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INDEPENDENT TESTING LABORATORIES, INC.  
4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

**REPORT NUMBER:** ITL93794-GONIOPHOTOMETRY

**PAGE:** 1 OF 7

**ISSUE DATE:** 08/19/20

**PREPARED FOR:** FINELITE, INC.

**ADDRESS:** 30500 WHIPPLE ROAD

UNION CITY, CA 94587

**CATALOG NUMBER:** HPO-P-ID-4ft-V-V-835-RT-RB

**LUMINAIRE:** EXTRUDED WHITE PAINTED METAL HOUSING WITH CAST WHITE PAINTED METAL END CAPS AND 2 DISTINCT OPTICAL COMPARTMENTS, TOP OPTICAL COMPARTMENT CONSISTS OF: TWO FABRICATED DIFFUSE METAL CIRCUIT BOARD MOUNTING PLATES, FOUR WHITE CIRCUIT BOARDS EACH WITH 40 LEDS, TRANSLUCENT WHITE FROSTED PLASTIC DIFFUSER. BOTTOM OPTICAL COMPARTMENT CONSISTS OF: TWO FABRICATED DIFFUSE METAL CIRCUIT BOARD MOUNTING PLATES, FOUR WHITE CIRCUIT BOARDS EACH WITH 120 LEDS, TRANSLUCENT WHITE FROSTED PLASTIC DIFFUSER. DIFFUSERS FROSTED BOTH SIDES.

**LAMPS:** SIX HUNDRED FORTY WHITE LIGHT EMITTING DIODES (LEDs), 160 VERTICAL BASE-DOWN POSITION, 480 VERTICAL BASE-UP POSITION.

**INPUT ELECTRICAL:** 277.0 VOLTS, 69.2 WATTS, 0.271 AMPS

**MOUNTING:** SUSPENDED

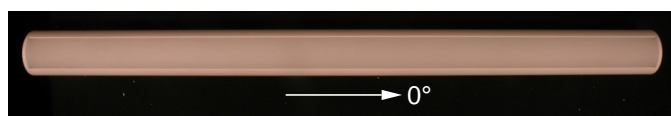
**LED DRIVERS:** TWO OSRAM OTi 50/120-277/1A4 DIM-1 L G2, DRIVERS HAVE MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES EACH DRIVER PROGRAMMED FOR 700mA OUTPUT.

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (277VAC, 60Hz) TO THE DRIVERS.

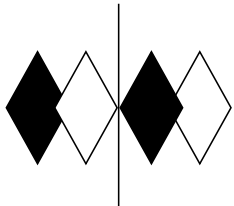
TEST PROCEDURE: IESNA LM-79-19

TEST DISTANCE = 35.0 FEET

THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.



Approved C STOUT



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NVLAP LAB CODE: 200925-0

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CATALOG NUMBER: HPO P-ID-4'-V-V-835-RT-RB-X-277-X-X-X-X-RE-SW

#### CANDELA DISTRIBUTION

|     | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 |
|-----|------|------|------|------|------|
| 0   | 1335 | 1335 | 1335 | 1335 | 1335 |
| 5   | 1327 | 1328 | 1328 | 1329 | 1329 |
| 15  | 1273 | 1267 | 1278 | 1283 | 1282 |
| 25  | 1164 | 1158 | 1179 | 1189 | 1191 |
| 35  | 1015 | 1013 | 1039 | 1053 | 1058 |
| 45  | 838  | 841  | 871  | 891  | 901  |
| 55  | 643  | 650  | 687  | 722  | 739  |
| 65  | 439  | 454  | 510  | 567  | 593  |
| 75  | 244  | 272  | 366  | 454  | 488  |
| 85  | 71   | 151  | 291  | 396  | 434  |
| 90  | 0    | 136  | 282  | 390  | 429  |
| 95  | 79   | 156  | 296  | 401  | 441  |
| 105 | 260  | 287  | 381  | 468  | 502  |
| 115 | 461  | 478  | 531  | 592  | 618  |
| 125 | 672  | 678  | 720  | 754  | 768  |
| 135 | 877  | 882  | 905  | 930  | 939  |
| 145 | 1061 | 1055 | 1080 | 1102 | 1110 |
| 155 | 1212 | 1206 | 1229 | 1239 | 1245 |
| 165 | 1321 | 1318 | 1330 | 1334 | 1332 |
| 175 | 1375 | 1375 | 1376 | 1376 | 1376 |
| 180 | 1381 | 1381 | 1381 | 1381 | 1381 |

#### FLUX

|     |
|-----|
| 126 |
| 360 |
| 542 |
| 648 |
| 670 |
| 616 |
| 508 |
| 388 |
| 302 |
| 307 |
| 403 |
| 532 |
| 643 |
| 700 |
| 676 |
| 565 |
| 375 |
| 131 |

