



REPORT

3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0151

Date: May 15, 2012

REPORT NO. 100639410CRT-103

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 PT 5 LED 63 350 NW UE
XINM3 PT 5 LED 63 350 NW UE
XLXM3 PT 5 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 4, 2012

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to copy or distribute this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program. Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.

SUMMARY:

Model No.:
XENM3 PT 5 LED 63 350 NW UE
XINM3 PT 5 LED 63 350 NW UE
XLXM3 PT 5 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	4158
Input Voltage (V)	120.0
Total Power (W)	70.0
Luminaire Efficacy	59
Power Factor	0.993
Driver Output Current (A)	0.351
THD _A	10.6%

Additional Reporting

Test Room Ambient Conditions	24.5 C and 43% RH
Total Luminaire Stabilization Time	46 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 5 LED 63 350 NW UE XINM3 PT 5 LED 63 350 NW UE XLXM3 PT 5 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)
ITK3236	Horizontal	120.0	0.586	70.0	0.993	4158	59

Characteristics

IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4158
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	59
Total Luminaire Watts	70
Ballast Factor	1.00
Upward Waste Light Ratio	0.02
Max. Cd.	1361 (45H, 47.5V)
Max. Cd. (<90 Vert.)	1361 (45H, 47.5V)
Max. Cd. (At 90 Deg. Vert.)	23 (0.6%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	402 (9.7%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	177.0	N.A.	4.3
FM (30-60)	1124.6	N.A.	27.0
FH (60-80)	753.4	N.A.	18.1
FVH (80-90)	42.1	N.A.	1.0
BL (0-30)	156.0	N.A.	3.8
BM (30-60)	992.3	N.A.	23.9
BH (60-80)	757.4	N.A.	18.2
BVH (80-90)	61.9	N.A.	1.5
UL (90-100)	16.5	N.A.	0.4
UH (100-180)	76.5	N.A.	1.8
Total	4157.7	N.A.	100.0
BUG Rating	B2-U3-G1		

RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	35	45	55	65	75	85	90
0	141	141	141	141	141	141	141	141	141	141	141
2.5	150	150	151	150	150	148	145	145	144	142	142
5	162	165	165	166	170	175	169	161	154	149	149
7.5	191	192	195	197	197	199	197	186	170	160	157
10	250	244	250	255	247	237	229	222	191	168	163
12.5	284	283	294	322	331	339	312	266	221	184	175
15	333	338	373	377	396	395	379	320	246	202	189
17.5	341	360	416	440	478	457	414	360	284	227	207
20	359	377	441	482	509	510	486	448	361	277	247
22.5	367	397	472	508	537	568	566	532	411	299	259
25	405	435	515	551	555	597	622	550	436	325	279
27.5	453	483	536	592	599	616	626	577	508	378	335
30	569	587	595	611	622	643	665	678	657	495	455
32.5	659	708	722	697	645	652	733	812	756	604	553
35	760	825	848	791	745	691	847	929	959	836	773
37.5	805	891	938	900	871	848	908	1096	1102	917	862
40	826	937	976	977	991	1004	1063	1189	1145	931	877
42.5	800	922	981	1035	1082	1145	1187	1194	1074	903	840
45	783	898	965	1012	1156	1295	1262	1101	1031	890	825
47.5	773	896	938	998	1206	1361	1236	1066	1003	863	798
50	762	875	917	996	1257	1342	1215	1061	946	813	753
52.5	752	858	898	1001	1283	1257	1217	1046	915	788	727
55	742	851	891	1033	1268	1191	1170	1082	920	782	718
57.5	734	846	875	1085	1200	1130	1123	1129	955	791	714
60	750	862	880	1118	1142	1071	1079	1171	1022	817	744
62.5	757	868	877	1111	1073	1027	1050	1185	1057	860	796
65	661	766	801	1053	1028	1004	1026	1140	1076	887	823
67.5	524	611	715	908	973	1011	986	1078	1054	864	820
70	421	489	636	762	879	991	951	964	957	767	717
72.5	330	386	510	607	731	882	880	752	749	592	557
75	243	280	356	460	579	696	703	631	658	515	494
77.5	132	155	219	323	418	484	556	510	482	407	388
80	67	80	126	197	258	326	368	360	308	256	231
82.5	41	56	94	114	131	137	139	141	127	77	59
85	32	36	57	57	44	37	36	53	59	38	24
87.5	21	18	14	10	13	18	21	17	26	18	17
90	21	19	9	16	16	22	23	19	14	14	12

RESULTS OF TESTS (cont'd)

