



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0154

Date: May 15, 2012

REPORT NO. 100639410CRT-106

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 PT 2 LED 63 350 NW UE
XINM3 PT 2 LED 63 350 NW UE
XLXM3 PT 2 LED 63 350 NW UE

LED DRIVER: 350mA Electronic Driver

RENDERED TO

LSI INDUSTRIES INCORPORATED
10000 ALLIANCE ROAD
CINCINNATI, OH 45242

TEST: Electrical and Photometric tests as required to the IESNA test standard.

AUTHORIZATION: The testing performed was authorized by signed quote number 500380383.

STANDARDS USED: The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:

IESNA LM-79-08: Electrical and Photometric Measurements of Solid-State Lighting Products

IESNA TM-15-11: Luminaire Classification System for Outdoor Luminaires

DESCRIPTION OF SAMPLE: The submitted test sample was representative of a current production Sample and was received in good condition.

DATE OF TEST: May 7, 2012

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SUMMARY:

Model No.:
XENM3 PT 2 LED 63 350 NW UE
XINM3 PT 2 LED 63 350 NW UE
XLXM3 PT 2 LED 63 350 NW UE
Description: 63 LED optic unit containing an integrated specular metal reflector and flat glass lens. Utilizing 350mA Output Driver.

Criteria	Result
Total Lumen Output	4859
Input Voltage (V)	120.0
Total Power (W)	70.0
Luminaire Efficacy	69.0
Power Factor	0.993
Driver Output Current (A)	0.350
THD _A	9.6%

Additional Reporting

Test Room Ambient Conditions	24.7 C and 41% RH
Total Luminaire Stabilization Time	45 Minutes

Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.

EQUIPMENT LIST

Equipment Used	Equipment #	Cal. Due Date
Elgar CW1251P-V AC Power Source 0-300V	0943A02235	VBU
Yokogawa WT-230 Power Analyzer	91KA35031	12/31/12
High Speed Moving Mirror Goniophotometer	---	VBU
Temperature/Humidity Sensor/Stopwatch	25223-01	04/30/13

Photometric and Electrical measurements – Distribution Method

A Type C High Speed Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the test sample.

Ambient temperature was measured equal to the height of the sample mounted on the Goniometer equipment. Each sample was operated at input rated voltage in its designated orientation. Each sample was allowed to stabilize per LM-79-08 requirements. Electrical measurements including voltage, current, and power were measured using the Yokogawa Power Analyzer.

Some graphics were created using Lighting Analysts Photometric Toolbox Professional Edition software.



RESULTS OF TESTS

Photometric and Electrical Measurements – Distribution Method

						XENM3 PT 2 LED 63 350 NW UE	
						XINM3 PT 2 LED 63 350 NW UE	
						XLXM3 PT 2 LED 63 350 NW UE	
Intertek Sample No.	Base Orientation	Input Voltage (VAC)	Input Current (A)	Input Power (Watts)	Input Power Factor	Absolute Luminous Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
ITK3238	Horizontal	120.0	0.586	70.0	0.993	4859	69.0

Characteristics

IES Classification	Type II
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4859
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	69
Total Luminaire Watts	70
Ballast Factor	1.00
Upward Waste Light Ratio	0.01
Max. Cd.	2967.297 (55H, 42.5V)
Max. Cd. (<90 Vert.)	2967.297 (55H, 42.5V)
Max. Cd. (At 90 Deg. Vert.)	8.001 (0.2%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	304.03 (6.3%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	361.4	N.A.	7.4
FM (30-60)	1906.5	N.A.	39.2
FH (60-80)	747.5	N.A.	15.4
FVH (80-90)	18.2	N.A.	0.4
BL (0-30)	276.4	N.A.	5.7
BM (30-60)	1089.4	N.A.	22.4
BH (60-80)	418.3	N.A.	8.6
BVH (80-90)	12.8	N.A.	0.3
UL (90-100)	5.1	N.A.	0.1
UH (100-180)	23.4	N.A.	0.5
Total	4859.0	N.A.	100.0
BUG Rating	B2-U2-G		



RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	35	45	55	57	65	75	85	90
0	628	628	628	628	628	628	628	628	628	628	628	628
2.5	606	598	606	621	631	628	620	619	617	616	618	615
5	587	580	582	575	567	575	570	570	608	600	601	591
7.5	598	590	584	602	581	553	539	536	561	573	541	553
10	625	617	640	624	589	579	545	541	560	523	551	562
12.5	718	710	742	689	641	627	564	560	592	561	611	596
15	754	745	780	740	709	686	643	642	593	581	602	607
17.5	791	784	844	796	778	737	686	675	618	589	646	633
20	834	835	916	874	828	791	733	722	725	689	739	747
22.5	910	968	1041	971	923	842	843	837	807	771	801	806
25	1001	1157	1178	1093	1036	975	955	968	958	843	841	843
27.5	1082	1319	1342	1257	1123	1054	1089	1083	1060	912	882	906
30	1122	1414	1455	1384	1242	1269	1224	1226	1227	1114	1103	1122
32.5	1075	1396	1496	1462	1332	1472	1474	1474	1516	1491	1472	1430
35	932	1262	1374	1351	1541	1756	1862	1851	1910	1985	1758	1753
37.5	821	1115	1184	1136	1586	2147	2345	2359	2355	2235	1886	1842
40	764	1035	1088	998	1495	2443	2815	2814	2559	2280	1882	1808
42.5	706	969	1019	963	1464	2437	2967	2965	2659	2260	1835	1757
44	664	920	975	959	1513	2279	2954	2960	2679	2233	1788	1687
45	648	905	960	961	1538	2228	2927	2944	2685	2225	1761	1656
47.5	597	838	895	963	1609	2104	2691	2785	2671	2162	1690	1560
50	544	767	827	984	1663	2012	2348	2479	2638	2149	1688	1537
52.5	483	686	771	1007	1656	1886	2116	2208	2662	2194	1756	1595
55	419	596	731	1064	1538	1740	2084	2155	2640	2341	1908	1709
57.5	288	409	607	1082	1350	1592	2130	2213	2564	2479	2025	1794
60	140	190	342	812	1149	1482	2144	2237	2447	2437	1969	1755
62.5	71	83	167	355	806	1438	2075	2152	2331	2254	1810	1619
65	43	55	102	177	426	1335	1915	1970	2190	2085	1609	1428
67.5	30	37	77	128	335	1000	1659	1703	1966	1841	1432	1271
70	24	27	62	97	285	772	1199	1285	1617	1543	1270	1112
72.5	20	22	41	74	202	550	717	772	1192	1161	936	812
75	17	19	31	65	156	300	480	508	697	836	723	615
77.5	14	15	23	42	109	175	233	268	404	571	497	452
80	11	12	15	24	47	67	86	97	219	304	256	241
82.5	8	9	11	14	20	25	28	31	71	147	126	104
85	7	7	9	9	13	14	16	16	17	32	42	40
87.5	6	6	7	6	8	9	9	9	8	8	7	6
90	5	5	5	6	7	8	7	7	6	5	5	4



RESULTS OF TESTS (cont'd)

