



**REPORT**  
**3933 US ROUTE 11 CORTLAND, NEW YORK 13045**

Project No. G100639410  
Client Ref. No. PH-0145

Date: May 15, 2012

REPORT NO. 100639410CRT-100

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XENM3 SA4 FT LED 63 350 NW UE  
XENM3 SA5 FT LED 63 350 NW UE  
XINM3 SA4 FT LED 63 350 NW UE  
XINM3 SA5 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 Luminaries

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 SA4 FT LED 63 350 NW UE
XENM3 SA5 FT LED 63 350 NW UE
XINM3 SA4 FT LED 63 350 NW UE
XINM3 SA5 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	5707
Input Voltage (V)	120.0
Total Power (W)	70.0
Luminaire Efficacy	82
Power Factor	0.993
Driver Output Current (A)	0.350
THD <sub>A</sub>	9.6%

## Additional Reporting

Test Room Ambient Conditions	25.2 C and 45% 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	VBV
Yokogawa WT-230 Power Analyzer	91KA35031	12/31/12
High Speed Moving Mirror Goniophotometer	---	VBV
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 FT LED 63 350 NW UE			
				XENM3 SA5 FT LED 63 350 NW UE			
				XINM3 SA4 FT LED 63 350 NW UE			
				XINM3 SA5 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)
ITK3230	Horizontal	120.0	0.587	70.0	0.993	5707	82

#### Characteristics

IES Classification	Type IV
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5707
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	82
Total Luminaire Watts	70
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Max. Cd.	3236.867 (23H, 65V)
Max. Cd. (<90 Vert.)	3236.867 (23H, 65V)
Max. Cd. (At 90 Deg. Vert.)	0 (0.0%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	552.806 (9.7%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

#### Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	711.1	N.A.	12.5
FM (30-60)	1957.3	N.A.	34.3
FH (60-80)	1485.1	N.A.	26.0
FVH (80-90)	42.8	N.A.	0.8
BL (0-30)	592.1	N.A.	10.4
BM (30-60)	728.3	N.A.	12.8
BH (60-80)	182.1	N.A.	3.2
BVH (80-90)	8.1	N.A.	0.1
UL (90-100)	0.0	N.A.	0.0
UH (100-180)	0.0	N.A.	0.0
Total	5706.9	N.A.	100.0
<b>BUG Rating</b>	<b>B2-U0-G1</b>		



