



## LM-79-08 Test Report

For

# American Lighting Industry Corp

(Brand Name: ASTRE LIGHTS)

7 Scouting Blvd Medford, NY 11763 United States

## Model name(s):

**ALI-SL0815-150W-H3-XXK-TP(XXX)**

**Report Type:** Testing and Report According to IES LM-79-2008

**Type of Luminaire:** Outdoor Pole/Arm-Mounted Area and Roadway Luminaires

**Report Date:** 2022-09-19  
Ningbo TengLi Testing Co., Ltd

**Prepared By:** 2nd floor, Block B, Ningbo Testing and Certification Base,  
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Ningbo, Zhejiang

Test & Report By:

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Engineer: Nick Song

Review By:

*Garman Mo*

Manager: Garman Mo

Note: 1. The results contained in this report pertain only to the tested samples  
2. This report does not imply product certification, approval, or endorsement by A2LA, or any agency of the Federal Government.



<b>1.1 Product Information:</b>		
Model Number	ALI-SL0815-150W-H3-XXK-TP(XXX)	
Remark	Where "XX" can be 40/50/57/65, denote CCT (e.g. 40K=4000K, 50K=5000K, 57K=5700K, 65K=6500K); The "XXX" can be Blank;(PIR);(PTC);(MS);(PIP);(MSP);(PR);(PSC);(BT). Blank=no sensor function; PIR=PIR sensor; PTC=Photocontrol; MS=motion sensor; PIP=PIR sensor and Photocontrol; MSP= motion sensor and Photocontrol; PR= PR Motion Sensor; PSC= Photocontrol socket and shorting cap; BT=Bluetooth Motion sensor;	
Representative (Tested) Model	ALI-SL0815-150W-H3-40K-TP ALI-SL0815-150W-H3-65K-TP	
Model Difference	All construction and rating are the same, except CCT.	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	
LED Manufacturer	Bridgelux Inc.	
LED Model	BXEN-40E-13H-9CP BXEN-65E-13H-9CP	
Dimming	Continuous	
Integral Controls	Yes	
Sample Number	JAE220802-A1(4000K), A2(6500K)	
Date of Receipt	Aug,01,2022	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

<b>1.2 Rated Values:</b>	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz
Nominal Power	70/100/150W
Rated Initial Lamp Lumen	--
Declared CCT	4000K,5000K,5700K, 6500K



### 1.3 Test Specifications:

Test item	<ol style="list-style-type: none"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> </ol>

### 1.4 Test Methods

#### 1) Photometric and Light Distribution Measurement – Goniophotometer Method:

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ , measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at  $1\text{ }^{\circ}$  vertical intervals and  $22.5\text{ }^{\circ}$  horizontal intervals.

#### 2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.

#### 3) Electrical Measurements:

Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.



**2.1 Summary of Test Result**

Criteria Item	Measured Value		Compliance	Requirement (DLC V5.1)	
Minimum Total Luminous	18125		Pass	≥1000(-10%)	
Minimum Luminous Efficacy	122.23		Pass	Standard: ≥105(-3%)	Premium: ≥120(-3%)
Minimum Power Factor	0.9105		Pass	≥0.9(-3%)	
Maximum THD %	8.90		Pass	≤20(+5)	
Minimum CRI	85.7		Pass	≥70(-1)	
Minimum R9	21		Pass	≥-40(-1)	
Minimum Rg	94		Pass	≥89(-1)	
Minimum Rf	84		Pass	≥70(-1)	
Rcs, h1%	-12		Pass	-18%-23%(-1%)	
CCT (K)	4000K	4012	Pass	≤6500K	
	6500K	6947			
Zonal Lumen Requirement	0-90 °	99.6	Pass	≥100 (-1)	
	80-90 °	0.6	Pass	≤10 (+3)	
BUG	B3-U3-G3		Pass	--	



**2.2 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2022-08-03	<b>Test Ambient:</b>	25 ± 1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALI-SL0815-150W-H3-40K-TP	<b>Total Operating Time(min)</b>	75

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-	120.2	60	1.247	149.2	0.9949	3.26
A1	277.1	60	0.5775	145.7	0.9105	8.90

