

GENERATION BRANDS, LLC TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

ESSF0606U48225930FW1

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-047

ISSUE DATE

11/16/2020

REVISED DATE

None

TEST DATES

11/05/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104349704CHI-047

MODEL NUMBER(s)

ESSF0606U48225930FW1

REPORT RENDERED TO:

GENERATION BRANDS, LLC
7400 LINDER AVE
SKOKIE, IL 60077
USA

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-01080748-3.

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	AH10292020032135	ESSF0606U48225930FW 1	ESSENCE 0606 U 300 930 FW	Production	10/29/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	ESSF0606U48225930FW1	1

SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	ESSF0606U48225930FW1
Product Description:	ESSENCE 0606 U 300 930 FW
LED Model No.:	U Series 300lm/ft
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	914.5	920.9
Input Power (W) @ 24 (Vdc)	10.80	10.79
Lumen Efficacy (lm/W)	84.7	85.4

Criteria	Results
Input ATHD (%) @ 24 (Vdc)	NA
Correlated Color Temperature (K)	3029
Color Rendering Index - Ra (l)	97.4
Color Rendering Index - R9 (l)	98.7
Duv (l)	-0.0011
Chromaticity Coordinate (x)	0.433
Chromaticity Coordinate (y)	0.400
Chromaticity Coordinate (u')	0.250
Chromaticity Coordinate (v')	0.519

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	ESSF0606U48225930FW1	NA

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

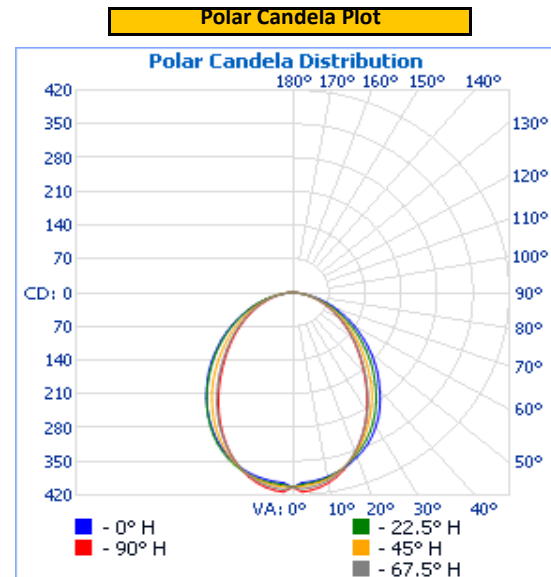
Base Orientation	Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	24.0	449.9	10.80	NA

