

VISUAL COMFORT & COMPANY TEST REPORT

SCOPE OF WORK

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

MODEL NUMBER

700TDSNGPC**-LED927

REPORT NUMBER

104349704CHI-003

ISSUE DATE

August 17, 2020

REVISION DATE

None

DOCUMENT CONTROL NUMBER

TBD

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REPORT NO.: 104349704CHI-003

REPORT DATE: August 17, 2020

TEST REPORT

TEST OF ONE SEDONA CLEAR

MODEL NO. 700TDSNGPC**-LED927

LED MODEL NO. 300BHV515

DRIVER MODEL NO. NA

RENDERED TO:

VISUAL COMFORT & COMPANY

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 G104349704.

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 700TDSNGPC**-LED927. The sample was received by Intertek on August 5, 2020 in undamaged condition and one sample was tested as received. The sample designation was AH08052020182125-003.

DATE OF TESTS

August 7, 2020 through August 14, 2020.

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SUMMARY

MODEL NO:	700TDSDNGPC**-LED927
DESCRIPTION:	SEDONA CLEAR

CRITERIA	RESULTS	
	INTEGRATING SPHERE	GONIOPHOTOMETER
Lumen Output (lumens)	307.3	305.3
Input Power (W) @ 120 (VAC)	3.36	3.36
Lumen Efficacy (lm/W)	91.5	90.9
Input Power Factor @ 120 (VAC)	0.922	0.922

CRITERIA	RESULTS
Input Current ATHD (%) @ 120 (VAC)	41.22
Correlated Color Temperature (K)	2819
Color Rendering Index - Ra	91.8
Color Rendering - R9	61.8
DUV	-0.0022
Chromaticity Coordinate (x)	0.447
Chromaticity Coordinate (y)	0.401
Chromaticity Coordinate (u')	0.258
Chromaticity Coordinate (v')	0.522

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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	3QAH00261	4/7/2020	4/7/2021
Ametek DC Power Supply	XFR150-8	146846	VBV	VBV
Newport Humidity Recorder	iServer	CHI0456	10/11/2019	10/11/2020
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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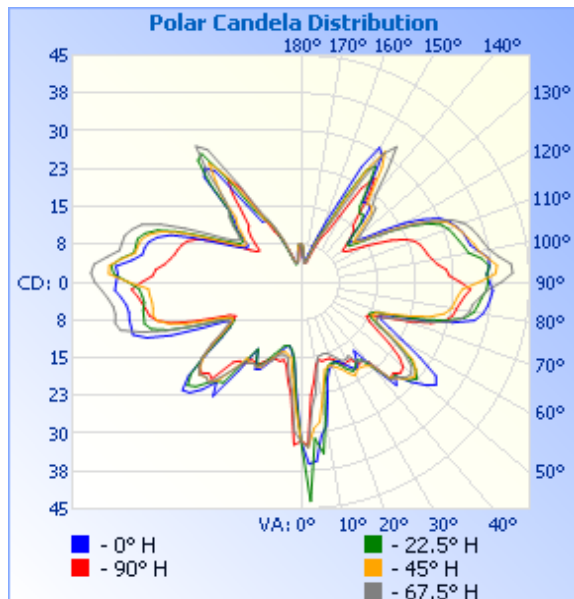
RESULTS OF TESTS

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)
AH08052020182125-003	Base Up	120.0	30.3	3.36	0.922	305.3	90.9

INTENSITY SUMMARY - CANDELAS

Angle	0	22.5	45	67.5	90
0	32	32	32	32	32
5	36	31	29	25	22
10	29	28	24	18	17
15	20	19	18	15	16
20	18	17	18	15	16
25	17	18	19	17	18
30	20	20	21	18	18
35	19	19	21	19	20
40	22	22	22	21	21
45	26	26	27	27	26
50	32	30	29	28	26
55	32	26	27	25	21
60	23	18	19	19	16
65	17	15	15	16	16
70	19	19	18	22	23
75	31	29	26	30	29
80	36	34	30	34	31
85	37	36	31	35	32
90	37	37	35	39	31
95	37	37	39	42	29
100	36	34	36	38	26
105	34	32	34	36	25
110	32	31	32	34	24
115	30	28	29	29	20
120	23	20	21	20	14
125	15	13	14	14	11
130	12	12	14	16	12
135	17	17	20	21	15
140	20	18	20	23	18
145	24	23	28	33	25
150	31	26	25	22	15
155	17	13	12	12	10
160	10	9	8	7	7
165	6	5	5	4	4
170	4	4	4	4	4
175	5	5	5	5	5
180	8	8	8	8	8



