

GENERATION BRANDS, LLC TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

ESSF0604U48720930AW1

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-054

ISSUE DATE

11/16/2020

REVISED DATE

None

TEST DATES

11/05/2020 through 11/10/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

© 2017 INTERTEK



REPORT NUMBER

104349704CHI-054

MODEL NUMBER(s)

ESSF0604U48720930AW1

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

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

SAMPLE INFORMATION

REPORT NO. 104349704CHI-054

ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH10292020032135	ESSF0604U48720930AW 1	ESSENCE 0604 U 800 930 WW	Production	10/29/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	ESSF0604U48720930AW1	1

SUMMARY

REPORT NO. 104349704CHI-054

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	ESSF0604U48720930AW1
Product Description:	ESSENCE 0604 U 800 930 WW
LED Model No.:	U Series 800lm/ft
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	2328.0	2360.1
Input Power (W) @ 24 (Vdc)	29.30	29.94
Lumen Efficacy (lm/W)	79.5	78.8

Criteria	Results
Input ATHD (%) @ 24 (Vdc)	NA
Correlated Color Temperature (K)	2923
Color Rendering Index - Ra (l)	97.5
Color Rendering Index - R9 (l)	96.6
Duv (l)	-0.0013
Chromaticity Coordinate (x)	0.441
Chromaticity Coordinate (y)	0.402
Chromaticity Coordinate (u')	0.254
Chromaticity Coordinate (v')	0.521

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-054

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0604U48720930AW1	NA

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

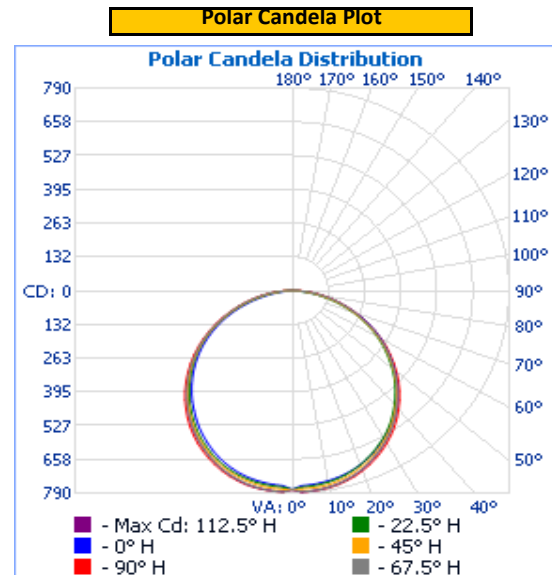
Base Orientation	Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	24.0	1220.7	29.30	NA

Light Output (lm)	Lumen Efficacy (lm/W)
2328.0	79.5

INTENSITY SUMMARY - CANDELA

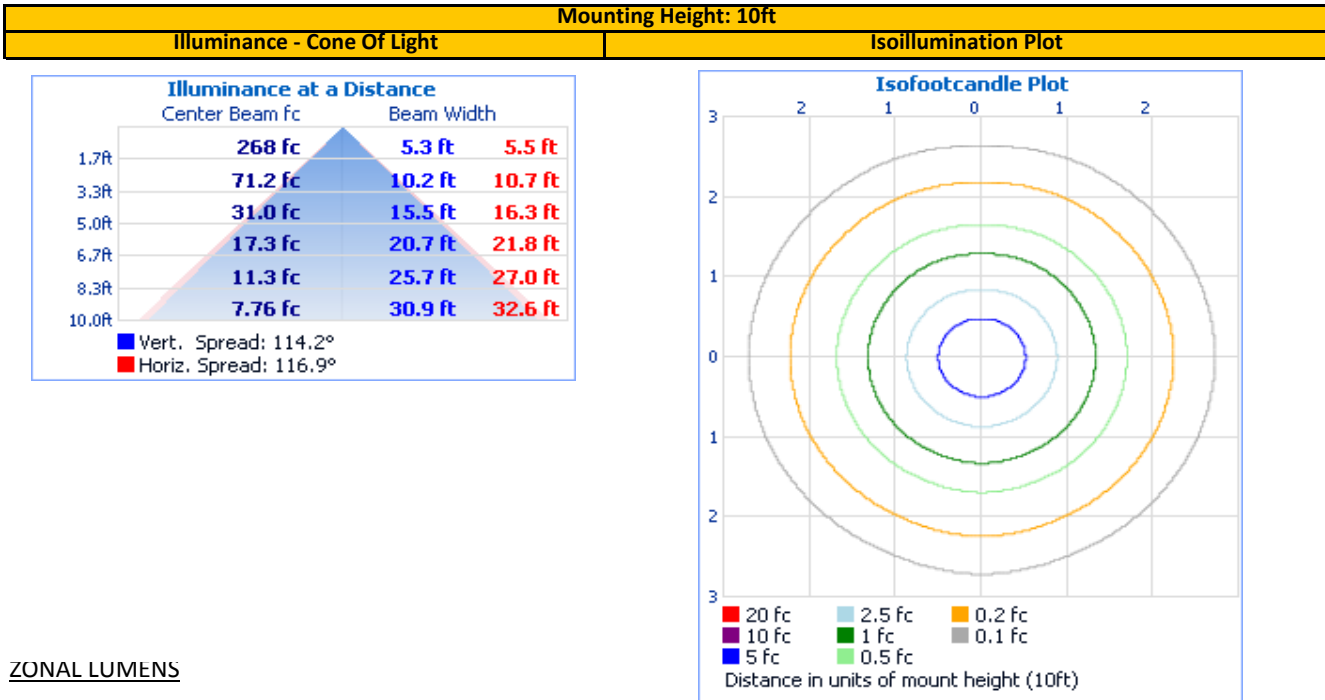
Angle	0	22.5	45	67.5	90
0	776	776	776	776	776
5	760	766	773	784	785
10	753	758	768	778	780
15	741	744	754	764	767
20	723	723	732	742	748
25	698	695	704	712	721
30	666	663	671	679	688
35	629	624	632	638	648
40	585	579	586	591	602
45	537	530	537	540	552
50	485	475	482	485	496
55	428	417	423	427	436
60	370	357	361	365	373
65	307	293	295	301	307
70	237	225	229	236	241
75	170	157	164	171	176
80	103	93	102	112	116
85	44	40	51	61	65
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



