



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0146

Date: May 15, 2012

REPORT NO. 100639410CRT-097

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 PT FT LED 63 350 NW UE
XINM3 PT FT LED 63 350 NW UE
XLXM3 PT FT 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 3, 2012

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SUMMARY:

Model No.:
XENM3 PT FT LED 63 350 NW UE
XINM3 PT FT LED 63 350 NW UE
XLXM3 PT FT 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	5032
Input Voltage (V)	120.0
Total Power (W)	70.0
Luminaire Efficacy	72.0
Power Factor	0.993
Driver Output Current (A)	0.351
THD _A	9.6%

Additional Reporting

Test Room Ambient Conditions	24.0 C and 43% RH
Total Luminaire Stabilization Time	47 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	12/31/2012
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 FT LED 63 350 NW UE
XINM3 PT FT LED 63 350 NW UE
XLXM3 PT FT 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)
ITK3231	Horizontal	120.0	0.587	70.0	0.993	5032	72.0

Characteristics

IES Classification	Type IV
Longitudinal Classification	Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5032
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	72
Total Luminaire Watts	70
Ballast Factor	1.00
Upward Waste Light Ratio	0.01
Max. Cd.	2977.404 (29H, 65V)
Max. Cd. (<90 Vert.)	2977.404 (29H, 65V)
Max. Cd. (At 90 Deg. Vert.)	10.998 (0.2%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	529.894 (10.5%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	478.0	N.A.	9.5
FM (30-60)	1841.8	N.A.	36.6
FH (60-80)	1393.2	N.A.	27.7
FVH (80-90)	40.7	N.A.	0.8
BL (0-30)	391.1	N.A.	7.8
BM (30-60)	663.3	N.A.	13.2
BH (60-80)	172.8	N.A.	3.4
BVH (80-90)	10.8	N.A.	0.2
UL (90-100)	7.7	N.A.	0.2
UH (100-180)	32.1	N.A.	0.6
Total	5031.5	N.A.	100.0
BUG Rating	B1-U2-G1		

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	29	35	45	55	65	75	85	90
0	1094	1094	1094	1094	1094	1094	1094	1094	1094	1094	1094	1094
2.5	1096	1094	1096	1102	1102	1099	1092	1078	1060	1048	1052	1054
5	1005	1008	1008	983	1001	1018	1020	1022	1077	1081	1077	1066
7.5	957	956	917	1001	999	1019	1046	1024	1051	1068	1065	1061
10	918	923	984	1011	1029	1033	1042	1017	1018	978	1002	1010
12.5	974	959	1000	1049	1049	1008	1024	955	978	957	1027	1012
15	932	945	1030	1054	1056	1042	991	955	958	973	1031	1042
17.5	958	952	1067	1038	1031	995	931	955	1006	1060	1180	1163
20	940	1025	1073	1066	1011	962	917	1002	1102	1196	1290	1295
22.5	988	1041	1136	1068	1017	952	959	1076	1203	1342	1467	1446
25	986	1097	1138	1033	1003	984	1050	1136	1355	1548	1672	1640
27.5	1034	1130	1203	1058	1028	1033	1074	1225	1470	1709	1900	1840
30	1039	1159	1205	1092	1073	1068	1159	1341	1565	1865	2103	2097
32.5	1062	1194	1222	1116	1100	1125	1294	1468	1700	1943	2222	2166
35	1062	1244	1254	1136	1118	1209	1418	1619	1717	1969	2322	2268
37.5	1071	1256	1249	1159	1167	1320	1541	1687	1759	1930	2245	2213
40	1099	1288	1251	1200	1270	1448	1655	1740	1712	1829	2074	2084
42.5	1148	1341	1297	1260	1331	1527	1737	1720	1653	1716	1935	1955
45	1176	1368	1345	1339	1418	1593	1732	1674	1602	1644	1876	1876
47.5	1237	1419	1365	1441	1541	1670	1682	1614	1565	1594	1814	1801
50	1379	1578	1517	1544	1624	1692	1647	1553	1538	1571	1768	1743
52.5	1370	1561	1569	1749	1804	1696	1617	1522	1530	1567	1751	1720
55	1547	1726	1613	1757	1845	1810	1594	1522	1532	1574	1722	1696
57.5	1869	2081	1979	1969	1893	1792	1678	1545	1521	1556	1621	1601
60	2151	2395	2370	2426	2294	1960	1724	1549	1464	1500	1533	1497
62.5	2316	2556	2653	2807	2720	2398	1793	1574	1358	1380	1389	1335
65	2074	2283	2531	2925	2977	2804	2109	1502	1255	1227	1273	1204
67.5	1678	1834	2022	2520	2757	2924	2472	1550	1139	1089	1119	1067
70	1213	1321	1491	2039	2258	2519	2537	1716	1045	876	833	795
72.5	670	733	844	1428	1663	1922	2092	1775	945	657	654	623
75	308	338	400	807	964	1136	1387	1388	890	541	532	488
77.5	145	156	189	416	481	527	723	895	766	388	363	337
80	69	71	81	167	193	211	283	473	530	316	230	198
82.5	29	30	33	55	61	70	96	162	248	185	108	99
85	15	15	17	21	21	24	37	60	73	80	62	51
87.5	9	10	11	11	11	12	13	14	15	13	13	11
90	8	8	9	9	9	10	10	8	7	7	7	7