## RESULTS OF TESTS (cont'd)

### Intensity (Candlepower) Summary

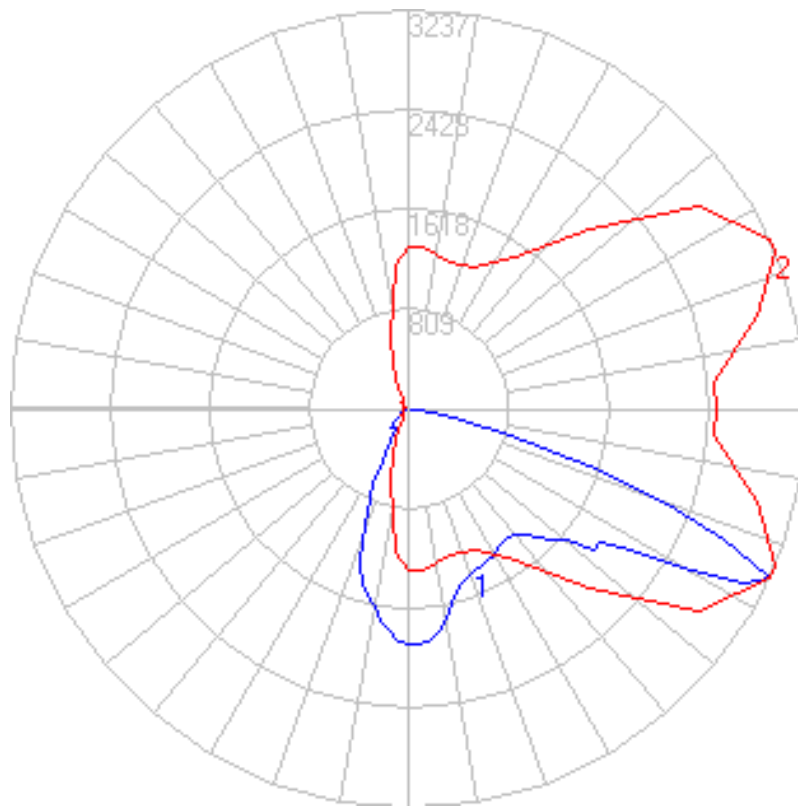
	0	5	15	23	25	35	45	55	65	75	85
0	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
2.5	1927	1921	1916	1921	1922	1920	1919	1920	1917	1911	1907
5	1894	1890	1888	1894	1897	1900	1904	1911	1912	1911	1907
7.5	1812	1811	1814	1825	1832	1850	1870	1887	1900	1903	1901
10	1696	1696	1700	1722	1732	1766	1807	1850	1889	1901	1905
12.5	1583	1583	1585	1612	1623	1669	1726	1803	1876	1914	1929
15	1505	1506	1506	1529	1538	1579	1637	1744	1849	1932	1967
17.5	1455	1454	1456	1470	1477	1512	1561	1668	1806	1942	2010
20	1425	1425	1427	1435	1442	1466	1511	1603	1766	1956	2059
22.5	1407	1407	1408	1413	1418	1437	1476	1570	1760	2002	2144
25	1394	1394	1392	1397	1402	1422	1453	1556	1787	2097	2284
27.5	1382	1383	1382	1387	1392	1409	1445	1556	1814	2187	2459
30	1357	1359	1363	1374	1381	1408	1462	1592	1830	2215	2583
32.5	1333	1333	1336	1348	1360	1413	1511	1653	1837	2179	2598
35	1325	1323	1324	1331	1341	1429	1576	1712	1817	2093	2594
37.5	1329	1326	1320	1329	1348	1478	1647	1750	1774	1985	2496
40	1354	1349	1333	1347	1373	1559	1726	1751	1723	1862	2319
42.5	1411	1403	1388	1395	1423	1631	1786	1730	1660	1735	2142
45	1446	1436	1430	1480	1514	1682	1787	1681	1604	1654	2045
47.5	1484	1469	1461	1565	1609	1751	1721	1620	1565	1599	1961
50	1654	1640	1607	1660	1698	1799	1679	1559	1536	1569	1901
52.5	1671	1662	1724	1890	1917	1799	1645	1522	1527	1564	1874
55	1800	1759	1703	1893	1967	1901	1615	1515	1531	1573	1834
57.5	2171	2135	2070	2128	2108	1912	1688	1532	1524	1557	1719
60	2515	2475	2529	2647	2586	2008	1746	1540	1475	1502	1609
62.5	2717	2685	2899	3084	3024	2431	1800	1568	1368	1389	1456
65	2490	2493	2919	3237	3231	2870	2060	1497	1256	1231	1328
67.5	1997	2011	2389	2767	2884	3072	2442	1529	1142	1094	1170
70	1488	1505	1821	2192	2330	2731	2579	1667	1052	897	878
72.5	851	875	1091	1525	1681	2110	2206	1780	932	659	681
75	402	415	530	860	966	1316	1494	1423	882	541	554
77.5	182	188	251	442	496	617	817	956	774	393	373
80	81	76	103	183	211	252	327	522	553	314	236
82.5	31	33	41	60	67	76	103	190	270	185	107
85	14	14	17	20	21	23	38	62	77	78	63
87.5	8	7	8	8	8	8	9	13	15	10	10
90	0	0	0	0	0	0	0	0	0	0	0

# RESULTS OF TESTS (cont'd)

	90	95	105	115	125	135	145	155	165	175	180
0	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910	1910
2.5	1905	1906	1903	1903	1904	1899	1897	1894	1899	1895	1898
5	1901	1899	1889	1876	1863	1845	1829	1817	1813	1806	1810
7.5	1895	1890	1865	1835	1807	1779	1753	1733	1724	1714	1715
10	1898	1887	1844	1796	1753	1711	1670	1640	1624	1612	1612
12.5	1920	1900	1827	1756	1695	1637	1587	1552	1535	1521	1520
15	1960	1933	1823	1720	1634	1563	1511	1464	1430	1407	1404
17.5	2006	1974	1836	1690	1575	1493	1415	1331	1267	1228	1223
20	2050	2003	1834	1660	1527	1409	1273	1146	1054	1003	995
22.5	2125	2055	1837	1629	1476	1292	1095	928	816	756	749
25	2244	2144	1870	1630	1417	1150	896	703	582	520	513
27.5	2410	2259	1925	1658	1356	992	708	493	374	323	314
30	2529	2343	1965	1678	1276	849	536	323	238	205	199
32.5	2549	2363	1970	1651	1165	705	403	223	166	148	143
35	2542	2348	1935	1547	1021	551	331	188	136	128	124
37.5	2476	2295	1868	1400	849	430	299	200	129	121	119
40	2338	2183	1768	1225	672	360	306	228	138	119	121
42.5	2177	2042	1647	1029	472	344	294	232	143	118	123
45	2084	1956	1533	831	324	353	251	186	146	115	122
47.5	1996	1881	1416	654	257	321	224	190	149	101	107
50	1934	1822	1294	501	235	260	214	178	120	69	71
52.5	1908	1781	1185	384	208	226	182	137	66	34	35
55	1883	1752	1097	324	179	209	122	100	50	31	36
57.5	1783	1668	1002	305	155	164	76	77	53	36	40
60	1655	1537	877	296	139	100	63	72	47	39	39
62.5	1472	1347	733	287	118	74	76	61	46	39	39
65	1317	1182	579	268	96	82	81	58	43	35	35
67.5	1164	1016	431	212	76	77	70	47	35	29	29
70	878	766	297	130	71	66	64	41	27	22	21
72.5	678	547	198	73	70	60	49	32	18	16	15
75	527	387	135	66	61	44	28	20	13	11	11
77.5	358	248	96	61	51	31	16	13	10	9	9
80	208	148	45	59	33	18	11	9	8	8	7
82.5	96	76	24	38	16	17	9	7	6	7	7
85	51	29	11	16	9	13	8	6	6	6	6
87.5	8	6	5	5	5	5	5	5	4	4	5
90	0	0	0	0	0	0	0	0	0	0	0

