

GENERATION BRANDS, LLC TEST REPORT

SCOPE OF WORK

LED Performance Testing

MODEL NUMBER

ENCL3SF-L12/ENCL3SFW-930W-W

PROJECT NUMBER

G104349704

REPORT NUMBER

104349704CHI-032

ISSUE DATE

8/18/2020

REVISED DATE

None

TEST DATES

08/17/2020.

DOCUMENT CONTROL NUMBER

RTTDS-R-AMER-Test-3407

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REPORT NUMBER

104349704CHI-032

MODEL NUMBER(s)

ENCL3SF-L12/ENCL3SFW-930W-W

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
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Reviewer:



Jeff Davis
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	AH08122020093108-032	ENCL3SF-L12/ENCL3SFW-930W-W	ENTRA CL WALL WASH-300mA	Production	8/12/2020

TESTED SAMPLE CONFIGURATIONS

Config No.	Tested Model No.	Item Nos. Utilized
1	ENCL3SF-L12/ENCL3SFW-930W-W	1

SAMPLE PHOTOS - TESTED CONFIGURATIONS



SUMMARY

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PRODUCT INFORMATION AND SUMMARY OF DATA

Product Model No.:	ENCL3SF-L12/ENCL3SFW-930W-W
Product Description:	ENTRA CL WALL WASH-300mA
LED Model No.:	LUMINUS: CXM-6-30-90-18-AC40-F5-3
Driver Model No.:	TECH LIGHTING PTB015W-0300-38-VCC
Light Source:	LED

Criteria	Results	
	Goniophotometer	Integrating Sphere
Light Output (lumens)	733.6	730.4
Input Power (W) @ 120VAC (Vac)	11.74	11.75
Lumen Efficacy (lm/W)	62.5	62.1
Input Power Factor (I) @ 120VAC (Vac)	0.990	0.991

Criteria	Results
Input ATHD (%) @ 120VAC (Vac)	9.96
Correlated Color Temperature (K)	2913
Color Rendering Index - Ra (I)	92.6
Color Rendering Index - R9 (I)	61.6
Duv (I)	0.0009
Chromaticity Coordinate (x)	0.445
Chromaticity Coordinate (y)	0.409
Chromaticity Coordinate (u')	0.253
Chromaticity Coordinate (v')	0.524

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	ENCL3SF-L12/ENCL3SFW-930W-W	NA

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

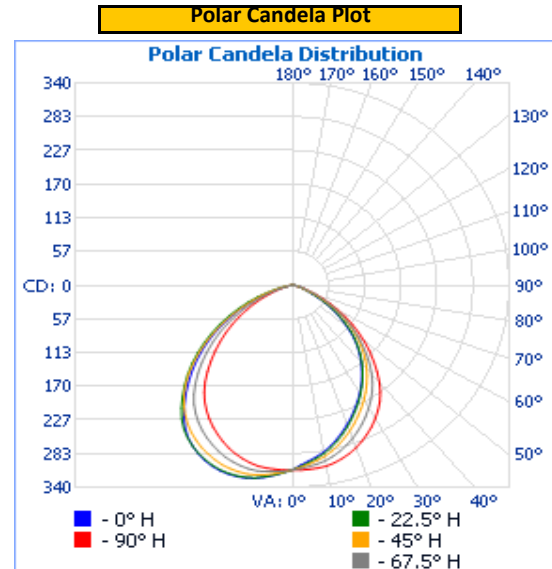
Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()
Up	120.1	98.7	11.74	0.990

