

VISUAL COMFORT & COMPANY TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

700PRTDES16**-LED927

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-009

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-009

MODEL NUMBER(s)

700PRTDES16**-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
Lighting Division

Reviewer:



Jeff Davis
NA Technical Lead
Lighting Division

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SAMPLE INFORMATION

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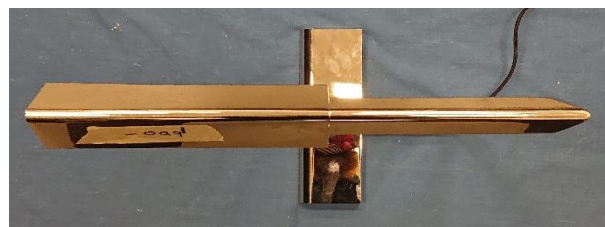
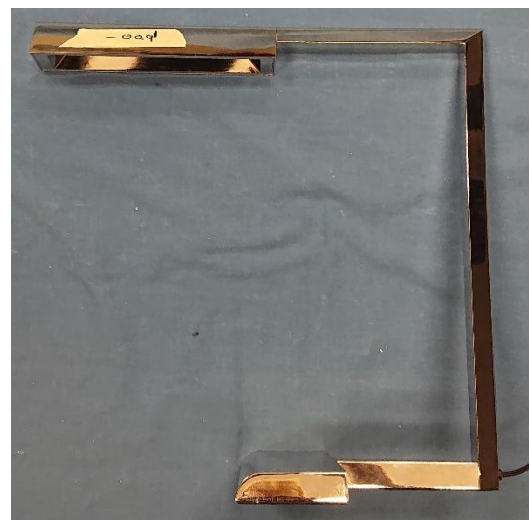
ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH08062020034718-009	700PRTDES16**-LED927	DESSAU 16 TABLE LAMP	Production	8/6/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	700PRTDES16**-LED927	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	700PRTDES16**-LED927
Product Description:	DESSAU 16 TABLE LAMP
LED Model No.:	LUMINUS MP-3030-1100-27-90
Driver Model No.:	XINSPower A122.1201000ID
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	551.8	553.9
Input Power (W) @ 120VAC (Vac)	10.79	10.63
Lumen Efficacy (lm/W)	51.1	52.1
Input Power Factor (I) @ 120VAC (Vac)	0.863	0.862

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	56.61
Correlated Color Temperature (K)	2643
Color Rendering Index - Ra (I)	90.9
Color Rendering Index - R9 (I)	48.6
Duv (I)	-0.0022
Chromaticity Coordinate (x)	0.461
Chromaticity Coordinate (y)	0.405
Chromaticity Coordinate (u')	0.266
Chromaticity Coordinate (v')	0.525

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	700PRTDES16**-LED927	NA

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

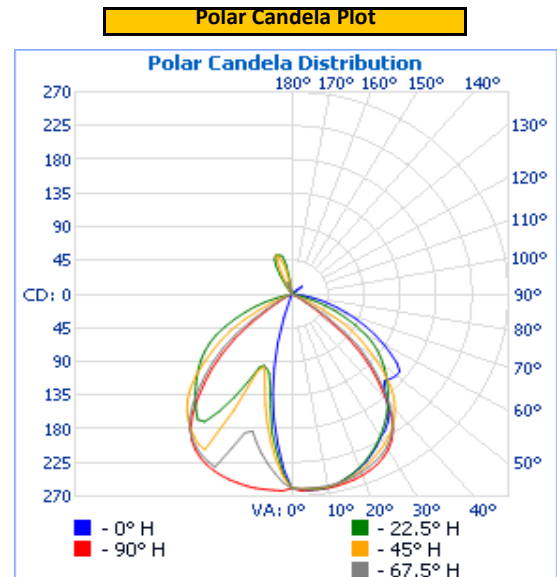
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.00	104.2	10.79	0.863

