

Project Number
19.01584



HUBBELL
Lighting

Date
9/6/2019

Photometric Test Report

Lab 1
Sphere

Test Sample Description

Catalog Number: P810025-028-30
Description: 11" FSL 15W-M9 w/ Polycarbonate Refractor - Type V Lens

Photometry

Test Method: IES LM-46-04
IES LM-79-08 §10

Preburn Time: 0:35

Time To Stabilize: 0:46

Total Operating Time: 2:00

Input Voltage (Volts): 119.9

Input Current (Amps): 0.123

Input Wattage (Watts): 14.5

Ambient Temp (°C): 26.0

Sphere

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

Preburn Time: 0:10

Time To Stabilize: 1:23

Total Operating Time: 1:33

Input Voltage (Volts): 120.1

Input Current (Amps): 0.123

Input Wattage (Watts): 14.5

Ambient Temp (°C): 24

PF @ 120V: 0.98

THD @ 120V (%): 12.5



Hubbell Lighting, Inc.

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

Checked (sphere): E. ELLMANN / B. LEE
Checked (photometry): D. ROBBINS
Approved: N. DeVOL



This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



Lamp Cat#: SPMWH6229

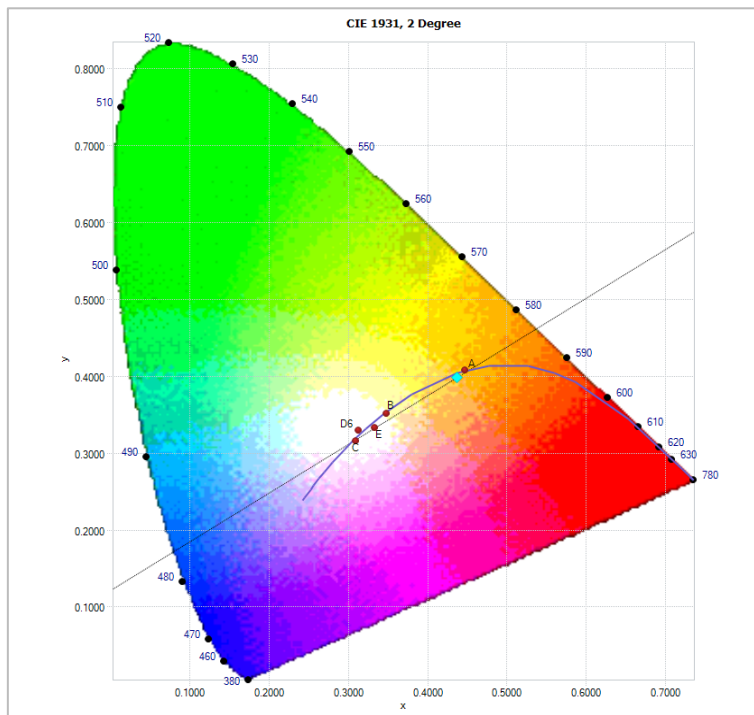
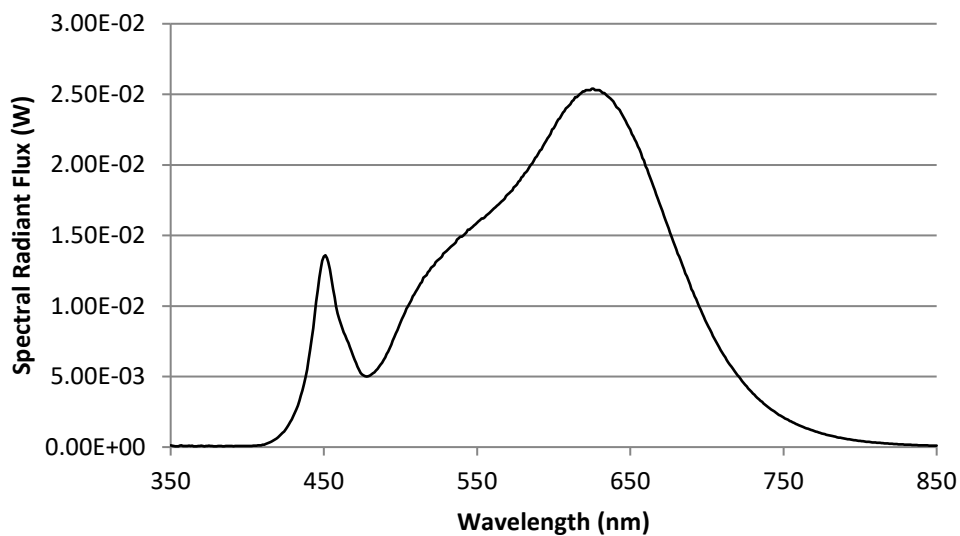
Lamp Desc: 26 - Samsung 3000K LEDs

