



REPORT

LSI INDUSTRIES, INC. 10000 ALLIANCE ROAD CINCINNATI, OH 45242

Project No.: G101225483
Client Ref. No.: PH-0471

Date: March 27, 2014

REPORT NO. 101225483CHI-159

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XGBM 5 LED LW NW

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 500477014.

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
ANSI C82.77-2002: Harmonic Emission Limits (Power Factor and THD-A)

DESCRIPTION OF SAMPLE: The submitted test sample was representative of a current production sample and was received in good condition.

DATE OF TEST: March 22, 2014

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SUMMARY:

Model No.:
XGBM 5 LED LW NW
Description: 128 LED luminaire with square die-formed aluminum housing and sealed optical grade flat glass lens, specular reflector, and LED driver delivering 350mA per LED.

<u>Criteria</u>	<u>Result</u>
Total Lumen Output	11291
Input Voltage (V)	120.0
Total Power (W)	136.0
Luminaire Efficacy	83
Power Factor	0.995
Driver Output Current (A)	0.349
THD _A	9.9%

Additional Reporting

Test Room Ambient Conditions 24.5°C and 20.3% RH
Total Luminaire Stabilization Time 71 Minutes

Measurement uncertainty budgets have been determined for applicable test methods and are available upon request.

EQUIPMENT LIST

<u>Equipment Used</u>	<u>Equipment #</u>	<u>Cal. Due Date</u>
Elgar CW1251P-V AC Power Source 0-300V	0943A02235	VBV
Yokogawa WT-230 Power Analyzer	91KA35031	12/31/2014
High Speed Moving Mirror Goniophotometer	NA	VBV
General DTH04 Temperature/Humidity	25223-01	4/30/2014

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

Model No.:
XGBM 5 LED LW NW

Photometric and Electrical Measurements – Distribution Method

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)
ITK5321	Horizontal	120.0	1.139	136.0	0.995	11291	83

Characteristics

IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	11291
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	136
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Max. Cd.	3577 (45H, 47.5V)
Max. Cd. (<90 Vert.)	3577 (45H, 47.5V)
Max. Cd. (At 90 Deg. Vert.)	0 (0.0%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	733 (6.5%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS Zone	Lumens	%Lamp	%Lum
FL (0-30)	642.9	N.A.	5.7
FM (30-60)	2918.9	N.A.	25.9
FH (60-80)	1996.4	N.A.	17.7
FVH (80-90)	87.5	N.A.	0.8
BL (0-30)	642.9	N.A.	5.7
BM (30-60)	2918.9	N.A.	25.9
BH (60-80)	1996.4	N.A.	17.7
BVH (80-90)	87.5	N.A.	0.8
UL (90-100)	0.0	N.A.	0.0
UH (100-180)	0.0	N.A.	0.0
Total	11291.4	N.A.	100.0