**Photometric Measurement – Goniophotometer Method(Test Distance: 26.00m):**

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	18235	18125
Luminous Efficacy (lm/W)	122.23	124.38
Zonal lumens in the 0-90 °zone (%)	99.6	--
Zonal lumens in the 80-90 °zone (%)	0.6	
Beam Angle (°)	102.0	--
Center Beam Candle Power (cd)	2774	--
BUG	B3-U3-G3	--



**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	2,652.6	14.5%
0-40	5,139.8	28.2%
0-60	13,399.2	73.5%
60-90	4,770.6	26.2%
70-100	1,296.5	7.1%
90-120	25.8	0.1%
0-90	18,169.8	99.6%
90-180	63.9	0.4%
0-180	18,233.7	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	268.7	1.5%	90-100	3.6	0%
10-20	844.2	4.6%	100-110	9.4	0.1%
20-30	1,539.8	8.4%	110-120	12.8	0.1%
30-40	2,487.2	13.6%	120-130	13.4	0.1%
40-50	3,715.0	20.4%	130-140	10.5	0.1%
50-60	4,544.4	24.9%	140-150	6.8	0%
60-70	3,477.7	19.1%	150-160	4.2	0%
70-80	1,179.2	6.5%	160-170	2.3	0%
80-90	113.7	0.6%	170-180	1.0	0%

**Photometric Data**

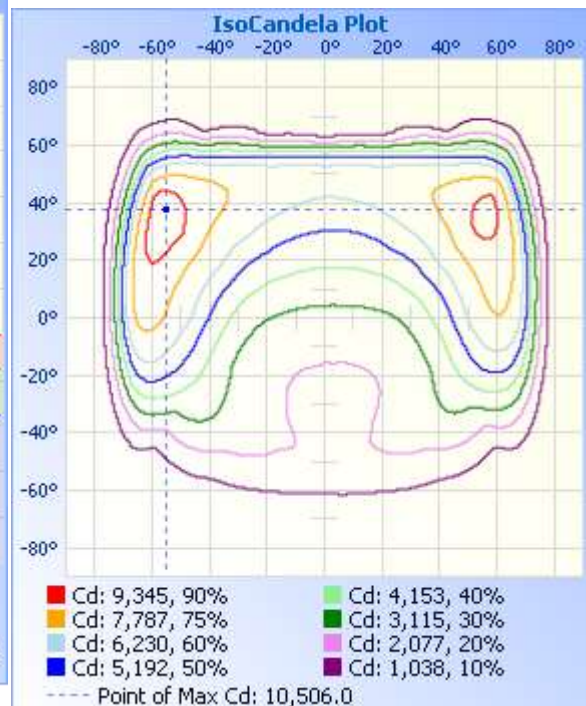
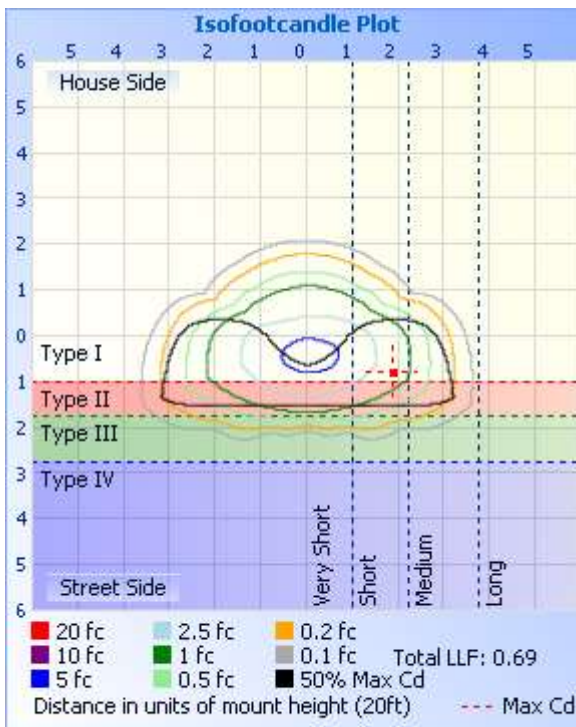
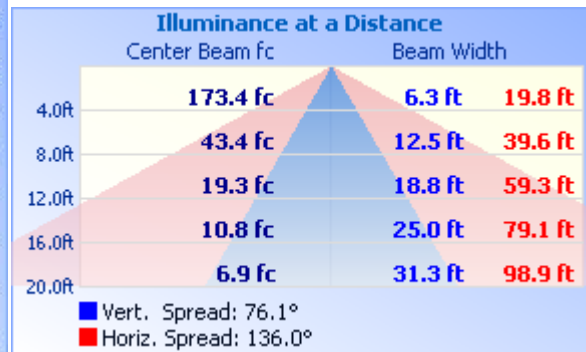
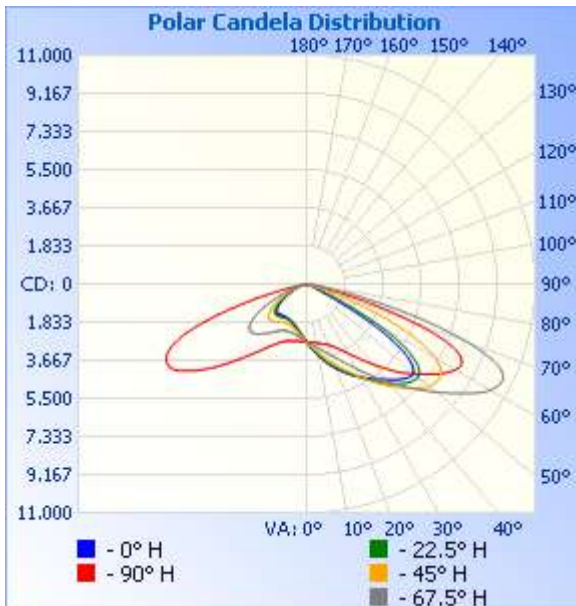




