



UL Verification Services
7036 Snowdrift Road Suite 200
Allentown, PA 18106
610-774-1300



Photometric Outdoor Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002

Prepared For
LED Waves, LLC
Kori Lozinski
The Esquire Building
41st Street, 4100 1st Avenue 3rd Floor North
Brooklyn, NY 11232

Catalog Number
Owl Pack 70 Watt
Project Number
10017853
Test Number
339643

Test Date

2013-11-22

Prepared By

Jeff Smith Jr., Project Coordinator

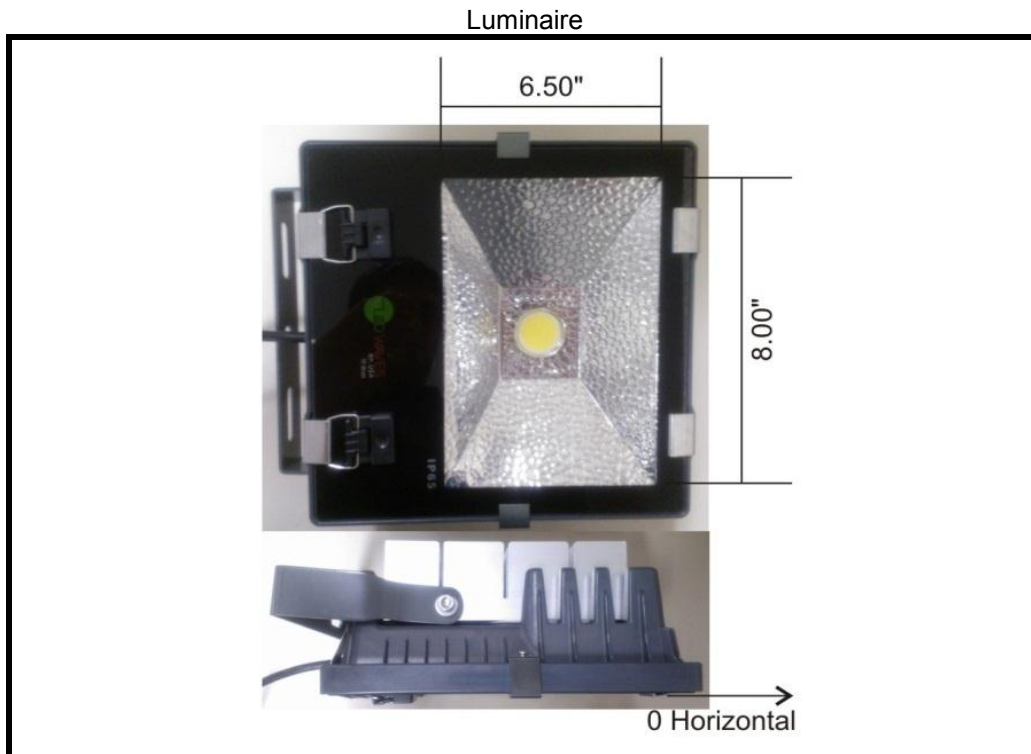
Approved By

Jeffrey Lockner, Engineer

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Molded plastic housing, cast aluminum heatsink, patterned specular reflector, clear glass enclosure
Catalog Number: Owl Pack 70 Watt
Lamp: One white LED array
Mounting: Horizontal
Ballast/Driver: One Inventronics TRC-075S140ST



Test Conditions

Test Temperature:	24.9 °C
Voltage:	120.0 VAC
Current:	0.4807 A
Power:	57.18 W
Power Factor:	0.991
Frequency:	60 Hz
Current THD:	7.28 %



*** THIS IS AN ABSOLUTE TEST REPORT ***

UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

RATIO	HOUSE SIDE	STREET SIDE	TOTAL
0.5	0.287	0.283	0.570
1.0	0.434	0.433	0.868
1.5	0.486	0.487	0.973
2.0	0.497	0.497	0.994
2.5	0.498	0.499	0.998
3.0	0.499	0.500	0.999
3.5	0.499	0.500	0.999
4.0	0.499	0.500	0.999
5.0	0.499	0.501	1.000
TOTAL:	0.499	0.501	1.000

PERCENTAGE OUTPUTS

DOWNWARD:	STREET SIDE =	50.1%
	HOUSE SIDE =	49.9%
	TOTAL =	100.0%
UPWARD:	STREET SIDE =	0.0%
	HOUSE SIDE =	0.0%
	TOTAL =	0.0%

EFFICACY (LUMENS PER WATT) 118.6

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
 BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
 LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
 THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA



ÁÁÁÚŠÚŇQ LUMINAIRE OUTPUT: 6782 Lms.

