Ningbo TengLi Testing Co., Ltd

2nd floor, Block B, Ningbo Testing and Certification Base, No. 66
Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang
Tel: 86574-8783 6802
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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-SL0830-300W-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

Prepared By: Ningbo TengLi Testing Co., Ltd
2nd floor, Block B, Ningbo Testing and Certification Base, No. 66 Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang

Test & Report By:

Nick Song

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.

1.1 Product Information:		
Model Number	ALI-SL0815-300W-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-SL0815-300W-H3-40K-TP ALI-SL0815-300W-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-B1(4000K), B2(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

1.2 Rated Values:	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz
Nominal Power	200/240/300W
Rated Initial Lamp Lumen	--
Declared CCT	4000K,5000K,5700K, 6500K

1.3 Test Specifications:

Test item	1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source

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℃ ±1℃, 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 °vertical intervals and 22.5 °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 ºC ±1 ºC. 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 ºC ±1 ºC. 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	35591		Pass	>=1000(-10%)	
Minimum Luminous Efficacy	120.63		Pass	Standard: >= 105(-3%)	Premium: >= 120(-3%)
Minimum Power Factor	0.9436		Pass	>= 0.9(-3%)	
Maximum THD %	8.53		Pass	<= 20(+5)	
Minimum CRI	85.8		Pass	>= 70(-1)	
Minimum R9	22		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	3977	Pass	<=6500K	
	6500K	6920			
Zonal Lumen Requirement	0-90 °	99.6	Pass	>=100 (-1)	
	80-90 °	1.5	Pass	<=10 (+3)	
BUG	B4-U3-G4		Pass	--	

2.2 Electrical, Photometric and Chromaticity Measurements

Test date	2022-08-03	**Test Ambient:**	25±1 ℃
Test Orientation	As intended	**Stabilization Time (min)**	60
Model Number	ALI-SL0815-300W-H3-40K-TP	**Total Operating Time(min)**	75

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-B1	120.2	60	2.485	297.8	0.9975	2.54
	277.2	60	1.099	287.5	0.9439	8.09

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

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	35926	35591
Luminous Efficacy (lm/W)	120.63	123.82
Zonal lumens in the 0-90 °zone (%)	99.6	--
Zonal lumens in the 80-90 °zone (%)	1.5	
Beam Angle (°)	126.2	--
Center Beam Candle Power (cd)	7572	--
BUG	B4-U3-G4	--

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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	6,392.7	17.8%
0-40	11,241.9	31.3%
0-60	24,378.2	67.9%
60-90	11,412.7	31.8%
70-100	4,497.8	12.5%
90-120	58.5	0.2%
0-90	35,790.9	99.6%
90-180	132.4	0.4%
0-180	35,923.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	721.4	2.0%	90-100	13.5	0%
10-20	2,141.5	6.0%	100-110	20.9	0.1%
20-30	3,529.8	9.8%	110-120	24.1	0.1%
30-40	4,849.2	13.5%	120-130	23.5	0.1%
40-50	6,034.0	16.8%	130-140	18.9	0.1%
50-60	7,102.2	19.8%	140-150	13.6	0%
60-70	6,928.5	19.3%	150-160	9.6	0%
70-80	3,930.1	10.9%	160-170	5.7	0%
80-90	554.2	1.5%	170-180	2.4	0%