Table--1

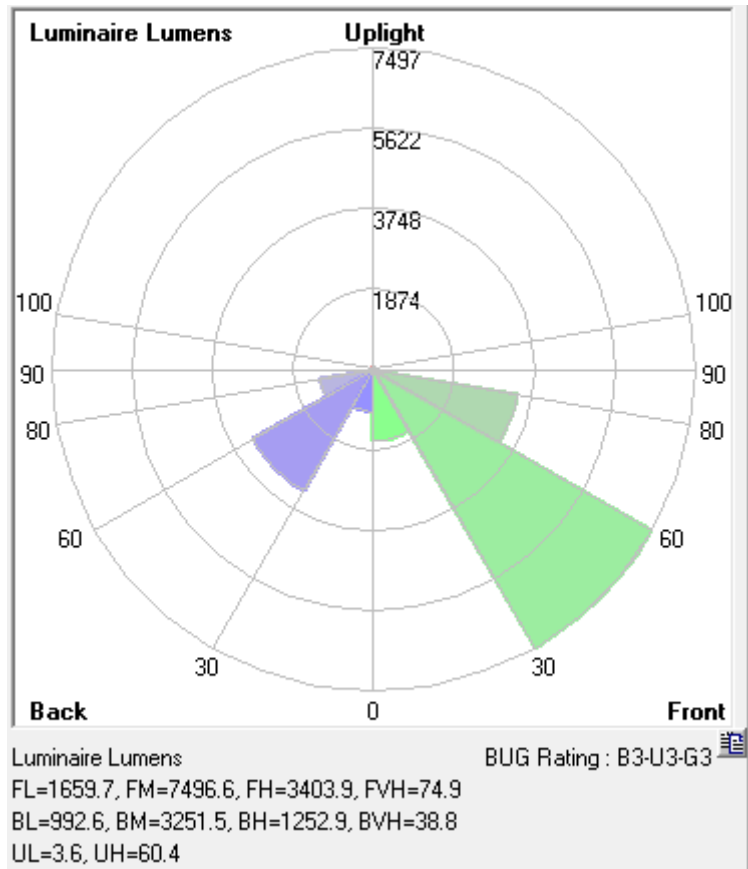
UNIT: X10ed

C (DEG) \ Q (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	
0	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	277	
5	277	291	303	310	313	312	304	292	279	266	257	249	247	249	255	264	
10	278	306	329	346	354	350	336	312	286	260	241	229	225	227	236	253	
15	282	325	362	384	395	391	372	338	297	256	231	215	208	211	222	245	
20	291	350	399	423	435	431	413	367	311	257	225	204	196	198	214	243	
25	310	385	440	463	475	474	458	411	338	265	224	199	189	191	210	246	
30	343	433	488	502	514	518	514	466	379	283	230	200	186	190	213	259	
35	391	493	546	554	557	569	577	534	435	310	241	205	188	195	223	280	
40	454	570	608	603	599	624	641	614	507	342	251	211	193	203	235	309	
45	539	661	678	653	645	672	708	705	589	371	257	213	198	207	245	338	
50	636	768	740	685	670	698	766	807	670	383	248	200	186	198	240	353	
55	727	883	766	634	574	636	783	915	755	359	212	166	153	166	207	332	
60	772	978	703	430	284	426	719	1020	825	289	155	120	110	121	153	263	
65	723	997	513	123	51.1	126	511	1044	817	178	93.8	75.6	71.9	77.2	96.0	165	
70	514	839	202	36.2	36.8	37.2	200	840	574	79.7	52.5	52.4	46.8	53.3	54.9	78.9	
75	201	425	33.5	30.4	29.7	31.3	35.3	405	203	33.8	33.8	37.7	29.2	37.1	34.9	35.3	
80	34.9	111	17.9	18.8	14.7	18.8	18.3	102	32.5	16.5	14.4	20.4	20.2	19.4	14.6	17.4	
85	6.97	23.4	9.92	5.15	4.66	5.49	10.4	21.3	7.81	4.94	4.66	6.66	7.47	6.68	4.47	4.86	
90	0.49	0.37	0.15	0.06	0.03	0.06	0.11	0.35	0.51	0.46	0.06	0.04	0.02	0.02	0.07	0.51	
