



REPORT

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

Project No.: G101225483
Client Ref. No.: PH-0497

Date: April 24, 2014

REPORT NO. 101225483CHI-170

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XGBM 5 LED SS 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 500518865.

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 24, 2014

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SUMMARY:

Model No.:
XGBM 5 LED SS NW
Description: 176 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	15173
Input Voltage (V)	120.0
Total Power (W)	188.5
Luminaire Efficacy	80
Power Factor	0.994
Driver Output Current (A)	0.354
THD _A	9.9%

Additional Reporting

Test Room Ambient Conditions	24.1°C and 12.0% RH
Total Luminaire Stabilization Time	66 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	4/30/2015

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 SS 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)
ITK5328	Horizontal	120.0	1.580	188.5	0.994	15173	80

Characteristics

IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	15173
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	80
Total Luminaire Watts	188.5
Ballast Factor	1.00
Upward Waste Light Ratio	0.00
Max. Cd.	4920 (25H, 60V)
Max. Cd. (<90 Vert.)	4920 (25H, 60V)
Max. Cd. (At 90 Deg. Vert.)	0 (0.0%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	934 (6.2%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

LCS	Zone	Lumens	%Lamp	%Lum
FL	(0-30)	730.2	N.A.	4.8
FM	(30-60)	3998.9	N.A.	26.4
FH	(60-80)	2741.8	N.A.	18.1
FVH	(80-90)	115.4	N.A.	0.8
BL	(0-30)	730.2	N.A.	4.8
BM	(30-60)	3998.9	N.A.	26.4
BH	(60-80)	2741.8	N.A.	18.1
BVH	(80-90)	115.4	N.A.	0.8
UL	(90-100)	0.0	N.A.	0.0
UH	(100-180)	0.0	N.A.	0.0
Total		15172.6	N.A.	100.0

