

Project Number
19.02014



HUBBELL
Lighting

Date
11/18/2019

Photometric Test Report

LAB 5
Sphere

Test Sample Description

Catalog Number: P810012-028-30
Description: 5.5" LED Surface Mount w/ Polycarbonate Refractor

Photometry

Test Methods: IES LM-46-04
IES LM-79-08 §10
Preburn Time: 0:10
Time To Stabilize: 2:13
Total Operating Time: 10:12

Input Voltage (Volts): 120.1
Input Current (Amps): 0.096
Input Wattage (Watts): 11.5
Ambient Temp (°C): 26.0
PF @ 120V: 0.993
THD @ 120V (%): 11.43

Sphere

Test Methods: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 2:30
Time To Stabilize: 1:40
Total Operating Time: 4:20

Input Voltage (Volts): 120.0
Input Current (Amps): 0.095
Input Wattage (Watts): 11.3
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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

Checked (sphere): M. ELLMANN
Checked (photometry): D. ROBBINS
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#: LM283Y+

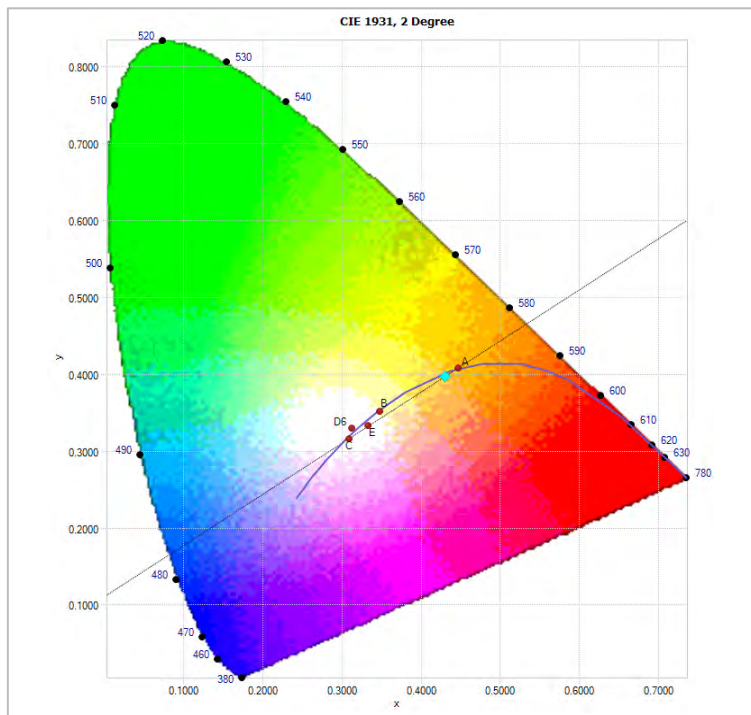
Lamp Desc: 14 - Samsung 3000K LEDs

Efficacy: 59.7 LPW

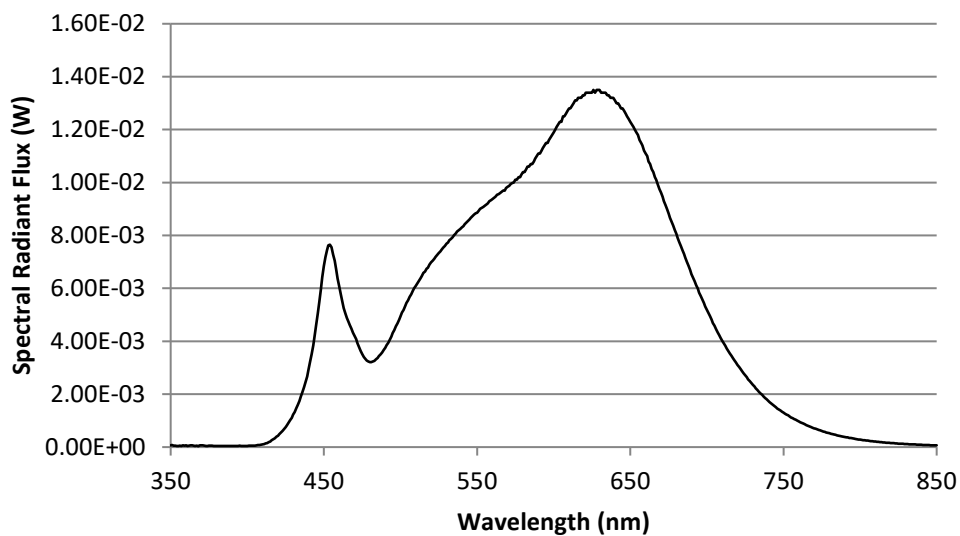
S/P Ratio: 1.5 LM'/LM

Spectral Results

Name	Value	Unit
Φ	2.46	watts
$\Phi(v)$	675	lumens
$\Phi(v')$	983	lm'
Chrom x	0.4302	
Chrom y	0.3976	
Chrom u	0.249	
Chrom v	0.3452	
Duv	0.0017	
Chrom u'	0.249	
Chrom v'	0.5178	
CCT	3061	K
Purity	48.5	%
λ (dom)	583.2	nm
FWHM	171.9	nm
λ (peak)	627.6	nm
λ (center)	602.8	nm
λ (centroid)	596.3	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.001654983	
Correlation	0.0054	
R1	96.1	
R2	97.4	
R3	96.3	
R4	95.3	
R5	95.3	
R6	95.6	
R7	95.1	
R8	89.6	
R9	76.3	
R10	92.1	
R11	95.3	
R12	81.7	
R13	96.6	
R14	97.1	



