

VISUAL COMFORT & COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700PRTKLE70**-LED927

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-012

ISSUE DATE

8/24/2020

REVISED DATE

None

TEST DATES

08/12/2020 through 08/18/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104349704CHI-012

MODEL NUMBER(s)

700PRTKLE70**-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
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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	AH08062020034718-012	700PRTKLE70**-LED927	KLEE 70 FLOOR LAMP	Production	8/6/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700PRTKLE70**-LED927	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700PRTKLE70**-LED927
Product Description:	KLEE 70 FLOOR LAMP
LED Model No.:	SAMSUNG SPMWH1228FD5WWS2
Driver Model No.:	XINSPower A243-2401000I
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	1746.8	1821.2
Input Power (W) @ 120VAC (Vac)	22.23	22.19
Lumen Efficacy (lm/W)	78.6	82.1
Input Power Factor (I) @ 120VAC (Vac)	0.954	0.933

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	25.46
Correlated Color Temperature (K)	2593
Color Rendering Index - Ra (I)	93.1
Color Rendering Index - R9 (I)	58.5
Duv (I)	-0.0013
Chromaticity Coordinate (x)	0.466
Chromaticity Coordinate (y)	0.408
Chromaticity Coordinate (u')	0.268
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	700PRTKLE70**-LED927	NA

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

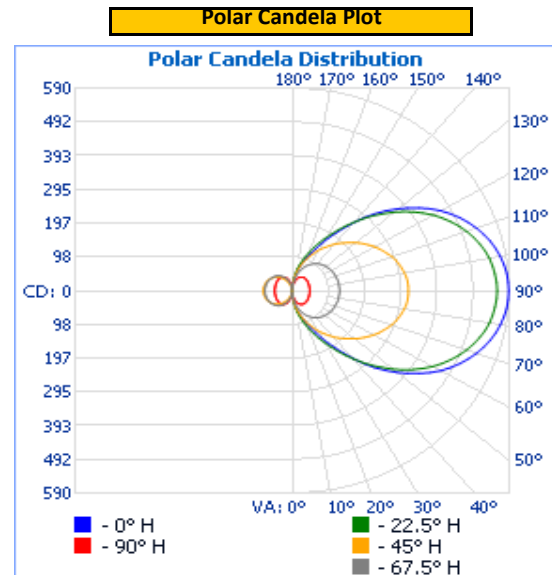
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Horizontal	120.0	194.1	22.23	0.954

Light Output (lm)	Lumen Efficacy (lm/W)
1746.8	78.6

INTENSITY SUMMARY - CANDELA

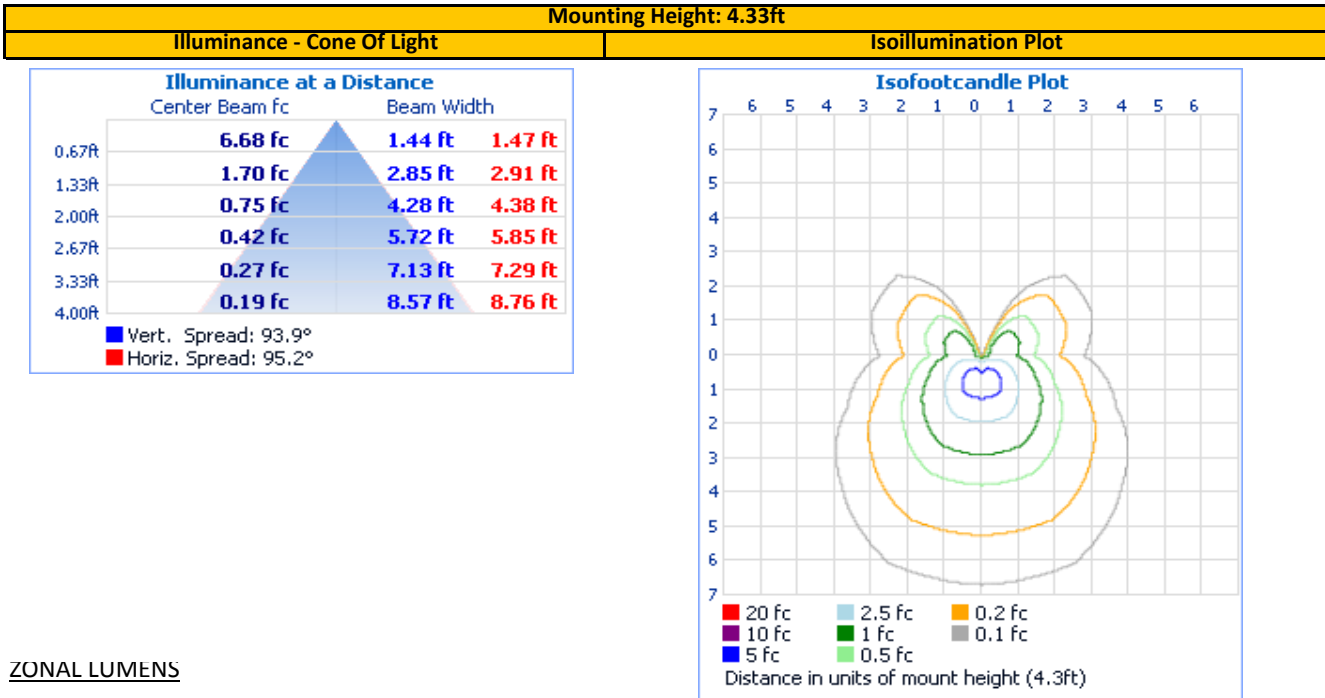
Angle	0	22.5	45	67.5	90
0	3	3	3	3	3
5	23	27	23	16	11
10	44	52	46	33	20
15	66	78	66	49	29
20	91	106	88	62	37
25	120	138	109	75	42
30	158	174	132	86	46
35	204	215	154	95	48
40	258	260	176	103	50
45	317	308	197	109	50
50	370	355	218	114	50
55	421	400	238	117	50
60	466	441	257	121	49
65	503	475	273	123	49
70	533	505	289	125	48
75	557	527	300	127	48
80	574	544	309	128	48
85	585	553	315	128	48
90	588	557	316	129	47
95	585	553	315	128	48
100	574	544	309	128	48
105	557	527	300	127	48
110	533	505	289	125	48
115	503	475	273	123	49
120	466	441	257	121	49
125	421	400	238	117	50
130	370	355	218	114	50
135	317	308	197	109	50
140	258	260	176	103	50
145	204	215	154	95	48
150	158	174	132	86	46
155	120	138	109	75	42
160	91	106	88	62	37
165	66	78	66	49	29
170	44	52	46	33	20
175	23	27	23	16	11
180	3	3	3	3	3

