

VISUAL COMFORT & CO. TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

E4PSLRD-8306-W

REPORT NUMBER

104206403CHI-102

ISSUE DATE

July 24, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: July 24, 2020

TEST REPORT

TEST OF ONE E4PSL 65DEG 300MA

MODEL NO. E4PSLRD-8306-W
LED MODEL NO. BRIDGELUX BXRE-**E2000-C-83
DRIVER MODEL NO. ERP 255ESS015W300

RENDERED TO:

VISUAL COMFORT & CO.
7400 LINDER AVE.
SKOKIE IL 60077

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-01040682-1.

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 E4PSLRD-8306-W. The sample was received by Intertek on July 13, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH07132020091733-102.

DATE OF TESTS

July 14, 2020 through July 22, 2020.

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SUMMARY

MODEL NO:	E4PSLRD-8306-W
DESCRIPTION:	E4PSL 65deg 300mA

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	967.7	967.8
Input Power (W) @ 120 (VAC)	11.56	11.58
Lumen Efficacy (lm/W)	83.7	83.6
Input Power Factor () @ 120 (VAC)	0.981	0.983

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	16.86
Correlated Color Temperature (K)	2944
Color Rendering Index - Ra	81.9
Color Rendering - R9	6.9
DUV	0.0014
Chromaticity Coordinate (x)	0.443
Chromaticity Coordinate (y)	0.410
Chromaticity Coordinate (u')	0.252
Chromaticity Coordinate (v')	0.525

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EQUIPMENT LIST

EQUIPMENT USED	MODEL NO.	CONTROL NO.	LAST CAL DATE	CAL DUE DATE
Yokogawa Power Meter	WT210	146919	7/1/2020	7/1/2021
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
Pacific, AC Power Supply	118-ACX	CHI0153	VBV	VBV
Labsphere Spectroradiometer	CDS-600	146923	VBV	VBV
2M Rotating Sphere	7660-ROT	146923	VBV	VBV
Omega thermometer	USB TC08	EQAH002615	4/7/2020	4/7/2021
Ametek DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iTHX-SD	146961	7/26/2019	7/26/2020
Yokogawa Power Meter	WT210	146880	10/2/2019	10/2/2020
Chroma Power Supply	61604	CHI0371	VBV	VBV

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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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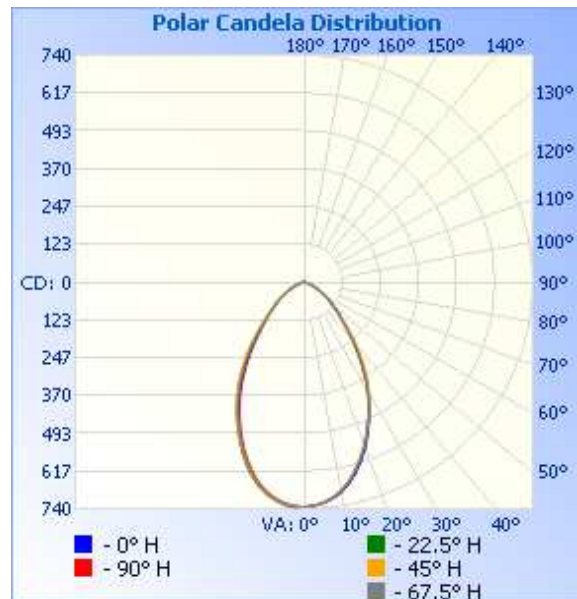
RESULTS OF TESTS

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)
AH07132020091733-102	Base Up	119.9	98.2	11.58	0.983	967.8	83.6

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	733	733	733	733	733
5	723	721	721	722	723
10	696	690	690	691	694
15	645	636	636	637	641
20	577	568	568	568	572
25	498	492	494	491	492
30	419	415	420	413	410
35	332	330	341	329	323
40	249	244	260	244	239
45	180	174	183	175	174
50	133	125	126	125	129
55	100	90	89	91	96
60	65	60	60	62	64
65	40	37	38	39	40
70	23	21	21	22	22
75	11	10	11	11	10
80	6	5	5	5	5
85	3	2	2	2	2
90	0	0	0	0	0



