

VISUAL COMFORT & CO. TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

E4PSLRD-8308-W

REPORT NUMBER

104206403CHI-108

ISSUE DATE

July 24, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT NO.: 104206403CHI-108

TEST REPORT

REPORT DATE: July 24, 2020

TEST OF ONE E4PSL 85DEG 200MA

MODEL NO. E4PSLRD-8308-W
LED MODEL NO. BRIDGELUX BXRE-**E2000-C-83
DRIVER MODEL NO. ERP 255ESS010W200

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-8308-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 AH07132020091733-108.

DATE OF TESTS

July 15, 2020 through July 22, 2020.

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SUMMARY

MODEL NO:	E4PSLRD-8308-W
DESCRIPTION:	E4PSL 85deg 200mA

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	809.9	801.3
Input Power (W) @ 120 (VAC)	7.79	7.80
Lumen Efficacy (lm/W)	103.9	102.7
Input Power Factor () @ 120 (VAC)	0.980	0.981

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	12.49
Correlated Color Temperature (K)	3014
Color Rendering Index - Ra	82.4
Color Rendering - R9	8.7
DUV	0.0011
Chromaticity Coordinate (x)	0.438
Chromaticity Coordinate (y)	0.407
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.523

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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	EQA002615	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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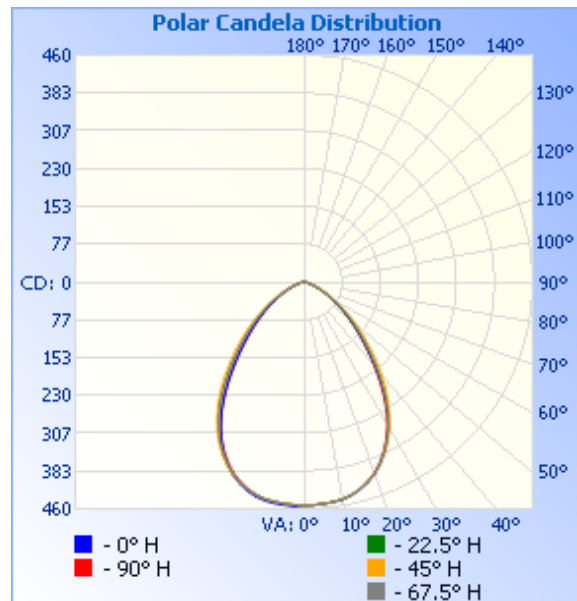
RESULTS OF TESTS

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)
AH07132020091733-108	Base Up	120.0	66.3	7.80	0.981	801.3	102.7

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	452	452	452	452	452
5	451	451	451	451	451
10	448	447	447	447	447
15	435	434	434	434	434
20	414	413	414	413	412
25	382	381	383	380	379
30	341	339	343	338	335
35	285	286	295	285	279
40	223	226	241	227	219
45	168	172	187	174	166
50	124	127	141	131	123
55	90	91	100	93	88
60	62	61	67	62	59
65	39	38	44	39	37
70	23	22	22	22	22
75	13	12	12	12	11
80	7	6	6	6	6
85	4	3	3	3	3
90	0	0	0	0	0



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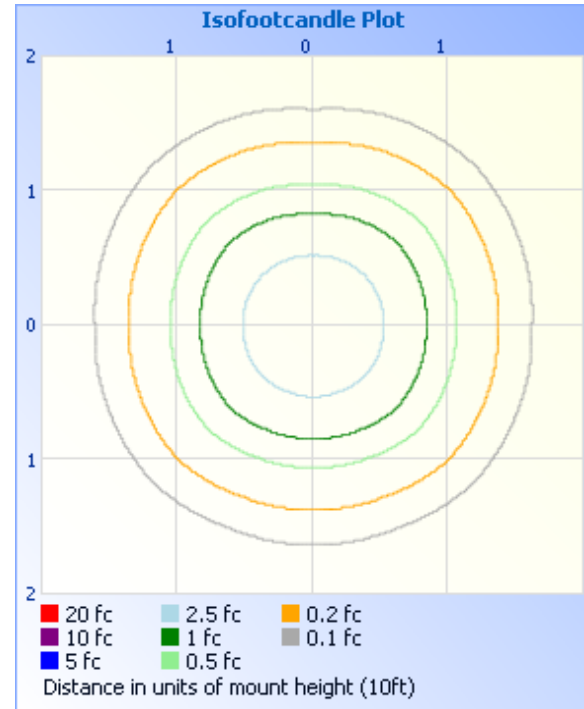
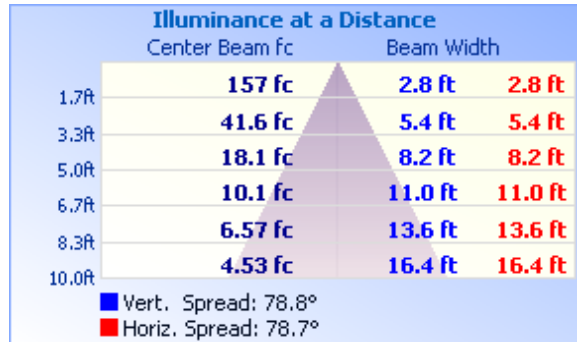
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RESULTS OF TESTS