REPORT NO. 104349704CHI-054

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	611.5	26.3%	90-100	0.0	0.0%
0-40	1,006.7	43.2%	100-110	0.0	0.0%
0-60	1,800.1	77.3%	110-120	0.0	0.0%
60-90	527.9	22.7%	120-130	0.0	0.0%
70-100	232.9	10.0%	130-140	0.0	0.0%
90-120	0.0	0.0%	140-150	0.0	0.0%
0-90	2,328.0	100.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	160-170	0.0	0.0%
0-180	2,328.0	100.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

REPORT NO. 104349704CHI-054

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0604U48720930AW1	NA

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

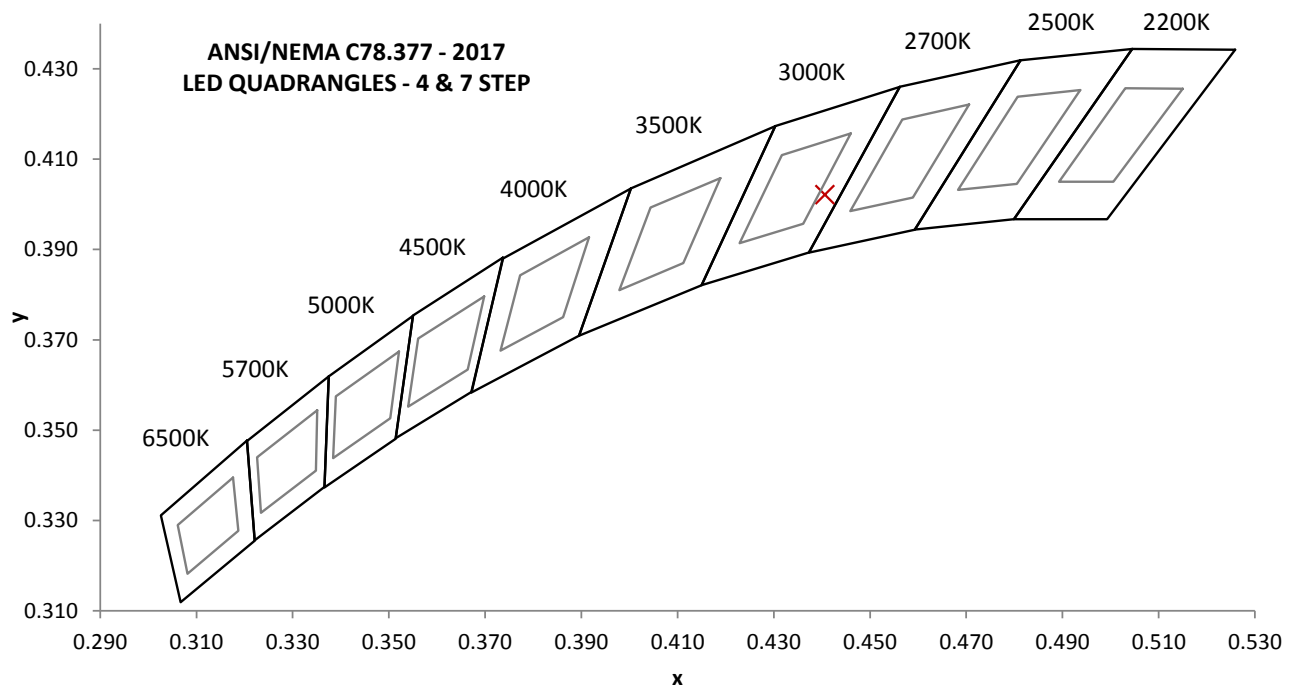
Base Orientation
Up

Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
23.99	1248.3	29.94	NA	NA

Measured at 23.99(Vdc)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
2360.1	78.8	2923	97.5	96.6

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0013	0.441	0.402	0.254	0.521

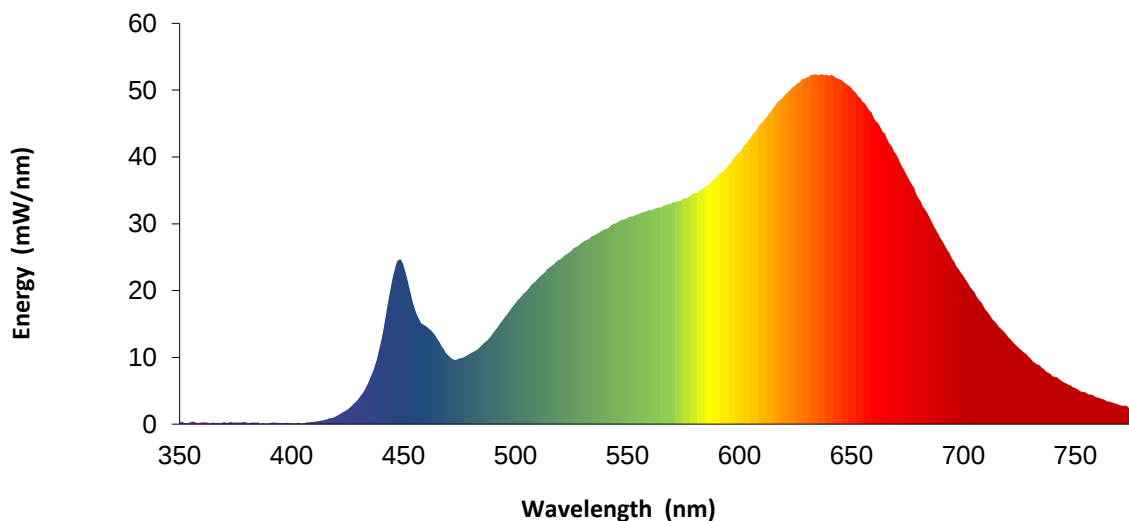


REPORT NO. 104349704CHI-054

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.2		460	14.7		570	33.1		680	33.8
