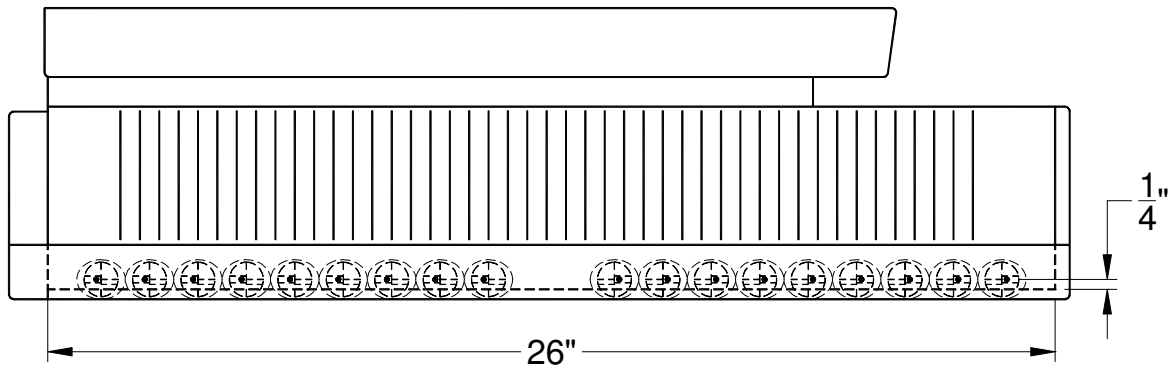




INDEPENDENT TEST LABORATORY REPORT No. 29407

RELUME TECHNOLOGIES - ROADWAY LUMINAIRE, CAT# VUE 150HE
WITH CLEAR PLASTIC CURVED LENSES OVER LEDS
THIRTY SIX LEDS. LUMINAIRE OUTPUT: 5285 Lms.
ONE PHILIPS LED-INTA-700C-140-F30 DRIVER OPERATING AT 120 VAC AND 84.4 WATTS

IESNA CUTOFF CLASSIFICATION: CUTOFF



PREPARED FOR:

CERTIFIED BY:

RELUME TECHNOLOGIES
OXFORD, MI

DATE: AUG 17, 2011

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.

