

Project Number  
19.01879



**HUBBELL**  
Lighting

Date  
10/25/2019

### Photometric Test Report

LAB 5  
Sphere

#### Test Sample Description

Catalog Number: P730000-030-30  
Description: 4FT Strip Light Fixture w/ Covestro Refractor Material

#### Photometry

Test Methods: IES LM-41-14  
IES LM-79-08 §10

Preburn Time: 1:11  
Time To Stabilize: 0:16  
Total Operating Time: 4:27

Input Voltage (Volts): 120.1  
Input Current (Amps): 0.284  
Input Wattage (Watts): 33.7  
Ambient Temp (°C): 25.8  
PF @ 120V: 0.988  
THD @ 120V (%): 8.96

#### Sphere

Test Methods: IES LM-16-93  
IES LM-79-08 §12.1

Preburn Time: 1:00  
Time To Stabilize: 0:59  
Total Operating Time: 1:59

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.282  
Input Wattage (Watts): 33.7  
Ambient Temp (°C): 24



#### Hubbell Lighting, Inc.

701 Millennium Boulevard  
Greenville, SC 29607  
www.hubbellighting.com

Checked (sphere): B. LEE  
Checked (photometry): M. OLALDE  
Approved: N. DeVOL



\* This customer-provided information was not verified by the laboratory and could affect the validity of the test results.

Note that the LED manufacturer and part number are unverifiable by the lab.

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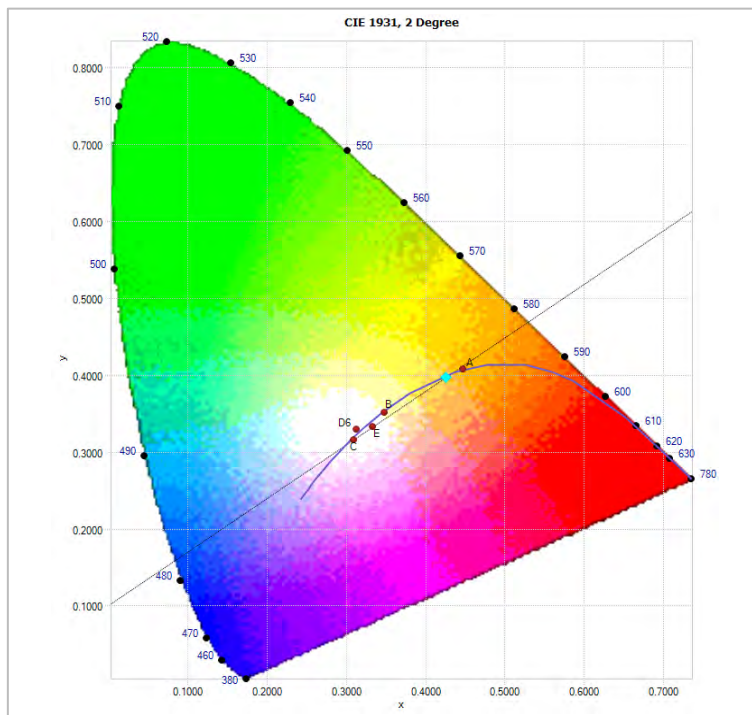


Lamp Cat#: STW9A12D-E2  
 Lamp Desc: 98 - Seoul 3000K LEDs

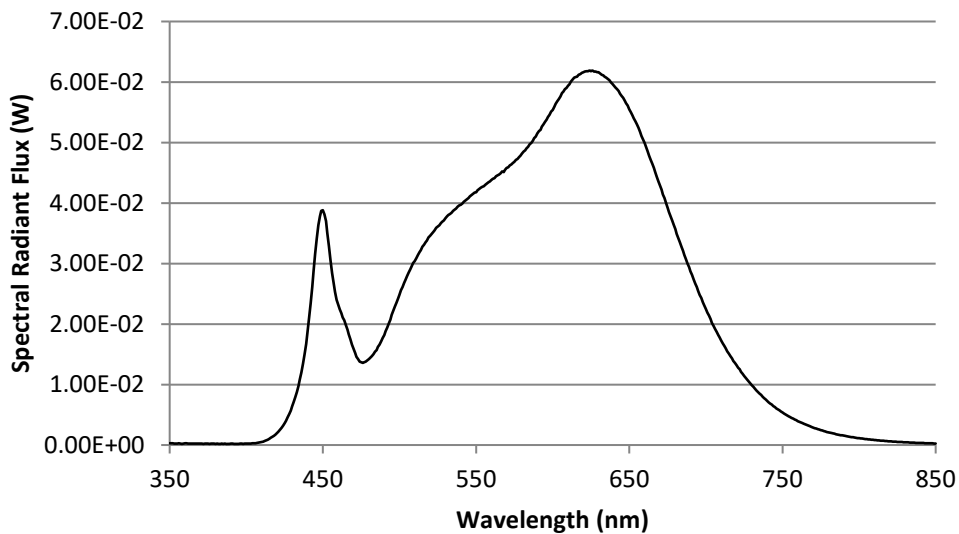
Efficacy: 94.2 LPW      S/P Ratio: 1.5 LM/LM

