



REPORT
3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0157

Date: May 15, 2012

REPORT NO. 100639410CRT-109

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 SA4 3 LED 63 450 NW UE
XENM3 SA5 3 LED 63 450 NW UE
XINM3 SA4 3 LED 63 450 NW UE
XINM3 SA5 3 LED 63 450 NW UE

LED DRIVER: 450mA 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 SA4 3 LED 63 450 NW UE
XENM3 SA5 3 LED 63 450 NW UE
XINM3 SA4 3 LED 63 450 NW UE
XINM3 SA5 3 LED 63 450 NW UE
Description: 63 LED optic unit containing an integrated specular metal reflector and flat glass lens. Utilizing 450mA Output Driver.

Criteria	Result
Total Lumen Output	6357
Input Voltage (V)	120.0
Total Power (W)	90.6
Luminaire Efficacy	70
Power Factor	0.995
Driver Output Current (A)	0.448
THD _A	8.6%

Additional Reporting

Test Room Ambient Conditions	24.3 C and 45% 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 SA4 3 LED 63 450 NW UE
 XENM3 SA5 3 LED 63 450 NW UE
 XINM3 SA4 3 LED 63 450 NW UE
 XINM3 SA5 3 LED 63 450 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)
ITK3241	Horizontal	120.0	0.760	90.6	0.995	6357	70

Characteristics

IES Classification	Type II
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6357
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	70
Total Luminaire Watts	91
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Max. Cd.	3406.944 (0H, 40V)
Max. Cd. (<90 Vert.)	3406.944 (0H, 40V)
Max. Cd. (At 90 Deg. Vert.)	0 (0.0%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	671.792 (10.6%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	966.4	N.A.	15.2
FM (30-60)	2118.4	N.A.	33.3
FH (60-80)	1004.0	N.A.	15.8
FVH (80-90)	52.5	N.A.	0.8
BL (0-30)	915.1	N.A.	14.4
BM (30-60)	894.0	N.A.	14.1
BH (60-80)	377.8	N.A.	5.9
BVH (80-90)	28.8	N.A.	0.5
UL (90-100)	0.0	N.A.	0.0
UH (100-180)	0.0	N.A.	0.0
Total	6357.0	N.A.	100.0
BUG Rating	B2-U0-G1		



RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	35	45	55	65	75	85	90
0	2584	2584	2584	2584	2584	2584	2584	2584	2584	2584	2584
2.5	2593	2580	2575	2582	2584	2576	2576	2581	2579	2578	2573
5	2602	2590	2586	2589	2589	2577	2576	2572	2571	2574	2572
7.5	2610	2598	2593	2595	2595	2580	2578	2567	2561	2560	2560
10	2631	2619	2610	2609	2603	2577	2563	2556	2543	2537	2538
12.5	2664	2651	2639	2627	2605	2572	2558	2543	2523	2506	2501
15	2687	2675	2660	2649	2609	2571	2532	2496	2466	2433	2422
17.5	2583	2578	2579	2597	2606	2547	2471	2411	2330	2271	2260
20	2509	2500	2493	2502	2531	2479	2381	2268	2149	2056	2038
22.5	2468	2458	2452	2446	2415	2331	2210	2049	1940	1841	1815
25	2414	2406	2406	2394	2297	2116	1966	1839	1789	1699	1671
27.5	2402	2390	2356	2317	2152	1863	1731	1700	1683	1608	1584
30	2561	2544	2457	2291	1960	1644	1564	1606	1625	1571	1537
32.5	2811	2789	2673	2380	1806	1493	1452	1540	1605	1574	1534
35	3074	3050	2921	2496	1745	1398	1393	1500	1591	1574	1523
37.5	3299	3274	3146	2580	1755	1392	1361	1475	1549	1539	1480
40	3407	3384	3278	2561	1798	1466	1356	1442	1491	1487	1423
41	3397	3386	3290	2518	1826	1518	1366	1414	1466	1461	1394
42.5	3371	3352	3253	2440	1841	1570	1373	1390	1454	1442	1374
45	3248	3228	3103	2234	1863	1674	1398	1344	1447	1440	1366
47.5	3092	3076	2891	2023	1844	1754	1452	1331	1486	1469	1370
50	2886	2881	2627	1842	1789	1784	1532	1376	1516	1495	1406
52.5	2492	2506	2227	1679	1724	1746	1615	1437	1542	1563	1466
55	2004	2007	1724	1470	1621	1649	1670	1528	1607	1657	1561
57.5	1594	1601	1292	1214	1406	1560	1702	1677	1659	1766	1630
60	1372	1386	1008	964	1127	1491	1749	1798	1634	1731	1611
62.5	1268	1282	888	818	925	1454	1792	1827	1544	1598	1522
65	1137	1145	794	770	917	1440	1748	1782	1479	1486	1444
67.5	1009	998	725	723	1028	1404	1608	1713	1441	1402	1366
70	844	815	664	729	1082	1364	1403	1594	1278	1194	1191
72.5	494	484	484	626	996	1220	1193	1278	1129	1018	989
75	95	93	142	390	762	936	925	1058	893	731	708
77.5	62	62	99	290	385	573	718	841	771	567	544
80	48	44	73	191	267	272	416	672	624	385	378
82.5	101	93	62	71	84	127	151	259	264	152	143
85	125	105	75	84	48	28	35	68	108	85	73
87.5	17	15	16	16	12	10	9	9	11	10	9
90	0	0	0	0	0	0	0	0	0	0	0

