



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
Nancy Ahn
The Esquire Building
41st Street, 4100 1st Avenue 3rd Floor North
Brooklyn, NY 11232

Catalog Number
IP65 50W
Project Number
10017853
Test Number
338312

Test Date

2013-10-02

Prepared By

Jeff Smith Jr., Project Coordinator

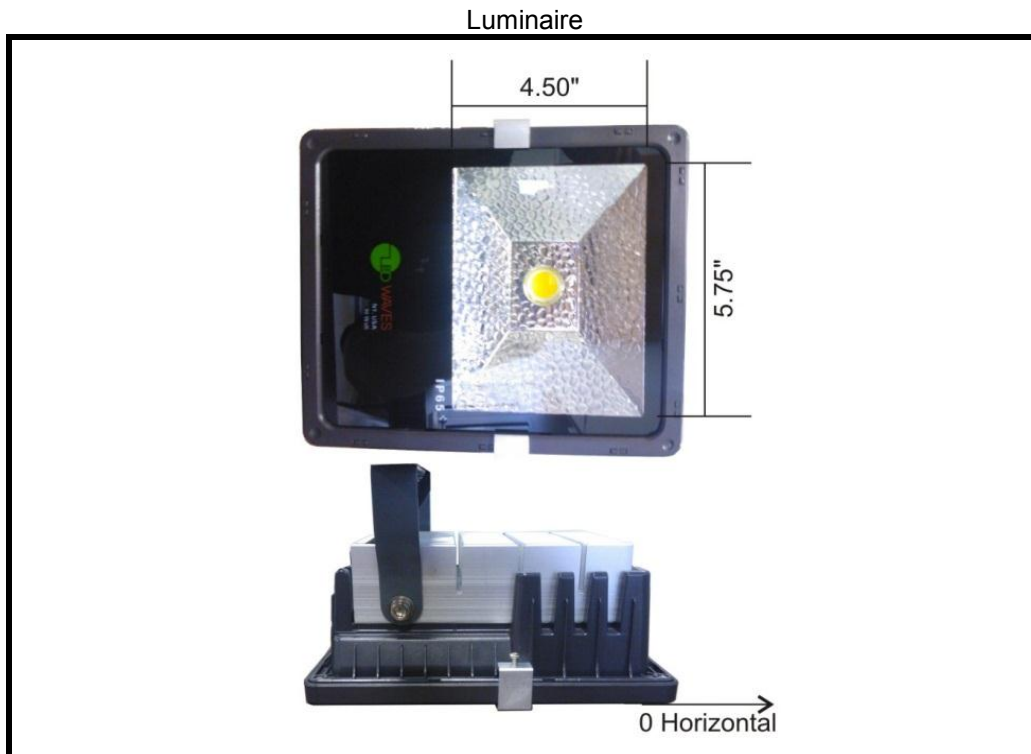
Approved By

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: IP65 50W
Lamp: One white LED array
Mounting: Surface Wall
Ballast/Driver: One LED Friend LFGIR055YA (A)



Test Conditions

Test Temperature:	25.3 °C
Voltage:	120.0 VAC
Current:	0.4559 A
Power:	50.75 W
Power Factor:	0.927
Frequency:	60 Hz
Current THD:	35.1 %



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

UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

RATIO	HOUSE SIDE	STREET SIDE	TOTAL
0.5	0.274	0.272	0.546
1.0	0.429	0.426	0.854
1.5	0.487	0.481	0.969
2.0	0.501	0.494	0.995
2.5	0.503	0.496	0.999
3.0	0.503	0.496	0.999
3.5	0.503	0.496	1.000
4.0	0.503	0.497	1.000
5.0	0.503	0.497	1.000
TOTAL:	0.503	0.497	1.000

PERCENTAGE OUTPUTS

DOWNWARD:	STREET SIDE =	49.7%
	HOUSE SIDE =	50.3%
	TOTAL =	100.0%
UPWARD:	STREET SIDE =	0.0%
	HOUSE SIDE =	0.0%
	TOTAL =	0.0%

EFFICACY (LUMENS PER WATT) 90.2

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: 4581 Lms.