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	340.5	42.5
0-40	519.9	64.9
0-60	743.3	92.8
60-90	58.0	7.2
70-100	17.2	2.1
90-120	0.0	0.0
0-90	801.3	100.0
90-180	0.0	0.0
0-180	801.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	42.9	5.4
10-20	122.3	15.3
20-30	175.2	21.9
30-40	179.4	22.4
40-50	137.6	17.2
50-60	85.8	10.7
60-70	40.8	5.1
70-80	13.9	1.7
80-90	3.3	0.4

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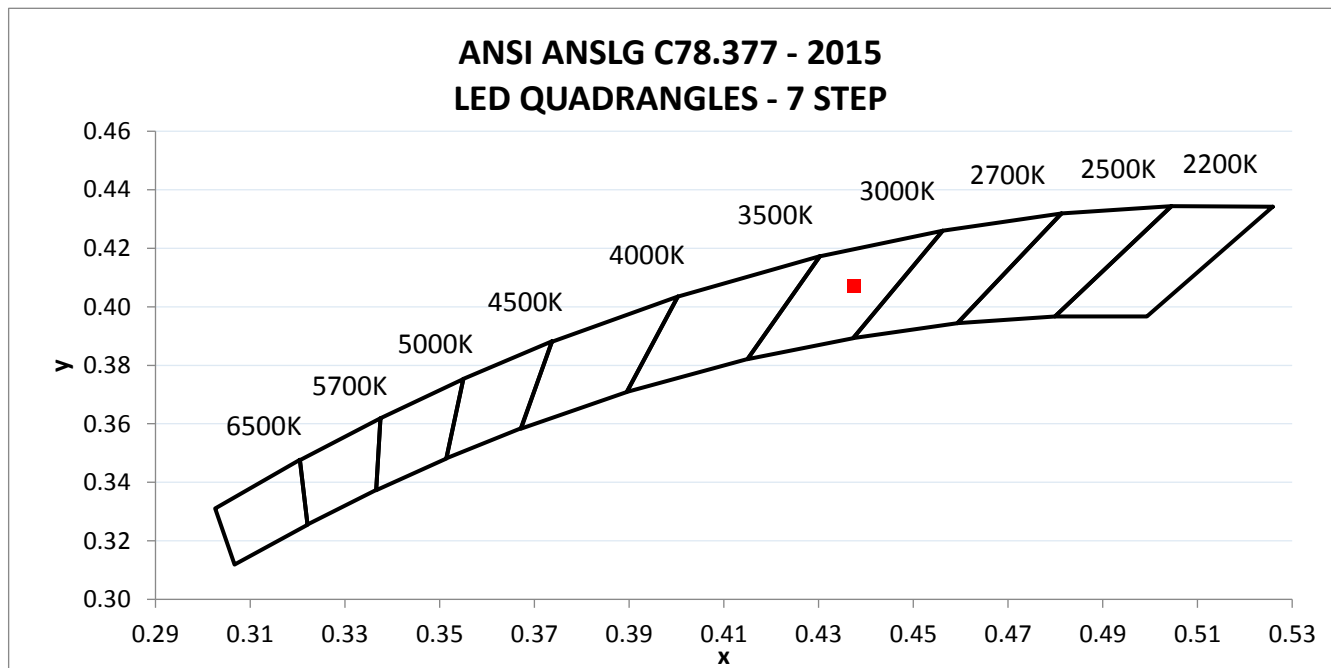
RESULTS OF TESTS

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 (%)
AH07132020091733-108	Base Up	120.07	66.25	7.79	0.980	12.49