**Spectral Results**

Name	Value	Unit
Φ	11.36	watts
Φ(v)	3174	lumens
Φ(v')	4706	lm'
Chrom x	0.4252	
Chrom y	0.3972	
Chrom u	0.2459	
Chrom v	0.3446	
Duv	0.0014	
Chrom u'	0.2459	
Chrom v'	0.5169	
CCT	3149	K
Purity	46.9	%
λ (dom)	582.6	nm
FWHM	175.7	nm
λ (peak)	623.8	nm
λ (center)	598.8	nm
λ (centroid)	593.3	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.00103181	
Correlation	0.0054	
R1	96.2	
R2	96.5	
R3	95.1	
R4	95.6	
R5	95.5	
R6	95.0	
R7	95.2	
R8	89.8	
R9	75.2	
R10	90.5	
R11	95.7	
R12	82.5	
R13	96.3	
R14	96.5	



**Spectral Distribution of Radiant Flux**



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**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P730000-030-30

**LUMINAIRE:** 4FT Strip Light Fixture w/ Covestro Refractor Material

**LAMP CAT. NO.:** STW9A12D-E2

**LAMP:** 98- Seoul 3000K LEDs

**MOUNTING:** Ceiling

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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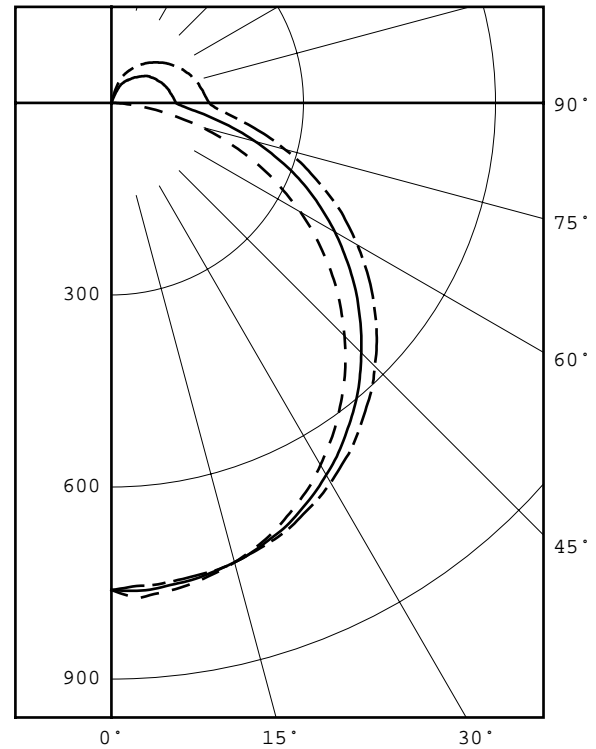
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CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	761	761	761	761	761	
5	770	755	762	758	756	72
15	743	730	743	743	743	209
25	689	681	701	708	709	322
35	612	611	636	652	656	396
45	515	523	552	577	582	425
55	402	420	455	485	494	404
65	277	305	349	382	393	339
75	145	183	233	269	281	237
85	29	74	127	165	179	133
90	3	48	101	139	153	
95	2	45	97	134	146	96
105	2	42	90	123	136	86
115	2	39	81	112	123	73
125	2	35	72	98	107	58
135	2	27	57	82	89	41
145	2	5	43	61	70	23
155	3	2	24	41	50	11
165	2	1	1	3	8	1
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0- 30	603	20.6
0- 40	999	34.1
0- 60	1828	62.5
0- 90	2537	86.7
90-120	254	8.7
90-130	312	10.7
90-150	377	12.9
90-180	389	13.3
0-180	2926	100.0

