

REPORT NUMBER: ITL85365

ISSUE DATE: 08/13/15

PAGE: 1 OF 9

PREPARED FOR: LED ROADWAY LIGHTING LTD.

CATALOG NUMBER: NXT 72M 0 X 2ES 5 XX 3 XX X XX X

LUMINAIRE: CAST METAL HOUSING WITH SEMI-DIFFUSE INTERIOR FINISH, 2 WHITE CIRCUIT BOARDS EACH WITH 36 LEDS, 2 CLEAR PLASTIC LENSES WITH 1 OPTIC PER LED, CLEAR FLAT GLASS LENS IN CAST SEMI-DIFFUSE METAL DOOR FRAME.

LAMPS: SEVENTY-TWO WHITE LIGHT EMITTING DIODES (LEDs), VERTICAL BASE-UP POSITION.

INPUT ELECTRICAL: 120.0 VOLTS, 116.4 WATTS, 0.980 AMPS

LED DRIVER: LED ROADWAY LIGHTING J150UN, DRIVER HAS MULTIPLE LEADS, ONLY LINE INPUT AND LED OUTPUT LEADS CONNECTED FOR THIS TEST, OUTPUT CURRENT ROTARY SWITCH SET TO 525mA. LRL65633-LF SURGE PROTECTOR.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (120VAC, 60Hz) TO THE DRIVER AND SURGE PROTECTOR. SURGE PROTECTOR INFORMATION PROVIDED BY CLIENT.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

TOTAL LUMEN OUTPUT: 13609

COLOR TEMPERATURE AS MEASURED IN INTEGRATING SPHERE TEST # ITL85373: 3770K

COLOR RENDERING INDEX AS MEASURED IN INTEGRATING SPHERE TEST # ITL85373: 73

LED DC DRIVE CURRENT (mA): 525 (PROVIDED BY CLIENT)

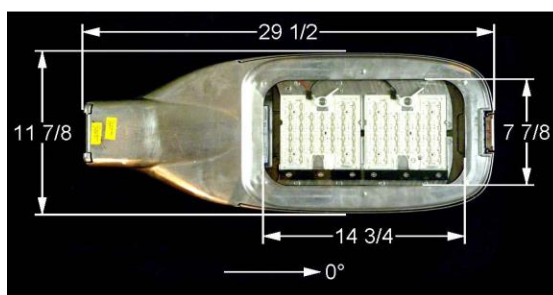
POWER FACTOR: 99.0 %

BUG RATING: B3 U0 G3

LUMINAIRE EFFICACY: 116.9 lm/W

IES CLASSIFICATION: Medium, Type II

\*\*CUTOFF DESIGNATION IS NOT INTENDED TO BE USED WITH ABSOLUTE PHOTOMETRIC TESTS.

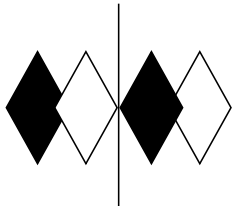


#### FLUX DISTRIBUTION

| LUMENS      | DOWNWARD | UPWARD | TOTALS |
|-------------|----------|--------|--------|
| HOUSE SIDE  | 4421     | 0      | 4421   |
| STREET SIDE | 9188     | 0      | 9188   |
| TOTALS      | 13609    | 0      | 13609  |

TESTING WAS PERFORMED IN ACCORDANCE WITH IESNA LM-79-08  
TEST ANGULAR INCREMENTS AND REPORT FORMATTING WAS BASED ON IESNA LM-31-95

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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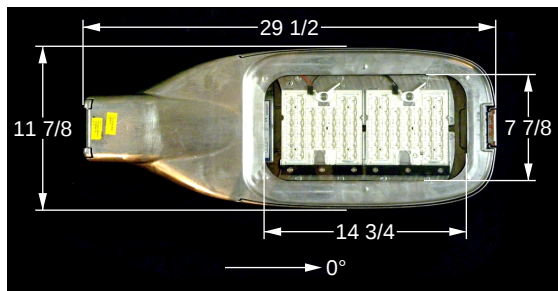
**NVLAP**  
NVLAP LAB CODE: 200925-0

INDEPENDENT TESTING LABORATORIES, INC.