BUG Rating B3-U0-G2



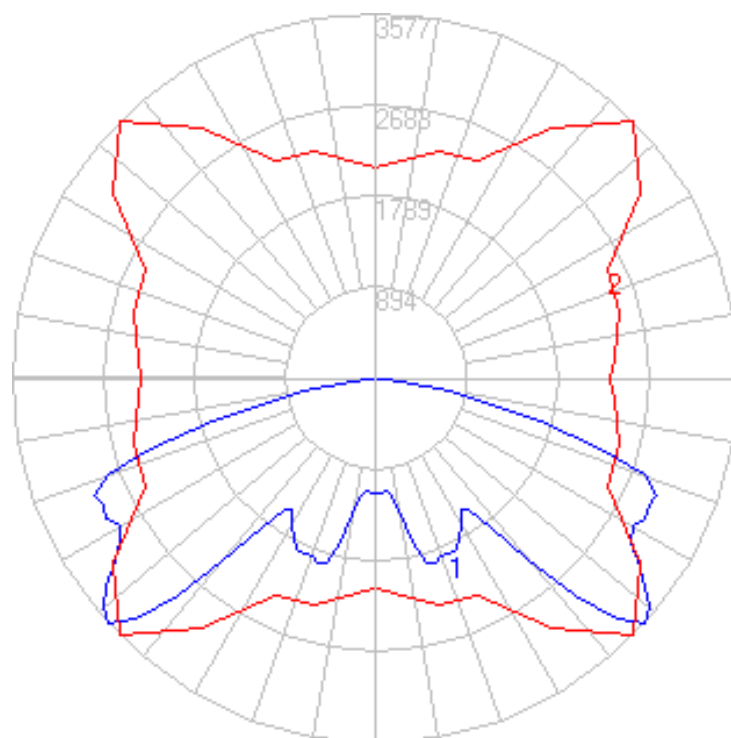
RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	35	45	55	65	75	85	90
0	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140	1140
2.5	1144	1141	1142	1141	1139	1138	1135	1138	1141	1144	1146
5	1120	1120	1123	1123	1119	1117	1113	1123	1130	1137	1140
7.5	1246	1249	1247	1232	1208	1154	1131	1133	1137	1148	1153
10	1401	1409	1431	1428	1401	1351	1273	1187	1166	1166	1171
12.5	1413	1428	1471	1520	1649	1662	1533	1328	1182	1149	1148
15	1367	1384	1434	1598	1808	1873	1770	1449	1160	1098	1094
17.5	1437	1449	1491	1667	1807	1917	1859	1582	1222	1114	1112
20	1408	1427	1509	1757	1890	1856	1897	1712	1298	1114	1106
22.5	1357	1369	1469	1738	1847	1869	1853	1755	1355	1125	1134
25	1356	1366	1445	1649	1799	1852	1790	1741	1440	1167	1179
27.5	1470	1460	1536	1577	1677	1768	1757	1713	1576	1327	1349
30	1751	1728	1817	1682	1603	1665	1702	1740	1793	1550	1569
32.5	2120	2116	2168	1966	1670	1541	1686	1946	2121	1897	1915
35	2448	2453	2508	2325	1919	1588	1834	2240	2419	2176	2196
37.5	2664	2663	2742	2633	2225	1855	2031	2463	2624	2334	2343
40	2647	2648	2749	2797	2546	2353	2289	2567	2635	2322	2313
42.5	2543	2545	2607	2710	2838	2891	2548	2549	2525	2245	2227
45	2423	2444	2509	2576	3019	3341	2790	2445	2394	2169	2133
47.5	2310	2353	2477	2520	3164	3577	3009	2366	2315	2120	2064
50	2255	2308	2437	2564	3290	3518	3182	2352	2251	2124	2064
52.5	2299	2328	2370	2616	3327	3342	3268	2465	2241	2218	2136
55	2332	2370	2369	2807	3249	3148	3234	2769	2290	2281	2178
57.5	2390	2453	2369	3052	3166	2986	3177	3012	2321	2326	2227
60	2507	2543	2578	3196	3136	2913	3089	3115	2384	2350	2248
62.5	2432	2483	2701	3291	3084	2994	2930	3095	2396	2230	2111
65	2136	2217	2618	3129	3129	2967	2828	2810	2336	2069	1925
67.5	1825	1929	2479	2734	3078	3000	2661	2451	2265	1838	1713
70	1283	1404	2064	2325	2743	2806	2466	2088	1965	1351	1264
72.5	984	1052	1577	1777	2256	2330	2173	1590	1562	949	923
75	826	887	1331	1505	1616	1669	1652	1307	1234	754	733
77.5	547	628	1069	1244	1180	1024	1161	1110	948	541	512
80	188	272	606	685	661	733	673	672	589	271	198
82.5	83	150	348	292	261	235	309	280	347	138	71
85	31	79	147	126	63	52	56	118	126	71	28
87.5	4	12	19	11	8	9	7	8	12	17	4
90	0	0	0	0	0	0	0	0	0	0	0

RESULTS OF TESTS (cont'd)