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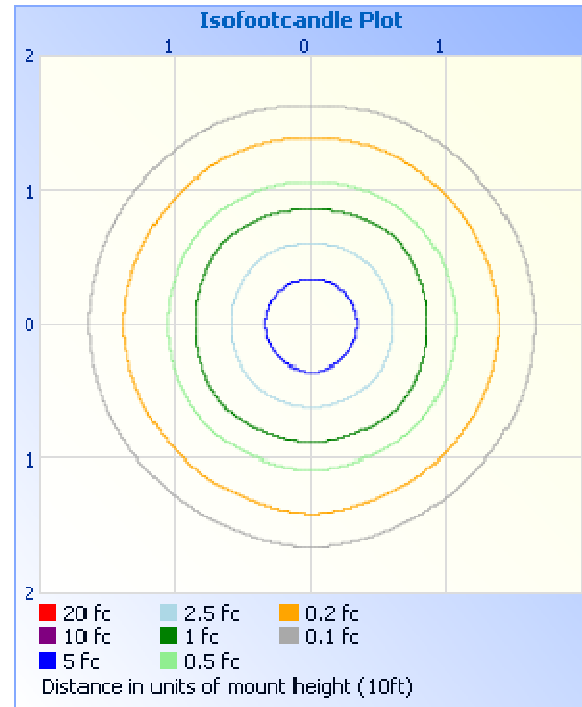
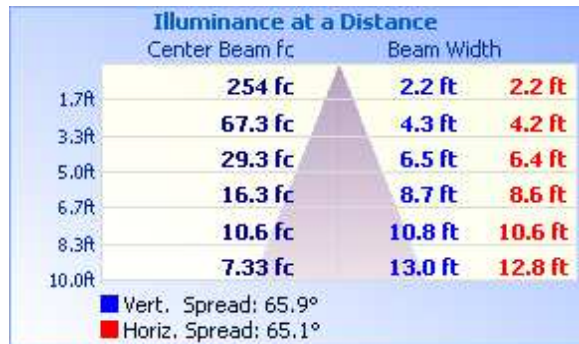
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RESULTS OF TESTS

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	476.5	49.2
0-40	685.8	70.9
0-60	911.9	94.2
60-90	55.8	5.8
70-100	15.5	1.6
90-120	0.0	0.0
0-90	967.8	100.0
90-180	0.0	0.0
0-180	967.8	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	68.2	7.0
10-20	179.7	18.6
20-30	228.6	23.6
30-40	209.4	21.6
40-50	141.6	14.6
50-60	84.4	8.7
60-70	40.3	4.2
70-80	12.7	1.3
80-90	2.8	0.3

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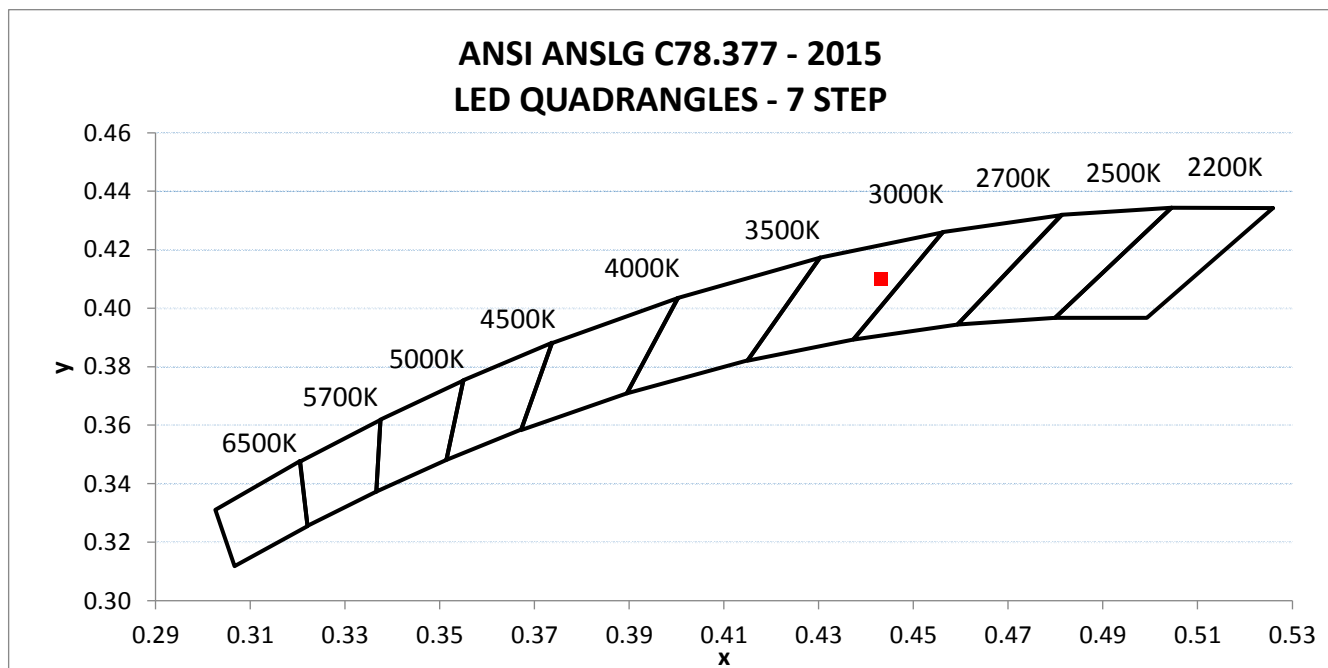
RESULTS OF TESTS

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 (%)
AH07132020091733-102	Base Up	120.04	98.10	11.56	0.981	16.86

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
967.7	83.7	2944	81.9	6.9	0.0014