4066 CAMELOT CIRCLE, LONGMONT, CO 80504 USA

## ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION

Values based on 30 foot mounting height.



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PAGE: 2 OF 9

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XX X XX X

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TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

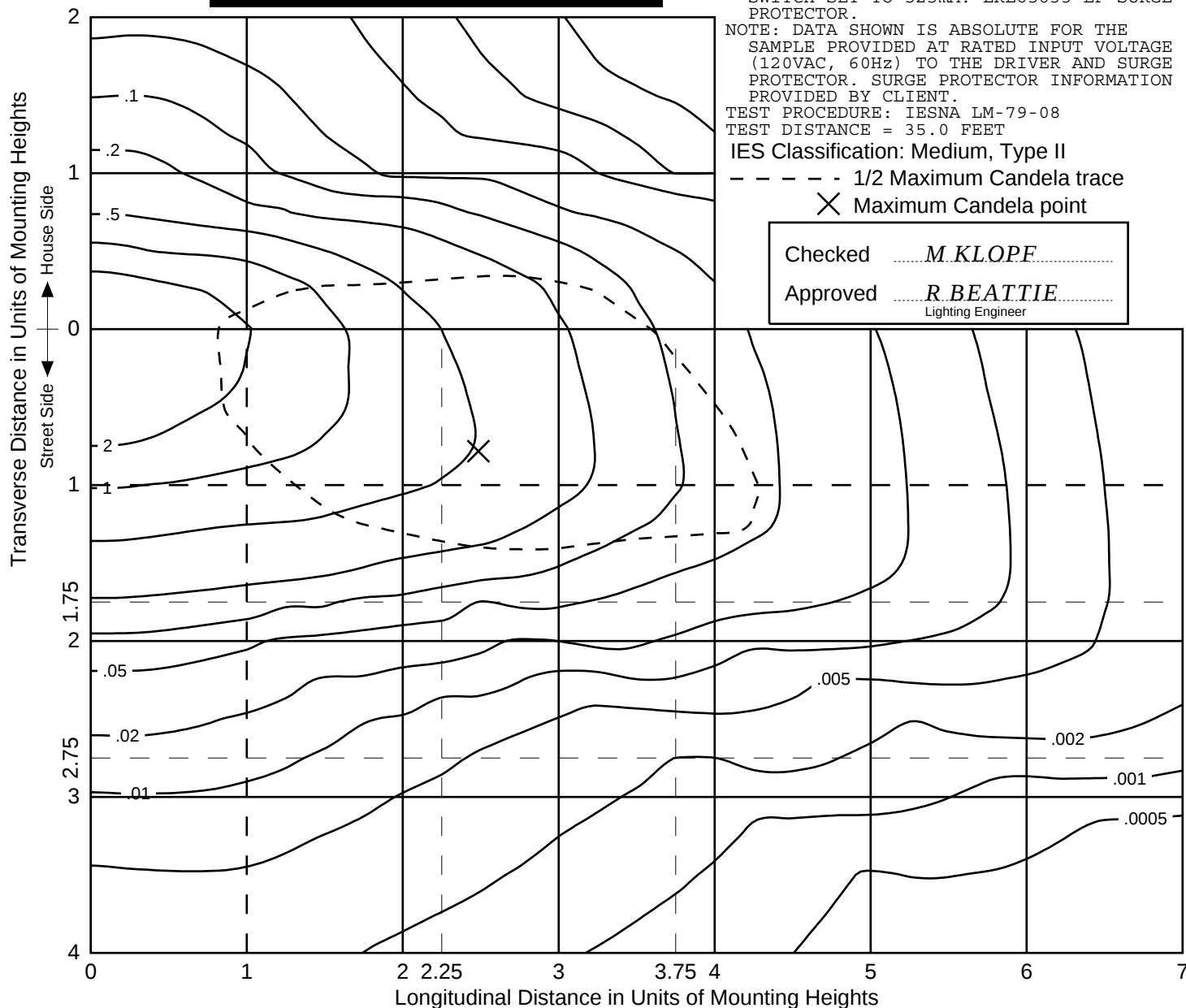
IES Classification: Medium, Type II