95	1.04	0.23	0.10	0.05	0.01	0.03	0.07	0.18	0.65	1.01	0.18	0.03	0.01	0.02	0.19	1.02	
100	1.97	0.28	0.12	0.05	0.01	0.07	0.10	0.27	1.14	1.71	0.57	0.11	0.04	0.10	0.57	1.76	
105	2.67	0.62	0.29	0.13	0.14	0.15	0.27	0.59	1.71	2.18	1.14	0.39	0.23	0.41	1.16	2.32	
110	2.97	0.98	0.43	0.30	0.26	0.26	0.42	0.97	2.01	2.41	1.37	0.83	0.62	0.84	1.41	2.62	
115	2.99	1.24	0.56	0.30	0.36	0.35	0.59	1.21	2.00	2.52	1.53	0.96	1.00	1.01	1.55	2.61	
120	2.87	1.29	0.70	0.52	0.43	0.48	0.70	1.28	1.89	2.61	1.71	1.29	1.22	1.35	1.80	2.57	
125	2.70	1.39	0.71	0.65	0.67	0.71	0.71	1.31	1.88	2.61	1.69	1.52	1.59	1.61	1.83	2.62	
130	2.48	1.39	0.71	0.70	0.70	0.72	0.71	1.33	1.85	1.99	1.68	1.87	1.81	1.99	1.88	1.99	
135	1.91	1.15	0.72	0.70	0.70	0.73	0.72	1.06	1.43	1.55	1.61	1.87	1.89	2.04	1.75	1.73	
140	1.66	1.07	0.68	0.71	0.67	0.75	0.67	1.02	1.22	1.40	1.26	1.75	1.76	1.82	1.27	1.70	
145	1.44	0.86	0.65	0.73	0.62	0.72	0.58	0.87	1.05	1.22	1.12	1.43	1.54	1.46	1.25	1.43	
150	1.22	0.80	0.73	0.69	0.69	0.71	0.63	0.87	0.92	1.03	1.12	1.22	1.47	1.33	1.31	1.33	
155	0.96	0.77	0.85	0.69	0.69	0.67	0.70	0.86	0.71	0.83	0.99	0.97	1.11	1.11	1.10	1.07	
160	0.89	0.75	0.86	0.70	0.69	0.69	0.75	0.80	0.75	0.72	0.91	0.87	0.84	0.82	0.84	0.87	
165	0.89	0.75	0.87	0.72	0.72	0.71	0.88	0.78	0.75	0.73	0.83	0.75	0.76	0.74	0.71	0.83	
170	0.93	0.82	0.96	0.91	0.83	0.90	0.94	0.77	0.94	0.92	1.01	1.17	1.31	1.30	1.12	1.17	
175	1.00	0.96	0.99	1.00	1.07	1.00	0.99	0.85	0.99	1.00	1.00	1.13	1.27	1.33	1.09	1.15	
180	0.99	1.00	1.01	1.00	1.13	1.01	1.02	0.85	0.97	0.99	1.00	1.01	1.00	1.13	1.01	1.01	





