

Project Number
17.00399



Date
2/13/2017

LAB 6
Sphere

Test Sample Description

Catalog Number: P7253-0930K9
Description: 14" LED Flush Mount

Photometry

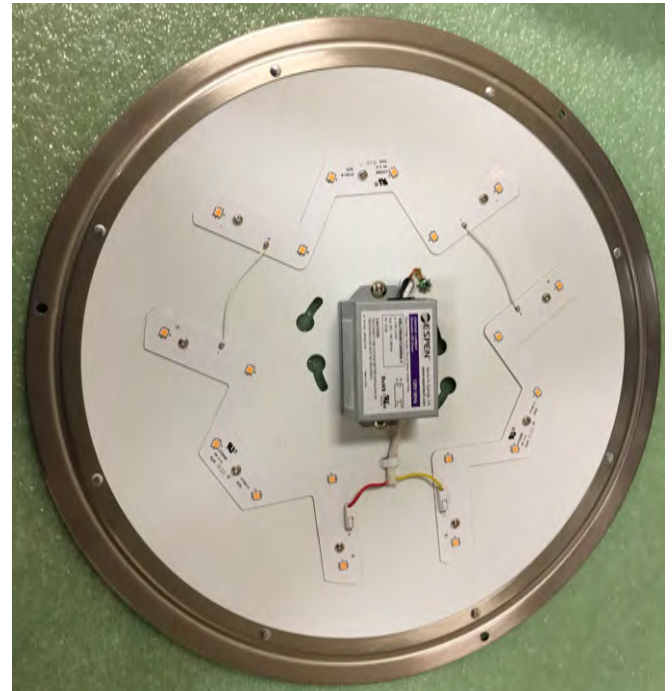
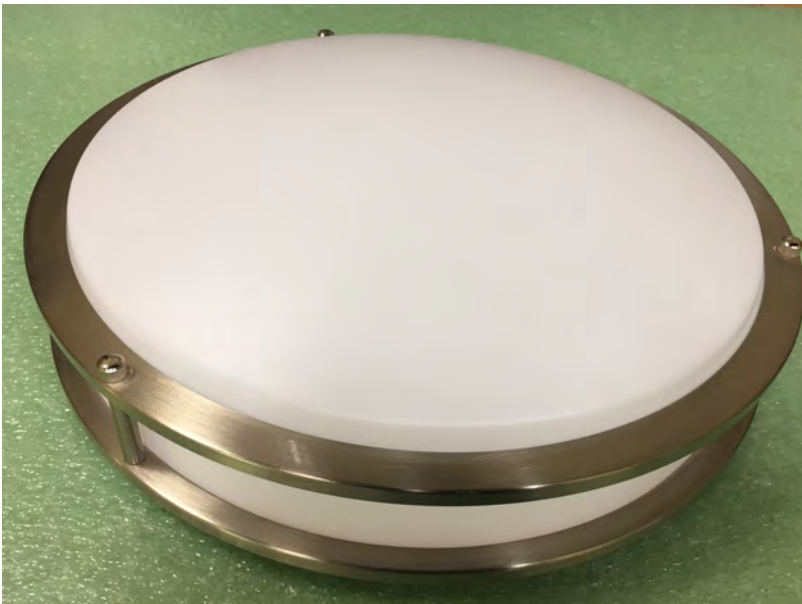
Test Method: IES LM-79-08 § 10
Preburn Time: 3:30
Time To Stabilize: 0:44
Total Operating Time: 4:30

Input Voltage (Volts): 120.0
Input Current (Amps): 0.183
Input Wattage (Watts): 21.9
Ambient Temp (°C): 24.2
PF @ 120V: 0.996

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 1:00
Time To Stabilize: 0:58
Total Operating Time: 1:58

Input Voltage (Volts): 120.0
Input Current (Amps): 0.183
Input Wattage (Watts): 21.8
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. ELLMANN
Approved: D. BLACK



