

VISUAL COMFORT & COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700PRTMINA**-LED927

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-016

ISSUE DATE

8/24/2020

REVISED DATE

None

TEST DATES

08/11/2020 through 08/12/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104349704CHI-016

MODEL NUMBER(s)

700PRTMINA**-LED927

REPORT RENDERED TO:

VISUAL COMFORT & COMPANY
7400 LINDER AVE
SKOKIE, IL 60077

STATEMENT OF LIMITATION

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-01080748-1.

TEST STANDARDS

IESNA LM-79 - 2008: Electrical and Photometric Measurements of Solid State Lighting

ANSI NEMA ANSLG C78.377: 2017: Specifications for the Chromaticity of Solid State Lighting (SSL) Products

CEC-140-2018-002: Title 20. Public Utilities and Energy

In Charge of Testing:



Ian Smith
Engineer
Lighting Division

Reviewer:



Jeff Davis
NA Technical Lead
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SAMPLE INFORMATION

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ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH08062020034718-016	700PRTMINA**-LED927	MINA TABLE LAMP	Production	8/6/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700PRTMINA**-LED927	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700PRTMINA**-LED927
Product Description:	MINA TABLE LAMP
LED Model No.:	SEOUL STW9A12D.3528
Driver Model No.:	XINSPower A122.1201000ID
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	295.2	291.8
Input Power (W) @ 120VAC (Vac)	10.30	10.31
Lumen Efficacy (lm/W)	28.7	28.3
Input Power Factor (I) @ 120VAC (Vac)	0.855	0.850

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	56.53
Correlated Color Temperature (K)	2711
Color Rendering Index - Ra (I)	93.1
Color Rendering Index - R9 (I)	57.3
Duv (I)	0.0002
Chromaticity Coordinate (x)	0.459
Chromaticity Coordinate (y)	0.411
Chromaticity Coordinate (u')	0.262
Chromaticity Coordinate (v')	0.527

TEST METHODS

SEASONING IN SAMPLE ORIENTATION - LED PRODUCTS

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

INTEGRATING SPHERE TESTING

A spectroradiometer and integrating sphere were used to measure the spectral distribution for each EUT resulting in photometric and colorimetric data. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position inside the sphere and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

A Type C Mirror Goniophotometer system was used to measure the luminous intensity (candela) at each angle of distribution for the EUT. Electrical measurements of the unit were measured using a power analyzer. Each EUT was operated at the rated input voltage of the system in its designated orientation. The ambient temperature was measured at a position near the EUT at equal height and stabilization procedures to LM-79 were followed.

TYPE C GONIOPHOTOMETER DISTRIBUTION TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTMINA**-LED927	Fail

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

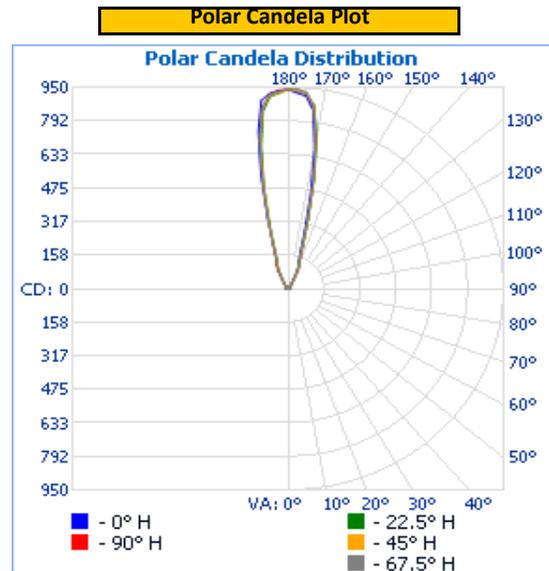
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Down	120.0	100.5	10.30	0.855

