



# itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.  
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL65639

DATE: 08/05/10

PREPARED FOR: HUBBELL LIGHTING, INC.

CATALOG NUMBER: FB150LU5KAL23BL

LUMINAIRE: FABRICATED METAL LED DRIVER HOUSING, ONE 8 SIDED TWO PIECE EXTRUDED SPECULAR METAL HEAT SINK, 8 CIRCUIT BOARDS EACH WITH 7 LEDS, SPUN SPECULAR METAL REFLECTOR, CLEAR FLAT INTERIOR FROSTED "HOLOGRAPHIC" ACRYLIC LENS. FABRICATED BLACK PAINTED METAL LENS RETAINING RING. HLI TEST NUMBER 3427.

LAMPS: FIFTY-SIX WHITE MULTI-CHIP LIGHT EMITTING DIODES (LEDs), LEDs AIMED AT THE HORIZON.

LED DRIVER: FOUR THOMAS RESEARCH PRODUCTS  
TRC-040S070PS

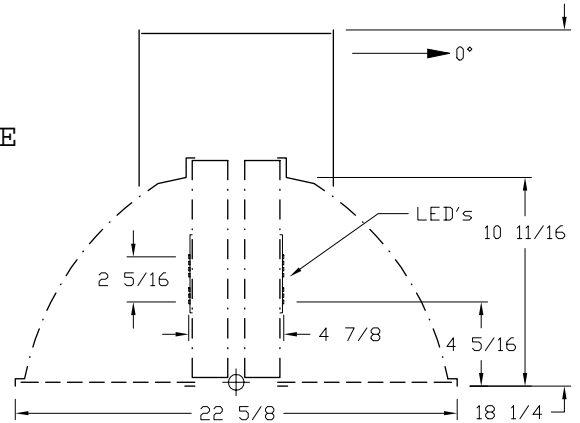
MOUNTING: PENDANT

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE LED DRIVER.

TOTAL INPUT WATTS = 145.2 AT 120.0 VOLTS

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 33.25 FEET



### CANDELA DISTRIBUTION

|    | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 | FLUX |
|----|------|------|------|------|------|------|
| 0  | 1784 | 1784 | 1784 | 1784 | 1784 |      |
| 5  | 2029 | 2002 | 2027 | 2019 | 2032 | 210  |
| 15 | 3147 | 3193 | 3174 | 3236 | 3212 | 915  |
| 25 | 3733 | 3648 | 3793 | 3690 | 3806 | 1685 |
| 35 | 3005 | 2600 | 3038 | 2585 | 3017 | 1742 |
| 45 | 1813 | 1479 | 1815 | 1452 | 1780 | 1269 |
| 55 | 917  | 780  | 914  | 760  | 902  | 766  |
| 65 | 422  | 390  | 423  | 386  | 419  | 407  |
| 75 | 157  | 150  | 158  | 148  | 155  | 166  |
| 85 | 18   | 18   | 18   | 19   | 18   | 27   |
| 90 | 0    | 0    | 0    | 0    | 0    |      |

### ZONAL LUMEN SUMMARY

| ZONE   | LUMENS | %FIXT |
|--------|--------|-------|
| 0- 30  | 2810   | 39.1  |
| 0- 40  | 4553   | 63.4  |
| 0- 60  | 6587   | 91.7  |
| 0- 90  | 7187   | 100.0 |
| 90-180 | 0      | 0.0   |
| 0-180  | 7187   | 100.0 |