IESNA CUTOFF CLASSIFICATION: CUTOFF

ZONAL LUMEN SUMMARY PER IES PUBLICATION TM-15-07

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

FORWARD LIGHT:

LUMENS	2275.3
% LUMENS	49.7 %
FORWARD LOW ZONE (0 TO 30 DEGREES)	16.9 %
FORWARD MID ZONE (30 TO 60 DEGREES)	30.1 %
FORWARD HIGH ZONE (60 TO 80 DEGREES)	2.7 %
FORWARD VERY HIGH ZONE (80 TO 90 DEGREES)	0.0 %

BACK LIGHT:

LUMENS	2305.4
% LUMENS	50.3 %
BACK LIGHT LOW ZONE (0 TO 30 DEGREES)	17.0 %
BACK LIGHT MID ZONE (30 TO 60 DEGREES)	30.6 %
BACK LIGHT HIGH ZONE (60 TO 80 DEGREES)	2.8 %
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)	126.7	B 1
BM (30-60 DEGREES)	1402.1	B 2
BL (0-30 DEGREES)	776.6	B 2
UPLIGHT		
UH (100-180 DEGREES)	0.0	U 0
UL (90-100 DEGREES)	0.0	U 0
GLARE LIGHT		
FVH (80-90 DEGRESS)	0.1	G 0
BVH (80-90 DEGRESS)	0.0	G 0
FH (60-80 DEGREES)	124.1	G 0
BH (60-80 DEGRESS)	126.7	G 0

IES BUG RATING: B2 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

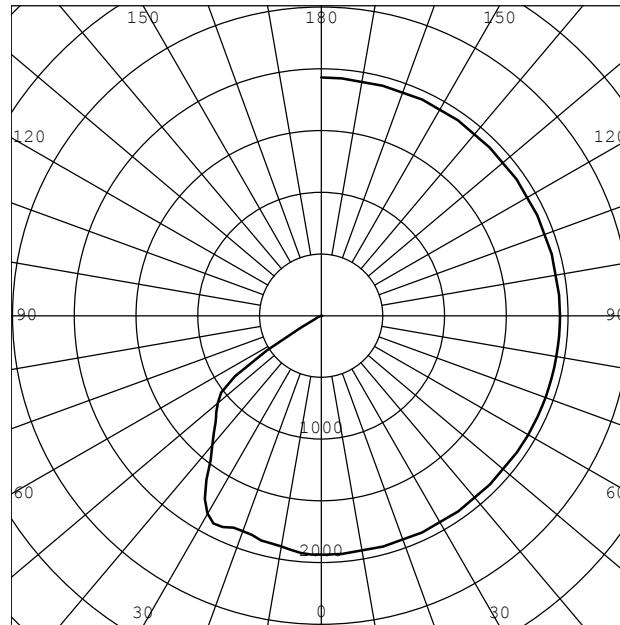


INTENSITY (CANDLEPOWER)
IN MAX. PLANE

ANGLE	CANDLEPOWER
0.0	1932
5.0	1929
10.0	1896
15.0	1884
20.0	1858
25.0	1890
30.0	1849
35.0	1622
40.0	1380
45.0	1211
50.0	1094
52.5	1025
55.0	856
57.5	525
60.0	194
62.5	63
65.0	46
67.5	36
70.0	24
72.5	13
75.0	6
77.5	3
80.0	0
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	1937
5.0	1936
15.0	1936
25.0	1936
35.0	1935
45.0	1934
55.0	1933
60.0	1932
62.5	1932
65.0	1933
67.5	1933
70.0	1932
72.5	1932
75.0	1932
77.5	1933
80.0	1933
82.5	1933
85.0	1933
87.5	1933
90.0	1934
95.0	1933
105.0	1932
115.0	1932
125.0	1932
135.0	1932
145.0	1932
155.0	1932
165.0	1932
175.0	1932
180.0	1930