Light Output (lm)	Lumen Efficacy (lm/W)
551.8	51.1

INTENSITY SUMMARY - CANDELA

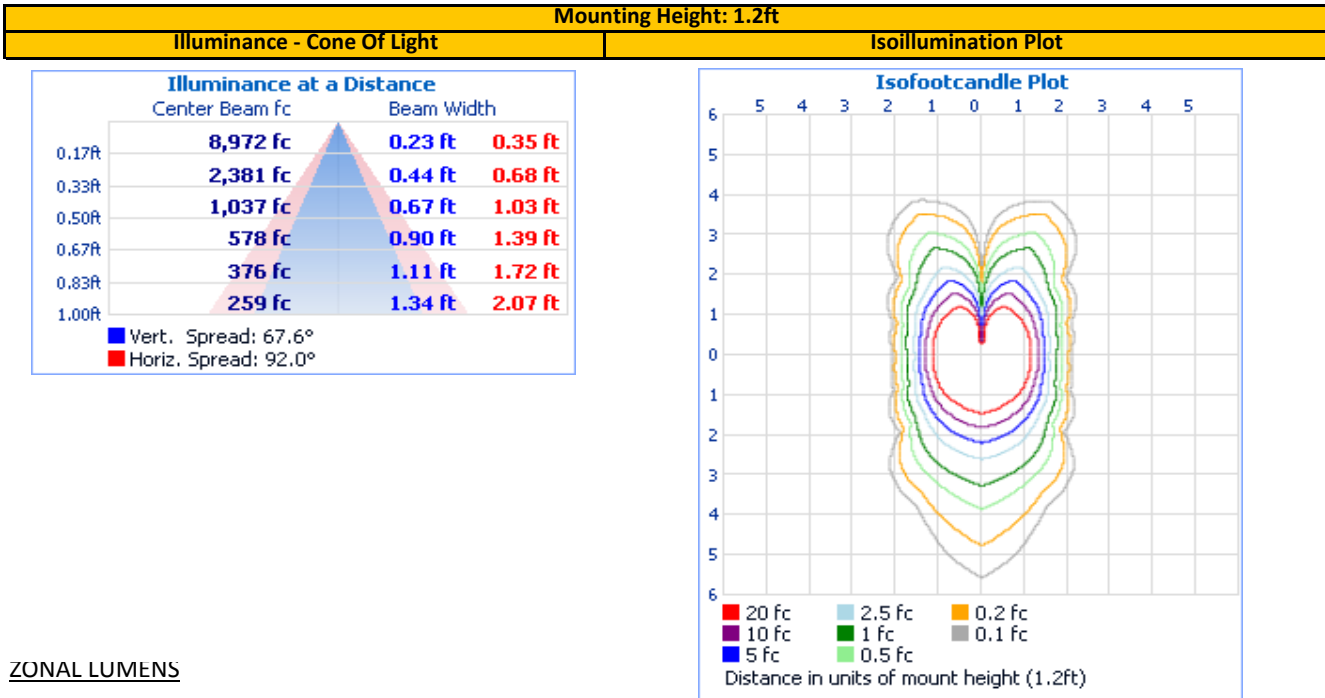
Angle	0	22.5	45	67.5	90
0	259	259	259	259	259
5	262	262	260	260	263
10	262	262	261	260	263
15	256	256	258	258	261
20	247	246	251	253	257
25	236	234	241	246	251
30	221	220	231	236	240
35	209	204	218	220	220
40	186	187	200	188	183
45	164	168	174	148	140
50	170	150	138	107	93
55	160	130	103	57	40
60	131	105	64	18	12
65	102	73	22	3	1
70	73	45	3	0	0
75	48	16	0	0	0
80	25	1	0	0	0
85	6	0	0	0	0
90	3	0	0	0	0
95	4	0	0	0	0
100	4	0	0	0	0
105	4	0	0	0	0
110	4	0	0	0	0
115	3	0	0	0	0
120	4	1	0	0	0
125	5	2	0	0	0
130	17	3	0	0	0
135	2	4	0	0	0
140	0	3	0	0	0
145	0	4	0	0	0
150	0	3	1	0	0
155	0	0	2	0	0
160	0	1	3	2	1
165	0	0	2	3	3
170	0	1	0	1	2
175	0	0	0	0	0
180	0	0	0	0	0

