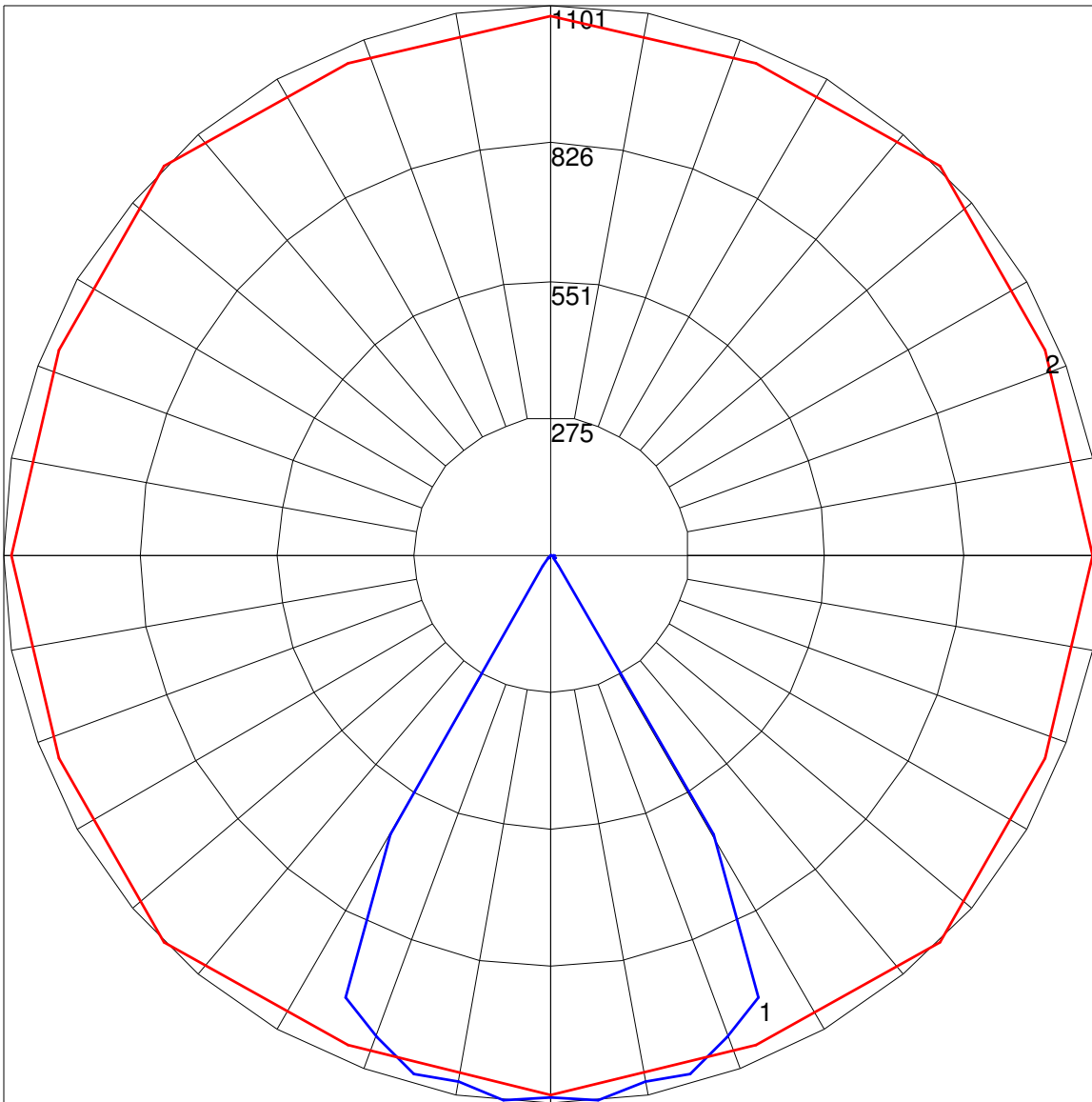
| X=2H | Y=2H | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
|------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | 3H | 0.0 | 0.0 | 0.0 | 0.1 | 0.5 | 0.0 | 0.0 | 0.0 | 0.1 |
| | 4H | 0.0 | 0.0 | 0.0 | 0.3 | 0.7 | 0.0 | 0.0 | 0.0 | 0.3 |
| | 6H | 0.0 | 0.2 | 0.0 | 0.6 | 1.0 | 0.0 | 0.2 | 0.0 | 0.6 |
| | 8H | 0.0 | 0.3 | 0.1 | 0.7 | 1.1 | 0.0 | 0.3 | 0.1 | 0.7 |
| | 12H | 0.0 | 0.2 | 0.1 | 0.6 | 1.0 | 0.0 | 0.2 | 0.1 | 0.6 |

UGR Viewed Endwise

| | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 4H | 2H | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| | 3H | 0.0 | 0.1 | 0.0 | 0.5 | 0.9 | 0.0 | 0.1 | 0.0 | 0.5 |
| | 4H | 0.0 | 0.3 | 0.2 | 0.7 | 1.2 | 0.0 | 0.3 | 0.2 | 0.7 |
| | 6H | 0.3 | 0.7 | 0.8 | 1.2 | 1.7 | 0.3 | 0.7 | 0.8 | 1.2 |
| | 8H | 0.4 | 0.8 | 0.9 | 1.3 | 1.8 | 0.4 | 0.8 | 0.9 | 1.3 |
| | 12H | 0.4 | 0.7 | 0.9 | 1.2 | 1.7 | 0.4 | 0.7 | 0.9 | 1.2 |
| 8H | 4H | 0.0 | 0.3 | 0.3 | 0.7 | 1.2 | 0.0 | 0.3 | 0.3 | 0.7 |
| | 6H | 0.5 | 0.9 | 1.0 | 1.4 | 1.8 | 0.5 | 0.9 | 1.0 | 1.4 |
| | 8H | 0.7 | 1.0 | 1.2 | 1.5 | 2.0 | 0.7 | 1.0 | 1.2 | 1.5 |
| | 12H | 0.7 | 0.9 | 1.2 | 1.4 | 2.0 | 0.7 | 0.9 | 1.2 | 1.4 |
| 12H | 4H | 0.0 | 0.2 | 0.3 | 0.7 | 1.2 | 0.0 | 0.2 | 0.3 | 0.7 |
| | 6H | 0.5 | 0.8 | 1.1 | 1.3 | 1.9 | 0.5 | 0.8 | 1.1 | 1.3 |
| | 8H | 0.7 | 1.0 | 1.3 | 1.5 | 2.1 | 0.7 | 1.0 | 1.3 | 1.5 |

Maximum UGR = 2.1

POLAR GRAPH



Maximum Candela = 1101 Located At Horizontal Angle = 45, Vertical Angle = 5
1 - Vertical Plane Through Horizontal Angles (45 - 225) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)