MAXIMUM INTENSITY (CANDLEPOWER) : 1937 CD
 PLANE OF MAXIMUM: 0.0
 VERTICAL ANGLE OF MAXIMUM: 2.5



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	1932	1932	1932	1932	1932	1932	1932	1932	1932	1932
2.5**	1937	1936	1936	1936	1935	1934	1933	1933	1932	1933
5.0	1929	1928	1928	1928	1927	1927	1928	1927	1927	1928
10.0	1896	1893	1893	1895	1896	1898	1900	1903	1907	1909
15.0	1884	1879	1875	1868	1863	1861	1870	1879	1887	1892
20.0	1858	1854	1850	1851	1852	1842	1825	1821	1824	1829
25.0	1890	1885	1863	1828	1803	1787	1762	1745	1751	1762
30.0	1849	1836	1838	1813	1770	1709	1695	1696	1689	1686
35.0	1622	1603	1640	1673	1679	1673	1626	1608	1579	1572
40.0	1380	1367	1376	1403	1484	1548	1576	1541	1496	1447
45.0	1211	1196	1193	1202	1242	1397	1426	1281	1205	1191
50.0	1094	1076	1067	1063	1056	1123	1164	1098	1031	1017
55.0	856	835	893	911	893	885	918	895	854	851
60.0	194	177	257	438	649	681	689	681	673	675
65.0	46	45	50	54	82	363	478	449	311	223
70.0	24	24	26	25	20	13	36	9	7	8
75.0	6	6	6	7	6	5	4	3	4	4
80.0	0	1	1	0	0	0	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

HORIZONTAL ANGLES - HOUSE SIDE

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	1932	1932	1932	1932	1932	1932	1932	1932	1932	1932	1932
2.5**	1934	1933	1932	1932	1932	1932	1932	1932	1932	1932	1930
5.0	1929	1927	1927	1926	1925	1925	1926	1926	1927	1927	1927
10.0	1910	1909	1909	1909	1912	1920	1926	1930	1932	1931	1930
15.0	1893	1892	1893	1901	1910	1918	1913	1901	1894	1889	1881
20.0	1831	1831	1841	1861	1872	1873	1857	1841	1842	1842	1838
25.0	1765	1768	1786	1793	1791	1779	1783	1819	1853	1868	1862
30.0	1684	1687	1707	1719	1712	1718	1755	1758	1770	1759	1736
35.0	1573	1577	1587	1604	1632	1650	1648	1636	1618	1600	1577
40.0	1444	1455	1523	1566	1544	1529	1504	1441	1408	1394	1375
45.0	1190	1192	1225	1326	1443	1405	1291	1253	1244	1229	1207
50.0	1016	1017	1041	1125	1204	1159	1112	1103	1114	1112	1098
55.0	854	852	863	910	952	927	937	969	951	897	844
60.0	677	679	683	699	706	713	700	510	312	214	170
65.0	219	196	224	458	496	402	118	49	43	36	33
70.0	8	8	8	8	39	10	15	19	17	16	15
75.0	5	5	4	3	2	2	3	3	2	2	1
80.0	1	1	1	0	0	0	0	0	0	0	0
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