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#: LEMWS36X90LZ3A00

Lamp Desc: 18 - LG 3000K LEDs

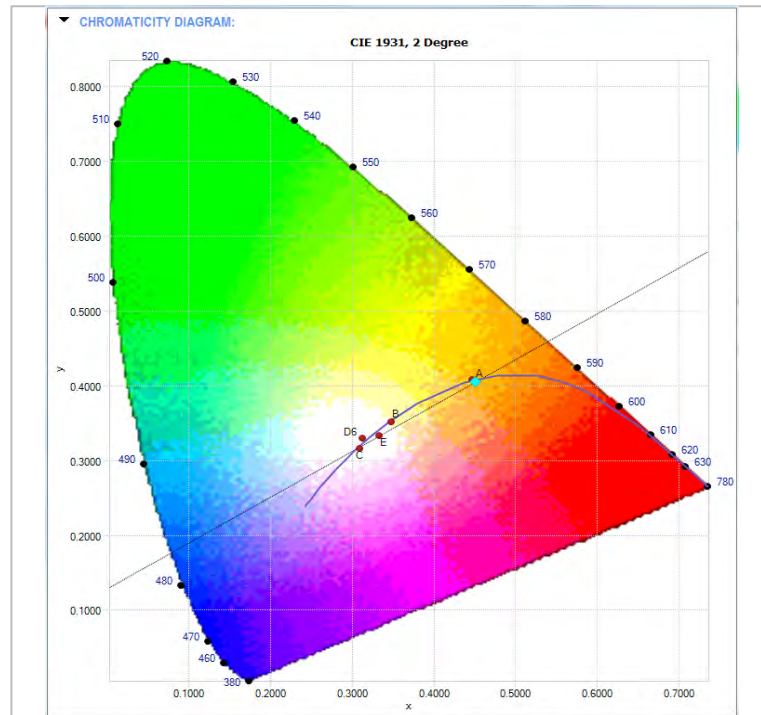
Driver Desc: 1 - Espen VEL19048120HDA-1

Efficacy: 58.8 LPW

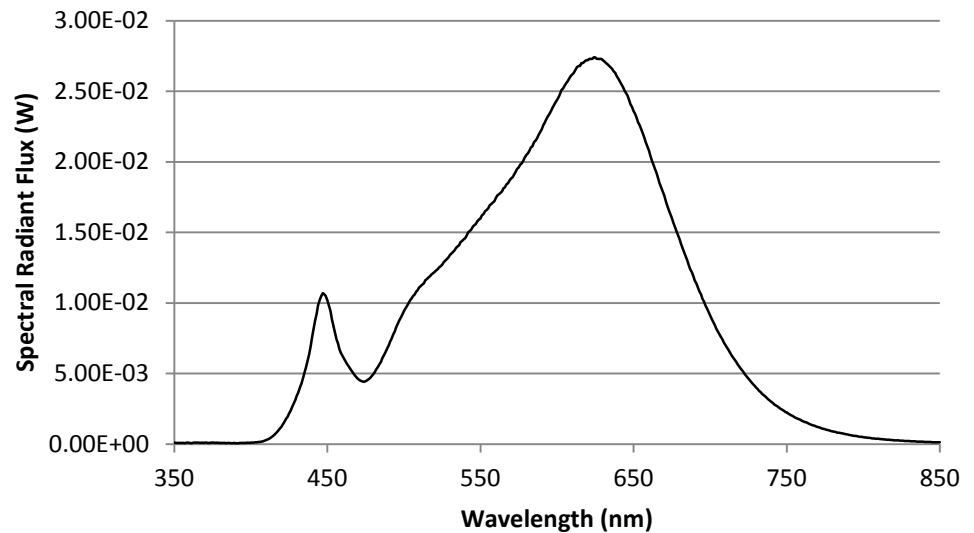
S/P Ratio: 1.3 LM'/LM

Spectral Results

Name	Value	Unit
Φ	4.57	watts
$\Phi(v)$	1282	lumens
$\Phi(v')$	1695	lm'
Chrom x	0.4504	
Chrom y	0.4051	
Chrom u	0.2589	
Chrom v	0.3492	
Duv	0.0013	
Chrom u'	0.2589	
Chrom v'	0.5238	
CCT	2791	K
Purity	56.8	%
λ (dom)	584.2	nm
FWHM	150	nm
λ (peak)	624.3	nm
λ (center)	607.7	nm
λ (centroid)	598.4	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.001216752	
Correlation	0.0054	
R1	93.4	
R2	96.2	
R3	97.6	
R4	93.6	
R5	93.4	
R6	96.0	
R7	92.0	
R8	82.6	
R9	61.7	
R10	90.7	
R11	95.0	
R12	89.7	
R13	94.1	
R14	98.0	