Entire luminous intensity matrix found in .IES file



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ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	41.6	2.4%	90-100	203.0	11.6%
0-40	97.9	5.6%	100-110	189.2	10.8%
0-60	318.0	18.2%	110-120	163.2	9.3%
60-90	555.4	31.8%	120-130	128.9	7.4%
70-100	595.2	34.1%	130-140	91.2	5.2%
90-120	555.4	31.8%	140-150	56.3	3.2%
0-90	873.4	50.0%	150-160	29.1	1.7%
90-180	873.4	50.0%	160-170	10.9	0.6%
0-180	1,746.8	100.0%	170-180	1.6	0.1%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTKLE70**-LED927	NA

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

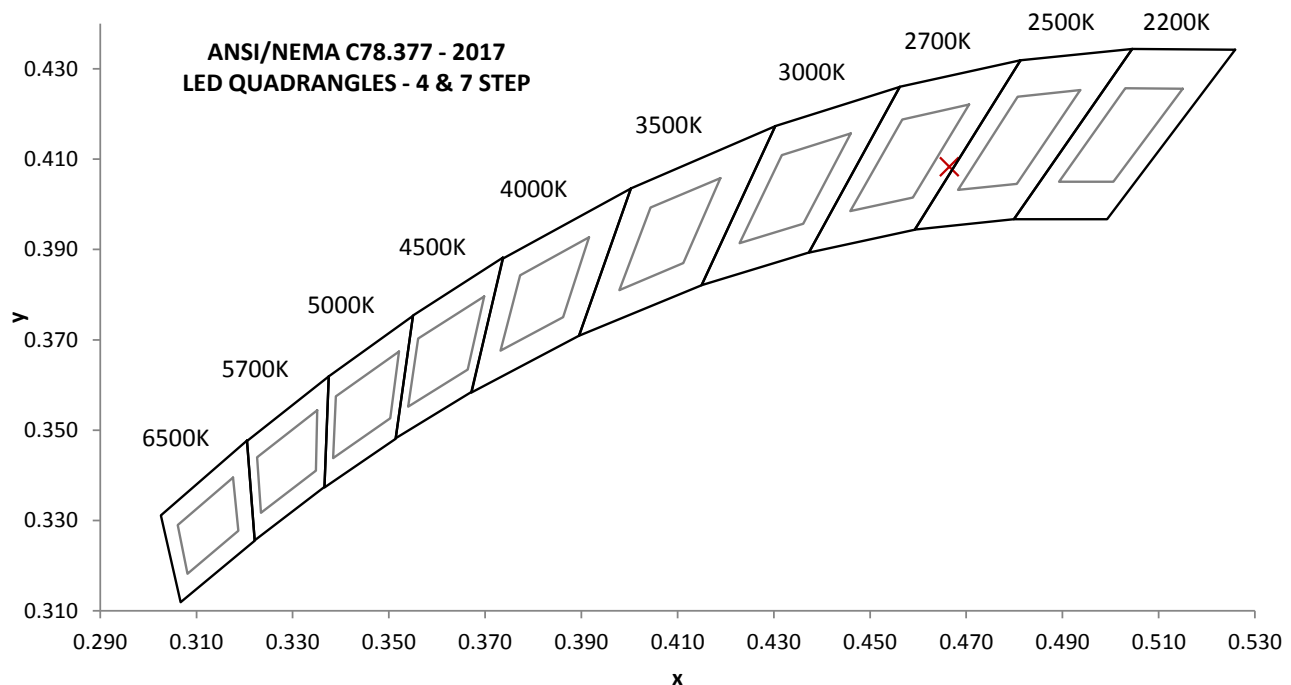
Base Orientation
Horizontal

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
119.98	198.1	22.19	0.933	25.46

Measured at 119.98(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
1821.2	82.1	2593	93.1	58.5

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0013	0.466	0.408	0.268	0.527

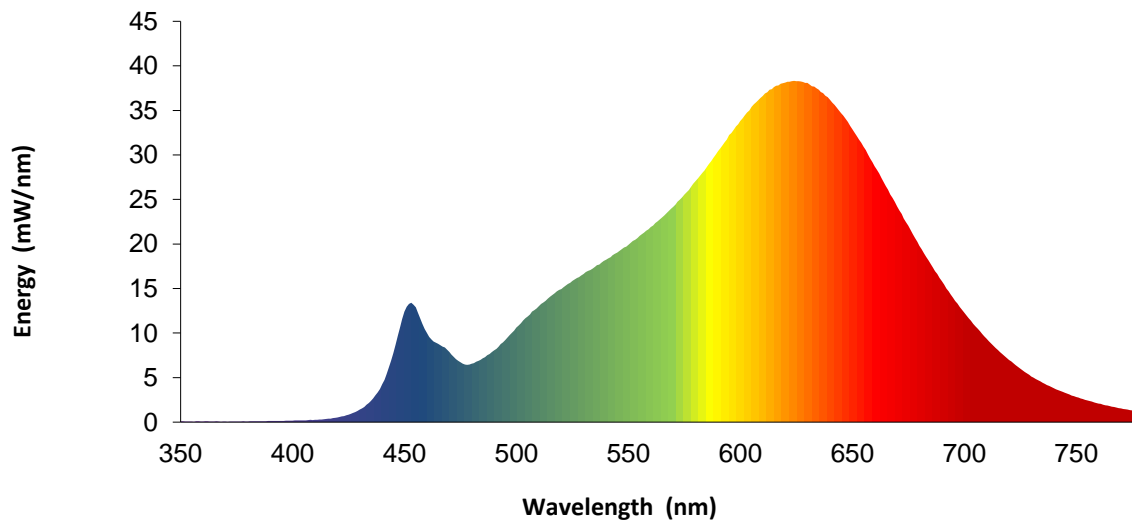


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.1		460	10.0		570	24.2		680	19.8
355	0.1		465	8.8		575	25.6		685	17.7
360	0.1		470	7.9		580	27.1		690	15.8
365	0.1		475	6.7		585	28.7		695	14.0