BUG Rating B4-U0-G2



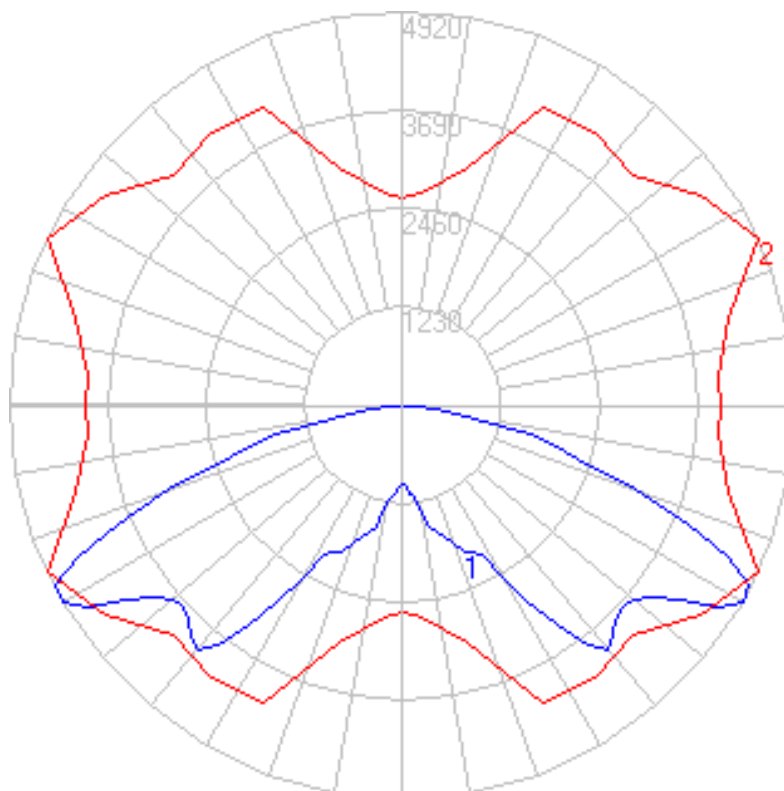
RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	5	15	25	35	45	55	65	75	85	90
0	1006	1006	1006	1006	1006	1006	1006	1006	1006	1006	1006
2.5	1017	1016	1017	1010	1011	1000	1005	1003	1003	1004	1005
5	1089	1088	1100	1113	1115	1106	1111	1084	1044	1020	1021
7.5	1068	1072	1123	1146	1165	1176	1182	1122	1072	1007	1001
10	1259	1272	1285	1296	1287	1215	1197	1194	1126	1045	1029
12.5	1525	1542	1550	1553	1475	1433	1334	1262	1178	1082	1055
15	1548	1561	1581	1640	1767	1840	1620	1364	1204	1091	1055
17.5	1656	1655	1668	1718	1926	2072	1880	1522	1274	1138	1104
20	1717	1708	1724	1870	2101	2141	2084	1672	1309	1182	1149
22.5	1785	1775	1787	1992	2243	2227	2087	1872	1389	1253	1216
25	1877	1852	1816	2013	2263	2252	2118	2022	1609	1463	1438
27.5	2131	2097	2033	2126	2173	2301	2195	2163	1837	1725	1713
30	2558	2546	2467	2469	2229	2252	2282	2351	2133	2016	1993
32.5	3032	3042	2971	2929	2518	2315	2451	2612	2469	2331	2296
35	3495	3497	3503	3375	2944	2555	2604	2921	2809	2572	2525
37.5	3725	3741	3816	3785	3465	2994	2845	3101	2992	2680	2620
40	3694	3728	3844	3998	3940	3564	3142	3146	3042	2678	2624
42.5	3537	3550	3669	3913	4300	4177	3469	3122	2971	2605	2537
45	3368	3368	3516	3783	4437	4665	3791	3108	2855	2474	2426
47.5	3242	3233	3436	3736	4451	4855	4095	3103	2779	2370	2348
50	3293	3252	3419	3772	4473	4783	4342	3152	2766	2356	2341
52.5	3481	3423	3508	3930	4454	4565	4451	3372	2781	2454	2417
55	3762	3715	3760	4255	4389	4309	4418	3729	2868	2583	2536
57.5	3906	3889	4015	4694	4435	4092	4322	4042	2955	2625	2570
60	3979	3975	4240	4920	4560	4076	4182	4109	3083	2661	2600
62.5	3745	3806	4266	4896	4583	4274	3954	4011	3156	2596	2505
65	3218	3310	3995	4506	4539	4390	3858	3683	3150	2450	2338
67.5	2609	2758	3555	3866	4313	4279	3795	3258	2982	2109	1960
70	1858	2041	2897	3115	3772	3878	3596	2673	2530	1579	1452
72.5	1356	1450	2132	2409	2992	3192	2950	2176	2023	1143	1039
75	1085	1156	1757	1995	2141	2197	2230	1843	1564	935	824
77.5	754	869	1410	1632	1515	1316	1511	1511	1204	714	588
80	261	372	780	912	823	934	832	871	782	374	240
82.5	118	213	443	391	333	340	358	363	441	200	97
85	51	118	192	156	85	64	71	128	157	102	45
87.5	19	36	43	29	25	24	24	23	31	35	21
90	0	0	0	0	0	0	0	0	0	0	0

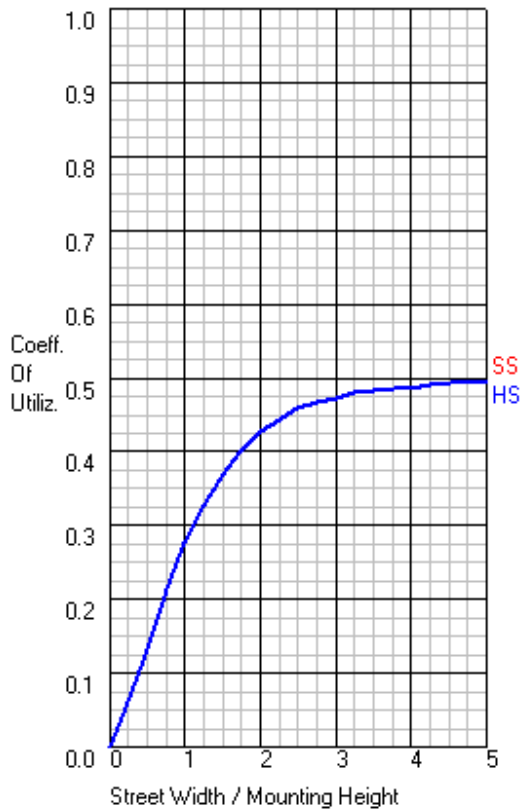
RESULTS OF TESTS (cont'd)

