

Project Number
18.01116



HUBBELL
Lighting

Date
7/16/2018

Lab 4
Sphere

Test Sample Description

Catalog Number: P810003-030-30

Description: 5.25" Square LED Mini Flushmount w/ Diffuse Translucent Plastic Lens

Photometry

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

Preburn Time: 0:30

Time To Stabilize: 0:35

Total Operating Time: 1:15

Input Voltage (Volts): 120.0

Input Current (Amps): 0.100

Input Wattage (Watts): 11.8

Ambient Temp (°C): 24

Sphere

Test Method: IES LM-16-93
IES LM-79-08 § 9.1 & 12.1

Preburn Time: 8:00

Time To Stabilize: 1:04

Total Operating Time: 9:04

Input Voltage (Volts): 120.0

Input Current (Amps): 0.097

Input Wattage (Watts): 11.5

Ambient Temp (°C): 24



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): R. HALL
Approved: N. DeVOL

NVLAP
TESTING
NVLAP LAB CODE: 201003-0

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#: L130-xyy003000W21

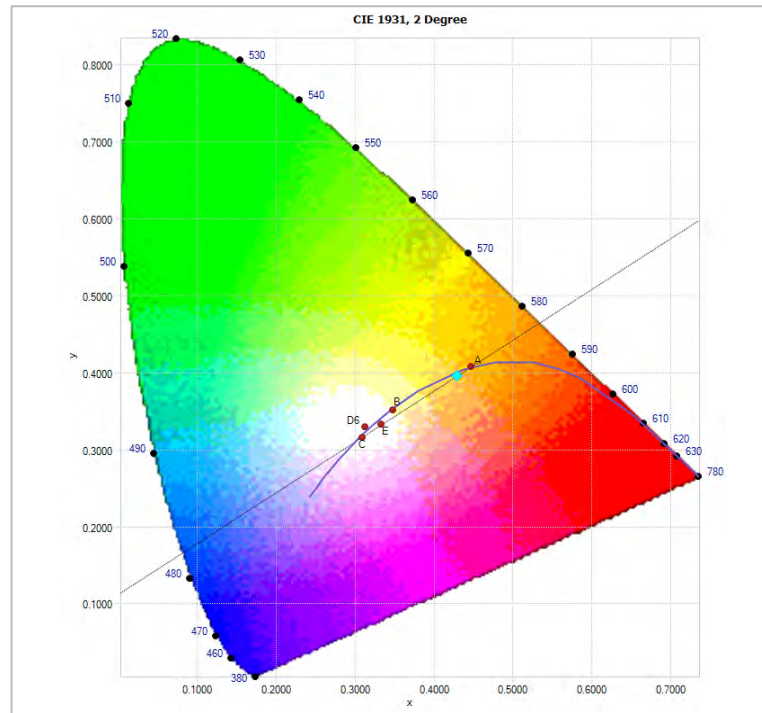
Lamp Desc: 22 - LUXEON 3000K LEDs

Driver Desc:

Efficacy: 63.6 LPW

S/P Ratio: 1.5 LM/LM

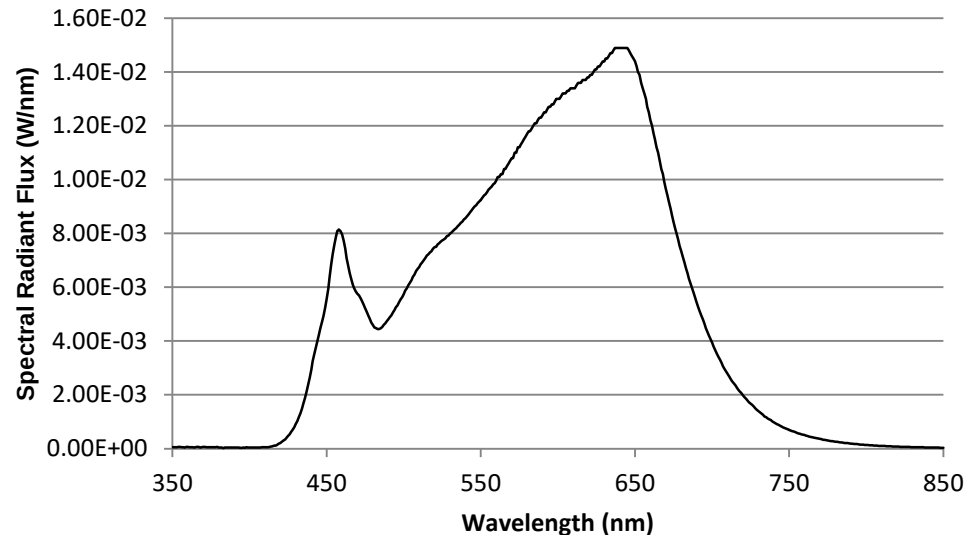
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	2.56	watts
$\Phi(v)$	731	lumens
$\Phi(v')$	1097	lm'
Chrom x	0.429	
Chrom y	0.3965	
Chrom u	0.2487	
Chrom v	0.3448	
Duv	0.0019	
Chrom u'	0.2487	
Chrom v'	0.5172	
CCT	3073	K
Purity	47.8	%
λ (dom)	583.3	nm
FWHM	159.7	nm
λ (peak)	640.4	nm
λ (center)	599.5	nm
λ (centroid)	589.9	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.001945248	
Correlation	0.0054	
R1	96.2	
R2	99.4	
R3	98.1	
R4	94.2	
R5	95.9	
R6	96.7	
R7	93.1	
R8	88.6	
R9	77.5	
R10	98.1	
R11	95.4	
R12	83.3	
R13	97.6	
R14	99.8	