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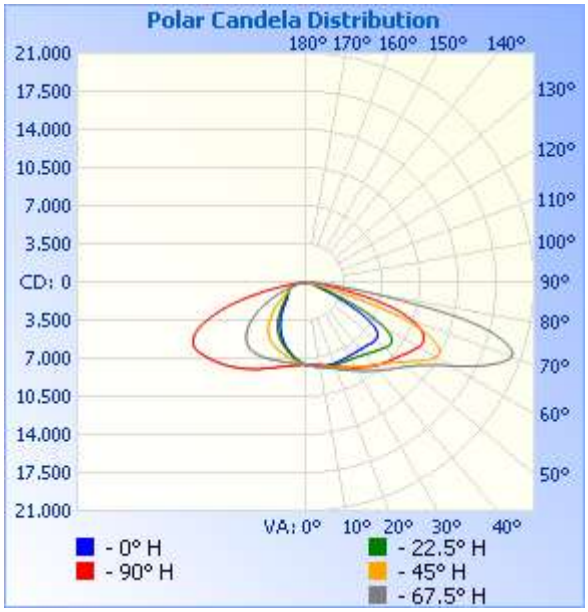
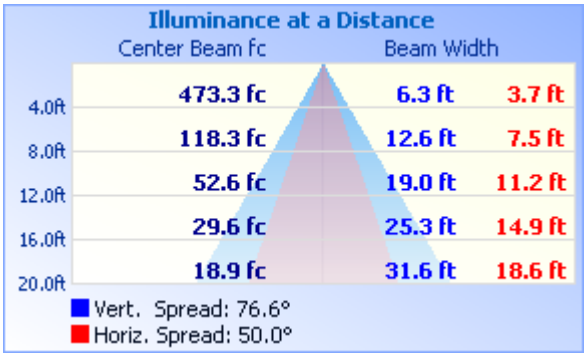
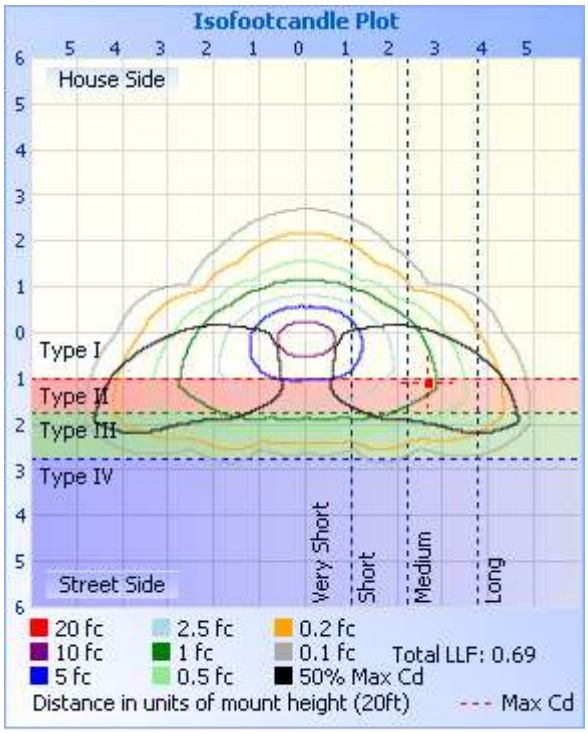
Photometric Data