RESULTS OF TESTS (cont'd)

	0	5	15	25	29	35	45	55	65	75	85	90
92.5	8	8	8	8	8	9	9	7	6	6	6	6
95	7	7	8	8	8	8	8	7	6	6	6	6
97.5	7	7	7	7	7	7	7	6	6	5	6	6
100	7	7	7	7	6	6	6	6	6	5	5	6
102.5	7	7	6	6	6	6	6	6	5	5	5	5
105	7	7	7	6	6	6	6	5	5	5	6	6
107.5	7	7	6	6	6	6	6	5	6	5	6	6
110	7	7	7	6	6	6	6	6	5	5	5	6
112.5	7	7	7	6	7	6	6	6	6	6	6	6
115	7	7	7	6	6	6	6	6	6	6	6	6
117.5	8	7	7	7	7	7	6	6	6	6	6	6
120	7	8	7	7	7	7	6	6	6	6	7	7
122.5	8	7	8	7	7	7	7	7	7	7	7	7
125	8	8	8	8	8	7	7	7	7	8	8	8
127.5	8	8	8	8	8	7	7	7	8	7	8	8
130	8	8	8	8	8	8	7	7	7	8	8	8
132.5	8	8	8	8	8	8	8	7	7	8	8	8
135	8	8	8	8	8	7	7	7	7	8	8	8
137.5	6	6	7	6	6	6	6	6	6	6	6	6
140	6	6	6	6	5	5	5	5	5	5	5	5
142.5	6	6	6	6	6	5	5	5	5	5	5	5
145	6	6	6	5	5	5	5	5	4	4	5	5
147.5	6	6	6	6	5	5	5	5	4	5	4	5
150	6	6	6	6	6	5	5	5	5	4	5	5
152.5	6	7	6	6	6	6	5	5	5	5	5	5
155	6	6	6	6	6	5	5	5	5	5	5	5
157.5	7	7	6	6	6	6	5	5	5	5	5	5
160	7	7	7	6	6	6	5	5	5	5	5	5
162.5	7	7	7	6	6	6	6	5	5	5	4	5
165	7	7	7	6	6	6	5	5	5	5	5	5
167.5	8	7	7	7	6	6	6	5	5	4	4	5
170	7	8	7	6	6	6	5	5	5	5	5	4
172.5	7	7	7	7	6	6	5	5	5	5	5	5
175	7	7	7	6	6	6	5	5	5	4	5	4
177.5	6	7	6	6	6	6	5	5	4	4	5	4
180	5	5	5	5	5	5	5	5	5	5	5	5

RESULTS OF TESTS (cont'd)