Light Output (lm)	Lumen Efficacy (lm/W)
914.5	84.7

INTENSITY SUMMARY - CANDELA

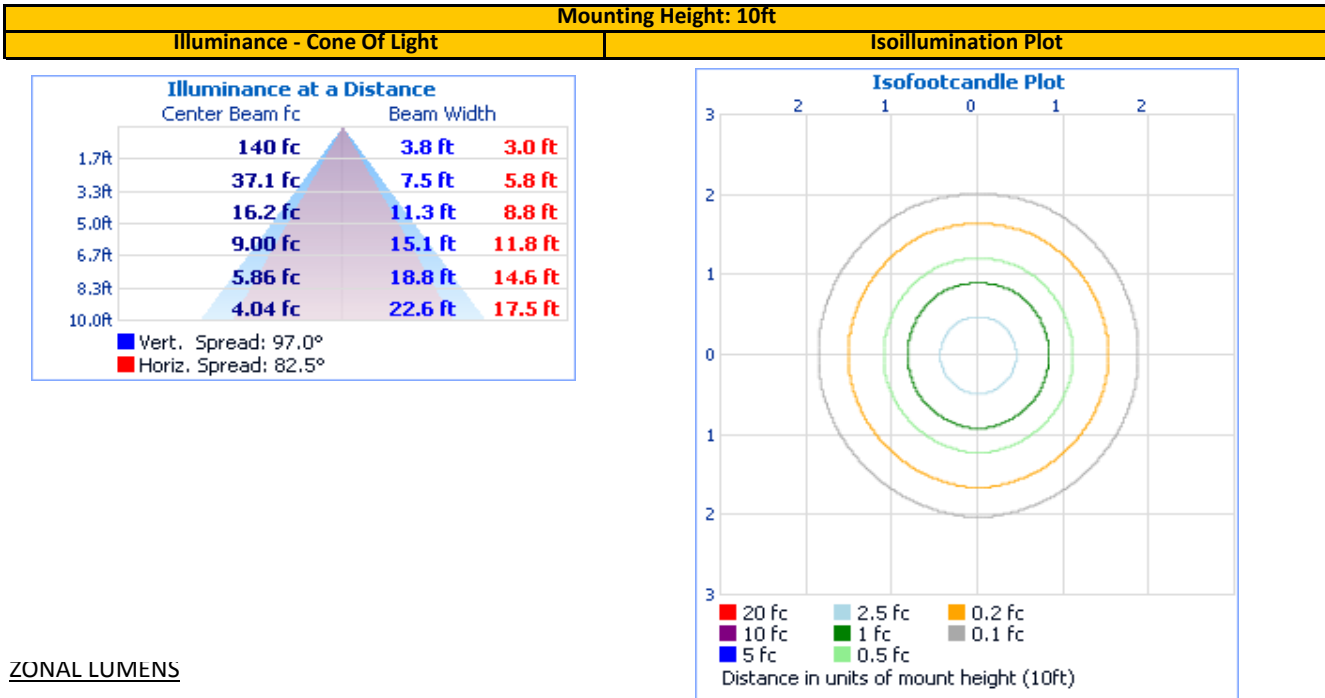
Angle	0	22.5	45	67.5	90
0	404	404	404	404	404
5	394	397	400	405	411
10	388	390	392	396	401
15	378	377	376	378	381
20	363	359	355	352	354
25	345	337	328	322	322
30	322	311	299	289	287
35	294	281	268	253	250
40	262	249	234	218	215
45	232	217	200	185	183
50	200	185	168	156	154
55	168	155	140	129	128
60	138	125	113	105	103
65	108	98	88	82	82
70	81	73	67	62	61
75	56	49	46	44	43
80	32	29	29	28	28
85	13	12	15	16	16
90	0	0	0	0	0
95	0	0	0	0	0
100	0	0	0	0	0
105	0	0	0	0	0
110	0	0	0	0	0
115	0	0	0	0	0
120	0	0	0	0	0
125	0	0	0	0	0
130	0	0	0	0	0
135	0	0	0	0	0
140	0	0	0	0	0
145	0	0	0	0	0
150	0	0	0	0	0
155	0	0	0	0	0
160	0	0	0	0	0
165	0	0	0	0	0
170	0	0	0	0	0
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	297.2	32.5%	90-100	0.0	0.0%
0-40	466.1	51.0%	100-110	0.0	0.0%
0-60	753.8	82.4%	110-120	0.0	0.0%
60-90	160.7	17.6%	120-130	0.0	0.0%
70-100	68.6	7.5%	130-140	0.0	0.0%
90-120	0.0	0.0%	140-150	0.0	0.0%
0-90	914.5	100.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	160-170	0.0	0.0%
0-180	914.5	100.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0606U48225930FW1	NA

