



REPORT
3933 US ROUTE 11 CORTLAND, NEW YORK 13045

Project No. G100639410
Client Ref. No. PH-0073

Date: March 31, 2012

REPORT NO. 100639410CRT-041

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

XBVRD ID LED 24 400 NW UE
XBVRF ID LED 24 400 NW UE

LED DRIVER: 400mA 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 500358206.

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: February 1, 2012

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SUMMARY:

Model No.: XBVRx ID LED 24 400 NW UE
Description: 24 LED Circular Optic Unit with Clear Round Glass Lens using 400mA Output Driver.

Criteria	Result
Total Lumen Output	1224
Input Voltage (V)	120.0
Total Power (W)	38
Luminaire Efficacy	32
Power Factor	0.992
Driver Output Current (A)	0.392
THD _A	8.8%

Additional Reporting

Test Room Ambient Conditions	25.7 C / 26% RH
Total Luminaire Stabilization Time	56 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	04/30/12

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

XBVRx ID LED 24 400 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)
ITK2042	Horizontal	120.0	0.318	38	0.992	1224	32

Characteristics

IES Classification	Type VS
Longitudinal Classification	Very Short
Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1224
Downward Total Efficiency	N.A.
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	32
Total Luminaire Watts	38
Ballast Factor	1.00
Upward Waste Light Ratio	0.02
Max. Cd.	567 (5H, 40V)
Max. Cd. (<90 Vert.)	567 (5H, 40V)
Max. Cd. (At 90 Deg. Vert.)	34 (2.8%Lum)
Max. Cd. (80 to <90 Deg. Vert.)	82 (6.7%Lum)
Cutoff Classification (deprecated)	N.A. (absolute)

Lum. Classification System (LCS)

<u>LCS Zone</u>	<u>Lumens</u>	<u>%Lamp</u>	<u>%Lum</u>
FL (0-30)	22.5	N.A.	1.8
FM (30-60)	407.4	N.A.	33.3
FH (60-80)	146.1	N.A.	11.9
FVH (80-90)	26.2	N.A.	2.1
BL (0-30)	22.5	N.A.	1.8
BM (30-60)	407.4	N.A.	33.3
BH (60-80)	146.1	N.A.	11.9
BVH (80-90)	26.2	N.A.	2.1
UL (90-100)	17.4	N.A.	1.4
UH (100-180)	2.1	N.A.	0.2
Total	1223.9	N.A.	100.0
BUG Rating	B1-U2-G1		