Light Output (lm)	Lumen Efficacy (lm/W)
733.6	62.5

INTENSITY SUMMARY - CANDELA

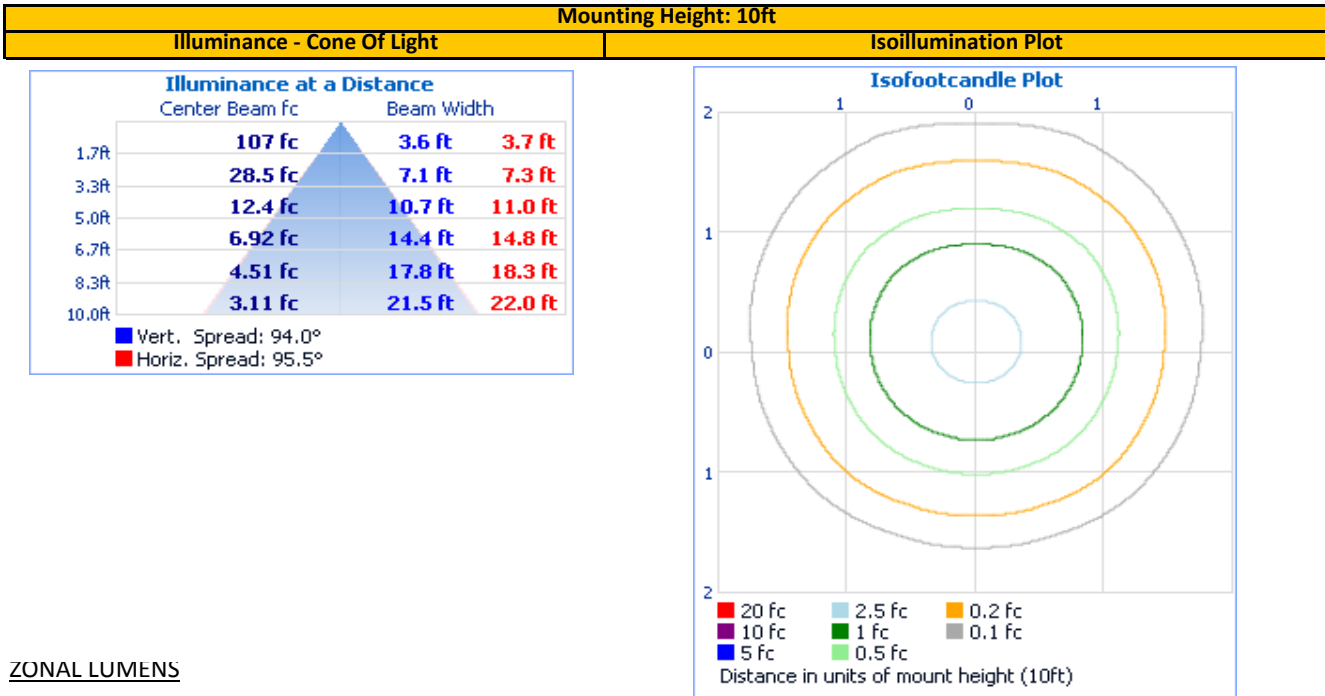
Angle	0	22.5	45	67.5	90
0	311	311	311	311	311
5	297	299	302	306	311
10	285	287	292	300	309
15	268	271	278	289	302
20	250	253	262	275	291
25	230	233	243	258	277
30	211	213	224	239	260
35	190	192	203	218	239
40	168	170	181	193	212
45	144	145	157	164	180
50	116	119	130	134	147
55	87	90	102	105	115
60	59	62	72	76	82
65	35	36	44	50	52
70	21	20	22	28	28
75	14	13	12	12	12
80	9	8	7	6	5
85	4	3	3	3	2
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	242.5	33.1%	90-100	0.0	0.0%
0-40	393.6	53.7%	100-110	0.0	0.0%
0-60	651.2	88.8%	110-120	0.0	0.0%
60-90	82.4	11.2%	120-130	0.0	0.0%
70-100	21.6	2.9%	130-140	0.0	0.0%
90-120	0.0	0.0%	140-150	0.0	0.0%
0-90	733.6	100.0%	150-160	0.0	0.0%
90-180	0.0	0.0%	160-170	0.0	0.0%
0-180	733.6	100.0%	170-180	0.0	0.0%

