

GENERATION BRANDS, LLC TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

ESSF0606U48300930FW1

PROJECT NUMBER

G104349704

REPORT NUMBER

10434974CHI-019

ISSUE DATE

8/17/2020

REVISED DATE

None

TEST DATES

08/13/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

© 2017 INTERTEK



REPORT NUMBER

10434974CHI-019

MODEL NUMBER(s)

ESSF0606U48300930FW1

REPORT RENDERED TO:

GENERATION BRANDS, LLC
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-01080748-3.

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. 10434974CHI-019

ITEMS RECEIVED

Item No.	Control No.	Model No.	Description	Type	Received
1	AH08122020025613-019	ESSF0606U48300930FW 1	ESSENCE 0606 U 300 930 F W	Production	8/12/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	ESSF0606U48300930FW1	1

SUMMARY

REPORT NO. 10434974CHI-019

PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	ESSF0606U48300930FW1
Product Description:	ESSENCE 0606 U 300 930 F W
LED Model No.:	U Series
Driver Model No.:	NA
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	1469.4	1502.8
Input Power (W) @ 24VDC (Vdc)	18.20	18.21
Lumen Efficacy (lm/W)	80.7	82.5
Input Power Factor (I) @ 24VDC (Vdc)	NA	NA

Criteria	Results
Input ATHD (%) @ 24VDC (Vdc)	NA
Correlated Color Temperature (K)	3052
Color Rendering Index - Ra (I)	97.4
Color Rendering Index - R9 (I)	98.3
Duv (I)	-0.0016
Chromaticity Coordinate (x)	0.431
Chromaticity Coordinate (y)	0.398
Chromaticity Coordinate (u')	0.249
Chromaticity Coordinate (v')	0.518

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. 10434974CHI-019

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0606U48300930FW1	NA

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

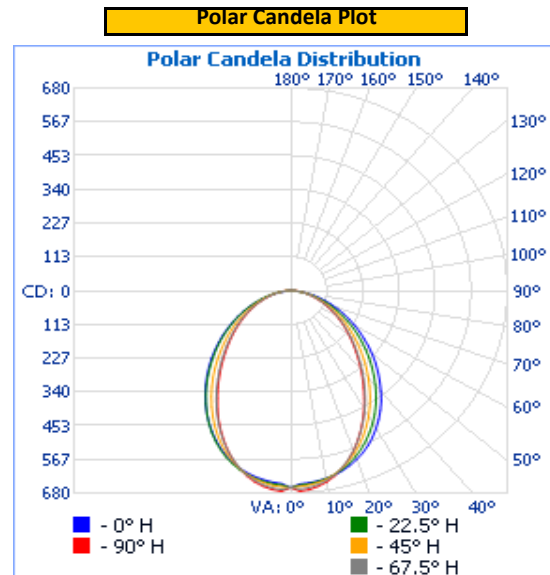
Base Orientation	Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	24.0	758.4	18.20	NA

Light Output (lm)	Lumen Efficacy (lm/W)
1469.4	80.7

INTENSITY SUMMARY - CANDELA

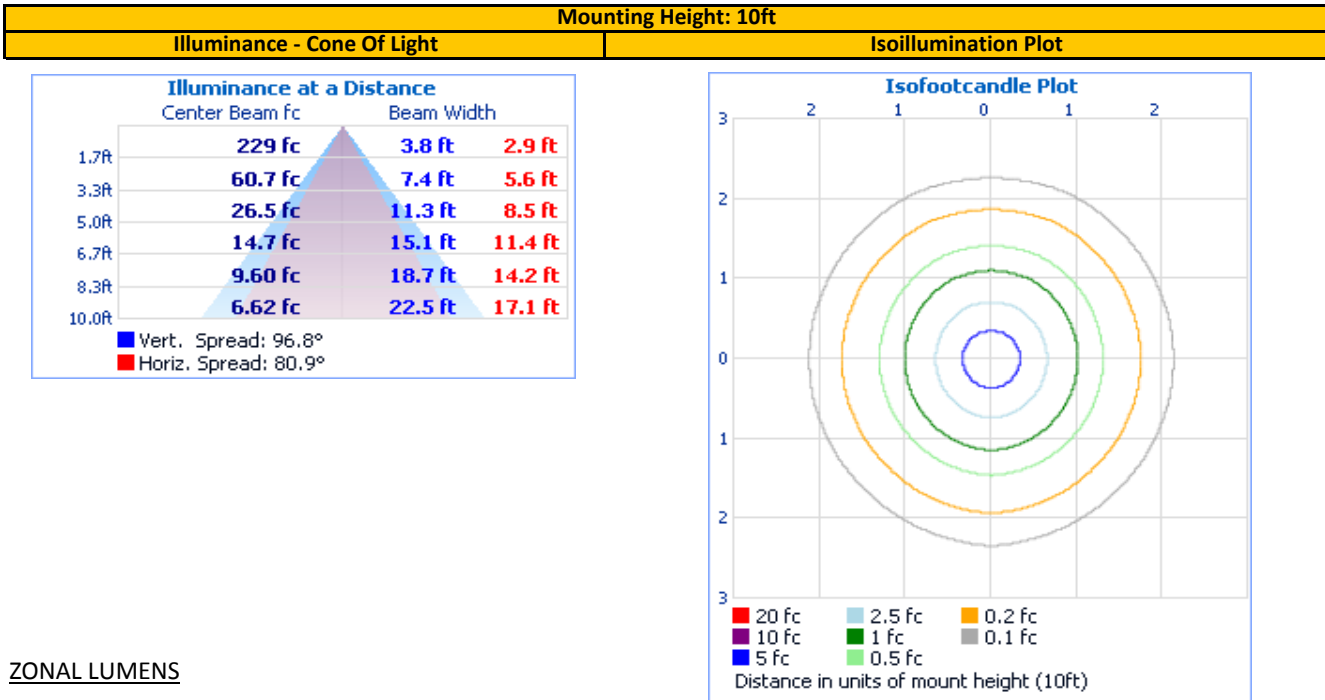
Angle	0	22.5	45	67.5	90
0	662	662	662	662	662
5	648	651	655	664	670
10	640	641	643	647	652
15	626	622	618	617	619
20	603	593	582	573	574
25	574	557	538	521	519
30	535	514	488	464	460
35	491	466	434	405	399
40	440	413	378	348	342
45	388	359	324	295	290
50	335	307	273	248	243
55	281	256	226	206	201
60	231	208	184	167	163
65	182	163	144	132	128
70	135	120	108	100	97
75	94	82	76	71	69
80	55	49	48	46	44
85	24	22	24	25	25
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. 10434974CHI-019

