

Photometric Report - (ecs-rby4-mn-354-unv-22h) - Page 1 of 4

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IESNA:LM-63-1995

Photopia 2.0.0.17 PHOTOMETRIC REPORT

PROJECT: ecs-rby4-mn-354-unv-22h

OPTIONS:

Spawning 1 rays for each reaction.
Random number generator seed: 8.
Tracing 5 reflections.
Stop tracing ray at 1.0% of initial magnitude.
Tracing 499884 initial lamp rays.
Photometric test distance of 20.00 feet.

LUMENS EXITING SYSTEM:

| Lumens(%) | Reflection |
|---------------|------------|
| 7219(48.1%) | 0 |
| 6116(40.8%) | 1 |
| 273(1.8%) | 2 |
| 448(3.0%) | 3 |
| 53(0.4%) | 4 |
| 67(0.5%) | 5 |
| 14179(94.5%) | Total |

LUMEN INTERACTION WITH SYSTEM:

| Absorbed(%) | Incident(%) | Layer Name |
|-------------|---------------|---------------|
| 122(0.8%) | 1890(12.6%) | LAMP-F54T5H01 |
| 4(0.0%) | 75(0.5%) | LAMP-F54T5H02 |
| 441(2.9%) | 7949(53.0%) | Refl-Poly1 |
| 14(0.1%) | 101(0.7%) | Refl-Poly2 |
| 582(3.9%) | 10017(66.8%) | Total |

| Absorbed(%) | Incident(%) | Material Name |
|-------------|---------------|---------------|
| 127(0.8%) | 1966(13.1%) | PHOSGLAS |
| 441(2.9%) | 7949(53.0%) | ALMIRO04 |
| 14(0.1%) | 101(0.7%) | PAINT001 |
| 582(3.9%) | 10017(66.8%) | Total |

UNACCOUNTED LUMENS:

reached interreflection limit: 122.27 (0.8%)
fell below continuation minimum: 0.00 (0.0%)
could not find in/out refractor facet: 0.00 (0.0%)
reached try limit for scatter bounce: 0.00 (0.0%)
lost elsewhere(i.e. outside distrib): 116.13 (0.8%)

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Number of Lamps: 3 Lumens per Lamp: 5000
Ballast Factor: 1.00 Ballast-Lamp Photometric Factor: 1.00
Luminaire Width: 0.9898 Length: 4.0000 Height: 0.1368
Photometry Type: C Units: feet

Candela Distribution:

| | 0.00 | 22.50 | 45.00 | 67.50 | 90.00 |
|-------|------|-------|-------|-------|-------|
| 0.00 | 3053 | 3053 | 3053 | 3053 | 3053 |
| 5.00 | 3076 | 3337 | 3763 | 3727 | 3892 |
| 10.00 | 3265 | 3537 | 3742 | 4061 | 4413 |
| 15.00 | 3273 | 3578 | 4380 | 5208 | 5430 |
| 20.00 | 3112 | 3726 | 5171 | 5742 | 5857 |
| 25.00 | 3126 | 3936 | 5548 | 5479 | 5334 |
| 30.00 | 2984 | 4223 | 5313 | 5079 | 4915 |
| 35.00 | 2836 | 4413 | 4816 | 4145 | 3804 |
| 40.00 | 2669 | 4244 | 4027 | 3195 | 3027 |
| 45.00 | 2499 | 3987 | 3222 | 2600 | 2477 |
| 50.00 | 2317 | 3470 | 2510 | 2082 | 1928 |
| 55.00 | 2116 | 2898 | 1875 | 1649 | 1717 |
| 60.00 | 1892 | 2235 | 1482 | 1584 | 1683 |
| 65.00 | 1608 | 1532 | 1245 | 1563 | 1696 |
| 70.00 | 1283 | 1052 | 1187 | 1563 | 1676 |
| 75.00 | 887 | 727 | 1141 | 1527 | 1663 |
| 80.00 | 513 | 549 | 1092 | 1472 | 1606 |
| 85.00 | 181 | 440 | 863 | 1082 | 1108 |
| 90.00 | 57.0 | 198 | 394 | 527 | 565 |

| Zonal Lumens | | |
|--------------|------------|---------|
| Cone | Between | Lumens |
| 0.0 | 0.0- 2.5 | 18.26 |
| 5.0 | 2.5- 7.5 | 170.91 |
| 10.0 | 7.5- 12.5 | 361.20 |
| 15.0 | 12.5- 17.5 | 621.31 |
| 20.0 | 17.5- 22.5 | 896.29 |
| 25.0 | 22.5- 27.5 | 1111.53 |
| 30.0 | 27.5- 32.5 | 1271.96 |
| 35.0 | 32.5- 37.5 | 1312.14 |
| 40.0 | 37.5- 42.5 | 1260.85 |
| 45.0 | 42.5- 47.5 | 1191.50 |
| 50.0 | 47.5- 52.5 | 1069.09 |
| 55.0 | 52.5- 57.5 | 935.99 |
| 60.0 | 57.5- 62.5 | 841.22 |
| 65.0 | 62.5- 67.5 | 744.18 |
| 70.0 | 67.5- 72.5 | 680.07 |
| 75.0 | 72.5- 77.5 | 618.05 |
| 80.0 | 77.5- 82.5 | 562.97 |
| 85.0 | 82.5- 87.5 | 413.54 |
| 90.0 | 87.5- 92.5 | 196.00 |

