

Project Number
17.01350



HUBBELL
Lighting

Date
5/11/2017

Lab 6
Sphere

Test Sample Description

Catalog Number: P350072-129-30
Description: 27" Round LED Flush-Mount

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 0:20
Time To Stabilize: 0:55
Total Operating Time: 1:30

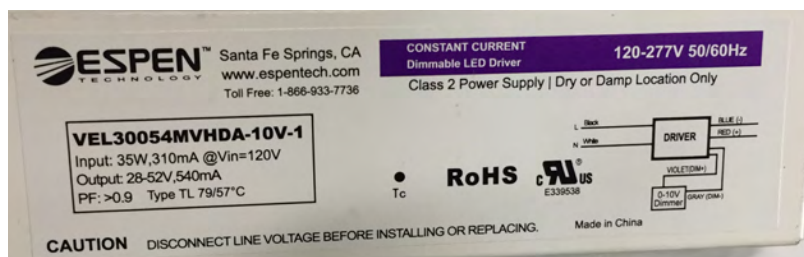
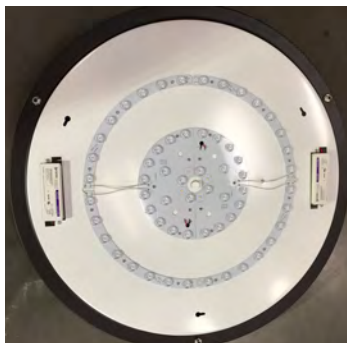
Input Voltage (Volts): 120.0
Input Current (Amps): 0.535
Input Wattage (Watts): 64.0
Ambient Temp (°C): 24.1



Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 1:16
Total Operating Time: 9:16

Input Voltage (Volts): 120.0
Input Current (Amps): 0.537
Input Wattage (Watts): 63.8
Ambient Temp (°C): 24.5



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. ELLMANN
Approved: P. McCARTHY

