



PHONE: (303) 442-1255 • FAX: (970) 535-3114 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com



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

REPORT NUMBER: ITL90352-GONIOPHOTOMETRY

PAGE: 1 OF 7

ISSUE DATE: 04/04/18

PREPARED FOR: FINELITE, INC.

ADDRESS: 30500 WHIPPLE ROAD
UNION CITY, CA 94587

CATALOG NUMBER: HP-2 ID-RG-4'-V-V-835-F-277V-X-X-X-X

LUMINAIRE: EXTRUDED WHITE PAINTED METAL HOUSING WITH WHITE PAINTED FLAT METAL END CAPS AND 2 DISTINCT OPTICAL COMPARTMENTS, TOP OPTICAL COMPARTMENT CONSISTS OF: 2-PIECE WHITE PAINTED METAL CIRCUIT BOARD MOUNT, 3 WHITE CIRCUIT BOARDS WITH A TOTAL OF 160 LEDS, EXTRUDED TRANSLUCENT WHITE FROSTED PLASTIC DIFFUSER. BOTTOM COMPARTMENT CONSISTS OF: 2-PIECE FORMED WHITE PAINTED METAL REFLECTOR/CIRCUIT BOARD MOUNT, 2 WHITE CIRCUIT BOARDS EACH WITH 80 LEDS, EXTRUDED TRANSLUCENT WHITE FROSTED PLASTIC REGRESSED DIFFUSER. DIFFUSERS FROSTED BOTH SIDES.

LAMPS: THREE HUNDRED TWENTY WHITE LIGHT EMITTING DIODES (LEDS), 160 VERTICAL BASE-UP POSITION, 160 VERTICAL BASE-DOWN POSITION.

INPUT ELECTRICAL: 277.0 VOLTS, 74.8 WATTS, 0.281 AMPS

MOUNTING: SUSPENDED

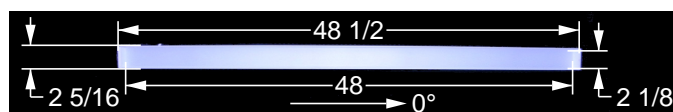
LED DRIVERS: TWO OSRAM OTi 50/120-277/1A4 DIM L, DRIVERS HAVE MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, CLIENT STATES EACH DRIVER PROGRAMMED FOR 700mA OUTPUT.

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

TEST PROCEDURE: IESNA LM-79-08

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.



Checked M KLOPF
Approved N WHITE

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CATALOG NUMBER: HP-2 ID-RG-4'-V-V-835-F-277V-X-X-X-X

CANDELA DISTRIBUTION

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 | |
|-----|------|------|------|------|------|-----|
| 0 | 1585 | 1585 | 1585 | 1585 | 1585 | |
| 5 | 1573 | 1571 | 1564 | 1558 | 1556 | 147 |
| 15 | 1492 | 1459 | 1411 | 1364 | 1342 | 396 |
| 25 | 1334 | 1260 | 1157 | 1068 | 1034 | 536 |
| 35 | 1118 | 1013 | 875 | 770 | 730 | 560 |
| 45 | 872 | 758 | 613 | 516 | 483 | 495 |
| 55 | 631 | 517 | 391 | 324 | 303 | 381 |
| 65 | 403 | 307 | 218 | 178 | 173 | 248 |
| 75 | 206 | 138 | 103 | 96 | 94 | 130 |
| 85 | 48 | 30 | 26 | 25 | 24 | 34 |
| 90 | 0 | 0 | 0 | 0 | 0 | |
| 95 | 69 | 69 | 69 | 66 | 64 | 76 |
| 105 | 251 | 250 | 250 | 249 | 247 | 265 |
| 115 | 478 | 474 | 476 | 471 | 470 | 470 |
| 125 | 734 | 726 | 728 | 723 | 721 | 650 |
| 135 | 1000 | 990 | 994 | 990 | 982 | 765 |
| 145 | 1265 | 1245 | 1253 | 1248 | 1238 | 781 |
| 155 | 1482 | 1463 | 1476 | 1467 | 1460 | 676 |
| 165 | 1635 | 1623 | 1630 | 1626 | 1621 | 458 |
| 175 | 1712 | 1711 | 1711 | 1710 | 1709 | 162 |
| 180 | 1722 | 1722 | 1722 | 1722 | 1722 | |