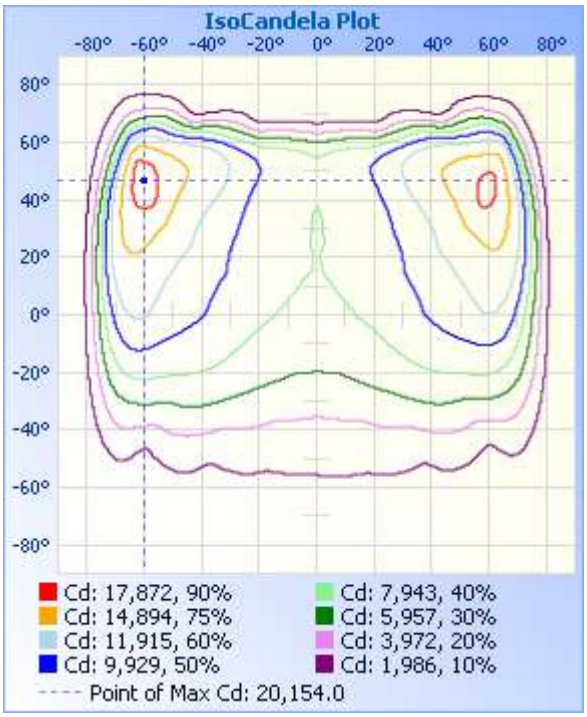


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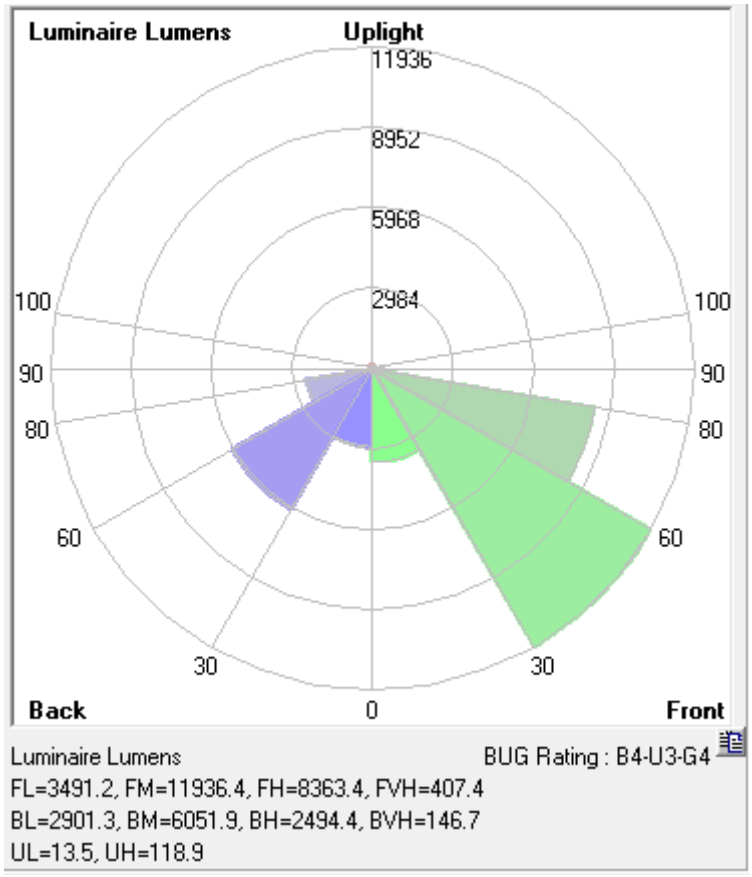
Table--1 UNIT: X10cd