IESNA CUTOFF CLASSIFICATION: CUTOFF

ZONAL LUMEN SUMMARY PER IES PUBLICATION TM-15-07

*** THIS IS AN ABSOLUTE TEST REPORT ***

FORWARD LIGHT:

LUMENS	3396.4
% LUMENS	50.1 %
FORWARD LOW ZONE (0 TO 30 DEGREES)	17.6 %
FORWARD MID ZONE (30 TO 60 DEGREES)	29.6 %
FORWARD HIGH ZONE (60 TO 80 DEGREES)	2.9 %
FORWARD VERY HIGH ZONE (80 TO 90 DEGREES)	0.0 %

BACK LIGHT:

LUMENS	3385.6
% LUMENS	49.9 %
BACK LIGHT LOW ZONE (0 TO 30 DEGREES)	17.7 %
BACK LIGHT MID ZONE (30 TO 60 DEGREES)	29.4 %
BACK LIGHT HIGH ZONE (60 TO 80 DEGREES)	2.7 %
BACK LIGHT VERY HIGH ZONE (80 TO 90 DEGREES)	0.0 %

UPLIGHT:

LUMENS	0.0
% LUMENS	0.0 %
UPLIGHT LOW ZONE (90 TO 100 DEGREES)	0.0 %
UPLIGHT HIGH ZONE (100 TO 180 DEGREES)	0.0 %

TRAPPED LIGHT: NOT APPLICABLE TO AN ABSOLUTE TEST



IES "BUG" RATING (BACK LIGHT, UPLIGHT, GLARE)
 PER IES TM-15-11

	LUMENS	SECONDARY SOLID ANGLE RATING
BACK LIGHT		
BH (60-80 DEGREES)	185.0	B 1
BM (30-60 DEGREES)	1997.2	B 2
BL (0-30 DEGREES)	1203.3	B 3
UPLIGHT		
UH (100-180 DEGREES)	0.0	U 0
UL (90-100 DEGREES)	0.0	U 0
GLARE LIGHT		
FVH (80-90 DEGRESS)	0.3	G 0
BVH (80-90 DEGRESS)	0.0	G 0
FH (60-80 DEGREES)	196.3	G 0
BH (60-80 DEGRESS)	185.0	G 0

IES BUG RATING: B3 U0 G0

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
 BALLAST FACTORS HAVE NOT BEEN APPLIED
 TESTED IN 30 PLANES LEFT SIDE, 30 PLANES RIGHT SIDE, LEFT AND
 RIGHT AVERAGED
 VERTICAL TEST INCREMENTS ARE 2.5 DEGREES.
 TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
 LUMINOUS OPENING OF LUMINAIRE

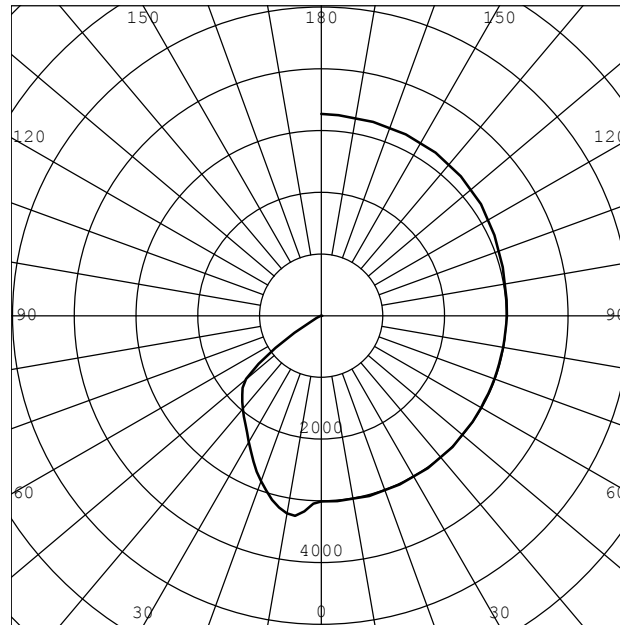


INTENSITY (CANDLEPOWER)
IN MAX. PLANE

ANGLE	CANDLEPOWER
0.0	3007
5.0	3182
10.0	3249
15.0	3091
20.0	2856
25.0	2608
30.0	2354
35.0	2150
40.0	1983
45.0	1817
50.0	1593
52.5	1285
55.0	909
57.5	519
60.0	192
62.5	119
65.0	100
67.5	77
70.0	49
72.5	28
75.0	15
77.5	7
80.0	2
82.5	0
85.0	0
87.5	0
90.0	0
95.0	0
105.0	0
115.0	0
125.0	0
135.0	0
145.0	0
155.0	0
165.0	0
175.0	0
180.0	0

