

VISUAL COMFORT & COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700PRTKLE18**-LED927

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-014

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-014

MODEL NUMBER(s)

700PRTKLE18**-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

In Charge of Testing:



Ian Smith
Engineer
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Reviewer:



Jeff Davis
NA Technical Lead
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SAMPLE INFORMATION

REPORT NO. 104349704CHI-014

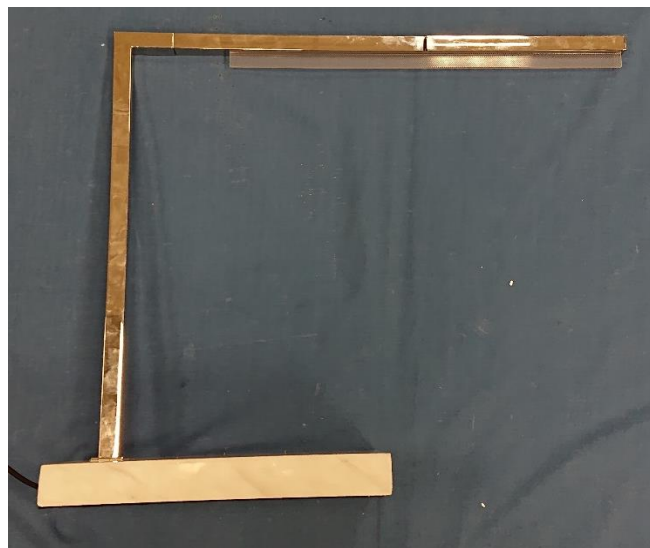
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH8062020034718-014	700PRTKLE18**-LED927	KLEE 18 TABLE LAMP	Production	8/6/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700PRTKLE18**-LED927	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

REPORT NO. 104349704CHI-014

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700PRTKLE18**-LED927
Product Description:	KLEE 18 TABLE LAMP
LED Model No.:	SAMSUNG SPMWH1228FD5WWS2
Driver Model No.:	XINSPower A122.1201000ID
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	666.4	675.6
Input Power (W) @ 120VAC (Vac)	10.01	10.00
Lumen Efficacy (lm/W)	66.6	67.5
Input Power Factor (I) @ 120VAC (Vac)	0.858	0.846

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	57.63
Correlated Color Temperature (K)	2908
Color Rendering Index - Ra (I)	93.1
Color Rendering Index - R9 (I)	60.5
Duv (I)	-0.0023
Chromaticity Coordinate (x)	0.440
Chromaticity Coordinate (y)	0.399
Chromaticity Coordinate (u')	0.255
Chromaticity Coordinate (v')	0.520

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

REPORT NO. 104349704CHI-014

Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTKLE18**-LED927	NA

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

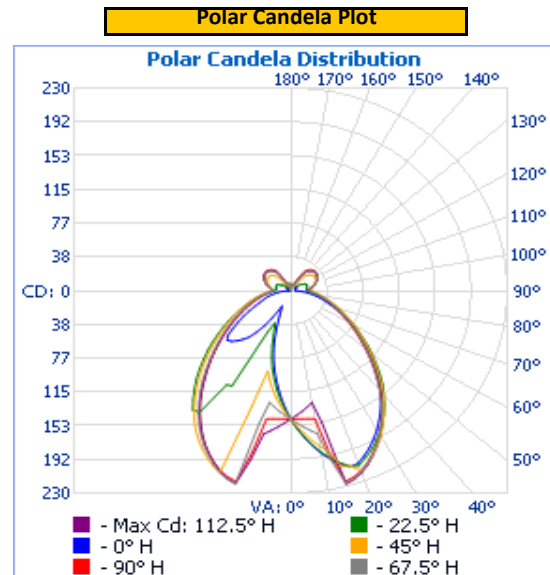
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.0	97.3	10.01	0.858