**BUG**





**2.3 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2022-08-03	<b>Test Ambient:</b>	25 ± 1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALI-SL0815-150W-H3-40K-TP	<b>Total Operating Time(min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-	120.0	60	1.250	149.3	0.9956	2.98
A1	277.0	60	0.5777	145.8	0.9111	8.42

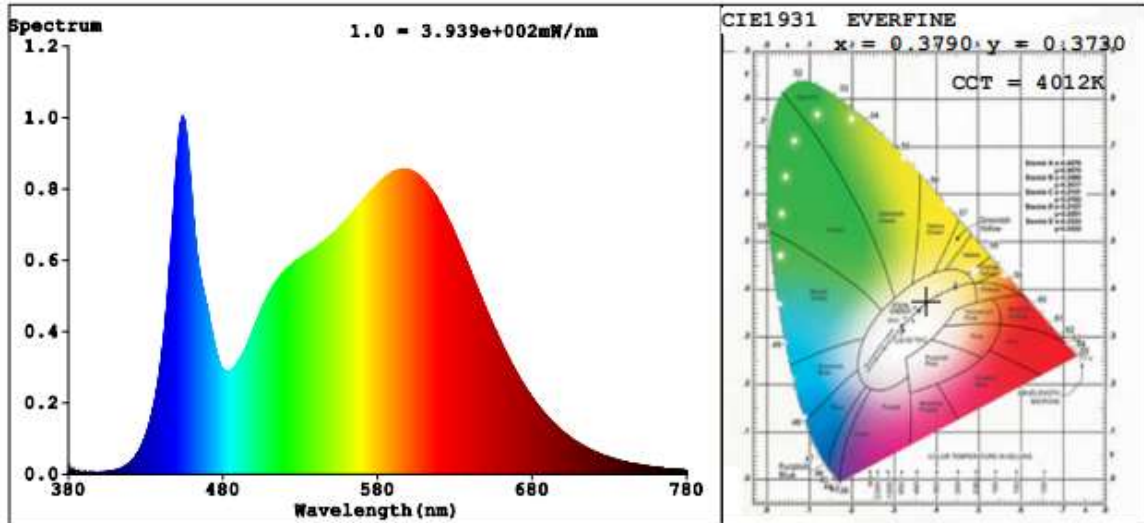
**Chromaticity Measurement - Sphere-Spectroradiometer  
 Method(Self-absorption:1.1638)(4π geometry):**

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	4012
Duv	-0.0013
Chromaticity (x, y)	x=0.3790 y=0.3730
Chromaticity (u', v')	u'=0.2256 v'=0.4997
Color Rendering Index (CRI)	85.8
R9	21
Rg	96
Rf	85
Rcs,h1	-11

**Photometric Measurement –Sphere-Spectroradiometer Method:**

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	18260	18150
Luminous Efficacy (lm/W)	122.30	124.49