INTEGRATING SPHERE TESTING

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Test Configuration	Tested Model No.	Pass/Fail/NA
1	ENCL3SF-L12/ENCL3SFW-930W-W	NA

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

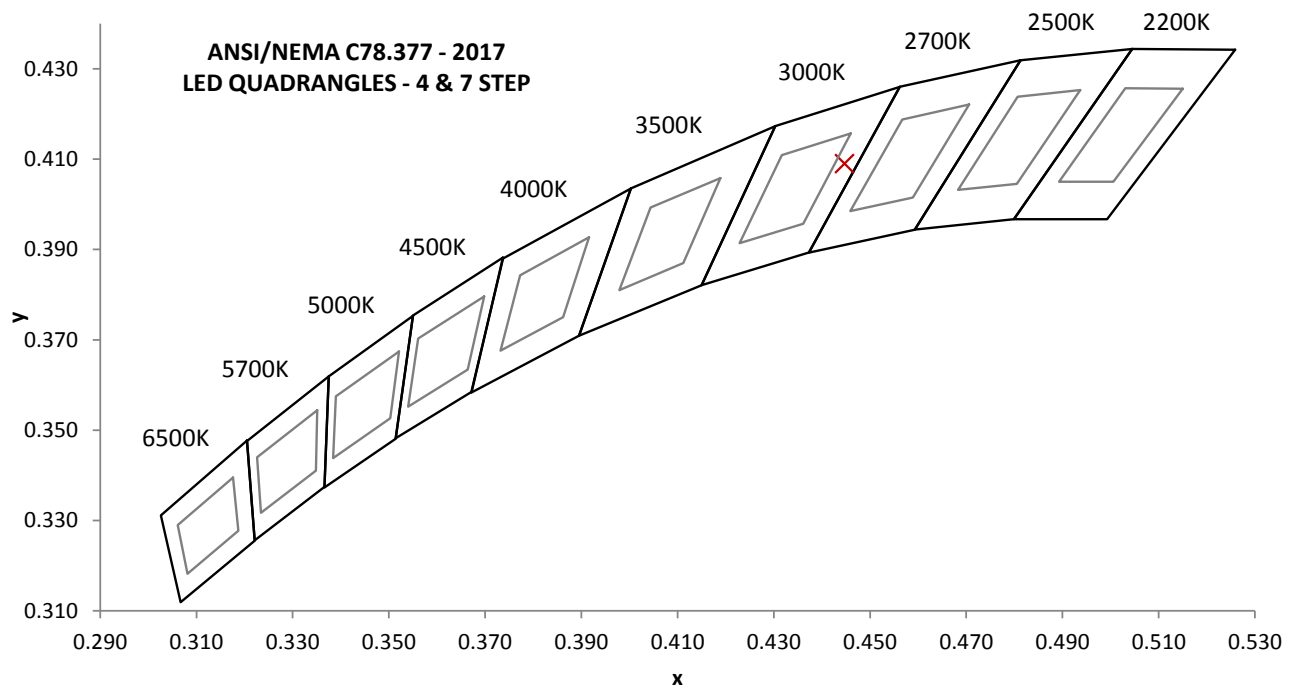
Base Orientation
Up

Input Voltage (Vac)	Input Current (mA)	Input Power (W)	Input Power Factor ()	Input ATHD (%)
120.01	98.8	11.75	0.991	9.96

Measured at 120.01(Vac)

Light Output (lm)	Lumen Efficacy (lm/W)	CCT (K)	CRI - Ra ()	CRI - R9 ()
730.4	62.1	2913	92.6	61.6

Duv ()	1931 Chrom (x)	1931 Chrom (y)	1976 Chrom (u')	1976 Chrom (v')
0.0009	0.445	0.409	0.253	0.524