Light Output (lm)	Lumen Efficacy (lm/W)
295.2	28.7

INTENSITY SUMMARY - CANDELA

Angle	0	22.5	45	67.5	90
0	1	1	1	1	1
5	1	1	1	1	1
10	2	2	2	1	1
15	2	2	2	2	2
20	2	2	1	1	2
25	2	2	1	1	1
30	2	2	1	1	1
35	3	3	2	1	2
40	3	3	3	2	2
45	3	3	3	2	2
50	2	2	2	2	2
55	2	3	3	3	2
60	3	3	3	3	3
65	4	4	5	5	6
70	4	5	5	6	7
75	4	5	6	6	8
80	4	5	6	7	9
85	4	5	5	7	10
90	4	4	5	7	10
95	4	4	4	6	11
100	4	4	4	6	12
105	3	3	4	6	12
110	3	3	4	6	13
115	3	3	4	6	14
120	4	4	4	7	15
125	3	4	4	8	16
130	3	3	4	9	16
135	3	4	5	10	18
140	5	10	12	17	24
145	17	19	21	26	33
150	31	46	51	56	61
155	91	104	116	119	124
160	138	152	158	160	161
165	284	345	340	342	341
170	672	730	711	712	703
175	912	924	925	932	923
180	939	939	939	939	939

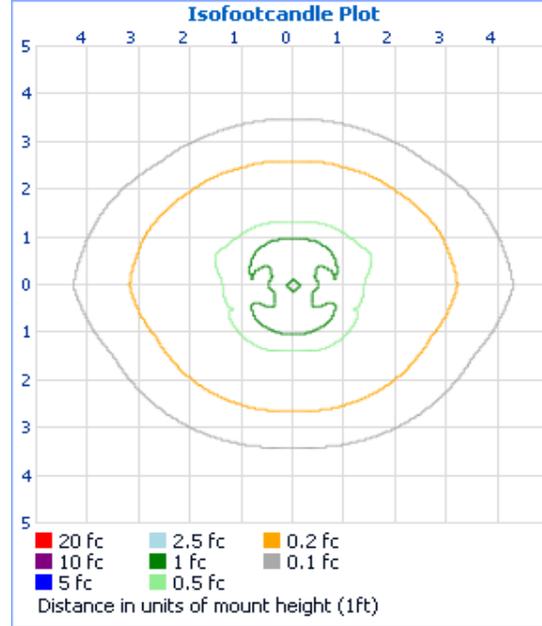
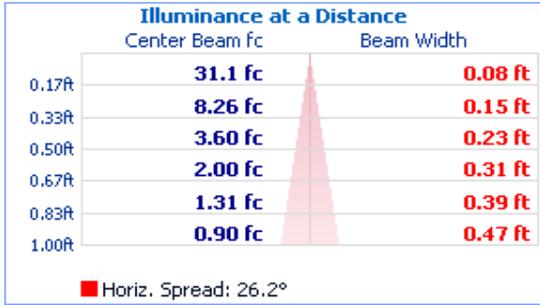
Entire luminous intensity matrix found in .IES file



ILLUMINANCE SUMMARY

Mounting Height: 1ft

Illuminance - Cone Of Light Isoillumination Plot



ZONAL LUMENS

Zonal Lumen Summary

Zone	Lumens	Luminaire
0-30	1.4	0.5%
0-40	2.8	0.9%
0-60	7.3	2.5%
60-90	17.4	5.9%
70-100	19.2	6.5%
90-120	17.9	6.1%
0-90	24.7	8.4%
90-180	270.5	91.6%
0-180	295.2	100.0%

Zone	Lumens	Total	Zone	Lumens	Total
0-10	0.1	0.0%	90-100	6.3	2.1%
10-20	0.5	0.2%	100-110	5.8	2.0%
20-30	0.8	0.3%	110-120	5.8	2.0%
30-40	1.4	0.5%	120-130	6.1	2.1%
40-50	2.1	0.7%	130-140	6.8	2.3%
50-60	2.4	0.8%	140-150	15.9	5.4%
60-70	4.5	1.5%	150-160	46.2	15.6%
70-80	6.2	2.1%	160-170	96.3	32.6%
80-90	6.7	2.3%	170-180	81.3	27.5%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTMINA**-LED927	Fail