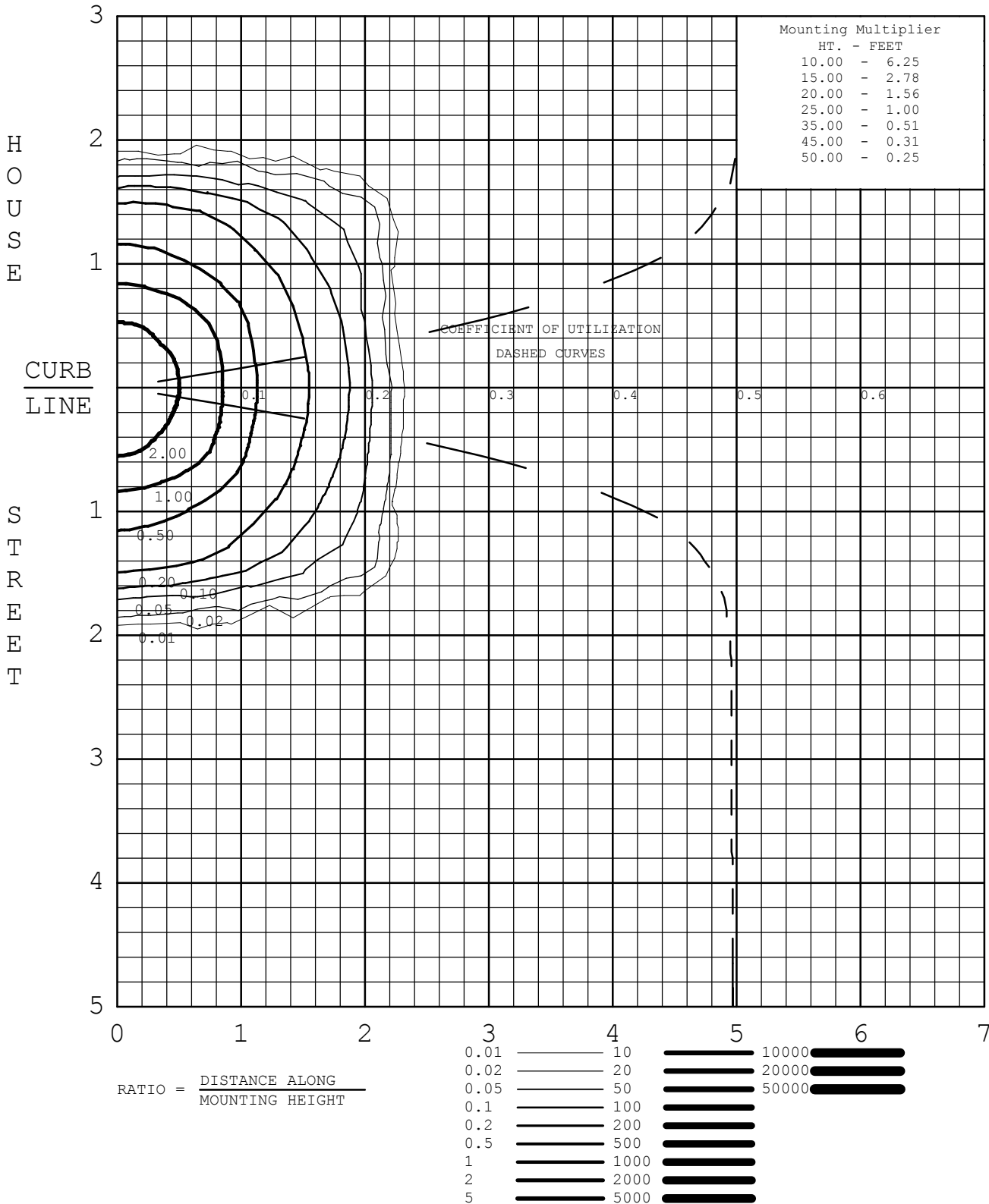
** ILLUMINANCE (FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 25.0 FT. **