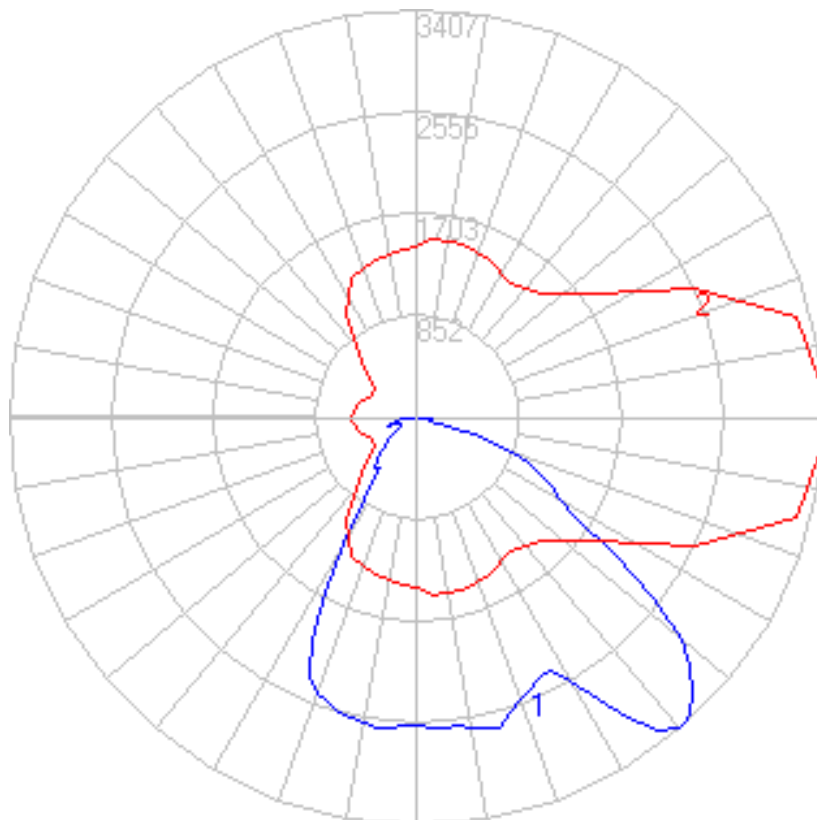


RESULTS OF TESTS (cont'd)

	95	105	115	125	135	145	155	165	175	180
0	2584	2584	2584	2584	2584	2584	2584	2584	2584	2584
2.5	2576	2584	2589	2594	2590	2580	2585	2588	2583	2582
5	2580	2584	2583	2590	2594	2596	2610	2622	2620	2616
7.5	2574	2578	2588	2601	2623	2641	2646	2652	2638	2630
10	2550	2555	2568	2600	2600	2601	2611	2618	2609	2605
12.5	2506	2520	2565	2574	2562	2558	2578	2592	2589	2584
15	2429	2464	2510	2526	2525	2519	2538	2559	2558	2555
17.5	2268	2338	2387	2440	2464	2474	2488	2498	2496	2493
20	2047	2125	2198	2293	2377	2416	2421	2444	2469	2472
22.5	1823	1885	1936	2075	2232	2338	2382	2361	2351	2341
25	1674	1704	1698	1826	2035	2235	2208	2107	2070	2055
27.5	1584	1591	1559	1613	1829	1991	1891	1718	1663	1645
30	1535	1518	1476	1478	1580	1636	1489	1294	1231	1215
32.5	1524	1477	1415	1395	1327	1231	1080	896	835	822
35	1513	1452	1373	1306	1081	871	722	614	587	582
37.5	1471	1413	1327	1205	849	592	490	505	528	530
40	1415	1360	1287	1051	650	424	416	499	539	543
41	1391	1339	1267	965	562	383	409	493	530	534
42.5	1370	1318	1242	880	487	365	409	478	504	507
45	1346	1282	1155	726	393	358	379	409	425	428
47.5	1340	1244	1041	576	375	351	324	353	374	379
50	1374	1238	917	459	385	314	288	313	331	336
52.5	1443	1276	820	433	362	293	254	290	309	313
55	1549	1346	790	446	322	275	235	265	275	277
57.5	1610	1423	806	468	305	271	209	196	196	199
60	1591	1429	832	448	291	242	165	155	160	169
62.5	1510	1321	792	387	269	186	150	146	157	166
65	1451	1165	698	341	219	154	148	130	142	143
67.5	1382	983	548	304	184	140	138	122	141	142
70	1196	750	396	245	176	130	148	137	146	148
72.5	995	545	276	214	160	143	137	138	157	161
75	703	369	176	176	152	135	173	177	247	253
77.5	541	187	145	125	119	201	260	156	163	163
80	374	94	85	80	138	146	120	97	106	115
82.5	129	54	44	56	61	73	90	113	117	141
85	52	26	26	21	28	41	59	85	78	80
87.5	8	8	8	8	9	12	16	26	25	22
90	0	0	0	0	0	0	0	0	0	0