--- 1/2 Maximum Candela trace

X Maximum Candela point

Checked .....M.KLOPF.....

Approved .....R.BEATTIE.....  
Lighting Engineer



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ISSUE DATE: 08/13/15 PAGE: 3 OF 9  
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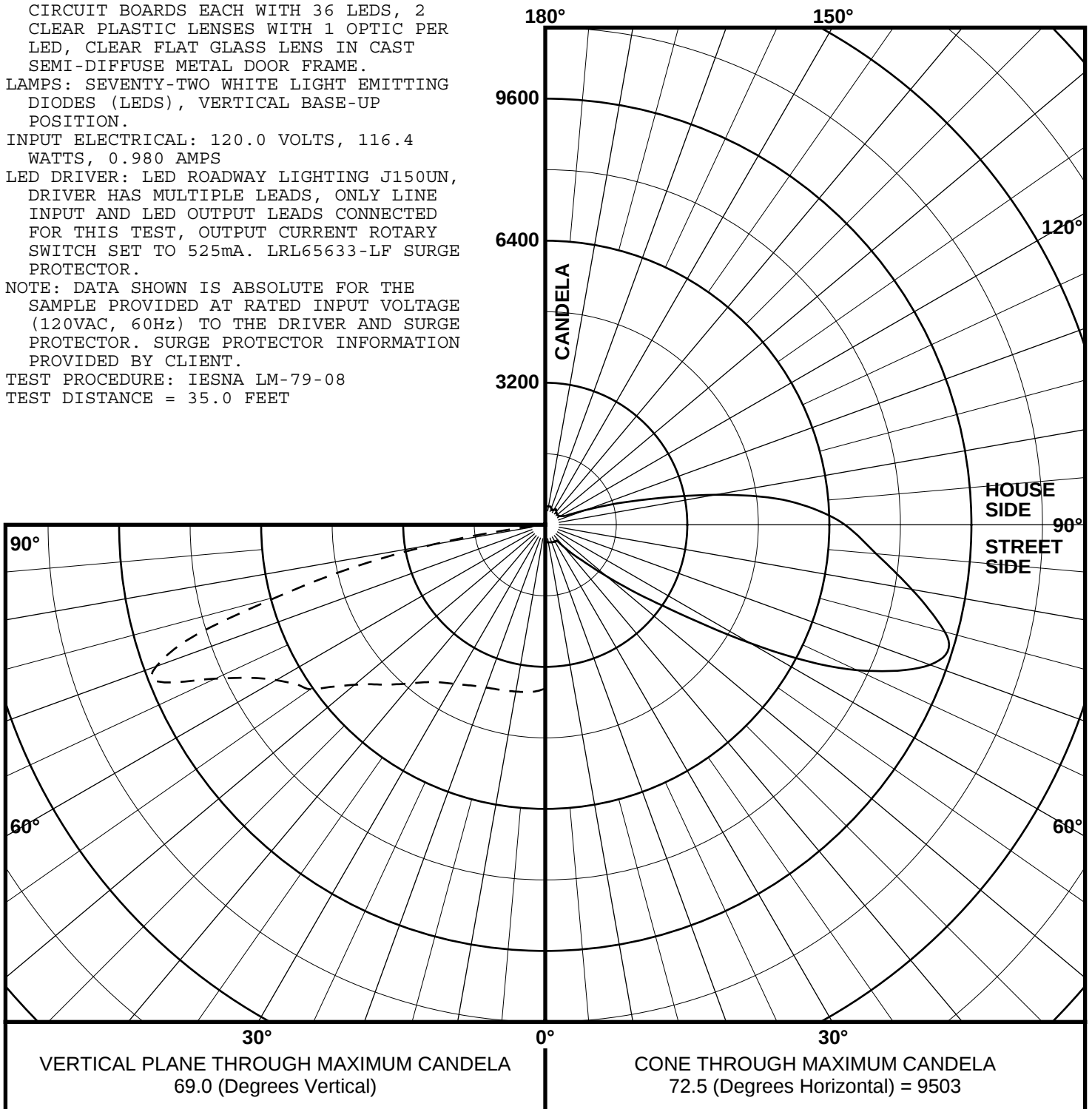
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TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 35.0 FEET

# MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA





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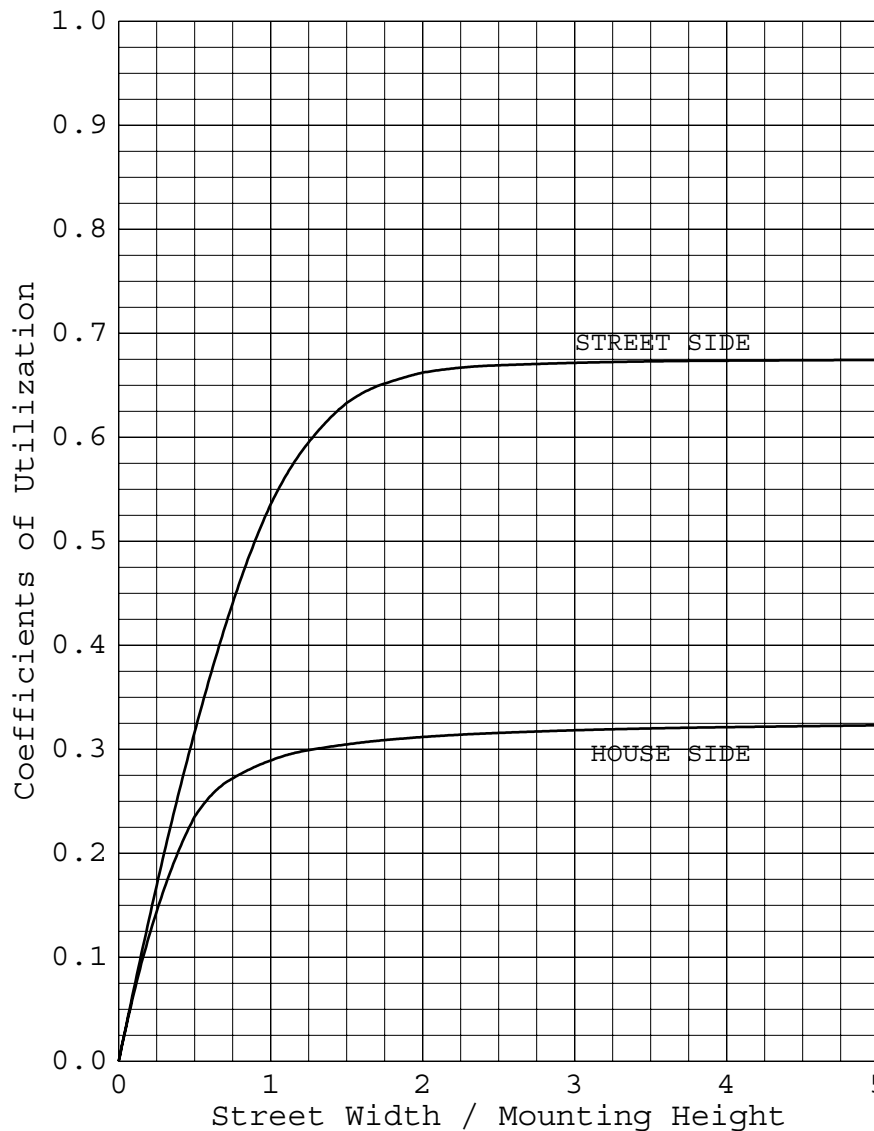
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PAGE: 4 OF 9

# COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



|                         | LUMENS | PERCENT<br>OF FIXTURE |
|-------------------------|--------|-----------------------|
| DOWNWARD<br>STREET SIDE | 9188   | 67.5                  |
| DOWNWARD<br>HOUSE SIDE  | 4421   | 32.5                  |
| DOWNWARD<br>TOTAL       | 13609  | 100.0                 |
| UPWARD<br>STREET SIDE   | 0      | 0.0                   |
| UPWARD<br>HOUSE SIDE    | 0      | 0.0                   |
| UPWARD<br>TOTAL         | 0      | 0.0                   |
| TOTAL<br>FLUX           | 13609  | 100.0                 |

EFFICACY = 116.9 lm/W

ALL CANDELA AND LUMENS 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.



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PAGE: 5 OF 9

### FLUX DISTRIBUTION BY SOLID ANGLE

(PER IESNA TM-15-11, LUMINAIRE CLASSIFICATION  
SYSTEM FOR OUTDOOR LUMINAIRES)

|               | LUMENS | PERCENT<br>OF<br>FIXTURE | BUG<br>ZONE<br>RATINGS |
|---------------|--------|--------------------------|------------------------|
| FORWARD LIGHT | 9188.  | 67.5                     |                        |
| FL ( 0- 30)   | 1637.7 | 12.0                     |                        |
| FM ( 30- 60)  | 4646.7 | 34.1                     |                        |
| FH ( 60- 80)  | 2829.0 | 20.8                     | G2                     |
| FVH( 80- 90)  | 74.4   | 0.5                      | G1                     |
| BACK LIGHT    | 4421.  | 32.5                     |                        |
| BL ( 0- 30)   | 1170.9 | 8.6                      | B3                     |
| BM ( 30- 60)  | 2158.4 | 15.9                     | B2                     |
| BH ( 60- 80)  | 1052.6 | 7.7                      | B3 G3                  |
| BVH( 80- 90)  | 38.8   | 0.3                      | G1                     |
| UPLIGHT       | 0.     | 0.0                      |                        |
| UL ( 90-100)  | 0.0    | 0.0                      | U0                     |
| UH (100-180)  | 0.0    | 0.0                      | U0                     |
| TRAPPED LIGHT | 0.     | 0.0                      |                        |
| TOTAL FLUX    | 13609. | 100.0                    |                        |

BACKLIGHT, UPLIGHT, AND GLARE (BUG) RATINGS  
(PER ADDENDUM A FOR IESNA TM-15-11)