355	0.3		465	12.8		575	33.8		685	30.9
360	0.2		470	10.3		580	34.5		690	27.7
365	0.3		475	9.9		585	35.6		695	24.8
370	0.3		480	10.6		590	37.1		700	22.2
375	0.2		485	11.8		595	38.7		705	19.7
380	0.2		490	13.6		600	40.7		710	17.1
385	0.3		495	15.9		605	42.8		715	15.0
390	0.2		500	18.1		610	45.1		720	13.1
395	0.2		505	20.0		615	47.2		725	11.3
400	0.2		510	21.8		620	49.2		730	9.9
405	0.1		515	23.4		625	50.7		735	8.4
410	0.4		520	24.7		630	51.9		740	7.1
415	0.7		525	26.0		635	52.3		745	6.2
420	1.2		530	27.2		640	52.1		750	5.4
425	2.2		535	28.2		645	51.6		755	4.7
430	3.8		540	29.2		650	50.3		760	4.0
435	6.8		545	30.1		655	48.3		765	3.4
440	12.5		550	30.9		660	45.9		770	2.8
445	21.7		555	31.4		665	43.5		775	2.5
450	23.8		560	32.1		670	40.4		780	2.0
455	17.2		565	32.4		675	37.1		---	---

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

REPORT NO. 104349704CHI-054

#	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
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

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
---	None	---	---	---
---	---	---	---	---
---	---	---	---	---