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#: LEMWS36X90LZ3A00

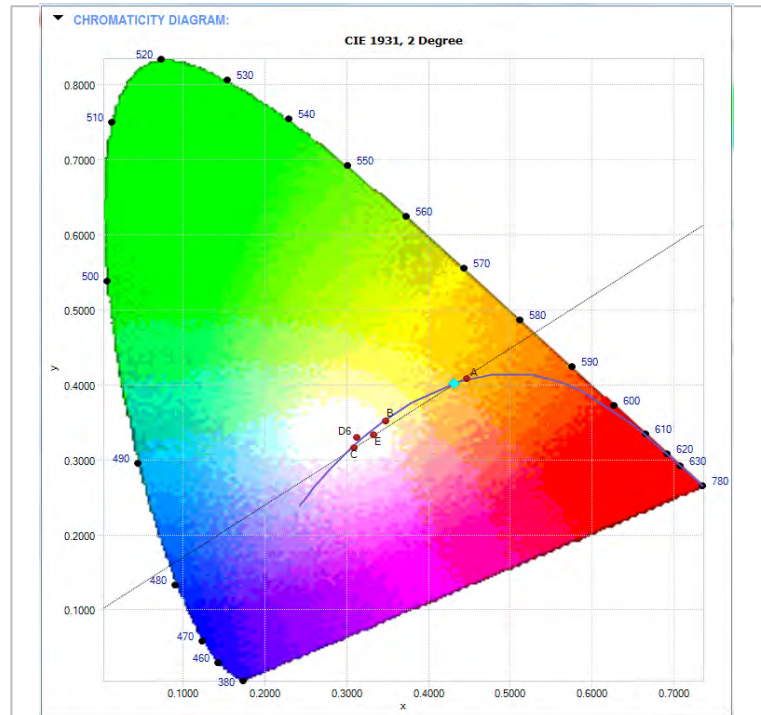
Lamp Desc: 64 - LG 3000K LEDs

Driver Desc: 2 - Espen VEL30054MVHDA-10V-1

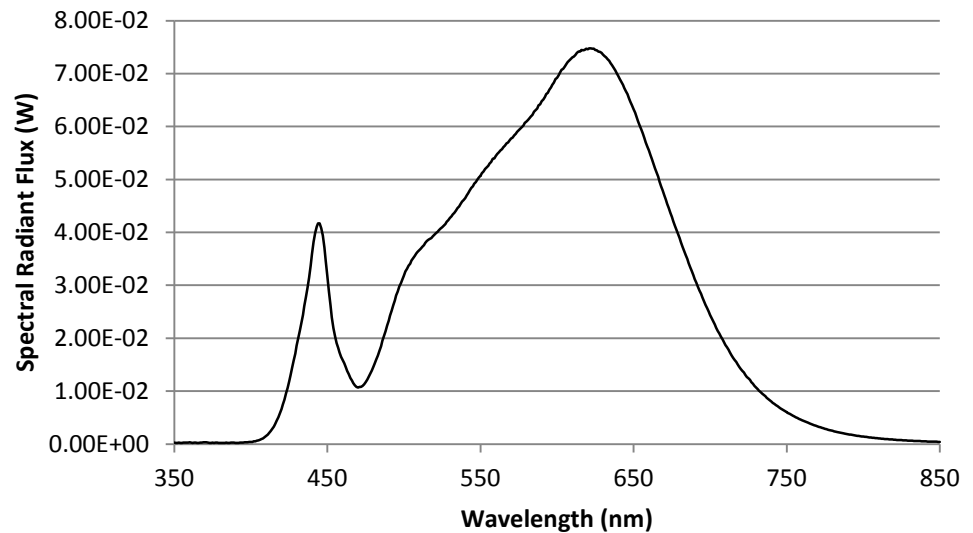
Efficacy: 60.4 LPW S/P Ratio: 1.4 LM'/LM

Spectral Results

Name	Value	Unit
Φ	13.42	watts
$\Phi(v)$	3852	lumens
$\Phi(v')$	5434	lm'
Chrom x	0.4315	
Chrom y	0.4016	
Chrom u	0.2481	
Chrom v	0.3464	
Duv	0.0002	
Chrom u'	0.2481	
Chrom v'	0.5196	
CCT	3072	K
Purity	50.1	%
λ (dom)	582.6	nm
FWHM	169.6	nm
λ (peak)	622.2	nm
λ (center)	597.1	nm
λ (centroid)	591.4	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.000264015	
Correlation	0.0054	
R1	91.5	
R2	93.4	
R3	94.7	
R4	92.0	
R5	91.2	
R6	92.1	
R7	91.8	
R8	82.4	
R9	58.4	
R10	84.8	
R11	93.5	
R12	84.3	
R13	91.6	
R14	96.5	



Spectral Distribution of Radiant Flux





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LUMINAIRE: 27" Round LED Flush-Mount