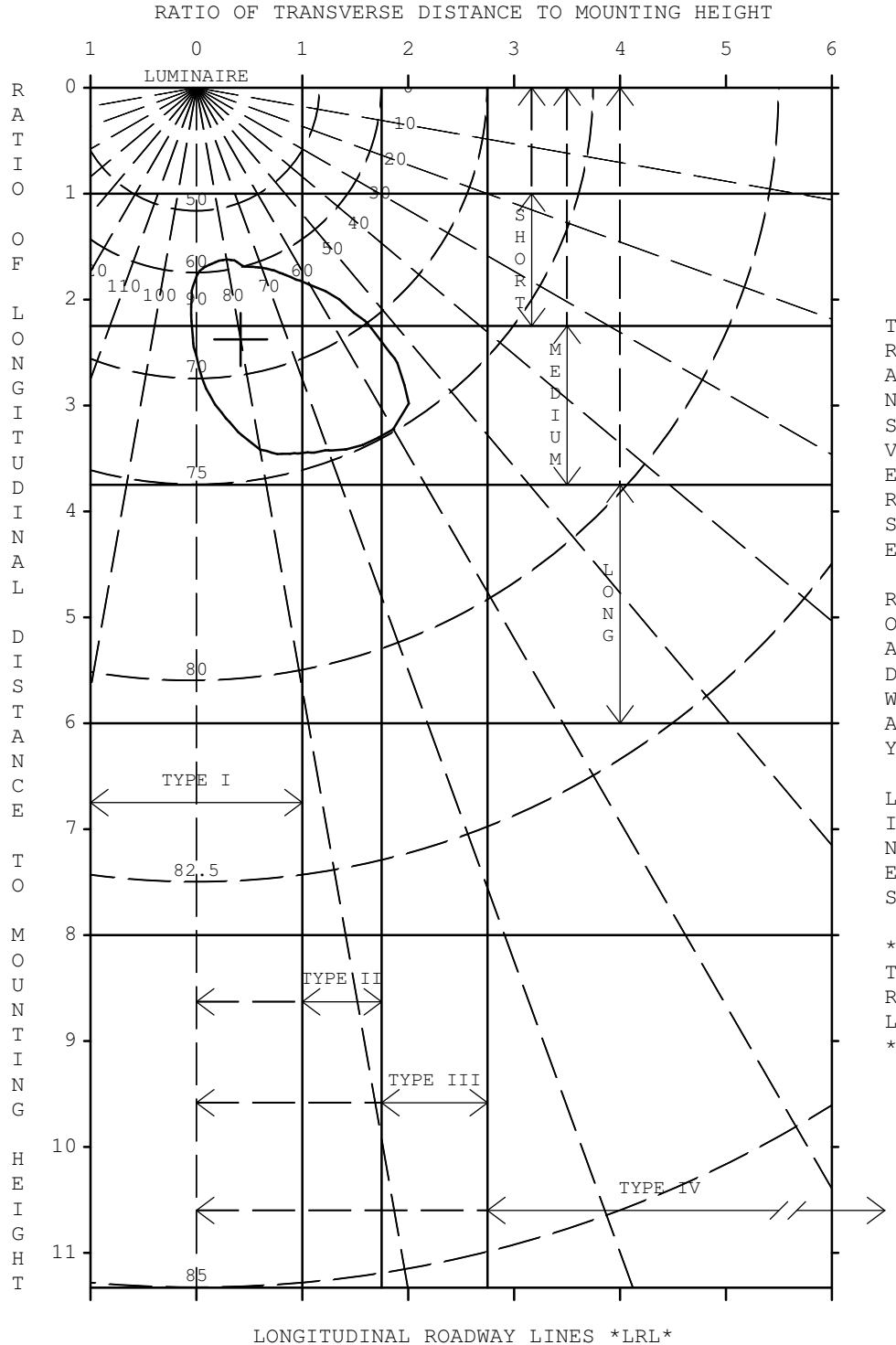
TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

LIGHTING SCIENCES, INC.

7826 E. EVANS RD.
SCOTTSDALE, AZ, USA 85260

CERTIFIED TEST REPORT NO.29407

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

IES ROADWAY CLASSIFICATION: TYPE III, MEDIUM

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

UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

RATIO	HOUSE SIDE	STREET SIDE	TOTAL
0.5	0.153	0.265	0.419
1.0	0.219	0.463	0.683
1.5	0.247	0.584	0.831
2.0	0.259	0.648	0.907
2.5	0.266	0.680	0.945
3.0	0.269	0.695	0.964
3.5	0.272	0.705	0.977
4.0	0.273	0.709	0.982
5.0	0.275	0.715	0.990
TOTAL:	0.278	0.722	0.999

PERCENTAGE OUTPUTS

DOWNWARD:	STREET SIDE =	72.2%
	HOUSE SIDE =	27.8%
	TOTAL =	99.9%
UPWARD:	STREET SIDE =	0.0%
	HOUSE SIDE =	0.0%
	TOTAL =	0.1%

EFFICACY (LUMENS PER WATT) 62.6

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

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ZONAL LUMEN SUMMARY PER IES PUBLICATION TM-15-07

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

FORWARD LIGHT:

LUMENS	3813.1
% LUMENS	72.2 %
FORWARD LOW ZONE (0 TO 30 DEGREES)	9.7 %
FORWARD MID ZONE (30 TO 60 DEGREES)	29.1 %
FORWARD HIGH ZONE (60 TO 80 DEGREES)	32.6 %
FORWARD VERY HIGH ZONE (80 TO 90 DEGREES)	0.7 %