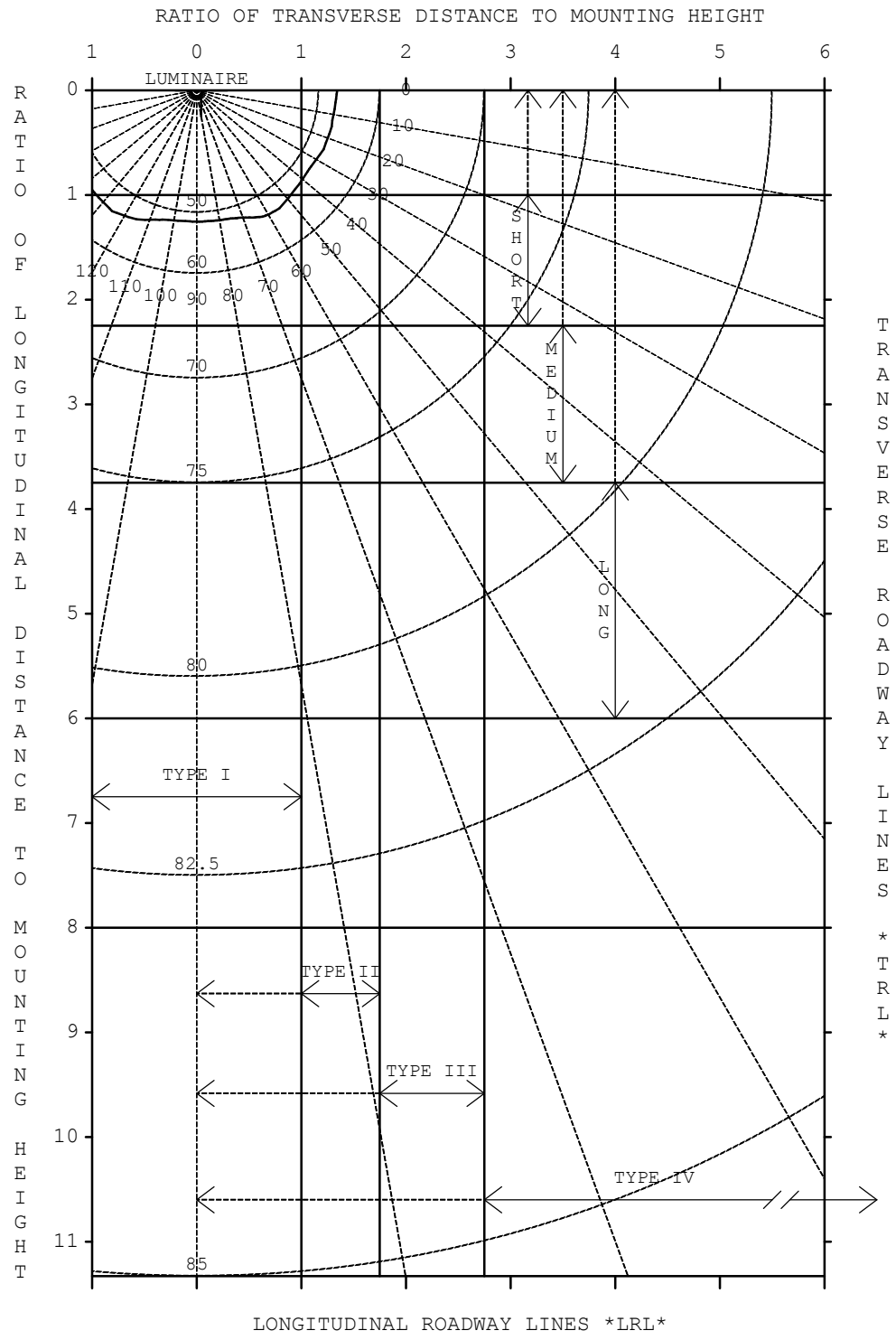
LATERAL RATIOS	0.0	0.5	1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0
-3.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.50	.002	.002	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-2.00	.006	.007	.005	.003	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
-1.50	0.18	0.17	0.10	.052	.019	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
-1.00	0.68	0.54	0.29	0.12	.039	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
-0.50	2.0	1.4	0.57	0.19	.046	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
HOUSE CURB LINE	3.0	2.0	0.67	0.22	.063	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
STREET	2.1	1.4	0.56	0.18	.053	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
0.50	0.68	0.52	0.27	0.11	.039	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.00	0.18	0.15	.092	.048	.018	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000
1.50	.008	.008	.006	.003	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.00	.003	.002	.002	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
2.50	.001	.001	.001	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.00	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
3.50	.000	.000	.000	.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