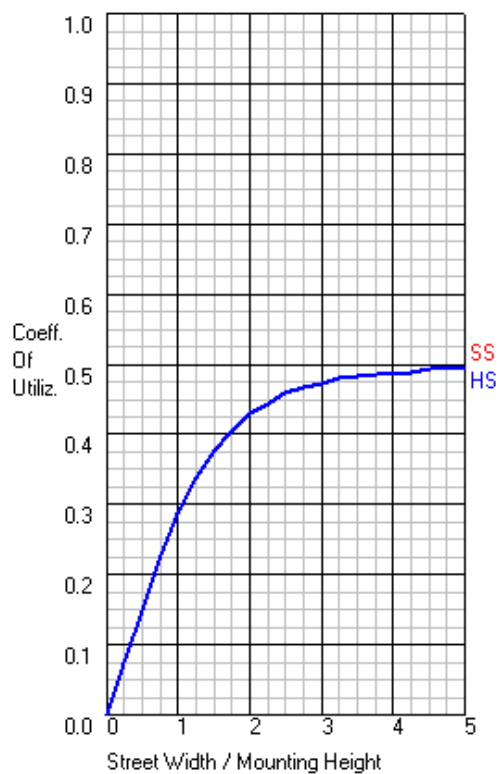
Polar Candela Distribution:





RESULTS OF TESTS (cont'd)

CU Graph:

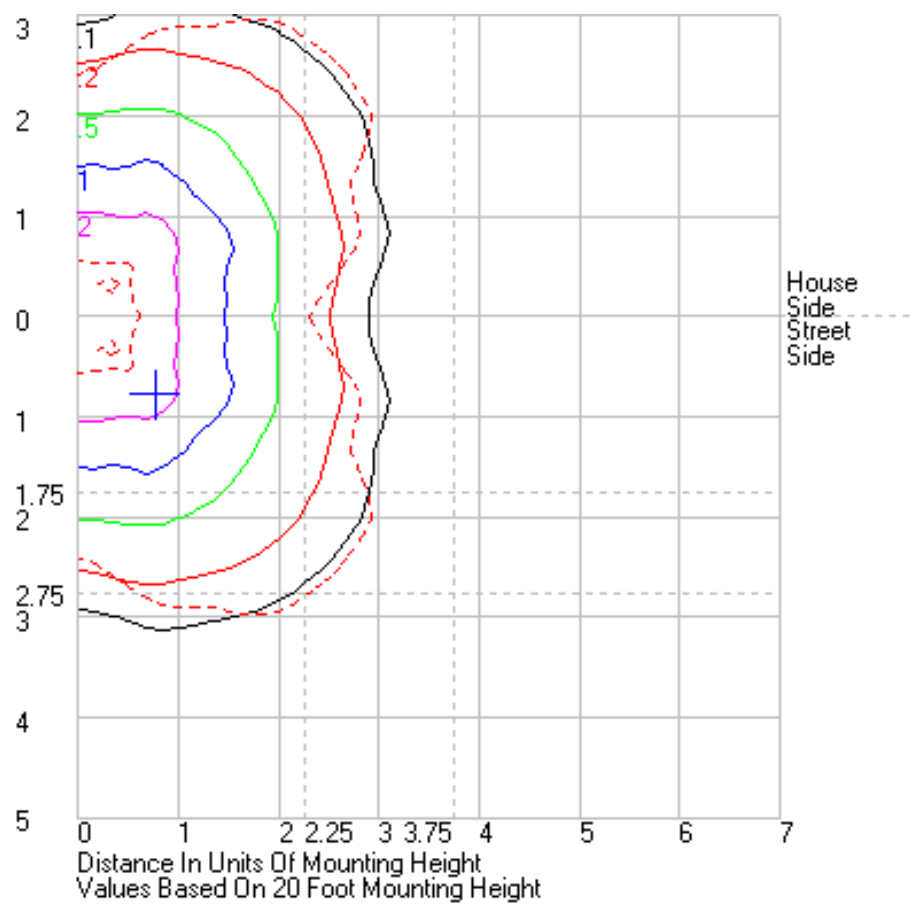


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	5645.7	50.0
Downward House Side	5645.7	50.0
Downward Total	11291.4	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	11291.4	100.0

RESULTS OF TESTS (cont'd)

Isolines:





PHOTOGRAPH(S)



Report Reviewed By:

Beverly Blake

A handwritten signature in black ink that reads "Beverly Blake".

LSI INDUSTRIES, INC.

Report Reviewed By:

Joe Schledorn

A handwritten signature in black ink that reads "Joe Schledorn".

Project Engineer
Lighting Division

Attachment: None