370	0.1		480	6.6		590	30.4		700	12.3
375	0.1		485	7.2		595	32.2		705	10.7
380	0.1		490	8.1		600	33.8		710	9.4
385	0.1		495	9.2		605	35.4		715	8.1
390	0.1		500	10.6		610	36.6		720	7.0
395	0.1		505	11.9		615	37.6		725	6.0
400	0.2		510	13.0		620	38.1		730	5.1
405	0.2		515	14.1		625	38.3		735	4.4
410	0.3		520	14.9		630	38.1		740	3.8
415	0.4		525	15.9		635	37.3		745	3.3
420	0.5		530	16.6		640	36.2		750	2.8
425	0.8		535	17.4		645	34.7		755	2.4
430	1.4		540	18.2		650	32.9		760	2.1
435	2.4		545	19.0		655	30.9		765	1.8
440	4.3		550	19.9		660	28.7		770	1.5
445	7.8		555	20.9		665	26.5		775	1.3
450	12.4		560	21.9		670	24.2		780	1.1
455	12.9		565	23.0		675	22.1		---	---

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	CDS2600	CHI0539	VBU	VBU
8	3 Meter Sphere	SPR600	CHI0088	VBU	VBU
9	Elgar AC Power Supply	CW1251	146112	VBU	VBU
10	Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
11	Yokogawa Power Meter	WT1600	146769	4/6/2020	4/6/2021
12	Extech K Temperature Meter	421502	CHI0476	10/1/2019	10/1/2020
13	Labsphere Spectroradiometer	CDS-600	146923	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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