



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0159

Date: May 15, 2012

REPORT NO. 100639410CRT-111

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 PT 3 LED 63 350 NW UE
XINM3 PT 3 LED 63 350 NW UE
XLXM3 PT 3 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 3 LED 63 350 NW UE
XINM3 PT 3 LED 63 350 NW UE
XLXM3 PT 3 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	4450
Input Voltage (V)	120.0
Total Power (W)	69.9
Luminaire Efficacy	64
Power Factor	0.993
Driver Output Current (A)	0.351
THD _A	9.6%

Additional Reporting

Test Room Ambient Conditions	24.5 C and 44% 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	12/31/12
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 3 LED 63 350 NW UE XINM3 PT 3 LED 63 350 NW UE XLXM3 PT 3 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)
ITK3243	Horizontal	120.0	0.586	69.9	0.993	4450	64.0

Characteristics

IES Classification	Type II
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4450
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	70
Ballast Factor	1.00
Upward Waste Light Ratio	0.01
Max. Cd.	2632.421 (6H, 40V)
Max. Cd. (<90 Vert.)	2632.421 (6H, 40V)
Max. Cd. (At 90 Deg. Vert.)	9.998 (0.2%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	550.879 (12.4%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	505.8	N.A.	11.4
FM (30-60)	1610.0	N.A.	36.2
FH (60-80)	794.2	N.A.	17.8
FVH (80-90)	44.2	N.A.	1.0
BL (0-30)	472.2	N.A.	10.6
BM (30-60)	665.1	N.A.	14.9
BH (60-80)	290.6	N.A.	6.5
BVH (80-90)	25.8	N.A.	0.6
UL (90-100)	7.5	N.A.	0.2
UH (100-180)	34.5	N.A.	0.8
Total	4449.9	N.A.	100.0
BUG Rating	B1-U2-G1		



RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	6	15	25	35	45	55	65	75	85	90
0	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098
2.5	1117	1113	1114	1113	1118	1111	1104	1088	1076	1070	1076	1076
5	974	979	978	981	981	1010	1023	1009	1043	1078	1076	1067
7.5	1041	1044	1044	1003	1071	1036	1025	980	1014	1077	1070	1062
10	1059	1061	1063	1136	1117	1052	1053	1011	1018	1029	1084	1096
12.5	1273	1256	1245	1292	1183	1106	1111	1083	1084	1087	1177	1134
15	1300	1312	1321	1407	1282	1265	1246	1193	1100	1070	1117	1110
17.5	1364	1342	1363	1408	1302	1373	1332	1213	1098	1035	1095	1077
20	1330	1395	1424	1395	1367	1404	1295	1229	1120	1001	1002	1006
22.5	1433	1475	1495	1432	1427	1373	1281	1182	1047	937	933	924
25	1411	1540	1572	1429	1457	1350	1230	1086	1030	975	965	938
27.5	1522	1621	1663	1500	1457	1317	1086	1027	1068	983	935	908
30	1704	1828	1845	1660	1499	1229	1007	1031	1071	1064	990	999
32.5	1943	2109	2108	1898	1630	1174	1001	1010	1139	1154	1053	1017
35	2189	2377	2373	2145	1750	1208	993	1049	1156	1234	1144	1106
37.5	2350	2549	2548	2331	1828	1268	1037	1054	1223	1267	1124	1085
40	2426	2628	2632	2403	1817	1336	1128	1108	1197	1232	1083	1037
41	2429	2608	2624	2407	1781	1360	1185	1125	1182	1211	1108	1022
42.5	2404	2600	2607	2375	1719	1367	1231	1131	1149	1198	1058	1004
45	2318	2507	2513	2264	1581	1392	1321	1150	1113	1188	1073	994
47.5	2212	2389	2397	2103	1431	1381	1393	1197	1109	1225	1114	1000
50	2079	2242	2253	1903	1297	1338	1421	1264	1160	1255	1147	1030
52.5	1809	1951	1959	1613	1181	1291	1399	1344	1209	1278	1217	1076
55	1463	1570	1577	1254	1042	1224	1326	1385	1275	1336	1285	1148
57.5	1160	1243	1250	938	872	1073	1256	1412	1394	1404	1359	1196
60	999	1064	1059	730	695	867	1193	1455	1488	1376	1349	1180
62.5	929	978	974	633	584	710	1175	1488	1501	1314	1258	1100
65	836	871	866	553	552	697	1160	1442	1464	1244	1164	1047
67.5	749	759	749	500	525	769	1120	1335	1418	1204	1094	1006
70	621	608	596	454	527	816	1080	1179	1311	1056	910	864
72.5	376	361	358	331	448	750	975	999	1051	931	788	737
75	86	85	86	106	272	566	744	772	881	740	574	533
77.5	54	52	53	80	198	292	463	606	695	631	454	416
80	41	39	38	57	132	197	225	356	551	500	317	291
82.5	81	71	68	47	57	73	106	134	216	214	130	108
85	99	82	80	52	66	44	30	35	62	91	79	61
87.5	17	16	16	15	17	15	14	12	12	13	12	11
90	7	7	7	8	7	8	8	8	8	8	7	7



