

Project Number
16.02057



Date
7/28/2016

Lab 6
Sphere

Test Sample Description

Catalog Number: P3683-2030K9
Description: 1-Lt. Led Semi-Flush. USE LIGHT ENGINE "A" FOR TEST.

Photometry

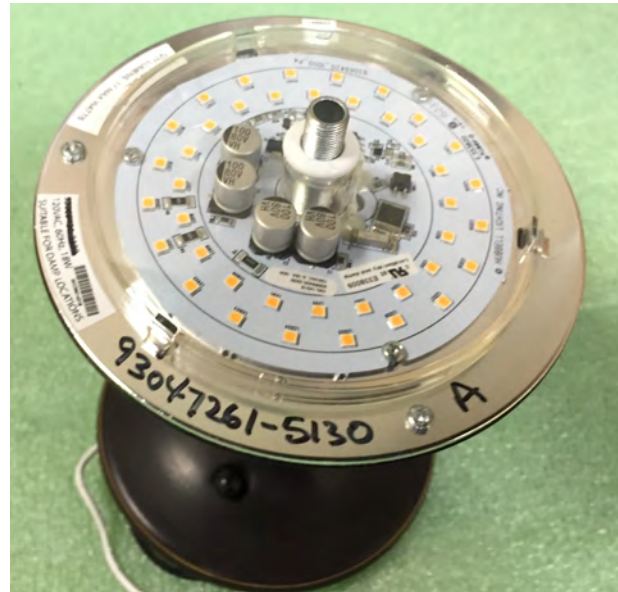
Test Method: IES LM-79-08 § 10
Preburn Time: 00:20
Time To Stabilize: 1:03
Total Operating Time: 2:27

Input Voltage (Volts): 120.2
Input Current (Amps): 0.150
Input Wattage (Watts): 17.7
Ambient Temp (°C): 24.0

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 0:58
Total Operating Time: 8:58

Input Voltage (Volts): 120.0
Input Current (Amps): 0.148
Input Wattage (Watts): 17.5
Ambient Temp (°C): 24



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Greenville, SC 29607
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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.