Light Output (lm)	Lumen Efficacy (lm/W)
666.4	66.6

INTENSITY SUMMARY - CANDELA

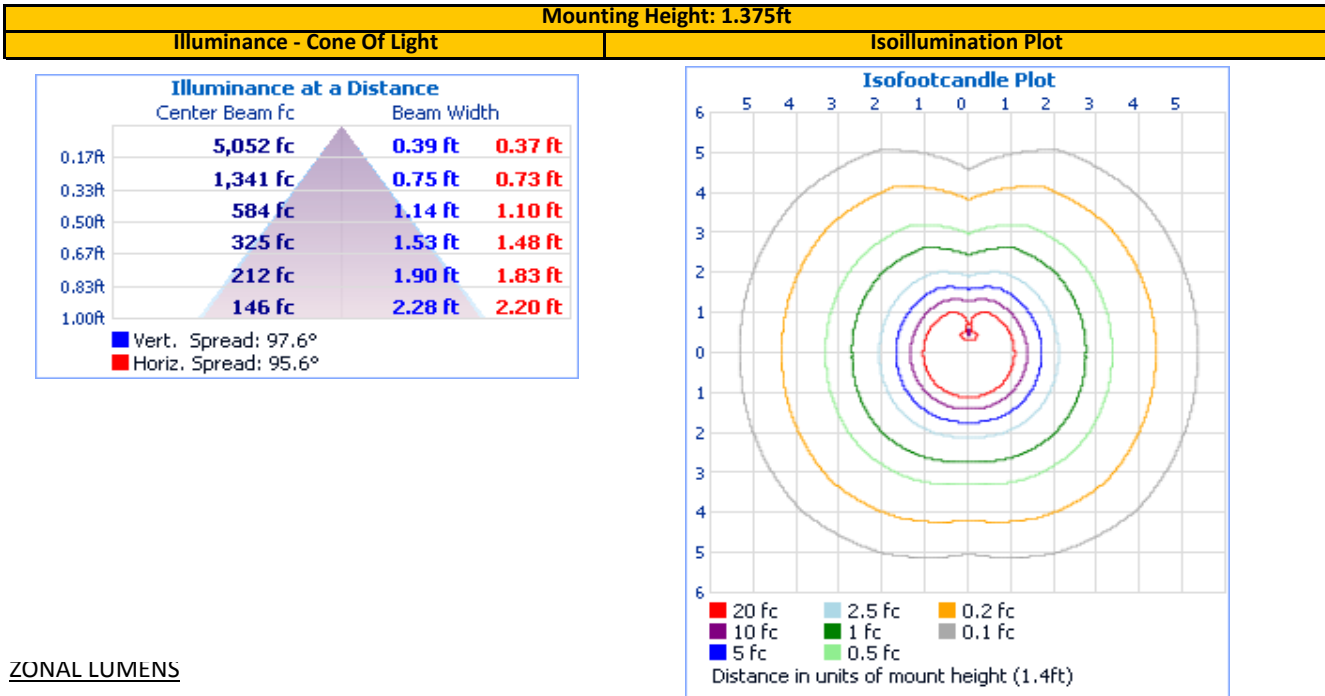
Angle	0	22.5	45	67.5	90
0	146	146	146	146	146
5	167	167	163	155	146
10	188	186	180	165	148
15	204	202	206	227	224
20	209	211	217	219	218
25	197	201	206	205	205
30	183	187	191	188	189
35	166	173	172	168	169
40	149	154	153	146	147
45	130	134	131	125	125
50	111	113	111	105	104
55	91	94	92	87	86
60	73	78	77	72	70
65	58	62	63	59	57
70	44	50	52	48	46
75	33	39	42	39	37
80	23	30	33	31	29
85	14	22	25	24	22
90	6	17	21	20	19
95	5	17	22	21	20
100	4	17	24	24	22
105	5	18	26	26	26
110	6	18	28	29	28
115	6	18	29	31	31
120	6	15	30	33	33
125	7	12	29	33	34
130	7	7	28	33	34
135	7	8	25	32	33
140	7	8	16	29	31
145	7	8	7	24	27
150	6	8	8	9	16
155	6	7	8	7	7
160	4	5	8	8	8
165	2	2	5	8	8
170	0	1	2	5	7
175	1	2	2	3	4
180	4	4	4	4	4