	0	5	15	25	35	45	55	57	65	75	85	90
92.5	5	5	6	5	6	7	6	6	6	5	4	4
95	5	5	5	5	5	6	6	6	5	4	4	4
97.5	5	5	5	4	5	5	4	4	4	4	4	4
100	5	5	5	4	4	4	4	4	4	3	3	3
102.5	5	5	5	4	4	4	3	3	3	3	3	3
105	4	5	5	4	4	4	3	4	3	3	3	3
107.5	5	5	5	4	4	4	3	3	3	3	3	3
110	5	5	5	5	5	4	4	4	3	3	3	3
112.5	5	5	5	5	5	4	4	4	3	3	3	3
115	5	5	5	5	5	5	4	4	4	4	4	4
117.5	5	5	5	5	5	5	4	4	4	4	4	4
120	5	6	5	6	5	5	4	4	4	4	4	4
122.5	6	6	6	6	6	5	5	5	4	4	5	5
125	5	6	6	6	6	5	5	5	5	4	5	5
127.5	6	6	6	6	6	6	5	5	5	5	5	5
130	7	6	7	6	6	6	5	5	5	5	5	5
132.5	6	7	7	6	6	5	5	5	5	5	5	5
135	6	7	7	6	6	5	5	5	4	5	5	5
137.5	5	5	5	5	5	4	4	4	3	4	4	4
140	5	5	5	4	4	3	3	3	3	3	3	3
142.5	5	5	4	4	4	4	3	3	3	2	3	3
145	5	5	5	4	4	3	3	3	2	2	2	3
147.5	5	5	5	4	4	3	3	3	3	2	2	2
150	4	5	5	5	4	4	3	3	2	2	2	3
152.5	5	5	5	4	4	4	3	3	3	2	2	3
155	5	5	5	5	4	4	3	3	3	3	3	3
157.5	5	5	5	5	4	4	3	3	2	2	3	3
160	5	5	5	4	4	3	3	3	3	2	2	3
162.5	5	5	5	5	4	3	3	3	3	3	2	2
165	5	5	5	4	4	3	3	3	2	2	2	2
167.5	5	5	5	5	4	4	3	3	2	2	2	2
170	6	5	5	4	4	4	3	3	2	2	2	2
172.5	5	5	5	5	4	3	3	3	2	2	2	2
175	5	5	5	4	4	3	2	2	2	1	2	2
177.5	5	5	4	4	4	3	2	2	2	2	2	2
180	3	3	3	3	3	3	3	3	3	3	3	3

RESULTS OF TESTS (cont'd)

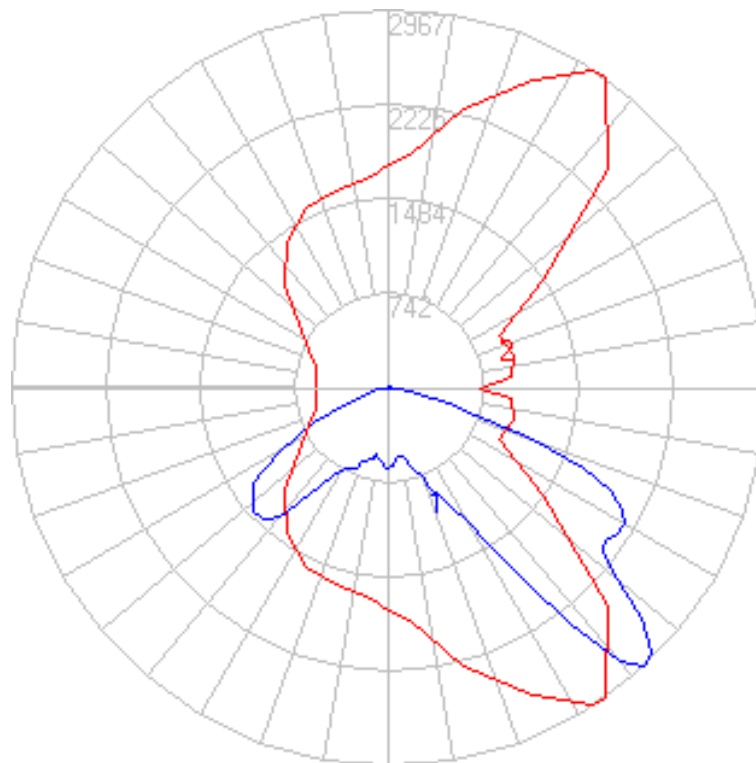
	95	105	115	125	135	145	155	165	175	180
0	628	628	628	628	628	628	628	628	628	628
2.5	613	617	628	633	629	628	620	618	615	617
5	575	569	561	598	598	614	620	635	636	638
7.5	542	564	553	572	549	538	556	604	642	643
10	554	555	553	539	524	555	560	611	642	652
12.5	572	579	571	581	555	565	551	561	620	635
15	589	616	603	584	563	580	591	594	608	651
17.5	650	651	636	606	584	580	573	570	584	626
20	743	750	687	619	620	600	604	611	608	620
22.5	803	758	707	686	636	618	599	616	614	588
25	831	771	724	711	670	638	641	644	632	635
27.5	893	855	773	722	702	660	654	637	646	641
30	1083	967	851	749	703	691	665	668	693	691
32.5	1359	1204	1021	806	738	681	679	700	714	718
35	1692	1457	1204	957	763	701	719	720	743	758
37.5	1756	1601	1403	1121	851	724	724	717	765	770
40	1739	1628	1509	1291	989	781	726	695	720	723
42.5	1671	1605	1558	1389	1150	861	690	604	581	576
44	1602	1564	1576	1427	1221	913	620	488	449	442
45	1579	1550	1578	1432	1246	927	584	442	399	391
47.5	1495	1487	1539	1439	1300	922	451	276	228	222
50	1475	1433	1493	1401	1257	785	317	159	122	118
52.5	1523	1442	1462	1354	1028	526	212	135	100	97
55	1615	1528	1470	1295	709	297	159	135	92	88
57.5	1653	1635	1541	1166	402	195	137	144	94	90
60	1598	1651	1624	996	261	165	138	146	98	97
62.5	1471	1557	1599	827	245	158	147	110	102	104
65	1301	1394	1367	664	235	165	162	116	100	104
67.5	1151	1209	991	499	209	181	183	137	80	82
70	1020	1040	673	313	168	181	157	152	53	53
72.5	732	764	470	199	131	129	126	158	34	33
75	583	533	292	141	88	87	82	91	25	24
77.5	442	354	167	80	52	89	51	34	17	16
80	237	153	67	47	38	60	38	29	12	11
82.5	96	42	32	31	24	28	19	15	9	9
85	38	14	16	14	11	14	9	9	8	7
87.5	6	6	6	6	6	6	6	6	6	6
90	4	4	4	4	5	5	5	5	6	5



