



REPORT

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

Project No.: G101617355

Date: August 18, 2014

Client Ref. No.: PH-0530

REPORT NO. 101617355CHI-180

TEST OF ONE LED LUMINAIRE

FIXTURE CATALOG NO.

SLI22 LED SS NW **

LED DRIVER: 1040mA 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 03, 2014

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SUMMARY:

Model No.:
SLI22 LED SS NW **
Description: 2X2 luminaire comprised of a rolled steel housing with 96 LEDs and electronic driver delivering 86.7mA per LED.

<u>Criteria</u>	<u>Result</u>
Total Lumen Output	2408
Input Voltage (V)	120.0
Total Power (W)	29.0
Luminaire Efficacy	83
Power Factor	.989
Driver Output Current (A)	1.043
THD _A	10.0%

Additional Reporting

Test Room Ambient Conditions	24.4C and 10.0% RH
Total Luminaire Stabilization Time	37 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.:
SLI22 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)
ITK5227	Horizontal	120.0	0.245	29.0	.989	2408	83

Characteristics

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2408
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	29
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.32
Spacing Criterion (90-270)	1.36
Spacing Criterion (Diagonal)	1.50
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	2.00 ft
Luminous Width (90-270)	2.00 ft
Luminous Height	0.00 ft

Luminance Data (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1760	1863	1992
55	1776	2044	2259
65	1819	2347	2665
75	1922	2836	3469
85	2313	4010	8329

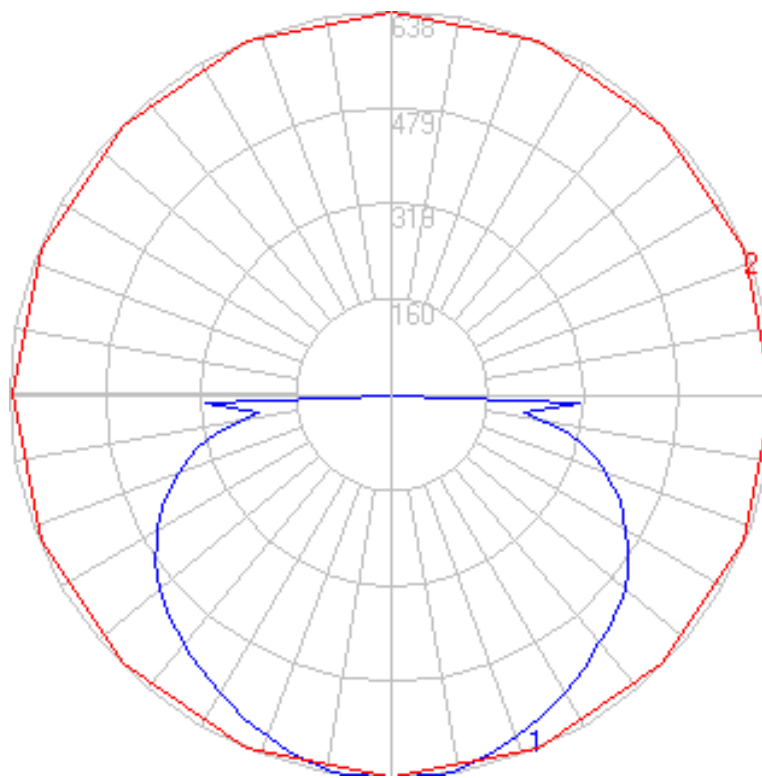
RESULTS OF TESTS (cont'd)

Intensity (Candlepower) Summary

	0	22.5	45	67.5	90
0	636	636	636	636	636
2.5	634	635	636	637	638
5	634	634	636	637	638
7.5	632	633	635	637	638
10	629	630	634	635	635
12.5	625	627	630	630	629
15	619	622	623	623	622
17.5	613	616	616	616	615
20	605	608	607	608	607
22.5	596	599	598	600	599
25	585	589	588	591	591
27.5	574	577	577	582	583
30	561	563	565	573	575
32.5	548	549	554	564	567
35	533	534	542	555	558
37.5	516	518	529	545	549
40	499	501	517	535	540
42.5	482	484	504	526	532
45	463	466	490	516	524
47.5	443	447	476	507	515
50	423	429	463	496	506
52.5	402	410	450	485	495
55	379	390	436	472	482
57.5	358	370	422	457	467
60	335	349	406	441	452
62.5	310	329	388	424	436
65	286	309	369	406	419
67.5	262	288	347	387	400
70	237	266	325	365	379
72.5	212	244	300	340	356
75	185	219	273	314	334
77.5	159	191	243	283	302
80	133	162	209	243	261
82.5	105	128	165	201	224
85	75	88	130	226	270
87.5	42	46	165	266	312
90	0	0	0	0	0

RESULTS OF TESTS (cont'd)

Polar Candela Distribution:



RESULTS OF TESTS (cont'd)

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-20	236.41	N.A.	9.80
0-30	508.21	N.A.	21.10
0-40	849.04	N.A.	35.30
0-60	1615.39	N.A.	67.10
0-80	2248.87	N.A.	93.40
0-90	2407.92	N.A.	100.00
10-90	2347.32	N.A.	97.50
20-40	612.63	N.A.	25.40
20-50	992.39	N.A.	41.20
40-70	1121.34	N.A.	46.60
60-80	633.48	N.A.	26.30
70-80	278.49	N.A.	11.60
80-90	159.05	N.A.	6.60
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2407.92	N.A.	100.00

Total Luminaire Efficiency = N.A.%

Zonal Lumen Summary

Zone	Lumens
0-10	60.60
10-20	175.81
20-30	271.80
30-40	340.83
40-50	379.76
50-60	386.59
60-70	354.99
70-80	278.49
80-90	159.05
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



RESULTS OF TESTS (cont'd)

Coefficients Of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	106	100	94	89	103	97	92	88	93	89	85	89	86	82	85	82	80	78
2	95	85	77	70	92	83	76	69	79	73	67	76	71	66	73	68	64	62
3	86	73	64	57	83	72	63	56	69	61	55	66	59	54	63	58	53	51
4	78	64	55	47	75	63	54	47	60	52	46	58	51	45	56	50	45	42
5	71	57	47	40	69	56	47	40	54	45	39	52	44	39	50	43	38	36
6	66	51	41	34	64	50	41	34	48	40	34	46	39	34	45	38	33	31
7	61	46	37	30	59	45	36	30	44	36	30	42	35	29	41	34	29	27
8	56	42	33	27	55	41	33	27	40	32	26	39	31	26	37	31	26	24
9	53	38	30	24	51	38	29	24	37	29	24	35	28	23	34	28	23	21
10	49	35	27	21	48	35	27	21	34	26	21	33	26	21	32	26	21	19

PHOTOGRAPH(S)



Report Reviewed By:

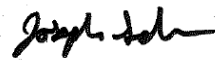
Beverly Blake



LSI INDUSTRIES, INC.

Report Reviewed By:

Joe Schledorn



Engineering Team Lead
Lighting Division

Attachment: None