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
809.9	103.9	3014	82.4	8.7	0.0011

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.438	0.407	0.250	0.523



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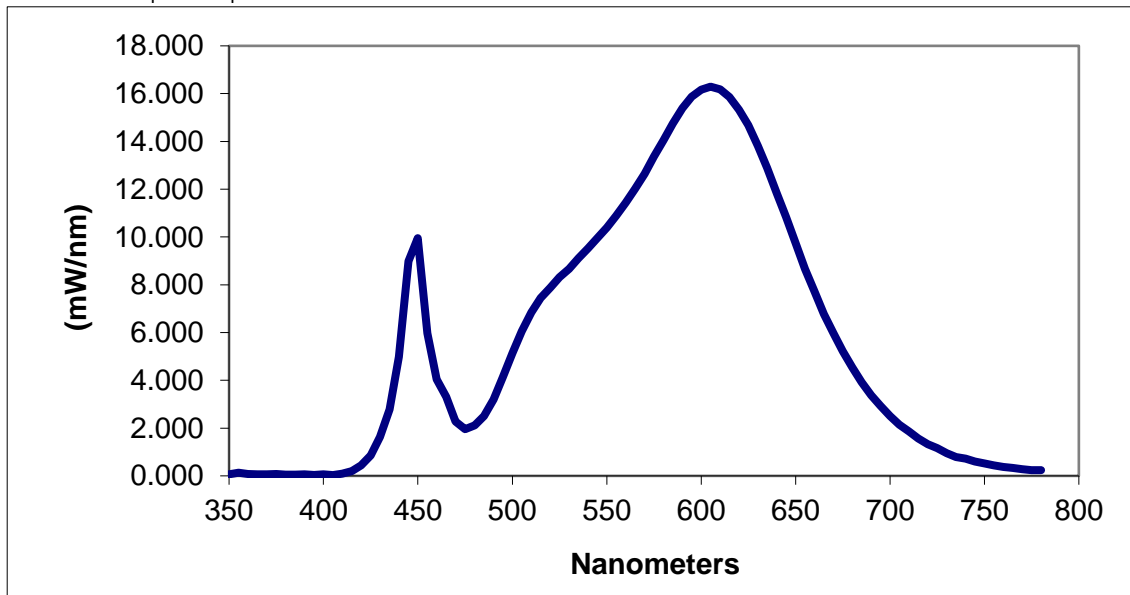
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RESULTS OF TESTS

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	0.059	460	4.045	570	12.645	680	4.538
355	0.131	465	3.306	575	13.360	685	3.927
360	0.082	470	2.281	580	14.047	690	3.379
365	0.067	475	1.954	585	14.743	695	2.937
370	0.065	480	2.118	590	15.383	700	2.501
375	0.073	485	2.502	595	15.877	705	2.141
380	0.046	490	3.201	600	16.160	710	1.866
385	0.051	495	4.132	605	16.292	715	1.561
390	0.065	500	5.143	610	16.186	720	1.321
395	0.040	505	6.046	615	15.862	725	1.157
400	0.059	510	6.844	620	15.327	730	0.944
405	0.033	515	7.449	625	14.680	735	0.794
410	0.091	520	7.875	630	13.809	740	0.720
415	0.202	525	8.316	635	12.878	745	0.604
420	0.436	530	8.664	640	11.829	750	0.524
425	0.860	535	9.102	645	10.828	755	0.440
430	1.636	540	9.515	650	9.735	760	0.369
435	2.779	545	9.950	655	8.671	765	0.336
440	4.979	550	10.398	660	7.710	770	0.278
445	8.981	555	10.887	665	6.780	775	0.237
450	9.946	560	11.441	670	5.979	780	0.237
455	5.967	565	12.007	675	5.219		

*Without correction of sample absorption.



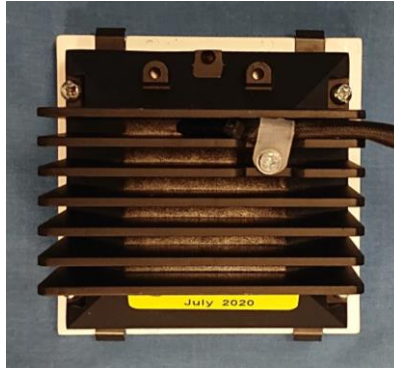
End Of Test Results

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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:

Jeffrey 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				