

Project Number
16.02283



Date
8/15/2016

Lab 6
Sphere

Test Sample Description

Catalog Number: P350051-2030K9XA
Description: 1-Lt. LED FLUSH MOUNT USE LIGHT ENGINE "A"

Photometry

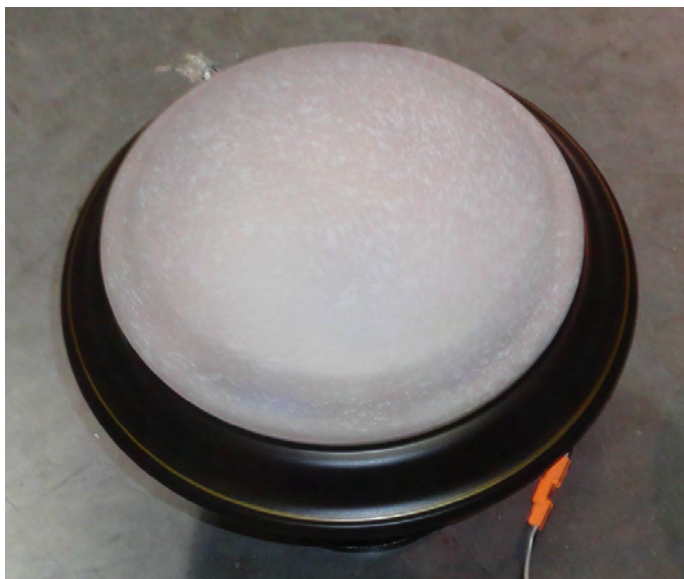
Test Method: IES LM-79-08 § 10
Preburn Time: 00:30
Time To Stabilize: 0:45
Total Operating Time: 2:20

Input Voltage (Volts): 120.1
Input Current (Amps): 0.150
Input Wattage (Watts): 17.8
Ambient Temp (°C): 24.1

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 10:00
Time To Stabilize: 0:56
Total Operating Time: 10:56

Input Voltage (Volts): 120.0
Input Current (Amps): 0.147
Input Wattage (Watts): 17.4
Ambient Temp (°C): 24.2