C(DEG) / (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	757	757	757	757	757	757	757	757	757	757	757	757	757	757	757	757	
5	765	771	774	777	775	774	773	768	760	749	739	729	725	729	741	751	
10	779	789	793	788	787	786	789	785	771	745	718	694	684	691	722	754	
15	803	818	814	800	792	797	808	811	794	747	696	652	637	650	699	758	
20	835	856	840	809	792	804	833	846	825	759	675	609	586	608	679	765	
25	874	901	871	816	787	811	862	890	865	768	654	564	528	564	659	779	
30	922	954	906	826	788	822	897	941	908	783	629	507	466	509	632	793	
35	971	1014	951	845	789	835	942	996	951	794	593	444	396	443	592	800	
40	1018	1078	1006	873	800	863	990	1058	997	795	537	370	324	368	531	795	
45	1068	1154	1078	913	813	898	1054	1125	1039	774	460	302	263	299	450	768	
50	1115	1249	1176	960	832	942	1141	1207	1084	724	374	240	219	239	363	706	
55	1157	1387	1303	981	803	962	1263	1328	1136	637	281	201	199	204	274	606	
60	1184	1592	1415	845	616	841	1380	1532	1198	508	201	185	188	188	199	471	
65	1121	1832	1336	483	298	481	1322	1814	1198	352	158	167	170	169	161	316	
70	912	1907	920	136	109	137	895	2013	1058	182	131	138	143	139	132	164	
75	578	1592	240	90.9	77.2	92.3	231	1762	707	94.6	96.2	103	105	103	95.3	94.0	
80	207	689	61.2	52.8	44.7	52.1	64.7	731	251	58.7	59.5	62.9	53.9	61.1	57.6	57.9	
85	29.2	136	22.9	17.5	16.2	17.6	26.3	173	35.9	22.4	14.9	20.2	22.0	19.0	14.0	21.1	
90	2.04	1.76	0.77	0.38	0.33	0.37	0.64	1.94	2.00	2.23	0.60	0.29	0.26	0.29	0.67	2.58	
95	2.82	0.93	0.54	0.35	0.30	0.33	0.42	0.90	1.93	3.43	1.19	0.31	0.25	0.33	1.30	3.85	
100	3.78	0.95	0.50	0.40	0.40	0.40	0.41	0.90	2.50	4.13	2.23	0.62	0.42	0.65	2.36	4.49	
105	4.54	1.41	0.55	0.45	0.46	0.47	0.54	1.42	3.21	4.64	3.01	1.18	0.82	1.25	3.17	4.79	
110	4.99	1.97	0.71	0.55	0.58	0.55	0.75	2.08	3.71	5.22	2.80	1.66	1.36	1.71	2.95	5.40	
115	5.08	2.39	1.01	0.55	0.60	0.57	1.12	2.55	3.77	5.24	2.95	1.46	1.52	1.62	3.05	5.48	
120	4.82	2.61	1.29	0.81	0.65	0.79	1.39	2.80	3.55	5.10	3.48	1.93	1.55	2.03	3.31	4.93	
125	4.55	2.88	1.42	1.13	1.05	1.21	1.49	3.12	3.37	4.58	3.07	2.39	2.26	2.38	2.87	4.33	
130	4.40	2.96	1.44	1.33	1.24	1.41	1.71	3.16	3.51	3.47	2.70	2.77	2.44	2.68	2.87	3.39	
135	3.74	2.71	1.54	1.53	1.40	1.64	1.91	2.85	3.05	2.73	2.56	2.73	2.43	2.66	2.62	2.99	
140	3.57	2.64	1.55	1.66	1.49	1.69	1.76	2.80	2.93	2.87	1.88	2.26	2.09	2.16	1.84	3.18	
145	3.27	2.20	1.71	1.83	1.46	1.88	1.63	2.49	2.79	2.54	1.83	2.06	1.62	1.74	1.96	2.78	
150	2.93	2.05	2.09	1.88	1.90	2.03	1.99	2.42	2.45	2.37	2.19	2.21	1.67	1.74	2.36	2.40	
155	2.43	1.94	2.28	2.06	2.03	2.06	2.27	2.35	2.05	2.19	2.18	2.00	1.49	1.46	2.10	2.06	
160	2.34	1.72	2.29	2.17	2.11	2.14	2.27	2.12	1.97	2.08	1.93	1.98	1.61	1.42	1.79	1.97	
165	2.29	1.67	2.37	2.23	2.11	2.17	2.25	1.93	1.89	1.87	1.72	1.96	1.70	1.43	1.64	2.03	
170	2.45	1.98	2.76	2.48	2.24	2.44	2.56	2.03	2.38	2.34	2.04	2.85	2.72	2.44	2.40	2.80	
175	2.67	2.30	2.88	2.54	2.62	2.45	2.68	2.22	2.71	2.70	2.42	2.88	2.73	2.68	2.46	2.80	
180	2.53	2.38	2.74	2.47	2.69	2.33	2.71	2.25	2.59	2.57	2.36	2.73	2.46	2.64	2.34	2.68	

BUG


Luminaire Lumens
Uplight
11936
8952
5968
2984
100
100
90
90
80
80
60
60
30
30
0
Back
Front
Luminaire Lumens
BUG Rating : B4-U3-G4
FL=3491.2, FM=11936.4, FH=8363.4, FVH=407.4
BL=2901.3, BM=6051.9, BH=2494.4, BVH=146.7
UL=13.5, UH=118.9

2.3 Electrical, Photometric and Chromaticity Measurements

Test date	2022-08-03	**Test Ambient:**	25±1 ℃
Test Orientation	As intended	**Stabilization Time (min)**	60
Model Number	ALI-SL0815-300W-H3-40K-TP	**Total Operating Time(min)**	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-B1	120.0	60	2.491	298.1	0.9972	3.11
	277.0	60	1.101	287.8	0.9436	8.53