	0	5	15	25	35	45	55	65	75	85	90
92.5	24	20	7	18	10	15	14	23	11	18	22
95	4	9	17	9	15	18	13	17	11	15	12
97.5	25	16	18	20	17	16	16	8	19	22	21
100	13	11	10	20	9	10	12	14	17	21	8
102.5	4	7	14	19	25	12	8	15	23	14	19
105	19	9	21	15	16	11	8	8	21	9	15
107.5	5	16	15	8	14	16	17	12	5	18	15
110	27	20	13	17	11	22	15	17	10	7	7
112.5	19	16	23	16	12	15	14	7	4	13	7
115	24	15	19	13	21	18	12	15	11	8	18
117.5	22	8	22	13	13	12	25	14	8	25	13
120	15	9	11	20	23	17	14	19	7	12	16
122.5	23	19	20	16	19	25	8	9	16	17	17
125	8	13	8	19	17	19	19	17	17	12	17
127.5	7	11	17	15	24	16	16	13	22	8	14
130	13	20	16	13	13	21	18	16	21	16	11
132.5	19	16	12	22	13	24	23	10	22	7	20
135	15	14	12	10	12	11	6	11	17	14	17
137.5	11	9	14	19	17	11	17	19	13	6	12
140	6	12	7	18	9	20	17	6	12	13	13
142.5	23	13	9	7	18	14	19	16	15	13	15
145	17	8	5	18	18	15	16	16	21	18	12
147.5	7	16	20	14	12	15	16	18	12	6	11
150	20	19	10	14	14	10	17	9	17	16	10
152.5	23	21	20	16	6	17	14	18	22	22	11
155	7	19	6	18	13	16	12	17	14	3	20
157.5	21	17	17	8	10	3	11	13	5	12	20
160	27	13	8	15	11	10	14	21	11	12	13
162.5	0	6	16	18	10	14	18	20	19	12	9
165	6	7	8	4	15	17	8	17	14	15	17
167.5	10	7	15	15	6	19	9	9	8	2	8
170	1	10	21	8	5	11	12	6	7	8	12
172.5	6	7	20	11	11	22	12	13	9	16	19
175	19	18	14	19	8	9	11	21	8	12	2
177.5	6	19	15	9	17	16	15	17	18	20	18
180	12	12	12	12	12	12	12	12	12	12	12

RESULTS OF TESTS (cont'd)

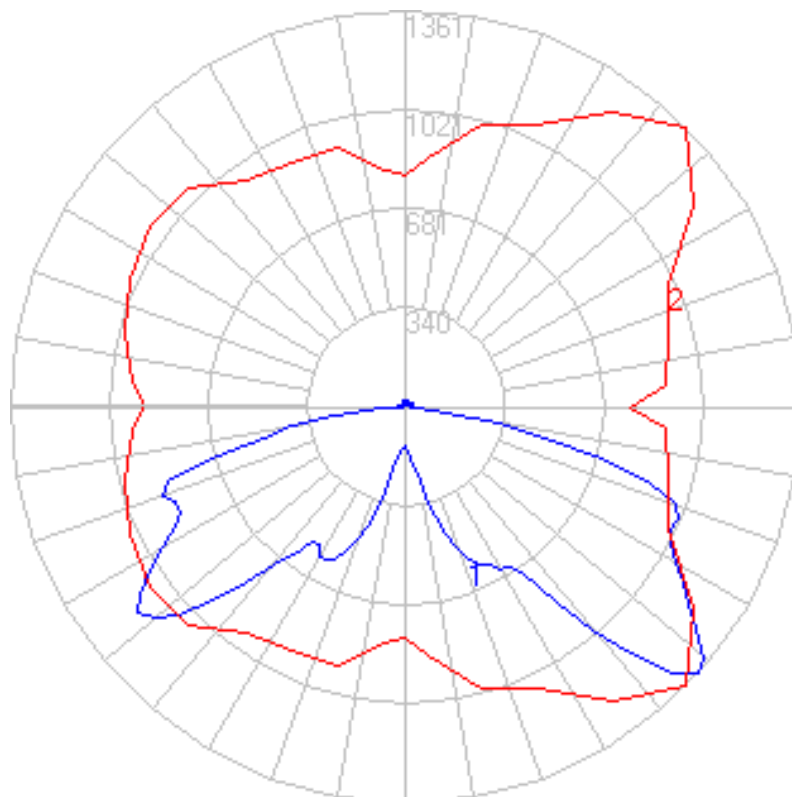
	95	105	115	125	135	145	155	165	175	180
0	141	141	141	141	141	141	141	141	141	141
2.5	141	139	138	136	134	136	135	135	136	135
5	145	141	141	146	147	148	150	148	149	150
7.5	152	149	155	160	158	162	168	169	173	173
10	158	161	173	174	179	186	195	196	199	196
12.5	169	181	190	203	222	238	263	286	292	303
15	185	201	215	254	327	371	363	353	322	326
17.5	203	221	247	365	437	442	401	366	330	328
20	245	265	343	467	485	468	437	399	350	353
22.5	263	295	464	548	530	515	503	454	378	364
25	281	333	522	588	581	541	523	438	338	315
27.5	337	399	562	600	589	560	498	463	339	315
30	456	531	624	602	596	543	527	453	361	351
32.5	551	651	713	669	559	536	522	456	432	437
35	774	834	786	749	569	525	551	566	561	568
37.5	872	989	935	779	640	568	648	716	736	712
40	884	1028	1027	834	710	682	778	844	862	838
42.5	857	1001	1041	894	816	858	905	949	970	924
45	839	953	986	939	943	986	1018	1019	983	929
47.5	817	925	924	954	1063	1078	1046	999	945	896
50	775	870	866	963	1132	1143	1031	972	912	868
52.5	750	834	829	970	1166	1162	1005	920	869	837
55	749	816	843	993	1124	1127	969	865	830	803
57.5	758	830	879	1005	1042	1066	934	856	819	791
60	774	865	944	988	970	1004	955	892	875	846
62.5	820	911	1010	946	897	961	1037	986	941	917
65	853	955	1047	907	856	962	1086	1020	933	913
67.5	836	943	1011	871	856	970	1034	910	761	730
70	736	873	916	830	895	909	812	702	565	542
72.5	579	715	745	802	865	725	629	599	492	472
75	512	618	584	718	669	599	537	538	448	431
77.5	408	486	508	528	505	512	458	438	362	345
80	255	329	383	386	398	402	351	266	200	181
82.5	79	146	179	243	251	232	203	135	97	80
85	39	64	78	72	83	100	115	99	63	53
87.5	16	31	20	29	29	36	47	49	35	40
90	8	22	9	17	12	22	14	9	10	17

