

Project Number
18.00251



HUBBELL
Lighting

Date
3/5/2018

LAB 5
Sphere

Test Sample Description

Catalog Number: P350085-009-30

Description: 1-Lt. LED Flush Mount with Etched/ Painted White Refractor

Photometry

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

Preburn Time: 0:00

Time To Stabilize: 1:00

Total Operating Time: 2:00

Input Voltage (Volts): 120.2

Input Current (Amps): 0.148

Input Wattage (Watts): 17.5

Ambient Temp (°C): 26

Sphere

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

Preburn Time: 1:00

Time To Stabilize: 1:40

Total Operating Time: 2:40

Input Voltage (Volts): 120.0

Input Current (Amps): 0.147

Input Wattage (Watts): 17.3

Ambient Temp (°C): 24

PF @ 120V: 0.977

THD @ 120V (%): 16.7



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): R. WILLIAMS
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#: 93047261-5230

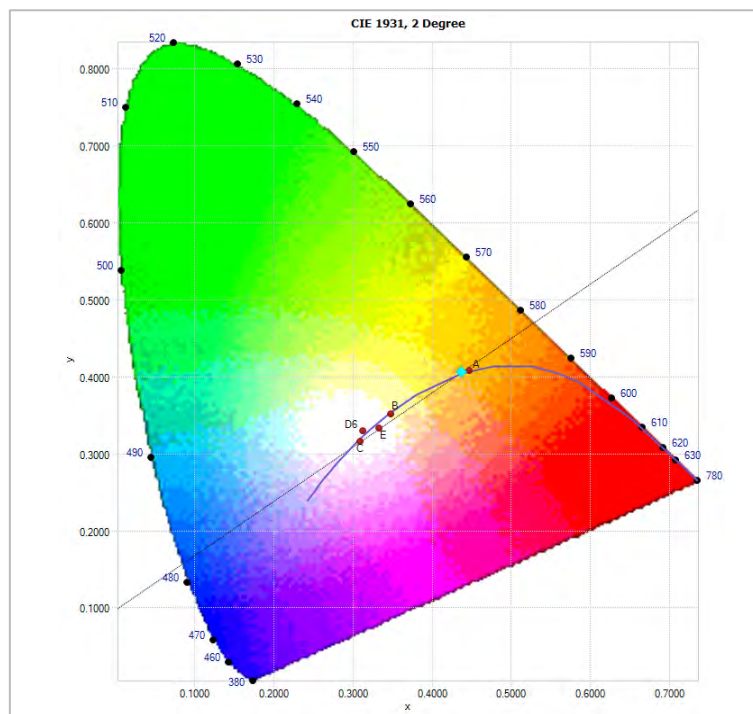
Lamp Desc: 40 - Nichia 3000K LEDs

Driver Desc:

Efficacy: 38.1 LPW

S/P Ratio: 1.5 LM/LM

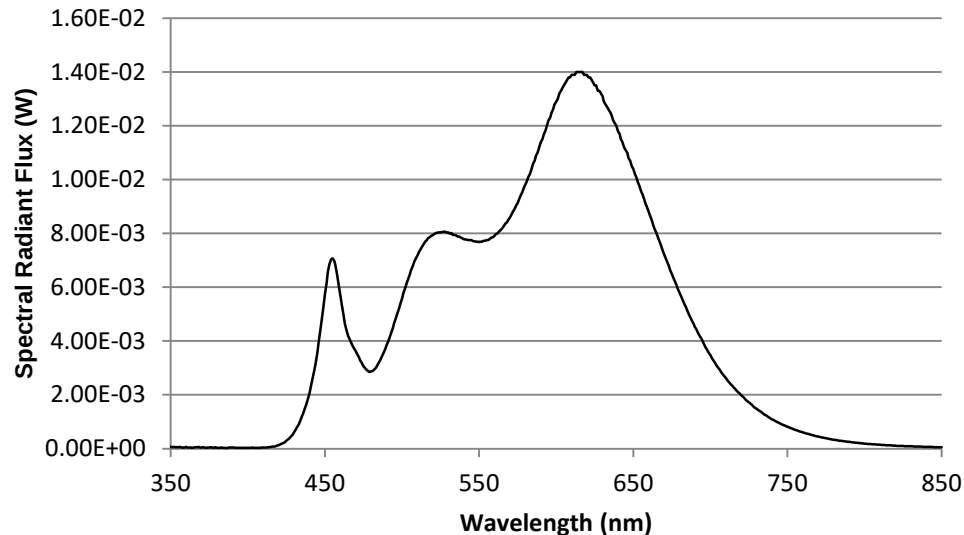
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	2.23	watts
$\Phi(v)$	659	lumens
$\Phi(v')$	976	lm'
Chrom x	0.4371	
Chrom y	0.4064	
Chrom u	0.2497	
Chrom v	0.3482	
Duv	0.0008	
Chrom u'	0.2497	
Chrom v'	0.5223	
CCT	3013	K
Purity	53.2	%
λ (dom)	582.5	nm
FWHM	163	nm
λ (peak)	613.7	nm
λ (center)	589.9	nm
λ (centroid)	590.6	nm
SDCM	Cool White	
RA	96	
Corr. Coef.	0.00090362	
Correlation	0.0054	
R1	98.9	
R2	99.5	
R3	97.9	
R4	98.7	
R5	99.1	
R6	94.3	
R7	92.1	
R8	83.7	
R9	63.2	
R10	98.7	
R11	92.1	
R12	86.6	
R13	99.3	
R14	99.0	