EFFICACY = 49.5 Lm/W

CIE TYPE - DIRECT

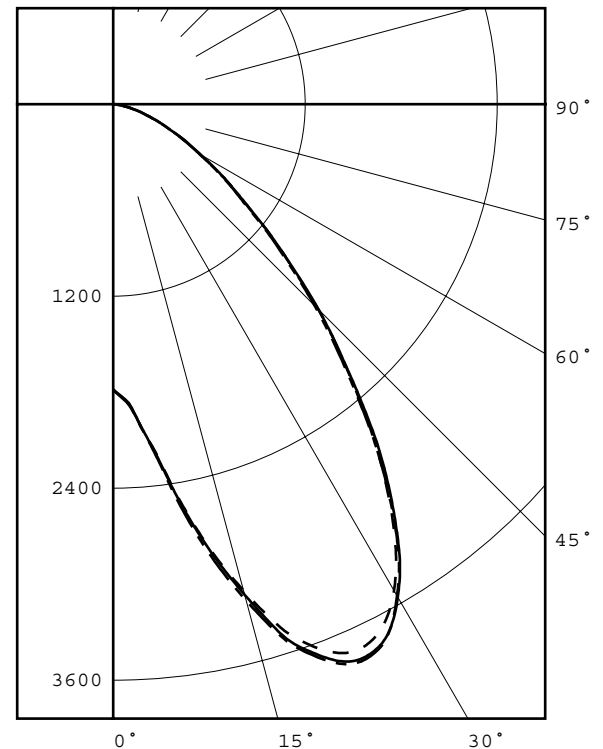
PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.8 1.8

LUMINOUS DIAMETER: 22.625

### LUMINANCE DATA IN CANDELA/SQ M

| ANGLE IN DEG | AVERAGE 0-DEG | AVERAGE 45-DEG | AVERAGE 90-DEG |
|--------------|---------------|----------------|----------------|
| 45           | 9885.         | 9896.          | 9705.          |
| 55           | 6164.         | 6144.          | 6063.          |
| 65           | 3850.         | 3859.          | 3822.          |
| 75           | 2339.         | 2354.          | 2309.          |
| 85           | 796.          | 796.           | 796.           |



#### LEGEND:

0-deg: - - - - -  
45-deg: \_\_\_\_\_  
90-deg: - . - . - .

Checked P. BELDING

Approved R. BEATTIE



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CANDELA DISTRIBUTION

|      | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 |
|------|------|------|------|------|------|
| 0.0  | 1784 | 1784 | 1784 | 1784 | 1784 |
| 2.5  | 1853 | 1851 | 1851 | 1861 | 1862 |
| 5.0  | 2029 | 2002 | 2027 | 2019 | 2032 |
| 7.5  | 2253 | 2253 | 2263 | 2282 | 2280 |
| 10.0 | 2568 | 2541 | 2581 | 2579 | 2611 |
| 12.5 | 2871 | 2889 | 2886 | 2927 | 2926 |
| 15.0 | 3147 | 3193 | 3174 | 3236 | 3212 |
| 17.5 | 3412 | 3456 | 3465 | 3510 | 3487 |
| 20.0 | 3597 | 3652 | 3648 | 3697 | 3668 |
| 22.5 | 3713 | 3717 | 3771 | 3762 | 3789 |
| 25.0 | 3733 | 3648 | 3793 | 3690 | 3806 |
| 27.5 | 3664 | 3482 | 3725 | 3515 | 3728 |
| 30.0 | 3511 | 3203 | 3558 | 3217 | 3548 |
| 32.5 | 3286 | 2909 | 3329 | 2905 | 3318 |
| 35.0 | 3005 | 2600 | 3038 | 2585 | 3017 |
| 37.5 | 2703 | 2263 | 2736 | 2259 | 2699 |
| 40.0 | 2381 | 1988 | 2400 | 1972 | 2364 |
| 42.5 | 2086 | 1710 | 2091 | 1684 | 2060 |
| 45.0 | 1813 | 1479 | 1815 | 1452 | 1780 |
| 47.5 | 1527 | 1280 | 1538 | 1255 | 1505 |
| 50.0 | 1303 | 1081 | 1302 | 1067 | 1278 |
| 52.5 | 1075 | 925  | 1085 | 914  | 1060 |
| 55.0 | 917  | 780  | 914  | 760  | 902  |
| 57.5 | 763  | 663  | 768  | 653  | 757  |
| 60.0 | 627  | 550  | 629  | 543  | 621  |
| 62.5 | 524  | 468  | 525  | 462  | 518  |
| 65.0 | 422  | 390  | 423  | 386  | 419  |
| 67.5 | 344  | 317  | 341  | 309  | 339  |
| 70.0 | 267  | 257  | 267  | 250  | 264  |
| 72.5 | 209  | 198  | 209  | 194  | 204  |
| 75.0 | 157  | 150  | 158  | 148  | 155  |
| 77.5 | 111  | 108  | 108  | 109  | 108  |
| 80.0 | 72   | 71   | 73   | 71   | 72   |
| 82.5 | 38   | 42   | 41   | 42   | 38   |
| 85.0 | 18   | 18   | 18   | 19   | 18   |
| 87.5 | 3    | 4    | 5    | 4    | 5    |
| 90.0 | 0    | 0    | 0    | 0    | 0    |