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



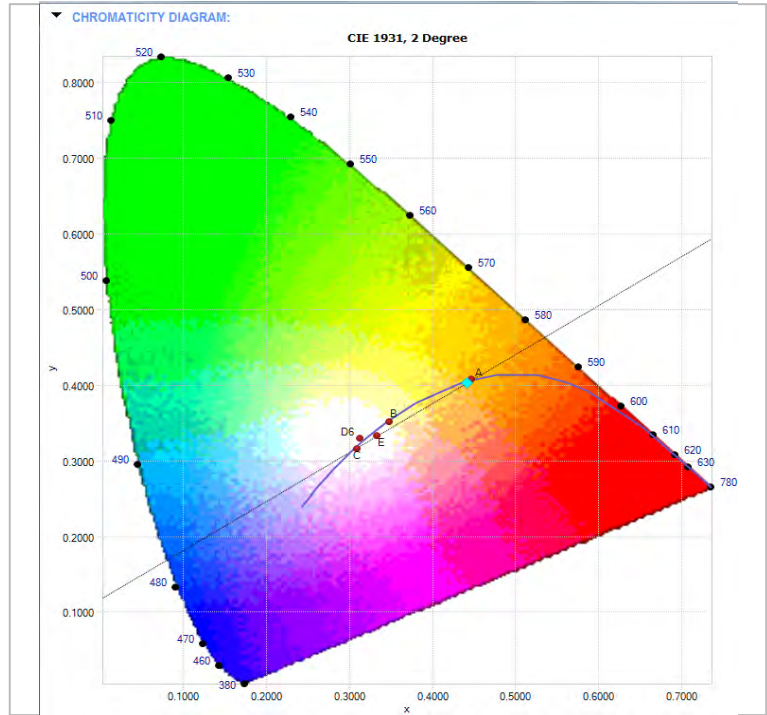


Lamp Cat#: 93047261-5130
 Lamp Desc: 40 - Nichia 3000K LEDs
 Driver Desc: n/a

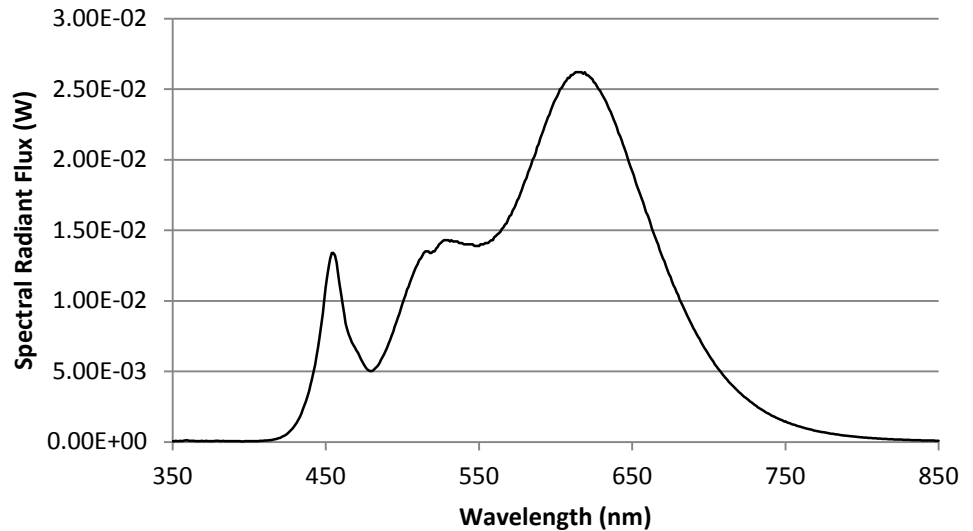
Efficacy: 69.5 LPW S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	4.09	watts
$\Phi(v)$	1209	lumens
$\Phi(v')$	1745	lm'
Chrom x	0.441	
Chrom y	0.4029	
Chrom u	0.2537	
Chrom v	0.3477	
Duv	0.0013	
Chrom u'	0.2537	
Chrom v'	0.5215	
CCT	2922	K
Purity	53.3	%
λ (dom)	583.5	nm
FWHM	156.9	nm
λ (peak)	614.5	nm
λ (center)	591.3	nm
λ (centroid)	590.7	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.001010876	
Correlation	0.0054	
R1	98.2	
R2	99.2	
R3	97.0	
R4	99.1	
R5	99.1	
R6	93.7	
R7	90.4	
R8	81.2	
R9	59.2	
R10	98.7	
R11	93.5	
R12	87.1	
R13	99.4	
R14	99.0	



Spectral Distribution of Radiant Flux



This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



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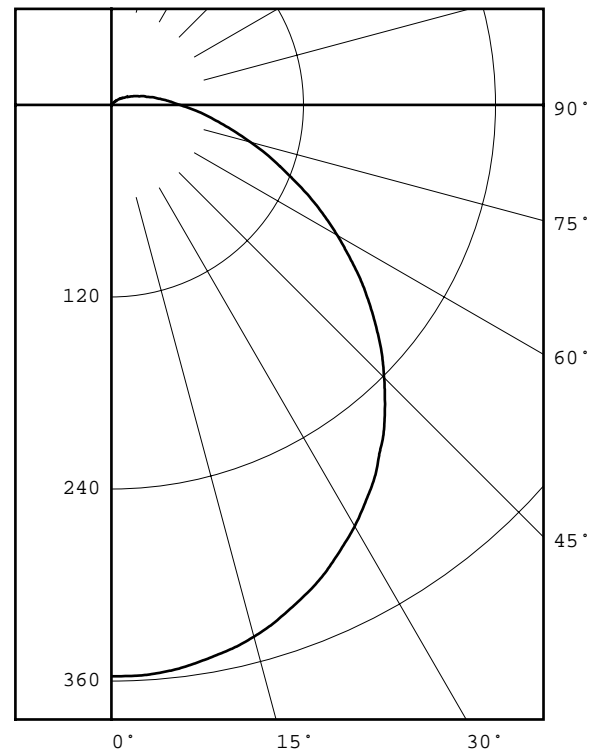
REPORT NUMBER: 16.02283
ISSUE DATE: 08/15/16
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350051-2030K9XA
LUMINAIRE: 1-Lt. LED FLUSH MOUNT
LAMP CAT. NO.: 93047261-5130
LAMP: 40 - Nichia 3000K LED's
BALLAST: 1 - CCdriver
MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