#### ZONAL LUMEN SUMMARY

| ZONE   | LUMENS | %FIXT |
|--------|--------|-------|
| 0- 30  | 1028   | 12.1  |
| 0- 40  | 1676   | 19.7  |
| 0- 60  | 2961   | 34.9  |
| 0- 90  | 4159   | 49.0  |
| 90-120 | 1242   | 14.6  |
| 90-130 | 1885   | 22.2  |
| 90-150 | 3261   | 38.4  |
| 90-180 | 4331   | 51.0  |
| 0-180  | 8490   | 100.0 |

EFFICACY (277) = 122.7 lm/W

EFFICACY (120) = 123.0 lm/W \*\*

\*\* THE EFFICACY AT 120 VOLTS IS BASED ON THE LUMENS FROM THIS REPORT AND THE WATTAGE MEASURED AT 120 VOLTS.

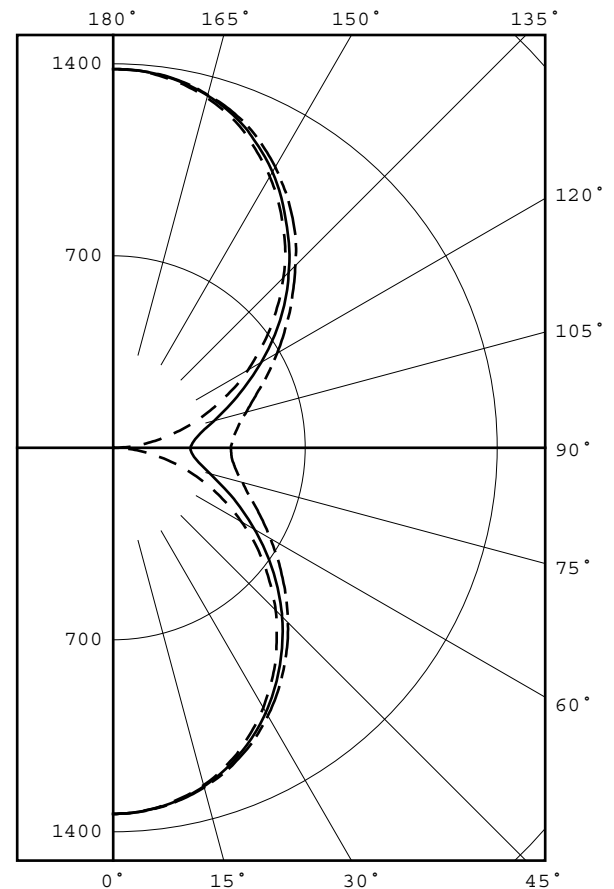
CIE TYPE - GENERAL DIFFUSE

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.22 1.26

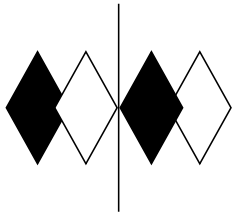
BEAM ANGLE (50%) : 108.3 X 119.9 DEGREES

FIELD ANGLE (10%) : 163.0 X N/A DEGREES



#### LEGEND

0-deg - - - - -  
45-deg - - - - -  
90-deg - - - - -



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**CATALOG NUMBER:** HPO P-ID-4'-V-V-835-RT-RB-X-277-X-X-X-X-RE-SW

| LUMINANCE DATA IN CANDELA/SQ M |                  |                   |                   |
|--------------------------------|------------------|-------------------|-------------------|
| ANGLE<br>IN DEG                | AVERAGE<br>0-DEG | AVERAGE<br>45-DEG | AVERAGE<br>90-DEG |
| 45                             | 15593.           | 16285.            | 16969.            |
| 55                             | 14787.           | 16013.            | 16458.            |
| 65                             | 13636.           | 15716.            | 15793.            |
| 75                             | 12441.           | 14183.            | 16372.            |
| 85                             | 10684.           | 13305.            | 14374.            |



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CATALOG NUMBER: HPO P-ID-4'-V-V-835-RT-RB-X-277-X-X-X-X-RE-SW