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5-DEGREE  
ZONAL LUMEN SUMMARY

|        |      |
|--------|------|
| 0- 5   | 46.  |
| 5- 10  | 165. |
| 10- 15 | 345. |
| 15- 20 | 570. |
| 20- 25 | 781. |
| 25- 30 | 905. |
| 30- 35 | 912. |
| 35- 40 | 830. |
| 40- 45 | 702. |
| 45- 50 | 566. |
| 50- 55 | 437. |
| 55- 60 | 329. |
| 60- 65 | 240. |
| 65- 70 | 167. |
| 70- 75 | 107. |
| 75- 80 | 59.  |
| 80- 85 | 23.  |
| 85- 90 | 4.   |

10-DEGREE  
ZONAL LUMEN SUMMARY

|       |       |
|-------|-------|
| 0- 10 | 210.  |
| 0- 20 | 1125. |
| 0- 30 | 2810. |
| 0- 40 | 4553. |
| 0- 50 | 5821. |
| 0- 60 | 6587. |
| 0- 70 | 6994. |
| 0- 80 | 7160. |
| 0- 90 | 7187. |
| 0-100 | 7187. |
| 0-110 | 7187. |
| 0-120 | 7187. |
| 0-130 | 7187. |
| 0-140 | 7187. |
| 0-150 | 7187. |
| 0-160 | 7187. |
| 0-170 | 7187. |
| 0-180 | 7187. |



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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  | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 99  | 101 | 98  | 96  | 97  | 95  | 93  | 94  | 92  | 91  | 89  |
| 2  | 103 | 96  | 91  | 86  | 100 | 94  | 89  | 85  | 91  | 87  | 83  | 88  | 84  | 81  | 85  | 82  | 79  | 77  |
| 3  | 95  | 86  | 80  | 74  | 93  | 85  | 79  | 73  | 82  | 77  | 72  | 79  | 75  | 71  | 77  | 73  | 70  | 68  |
| 4  | 88  | 78  | 70  | 65  | 86  | 77  | 70  | 64  | 74  | 68  | 63  | 72  | 67  | 63  | 70  | 66  | 62  | 60  |
| 5  | 82  | 71  | 63  | 57  | 80  | 70  | 62  | 57  | 68  | 61  | 56  | 66  | 60  | 56  | 64  | 59  | 55  | 53  |
| 6  | 76  | 64  | 56  | 51  | 74  | 63  | 56  | 50  | 62  | 55  | 50  | 60  | 54  | 50  | 59  | 53  | 49  | 47  |
| 7  | 71  | 59  | 51  | 45  | 69  | 58  | 50  | 45  | 56  | 50  | 45  | 55  | 49  | 45  | 54  | 48  | 44  | 42  |
| 8  | 66  | 54  | 46  | 41  | 65  | 53  | 46  | 41  | 52  | 45  | 40  | 51  | 45  | 40  | 50  | 44  | 40  | 38  |
| 9  | 62  | 50  | 42  | 37  | 61  | 49  | 42  | 37  | 48  | 41  | 37  | 47  | 41  | 37  | 46  | 40  | 36  | 35  |
| 10 | 58  | 46  | 39  | 34  | 57  | 45  | 38  | 34  | 44  | 38  | 33  | 44  | 38  | 33  | 43  | 37  | 33  | 32  |

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 LUMINAIRE SAMPLE.