Entire luminous intensity matrix found in .IES file



REPORT NO. 104349704CHI-014

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	143.0	21.5%	90-100	19.3	2.9%
0-40	243.9	36.6%	100-110	21.9	3.3%
0-60	424.6	63.7%	110-120	23.1	3.5%
60-90	126.4	19.0%	120-130	20.6	3.1%
70-100	85.4	12.8%	130-140	15.8	2.4%
90-120	64.3	9.6%	140-150	8.8	1.3%
0-90	551.0	82.7%	150-160	3.6	0.5%
90-180	115.4	17.3%	160-170	1.8	0.3%
0-180	666.4	100.0%	170-180	0.4	0.1%

INTEGRATING SPHERE TESTING

REPORT NO. 104349704CHI-014

Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTKLE18**-LED927	NA

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

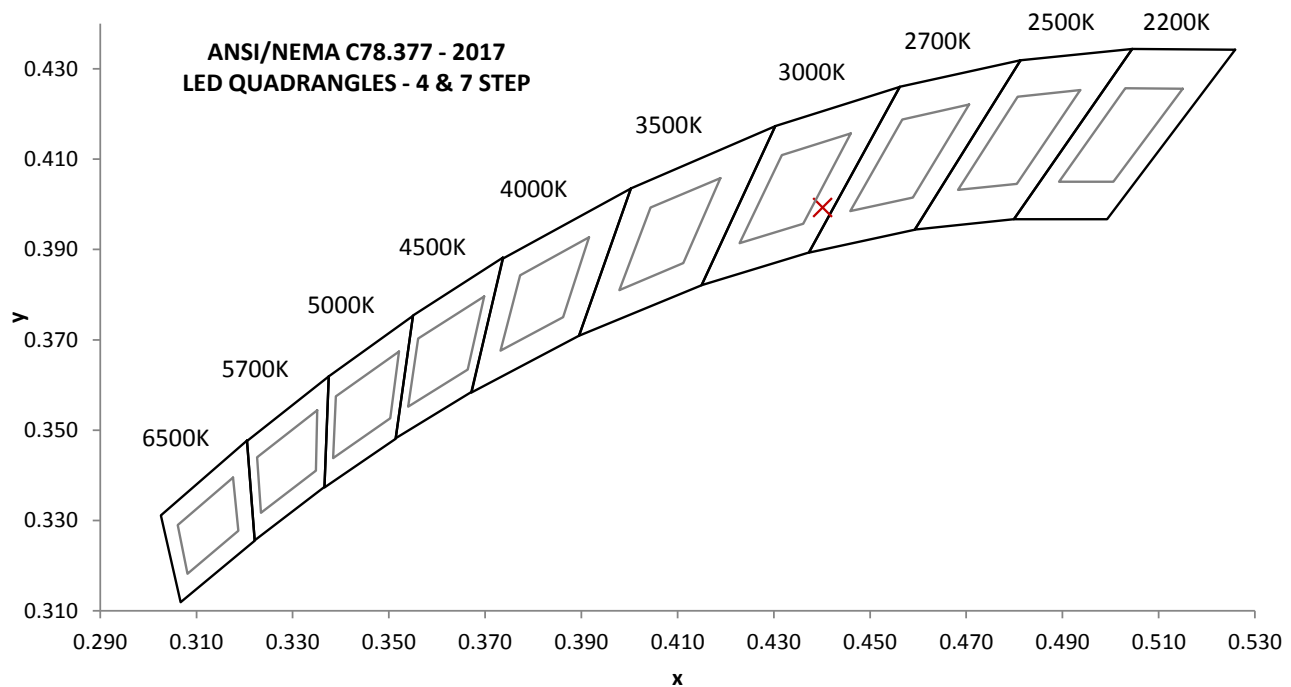
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.05	98.4	10.00	0.846	57.63