FLUX

ZONAL LUMEN SUMMARY

| ZONE | LUMENS | %FIXT |
|--------|--------|-------|
| 0- 30 | 1080 | 14.9 |
| 0- 40 | 1640 | 22.7 |
| 0- 60 | 2516 | 34.8 |
| 0- 90 | 2928 | 40.5 |
| 90-120 | 811 | 11.2 |
| 90-130 | 1461 | 20.2 |
| 90-150 | 3007 | 41.6 |
| 90-180 | 4304 | 59.5 |
| 0-180 | 7232 | 100.0 |

EFFICACY (277) = 96.7 lm/W

EFFICACY (120) = 98.8 lm/W **

** THE EFFICACY AT 120 VOLTS IS BASED ON THE LUMENS FROM THIS REPORT AND THE WATTAGE MEASURED AT 120 VOLTS FROM ITL REPORT NUMBER ITL90352-THD.

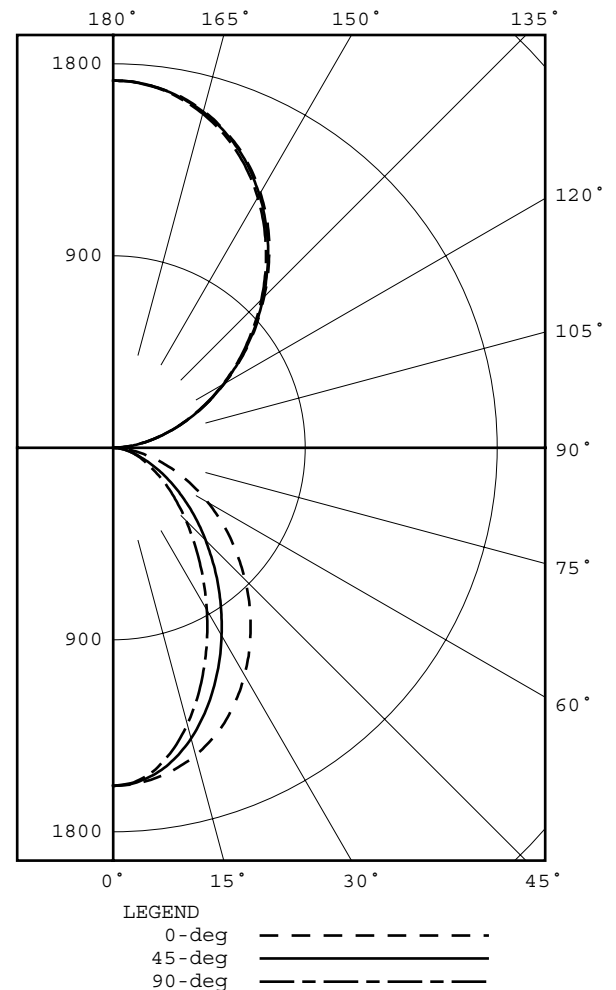
CIE TYPE - GENERAL DIFFUSE

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.16 0.91

BEAM ANGLE (50%) : 100.5 X 99.2 DEGREES

FIELD ANGLE (10%) : 158.1 X 157.7 DEGREES





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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 48.000 2.125

| LUMINANCE DATA IN CANDELA/SQ M | | | | |
|--------------------------------|---------|---------|---------|--|
| ANGLE | AVERAGE | AVERAGE | AVERAGE | |
| IN DEG | 0-DEG | 45-DEG | 90-DEG | |
| 45 | 18740. | 13174. | 10380. | |
| 55 | 16717. | 10359. | 8028. | |
| 65 | 14491. | 7839. | 6221. | |
| 75 | 12095. | 6047. | 5519. | |
| 85 | 8369. | 4533. | 4185. | |