PHOTOMETRIC, COLORIMETRIC, AND ELECTRICAL MEASUREMENTS (25°C +/- 1°C)

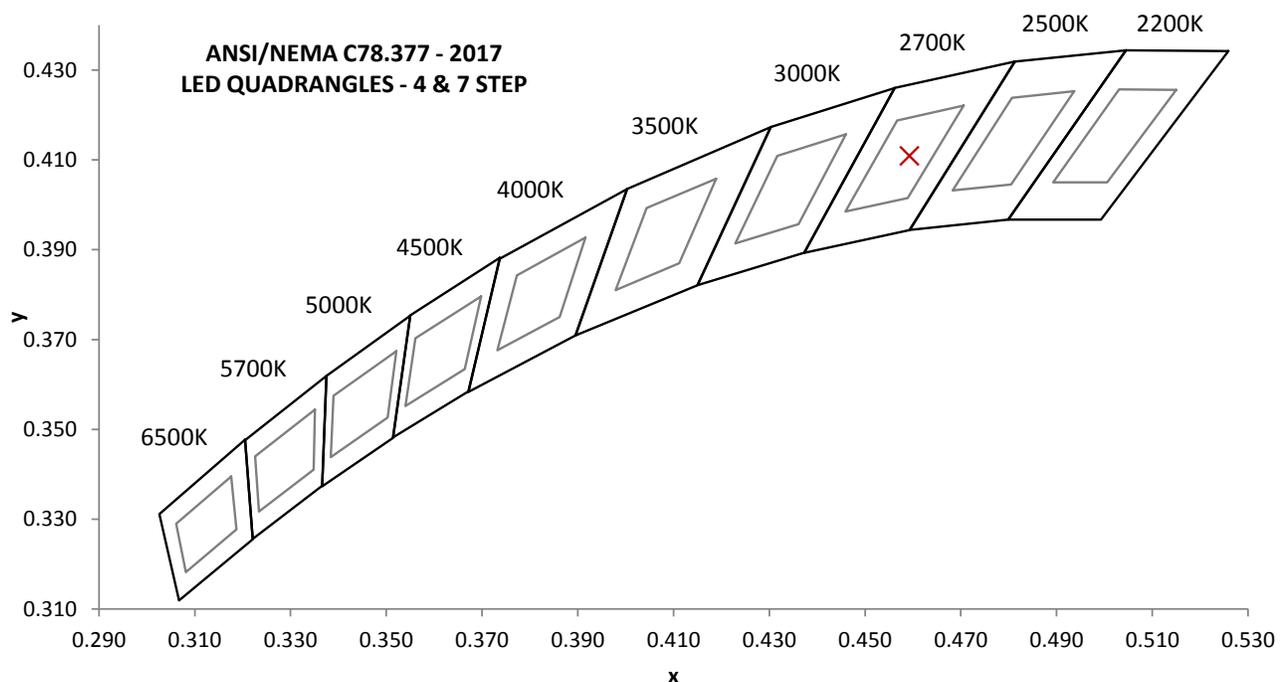
Base Orientation
Down

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.02	101.1	10.31	0.850	56.53

Measured at 120.02(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
291.8	28.3	2711	93.1	57.3