BACK LIGHT:

LUMENS	1467.8
% LUMENS	27.8 %
BACK LIGHT LOW ZONE (0 TO 30 DEGREES)	6.0 %
BACK LIGHT MID ZONE (30 TO 60 DEGREES)	12.1 %
BACK LIGHT HIGH ZONE (60 TO 80 DEGREES)	9.3 %
BACK LIGHT VERY HIGH ZONE (80 TO 90 DEGREES)	0.3 %

UPLIGHT:

LUMENS	4.0
% LUMENS	0.1 %
UPLIGHT LOW ZONE (90 TO 100 DEGREES)	0.1 %
UPLIGHT HIGH ZONE (100 TO 180 DEGREES)	0.0 %

TRAPPED LIGHT: NOT APPLICABLE TO AN ABSOLUTE TEST

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IES "BUG" RATING (BACK LIGHT, UPLIGHT, GLARE)
PER ADDENDUM TO IES TM-15-07

	LUMENS	SECONDARY SOLID ANGLE RATING
BACK LIGHT		
BH (60-80 DEGREES)	494.1	B1
BM (30-60 DEGREES)	637.2	B1
BL (0-30 DEGREES)	318.6	B1
UPLIGHT		
UH (100-180 DEGREES)	0.6	U1
UL (90-100 DEGREES)	3.4	U1
FVH (80-90 DEGREES)	36.9	U1
BVH (80-90 DEGREES)	17.9	U1
GLARE LIGHT		
FVH (80-90 DEGREES)	36.9	G1
BVH (80-90 DEGREES)	17.9	G1
FH (60-80 DEGREES)	1724.4	G1
BH (60-80 DEGREES)	494.1	G1

IES BUG RATING: B1 U1 G1

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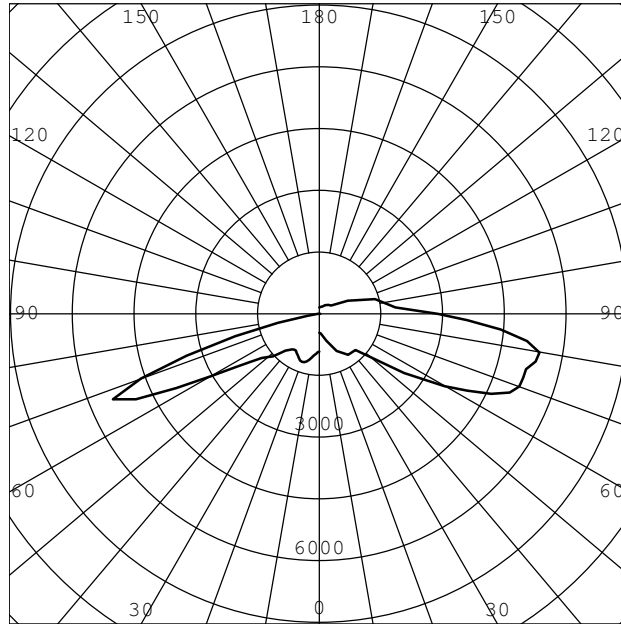
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INTENSITY (CANDLEPOWER)
 IN MAX. PLANE

INTENSITY (CANDLEPOWER)
 IN MAX. CONE

ANGLE	CANDLEPOWER
0.0	919
5.0	986
10.0	1088
15.0	1208
20.0	1247
25.0	1194
30.0	1107
35.0	1065
40.0	1157
45.0	1361
50.0	1640
52.5	1764
55.0	2048
57.5	2406
60.0	3048
62.5	3917
65.0	4925
67.5	5434
70.0	4615
72.5	3389
75.0	2127
77.5	1034
80.0	293
82.5	48
85.0	17
87.5	6
90.0	1
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