CANDELA DISTRIBUTION  
LATERAL ANGLE

|       | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 |
|-------|------|------|------|------|------|
| 0.0   | 1335 | 1335 | 1335 | 1335 | 1335 |
| 5.0   | 1327 | 1328 | 1328 | 1329 | 1329 |
| 10.0  | 1306 | 1305 | 1310 | 1312 | 1311 |
| 15.0  | 1273 | 1267 | 1278 | 1283 | 1282 |
| 20.0  | 1225 | 1218 | 1233 | 1243 | 1242 |
| 25.0  | 1164 | 1158 | 1179 | 1189 | 1191 |
| 30.0  | 1094 | 1089 | 1114 | 1127 | 1128 |
| 35.0  | 1015 | 1013 | 1039 | 1053 | 1058 |
| 40.0  | 927  | 930  | 956  | 976  | 981  |
| 45.0  | 838  | 841  | 871  | 891  | 901  |
| 50.0  | 740  | 748  | 779  | 806  | 819  |
| 55.0  | 643  | 650  | 687  | 722  | 739  |
| 60.0  | 540  | 553  | 594  | 643  | 662  |
| 65.0  | 439  | 454  | 510  | 567  | 593  |
| 70.0  | 340  | 360  | 431  | 504  | 533  |
| 75.0  | 244  | 272  | 366  | 454  | 488  |
| 80.0  | 153  | 199  | 318  | 418  | 454  |
| 85.0  | 71   | 151  | 291  | 396  | 434  |
| 90.0  | 0    | 136  | 282  | 390  | 429  |
| 95.0  | 79   | 156  | 296  | 401  | 441  |
| 100.0 | 164  | 211  | 327  | 429  | 464  |
| 105.0 | 260  | 287  | 381  | 468  | 502  |
| 110.0 | 358  | 379  | 450  | 525  | 552  |
| 115.0 | 461  | 478  | 531  | 592  | 618  |
| 120.0 | 568  | 579  | 624  | 671  | 690  |
| 125.0 | 672  | 678  | 720  | 754  | 768  |
| 130.0 | 775  | 784  | 815  | 839  | 851  |
| 135.0 | 877  | 882  | 905  | 930  | 939  |
| 140.0 | 974  | 969  | 994  | 1016 | 1030 |
| 145.0 | 1061 | 1055 | 1080 | 1102 | 1110 |
| 150.0 | 1142 | 1133 | 1161 | 1175 | 1182 |
| 155.0 | 1212 | 1206 | 1229 | 1239 | 1245 |
| 160.0 | 1276 | 1269 | 1288 | 1292 | 1296 |
| 165.0 | 1321 | 1318 | 1330 | 1334 | 1332 |
| 170.0 | 1354 | 1353 | 1359 | 1361 | 1361 |
| 175.0 | 1375 | 1375 | 1376 | 1376 | 1376 |
| 180.0 | 1381 | 1381 | 1381 | 1381 | 1381 |



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**CATALOG NUMBER:** HPO P-ID-4'-V-V-835-RT-RB-X-277-X-X-X-X-RE-SW

5-DEGREE  
ZONAL LUMEN SUMMARY

|         |     |
|---------|-----|
| 0- 5    | 32  |
| 5- 10   | 94  |
| 10- 15  | 153 |
| 15- 20  | 207 |
| 20- 25  | 253 |
| 25- 30  | 289 |
| 30- 35  | 316 |
| 35- 40  | 332 |
| 40- 45  | 337 |
| 45- 50  | 333 |
| 50- 55  | 319 |
| 55- 60  | 297 |
| 60- 65  | 270 |
| 65- 70  | 239 |
| 70- 75  | 208 |
| 75- 80  | 180 |
| 80- 85  | 158 |
| 85- 90  | 144 |
| 90- 95  | 146 |
| 95-100  | 162 |
| 100-105 | 186 |
| 105-110 | 217 |
| 110-115 | 250 |
| 115-120 | 282 |
| 120-125 | 310 |
| 125-130 | 333 |
| 130-135 | 348 |
| 135-140 | 352 |
| 140-145 | 346 |
| 145-150 | 330 |
| 150-155 | 302 |
| 155-160 | 263 |
| 160-165 | 215 |
| 165-170 | 159 |
| 170-175 | 98  |
| 175-180 | 33  |

10-DEGREE  
ZONAL LUMEN SUMMARY

|       |      |
|-------|------|
| 0- 10 | 126  |
| 0- 20 | 486  |
| 0- 30 | 1028 |
| 0- 40 | 1676 |
| 0- 50 | 2346 |
| 0- 60 | 2961 |
| 0- 70 | 3470 |
| 0- 80 | 3858 |
| 0- 90 | 4159 |
| 0-100 | 4467 |
| 0-110 | 4870 |
| 0-120 | 5401 |
| 0-130 | 6045 |
| 0-140 | 6744 |
| 0-150 | 7420 |
| 0-160 | 7985 |
| 0-170 | 8360 |
| 0-180 | 8490 |



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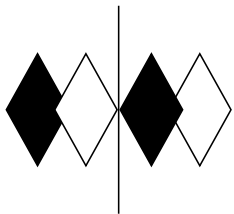
**CATALOG NUMBER:** HPO P-ID-4'-V-V-835-RT-RB-X-277-X-X-X-X-RE-SW