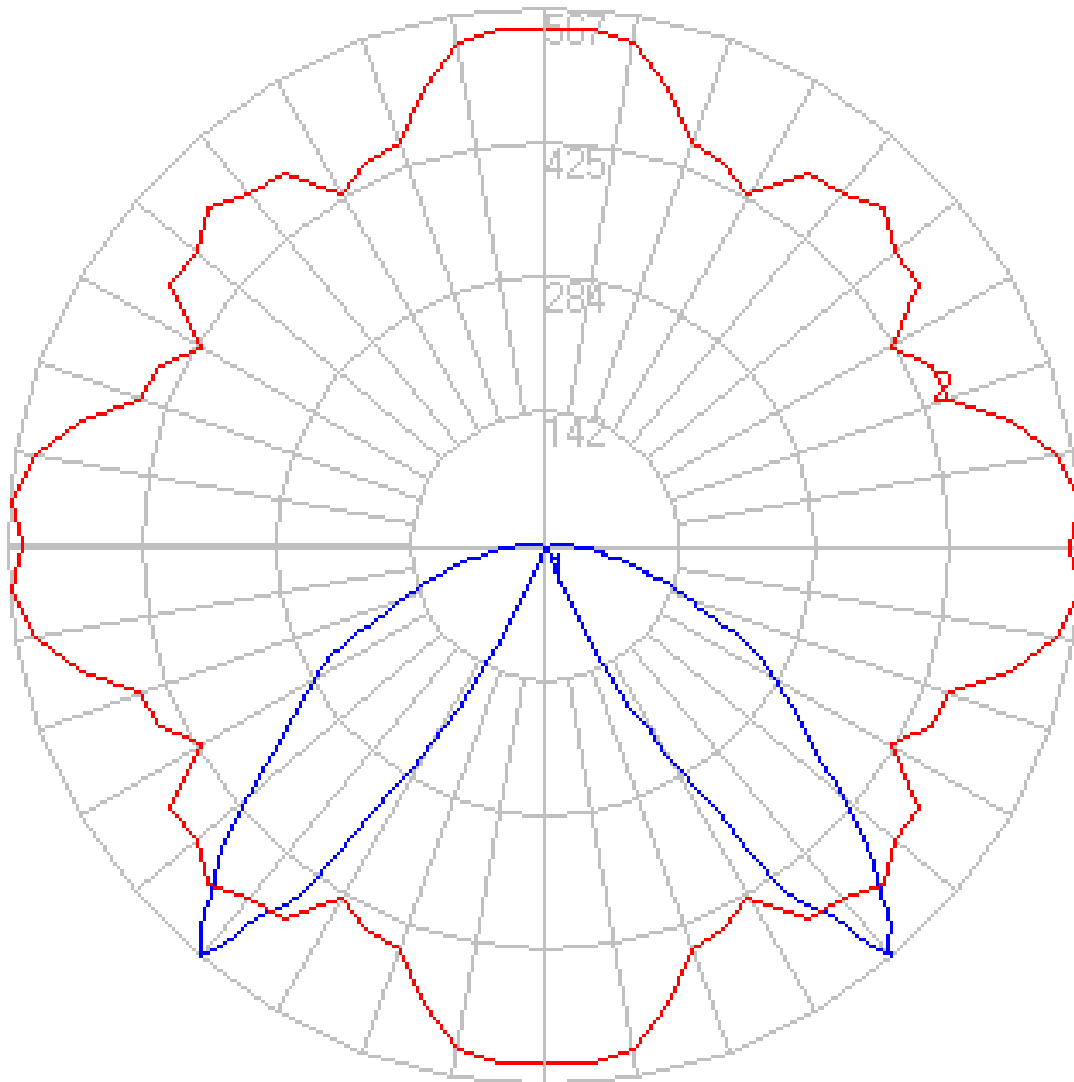


RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

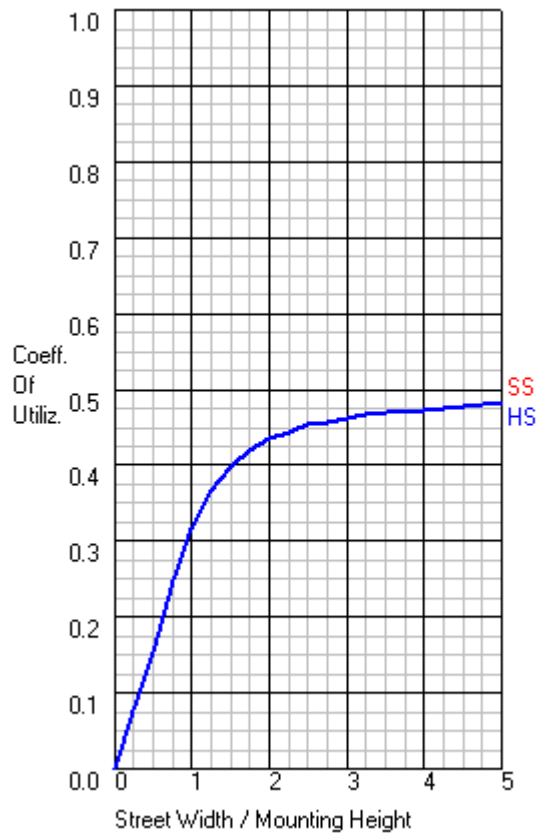
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0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1
15	1	1	1	2	2	2	2	1	1	1	1	1	2	2	1	2	1	2	2
20	2	2	2	2	2	2	2	1	2	2	2	2	2	2	2	2	2	2	2
25	83	82	80	81	76	69	68	70	54	52	51	61	75	77	78	79	78	77	81
30	257	254	245	215	208	208	189	214	198	209	192	222	214	220	212	215	235	261	277
35	438	443	414	390	348	350	335	375	362	371	367	373	348	352	344	386	410	429	435
40	552	567	548	508	455	450	420	483	480	506	487	482	429	447	453	500	538	548	545
45	505	495	466	423	376	383	367	428	419	441	416	430	376	376	376	416	459	489	490
50	431	409	383	347	309	314	316	363	356	380	350	358	311	314	314	344	379	399	401
55	347	332	299	274	247	253	259	295	283	297	281	298	258	255	254	276	302	328	338
60	286	280	243	225	203	208	217	246	228	244	226	245	213	205	209	230	252	278	289
65	222	222	205	189	173	163	164	194	185	198	185	188	161	157	166	187	203	216	218
70	157	155	142	133	121	115	119	129	132	145	138	135	119	117	129	141	152	160	160
75	115	113	113	106	99	90	91	99	100	104	102	99	89	88	100	108	111	114	116
80	82	77	76	70	69	61	57	61	70	68	71	63	59	62	70	72	77	77	78
85	58	53	50	47	47	41	38	40	41	40	42	41	39	43	49	48	50	53	53
90	33	33	32	32	32	30	26	25	24	24	25	25	26	29	31	32	33	34	34
95	15	15	16	16	16	14	13	12	12	12	13	12	13	14	15	16	16	16	16
100	10	10	10	10	10	10	9	8	7	7	8	8	9	9	10	10	10	10	11
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Polar Candela Distribution:



RESULTS OF TESTS (cont'd)

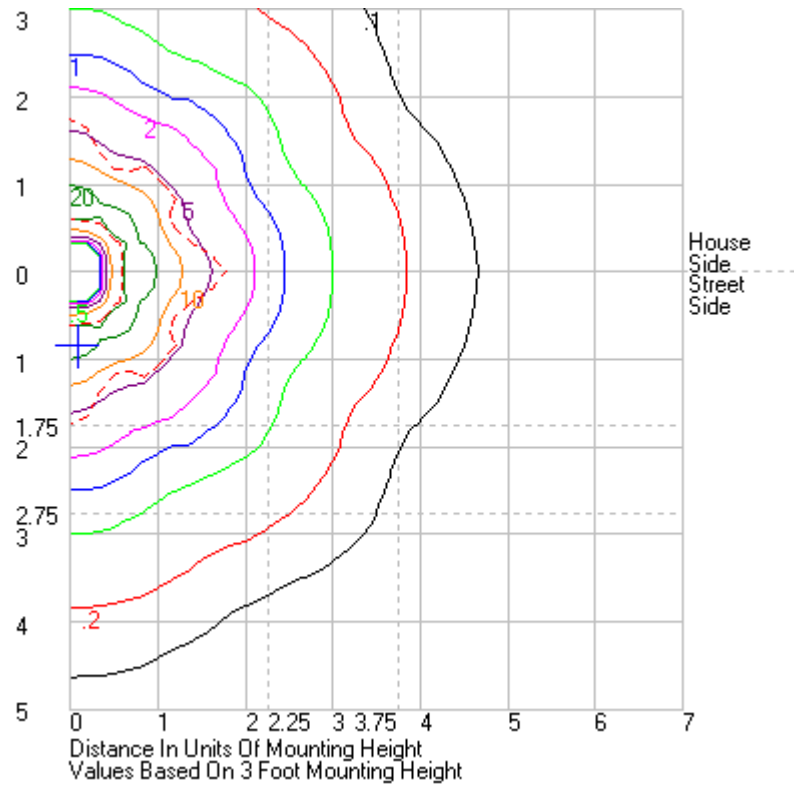
CU Graph:



Flux Distribution

	Lumens	Percent Of Luminaire
Downward Street Side	602.1	49.2
Downward House Side	602.1	49.2
Downward Total	1204.2	98.4
Upward Street Side	9.7	0.8
Upward House Side	9.7	0.8
Upward Total	19.4	1.6
Total Flux	1223.6	100.0

Isolines:





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Jeffery Davis

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Lighting Division

Attachment: None