Spectral Distribution of Radiant Flux





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LUMINAIRE: 5.25" Square LED Mini Flushmount w/ Diffuse Plastic Lens

LAMP CAT. NO.: L130-xyyy003000W21

LAMP: 22- LUXEON 3000K LEDs



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DEG	CANDELA	LUMENS
0	271	
5	270	26
15	259	73
25	236	109
35	206	129
45	170	131
55	131	117
65	89	88
75	46	49
85	9	12
90	1	

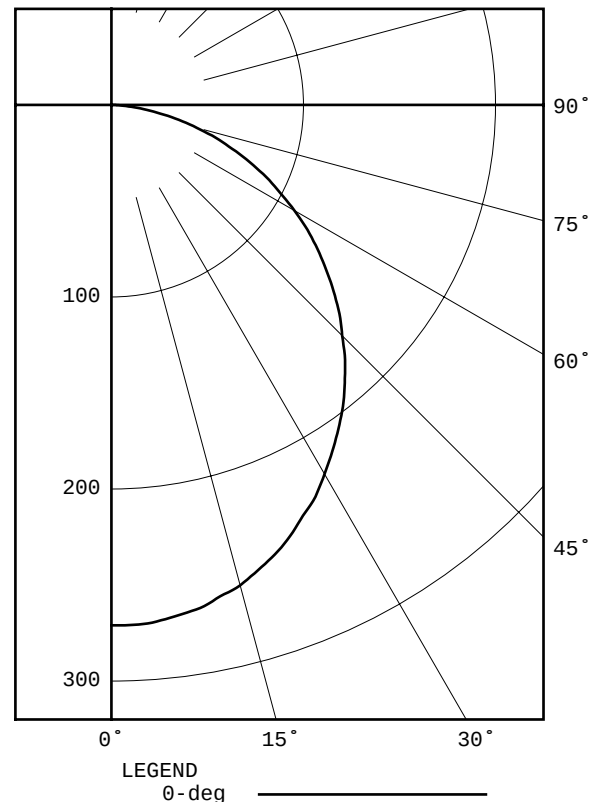
ZONAL LUMEN SUMMARY	
ZONE	LUMENS
0- 30	207
0- 40	336
0- 60	585
0- 90	733
90-180	0
0-180	733

	%FIXT
0- 30	28.3
0- 40	45.9
0- 60	79.8
0- 90	100.0
90-180	0.0
0-180	100.0

EFFICACY = 61.8 lm/W
CIE TYPE - DIRECT
SPACING CRITERION: 1.22
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90
LUMINOUS LENGTH : 3.125 3.125

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	38159.
55	36250.
65	33425.
75	28209.
85	16390.





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CANDELA DISTRIBUTION

0.0	271
2.5	271
5.0	270
7.5	268
10.0	266
12.5	262
15.0	259
17.5	254
20.0	249
22.5	243
25.0	236
27.5	230
30.0	222
32.5	214
35.0	206
37.5	198
40.0	189
42.5	180
45.0	170
47.5	161
50.0	151
52.5	141
55.0	131
57.5	121
60.0	110
62.5	99
65.0	89
67.5	78
70.0	67
72.5	57
75.0	46
77.5	36
80.0	26
82.5	17
85.0	9
87.5	3
90.0	1



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	5	6
5-	10	19
10-	15	31
15-	20	42
20-	25	51
25-	30	58
30-	35	63
35-	40	66
40-	45	67
45-	50	65
50-	55	61
55-	60	56
60-	65	48
65-	70	39
70-	75	30
75-	80	19
80-	85	9
85-	90	2

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	10	26
0-	20	99
0-	30	207
0-	40	336
0-	50	468
0-	60	585
0-	70	673
0-	80	722
0-	90	733



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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	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	63	70	65	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	68	56	48	42	54	47	41	53	46	41	51	45	41	38
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	35	29	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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 : Osram ST8-HA4-250-840 22W / 4000K

Lamp Number: RM B6-28

Ballast: Vossloh Schwabe LN 36.149

Ballast Number: RM B6-28

Calibration Voltage/Frequency: 220Vac / 50hz

Total Luminous Flux: 2463 Lumens

Calibration Date: 01/19/2017

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	LMT/GO-DS 1600 Lab 4- Test Dist.: 31.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27074V	10/25/2018
<i>Power Source</i>	Chroma / 61604 AC P/S	616040003897	N/A
<i>Thermometer</i>	LMT / ATS-4Ch	10B623-3	10/26/2018

Sphere Calibration Calibration

Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-J136

Calibration Current: 2.679 Amps *Total*

Luminous Flux: 1427 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	10/26/2018
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	10/25/2018
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	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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