Chromaticity Measurement - Sphere-Spectroradiometer Method(Self-absorption:1.2136)(4π geometry):

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	3977
Duv	-0.0016
Chromaticity (x, y)	x=0.3803 y=0.3732
Chromaticity (u', v')	u'=0.2264 v'=0.5000
Color Rendering Index (CRI)	85.9
R9	22
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)	35979	35644
Luminous Efficacy (lm/W)	120.69	123.85

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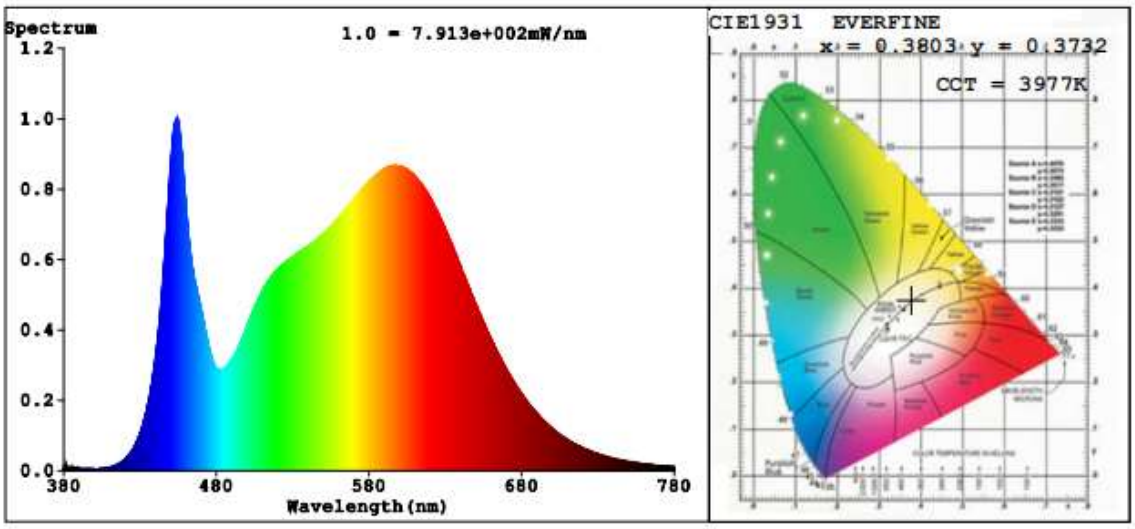
Spectral Power Distribution & Chromaticity Diagram



R1 =85	R2 =93	R3 =96	R4 =84	R5 =85	R6 =89	R7 =86	
R8 =68	R9 =22	R10=82	R11=84	R12=65	R13=88	R14=98	R15=80

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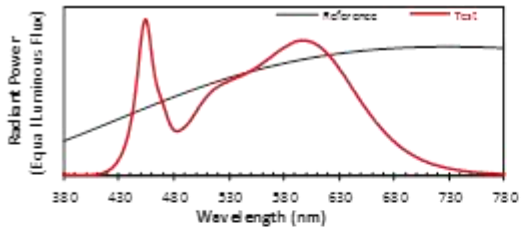
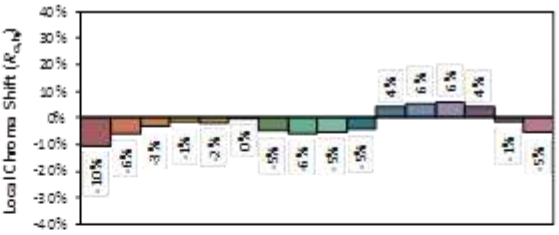
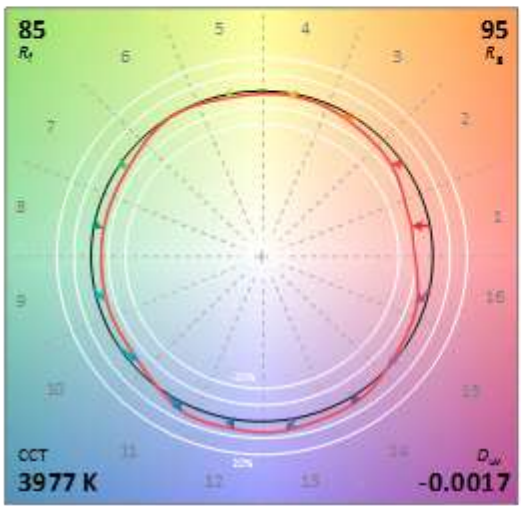
TM30