Zonal Lumen Summary

| Zone | Lumens | %Lamp | %Fixt |
|--------|--------|-------|-------|
| 0- 30 | 3791 | 25.3 | 26.6 |
| 0- 40 | 6378 | 42.5 | 44.7 |
| 0- 60 | 10636 | 70.9 | 74.5 |
| 0- 90 | 14179 | 94.5 | 99.3 |
| 90-120 | 98 | 0.7 | 0.7 |
| 90-130 | 98 | 0.7 | 0.7 |
| 90-150 | 98 | 0.7 | 0.7 |
| 90-180 | 98 | 0.7 | 0.7 |
| 0-180 | 14277 | 95.2 | 100.0 |

Total Luminaire Optical Efficiency = 95.2%

Luminaire Spacing Criterion:

| | |
|-------|--------|
| 0 deg | 90 deg |
| 1.42 | 1.60 |

Average Luminaire Luminance (cd/m²):

| | | | |
|----|---------|----------|----------|
| | 0 | 45 | 90 |
| 0 | 8301.01 | 8301.01 | 8301.01 |
| 45 | 9290.50 | 11039.87 | 8367.78 |
| 50 | 9416.48 | 9270.73 | 7001.44 |
| 55 | 9560.11 | 7567.78 | 6797.22 |
| 60 | 9709.35 | 6652.86 | 7384.43 |
| 65 | 9639.12 | 6347.88 | 8413.38 |
| 70 | 9321.29 | 7064.55 | 9653.65 |
| 75 | 8258.31 | 8235.16 | 11521.56 |
| 80 | 6727.32 | 10104.12 | 14092.62 |
| 85 | 4053.48 | 11244.57 | 13395.42 |

Coefficients of Utilization - Zonal Cavity Method:

pfc = 0.20

| | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| pcc | .8 | | | | .7 | | | | .5 | | |
| pw | .7 | .5 | .3 | .1 | .7 | .5 | .3 | .1 | .5 | .3 | .1 |
| RCR | | | | | | | | | | | |
| 0 | 112 | 112 | 112 | 112 | 110 | 110 | 110 | 110 | 105 | 105 | 105 |
| 1 | 101 | 96 | 91 | 87 | 98 | 94 | 89 | 86 | 90 | 86 | 83 |
| 2 | 92 | 83 | 76 | 70 | 89 | 81 | 75 | 69 | 78 | 73 | 68 |
| 3 | 84 | 73 | 65 | 58 | 81 | 71 | 64 | 58 | 69 | 62 | 57 |
| 4 | 76 | 65 | 56 | 49 | 74 | 63 | 55 | 49 | 61 | 54 | 48 |
| 5 | 70 | 58 | 49 | 43 | 68 | 57 | 48 | 42 | 55 | 47 | 42 |
| 6 | 65 | 52 | 43 | 37 | 63 | 51 | 43 | 37 | 49 | 42 | 37 |
| 7 | 60 | 47 | 39 | 33 | 59 | 46 | 38 | 33 | 45 | 38 | 32 |
| 8 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 |
| 9 | 52 | 39 | 31 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 |
| 10 | 49 | 36 | 29 | 24 | 48 | 36 | 28 | 24 | 35 | 28 | 23 |

| | | | | | | | |
|-----|-----|-----|-----|----|----|----|----|
| pcc | .3 | | | .1 | | | 0 |
| pw | .5 | .3 | .1 | .5 | .3 | .1 | 0 |
| RCR | | | | | | | |
| 0 | 100 | 100 | 100 | 96 | 96 | 96 | 94 |
| 1 | 86 | 83 | 80 | 82 | 80 | 78 | 76 |
| 2 | 75 | 70 | 66 | 72 | 68 | 65 | 63 |
| 3 | 66 | 60 | 56 | 63 | 59 | 55 | 53 |
| 4 | 59 | 53 | 48 | 57 | 51 | 47 | 45 |
| 5 | 53 | 46 | 41 | 51 | 45 | 41 | 39 |
| 6 | 48 | 41 | 36 | 46 | 40 | 36 | 34 |
| 7 | 44 | 37 | 32 | 42 | 36 | 32 | 30 |
| 8 | 40 | 33 | 29 | 39 | 33 | 28 | 27 |
| 9 | 37 | 30 | 26 | 36 | 30 | 26 | 24 |
| 10 | 34 | 28 | 23 | 33 | 27 | 23 | 21 |