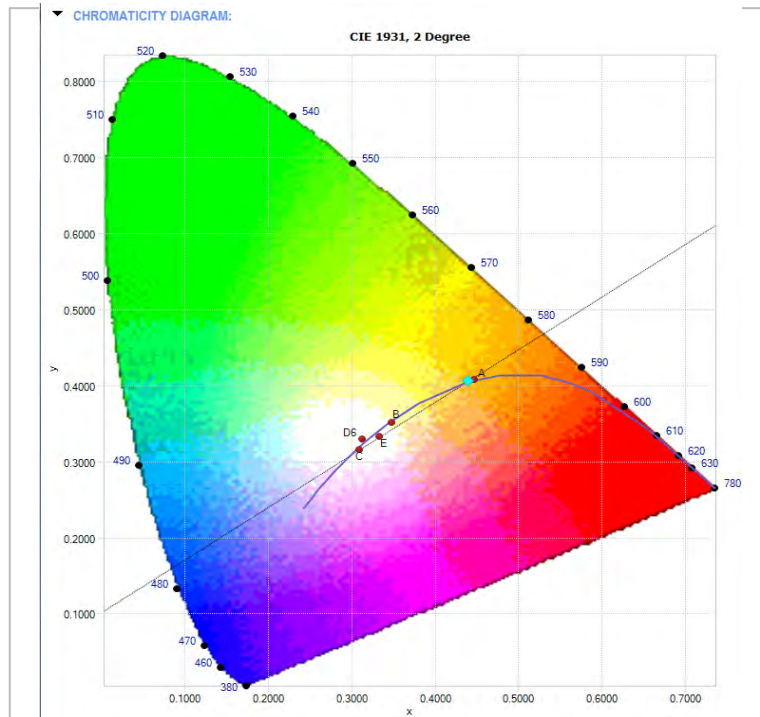


Lamp Cat#: 93047261-5130
Lamp Desc: 40 - Nichia 3000K LEDs
Driver Desc: NA

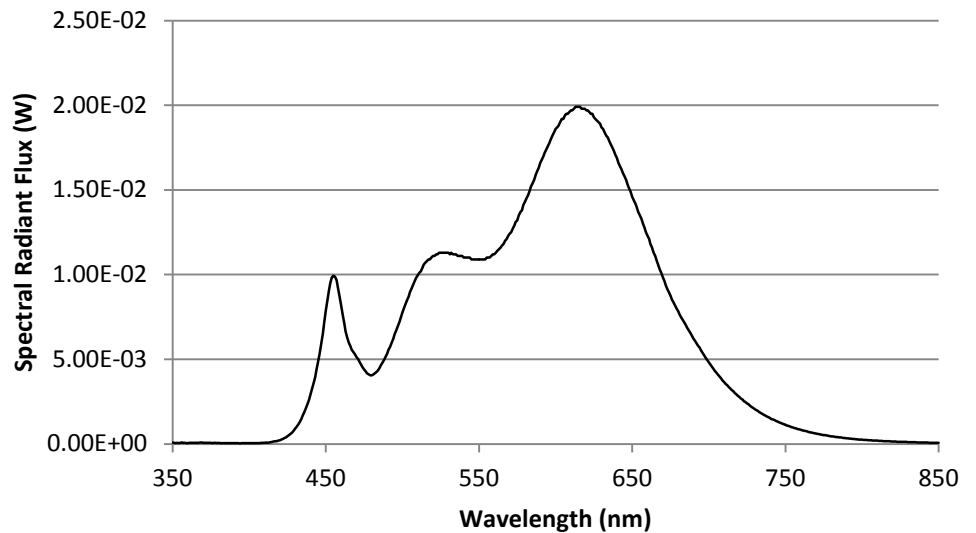
Efficacy: 53.6 LPW S/P Ratio: 1.5 LM/LM

Spectral Results

Name	Value	Unit
Φ	3.15	watts
$\Phi(v)$	938	lumens
$\Phi(v')$	1371	lm'
Chrom x	0.4391	
Chrom y	0.4065	
Chrom u	0.2509	
Chrom v	0.3484	
Duv	0.0005	
Chrom u'	0.2509	
Chrom v'	0.5227	
CCT	2982	K
Purity	53.8	%
λ (dom)	582.7	nm
FWHM	159.7	nm
λ (peak)	615.1	nm
λ (center)	589.7	nm
λ (centroid)	590.3	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.000699836	
Correlation	0.0054	
R1	98.0	
R2	99.7	
R3	97.5	
R4	99.7	
R5	98.6	
R6	94.7	
R7	91.1	
R8	81.6	
R9	59.0	
R10	99.5	
R11	93.9	
R12	86.4	
R13	99.4	
R14	99.0	



Spectral Distribution of Radiant Flux



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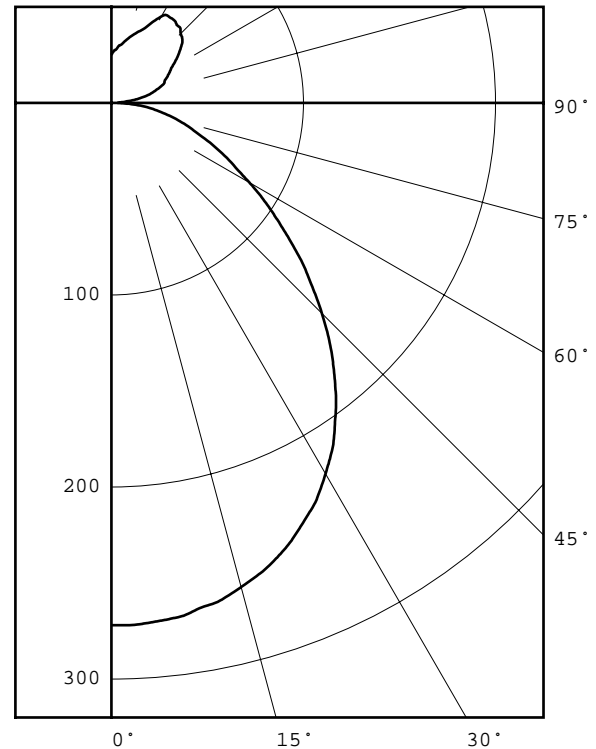
REPORT NUMBER: 16.02057
ISSUE DATE: 07/28/16
PREPARED FOR: PROGRESS
CATALOG NUMBER: P3683-2030K9
LUMINAIRE: 1-Lt. Led Semi-Flush
LAMP CAT. NO.: 93047261-5130
LAMP: 40-3000K Nichia LED's
BALLAST CAT. NO.: UFF25-1Q-700F
BALLAST: CC driver
MOUNTING: Ceiling

PAGE: 3 OF 9

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

DEG	CANDELA	LUMENS
0	272	
5	271	26
15	261	74
25	239	110
35	203	127
45	155	120
55	105	94
65	65	65
75	37	39
85	14	15
90	4	
95	7	9
105	23	24
115	32	32
125	42	38
135	51	40
145	54	34
155	44	21
165	35	10
175	28	3
180	25	

ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	209	23.8
0- 40	336	38.3
0- 60	550	62.6
0- 90	669	76.2
90-120	65	7.4
90-130	103	11.7
90-150	176	20.0
90-180	209	23.8
0-180	879	100.0



TOTAL INPUT WATTS = 17.7
EFFICACY = 49.7 Lm/W
CIE TYPE - SEMI-DIRECT
LUMINAIRE SPACING CRITERION = 1.2



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PAGE: 4 OF 9

LUMINOUS DIAMETER: 13.000
HEIGHT OF SIDE : 4.500

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE

IN DEG

45	1776.
55	1311.
65	923.
75	631.
85	311.



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REPORT NUMBER: 16.02057
ISSUE DATE: 07/28/16
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PAGE: 5 OF 9

CANDELA DISTRIBUTION

	0.0
0.0	272
5.0	271
10.0	267
15.0	261
20.0	252
25.0	239
30.0	223
35.0	203
40.0	180
45.0	155
50.0	130
55.0	105
60.0	83
65.0	65
70.0	49
75.0	37
80.0	25
85.0	14
90.0	4
95.0	7
100.0	16
105.0	23
110.0	29
115.0	32
120.0	36
125.0	42
130.0	48
135.0	51
140.0	53
145.0	54
150.0	52
155.0	44
160.0	39
165.0	35
170.0	31
175.0	28
180.0	25



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REPORT NUMBER: 16.02057
ISSUE DATE: 07/28/16
PREPARED FOR: PROGRESS

PAGE: 6 OF 9

ZONAL LUMEN SUMMARY

0- 5	6.
5- 10	19.
10- 15	31.
15- 20	42.
20- 25	52.
25- 30	59.
30- 35	63.
35- 40	64.
40- 45	62.
45- 50	57.
50- 55	51.
55- 60	43.
60- 65	36.
65- 70	29.
70- 75	22.
75- 80	17.
80- 85	11.
85- 90	5.
90- 95	3.
95-100	6.
100-105	11.
105-110	14.
110-115	15.
115-120	17.
120-125	18.
125-130	20.
130-135	20.
135-140	19.
140-145	18.
145-150	16.
150-155	12.
155-160	9.
160-165	6.
165-170	4.
170-175	2.
175-180	1.



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REPORT NUMBER: 16.02057
ISSUE DATE: 07/28/16
PREPARED FOR: PROGRESS

PAGE: 7 OF 9

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	6
5- 10	19
10- 15	31
15- 20	42
20- 25	52
25- 30	59
30- 35	63
35- 40	64
40- 45	62
45- 50	57
50- 55	51
55- 60	43
60- 65	36
65- 70	29
70- 75	22
75- 80	17
80- 85	11
85- 90	5
90- 95	3
95-100	6
100-105	11
105-110	14
110-115	15
115-120	17
120-125	18
125-130	20
130-135	20
135-140	19
140-145	18
145-150	16
150-155	12
155-160	9
160-165	6
165-170	4
170-175	2
175-180	1

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	26
0- 20	99
0- 30	209
0- 40	336
0- 50	456
0- 60	550
0- 70	615
0- 80	654
0- 90	669
0-100	678
0-110	702
0-120	734
0-130	772
0-140	811
0-150	845
0-160	866
0-170	876
0-180	879



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ISSUE DATE: 07/28/16

PAGE: 8 OF 9

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	
0	113	113	113	113	108	108	108	108	98	98	98	89	89	89	80	80	80	76
1	104	99	95	92	99	95	91	88	86	83	81	78	76	74	71	69	68	64
2	95	87	81	76	90	83	78	73	76	71	68	69	66	63	63	60	58	54
3	87	77	69	63	82	74	67	61	67	62	57	62	57	53	56	53	50	47
4	80	69	60	54	76	66	58	53	60	54	49	55	50	46	50	46	43	40
5	73	61	53	47	70	59	51	46	54	48	43	50	44	40	46	41	38	35
6	68	55	47	41	64	53	46	40	49	43	38	45	40	36	42	37	34	31
7	63	50	42	36	60	48	41	35	45	38	34	41	36	32	38	33	30	28
8	59	46	38	32	56	44	37	32	41	35	30	38	32	28	35	30	27	25
9	55	42	34	29	52	41	33	28	38	31	27	35	30	26	32	28	24	22
10	51	39	31	26	49	37	30	26	35	29	25	32	27	23	30	26	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 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

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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