BUG RATING: B3 U0 G3



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PAGE: 6 OF 9

# CANDELA TABULATION

|          | STREET SIDE |       |       |       |       |       |       |       |       |       |       |
|----------|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|          | 0.0         | 5.0   | 15.0  | 25.0  | 35.0  | 45.0  | 55.0  | 65.0  | 72.5  | 75.0  | 85.0  |
|          |             |       |       |       |       |       |       |       |       |       |       |
| 180.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 175.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 165.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 155.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 145.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 135.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 125.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 115.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 105.0    | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 95.0     | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 92.5     | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 90.0     | 0.          | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
| 87.5     | 3.          | 3.    | 3.    | 2.    | 2.    | 2.    | 3.    | 5.    | 8.    | 9.    | 10.   |
| 85.0     | 21.         | 21.   | 27.   | 25.   | 17.   | 15.   | 15.   | 19.   | 22.   | 24.   | 23.   |
| V 82.5   | 57.         | 57.   | 79.   | 68.   | 50.   | 59.   | 55.   | 128.  | 752.  | 711.  | 480.  |
| E 80.0   | 102.        | 109.  | 145.  | 105.  | 96.   | 116.  | 116.  | 417.  | 2571. | 2654. | 1954. |
| R 77.5   | 146.        | 153.  | 190.  | 145.  | 155.  | 163.  | 211.  | 1248. | 4435. | 4711. | 3783. |
| T 75.0   | 178.        | 187.  | 219.  | 210.  | 214.  | 240.  | 404.  | 3208. | 6204. | 6460. | 5086. |
| I 72.5   | 233.        | 244.  | 273.  | 283.  | 283.  | 391.  | 1073. | 5387. | 8250. | 8301. | 6418. |
| C 70.0   | 325.        | 334.  | 359.  | 380.  | 379.  | 776.  | 2466. | 7250. | 9320. | 9176. | 7280. |
| A 69.0<< | 381.        | 392.  | 409.  | 428.  | 442.  | 1065. | 3073. | 7749. | 9503. | 9317. | 7484. |
| L 67.5   | 457.        | 473.  | 486.  | 514.  | 593.  | 1653. | 3913. | 8023. | 9283. | 9188. | 7583. |
| 65.0     | 613.        | 623.  | 667.  | 792.  | 1237. | 2772. | 4911. | 7565. | 8204. | 8203. | 7174. |
| A 62.5   | 924.        | 938.  | 1058. | 1355. | 2039. | 3505. | 5185. | 7018. | 7467. | 7391. | 6709. |
| N 60.0   | 1389.       | 1402. | 1530. | 1879. | 2500. | 3698. | 5097. | 6634. | 6999. | 6958. | 6464. |
| G 57.5   | 1758.       | 1771. | 1867. | 2162. | 2693. | 3718. | 5026. | 6406. | 6674. | 6635. | 6303. |
| L 55.0   | 2006.       | 2006. | 2099. | 2356. | 2856. | 3738. | 4953. | 6277. | 6459. | 6390. | 6129. |
| E 52.5   | 2183.       | 2210. | 2277. | 2531. | 3023. | 3763. | 4836. | 5829. | 5984. | 5989. | 5927. |
| 50.0     | 2334.       | 2363. | 2444. | 2714. | 3191. | 3830. | 4752. | 5474. | 5608. | 5620. | 5684. |
| 47.5     | 2479.       | 2517. | 2618. | 2881. | 3348. | 3920. | 4667. | 5182. | 5315. | 5354. | 5467. |
| 45.0     | 2629.       | 2674. | 2794. | 3055. | 3477. | 3977. | 4526. | 4912. | 5091. | 5143. | 5267. |
| 42.5     | 2799.       | 2851. | 2991. | 3303. | 3630. | 4050. | 4437. | 4687. | 4868. | 4934. | 5072. |
| 40.0     | 3079.       | 3137. | 3303. | 3542. | 3798. | 4125. | 4325. | 4489. | 4661. | 4725. | 4851. |
| 37.5     | 3431.       | 3502. | 3625. | 3764. | 3962. | 4159. | 4195. | 4318. | 4473. | 4533. | 4639. |
| 35.0     | 3736.       | 3801. | 3868. | 3960. | 4079. | 4118. | 4069. | 4176. | 4327. | 4379. | 4450. |
| 30.0     | 4096.       | 4154. | 4156. | 4138. | 4058. | 3885. | 3879. | 4018. | 4138. | 4163. | 4174. |
| 25.0     | 4074.       | 4114. | 4038. | 3933. | 3819. | 3756. | 3808. | 3936. | 3993. | 3999. | 3954. |
| 20.0     | 3772.       | 3819. | 3794. | 3767. | 3746. | 3776. | 3849. | 3914. | 3902. | 3890. | 3811. |
| 15.0     | 3738.       | 3790. | 3791. | 3804. | 3827. | 3868. | 3912. | 3894. | 3851. | 3836. | 3753. |
| 10.0     | 3853.       | 3911. | 3915. | 3924. | 3933. | 3917. | 3899. | 3857. | 3814. | 3802. | 3731. |
| 5.0      | 3849.       | 3887. | 3884. | 3874. | 3864. | 3837. | 3821. | 3800. | 3777. | 3767. | 3722. |
| 0.0      | 3691.       | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. |

||  
PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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PAGE: 7 OF 9