ANGLE	CANDLEPOWER
0.0	464
5.0	492
15.0	681
25.0	1002
35.0	1222
45.0	1247
55.0	2521
60.0	3514
62.5	4052
65.0	4615
67.5	5015
70.0	5177
72.5	5197
75.0	5207
77.5	5392
80.0	5434
82.5	5093
85.0	4432
87.5	3606
90.0	2875
95.0	1858
105.0	1410
115.0	770
125.0	362
135.0	316
145.0	260
155.0	206
165.0	183
175.0	166
180.0	159

MAXIMUM INTENSITY (CANDLEPOWER) : 5434 CD
 PLANE OF MAXIMUM: 80.0
 VERTICAL ANGLE OF MAXIMUM: 67.5

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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	80.0 ****	85.0
0.0	919	919	919	919	919	919	919	919	919	919	919
5.0	1011	1012	1011	1010	1010	1011	1012	1006	995	986	977
10.0	1094	1094	1097	1109	1120	1128	1133	1121	1104	1088	1071
15.0	1142	1143	1159	1189	1221	1248	1262	1259	1230	1208	1176
20.0	1151	1154	1186	1243	1292	1335	1339	1323	1278	1247	1210
25.0	1154	1163	1211	1285	1354	1383	1355	1303	1239	1194	1144
30.0	1185	1195	1249	1337	1396	1380	1312	1247	1150	1107	1058
35.0	1244	1249	1308	1363	1404	1366	1237	1211	1113	1065	1006
40.0	1285	1285	1335	1372	1351	1294	1215	1208	1228	1157	1044
45.0	1219	1220	1284	1367	1343	1247	1165	1351	1360	1361	1296
50.0	1077	1086	1239	1401	1462	1258	1119	1332	1616	1640	1481
55.0	935	964	1168	1434	1581	1314	1264	1344	1872	2048	1883
60.0	750	785	1004	1386	1533	1309	1575	1973	2640	3048	2942
65.0	559	604	792	1141	1353	1260	2091	3574	4656	4925	4140
67.5**	464	492	681	1002	1222	1247	2521	4615	5207	5434	4432
70.0	381	390	567	865	1074	1230	2881	5030	4712	4615	3674
75.0	208	227	366	618	753	1099	2464	2689	2420	2127	1406
80.0	110	115	225	371	283	234	217	193	210	293	93
85.0	33	49	90	66	50	45	53	17	17	17	16
90.0	3	11	15	19	16	10	8	2	2	1	1

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	919	919	919	919	919	919	919	919	919	919	919
5.0	969	955	931	905	879	852	827	808	795	787	784
10.0	1052	1024	964	907	853	803	759	728	707	695	693
15.0	1144	1108	1011	911	828	772	718	673	646	630	625
20.0	1172	1120	1018	911	829	754	680	622	585	565	562
25.0	1097	1046	950	867	794	707	628	564	521	499	496
30.0	1007	941	844	787	716	632	566	514	469	446	444
35.0	932	858	752	705	621	567	498	465	425	397	392
40.0	944	858	720	622	556	514	457	421	379	349	342
45.0	1149	999	746	573	510	480	431	379	332	303	298
50.0	1269	1030	749	562	474	448	402	338	285	263	260
55.0	1621	1297	959	628	443	409	361	287	248	229	225
60.0	2631	2029	1283	782	415	371	314	250	219	205	198
65.0	3001	1987	1364	779	378	339	281	221	196	180	172
67.5**	2875	1858	1410	770	362	316	260	206	183	166	159
70.0	2423	1728	1404	730	347	295	240	193	170	147	142
75.0	816	557	591	446	244	230	194	160	134	101	91
80.0	91	90	78	76	77	88	98	113	103	56	52
85.0	16	15	12	11	15	25	27	35	56	22	18
90.0	1	1	2	1	2	8	6	10	13	5	1