Spectral Distribution of Radiant Flux





®

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ISSUE DATE: 03/05/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P350085-009-30

LUMINAIRE: 1-Lt. LED Flush Mount

LAMP CAT. NO.: 93047261-5230

LAMP: 40- Nichia 3000K LEDs

MOUNTING: Ceiling

REFRACTOR: Etched/Painted White

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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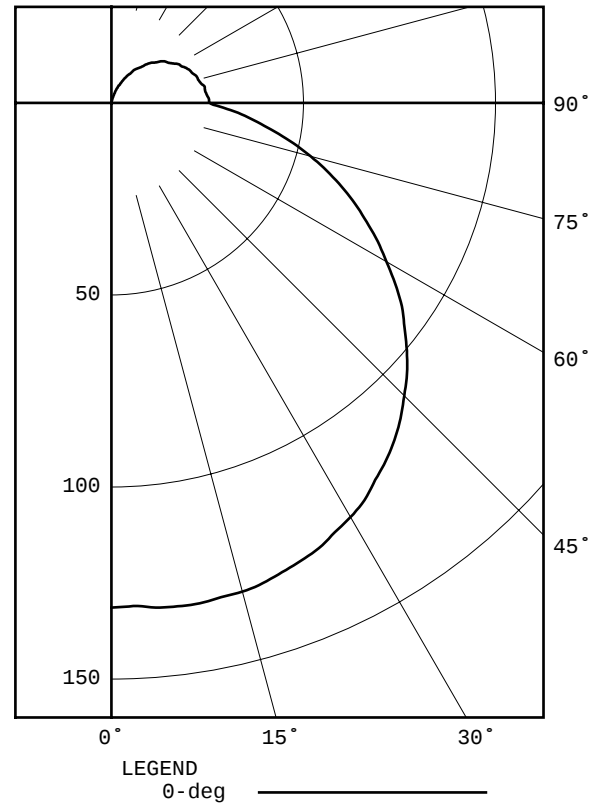
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DEG	CANDELA	LUMENS
0	131	
5	132	13
15	132	37
25	128	59
35	120	75
45	108	83
55	92	82
65	73	73
75	54	57
85	34	37
90	26	
95	25	27
105	23	25
115	22	21
125	18	17
135	15	11
145	11	7
155	6	3
165	2	0
175	0	0
180	0	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		109	17.4
0- 40		184	29.3
0- 60		350	55.8
0- 90		516	82.3
90-120		73	11.7
90-130		90	14.3
90-150		108	17.2
90-180		111	17.7
0-180		627	100.0

EFFICACY = 35.8 lm/W
CIE TYPE - SEMI-DIRECT





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CANDELA DISTRIBUTION

0.0	131
5.0	132
10.0	132
15.0	132
20.0	130
25.0	128
30.0	125
35.0	120
40.0	115
45.0	108
50.0	100
55.0	92
60.0	83
65.0	73
70.0	64
75.0	54
80.0	43
85.0	34
90.0	26
95.0	25
100.0	25
105.0	23
110.0	23
115.0	22
120.0	20
125.0	18
130.0	17
135.0	15
140.0	12
145.0	11
150.0	8
155.0	6
160.0	4
165.0	2
170.0	0
175.0	0
180.0	0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		3
5- 10		9
10- 15		16
15- 20		22
20- 25		27
25- 30		32
30- 35		36
35- 40		39
40- 45		41
45- 50		42
50- 55		42
55- 60		40
60- 65		38
65- 70		35
70- 75		31
75- 80		26
80- 85		21
85- 90		16
90- 95		14
95-100		13
100-105		13
105-110		12
110-115		11
115-120		10
120-125		9
125-130		8
130-135		6
135-140		5
140-145		4
145-150		3
150-155		2
155-160		1
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		13
0- 20		50
0- 30		109
0- 40		184
0- 50		267
0- 60		350
0- 70		422
0- 80		479
0- 90		516
0-100		543
0-110		568
0-120		589
0-130		606
0-140		617
0-150		624
0-160		627
0-170		627
0-180		627



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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	101	110	110	93	93	93	86	86	86	82
1	102	97	91	87	98	93	88	84	85	81	78	78	75	72	72	69	67	64
2	92	83	75	69	88	79	72	66	73	67	62	67	62	58	61	58	54	51
3	83	72	63	56	79	69	61	54	63	57	51	58	53	48	53	49	45	42
4	76	63	54	46	72	60	52	45	56	48	43	51	45	40	47	42	38	35
5	69	56	46	39	66	54	45	38	49	42	36	46	39	34	42	37	32	30
6	64	50	41	34	61	48	39	33	44	37	31	41	35	30	38	32	28	26
7	59	45	36	30	56	43	35	29	40	33	28	37	31	26	34	29	25	22
8	55	41	32	26	52	39	31	26	37	29	24	34	28	23	32	26	22	20
9	51	37	29	23	49	36	28	23	34	27	22	31	25	21	29	24	20	18
10	48	34	26	21	46	33	26	20	31	24	20	29	23	19	27	22	18	16

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: 09/08/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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	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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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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