Spectral Distribution of Radiant Flux



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PREPARED FOR: PROGRESS

CATALOG NUMBER: P810012-028-30

LUMINAIRE: 5.5" LED Surface Mount w/ Polycarbonate Refractor

LAMP CAT. NO.: LM283Y+

LAMP: 14- Samsung 3000K LEDs

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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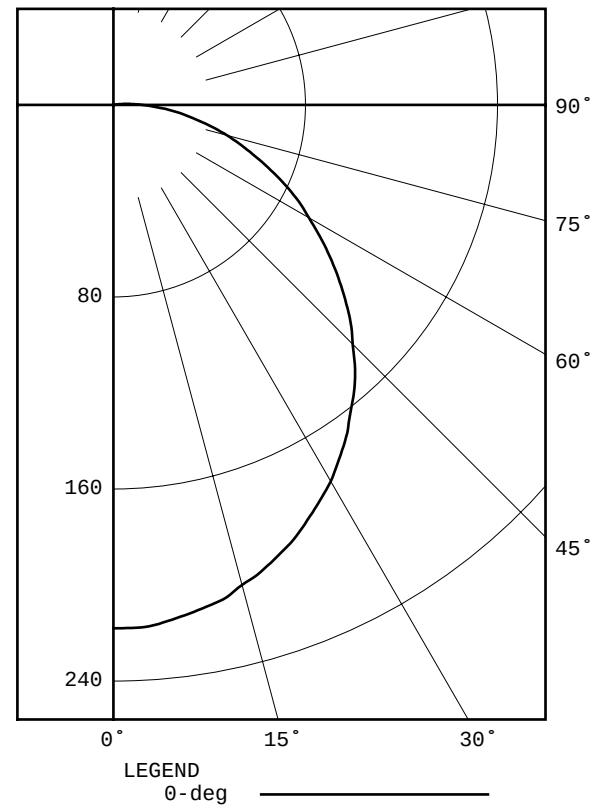
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DEG	CANDELA	LUMENS
0	218	
5	217	21
15	207	59
25	191	88
35	169	106
45	141	109
55	110	98
65	79	78
75	49	52
85	23	25
90	12	
95	5	6
105	0	0
115	0	0
125	0	0
135	0	0
145	0	0
155	0	0
165	0	0
175	0	0
180	0	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		167	26.1
0- 40		273	42.5
0- 60		480	74.9
0- 90		635	99.1
90-120		6	0.9
90-130		6	0.9
90-150		6	0.9
90-180		6	0.9
0-180		641	100.0

EFFICACY = 55.7 lm/W
CIE TYPE - DIRECT
SPACING CRITERION: 1.24





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CANDELA DISTRIBUTION

0.0	218
5.0	217
10.0	213
15.0	207
20.0	200
25.0	191
30.0	181
35.0	169
40.0	156
45.0	141
50.0	126
55.0	110
60.0	94
65.0	79
70.0	63
75.0	49
80.0	35
85.0	23
90.0	12
95.0	5
100.0	1
105.0	0
110.0	0
115.0	0
120.0	0
125.0	0
130.0	0
135.0	0
140.0	0
145.0	0
150.0	0
155.0	0
160.0	0
165.0	0
170.0	0
175.0	0
180.0	0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		5
5- 10		15
10- 15		25
15- 20		34
20- 25		41
25- 30		47
30- 35		52
35- 40		54
40- 45		55
45- 50		54
50- 55		51
55- 60		47
60- 65		42
65- 70		36
70- 75		29
75- 80		22
80- 85		16
85- 90		9
90- 95		5
95-100		1
100-105		0
105-110		0
110-115		0
115-120		0
120-125		0
125-130		0
130-135		0
135-140		0
140-145		0
145-150		0
150-155		0
155-160		0
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		21
0- 20		79
0- 30		167
0- 40		273
0- 50		382
0- 60		480
0- 70		558
0- 80		610
0- 90		635
0-100		641
0-110		641
0-120		641
0-130		641
0-140		641
0-150		641
0-160		641
0-170		641
0-180		641



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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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	108	102	98	93	105	100	96	92	95	92	89	91	88	86	88	85	83	81
2	97	89	81	75	95	87	80	74	83	77	73	80	75	71	76	72	69	67
3	89	78	69	62	86	76	68	62	73	66	61	70	64	59	67	62	58	56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50	48
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43	41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38	36
7	64	50	41	35	62	49	41	35	48	40	34	46	39	34	45	38	34	32
8	59	46	37	31	58	45	37	31	44	36	31	42	35	30	41	35	30	28
9	56	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27	25
10	52	39	31	25	51	38	30	25	37	30	25	36	30	25	35	29	25	23

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

Test Equipment Used

<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

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	10/31/2020
<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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