** DENOTES VERTICAL ANGLE OF MAXIMUM CONE

**** DENOTES LATERAL ANGLE OF MAXIMUM PLANE

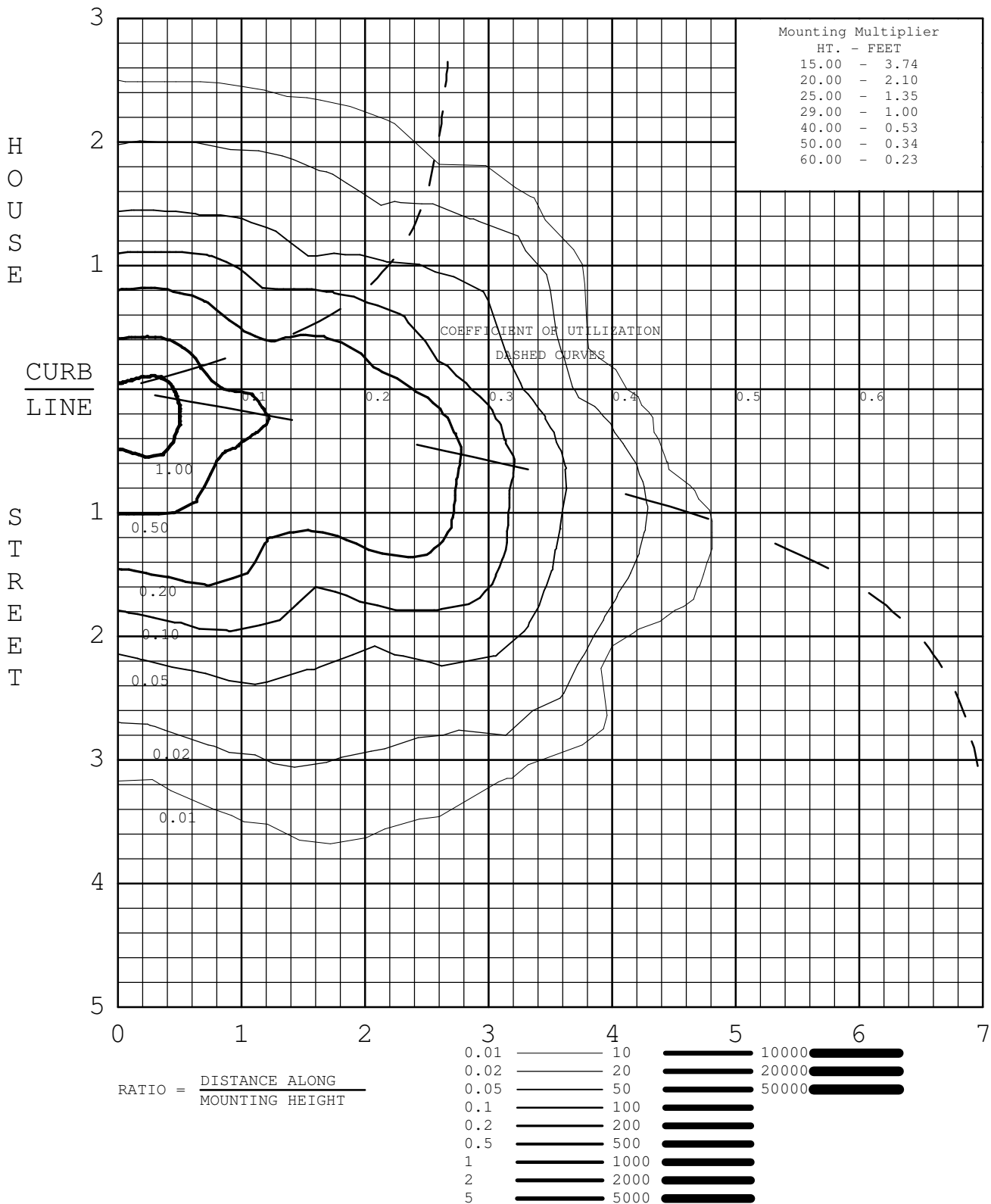
INTENSITY WAS MEASURED IN 2.5 DEGREE STEPS - TABULATIONS ARE AVAILABLE

ISOFOOTCANDLE

CERTIFIED TEST REPORT NO.29407

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MOUNTING HEIGHT FOR ISOFC 29.0 FEET



