

PURE EDGE LIGHTING

TEST REPORT

SCOPE OF WORK

Electrical and Photometric tests as required to the IESNA LM-79 test standard.

MODEL NUMBER

PLAZA-L-LED-35K

REPORT NUMBER

103597691CHI-035

ISSUE DATE

January 21, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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TEST OF ONE LED MIRROR

MODEL NO. PLAZA-L-LED-35K
LED MODEL NO. LUMILED 2835
DRIVER MODEL NO. MAGNITUDE CVD96R24VDC

RENDERED TO:

PURE EDGE LIGHTING
1718 WEST FULLERTON
CHICAGO, IL 60614

STATEMENT OF LIMITATIONS

NVLAP Lab Code 600186-0. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00901421-1 .

STANDARDS USED

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting
ANSI NEMA ANSLG C78.377: 2015: Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE

The client submitted one production sample of model number PLAZA-L-LED-35K. The sample was received by Intertek on January 13, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH01132020121521-035.

DATE OF TESTS

January 15, 2020 through January 17, 2020.

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SUMMARY

MODEL NO:	PLAZA-L-LED-35K
DESCRIPTION:	LED MIRROR

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1929.6	1860.4
Input Power (W) @ 120 (VAC)	75.94	75.94
Lumen Efficacy (lm/W)	25.4	24.5
Input Power Factor () @ 120 (VAC)	0.998	0.998

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	4.85
Correlated Color Temperature (K)	3933
Color Rendering Index - Ra	89.6
Color Rendering - R9	55.6
DUV	0.0052
Chromaticity Coordinate (x)	0.387
Chromaticity Coordinate (y)	0.392
Chromaticity Coordinate (u')	0.223
Chromaticity Coordinate (v')	0.509
Input Power Factor (W) @ 277 (VAC)	0.922
Input Current ATHD (%) @ 277 (VAC)	10.30
Input Power Factor (W) @ 230 (VAC)	0.959
Input Current ATHD (%) @ 230 (VAC)	11.39

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2019	7/1/2020
Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
Elgar, AC Power Supply	CW1251	146111	VBV	VBV
Labsphere Spectroradiometer	CDS1100	CHI0091	VBV	VBV
3 Meter Sphere	SPR600	CHI0088	VBV	VBV
Elgar AC Power Supply	CW1251	146112	VBV	VBV
Sorenson DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iTHX-SD	146382	4/17/2019	4/17/2020
Yokogawa Power Meter	WT1600	146769	4/3/2019	4/3/2020
Extech K Temperature Meter	SD200	CHI0207	4/3/2019	4/3/2020

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TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

No seasoning was performed in accordance with IESNA LM-79.

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD

A Spectroradiometer and integrating sphere was used to measure correlated color temperature, chromaticity coordinates, and the color rendering index for each SSL unit.

Ambient temperature was measured at a position inside the sphere. Each SSL unit was operated on the client provided driver at the rated input voltage in its designated orientation. Each SSL unit was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

The calibration of the sphere photometer-spectroradiometer system is traceable to the National Institute of Standards and Technology.

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD

A Type C Mirror Goniometer was used to measure the intensity (candelas) at each angle of distribution for the SSL sample.

Ambient temperature was measured equal to the height of the sample mounted on the goniometer equipment. The SSL sample was operated on the client provided driver at rated input volts in its designated orientation. The SSL sample was allowed to stabilize for at least thirty minutes before measurements were made. Stabilization procedures to LM-79 were followed. Electrical measurements including voltage, current, and power were measured using a power analyzer.