# CANDELA TABULATION

|   | HOUSE SIDE | LATERAL ANGLE |       |       |       |       |       |       |       |       |       |       |
|---|------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|   |            | 90.0          | 95.0  | 105.0 | 115.0 | 125.0 | 135.0 | 145.0 | 155.0 | 165.0 | 175.0 | 180.0 |
|   | 180.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 175.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 165.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 155.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 145.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 135.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 125.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 115.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 105.0      | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 95.0       | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 92.5       | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 90.0       | 0.            | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    | 0.    |
|   | 87.5       | 10.           | 9.    | 6.    | 4.    | 3.    | 2.    | 1.    | 1.    | 1.    | 0.    | 0.    |
|   | 85.0       | 23.           | 20.   | 15.   | 12.   | 12.   | 17.   | 24.   | 36.   | 27.   | 9.    | 3.    |
| V | 82.5       | 444.          | 344.  | 48.   | 46.   | 46.   | 71.   | 88.   | 104.  | 126.  | 127.  | 122.  |
| E | 80.0       | 1653.         | 1278. | 134.  | 102.  | 99.   | 132.  | 174.  | 195.  | 238.  | 258.  | 245.  |
| R | 77.5       | 3196.         | 2476. | 305.  | 166.  | 158.  | 196.  | 257.  | 297.  | 377.  | 415.  | 412.  |
| T | 75.0       | 4443.         | 3554. | 615.  | 243.  | 229.  | 250.  | 318.  | 340.  | 459.  | 511.  | 501.  |
| I | 72.5       | 5779.         | 4814. | 1197. | 336.  | 289.  | 299.  | 355.  | 352.  | 485.  | 536.  | 534.  |
| C | 70.0       | 6575.         | 5528. | 1842. | 433.  | 340.  | 341.  | 397.  | 359.  | 439.  | 456.  | 458.  |
| A | 69.0<<     | 6750.         | 5666. | 2079. | 468.  | 359.  | 358.  | 414.  | 365.  | 425.  | 418.  | 421.  |
| L | 67.5       | 6837.         | 5742. | 2394. | 514.  | 391.  | 382.  | 440.  | 383.  | 413.  | 384.  | 383.  |
|   | 65.0       | 6598.         | 5690. | 2850. | 594.  | 435.  | 430.  | 473.  | 429.  | 417.  | 377.  | 369.  |
| A | 62.5       | 6349.         | 5652. | 3245. | 720.  | 476.  | 481.  | 494.  | 486.  | 449.  | 416.  | 403.  |
| N | 60.0       | 6246.         | 5681. | 3592. | 941.  | 520.  | 530.  | 499.  | 527.  | 505.  | 463.  | 442.  |
| G | 57.5       | 6199.         | 5774. | 3905. | 1285. | 574.  | 573.  | 522.  | 552.  | 552.  | 509.  | 491.  |
| L | 55.0       | 6074.         | 5740. | 4169. | 1706. | 649.  | 614.  | 558.  | 566.  | 585.  | 553.  | 532.  |
| E | 52.5       | 5866.         | 5537. | 4190. | 2109. | 774.  | 649.  | 595.  | 599.  | 621.  | 580.  | 562.  |
|   | 50.0       | 5652.         | 5367. | 4202. | 2455. | 969.  | 690.  | 634.  | 631.  | 645.  | 610.  | 599.  |
|   | 47.5       | 5449.         | 5220. | 4210. | 2704. | 1224. | 743.  | 680.  | 668.  | 656.  | 632.  | 627.  |
|   | 45.0       | 5241.         | 5058. | 4165. | 2881. | 1493. | 854.  | 730.  | 707.  | 690.  | 672.  | 669.  |
|   | 42.5       | 5034.         | 4871. | 4104. | 2983. | 1738. | 1031. | 792.  | 746.  | 730.  | 719.  | 718.  |
|   | 40.0       | 4819.         | 4670. | 4010. | 3044. | 1939. | 1219. | 907.  | 795.  | 767.  | 752.  | 749.  |
|   | 37.5       | 4610.         | 4479. | 3900. | 3076. | 2114. | 1399. | 1058. | 897.  | 825.  | 799.  | 794.  |
|   | 35.0       | 4415.         | 4291. | 3797. | 3087. | 2266. | 1577. | 1207. | 1033. | 948.  | 912.  | 905.  |
|   | 30.0       | 4104.         | 3985. | 3602. | 3096. | 2523. | 1992. | 1581. | 1357. | 1227. | 1165. | 1165. |
|   | 25.0       | 3868.         | 3757. | 3461. | 3125. | 2750. | 2376. | 2056. | 1815. | 1661. | 1583. | 1586. |
|   | 20.0       | 3728.         | 3634. | 3413. | 3183. | 2952. | 2717. | 2500. | 2328. | 2205. | 2133. | 2139. |
|   | 15.0       | 3680.         | 3606. | 3443. | 3275. | 3129. | 2987. | 2863. | 2769. | 2695. | 2643. | 2659. |
|   | 10.0       | 3678.         | 3626. | 3518. | 3408. | 3306. | 3217. | 3149. | 3097. | 3069. | 3038. | 3063. |
|   | 5.0        | 3693.         | 3667. | 3615. | 3561. | 3510. | 3458. | 3420. | 3391. | 3371. | 3359. | 3388. |
|   | 0.0        | 3691.         | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. | 3691. |