**Spectral Power Distribution & Chromaticity Diagram**



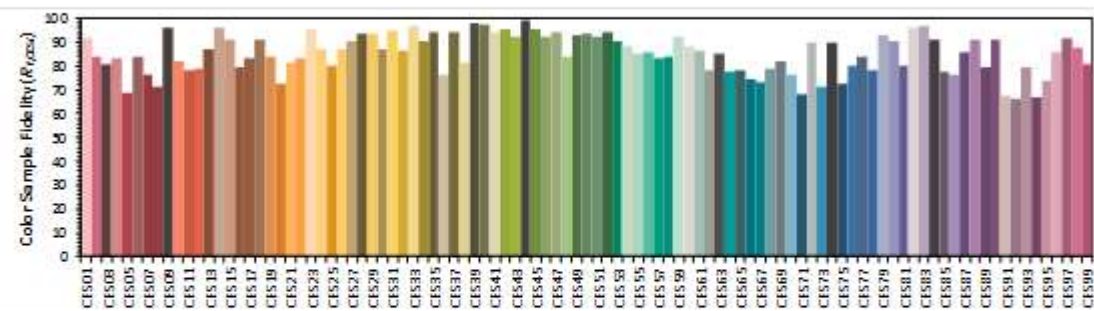
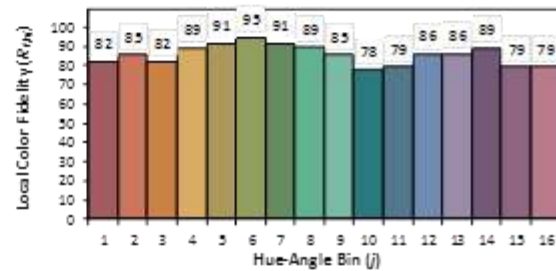
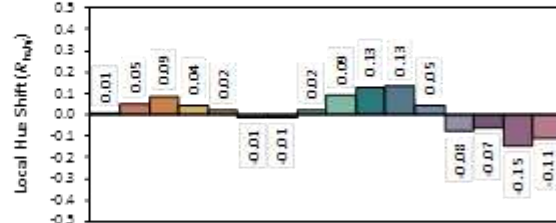
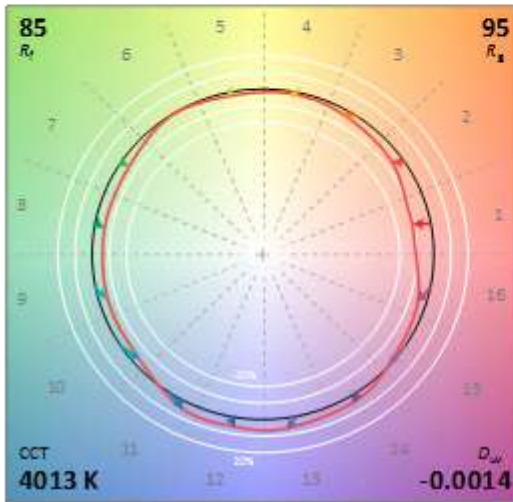
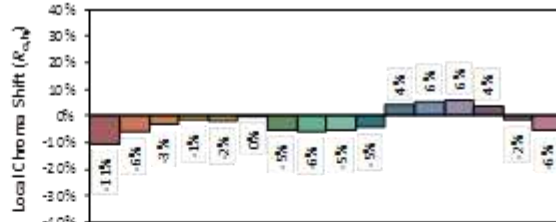
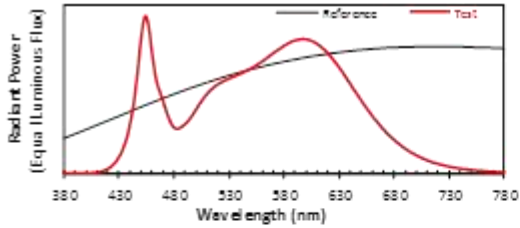
R1 =85	R2 =93	R3 =96	R4 =84	R5 =85	R6 =89	R7 =87
R8 =68	R9 =21	R10=82	R11=83	R12=65	R13=88	R14=98
						R15=80



**TM30**

**ANSI/IES TM-30-18 Color Rendition Report**

<b>Source:</b>	BXEN-40E-13H-9CP	<b>Manufacturer:</b>	American Lighting Industry Corp
<b>Date:</b>	2022-08-03	<b>Model:</b>	ALI-SL0815-150W-H3-40K-TP



**Notes:** This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3789  
 $y$  0.3728  
 $u'$  0.2257  
 $v'$  0.4996

CIE 13.3-1995 (CRI)	
$R_a$	86
$R_g$	22

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0



**2.4 Electrical, Photometric and Chromaticity Measurements**

<b>Test date</b>	2022-08-03	<b>Test Ambient:</b>	25 ± 1 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	60
<b>Model Number</b>	ALI-SL0815-150W-H3-65K-TP	<b>Total Operating Time(min)</b>	61

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-	120.0	60	1.248	149.1	0.9955	3.11
A2	277.0	60	0.5928	149.6	0.9110	8.63