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

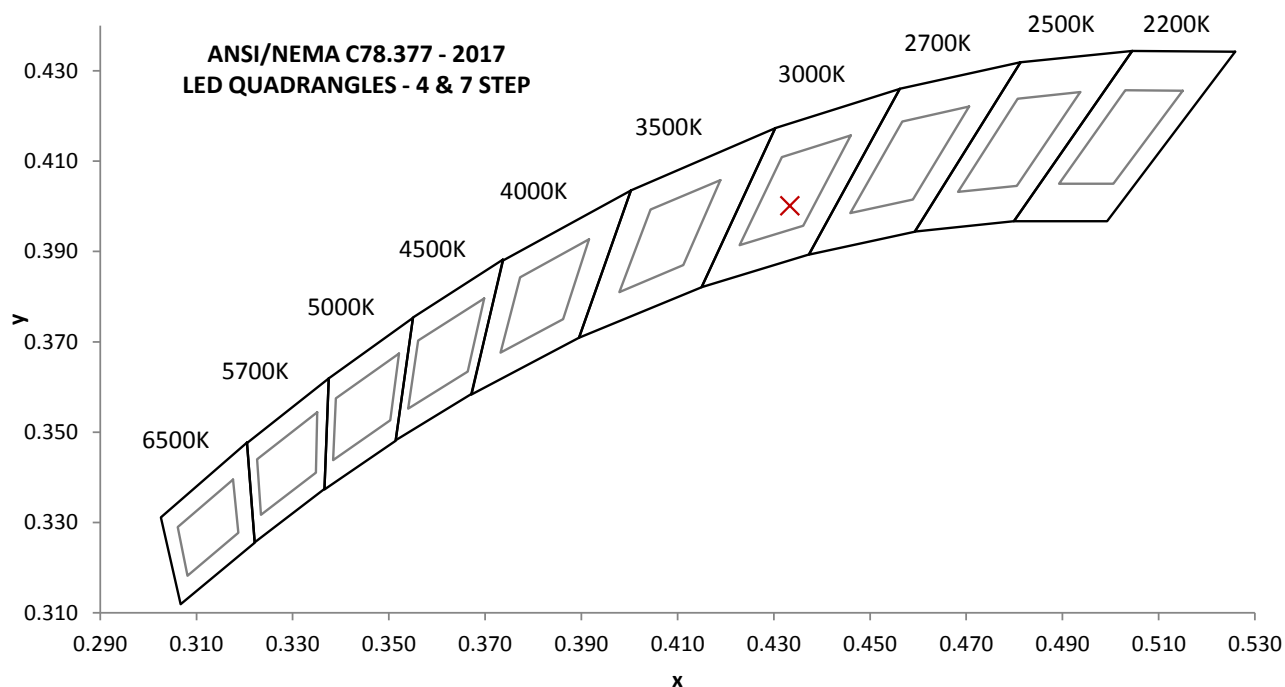
Base Orientation
Up

Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
23.99	449.7	10.79	NA	NA

Measured at 23.99(Vdc)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
920.9	85.4	3029	97.4	98.7

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0011	0.433	0.400	0.250	0.519

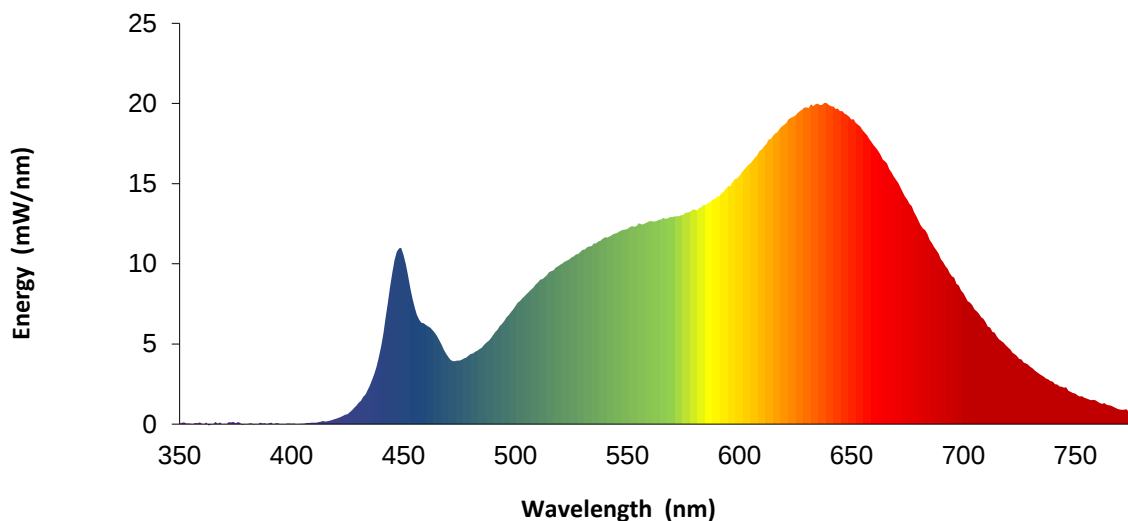


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	6.2		570	12.9		680	12.7
355	0.0		465	5.5		575	13.1		685	11.5
360	0.0		470	4.2		580	13.4		690	10.3
365	0.0		475	4.0		585	13.7		695	9.2
370	0.0		480	4.4		590	14.2		700	8.2
375	0.1		485	4.8		595	14.8		705	7.2
380	0.0		490	5.6		600	15.5		710	6.4
385	0.0		495	6.4		605	16.3		715	5.5
390	0.1		500	7.4		610	17.1		720	4.8
395	0.0		505	8.1		615	18.0		725	4.1
400	0.0		510	8.8		620	18.7		730	3.6
405	0.0		515	9.5		625	19.2		735	3.0
410	0.1		520	10.0		630	19.8		740	2.6
415	0.2		525	10.4		635	20.0		745	2.3
420	0.3		530	10.9		640	19.9		750	1.9
425	0.6		535	11.3		645	19.5		755	1.6
430	1.3		540	11.7		650	19.0		760	1.4
435	2.4		545	11.9		655	18.3		765	1.2
440	4.9		550	12.2		660	17.4		770	0.9
445	9.4		555	12.5		665	16.4		775	0.8
450	10.6		560	12.7		670	15.2		780	0.6
455	7.2		565	12.8		675	14.0		---	---

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	10/1/2020	10/1/2021
3	LSI High Speed Mirror Goniometer	6440T	146928	VBV	VBV
4	Newport Thermohygrometer	iServer	146957	12/2/2019	12/2/2020
5	Sorenson DC Power Supply	XHR 150-7	146922	VBV	VBV
6	Labsphere Spectroradiometer	CDS-600	146923	VBV	VBV
7	2M Rotating Sphere	7660-ROT	146923	VBV	VBV
8	Omega thermometer	USB TC08	EQA002615	4/7/2020	4/7/2021
9	Ametek DC Power Supply	XFR150-8	1468464	VBV	VBV
10	Yokogawa Power Meter	WT210	146880	10/1/2020	10/1/2021
11	Chroma Power Supply	61604	CHI0371	VBV	VBV
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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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ANNEX A - TM-30 CALCULATIONS