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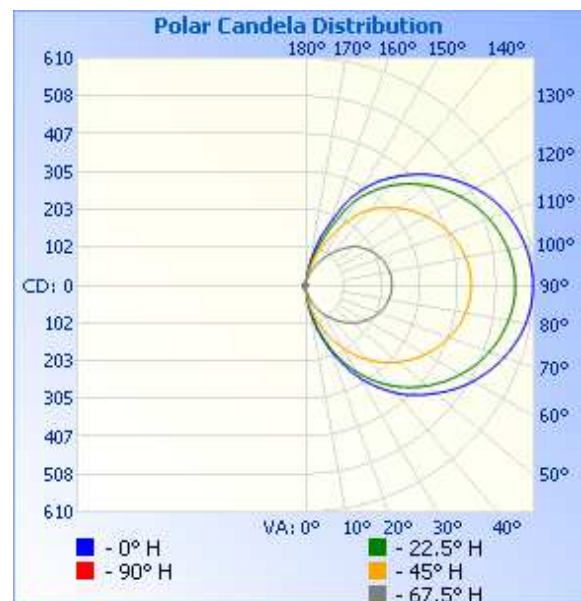
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR	LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)
AH01132020121521-035	Horizontal	120.0	633.8	75.94	0.998	1860.4	24.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	3	3	3	3	3
5	23	26	17	8	3
10	70	69	44	18	3
15	122	117	80	31	3
20	179	169	117	48	4
25	233	220	156	67	4
30	287	267	193	86	4
35	335	311	229	103	4
40	379	352	262	122	4
45	418	389	293	140	4
50	453	422	322	158	4
55	487	452	348	174	4
60	517	480	371	188	4
65	543	504	392	201	4
70	565	523	409	212	4
75	584	539	423	220	4
80	598	551	434	226	4
85	606	558	441	230	4
90	608	561	443	231	4
95	605	558	440	230	4
100	598	550	434	227	4
105	586	538	424	221	4
110	570	522	410	214	4
115	549	502	392	203	4
120	523	478	372	192	4
125	491	450	349	178	4
130	458	419	323	161	4
135	422	385	295	138	4
140	382	348	263	115	4
145	342	307	225	92	3
150	293	260	172	73	3
155	232	188	129	52	3
160	161	130	88	34	2
165	105	80	52	20	2
170	50	36	23	12	2
180	2	2	2	2	2



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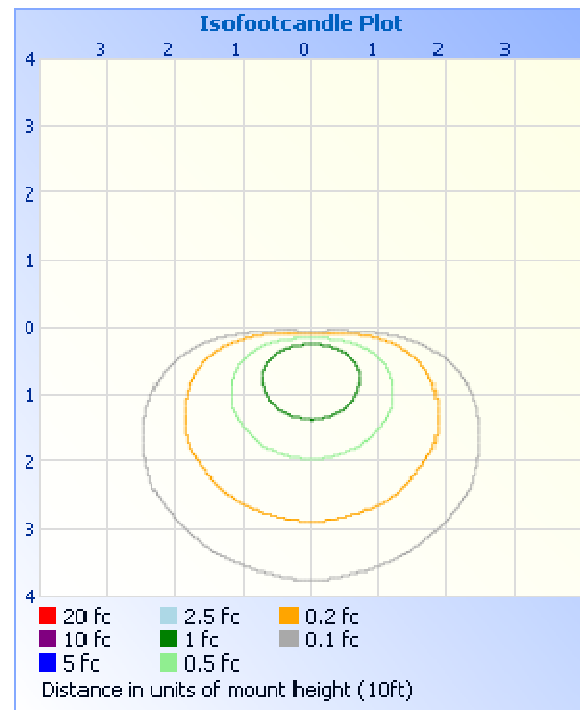
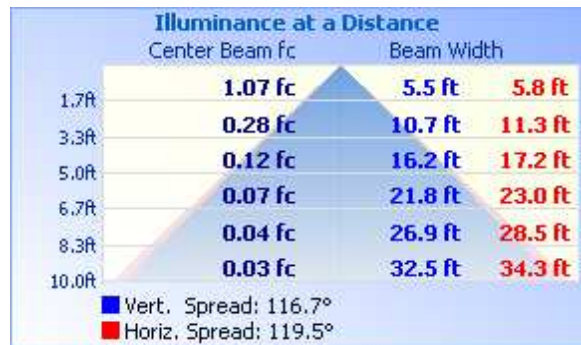
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - DISTRIBUTION METHOD (25°C +/- 1°C)

MOUNTING HEIGHT: 10ft	
ILLUMINANCE - CONE OF LIGHT	ISOILLUMINATION PLOT



ZONAL LUMEN SUMMARY AND PERCENTAGES

ZONE	LUMENS	% LUMINAIRE
0-30	46.8	2.5
0-40	112.4	6.0
0-60	353.7	19.0
60-90	581.0	31.2
70-100	619.9	33.3
90-120	581.7	31.3
0-90	934.7	50.2
90-180	925.7	49.8
0-180	1860.4	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	1.4	0.1
10-20	11.5	0.6
20-30	33.9	1.8
30-40	65.6	3.5
40-50	102.2	5.5
50-60	139.1	7.5
60-70	172.3	9.3
70-80	197.5	10.6
80-90	211.2	11.4
90-100	211.2	11.4
100-110	197.7	10.6
110-120	172.8	9.3
120-130	139.5	7.5
130-140	101.8	5.5
140-150	64.0	3.4
150-160	29.7	1.6
160-170	8.3	0.4
170-180	0.7	0.0