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.443	0.410	0.252	0.525



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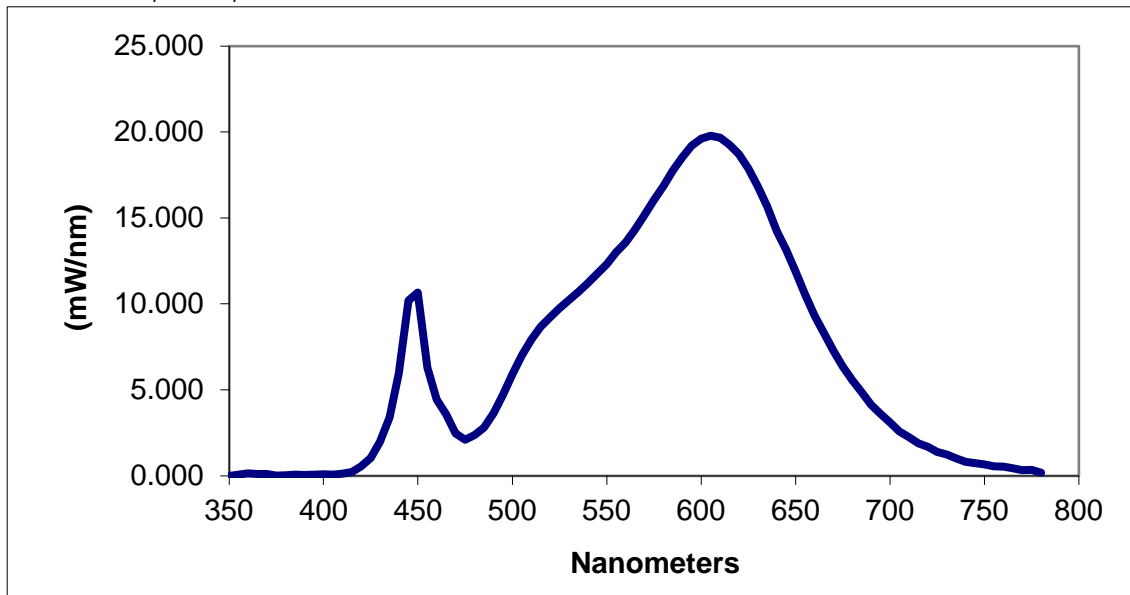
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PHOTOMETRIC AND ELECTRICAL MEASUREMENTS - INTEGRATING SPHERE METHOD (25°C +/- 1°C)

SPECTRAL DISTRIBUTION OVER VISIBLE WAVELENGTHS*							
nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.015	460	4.447	570	15.186	680	5.555
355	0.080	465	3.578	575	16.043	685	4.872
360	0.144	470	2.470	580	16.850	690	4.128
365	0.106	475	2.101	585	17.748	695	3.611
370	0.104	480	2.383	590	18.528	700	3.102
375	0.015	485	2.799	595	19.193	705	2.588
380	0.041	490	3.640	600	19.612	710	2.246
385	0.067	495	4.711	605	19.783	715	1.894
390	0.054	500	5.905	610	19.664	720	1.684
395	0.064	505	6.988	615	19.262	725	1.394
400	0.087	510	7.922	620	18.686	730	1.235
405	0.070	515	8.668	625	17.883	735	1.021
410	0.129	520	9.224	630	16.816	740	0.811
415	0.228	525	9.745	635	15.667	745	0.747
420	0.564	530	10.226	640	14.239	750	0.673
425	1.036	535	10.702	645	13.149	755	0.548
430	1.995	540	11.219	650	11.872	760	0.530
435	3.395	545	11.762	655	10.567	765	0.450
440	5.990	550	12.321	660	9.313	770	0.341
445	10.188	555	13.004	665	8.318	775	0.347
450	10.659	560	13.585	670	7.266	780	0.184
455	6.301	565	14.327	675	6.357		

*Without correction of sample absorption.



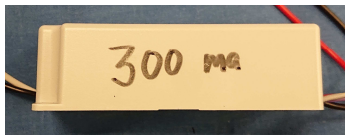
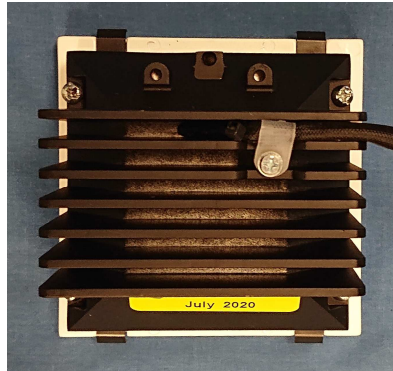
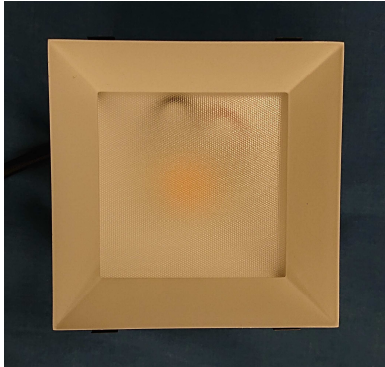
End Of Test Results

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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
N.A. Technical Lead
Lighting Division

Attachments: IES File

REVISION HISTORY

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