

VISUAL COMFORT GROUP TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700LSDYNAR4PA-LED930

REPORT NUMBER

104019509CHI-002

ISSUE DATE

July 25, 2019

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT DATE: July 25, 2019

TEST REPORT

TEST OF ONE LED SUSPENSION

MODEL NO. 700LSDYNAR4PA-LED930
LED MODEL NO. LUMINUS MP-3030-1100-30-90
DRIVER MODEL NO. ERP 255EPT30W750

RENDERED TO:

VISUAL COMFORT GROUP
7400 LINDER AVE.
SKOKIE, IL 60077

AUTHORIZATION

The testing performed was authorized by signed quote number Qu-00981438.

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 700LSDYNAR4PA-LED930. The sample was received by Intertek on July 17, 2019 in undamaged condition and one sample was tested as received. The sample designation was AH07172019014704-002.

DATE OF TESTS

July 19, 2019

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SUMMARY

MODEL NO:	700LSDYNAR4PA-LED930
DESCRIPTION:	LED suspension

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	1305.9	1241.3
Input Power (W) @ 120 (VAC)	32.04	32.23
Lumen Efficacy (lm/W)	40.8	38.5
Input Power Factor @ 120 (VAC)	0.989	0.989

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	14.51
Correlated Color Temperature (K)	3021
Color Rendering Index - Ra	93.1
Color Rendering - R9	64.3
DUV	0.0008
Chromaticity Coordinate (x)	0.434
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.520

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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	10/4/2018	10/4/2019
LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
Newport Thermohygrometer	iServer	146957	12/11/2018	12/11/2019
Pacific, AC power supply	118-ACX	CHI0358	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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TEST REPORT

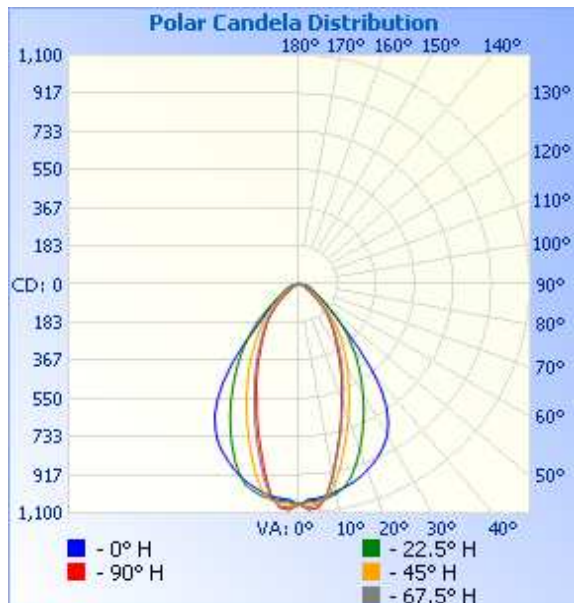
RESULTS OF TESTS

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)
AH07172019014704-002	Base Up	120.1	271.4	32.23	0.989	1241.3	38.5

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	1060	1060	1060	1060	1060
5	1033	1044	1052	1064	1078
10	1013	1024	977	934	931
15	988	958	825	756	748
20	951	847	686	604	592
25	904	727	560	491	477
30	841	610	462	390	372
35	729	502	369	308	294
40	545	400	290	242	234
45	321	303	214	177	171
50	202	208	146	114	100
55	140	135	103	69	60
60	100	93	69	45	42
65	74	69	45	31	29
70	57	52	28	17	12
75	44	33	11	2	2
80	30	14	1	1	1
85	13	1	1	1	0
90	0	0	0	0	0



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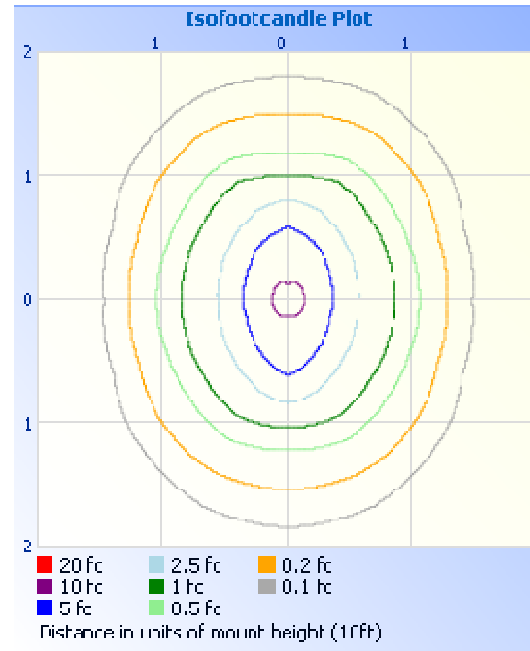
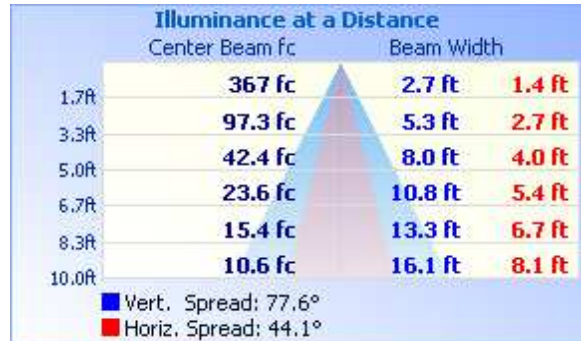
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RESULTS OF TESTS