INTENSITY (CANDLEPOWER)
IN MAX. CONE

ANGLE	CANDLEPOWER
0.0	3009
5.0	3020
15.0	3021
25.0	3018
35.0	3015
45.0	3007
55.0	2995
60.0	2990
62.5	2987
65.0	2986
67.5	2985
70.0	2987
72.5	2986
75.0	2987
77.5	2988
80.0	2989
82.5	2993
85.0	2997
87.5	3002
90.0	3006
95.0	3017
105.0	3049
115.0	3095
125.0	3161
135.0	3207
145.0	3231
155.0	3248
165.0	3256
175.0	3264
180.0	3274



MAXIMUM INTENSITY (CANDLEPOWER) : 3274 CD
 PLANE OF MAXIMUM: 180.0
 VERTICAL ANGLE OF MAXIMUM: 7.5



INTENSITY (CANDLEPOWER) SUMMARY

VERT. ANGLE	HORIZONTAL ANGLES - STREET SIDE									
	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
0.0	3007	3007	3007	3007	3007	3007	3007	3007	3007	3007
5.0	3004	3011	3013	3012	3010	3007	3005	3002	3005	3010
7.5**	3009	3020	3021	3018	3015	3007	2995	2986	2987	2997
10.0	2986	2999	3003	3000	2998	2989	2977	2962	2959	2970
15.0	2913	2925	2928	2933	2932	2932	2922	2905	2883	2891
20.0	2990	3000	2976	2940	2879	2838	2820	2801	2779	2774
25.0	2861	2870	2850	2857	2847	2797	2707	2667	2643	2635
30.0	2535	2556	2563	2606	2646	2655	2611	2523	2485	2480
35.0	2174	2187	2202	2263	2363	2447	2458	2384	2304	2295
40.0	1922	1939	1950	1976	2037	2173	2237	2224	2126	2097
45.0	1750	1751	1743	1739	1783	1860	2002	2051	2001	1943
50.0	1557	1568	1564	1554	1551	1609	1774	1835	1716	1632
55.0	907	940	1056	1236	1329	1357	1387	1425	1361	1318
60.0	160	190	277	483	772	1048	1060	1078	1058	1049
65.0	89	88	82	76	78	415	774	756	587	479
70.0	80	78	67	61	46	27	91	18	10	11
75.0	37	40	35	37	23	11	8	7	4	5
80.0	6	7	6	6	3	1	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0

VERT. ANGLE	HORIZONTAL ANGLES - HOUSE SIDE										
	90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
0.0	3007	3007	3007	3007	3007	3007	3007	3007	3007	3007	3007
5.0	3016	3022	3039	3061	3089	3120	3146	3166	3178	3183	3182
7.5**	3006	3017	3049	3095	3161	3207	3231	3248	3256	3264	3274
10.0	2980	2999	3046	3125	3193	3224	3233	3235	3234	3235	3249
15.0	2905	2937	3018	3109	3155	3144	3112	3092	3071	3074	3091
20.0	2783	2826	2920	2989	2985	2928	2882	2852	2840	2843	2856
25.0	2648	2695	2790	2800	2752	2704	2660	2627	2602	2596	2608
30.0	2495	2541	2628	2621	2581	2493	2438	2382	2355	2348	2354
35.0	2303	2348	2421	2436	2375	2279	2205	2174	2146	2141	2150
40.0	2108	2144	2198	2222	2143	2057	2014	1984	1973	1976	1983
45.0	1946	1973	2015	2043	1924	1857	1812	1803	1802	1814	1817
50.0	1645	1686	1773	1811	1738	1631	1599	1604	1603	1573	1593
55.0	1316	1333	1387	1433	1402	1375	1335	1157	977	882	909
60.0	1047	1048	1066	1090	1067	1008	696	410	242	180	192
65.0	465	479	583	733	745	364	72	85	97	98	100
70.0	11	10	9	16	69	17	34	50	51	47	49
75.0	5	4	3	2	2	4	10	14	15	14	15
80.0	0	0	0	0	0	0	0	1	1	1	2
85.0	0	0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0	0	0