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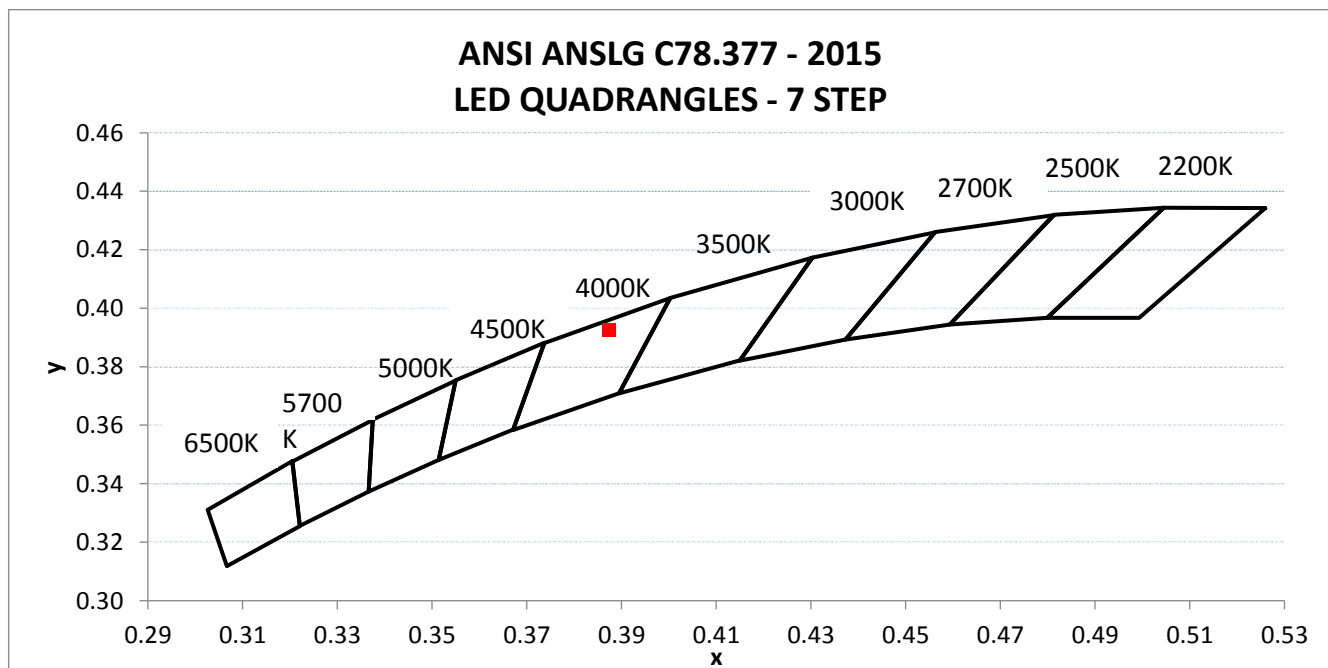
RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

INTERTEK CONTROL NO.	BASE POSITION	INPUT VOLTAGE (VAC)	INPUT CURRENT (mA)	INPUT POWER (W)	INPUT POWER FACTOR ()	INPUT CURRENT ATHD (%)
AH01132020121521-035	Horizontal	120.03	633.70	75.94	0.998	4.85
		230.01	334.7	73.85	0.959	11.39
		277.01	288.4	73.69	0.922	10.30

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1929.6	25.4	3933	89.6	55.6	0.0052