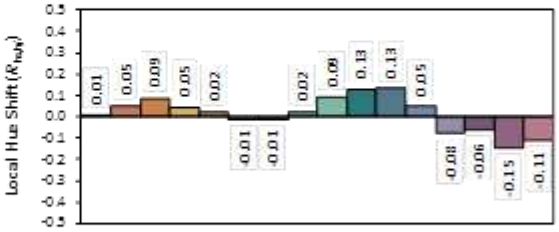
ANSI/IES TM-30-18 Color Rendition Report

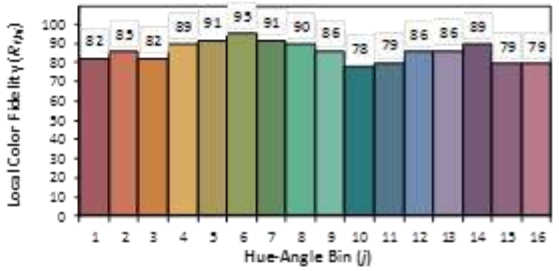
Source:	BXEN-40E-13H-9CP	**Manufacturer:**	American Lighting Industry Corp
Date:	2022-08-03	**Model:**	ALI-SLO815-300W-H3-40K-TP

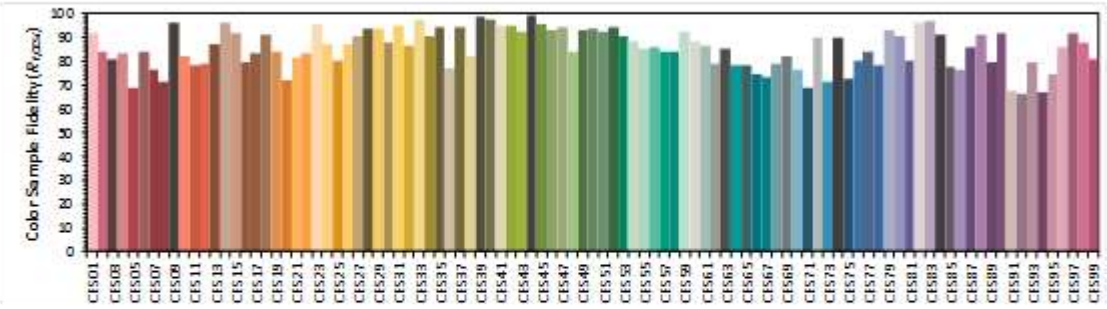












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3803
y	0.3731
u'	0.2265
v'	0.4999

CIE 13.3-1995 (CRI)

R_a	86
R_9	22

lors 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

Test date	2022-08-03	**Test Ambient:**	25±1 ℃
Test Orientation	As intended	**Stabilization Time (min)**	60
Model Number	ALI-SL0815-300W-H3-65K-TP	**Total Operating Time(min)**	61

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JAE220802-B2	120.0	60	2.488	297.7	0.9973	2.95
	277.0	60	1.099	287.4	0.9437	8.21

Chromaticity Measurement - Sphere-Spectroradiometer Method(Self-absorption:1.2138)(4π geometry):

Parameter	Result
Test Voltage (V)	120
Frequency (Hz)	60
CCT (K)	6920
Duv	0.0005
Chromaticity (x, y)	x=0.3073 y=0.3184
Chromaticity (u', v')	u'=0.1981 v'=0.4617
Color Rendering Index (CRI)	85.8
R9	22
Rg	94
Rf	84
Rcs,h1	-12