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CANDELA DISTRIBUTION
LATERAL ANGLE

| | 0.0 | 22.5 | 45.0 | 67.5 | 90.0 |
|-------|------|------|------|------|------|
| 0.0 | 1585 | 1585 | 1585 | 1585 | 1585 |
| 5.0 | 1573 | 1571 | 1564 | 1558 | 1556 |
| 10.0 | 1542 | 1529 | 1505 | 1481 | 1469 |
| 15.0 | 1492 | 1459 | 1411 | 1364 | 1342 |
| 20.0 | 1423 | 1367 | 1291 | 1221 | 1193 |
| 25.0 | 1334 | 1260 | 1157 | 1068 | 1034 |
| 30.0 | 1230 | 1139 | 1016 | 916 | 877 |
| 35.0 | 1118 | 1013 | 875 | 770 | 730 |
| 40.0 | 998 | 885 | 740 | 635 | 597 |
| 45.0 | 872 | 758 | 613 | 516 | 483 |
| 50.0 | 748 | 634 | 497 | 412 | 385 |
| 55.0 | 631 | 517 | 391 | 324 | 303 |
| 60.0 | 514 | 407 | 299 | 248 | 231 |
| 65.0 | 403 | 307 | 218 | 178 | 173 |
| 70.0 | 300 | 218 | 148 | 136 | 133 |
| 75.0 | 206 | 138 | 103 | 96 | 94 |
| 80.0 | 122 | 73 | 62 | 59 | 58 |
| 85.0 | 48 | 30 | 26 | 25 | 24 |
| 90.0 | 0 | 0 | 0 | 0 | 0 |
| 95.0 | 69 | 69 | 69 | 66 | 64 |
| 100.0 | 154 | 154 | 153 | 152 | 151 |
| 105.0 | 251 | 250 | 250 | 249 | 247 |
| 110.0 | 359 | 357 | 358 | 355 | 354 |
| 115.0 | 478 | 474 | 476 | 471 | 470 |
| 120.0 | 602 | 598 | 599 | 594 | 592 |
| 125.0 | 734 | 726 | 728 | 723 | 721 |
| 130.0 | 868 | 858 | 861 | 857 | 850 |
| 135.0 | 1000 | 990 | 994 | 990 | 982 |
| 140.0 | 1135 | 1121 | 1127 | 1122 | 1113 |
| 145.0 | 1265 | 1245 | 1253 | 1248 | 1238 |
| 150.0 | 1380 | 1361 | 1370 | 1364 | 1355 |
| 155.0 | 1482 | 1463 | 1476 | 1467 | 1460 |
| 160.0 | 1566 | 1551 | 1562 | 1555 | 1550 |
| 165.0 | 1635 | 1623 | 1630 | 1626 | 1621 |
| 170.0 | 1683 | 1678 | 1680 | 1678 | 1676 |
| 175.0 | 1712 | 1711 | 1711 | 1710 | 1709 |
| 180.0 | 1722 | 1722 | 1722 | 1722 | 1722 |



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5-DEGREE
ZONAL LUMEN SUMMARY

| | |
|---------|-----|
| 0- 5 | 38 |
| 5- 10 | 110 |
| 10- 15 | 173 |
| 15- 20 | 223 |
| 20- 25 | 258 |
| 25- 30 | 278 |
| 30- 35 | 283 |
| 35- 40 | 276 |
| 40- 45 | 260 |
| 45- 50 | 236 |
| 50- 55 | 207 |
| 55- 60 | 174 |
| 60- 65 | 140 |
| 65- 70 | 108 |
| 70- 75 | 78 |
| 75- 80 | 51 |
| 80- 85 | 27 |
| 85- 90 | 7 |
| 90- 95 | 17 |
| 95-100 | 59 |
| 100-105 | 107 |
| 105-110 | 158 |
| 110-115 | 210 |
| 115-120 | 260 |
| 120-125 | 305 |
| 125-130 | 344 |
| 130-135 | 374 |
| 135-140 | 391 |
| 140-145 | 396 |
| 145-150 | 385 |
| 150-155 | 359 |
| 155-160 | 317 |
| 160-165 | 262 |
| 165-170 | 196 |
| 170-175 | 121 |
| 175-180 | 41 |

10-DEGREE
ZONAL LUMEN SUMMARY

| | |
|-------|------|
| 0- 10 | 147 |
| 0- 20 | 544 |
| 0- 30 | 1080 |
| 0- 40 | 1640 |
| 0- 50 | 2135 |
| 0- 60 | 2516 |
| 0- 70 | 2765 |
| 0- 80 | 2894 |
| 0- 90 | 2928 |
| 0-100 | 3004 |
| 0-110 | 3270 |
| 0-120 | 3740 |
| 0-130 | 4389 |
| 0-140 | 5154 |
| 0-150 | 5935 |
| 0-160 | 6611 |
| 0-170 | 7069 |
| 0-180 | 7232 |