Measured at 120.05(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
675.6	67.5	2908	93.1	60.5

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0023	0.440	0.399	0.255	0.520

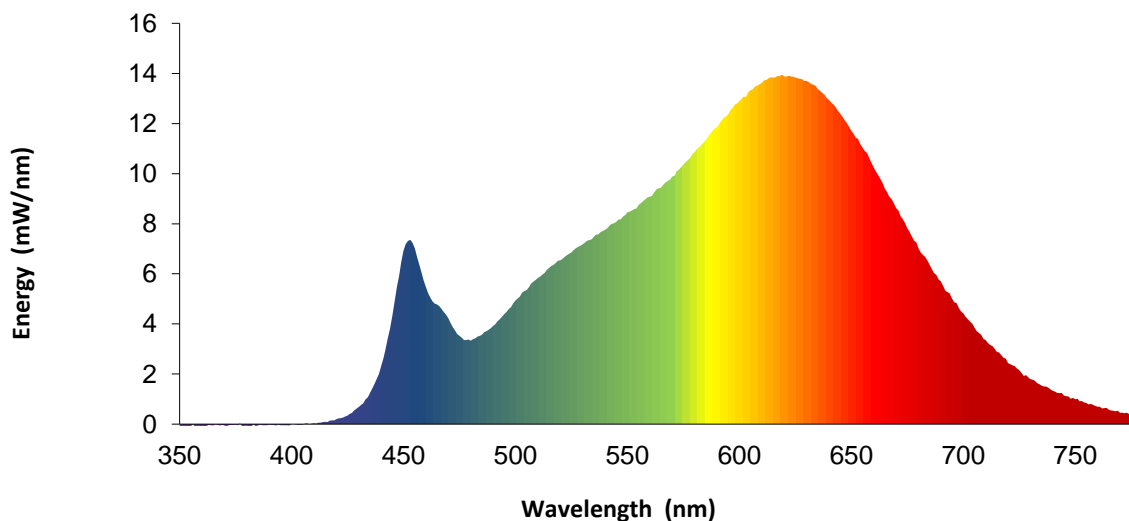


REPORT NO. 104349704CHI-014

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	-0.1		460	5.5		570	9.9		680	7.0
355	-0.1		465	4.8		575	10.4		685	6.3
360	-0.1		470	4.2		580	10.8		690	5.7
365	-0.1		475	3.5		585	11.4		695	5.0
370	-0.1		480	3.3		590	11.9		700	4.4
375	0.0		485	3.6		595	12.4		705	3.9
380	-0.1		490	3.9		600	12.9		710	3.4
385	-0.1		495	4.4		605	13.3		715	2.9
390	0.0		500	4.9		610	13.6		720	2.4
395	0.0		505	5.4		615	13.8		725	2.2
400	0.0		510	5.8		620	13.9		730	1.8
405	0.0		515	6.2		625	13.8		735	1.5
410	0.0		520	6.5		630	13.7		740	1.3
415	0.1		525	6.9		635	13.4		745	1.1
420	0.2		530	7.2		640	12.9		750	1.0
425	0.3		535	7.5		645	12.4		755	0.8
430	0.7		540	7.8		650	11.7		760	0.7
435	1.2		545	8.1		655	11.0		765	0.6
440	2.3		550	8.4		660	10.2		770	0.5
445	4.3		555	8.8		665	9.4		775	0.4
450	6.9		560	9.1		670	8.6		780	0.3
455	7.0		565	9.4		675	7.8		---	---

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

REPORT NO. 104349704CHI-014

#	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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