Photometric Measurement – Sphere-Spectroradiometer Method:

Parameter	Result	
Test Voltage (V)	120	277
Frequency (Hz)	60	60
Total Luminous (lm)	36700	36358
Luminous Efficacy (lm/W)	123.28	126.51

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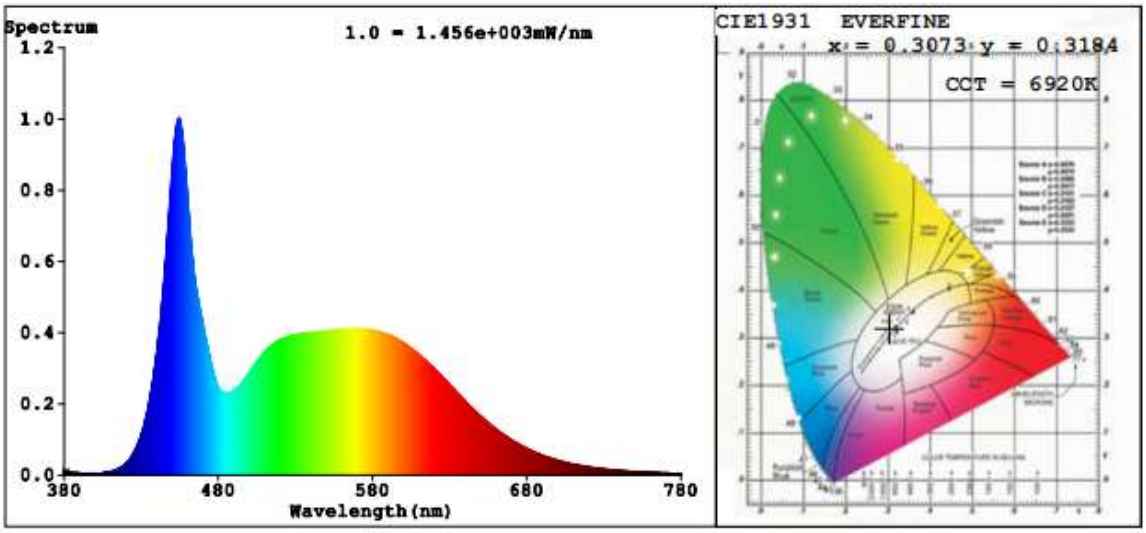
Spectral Power Distribution & Chromaticity Diagram



R1 =85	R2 =92	R3 =93	R4 =84	R5 =85	R6 =85	R7 =89	
R8 =74	R9 =-22	R10=78	R11=84	R12=59	R13=88	R14=96	R15=82

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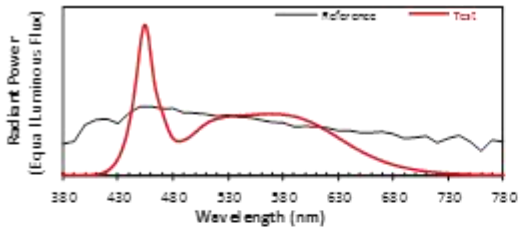
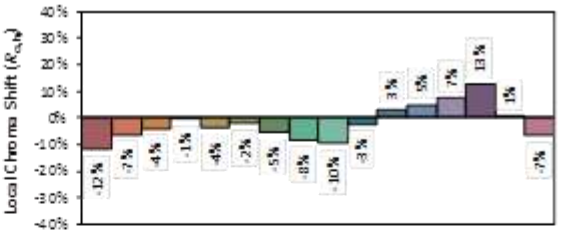
ACCREDITED
Certificate#4703.02