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.387	0.392	0.223	0.509



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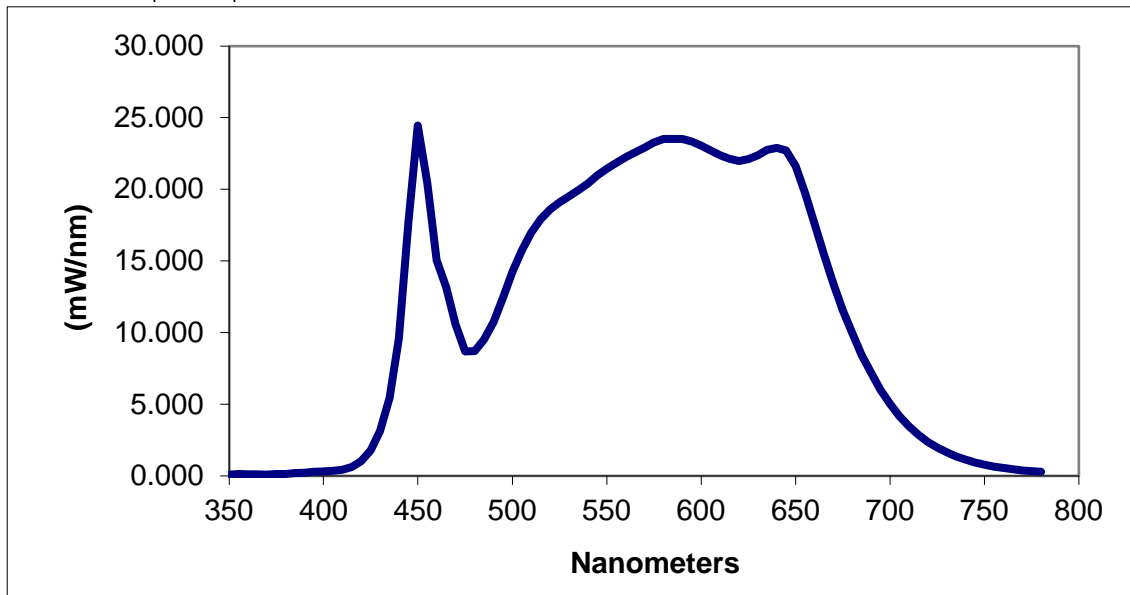
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RESULTS OF TESTS

PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.087	460	15.042	570	22.911	680	9.947
355	0.121	465	13.142	575	23.261	685	8.444
360	0.105	470	10.569	580	23.505	690	7.176
365	0.117	475	8.675	585	23.502	695	5.996
370	0.096	480	8.702	590	23.515	700	5.023
375	0.121	485	9.498	595	23.331	705	4.180
380	0.142	490	10.729	600	23.044	710	3.460
385	0.189	495	12.420	605	22.693	715	2.872
390	0.227	500	14.234	610	22.371	720	2.373
395	0.284	505	15.706	615	22.115	725	1.975
400	0.317	510	16.997	620	21.968	730	1.638
405	0.347	515	17.906	625	22.098	735	1.358
410	0.428	520	18.589	630	22.362	740	1.134
415	0.631	525	19.082	635	22.737	745	0.941
420	1.023	530	19.510	640	22.886	750	0.784
425	1.793	535	19.941	645	22.697	755	0.654
430	3.116	540	20.411	650	21.599	760	0.551
435	5.434	545	20.962	655	19.758	765	0.456
440	9.604	550	21.435	660	17.599	770	0.386
445	17.744	555	21.825	665	15.472	775	0.326
450	24.446	560	22.235	670	13.402	780	0.279
455	20.412	565	22.574	675	11.571		

*Without correction of sample absorption.



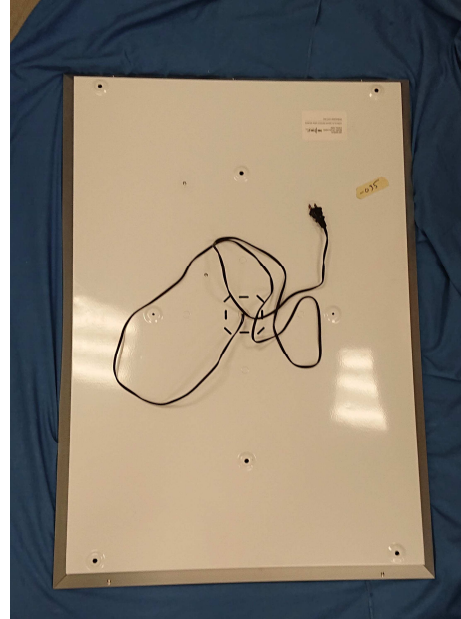
End Of Test Results

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PICTURES



CONCLUSION

The results tabulated in this report are representative of the actual test samples submitted for this report only. The data is provided to the client for further evaluation. Compliance to the referenced specification requirements was not determined in this report.

In Charge Of Tests:

Ian Smith

Ian Smith
Engineer
Lighting Division

Report Reviewed By:

Jeff Davis

Jeff Davis
NA Technical Lead
Lighting Division

Attachments: IES File

REVISION HISTORY

JOB NUMBER	DATE OF REVISION	PROJECT HANDLER	REVIEWED BY	REVISION NOTE
None				