RESULTS OF TESTS (cont'd)

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

RESULTS OF TESTS (cont'd)

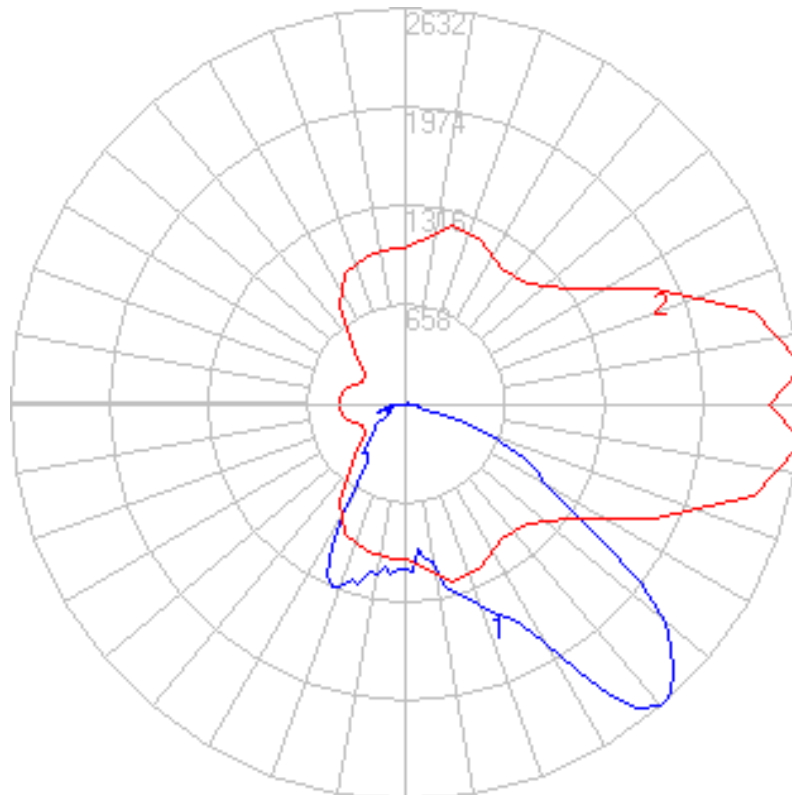
	95	105	115	125	135	145	155	165	175	180
0	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098
2.5	1080	1089	1091	1078	1072	1079	1087	1094	1097	1095
5	1063	1026	1062	1088	1089	1106	1092	1108	1135	1136
7.5	1039	1071	1129	1108	1080	1068	1080	1055	1107	1110
10	1064	1097	1113	1079	1090	1111	1105	1131	1147	1150
12.5	1133	1158	1168	1164	1169	1168	1139	1157	1143	1197
15	1119	1202	1197	1204	1196	1182	1245	1227	1241	1258
17.5	1092	1118	1174	1222	1202	1261	1238	1242	1220	1279
20	1024	1088	1117	1197	1275	1267	1265	1293	1301	1318
22.5	923	940	1003	1093	1211	1330	1338	1328	1310	1306
25	927	932	912	1015	1154	1298	1306	1276	1255	1250
27.5	938	936	903	943	1095	1202	1174	1114	1077	1081
30	970	952	897	888	989	1044	997	876	858	858
32.5	1036	1001	929	890	872	844	750	647	616	613
35	1092	1045	950	900	731	626	531	473	453	455
37.5	1079	1053	961	859	617	447	381	398	420	423
40	1032	1015	956	788	495	333	330	404	441	448
41	1000	999	937	733	523	307	334	409	439	447
42.5	1004	985	921	672	386	298	332	392	413	420
45	983	962	859	566	321	296	311	336	349	355
47.5	973	936	780	462	305	290	273	297	312	316
50	989	921	696	379	312	264	240	264	280	283
52.5	1041	942	639	349	299	242	213	241	264	265
55	1105	980	623	356	268	230	199	220	232	233
57.5	1133	1026	635	375	250	224	175	164	166	168
60	1128	1029	648	365	234	195	139	132	136	144
62.5	1077	966	619	319	215	155	128	126	135	142
65	1026	851	551	280	182	132	126	115	122	127
67.5	984	735	418	237	154	122	117	108	124	125
70	846	564	302	193	142	114	124	123	128	131
72.5	717	413	214	167	128	123	118	120	137	140
75	506	292	145	133	118	115	141	153	204	212
77.5	385	158	111	97	95	163	210	138	135	138
80	259	84	73	67	111	122	104	95	100	103
82.5	87	49	40	47	50	64	82	107	114	121
85	40	23	22	21	25	37	52	76	74	72
87.5	10	10	10	11	12	14	19	26	29	25
90	7	7	6	6	7	7	8	9	10	10