DEG	CANDELA	LUMENS
0	357	
5	356	34
15	344	97
25	320	147
35	286	179
45	241	186
55	190	170
65	137	136
75	90	96
85	56	61
90	43	
95	34	37
105	21	22
115	12	12
125	7	6
135	3	2
145	0	0
155	0	0
165	0	0
175	0	0
180	0	0

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	278	23.5
0- 40	457	38.5
0- 60	813	68.5
0- 90	1105	93.2
90-120	72	6.1
90-130	78	6.6
90-150	80	6.8
90-180	80	6.8
0-180	1186	100.0

TOTAL INPUT WATTS = 17.8
EFFICACY = 66.6 Lm/W
CIE TYPE - DIRECT
LUMINAIRE SPACING CRITERION = 1.3





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LUMINOUS DIAMETER: 9.000
HEIGHT OF SIDE : 2.750

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE

IN DEG

45	5976.
55	5186.
65	4304.
75	3454.
85	2873.



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CANDELA DISTRIBUTION

	0.0
0.0	357
5.0	356
10.0	351
15.0	344
20.0	333
25.0	320
30.0	304
35.0	286
40.0	265
45.0	241
50.0	216
55.0	190
60.0	163
65.0	137
70.0	112
75.0	90
80.0	71
85.0	56
90.0	43
95.0	34
100.0	27
105.0	21
110.0	16
115.0	12
120.0	9
125.0	7
130.0	4
135.0	3
140.0	1
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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ZONAL LUMEN SUMMARY

0- 5	9.
5- 10	25.
10- 15	41.
15- 20	56.
20- 25	69.
25- 30	79.
30- 35	87.
35- 40	92.
40- 45	94.
45- 50	92.
50- 55	88.
55- 60	81.
60- 65	73.
65- 70	63.
70- 75	53.
75- 80	43.
80- 85	34.
85- 90	27.
90- 95	21.
95-100	16.
100-105	13.
105-110	10.
110-115	7.
115-120	5.
120-125	4.
125-130	3.
130-135	2.
135-140	1.
140-145	0.
145-150	0.
150-155	0.
155-160	0.
160-165	0.
165-170	0.
170-175	0.
175-180	0.



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	9
5- 10	25
10- 15	41
15- 20	56
20- 25	69
25- 30	79
30- 35	87
35- 40	92
40- 45	94
45- 50	92
50- 55	88
55- 60	81
60- 65	73
65- 70	63
70- 75	53
75- 80	43
80- 85	34
85- 90	27
90- 95	21
95-100	16
100-105	13
105-110	10
110-115	7
115-120	5
120-125	4
125-130	3
130-135	2
135-140	1
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	34
0- 20	131
0- 30	278
0- 40	457
0- 50	643
0- 60	813
0- 70	948
0- 80	1044
0- 90	1105
0-100	1143
0-110	1165
0-120	1177
0-130	1184
0-140	1186
0-150	1186
0-160	1186
0-170	1186
0-180	1186



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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	117	117	117	117	117	114	114	114	114	107	107	107	101	101	101	96	96	96	93
1	106	100	95	91	102	97	93	89	92	88	85	87	84	81	82	80	77	75	75
2	96	87	79	73	92	84	77	72	79	74	69	75	70	66	71	67	64	61	61
3	87	76	67	60	84	74	66	59	70	63	57	66	60	56	63	58	54	51	51
4	79	67	58	51	77	65	57	50	62	54	49	59	52	47	56	50	46	43	43
5	73	60	50	44	70	58	49	43	55	48	42	52	46	41	50	44	40	37	37
6	67	54	44	38	65	52	44	37	50	42	37	47	41	36	45	39	35	33	33
7	62	49	40	33	60	47	39	33	45	38	32	43	37	32	41	35	31	29	29
8	58	44	36	30	56	43	35	29	41	34	29	40	33	28	38	32	28	26	26
9	54	41	32	27	52	40	32	26	38	31	26	36	30	25	35	29	25	23	23
10	51	37	29	24	49	37	29	24	35	28	23	34	27	23	32	27	23	21	21

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 LUMINAIRE SAMPLE.

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Goniophotometer Calibration

Calibration Lamp: GE 1000W, 120V, T6, CL (FEL)

Lamp Number: ITL78966-1000-14

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 23413.0 Lumens

Calibration Date: 07/18/2015 07/18/2015

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	11/10/2016
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/10/2016

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	11/10/2016
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	11/10/2016
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	031159372	11/10/2016
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148605	11/10/2016
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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