** DENOTES VERTICAL ANGLE OF MAXIMUM CONE

**** DENOTES LATERAL ANGLE OF MAXIMUM PLANE

INTENSITY WAS MEASURED IN 2.5 DEGREE STEPS - TABULATIONS ARE AVAILABLE



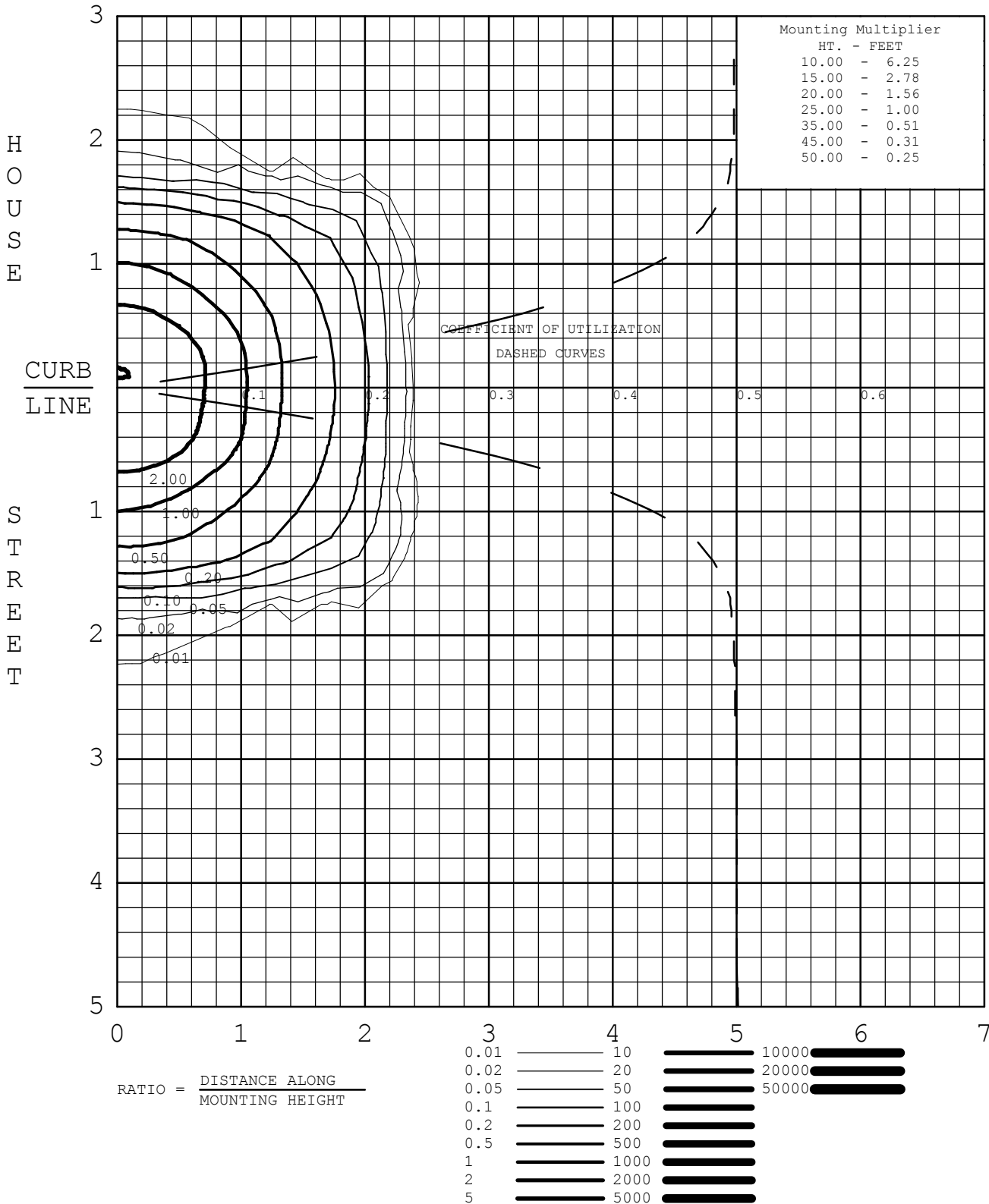
** ILLUMINANCE (FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 25.0 FT. **