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	175.3	31.8%	0-10	22.6	4.1%
0-40	299.9	54.3%	10-20	57.7	10.5%
0-60	496.1	89.9%	20-30	94.9	17.2%
60-90	43.2	7.8%	30-40	124.6	22.6%
70-100	9.7	1.8%	40-50	116.5	21.1%
90-120	0.9	0.2%	50-60	79.7	14.4%
0-90	539.3	97.7%	60-70	33.8	6.1%
90-180	12.5	2.3%	70-80	8.6	1.6%
0-180	551.8	100.0%	80-90	0.8	0.1%
			90-100	0.3	0.0%
			100-110	0.3	0.1%
			110-120	0.3	0.1%
			120-130	0.7	0.1%
			130-140	0.8	0.1%
			140-150	1.1	0.2%
			150-160	4.6	0.8%
			160-170	4.1	0.7%
			170-180	0.3	0.1%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	700PRTDES16**-LED927	NA

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

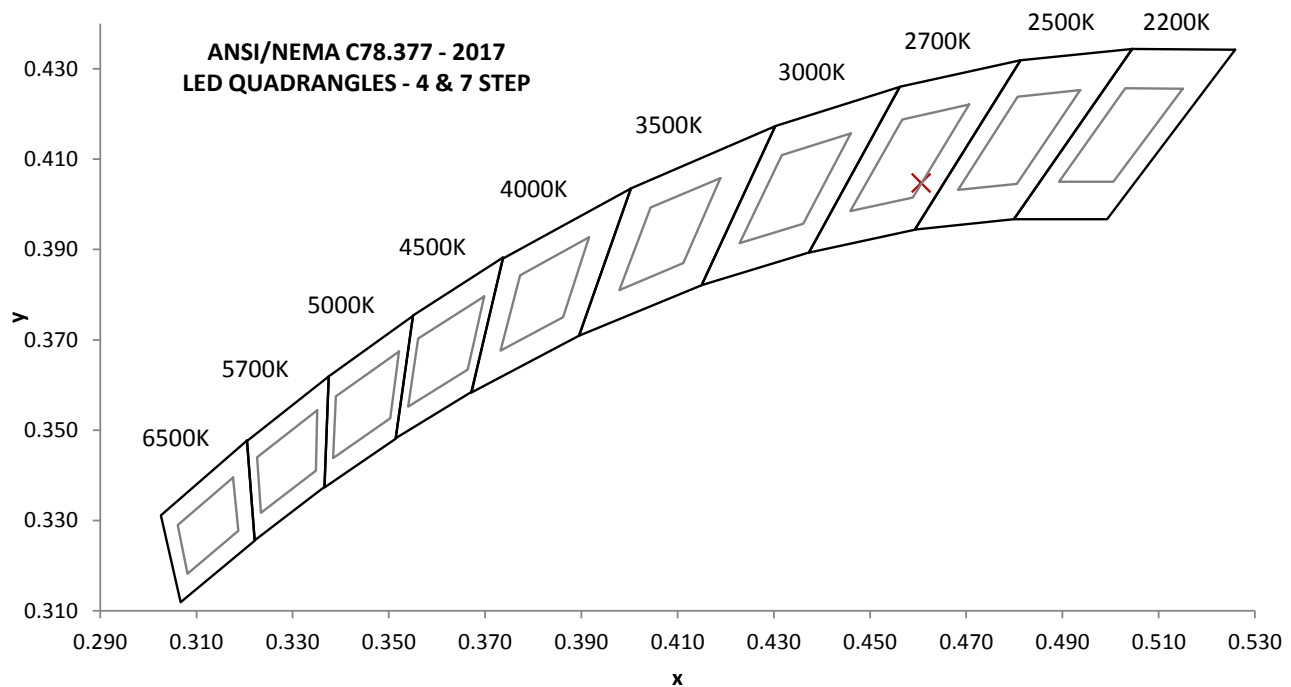
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.05	102.7	10.63	0.862	56.61