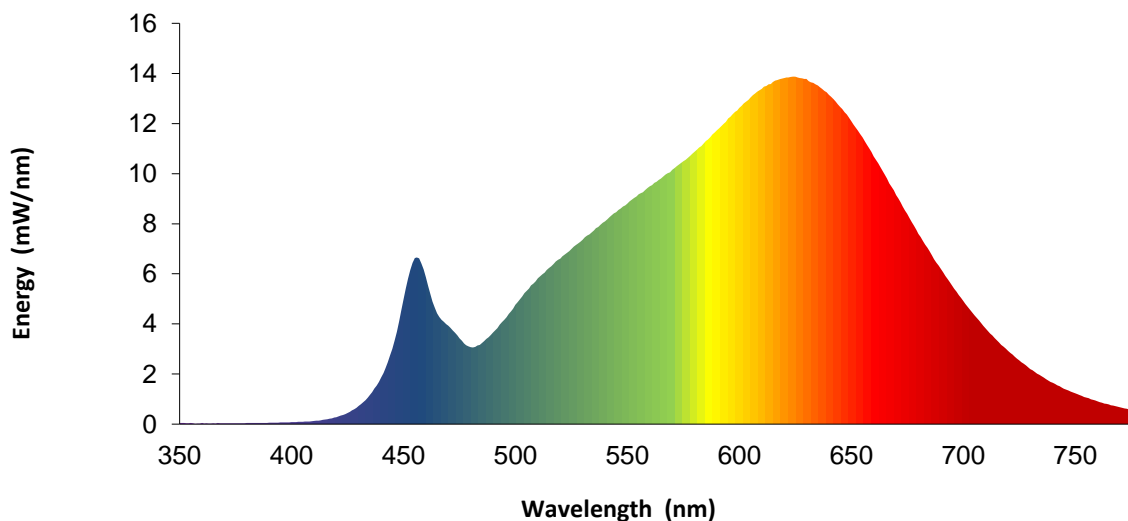


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SPECTRAL DISTRIBUTION OVER WAVELENGTHS

nm	mW/nm		nm	mW/nm		nm	mW/nm		nm	mW/nm
350	0.0		460	5.9		570	10.2		680	7.6
355	0.0		465	4.4		575	10.5		685	6.9
360	0.0		470	3.9		580	10.9		690	6.2
365	0.0		475	3.4		585	11.3		695	5.5
370	0.0		480	3.1		590	11.7		700	4.9
375	0.0		485	3.2		595	12.2		705	4.3
380	0.0		490	3.7		600	12.6		710	3.8
385	0.0		495	4.2		605	13.0		715	3.3
390	0.1		500	4.8		610	13.4		720	2.9
395	0.1		505	5.3		615	13.7		725	2.6
400	0.1		510	5.8		620	13.8		730	2.2
405	0.1		515	6.2		625	13.9		735	1.9
410	0.1		520	6.6		630	13.8		740	1.6
415	0.2		525	7.0		635	13.5		745	1.4
420	0.3		530	7.4		640	13.1		750	1.2
425	0.4		535	7.7		645	12.7		755	1.1
430	0.7		540	8.1		650	12.1		760	0.9
435	1.2		545	8.5		655	11.4		765	0.8
440	1.9		550	8.8		660	10.7		770	0.7
445	3.0		555	9.2		665	10.0		775	0.6
450	5.0		560	9.5		670	9.1		780	0.5
455	6.6		565	9.8		675	8.4		---	---

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	Multi Channel Spectroradiometer	OL770	CHI0092	VBU	VBU
7	Newport Humidity Recorder	iServer	CHI0456	10/11/2019	10/11/2020
8	Labsphere Spectroradiometer	CDS2600	CHI0539	VBU	VBU
9	3 Meter Sphere	SPR600	CHI0088	VBU	VBU
10	Elgar AC Power Supply	CW1251	146112	VBU	VBU
11	Sorenson DC Power Supply	XFR150-8	146846	VBU	VBU
12	Yokogawa Power Meter	WT1600	146769	4/6/2020	4/6/2021
13	Extech K Temperature Meter	421502	CHI0476	10/1/2019	10/1/2020
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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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