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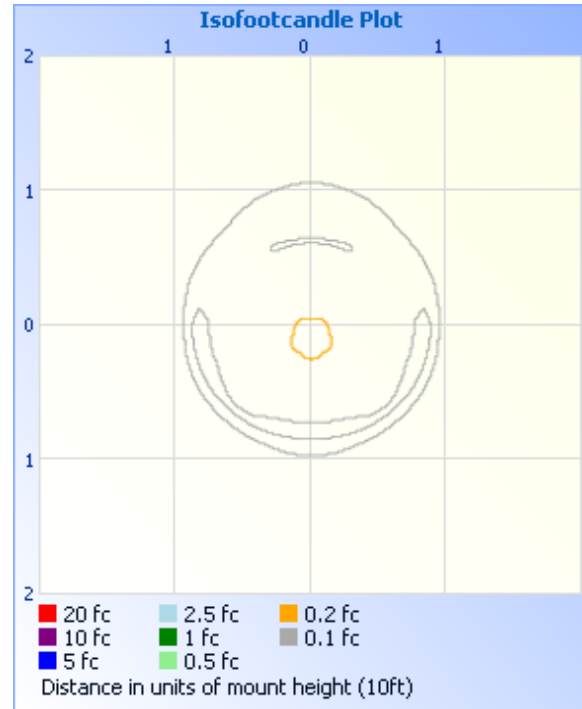
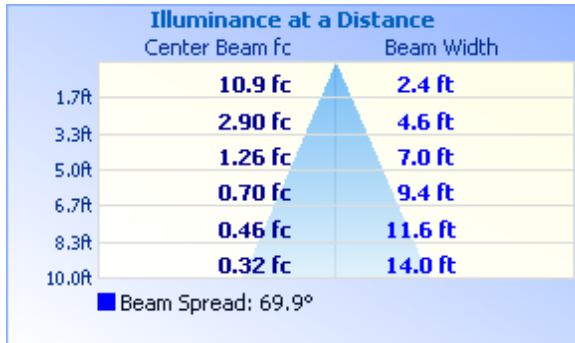
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RESULTS OF TESTS

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	15.1	5.0
0-40	27.8	9.1
0-60	69.2	22.7
60-90	86.7	28.4
70-100	108.2	35.4
90-120	98.3	32.2
0-90	155.9	51.1
90-180	149.4	48.9
0-180	305.3	100.0

ZONE	LUMENS	% LUMINAIRE
0-10	2.2	0.7
10-20	4.6	1.5
20-30	8.3	2.7
30-40	12.7	4.2
40-50	20.9	6.8
50-60	20.6	6.7
60-70	18.1	5.9
70-80	31.5	10.3
80-90	37.1	12.1
90-100	39.6	13.0
100-110	34.3	11.2
110-120	24.4	8.0
120-130	13.1	4.3
130-140	14.6	4.8
140-150	15.6	5.1
150-160	6.0	2.0
160-170	1.4	0.5
170-180	0.5	0.2

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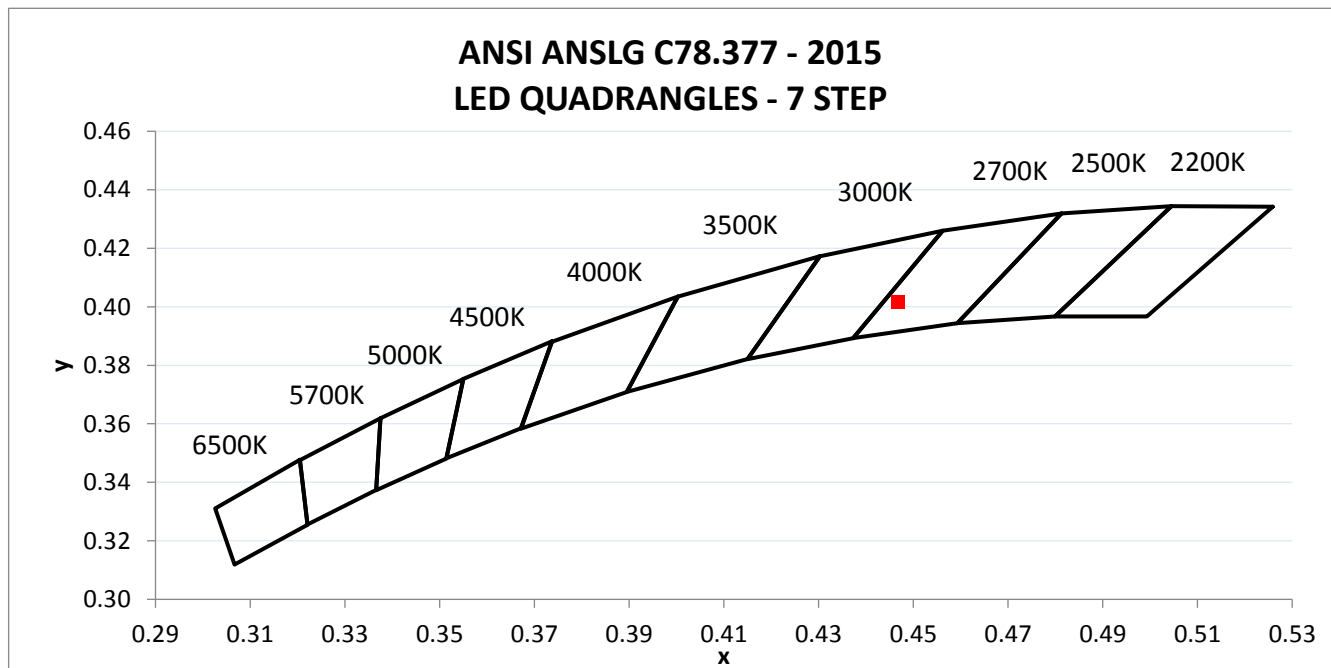
RESULTS OF TESTS