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	626.7	50.5
0-40	891.5	71.8
0-60	1169.6	94.2
60-90	71.7	5.8
70-100	22.3	1.8
90-120	0.0	0.0
0-90	1241.3	100.0
90-180	0.0	0.0
0-180	1241.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	98.4	7.9
10-20	240.8	19.4
20-30	287.5	23.2
30-40	264.8	21.3
40-50	183.3	14.8
50-60	94.8	7.6
60-70	49.4	4.0
70-80	19.4	1.6
80-90	2.9	0.2

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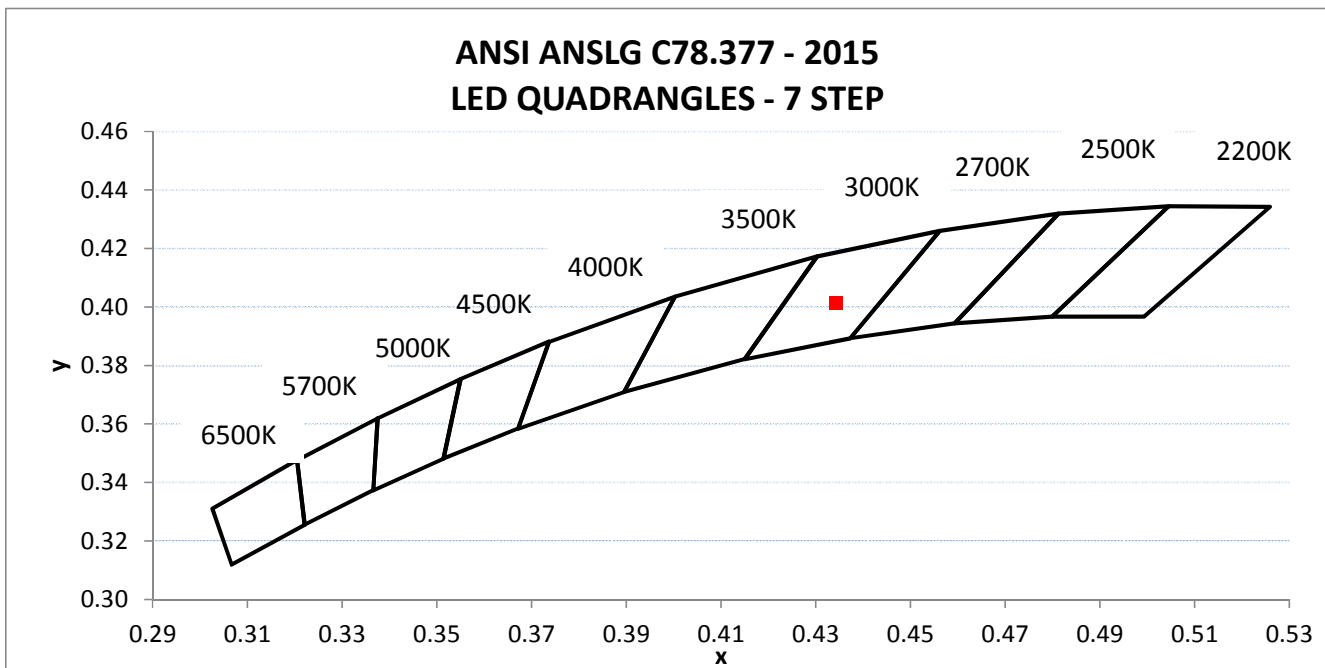
RESULTS OF TESTS

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 (%)
AH07172019014704-002	Base Up	120.01	269.88	32.04	0.989	14.51

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
1305.9	40.8	3021	93.1	64.3	0.0008