**Chromaticity Measurement - Sphere-Spectroradiometer**

**Method(Self-absorption:1.1636)(4π geometry):**

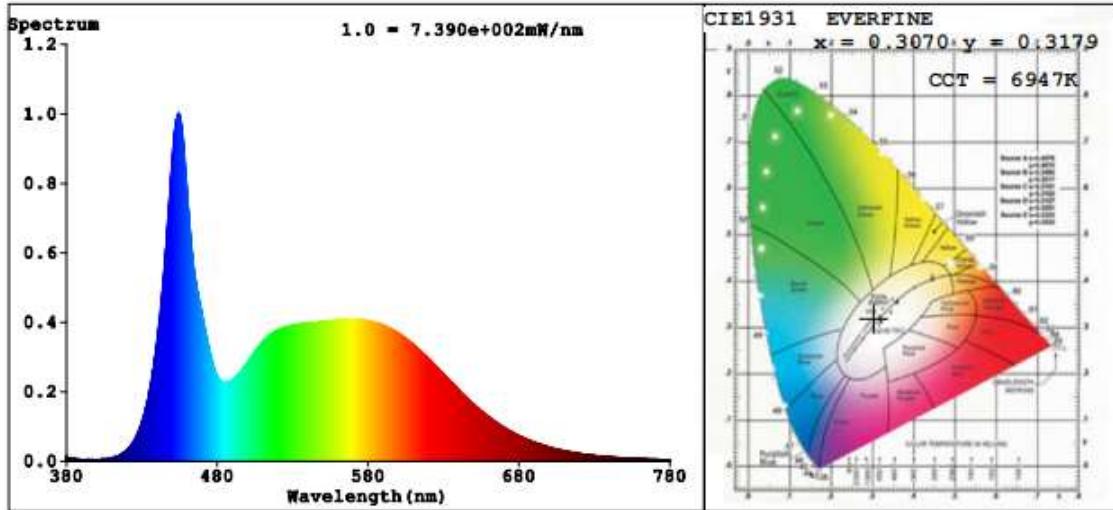
Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	6947
Duv	0.0004
Chromaticity (x, y)	x=0.3070 y=0.3179
Chromaticity (u', v')	u'=0.1980 v'=0.4614
Color Rendering Index (CRI)	85.7
R9	21
Rg	94
Rf	84
Rcs,h1	-12

**Photometric Measurement – Sphere-Spectroradiometer Method:**

Parameter	Result	
	Test Voltage (V)	120
Frequency (Hz)	60	60
Total Luminous (lm)	18715	18602
Luminous Efficacy (lm/W)	125.52	124.34



**Spectral Power Distribution & Chromaticity Diagram**



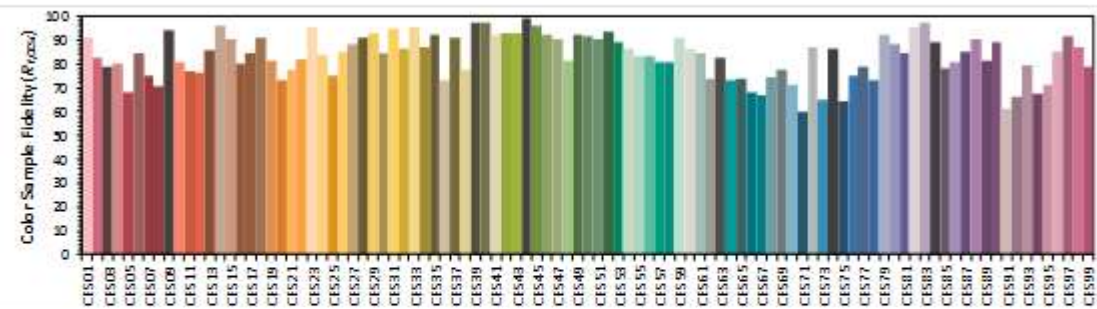
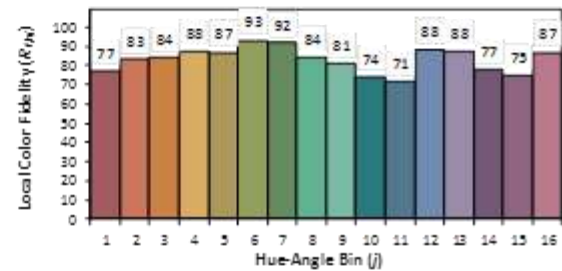
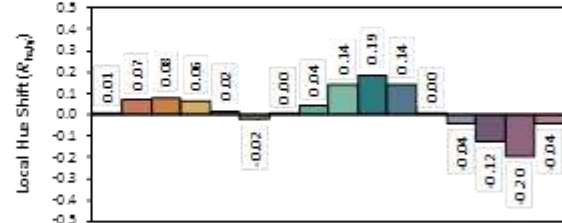
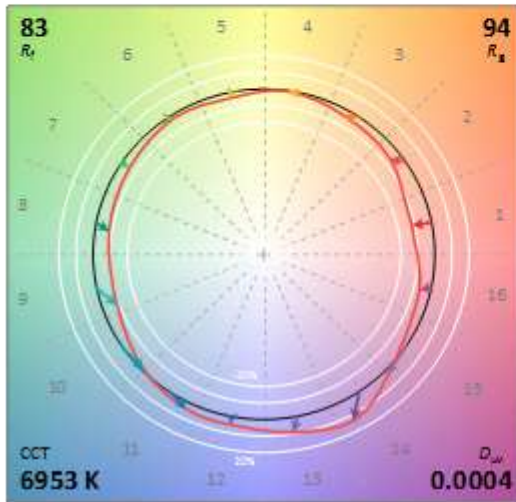
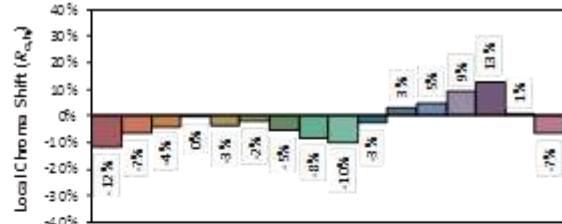
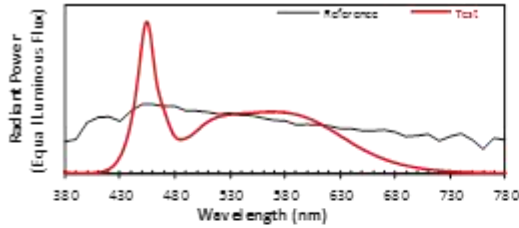
R1 =85	R2 =91	R3 =93	R4 =84	R5 =85	R6 =85	R7 =89		
R8 =74	R9 =21	R10=78	R11=84	R12=58	R13=88	R14=96	R15=82	