Efficacy: 85.2 LPW

S/P Ratio: 1.4 LM'/LM

Spectral Results

Name	Value	Unit
Φ	4.43	watts
$\Phi(v)$	1236	lumens
$\Phi(v')$	1739	lm'
Chrom x	0.4366	
Chrom y	0.3988	
Chrom u	0.2527	
Chrom v	0.3462	
Duv	0.0023	
Chrom u'	0.2527	
Chrom v'	0.5192	
CCT	2960	K
Purity	50.8	%
λ (dom)	583.8	nm
FWHM	164.8	nm
λ (peak)	625.7	nm
λ (center)	602.4	nm
λ (centroid)	595.9	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.002078058	
Correlation	0.0054	
R1	95.6	
R2	96.9	
R3	96.2	
R4	94.9	
R5	95.0	
R6	95.6	
R7	93.8	
R8	87.1	
R9	70.7	
R10	91.4	
R11	95.3	
R12	83.7	
R13	96.1	
R14	97.1	

**Spectral Distribution of Radiant Flux**

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PREPARED FOR: PROGRESS

CATALOG NUMBER: P810025-028-30

LUMINAIRE: 11" FSL 15W-M9 w/ Polycarbonate Refractor - Type V Lens

LAMP CAT. NO.: SPMWH6229

LAMP: 26- Samsung 3000K LEDs

MOUNTING: Surface

ABSOLUTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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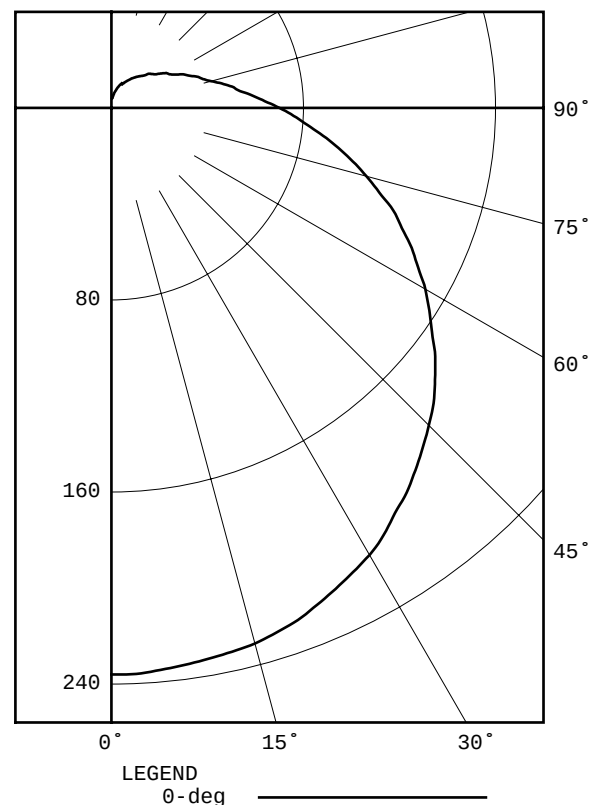
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DEG	CANDELA	LUMENS
0	236	
5	235	22
15	231	65
25	221	102
35	206	129
45	187	145
55	163	146
65	138	137
75	110	116
85	82	90
90	70	
95	59	65
105	43	46
115	33	33
125	25	22
135	19	15
145	15	9
155	11	5
165	8	2
175	4	0
180	4	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		190	16.5
0- 40		319	27.7
0- 60		610	53.0
0- 90		953	82.7
90-120		144	12.5
90-130		166	14.4
90-150		191	16.6
90-180		199	17.3
0-180		1152	100.0