Polar Candela Distribution:



RESULTS OF TESTS (cont'd)

CU Graph:

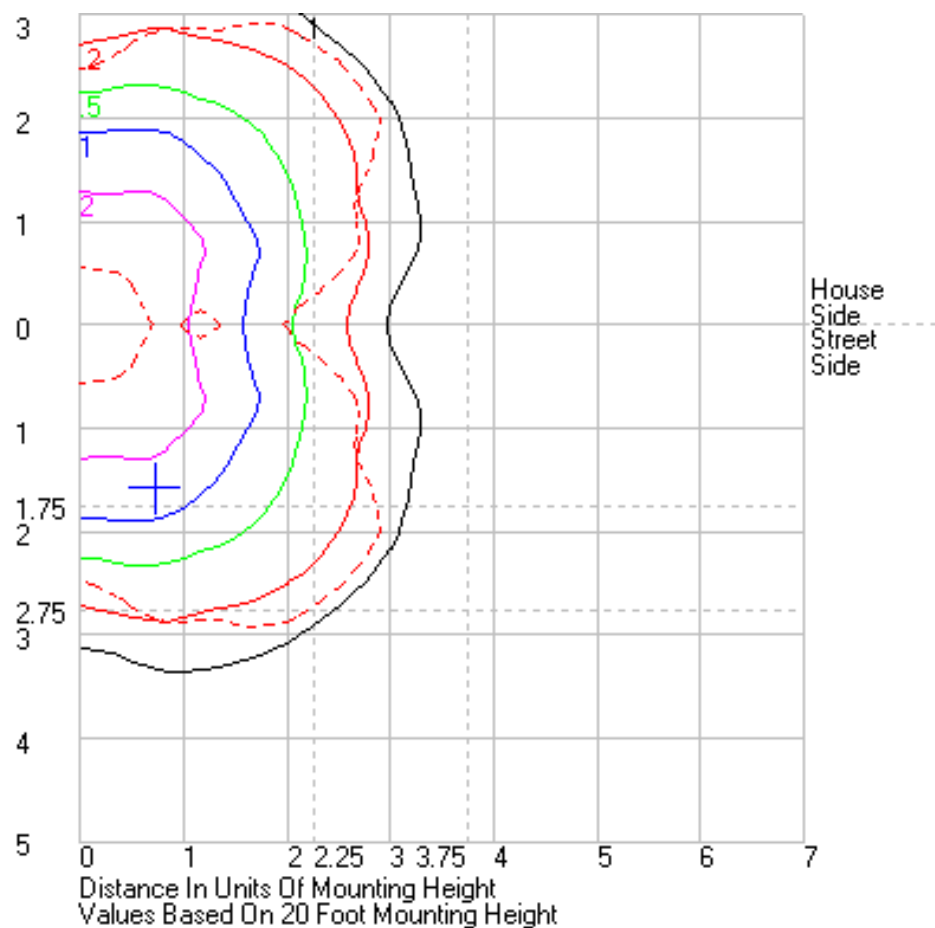


Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	7586.3	50.0
Downward House Side	7586.3	50.0
Downward Total	15172.6	100.0
Upward Street Side	0.0	0.0
Upward House Side	0.0	0.0
Upward Total	0.0	0.0
Total Flux	15172.6	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".

Engineering Team Lead
Lighting Division

Attachment: None