RESULTS OF TESTS (cont'd)

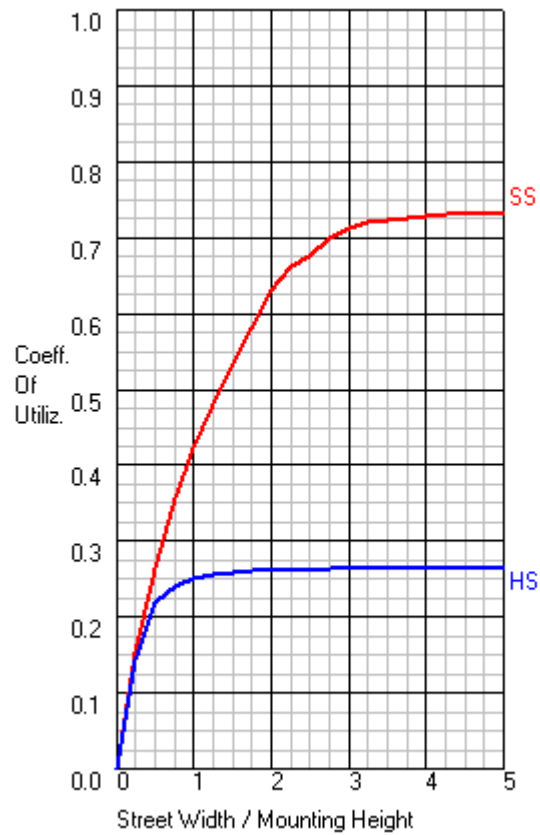
Polar Candela Distribution:





## RESULTS OF TESTS (cont'd)

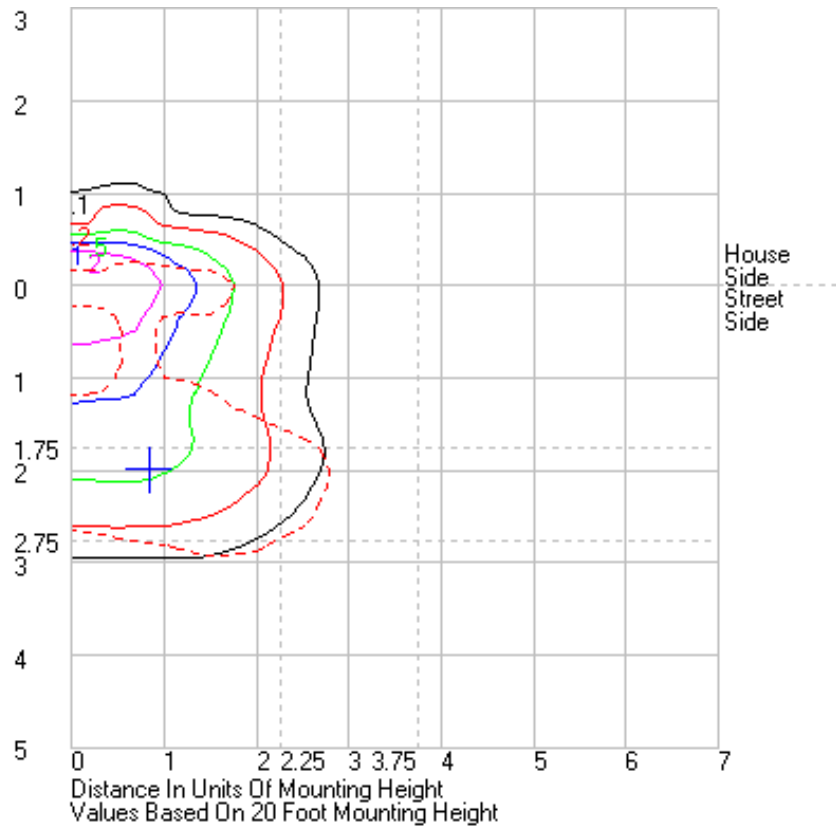
### CU Graph:



### Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	4196.3	73.5
Downward House Side	1510.6	26.5
Downward Total	5706.9	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	5706.9	100.0

Isolines:







Testing By:

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David Ellis

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Lighting Division

Attachment: None