EFFICACY = 86.8 lm/W  
CIE TYPE - SEMI-DIRECT  
PLANE : 0-DEG 90-DEG  
SPACING CRITERIA : 1.27 1.34



LEGEND  
0-deg - - - - -  
45-deg \_\_\_\_\_  
90-deg - . - . -



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CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	761	761	761	761	761
5.0	770	755	762	758	756
10.0	760	745	755	752	750
15.0	743	730	743	743	743
20.0	720	708	725	728	729
25.0	689	681	701	708	709
30.0	653	649	671	682	685
35.0	612	611	636	652	656
40.0	566	569	597	616	620
45.0	515	523	552	577	582
50.0	461	474	505	533	540
55.0	402	420	455	485	494
60.0	341	364	403	434	444
65.0	277	305	349	382	393
70.0	210	244	292	325	336
75.0	145	183	233	269	281
80.0	81	124	175	214	227
85.0	29	74	127	165	179
90.0	3	48	101	139	153
95.0	2	45	97	134	146
100.0	2	43	93	129	141
105.0	2	42	90	123	136
110.0	2	40	86	118	130
115.0	2	39	81	112	123
120.0	2	37	77	105	115
125.0	2	35	72	98	107
130.0	2	31	65	90	98
135.0	2	27	57	82	89
140.0	2	17	50	72	80
145.0	2	5	43	61	70
150.0	3	2	36	51	60
155.0	3	2	24	41	50
160.0	2	2	4	26	38
165.0	2	1	1	3	8
170.0	0	0	0	0	0
175.0	0	0	0	0	0
180.0	0	0	0	0	0



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		18
5- 10		54
10- 15		88
15- 20		120
20- 25		149
25- 30		173
30- 35		192
35- 40		205
40- 45		212
45- 50		213
50- 55		208
55- 60		197
60- 65		180
65- 70		159
70- 75		133
75- 80		104
80- 85		77
85- 90		56
90- 95		49
95-100		47
100-105		44
105-110		41
110-115		38
115-120		35
120-125		31
125-130		27
130-135		23
135-140		18
140-145		14
145-150		10
150-155		7
155-160		4
160-165		1
165-170		0
170-175		0
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		72
0- 20		281
0- 30		603
0- 40		999
0- 50		1424
0- 60		1828
0- 70		2167
0- 80		2404
0- 90		2537
0-100		2633
0-110		2718
0-120		2791
0-130		2849
0-140		2890
0-150		2914
0-160		2925
0-170		2926
0-180		2926



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0		
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30		10	
0	116	116	116	116	116	112	112	112	112	112	104	104	104	96	96	96	90	90	90	87
1	104	99	94	90	90	100	95	91	87	87	88	85	82	82	79	77	77	74	72	69
2	94	85	78	72	72	90	82	75	70	70	76	71	66	71	67	63	66	63	59	56
3	85	74	66	59	59	82	72	64	57	57	67	60	55	62	57	52	58	53	50	47
4	78	65	56	49	49	74	63	55	48	48	59	52	46	55	49	44	51	46	42	39
5	71	58	49	42	42	68	56	48	41	41	53	45	40	49	43	38	46	41	36	34
6	66	52	43	36	36	63	50	42	36	36	47	40	34	44	38	33	42	36	32	29
7	61	47	38	32	32	58	46	37	31	31	43	36	30	40	34	29	38	32	28	26
8	57	43	34	28	28	54	42	33	28	28	39	32	27	37	31	26	35	29	25	23
9	53	39	31	25	25	51	38	30	25	25	36	29	24	34	28	23	32	26	22	20
10	49	36	28	23	23	47	35	28	22	22	33	26	22	31	25	21	30	24	20	18

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS TEST SAMPLE.

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### *Goniophotometer Calibration*

*Calibration Lamp:* GE 1000W, 120V, T6, CL (FEL)

*Lamp Number:* ITL78966-1000-66

*Calibration Current:* 8.300 Amps DC

*Total Luminous Flux:* 23013.0 Lumens

*Calibration Date:* 08/20/2019

<i>Test Equipment Used</i>			
<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/31/2020
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	10/31/2020

### *3-Meter-Sphere Calibration*

*Calibration Lamp:* EIKO 28V75W/E10

*Lamp Number:* SCL-1400-K136

*Calibration Current:* 2.679 Amps

*Total Luminous Flux:* 1429 Lumens

<i>Test Equipment Used - Color &amp; SPD; THD &amp; Power Factor</i>			
<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>3-Meter Sphere</i>	Labsphere / LMS-3M	N/A	Calibration Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/31/2020
<i>Power Analyzer</i>	Yokogawa / WT332	C2QA27075V	10/31/2020
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	GW Instek / PSU 150-10	GER221028	N/A
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	N/A
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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