Spectral Distribution of Radiant Flux





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PREPARED FOR: PROGRESS

CATALOG NUMBER: P7253-0930K9

LUMINAIRE: 14" LED Flush Mount

LAMP CAT. NO.: LEMWS36X90LZ3A00

LAMP: 18 - 3000K LG LEDs

BALLAST CATALOG NUMBER: VEL19048120HDA-1

BALLAST: 1 - Espen

INPUT ELECTRICAL: 120.0 VOLTS, 21.9 WATTS, 0.183 AMPS

REFRACTOR: Acrylic

MOUNTING: Ceiling

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



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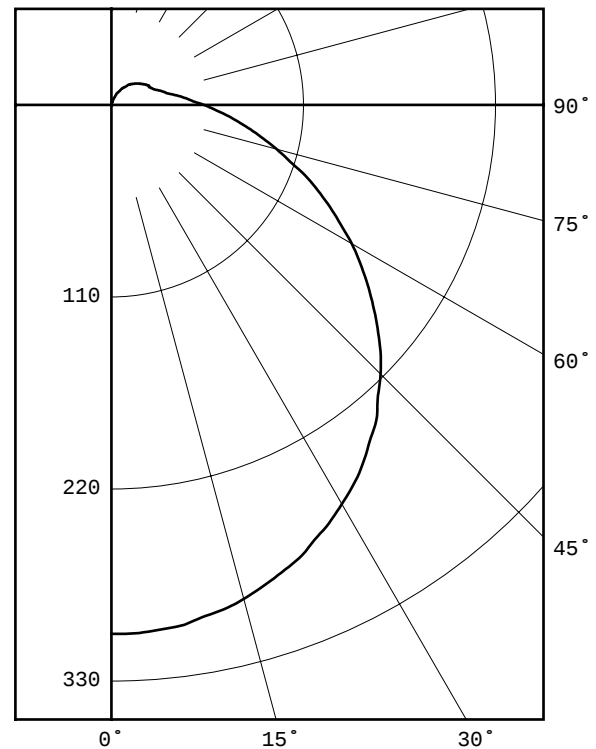
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CATALOG NUMBER: P7253-0930K9

DEG	CANDELA	LUMENS
0	303	
5	302	29
15	293	83
25	275	127
35	251	157
45	218	168
55	179	160
65	138	137
75	98	104
85	66	72
90	53	
95	43	47
105	30	32
115	24	24
125	21	19
135	17	13
145	12	8
155	7	3
165	2	1
175	1	0
180	0	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		238	20.1
0- 40		395	33.4
0- 60		724	61.1
0- 90		1037	87.6
90-120		103	8.7
90-130		122	10.3
90-150		143	12.1
90-180		147	12.4
0-180		1184	100.0

EFFICACY = 54.1 lm/W
CIE TYPE - SEMI-DIRECT
LUMINAIRE SPACING CRITERION = 1.30





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LUMINOUS DIAMETER: 12.000
HEIGHT OF SIDE : 3.000

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	3205.
55	2940.
65	2660.
75	2372.
85	2238.



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CANDELA DISTRIBUTION

0.0	303
5.0	302
10.0	298
15.0	293
20.0	285
25.0	275
30.0	264
35.0	251
40.0	236
45.0	218
50.0	199
55.0	179
60.0	159
65.0	138
70.0	118
75.0	98
80.0	81
85.0	66
90.0	53
95.0	43
100.0	35
105.0	30
110.0	26
115.0	24
120.0	23
125.0	21
130.0	19
135.0	17
140.0	15
145.0	12
150.0	9
155.0	7
160.0	4
165.0	2
170.0	1
175.0	1
180.0	0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		7
5- 10		21
10- 15		35
15- 20		48
20- 25		59
25- 30		68
30- 35		76
35- 40		81
40- 45		84
45- 50		84
50- 55		82
55- 60		78
60- 65		72
65- 70		65
70- 75		56
75- 80		48
80- 85		40
85- 90		32
90- 95		26
95-100		21
100-105		17
105-110		15
110-115		13
115-120		12
120-125		10
125-130		9
130-135		7
135-140		6
140-145		4
145-150		3
150-155		2
155-160		1
160-165		1
165-170		0
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		29
10- 20		83
20- 30		127
30- 40		157
40- 50		168
50- 60		160
60- 70		137
70- 80		104
80- 90		72
90-100		47
100-110		32
110-120		24
120-130		19
130-140		13
140-150		8
150-160		3
160-170		1
170-180		0



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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	116	116	116	116	112	112	112	112	104	104	104	97	97	97	91	91	91	88
1	104	98	93	88	100	94	90	86	88	84	81	82	79	76	76	74	72	69
2	93	84	77	70	90	81	74	68	76	70	65	70	66	62	66	62	58	55
3	85	73	65	58	81	71	63	56	66	59	54	62	56	51	57	53	49	46
4	77	65	55	48	74	62	54	47	58	51	45	54	48	43	51	46	41	39
5	71	57	48	41	68	56	47	40	52	44	39	49	42	37	46	40	36	33
6	65	51	42	36	63	50	41	35	47	39	34	44	37	32	41	36	31	29
7	60	47	37	31	58	45	37	31	42	35	30	40	33	28	38	32	27	25
8	56	42	34	28	54	41	33	27	39	31	26	36	30	25	34	29	24	22
9	52	39	30	25	50	38	30	24	36	28	24	34	27	23	32	26	22	20
10	49	36	28	22	47	35	27	22	33	26	21	31	25	21	29	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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Date
2/13/2017

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: 09/02/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 6 - Test Distance: 31.3'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27076V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	11/30/7136	11/2/2017

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	Calibrated Weekly
<i>Thermometer</i>	National Instruments / USB TC01	1912751	11/2/2017
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	11/1/2017
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	031159372	10/31/2017
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	12/1/2017
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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