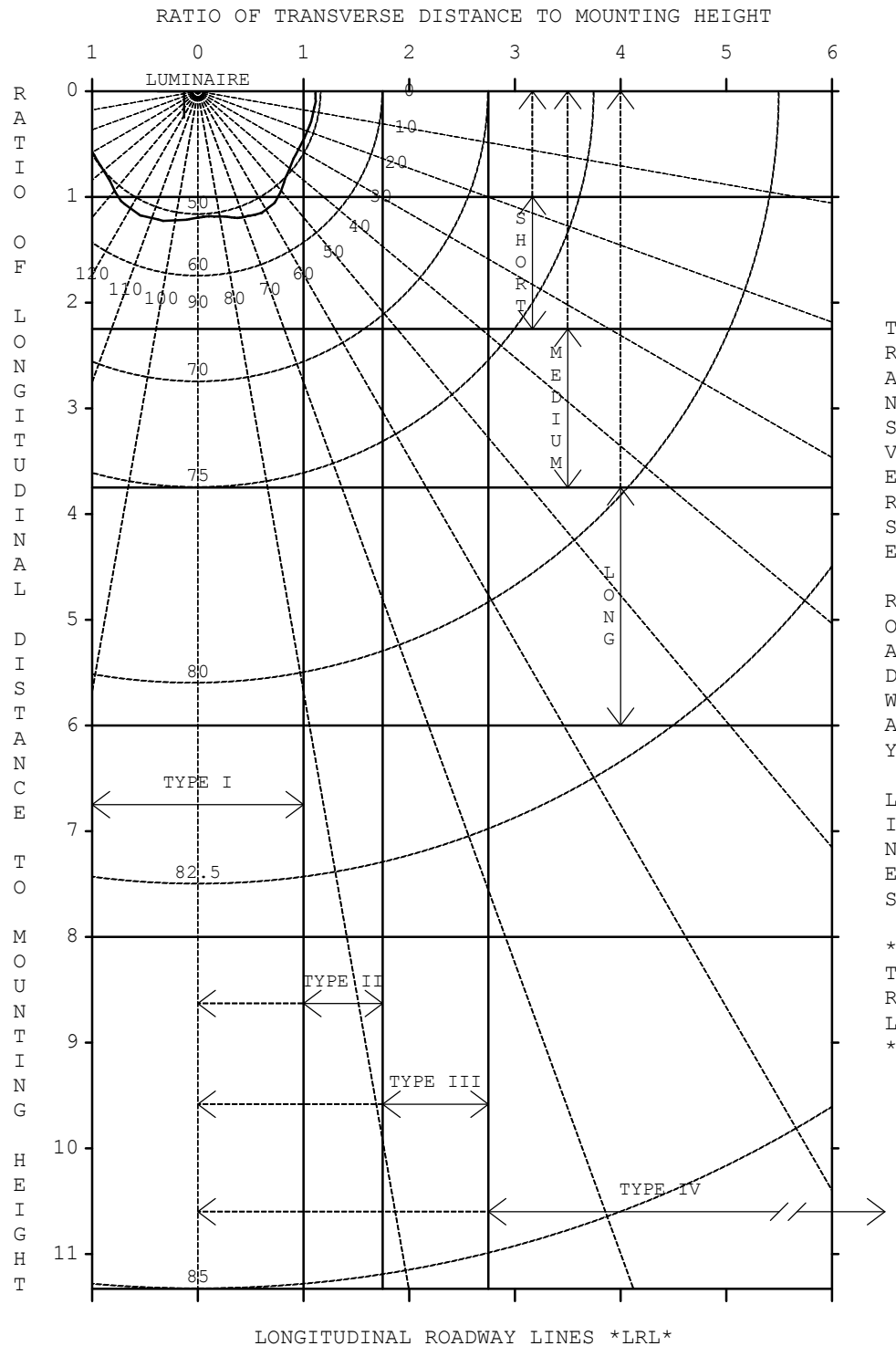
LATERAL RATIOS	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
-3.00	.002	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.50	.006	.005	.004	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.00	.016	.014	.008	.004	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-1.50	0.19	0.15	.094	.049	.023	.002	.000	.000	.000	.000	.000	.000	.000	.000	.000
-1.00	1.0	0.79	0.42	0.18	.065	.004	.000	.000	.000	.000	.000	.000	.000	.000	.000
-0.50	2.8	1.9	0.89	0.29	.092	.005	.000	.000	.000	.000	.000	.000	.000	.000	.000
HOUSE CURB LINE	4.8	2.9	1.1	0.34	0.10	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000
STREET	3.1	2.1	0.92	0.29	.092	.005	.000	.000	.000	.000	.000	.000	.000	.000	.000
0.50	0.99	0.76	0.42	0.18	.069	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.00	0.18	0.17	0.10	.056	.026	.003	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.50	.013	.011	.008	.005	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.00	.007	.006	.004	.003	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.50	.003	.003	.002	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.00	.002	.001	.001	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.50	.001	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
4.50	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
5.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0

CORRECTION FACTORS FOR OTHER MOUNTING HEIGHTS: SEE ISOFOOTCANDLE PAGE



MOUNTING HEIGHT FOR ISOFC 25.0 FEET





NOTE:
 CONTOUR LINE
 IS FOR 50%
 OF THE MAXIMUM
 INTENSITY

IES ROADWAY CLASSIFICATION: TYPE ÜÜ, VERY SHORT