RESULTS OF TESTS (cont'd)

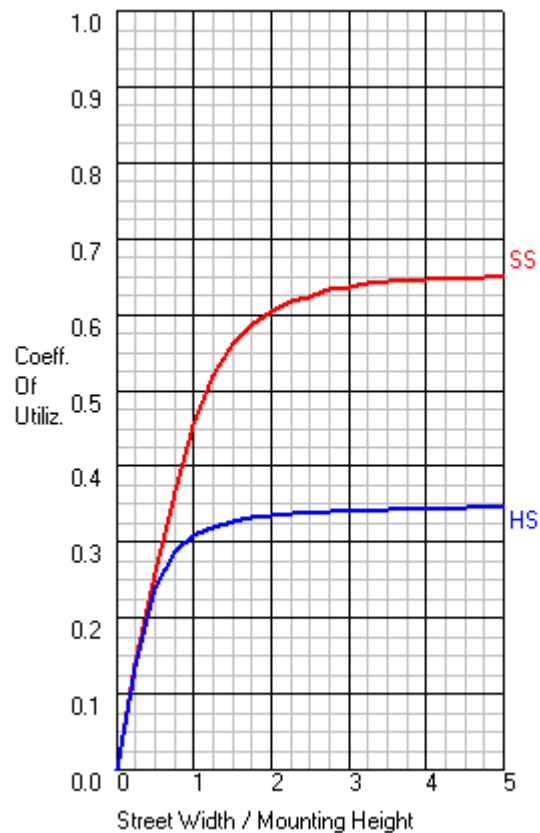
Polar Candela Distribution:





RESULTS OF TESTS (cont'd)

CU Graph:

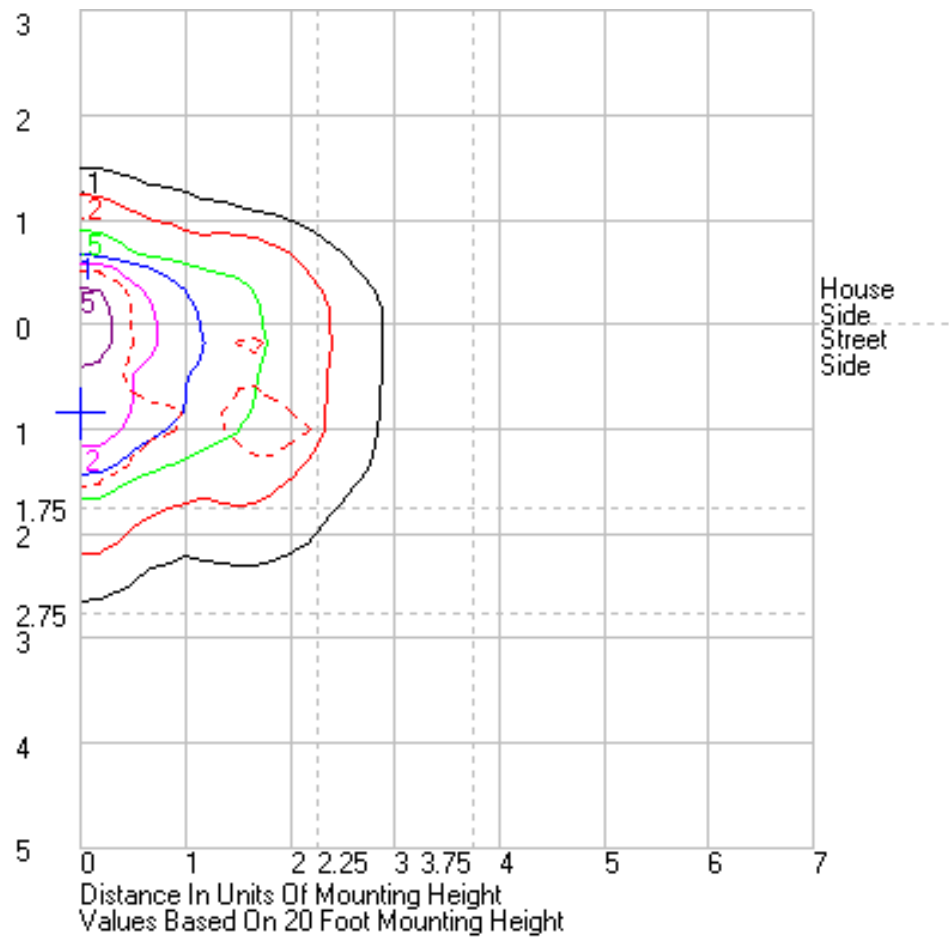


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	4141.3	65.1
Downward House Side	2215.7	34.9
Downward Total	6357.0	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	6357.0	100.0

RESULTS OF TESTS (cont'd)

Isolines:





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Attachment: None