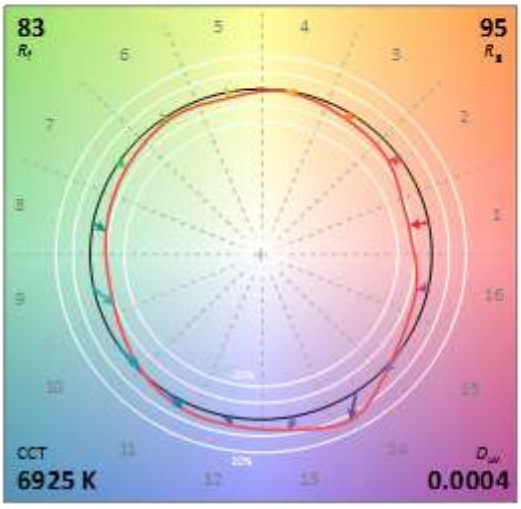
TM30

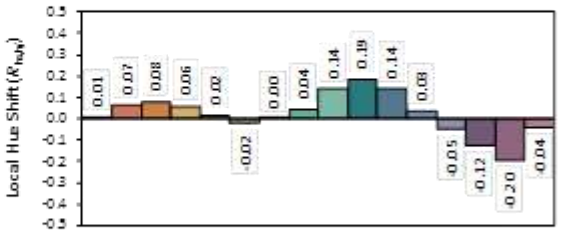
ANSI/IES TM-30-18 Color Rendition Report

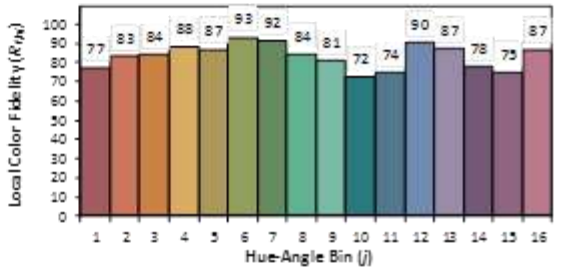
Source:	BXEN-65E-13H-9CP	**Manufacturer:**	American Lighting Industry Corp
Date:	2022-08-03	**Model:**	ALI-SL0815-300W-H3-65K-TP

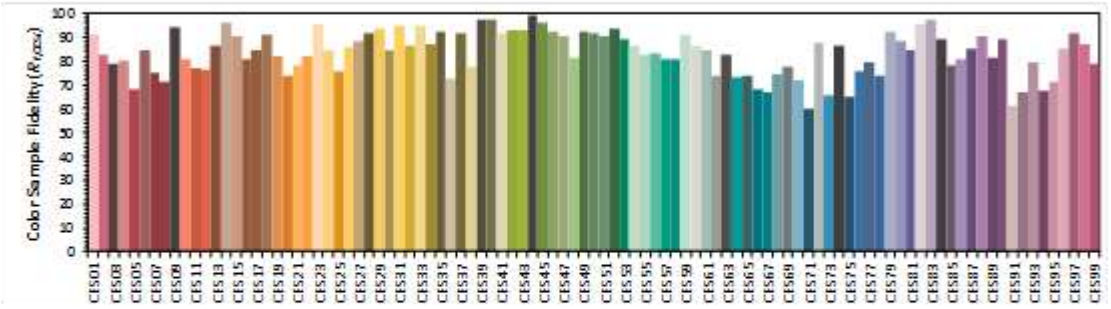












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.3072
y	0.3182
u'	0.1981
v'	0.4616

CIE 13.3-1995 (CRI)

R_a	86
R_9	22

lors 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-SL0815-300W-H3-40K-TP	4000K	35926	297.8	120.63
ALI-SL0815-300W-H3-50K-TP	5000K	36313*1	297.8*2	121.94*3
ALI-SL0815-300W-H3-57K-TP	5700K	36507*1	297.8*2	122.59*3
ALI-SL0815-300W-H3-65K-TP	6500K	36700	297.7	123.28

*1: This value is calculated and the calculation formula is as below:
36313= (36700-35926)/4*2+35926
36507= (36700-35926)/4*3+35926

*2: This value is calculated and the calculation formula is as below:
297.8= (297.8+297.7)/2

*3: This value is calculated and the calculation formula is as below:
121.94= 36313/297.8
122.59= 36507/297.8

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 ********