REPORT NO. 104349704CHI-047

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0606U48225930FW1	NA

TM-30 REPORT

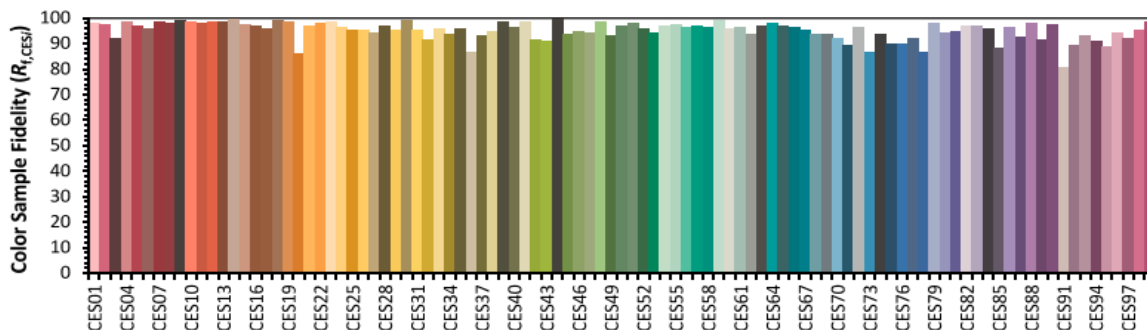
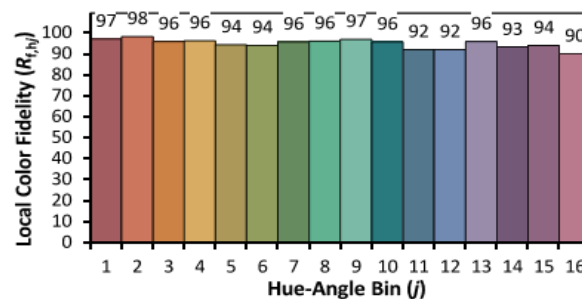
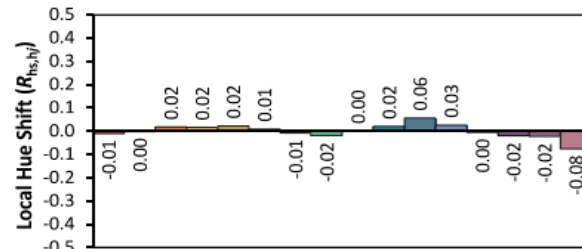
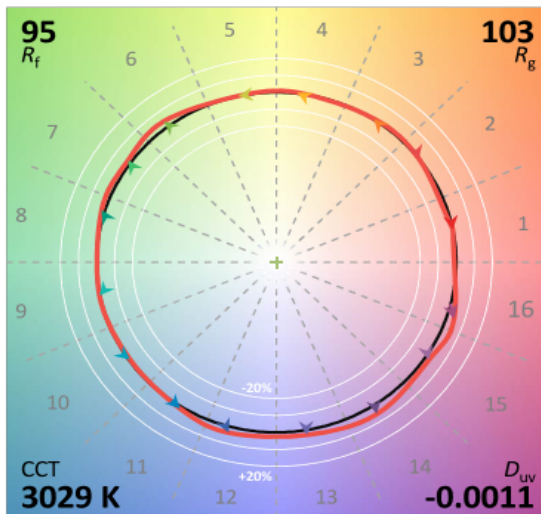
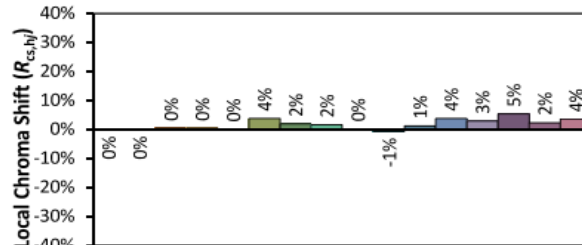
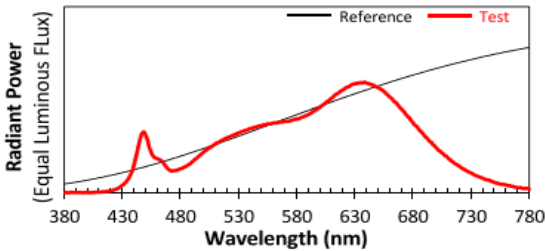
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Generation Brands, LLC

Date: 11/5/2020

Model: ESSF0606U48225930FW1



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4333
 y 0.4001
 u' 0.2500
 v' 0.5193

Colors are for visual orientation purposes only. Created with the IES TM-30-18 Calculator Version 2.00.