ANNEX A - TM-30 CALCULATIONS

REPORT NO. 104349704CHI-054

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0604U48720930AW1	NA

TM-30 REPORT

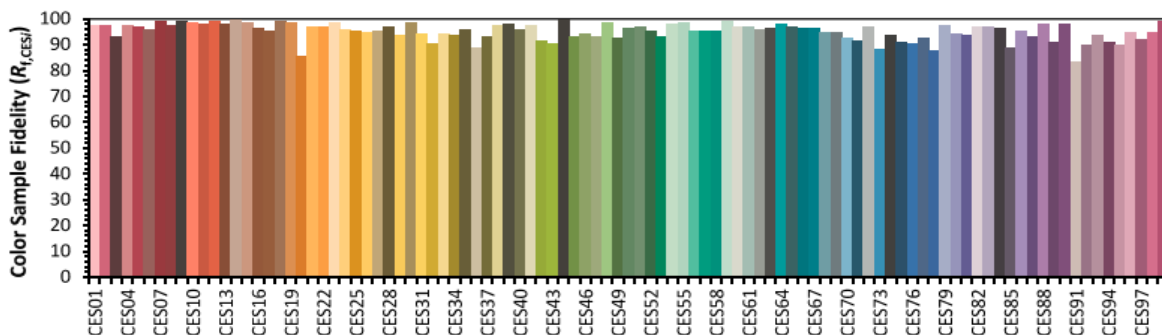
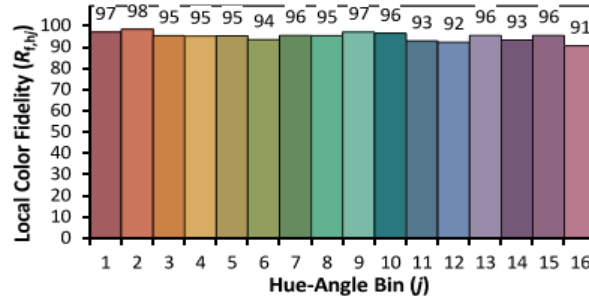
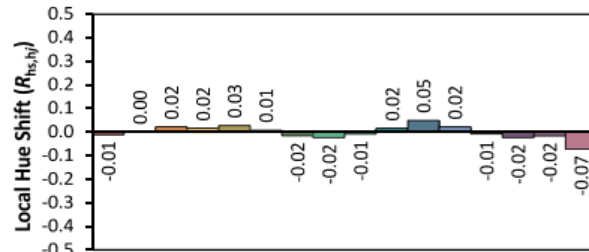
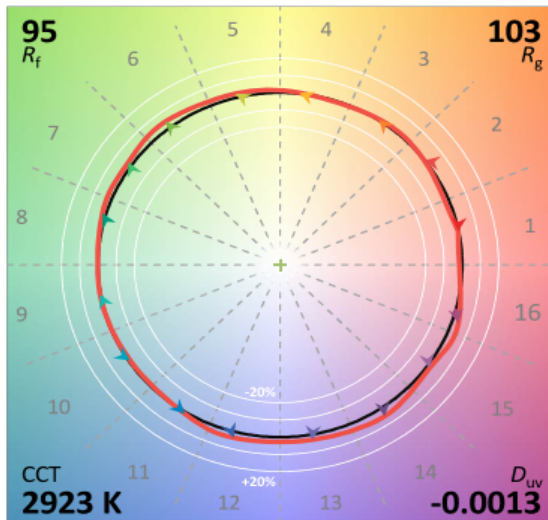
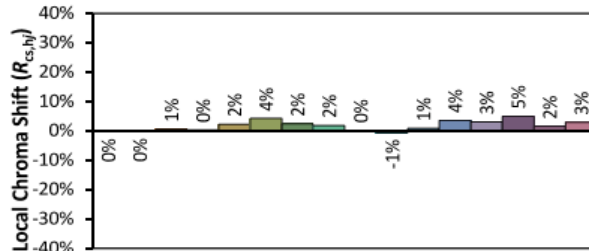
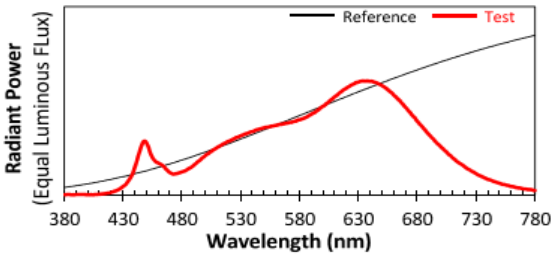
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Generation Brands, LLC

Date: 11/5/2020

Model: ESSF0604U48720930AW1



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

x 0.4406
y 0.4021
u' 0.2538
v' 0.5211

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