RESULTS OF TESTS (cont'd)

	95	105	115	125	135	145	155	165	175	180
92.5	13	11	21	16	25	13	9	9	24	9
95	18	16	17	11	19	12	7	11	11	19
97.5	21	12	4	13	21	15	20	20	18	14
100	13	12	9	22	19	15	15	16	24	13
102.5	4	11	15	17	13	14	18	7	19	21
105	18	19	15	16	12	16	17	21	11	21
107.5	19	19	10	12	16	26	23	16	12	18
110	18	16	8	22	13	15	19	22	11	27
112.5	18	18	13	8	17	20	14	19	7	23
115	9	12	17	14	16	21	21	17	20	12
117.5	15	20	14	16	18	17	19	16	21	15
120	20	16	10	12	14	12	8	20	10	22
122.5	11	20	4	19	9	23	22	13	16	17
125	10	12	24	16	14	10	23	11	15	11
127.5	20	5	13	7	17	16	11	20	26	8
130	17	20	20	11	17	19	11	7	7	11
132.5	19	14	20	23	15	16	18	21	15	16
135	21	10	18	7	13	14	11	20	20	5
137.5	13	11	17	22	12	12	17	20	12	9
140	12	20	14	7	19	18	18	14	20	12
142.5	11	12	20	16	6	11	16	17	13	26
145	15	15	13	10	18	19	18	16	16	24
147.5	8	17	10	4	15	17	14	15	20	9
150	5	7	12	17	15	6	9	16	6	5
152.5	10	17	17	9	5	19	17	21	11	19
155	13	20	18	7	19	8	17	9	14	14
157.5	17	16	23	6	22	20	9	19	11	11
160	8	18	14	6	21	16	16	16	14	14
162.5	11	10	15	18	11	11	10	12	10	3
165	13	15	12	19	20	13	13	12	12	17
167.5	15	10	14	25	15	7	13	23	8	17
170	15	16	12	7	6	8	5	14	13	8
172.5	15	20	21	19	17	11	10	22	13	14
175	12	13	11	9	12	13	11	10	6	9
177.5	19	16	7	19	15	10	18	14	18	20
180	12	12	12	12	12	12	12	12	12	12

RESULTS OF TESTS (cont'd)