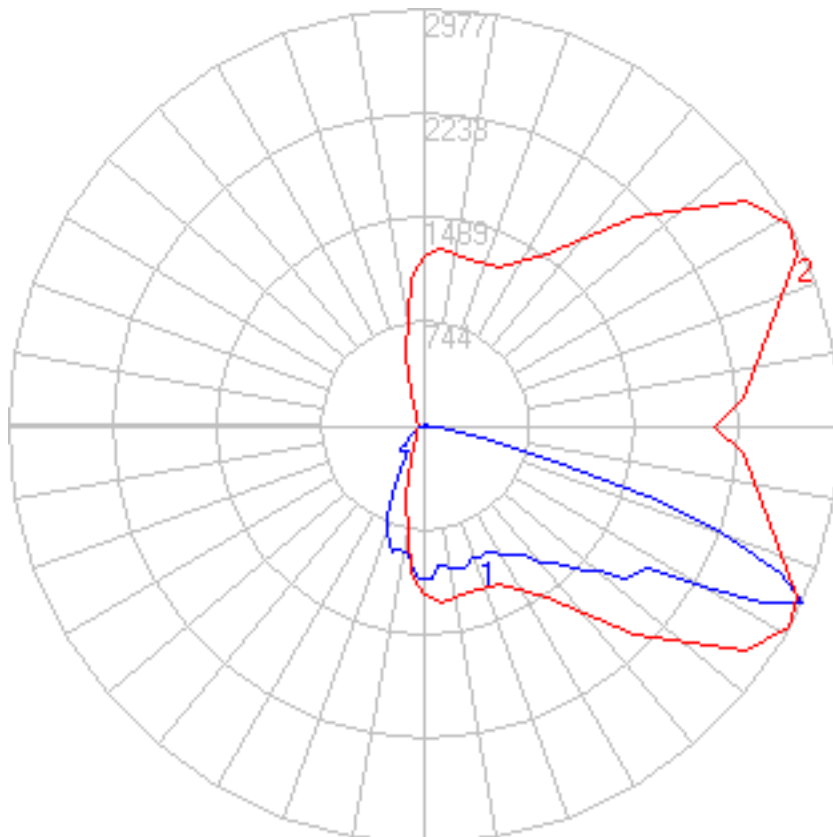
	95	105	115	125	135	145	155	165	175	180
0	1094	1094	1094	1094	1094	1094	1094	1094	1094	1094
2.5	1061	1078	1087	1079	1079	1087	1094	1102	1103	1102
5	1055	1028	1049	1066	1042	1042	1035	1042	1072	1071
7.5	1030	1067	1054	1013	954	918	932	931	986	991
10	997	1009	980	945	935	947	897	926	945	943
12.5	1004	995	971	954	932	932	884	890	873	926
15	1034	1033	976	941	908	925	941	889	884	906
17.5	1169	1086	999	950	894	900	858	827	798	851
20	1296	1194	1071	987	927	856	806	743	721	721
22.5	1416	1241	1103	1016	889	794	692	626	572	571
25	1541	1342	1146	1039	859	684	559	474	430	424
27.5	1756	1485	1240	1049	792	569	408	326	288	285
30	1906	1591	1324	1037	710	453	290	212	187	183
32.5	2017	1674	1386	1007	616	361	202	151	138	137
35	2066	1719	1357	929	513	310	171	125	126	120
37.5	2045	1695	1273	799	421	279	185	123	123	121
40	1944	1606	1144	646	353	287	217	136	123	124
42.5	1827	1497	971	460	328	287	235	143	123	127
45	1754	1393	792	321	325	248	193	145	122	128
47.5	1678	1289	631	253	296	216	188	151	111	117
50	1621	1175	488	226	250	208	180	132	83	86
52.5	1582	1078	377	199	217	182	146	78	43	44
55	1553	1002	314	173	200	133	112	55	37	41
57.5	1475	917	291	152	163	86	85	58	42	46
60	1366	801	279	136	106	71	79	55	45	46
62.5	1202	668	268	117	79	82	65	53	46	46
65	1060	529	254	98	82	85	63	50	43	43
67.5	916	393	201	77	78	76	52	43	37	37
70	686	270	128	76	69	68	47	35	30	30
72.5	496	182	73	73	62	55	40	27	24	23
75	353	129	66	61	48	35	28	21	19	20
77.5	231	91	61	52	34	23	20	18	18	17
80	142	45	59	37	22	16	16	16	16	15
82.5	74	26	39	20	20	14	14	15	15	15
85	31	14	18	12	17	13	13	13	14	14
87.5	10	9	9	8	10	10	12	12	12	13
90	6	6	6	6	7	7	10	10	10	11



RESULTS OF TESTS (cont'd)