LAMP CAT. NO.: LEMWS36X90LZ3A00

LAMP: 64- 3000K LG LEDs

BALLAST CATALOG NUMBER: VEL30054MVHDA-10V-1

BALLAST: 2- Espen

REFRACTOR: Etched Glass

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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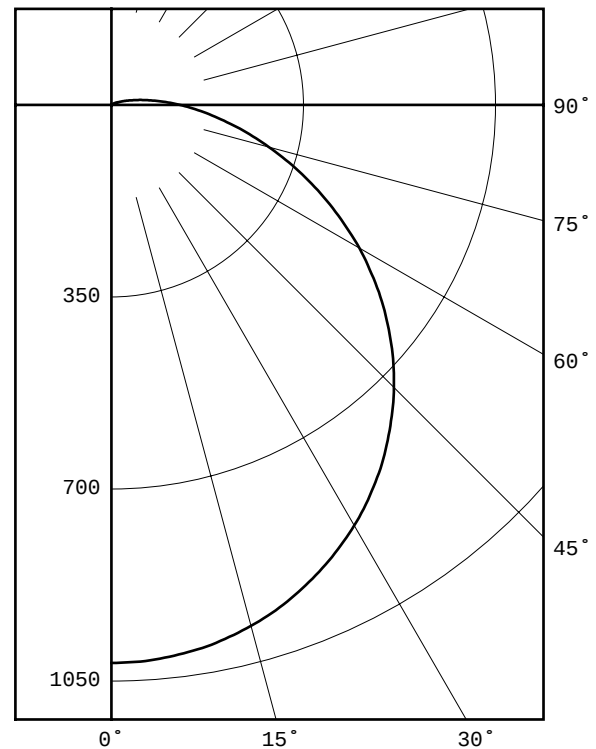
DEG	CANDELA	LUMENS
0	1017	
5	1013	96
15	983	278
25	924	426
35	839	525
45	728	562
55	595	532
65	445	441
75	297	316
85	174	191
90	125	
95	83	93
105	30	33
115	9	10
125	3	3
135	2	2
145	3	2
155	4	2
165	5	1
175	6	1
180	6	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		800	22.8
0- 40		1325	37.7
0- 60		2419	68.8
0- 90		3366	95.8
90-120		136	3.9
90-130		139	4.0
90-150		143	4.1
90-180		147	4.2
0-180		3513	100.0

EFFICACY = 54.9 lm/W

CIE TYPE - DIRECT

LUMINAIRE SPACING CRITERION = 1.29





®

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LUMINOUS DIAMETER: 24.000

HEIGHT OF SIDE : 3.750

LUMINANCE DATA IN CANDELA/SQ M

ANGLE AVERAGE

IN DEG

45	2942.
55	2768.
65	2529.
75	2256.
85	2089.



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CANDELA DISTRIBUTION

0.0	1017
5.0	1013
10.0	1002
15.0	983
20.0	957
25.0	924
30.0	885
35.0	839
40.0	786
45.0	728
50.0	664
55.0	595
60.0	522
65.0	445
70.0	370
75.0	297
80.0	232
85.0	174
90.0	125
95.0	83
100.0	52
105.0	30
110.0	16
115.0	9
120.0	6
125.0	3
130.0	2
135.0	2
140.0	3
145.0	3
150.0	4
155.0	4
160.0	4
165.0	5
170.0	5
175.0	6
180.0	6



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		24
5- 10		72
10- 15		118
15- 20		160
20- 25		197
25- 30		229
30- 35		254
35- 40		271
40- 45		280
45- 50		281
50- 55		274
55- 60		258
60- 65		235
65- 70		206
70- 75		174
75- 80		141
80- 85		110
85- 90		81
90- 95		57
95-100		36
100-105		21
105-110		12
110-115		6
115-120		4
120-125		2
125-130		1
130-135		1
135-140		1
140-145		1
145-150		1
150-155		1
155-160		1
160-165		1
165-170		1
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		96
10- 20		278
20- 30		426
30- 40		525
40- 50		562
50- 60		532
60- 70		441
70- 80		316
80- 90		191
90-100		93
100-110		33
110-120		10
120-130		3
130-140		2
140-150		2
150-160		2
160-170		1
170-180		1



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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	118	118	118	118	115	115	115	115	109	109	109	103	103	103	98	98	98	96
1	106	100	95	91	103	98	93	89	92	89	85	88	85	82	83	81	79	76
2	96	86	79	72	92	84	77	71	80	74	69	76	71	67	72	68	65	62
3	87	75	66	59	84	73	65	59	70	63	57	66	60	55	63	58	54	51
4	79	66	57	50	76	65	56	49	62	54	48	59	52	47	56	50	46	43
5	73	59	50	43	70	58	49	42	55	47	41	52	46	40	50	44	40	37
6	67	53	44	37	65	52	43	37	49	42	36	47	40	35	45	39	35	32
7	62	48	39	32	60	47	38	32	45	37	32	43	36	31	41	35	31	28
8	58	44	35	29	56	43	34	29	41	33	28	39	33	28	38	32	27	25
9	54	40	32	26	52	39	31	26	38	30	25	36	30	25	35	29	25	23
10	50	37	29	23	49	36	28	23	35	28	23	34	27	23	32	27	22	20

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: 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	1912745	11/7/2017

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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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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