RESULTS OF TESTS (cont'd)

	95	105	115	125	135	145	155	165	175	180
92.5	4	4	4	4	4	5	5	5	5	5
95	3	4	4	4	4	4	5	5	5	5
97.5	3	4	4	4	4	4	5	5	5	4
100	3	4	4	4	4	4	5	4	4	4
102.5	3	4	4	4	4	4	4	4	4	4
105	3	4	4	4	4	5	5	4	4	4
107.5	3	4	4	4	5	5	5	4	4	4
110	3	4	4	5	5	5	5	4	4	4
112.5	3	4	4	5	5	5	5	5	4	4
115	4	4	4	5	5	5	5	5	5	4
117.5	4	5	5	5	5	5	5	5	5	5
120	5	5	5	5	6	6	5	5	5	5
122.5	5	5	5	5	6	6	6	5	5	5
125	5	5	5	6	6	6	6	6	5	5
127.5	5	6	5	6	7	6	6	6	6	6
130	5	6	6	6	7	7	6	6	6	5
132.5	5	6	6	6	7	7	6	6	6	6
135	5	5	5	6	6	7	6	6	6	6
137.5	4	4	5	5	6	6	6	6	5	6
140	3	4	4	4	5	5	5	5	5	5
142.5	3	3	4	4	5	5	5	5	5	5
145	3	3	4	4	5	5	5	5	4	4
147.5	3	3	3	4	5	5	5	5	4	5
150	2	3	4	4	4	5	5	5	5	4
152.5	3	3	4	4	4	5	5	5	5	5
155	3	3	3	4	5	5	5	5	5	5
157.5	3	3	3	4	4	5	5	5	5	5
160	2	3	3	4	5	5	5	5	5	5
162.5	2	3	3	4	4	5	5	5	5	5
165	2	3	3	4	4	4	4	4	5	4
167.5	2	3	3	4	4	4	5	4	4	4
170	2	3	3	4	4	4	4	5	4	5
172.5	2	2	3	3	4	4	4	4	4	4
175	2	2	3	3	4	4	4	4	4	4
177.5	2	2	2	2	3	4	4	4	4	4
180	3	3	3	3	3	3	3	3	3	3