LIGHTING SCIENCES, INC.
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INDEPENDENT TEST LABORATORY REPORT No. 29407

** ILLUMINANCE(FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 29.0 FT. **															
LATERAL RATIOS															
-3.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.005	.005	.005	.005	.004	.004	.003	.002	.001	.001	.000	.000	.000	.000	
-2.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.009	.010	.009	.009	.007	.006	.004	.002	.001	.001	.001	.000	.000	.000	
-2.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.019	.020	.018	.016	.013	.009	.007	.004	.002	.001	.001	.000	.000	.000	
-1.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.044	.044	.041	.031	.021	.019	.015	.008	.003	.001	.001	.000	.000	.000	
-1.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	0.12	0.12	.094	.062	.058	.048	.036	.015	.005	.002	.001	.001	.000	.000	
-0.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	0.40	0.36	0.19	0.18	0.14	.090	.054	.020	.007	.002	.001	.001	.000	.000	
HOUSE		CURB LINE													
STREET	1.0	0.91	0.48	0.38	0.31	0.16	.076	.029	.010	.004	.002	.001	.000	.000	
0.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	0.98	0.88	0.45	0.34	0.43	0.29	0.13	.054	.021	.007	.003	.001	.000	.000	
1.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	0.51	0.48	0.30	0.23	0.29	0.25	0.12	.057	.028	.013	.005	.002	.001	.000	
1.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	0.18	0.21	0.20	0.11	0.14	0.15	.100	.048	.022	.011	.005	.001	.001	.000	
2.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.066	.080	.091	.073	.054	.072	.060	.031	.012	.006	.003	.001	.001	.000	
2.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.027	.033	.040	.038	.032	.027	.029	.019	.008	.003	.001	.001	.001	.000	
3.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.012	.014	.018	.020	.017	.016	.012	.009	.006	.002	.001	.001	.000	.000	
3.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.006	.007	.009	.011	.010	.009	.007	.005	.003	.001	.001	.001	.000	.000	
4.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.003	.004	.005	.006	.006	.005	.004	.003	.002	.001	.001	.001	.000	.000	
4.50	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.002	.002	.003	.004	.004	.003	.002	.002	.001	.001	.001	.000	.000	.000	
5.00	+	+	+	+	+	+	+	+	+	+	+	+	+	+	
	.001	.001	.002	.002	.003	.002	.002	.001	.001	.001	.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
	LONGITUDINAL MOUNTING HEIGHT RATIOS														

CORRECTION FACTORS FOR OTHER MOUNTING HEIGHTS: SEE ISOFOOTCANDLE PAGE

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ELECTRICAL MEASUREMENTS

INPUT VOLTAGE:	120.0	VOLTS AC
INPUT CURRENT:	0.707	AMPS
INPUT POWER:	84.4	WATTS
POWER FACTOR:	99.5	PERCENT
OFF STATE POWER:	0.00	WATTS