ILLUMINANCE SUMMARY



ZONAL LUMENS

Zonal Lumen Summary					
Zone	Lumens	Luminaire	Zone	Lumens	Total
0-30	484.3	33.0%	0-10	62.3	4.2%
0-40	756.6	51.5%	10-20	174.0	11.8%
0-60	1,216.4	82.8%	20-30	248.0	16.9%
60-90	253.0	17.2%	30-40	272.3	18.5%
70-100	107.1	7.3%	40-50	253.1	17.2%
90-120	0.0	0.0%	50-60	206.8	14.1%
0-90	1,469.4	100.0%	60-70	145.9	9.9%
90-180	0.0	0.0%	70-80	81.3	5.5%
0-180	1,469.4	100.0%	80-90	25.8	1.8%
			90-100	0.0	0.0%
			100-110	0.0	0.0%
			110-120	0.0	0.0%
			120-130	0.0	0.0%
			130-140	0.0	0.0%
			140-150	0.0	0.0%
			150-160	0.0	0.0%
			160-170	0.0	0.0%
			170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

REPORT NO. 10434974CHI-019

Test Configuration	Tested Model No.	Pass/Fail/NA
1	ESSF0606U48300930FW1	NA

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

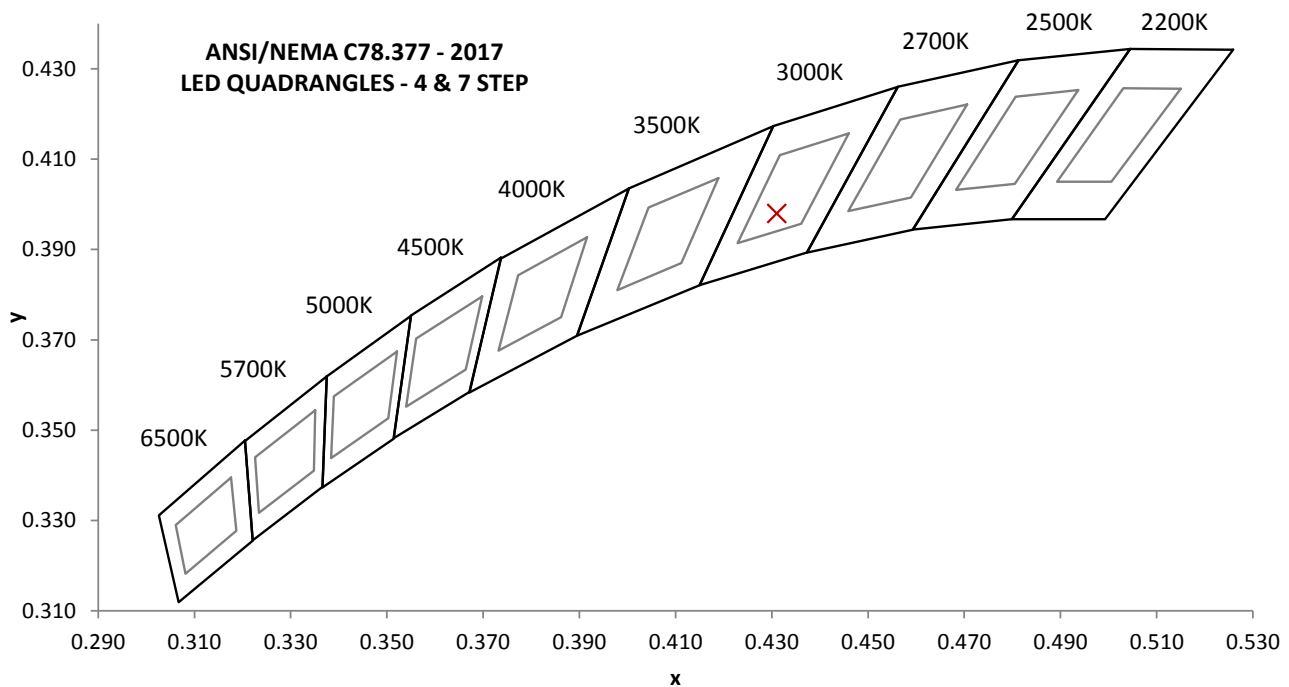
Base Orientation
Up

Input Voltage (Vdc)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
24.00	758.9	18.21	NA	NA

Measured at 24(Vdc)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
1502.8	82.5	3052	97.4	98.3

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
-0.0016	0.431	0.398	0.249	0.518

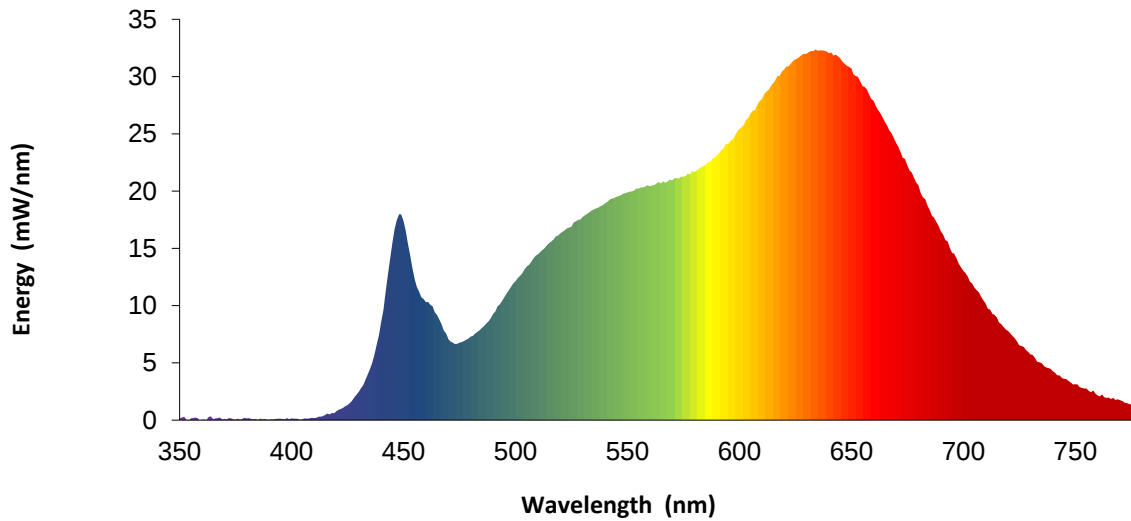


REPORT NO. 10434974CHI-019

SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.2		460	10.3		570	20.9		680	20.5
355	0.2		465	9.2		575	21.3		685	18.4
360	0.0		470	7.1		580	21.7		690	16.5
365	0.1		475	6.8		585	22.3		695	14.6
370	0.1		480	7.3		590	23.1		700	13.0
375	0.0		485	8.0		595	24.1		705	11.6
380	0.2		490	9.3		600	25.4		710	10.2
385	0.0		495	10.7		605	26.8		715	9.0
390	0.0		500	12.1		610	28.0		720	7.8
395	0.1		505	13.4		615	29.4		725	6.6
400	0.2		510	14.5		620	30.6		730	5.7
405	0.1		515	15.5		625	31.5		735	5.0
410	0.2		520	16.3		630	32.0		740	4.3
415	0.4		525	16.9		635	32.3		745	3.6
420	0.8		530	17.7		640	32.0		750	3.1
425	1.3		535	18.4		645	31.6		755	2.8
430	2.5		540	18.9		650	30.7		760	2.2
435	4.4		545	19.5		655	29.2		765	2.0
440	8.6		550	19.9		660	27.9		770	1.7
445	15.5		555	20.2		665	26.1		775	1.4
450	17.4		560	20.4		670	24.2		780	1.1
455	12.3		565	20.7		675	22.3		---	---

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. 10434974CHI-019

#	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	Sorenson DC Power Supply	XHR 150-7	146922	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
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	---	---	---
---	---	---	---	---
---	---	---	---	---