EFFICACY = 79.4 lm/W
CIE TYPE - SEMI-DIRECT
SPACING CRITERION: 1.35
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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LUMINOUS DIAMETER: 11.000
HEIGHT OF SIDE : 3.500

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	3070.
55	2936.
65	2850.
75	2760.
85	2725.



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CANDELA DISTRIBUTION

0.0	236
5.0	235
10.0	233
15.0	231
20.0	227
25.0	221
30.0	215
35.0	206
40.0	197
45.0	187
50.0	176
55.0	163
60.0	151
65.0	138
70.0	125
75.0	110
80.0	96
85.0	82
90.0	70
95.0	59
100.0	51
105.0	43
110.0	38
115.0	33
120.0	28
125.0	25
130.0	22
135.0	19
140.0	17
145.0	15
150.0	13
155.0	11
160.0	10
165.0	8
170.0	6
175.0	4
180.0	4



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		6
5- 10		17
10- 15		28
15- 20		38
20- 25		47
25- 30		55
30- 35		62
35- 40		67
40- 45		71
45- 50		73
50- 55		74
55- 60		73
60- 65		70
65- 70		66
70- 75		61
75- 80		55
80- 85		48
85- 90		42
90- 95		35
95-100		30
100-105		25
105-110		21
110-115		18
115-120		15
120-125		12
125-130		10
130-135		8
135-140		7
140-145		5
145-150		4
150-155		3
155-160		2
160-165		1
165-170		1
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		22
0- 20		88
0- 30		190
0- 40		319
0- 50		464
0- 60		610
0- 70		747
0- 80		863
0- 90		953
0-100		1018
0-110		1064
0-120		1096
0-130		1119
0-140		1134
0-150		1144
0-160		1149
0-170		1151
0-180		1152



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	115	115	115	115	110	110	110	110	102	102	102	94	94	94	86	86	86	83
1	101	95	90	85	97	91	86	82	84	80	76	77	74	71	71	68	66	62
2	91	81	73	67	87	78	71	64	71	65	60	65	61	56	60	56	53	49
3	82	70	61	54	78	67	59	52	62	55	49	57	51	46	52	47	43	40
4	75	62	52	45	71	59	50	43	54	47	41	50	44	39	46	41	36	33
5	68	55	45	38	65	52	44	37	48	41	35	44	38	33	41	35	31	28
6	63	49	39	33	60	47	38	32	43	36	30	40	33	28	37	31	27	24
7	58	44	35	28	55	42	34	28	39	32	26	36	30	25	34	28	24	21
8	54	40	31	25	51	39	30	24	36	28	23	33	27	22	31	25	21	19
9	50	37	28	22	48	35	27	22	33	26	21	30	24	20	28	23	19	17
10	47	34	25	20	45	32	25	20	30	23	19	28	22	18	26	21	17	15

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: ITL78966-1000-38

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 25889.0 Lumens

Calibration Date: 07/10/2017

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	10/31/2019
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/31/2019

3-Meter-Sphere Calibration

Calibration Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-K136

Calibration Current: 2.679 Amps

Total Luminous Flux: 1429 Lumens

Test Equipment Used - Color & SPD; THD & Power Factor

<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	10/31/2019
<i>Power Analyzer</i>	Yokogawa / WT332	C2QA27074V	10/31/2019
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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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