CONE OF MAXIMUM CANDELA



INDEPENDENT TESTING LABORATORIES, INC.  
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PAGE: 8 OF 9

5-DEGREE  
ZONAL LUMEN SUMMARY

|         |      |
|---------|------|
| 0- 5    | 88   |
| 5- 10   | 259  |
| 10- 15  | 416  |
| 15- 20  | 555  |
| 20- 25  | 683  |
| 25- 30  | 809  |
| 30- 35  | 926  |
| 35- 40  | 1024 |
| 40- 45  | 1105 |
| 45- 50  | 1184 |
| 50- 55  | 1260 |
| 55- 60  | 1306 |
| 60- 65  | 1289 |
| 65- 70  | 1214 |
| 70- 75  | 910  |
| 75- 80  | 469  |
| 80- 85  | 109  |
| 85- 90  | 4    |
| 90- 95  | 0    |
| 95-100  | 0    |
| 100-105 | 0    |
| 105-110 | 0    |
| 110-115 | 0    |
| 115-120 | 0    |
| 120-125 | 0    |
| 125-130 | 0    |
| 130-135 | 0    |
| 135-140 | 0    |
| 140-145 | 0    |
| 145-150 | 0    |
| 150-155 | 0    |
| 155-160 | 0    |
| 160-165 | 0    |
| 165-170 | 0    |
| 170-175 | 0    |
| 175-180 | 0    |

10-DEGREE  
ZONAL LUMEN SUMMARY

|       |       |
|-------|-------|
| 0- 10 | 346   |
| 0- 20 | 1317  |
| 0- 30 | 2809  |
| 0- 40 | 4758  |
| 0- 50 | 7047  |
| 0- 60 | 9614  |
| 0- 70 | 12117 |
| 0- 80 | 13495 |
| 0- 90 | 13609 |
| 0-100 | 13609 |
| 0-110 | 13609 |
| 0-120 | 13609 |
| 0-130 | 13609 |
| 0-140 | 13609 |
| 0-150 | 13609 |
| 0-160 | 13609 |
| 0-170 | 13609 |
| 0-180 | 13609 |



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PAGE: 9 OF 9

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