LIGHT OUTPUT

LUMENS:	5285	lm
EFFICACY:	62.6	lm/W

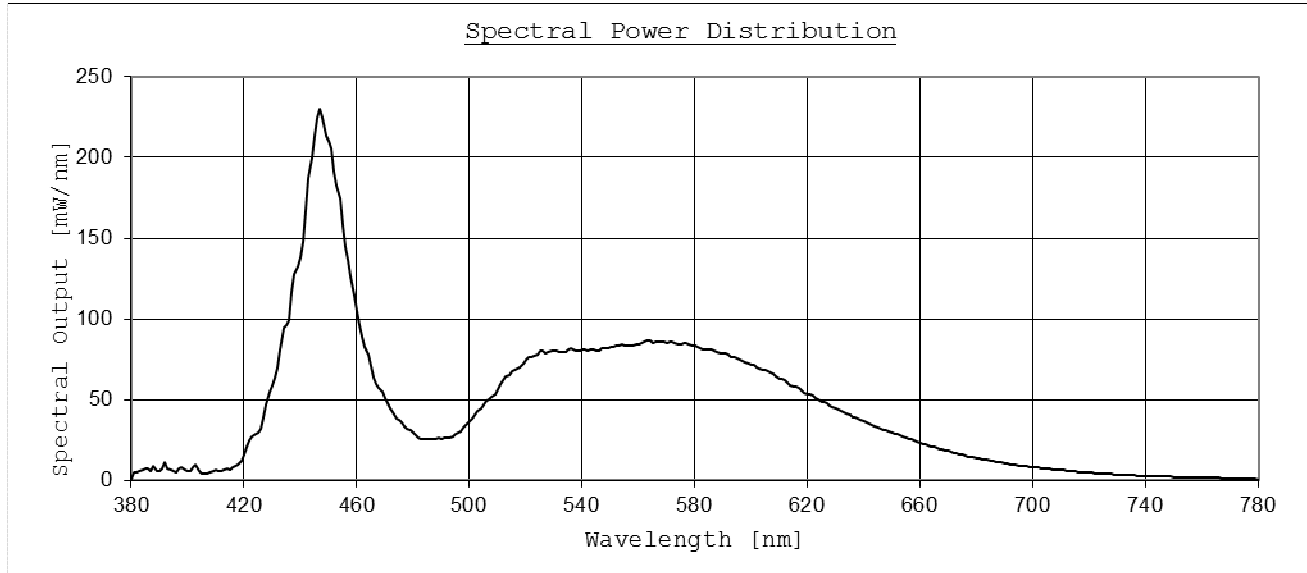
SPECTRAL MEASUREMENTS

X:	0.3020	
y:	0.2982	
u/u':	0.2022	
v:	0.2995	
v':	0.4492	
Duv:	0.0075	
CRI (R _a):	78.5	
CRI (R _g):	8.3	
CCT:	7619	K
RADIANT FLUX:	18110	mW

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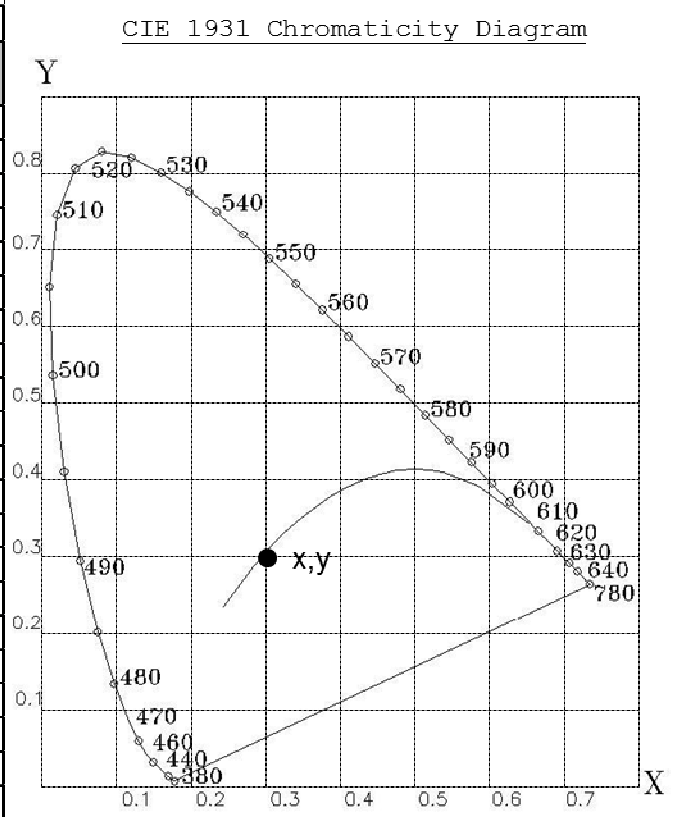
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Tabulated Spectral Power Distribution