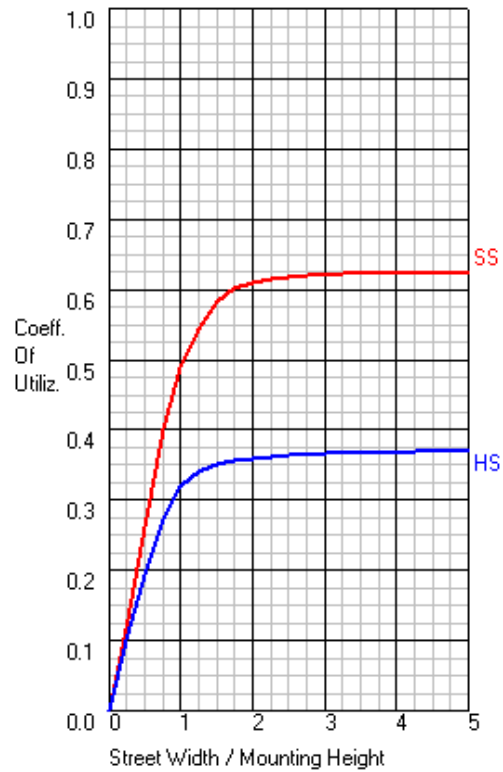
Polar Candela Distribution:





RESULTS OF TESTS (cont'd)

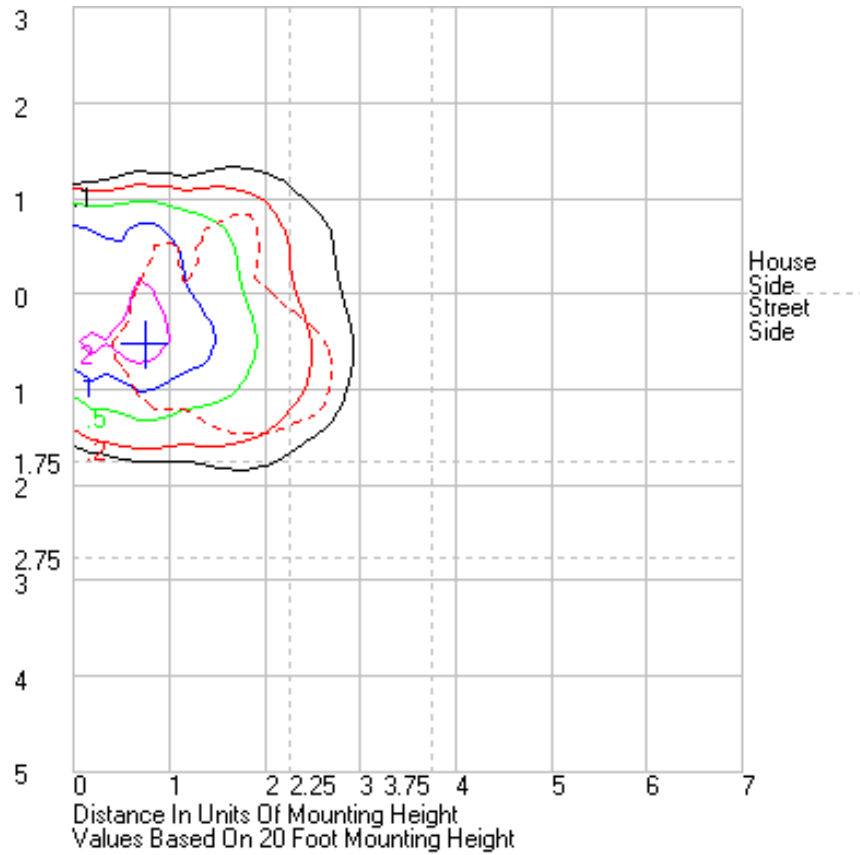
CU Graph:



Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	3033.6	62.4
Downward House Side	1796.9	37.0
Downward Total	4830.5	99.4
Upward Street Side	13.9	0.3
Upward House Side	14.5	0.3
Upward Total	28.4	0.6
Total Flux	4858.9	100.0

Isolines:





Tested By:

Kyle McAllister

Handwritten signature of Kyle McAllister in blue ink.

Report Reviewed By:

Jeffrey Davis

Handwritten signature of Jeffrey Davis in black ink.

Senior Associate Engineer
Commercial & Electrical

David Ellis

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Senior Project Engineer
Lighting Division

Attachment: None