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.434	0.401	0.250	0.520



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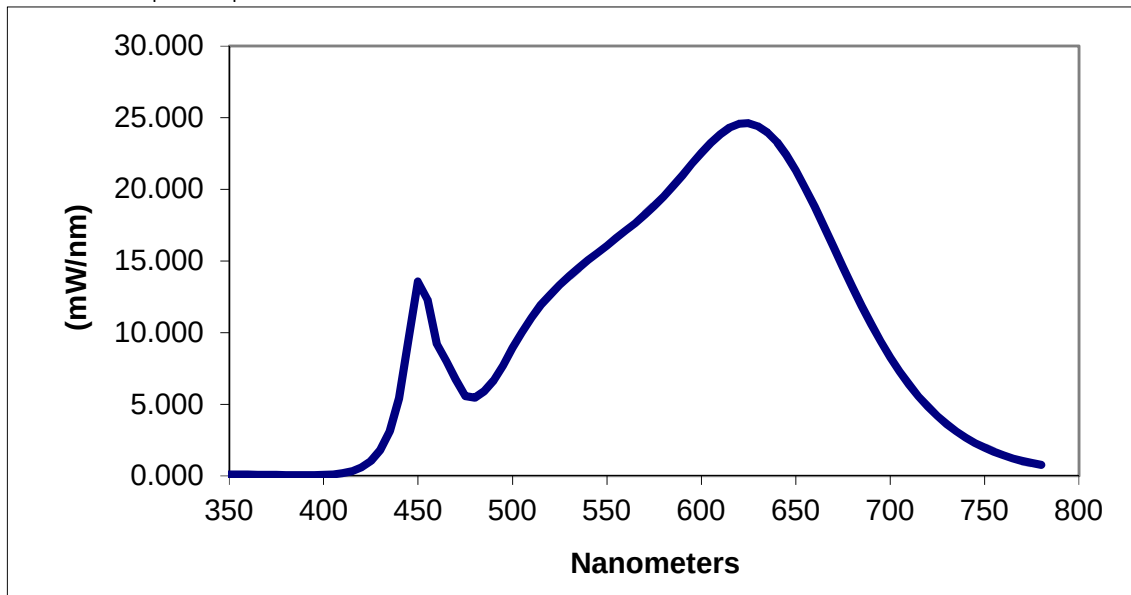
TEST REPORT

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	0.106	460	9.224	570	18.235	680	13.177
355	0.108	465	8.006	575	18.848	685	11.843
360	0.098	470	6.745	580	19.490	690	10.590
365	0.095	475	5.573	585	20.232	695	9.403
370	0.090	480	5.456	590	20.977	700	8.291
375	0.081	485	5.912	595	21.783	705	7.287
380	0.072	490	6.663	600	22.538	710	6.373
385	0.071	495	7.705	605	23.229	715	5.557
390	0.066	500	8.932	610	23.838	720	4.831
395	0.069	505	10.025	615	24.299	725	4.186
400	0.082	510	11.055	620	24.569	730	3.616
405	0.117	515	11.939	625	24.614	735	3.117
410	0.195	520	12.657	630	24.397	740	2.676
415	0.339	525	13.327	635	23.984	745	2.303
420	0.590	530	13.947	640	23.301	750	1.973
425	1.036	535	14.516	645	22.403	755	1.690
430	1.807	540	15.069	650	21.325	760	1.450
435	3.120	545	15.549	655	20.118	765	1.234
440	5.428	550	16.077	660	18.795	770	1.057
445	9.571	555	16.617	665	17.418	775	0.901
450	13.564	560	17.143	670	15.971	780	0.773
455	12.329	565	17.636	675	14.573		

*Without correction of sample absorption.



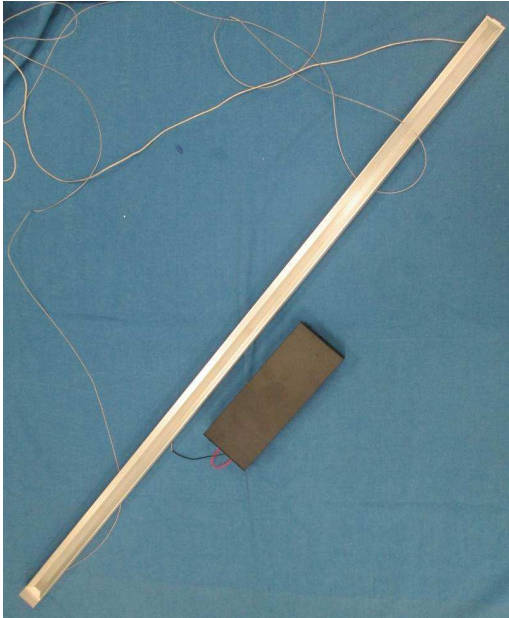
End Of Test Results

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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:

Tim Quigley

Timothy Quigley
Project Engineer
Lighting Division

Report Reviewed By:

Hector Huitron

Hector Huitron
Associate Engineer
Lighting Division

Attachments: IES File

REVISION HISTORY

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