RESULTS OF TESTS (cont'd)

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

RESULTS OF TESTS (cont'd)

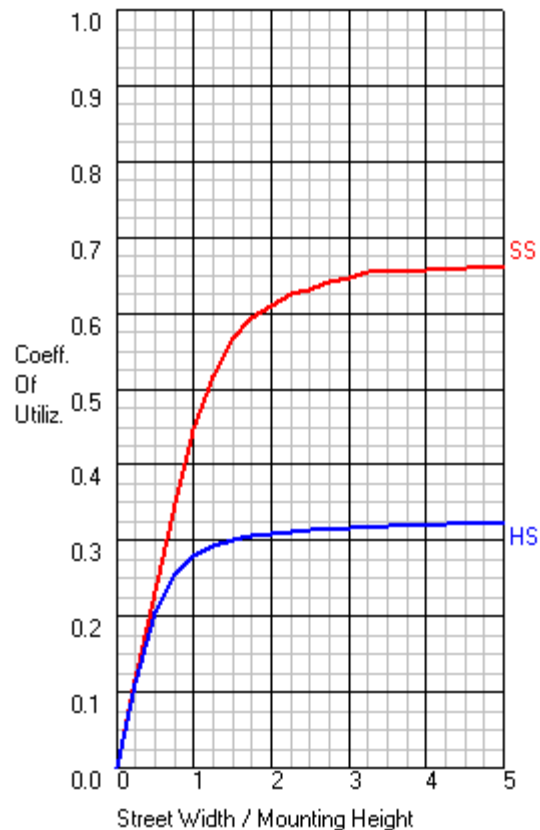
Polar Candela Distribution:





RESULTS OF TESTS (cont'd)

CU Graph:

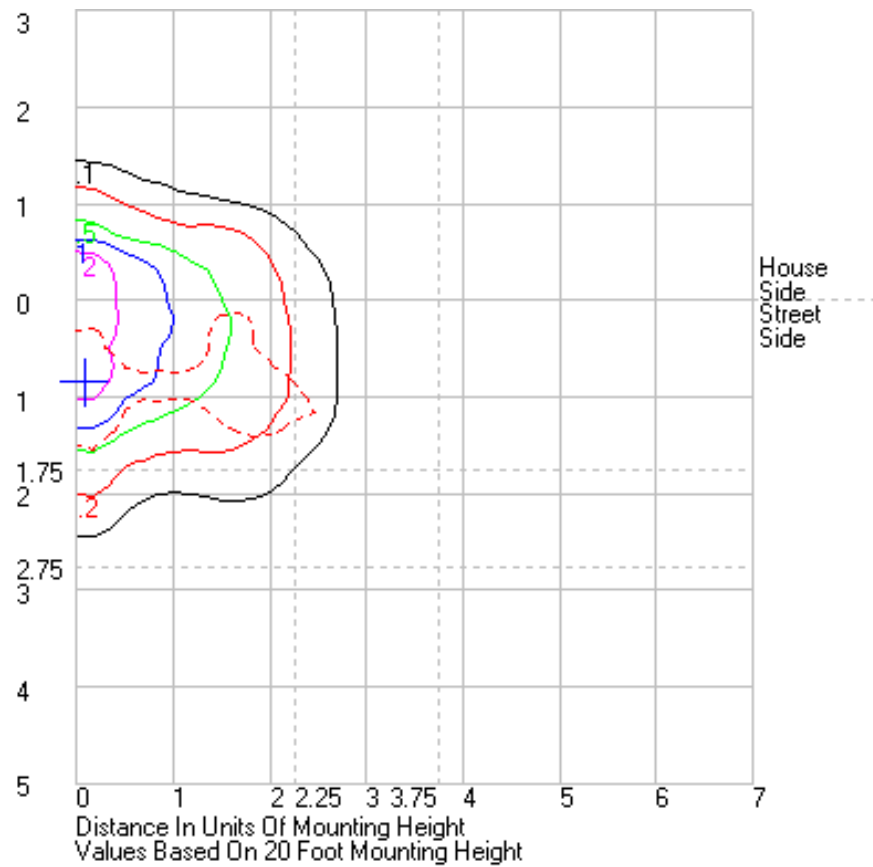


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	2954.2	66.4
Downward House Side	1453.6	32.7
Downward Total	4407.8	99.1
Upward Street Side	20.6	0.5
Upward House Side	21.4	0.5
Upward Total	42.0	0.9
Total Flux	4449.8	100.0

RESULTS OF TESTS (cont'd)

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