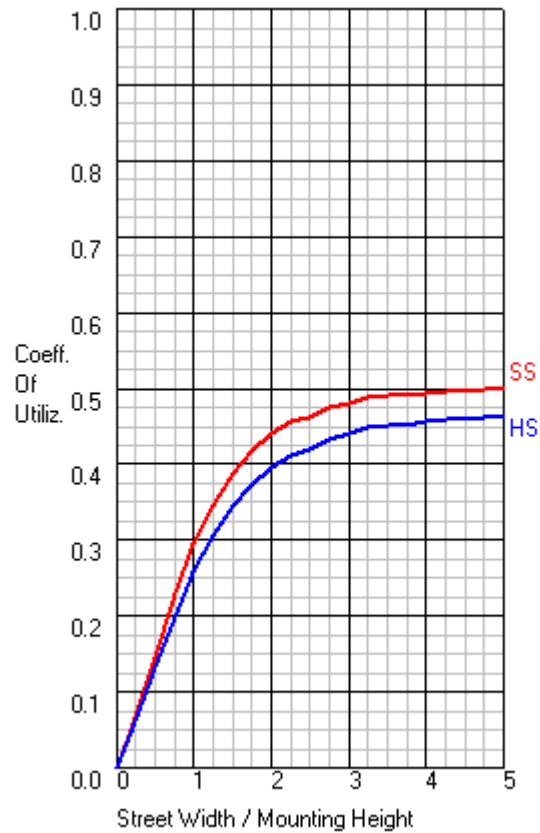
Polar Candela Distribution:





RESULTS OF TESTS (cont'd)

CU Graph:

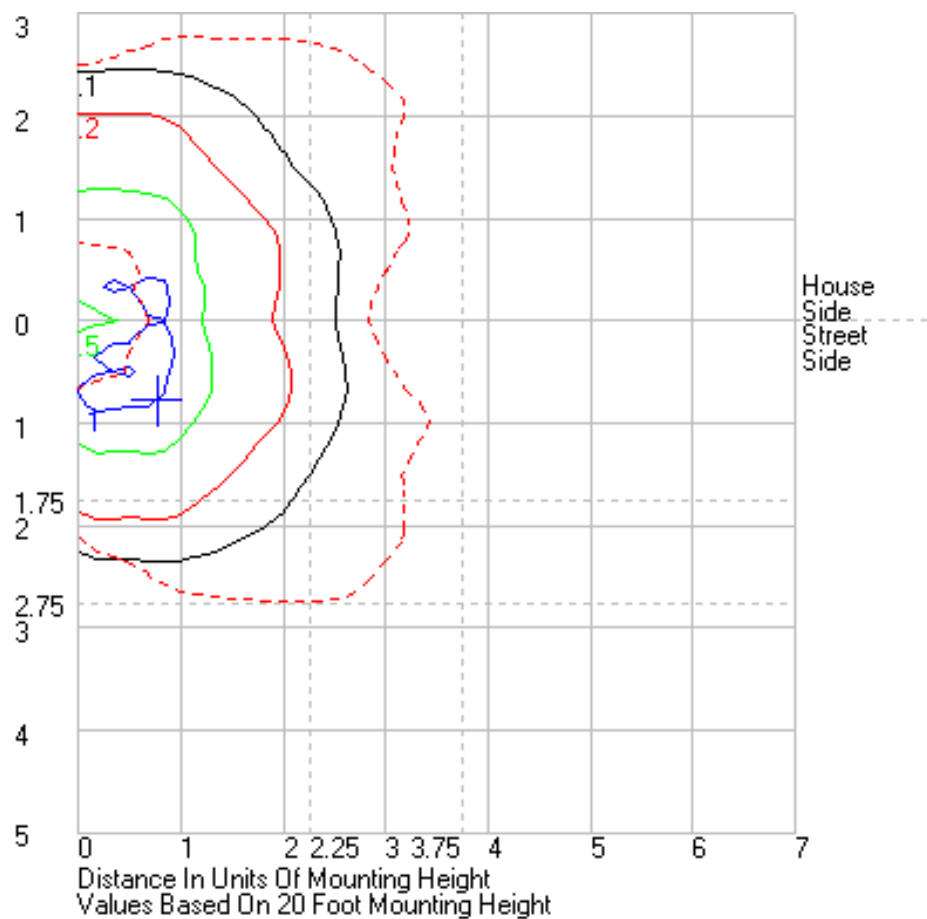


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	2097.1	50.4
Downward House Side	1967.6	47.3
Downward Total	4064.7	97.8
Upward Street Side	45.9	1.1
Upward House Side	47.2	1.1
Upward Total	93.1	2.2
Total Flux	4157.8	100.0

RESULTS OF TESTS (cont'd)

Isolines:



PHOTOGRAPH(S)



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

Handwritten signature of David Ellis in black ink.

Senior Project Engineer
Lighting Division

Attachment: None