# 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  | 107 | 107 | 107 | 107 | 98 | 98 | 98 | 98 | 83 | 83 | 83 | 68 | 68 | 68 | 55 | 55 | 55 | 49 |
| 1  | 96  | 91  | 87  | 83  | 88 | 84 | 80 | 77 | 71 | 68 | 65 | 58 | 56 | 54 | 47 | 45 | 44 | 39 |
| 2  | 87  | 79  | 72  | 67  | 80 | 73 | 67 | 62 | 61 | 57 | 53 | 50 | 47 | 44 | 40 | 38 | 36 | 31 |
| 3  | 79  | 69  | 61  | 55  | 73 | 64 | 57 | 52 | 54 | 48 | 44 | 44 | 40 | 37 | 36 | 33 | 30 | 26 |
| 4  | 72  | 61  | 53  | 46  | 66 | 56 | 49 | 43 | 48 | 42 | 37 | 39 | 35 | 32 | 32 | 29 | 26 | 22 |
| 5  | 66  | 54  | 46  | 40  | 61 | 50 | 43 | 37 | 42 | 37 | 32 | 35 | 31 | 27 | 28 | 25 | 22 | 19 |
| 6  | 61  | 49  | 40  | 34  | 56 | 45 | 38 | 32 | 38 | 32 | 28 | 32 | 27 | 24 | 26 | 22 | 20 | 17 |
| 7  | 56  | 44  | 36  | 30  | 52 | 41 | 33 | 28 | 35 | 29 | 24 | 29 | 24 | 21 | 23 | 20 | 17 | 15 |
| 8  | 52  | 40  | 32  | 26  | 48 | 37 | 30 | 25 | 31 | 26 | 22 | 26 | 22 | 19 | 22 | 18 | 16 | 13 |
| 9  | 49  | 36  | 29  | 23  | 45 | 34 | 27 | 22 | 29 | 23 | 19 | 24 | 20 | 17 | 20 | 16 | 14 | 12 |
| 10 | 45  | 33  | 26  | 21  | 42 | 31 | 24 | 20 | 26 | 21 | 17 | 22 | 18 | 15 | 18 | 15 | 13 | 11 |

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.



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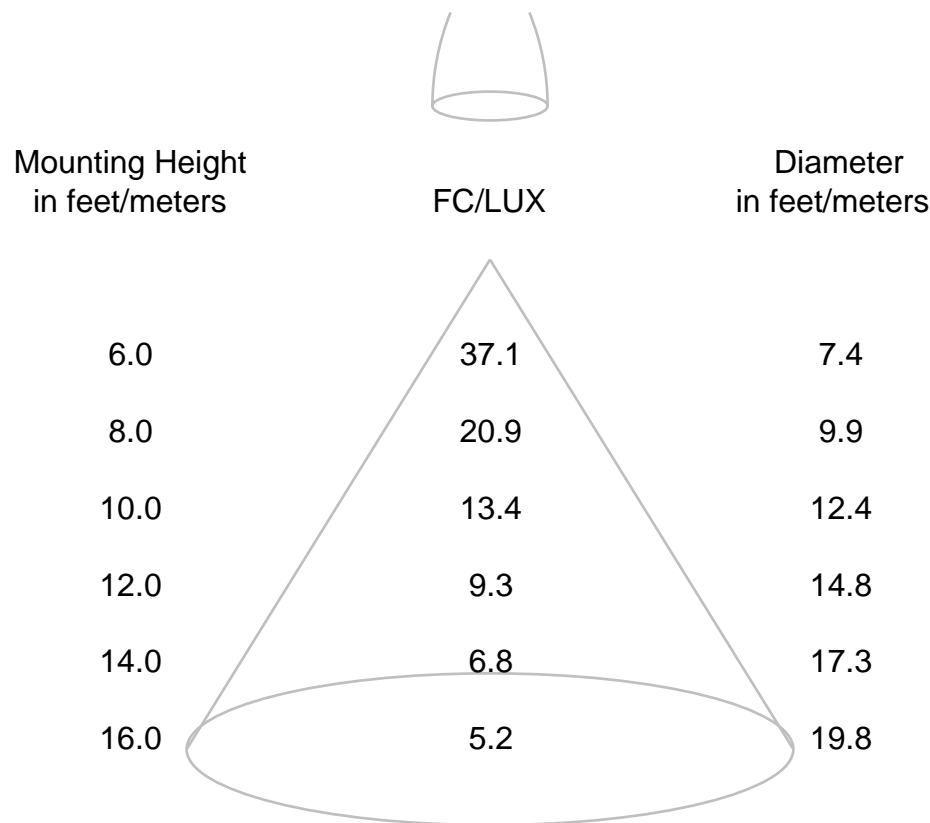
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## CONE OF LIGHT DIAGRAM

(diameter shown is where fc/lux value is half the fc/lux at nadir)



If distances are feet, results are footcandles.  
If distances are meters, results are lux.

Note: The candela values used to generate this diagram were obtained by averaging the photometric data into a single plane.