**TM30**

ANSI/IES TM-30-18 Color Rendition Report

Source:	BXEN-65E-13H-9CP	Manufacturer:	American Lighting Industry Corp
Date:	2022-08-03	Model:	ALI-SL0815-150W-H3-65K-TP



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.3069  
 y 0.3177  
 U' 0.1980  
 v' 0.4613

CIE 13.3-1995 (CRI)  
 R<sub>a</sub> 86  
 R<sub>g</sub> 22

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.0



**2.5 Performance Assessment:**

Model name	CCT(K)	Total Luminous (lm)	Power (W)	Luminous Efficacy (lm/W)
ALI-SL0815-150W-H3-40K-TP	4000K	18235	149.2	122.23
ALI-SL0815-150W-H3-50K-TP	5000K	18475 <sup>*1</sup>	149.2 <sup>*2</sup>	123.83 <sup>*3</sup>
ALI-SL0815-150W-H3-57K-TP	5700K	18595 <sup>*1</sup>	149.2 <sup>*2</sup>	124.63 <sup>*3</sup>
ALI-SL0815-150W-H3-65K-TP	6500K	18715	149.1	125.52

\*1: This value is calculated and the calculation formula is as below:

$$18475 = (18715 - 18235) / 4 * 2 + 18235$$

$$18595 = (18715 - 18235) / 4 * 3 + 18235$$

\*2: This value is calculated and the calculation formula is as below:

$$149.2 = (149.2 + 149.1) / 2$$

\*3: This value is calculated and the calculation formula is as below:

$$123.83 = 18475 / 149.2$$

$$124.63 = 18595 / 149.2$$





### 3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-702	2 meter Integrating Sphere	Verified by D204 standard lamp	
ST-R-701	Spectral analysis system HAAS-1200	Verified by D204 standard lamp	
ST-R-703	Standard Lamp D204	2022-01-14	2023-01-13
ST-R-704	Power Meter for Integrating Sphere	2022-01-03	2023-01-02
ST-R-707	Temperature Probe for Integrating Sphere	2022-01-03	2023-01-02
ST-R-714	Goniophotometer system	Verified by D908S standard lamp	
ST-R-710	Standard Lamp D908S	2022-01-14	2023-01-13
ST-R-711	Power Meter for Goniophotometer	2022-01-03	2023-01-02
ST-R-709	Hygrothermograph for Goniophotometer	2022-01-03	2023-01-02
Uncertainty(K=2): Photometric Measurement (Sphere):3.40% Chromaticity Measurement(Sphere):44.8K Photometric Measurement(Goniophotometer):3.64%			

#### 4. Product Photo



\*\*\*\*\* END OF REPORT \*\*\*\*\*