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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 | 105 | 105 | 105 | 105 | 96 | 96 | 96 | 96 | 78 | 78 | 78 | 62 | 62 | 62 | 47 | 47 | 47 | 40 |
| 1 | 96 | 92 | 88 | 85 | 87 | 84 | 81 | 78 | 69 | 67 | 65 | 55 | 54 | 53 | 43 | 42 | 41 | 35 |
| 2 | 88 | 81 | 75 | 70 | 80 | 74 | 69 | 65 | 61 | 58 | 55 | 49 | 47 | 45 | 38 | 37 | 35 | 30 |
| 3 | 81 | 72 | 65 | 59 | 73 | 66 | 60 | 55 | 54 | 50 | 46 | 44 | 41 | 38 | 34 | 32 | 31 | 26 |
| 4 | 74 | 64 | 56 | 50 | 67 | 58 | 52 | 47 | 49 | 44 | 40 | 39 | 36 | 33 | 31 | 29 | 27 | 23 |
| 5 | 68 | 57 | 49 | 43 | 62 | 52 | 46 | 41 | 44 | 39 | 35 | 36 | 32 | 29 | 28 | 26 | 24 | 20 |
| 6 | 63 | 51 | 43 | 38 | 57 | 47 | 40 | 35 | 40 | 34 | 31 | 32 | 29 | 26 | 26 | 23 | 21 | 18 |
| 7 | 58 | 46 | 39 | 33 | 53 | 43 | 36 | 31 | 36 | 31 | 27 | 30 | 26 | 23 | 24 | 21 | 19 | 16 |
| 8 | 54 | 42 | 35 | 30 | 49 | 39 | 32 | 28 | 33 | 28 | 24 | 27 | 23 | 21 | 22 | 19 | 17 | 15 |
| 9 | 50 | 39 | 31 | 27 | 46 | 36 | 29 | 25 | 30 | 25 | 22 | 25 | 21 | 19 | 20 | 18 | 16 | 13 |
| 10 | 47 | 35 | 29 | 24 | 43 | 33 | 27 | 22 | 28 | 23 | 20 | 23 | 20 | 17 | 19 | 16 | 14 | 12 |

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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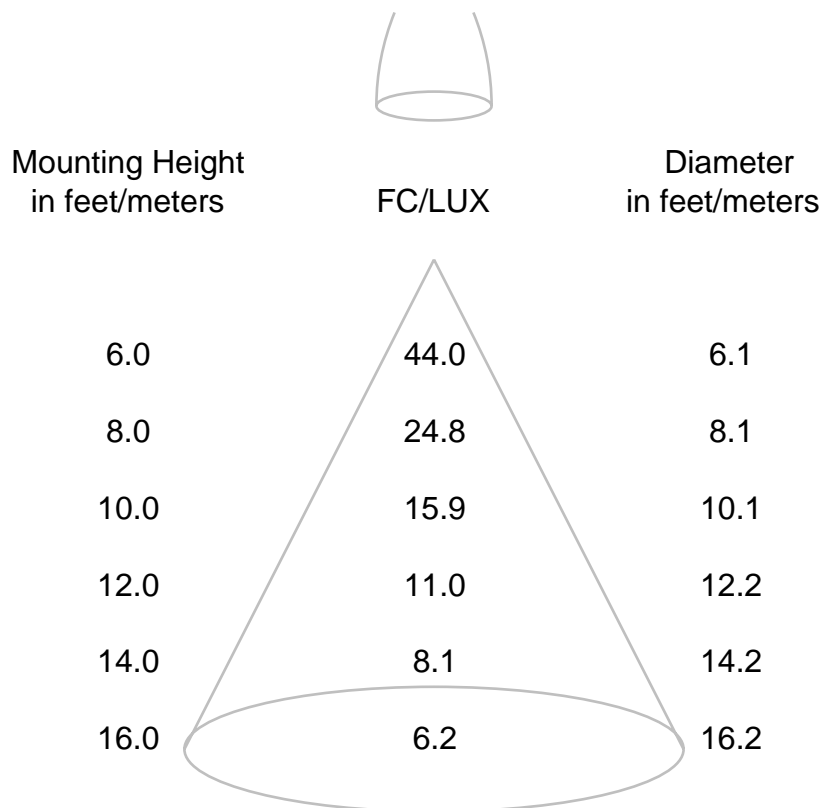
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CONE OF LIGHT DIAGRAM

(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.