Measured at 120.05(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
553.9	52.1	2643	90.9	48.6

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0022	0.461	0.405	0.266	0.525

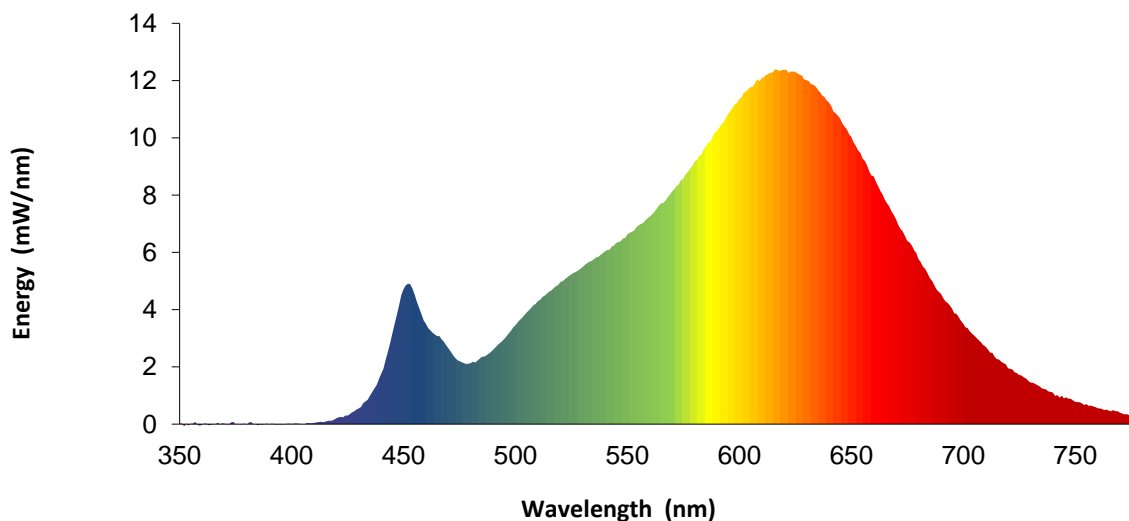


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	3.5		570	8.1		680	5.8
355	0.0		465	3.1		575	8.6		685	5.1
360	0.0		470	2.6		580	9.2		690	4.6
365	0.0		475	2.2		585	9.7		695	4.0
370	0.0		480	2.1		590	10.2		700	3.5
375	0.0		485	2.3		595	10.8		705	3.1
380	0.0		490	2.6		600	11.4		710	2.7
385	0.0		495	3.0		605	11.8		715	2.3
390	0.0		500	3.4		610	12.1		720	2.0
395	0.0		505	3.9		615	12.3		725	1.7
400	0.0		510	4.3		620	12.4		730	1.5
405	0.0		515	4.6		625	12.3		735	1.3
410	0.0		520	5.0		630	12.0		740	1.1
415	0.1		525	5.2		635	11.7		745	0.9
420	0.2		530	5.5		640	11.2		750	0.8
425	0.3		535	5.8		645	10.7		755	0.7
430	0.6		540	6.0		650	10.0		760	0.6
435	1.0		545	6.3		655	9.3		765	0.5
440	1.8		550	6.6		660	8.7		770	0.4
445	3.2		555	6.9		665	7.8		775	0.3
450	4.7		560	7.3		670	7.1		780	0.3
455	4.5		565	7.7		675	6.4		---	---

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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