Wavelength [nm]	[mW/nm]	Wavelength [nm]	[mW/nm]
380	1.52037	590	78.68639
390	5.91795	600	71.95941
400	5.62467	610	63.27236
410	6.54492	620	53.65581
420	15.96545	630	44.63006
430	58.94253	640	37.00150
440	137.78992	650	29.85719
450	210.38961	660	23.43545
460	105.15114	670	18.22229
470	50.91497	680	13.89633
480	29.64894	690	10.74794
490	25.99524	700	8.35135
500	36.50303	710	6.37043
510	56.20152	720	4.96455
520	74.91298	730	3.76505
530	80.32385	740	2.86447
540	81.39870	750	2.19681
550	82.38759	760	1.72628
560	84.64379	770	1.44582
570	85.37721	780	0.00000
580	83.40281		

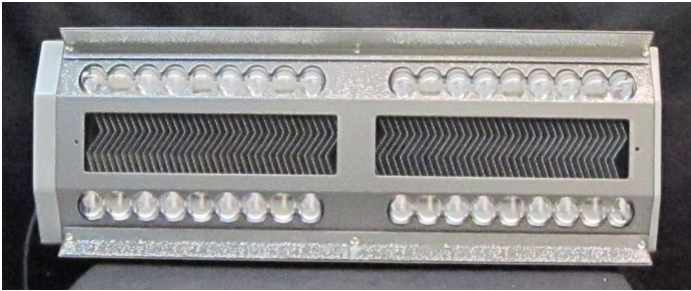


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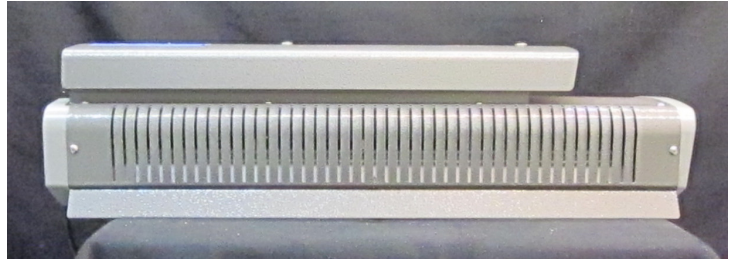
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LUMINOUS OPENING



SIDE VIEW



All testing was conducted in accordance with LM-79-08,

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products as published by the Illuminating Engineering Society of North America (IESNA).

The condition of the item tested was new. Stabilization time before testing exceeded 16 hours.

The test results (luminous distribution and flux) were obtained by using a Lighting Sciences series 6000 Type C Moving Mirror Goniophotometer

- The photometric reference standard used is a set of three incandescent luminous intensity standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.

The test results (colorimetric and luminous flux) were obtained by using a Lighting Sciences model 4000 Integrating Sphere of either 1 or 2 meters diameter, having an internal reflectance exceeding 0.80. 4π geometry was used. Correction factors were applied for spectral mismatch and self-absorption. The spectroradiometer employed was a LSC model 500E having a bandwidth of .84.

- The photometric reference standard used is a set of three incandescent luminous flux standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.
- The colorimetric reference standard used is an incandescent spectral standard lamp calibrated and traceable to the U.S. National Institute of Standards and Technology.

Power measurements were obtained with a Yokogawa WT210 power analyzer.

Ambient temperature during testing was $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured using an Omega model DP460.

Calibration certificates are on file at the laboratories of Lighting Sciences Inc.

The results in this report apply to the test sample(s) mentioned in this report at the time of the testing period only and are not to be used to indicate applicability to other similar products.