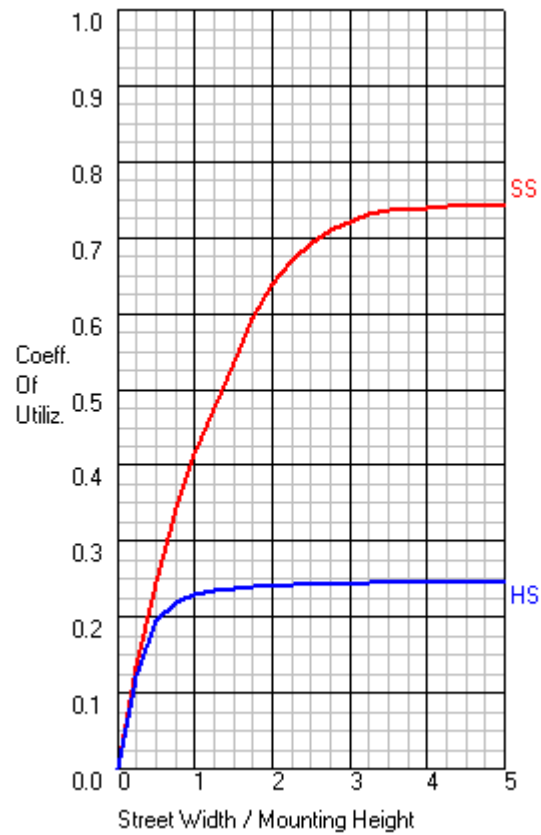
	95	105	115	125	135	145	155	165	175	180
92.5	6	6	5	6	7	7	9	9	10	10
95	6	6	6	6	6	7	9	9	9	9
97.5	6	6	6	6	7	6	8	9	9	9
100	5	6	6	6	6	6	8	7	8	8
102.5	5	6	6	6	6	6	7	7	7	7
105	5	6	6	6	6	6	7	7	7	7
107.5	6	6	6	6	6	6	7	6	7	7
110	6	6	6	6	6	6	6	7	7	7
112.5	6	6	6	6	6	6	6	7	6	6
115	6	6	6	6	6	6	7	6	7	7
117.5	6	6	6	6	6	6	6	7	7	7
120	7	7	7	7	7	7	7	7	7	7
122.5	7	7	7	7	7	7	7	7	7	7
125	8	8	7	7	8	7	8	7	7	7
127.5	8	8	7	8	7	8	8	7	7	8
130	8	8	7	7	7	8	7	7	7	7
132.5	8	8	7	7	7	8	7	8	8	7
135	8	8	7	7	7	7	8	7	7	8
137.5	6	7	6	6	6	6	6	6	7	6
140	5	5	5	5	5	5	5	6	6	6
142.5	5	5	5	5	5	5	5	5	5	5
145	5	5	5	5	5	5	5	5	5	5
147.5	5	5	5	5	5	4	5	4	5	5
150	4	5	5	5	4	5	5	4	5	5
152.5	5	5	5	5	5	4	4	5	5	5
155	4	5	5	5	5	5	5	5	5	5
157.5	5	4	5	5	5	5	5	4	5	5
160	5	4	5	5	5	5	5	5	5	5
162.5	4	4	5	5	5	4	5	4	5	5
165	4	4	4	5	5	4	5	4	4	5
167.5	5	5	4	5	5	5	4	5	5	5
170	5	5	5	4	5	4	5	5	5	4
172.5	5	4	4	4	4	4	5	5	5	4
175	4	5	4	4	4	4	4	5	4	4
177.5	4	4	5	4	4	4	4	4	4	4
180	5	5	5	5	5	5	5	5	5	5

Polar Candela Distribution:



RESULTS OF TESTS (cont'd)

CU Graph:

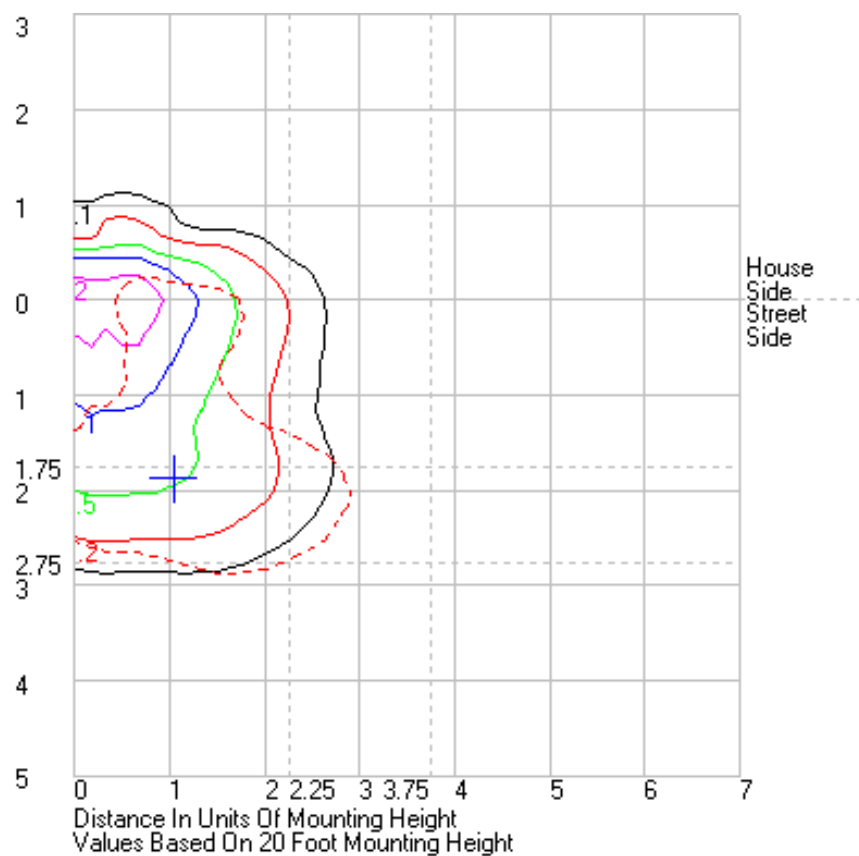


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	3753.8	74.6
Downward House Side	1237.9	24.6
Downward Total	4991.7	99.2
Upward Street Side	20.1	0.4
Upward House Side	19.8	0.4
Upward Total	39.9	0.8
Total Flux	5031.6	100.0

RESULTS OF TESTS (cont'd)

Isolines:





Testing 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