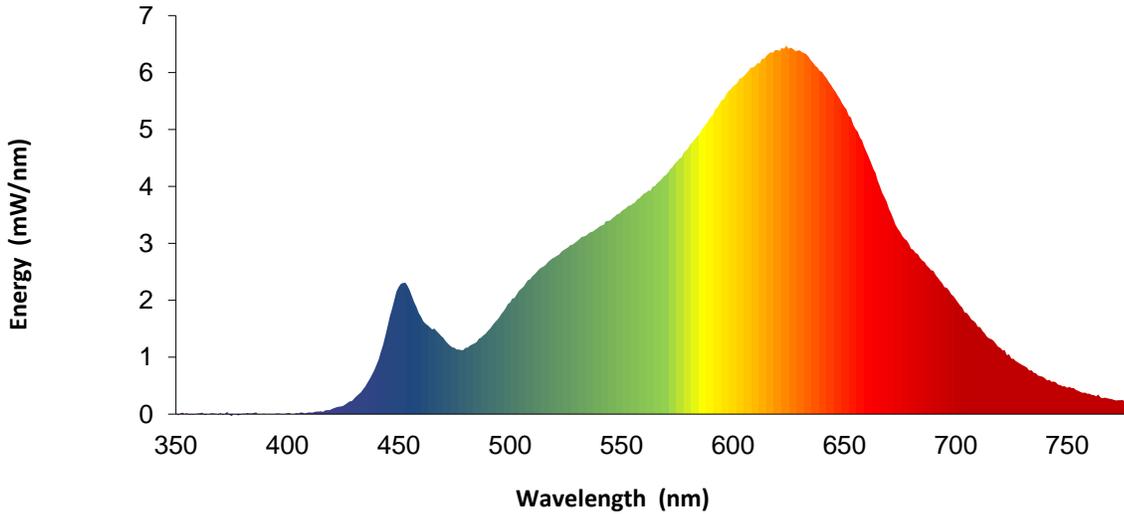
Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0002	0.459	0.411	0.262	0.527



SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
350	0.0	460	1.7	570	4.2	680	2.9
355	0.0	465	1.5	575	4.4	685	2.7
360	0.0	470	1.3	580	4.7	690	2.5
365	0.0	475	1.2	585	4.9	695	2.2
370	0.0	480	1.2	590	5.2	700	2.0
375	0.0	485	1.3	595	5.5	705	1.8
380	0.0	490	1.5	600	5.8	710	1.5
385	0.0	495	1.7	605	5.9	715	1.3
390	0.0	500	2.0	610	6.1	720	1.2
395	0.0	505	2.2	615	6.3	725	1.0
400	0.0	510	2.4	620	6.4	730	0.9
405	0.0	515	2.6	625	6.4	735	0.7
410	0.0	520	2.8	630	6.4	740	0.6
415	0.1	525	2.9	635	6.2	745	0.6
420	0.1	530	3.0	640	6.0	750	0.5
425	0.1	535	3.2	645	5.7	755	0.4
430	0.3	540	3.3	650	5.4	760	0.4
435	0.5	545	3.4	655	5.0	765	0.3
440	0.9	550	3.6	660	4.6	770	0.3
445	1.5	555	3.7	665	4.1	775	0.3
450	2.2	560	3.9	670	3.6	780	0.2
455	2.2	565	4.0	675	3.2	---	---

Without correction of sample absorption.



Portrayed color in graphic is estimated by wavelength (nm) and may not be exact - it is a visual representation only

EQUIPMENT LIST

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#	Equipment	Model No	Control No.	Last Cal	Cal Due
1	Yokogawa Power Meter	WT210	146919	7/1/2020	7/1/2021
2	Omega Thermometer	DPI8-C24	146920	10/3/2019	10/3/2020
3	LSI High Speed Mirror Goniometer	6440T	146928	VBU	VBU
4	Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
5	Pacific AC Power Supply	118-ACX	CHI0153	VBU	VBU
6	Newport Humidity Recorder	iServer	CHI0456	10/11/2019	10/11/2020
7	Labsphere Spectroradiometer	CDS-600	146923	VBU	VBU
8	2M Rotating Sphere	7660-ROT	146923	VBU	VBU
9	Omega thermometer	USB TC08	EQAH002615	4/7/2020	4/7/2021
10	Ametek DC Power Supply	XFR150-8	1468464	VBU	VBU
11	Yokogawa Power Meter	WT210	146880	10/2/2019	10/2/2020
12	Chroma Power Supply	61604	CHI0371	VBU	VBU
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Note: Standard sources listed above are traceable to NIST: National Institute of Standards and Technology

REVISION HISTORY

#	Revision Date	Updated By	Reviewed By	Description of Change
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