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 (%)
AH08052020182125-003	Base Up	120.10	30.32	3.36	0.922	41.22

LIGHT OUTPUT (lm)	LUMEN EFFICACY (lm/W)	CORRELATED COLOR TEMPERATURE - CCT (K)	CRI - Ra	CRI - R9	DUV
307.3	91.5	2819	91.8	61.8	-0.0022

CIE 1931 CHROMATICITY COORDINATE (x)	CIE 1931 CHROMATICITY COORDINATE (y)	CIE 1976 CHROMATICITY COORDINATE (u')	CIE 1976 CHROMATICITY COORDINATE (v')
0.447	0.401	0.258	0.522



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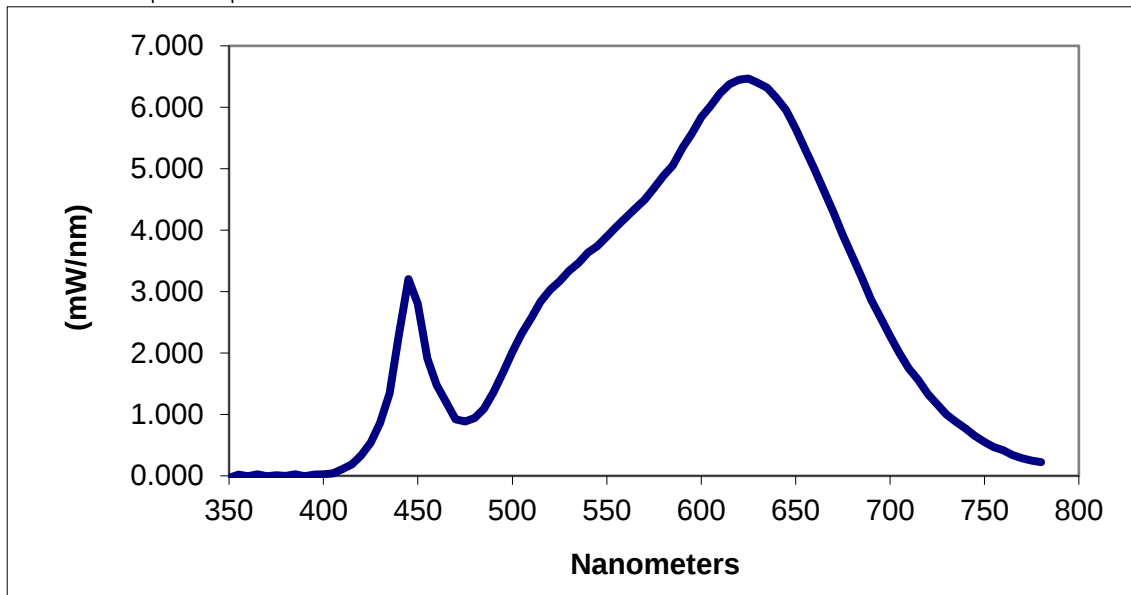
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RESULTS OF TESTS

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	-0.032	460	1.480	570	4.496	680	3.575
355	0.018	465	1.198	575	4.684	685	3.232
360	-0.008	470	0.920	580	4.888	690	2.865
365	0.026	475	0.884	585	5.054	695	2.578
370	-0.006	480	0.940	590	5.339	700	2.278
375	0.009	485	1.095	595	5.566	705	2.000
380	-0.003	490	1.363	600	5.837	710	1.742
385	0.024	495	1.679	605	6.022	715	1.560
390	-0.006	500	2.019	610	6.229	720	1.333
395	0.022	505	2.320	615	6.375	725	1.166
400	0.026	510	2.572	620	6.450	730	0.992
405	0.040	515	2.836	625	6.469	735	0.882
410	0.107	520	3.033	630	6.396	740	0.768
415	0.186	525	3.165	635	6.319	745	0.651
420	0.331	530	3.338	640	6.146	750	0.550
425	0.542	535	3.462	645	5.954	755	0.469
430	0.858	540	3.636	650	5.654	760	0.417
435	1.346	545	3.742	655	5.322	765	0.337
440	2.294	550	3.895	660	4.990	770	0.288
445	3.202	555	4.050	665	4.645	775	0.250
450	2.802	560	4.201	670	4.290	780	0.225
455	1.912	565	4.351	675	3.923		

*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:

A handwritten signature in cursive script, reading "Tim Quigley".

Timothy Quigley
Project Engineer
Lighting Division

Report Reviewed By:

A handwritten signature in cursive script, reading "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				