

Project Number
17.00416



Date
2/14/2017

LAB 6
Sphere

Test Sample Description

Catalog Number: P350052-00930
Description: 1-Lt. LED Flush Mount. Use 24W Sample "A" LED ENGINE WITH CLEAR LENS.

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 1:15
Time To Stabilize: 1:10
Total Operating Time: 3:00

Input Voltage (Volts): 119.9
Input Current (Amps): 0.208
Input Wattage (Watts): 24.7
Ambient Temp (°C): 24.3
PF @ 120V: 0.99
THD @ 120V (%): 15.01

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 2:00
Time To Stabilize: 1:01
Total Operating Time: 3:01

Input Voltage (Volts): 120.0
Input Current (Amps): 0.207
Input Wattage (Watts): 24.6
Ambient Temp (°C): 24.1



Hubbell Lighting, Inc.

701 Millennium Boulevard
Greenville, SC 29607
www.hubbellighting.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.

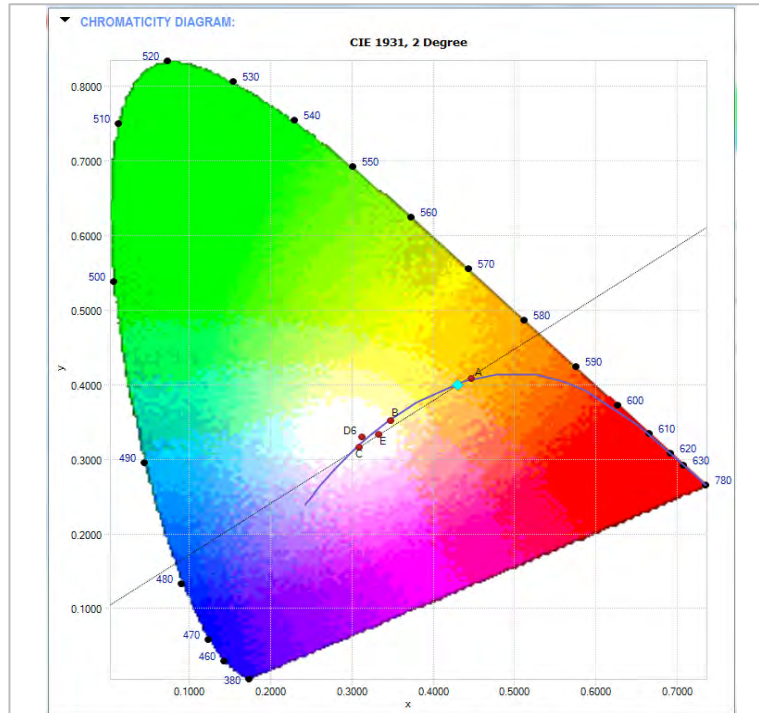


Lamp Cat#: 93058664-4130
 Lamp Desc: 40 - Nichia 3000K LEDs
 Driver Desc: n/a

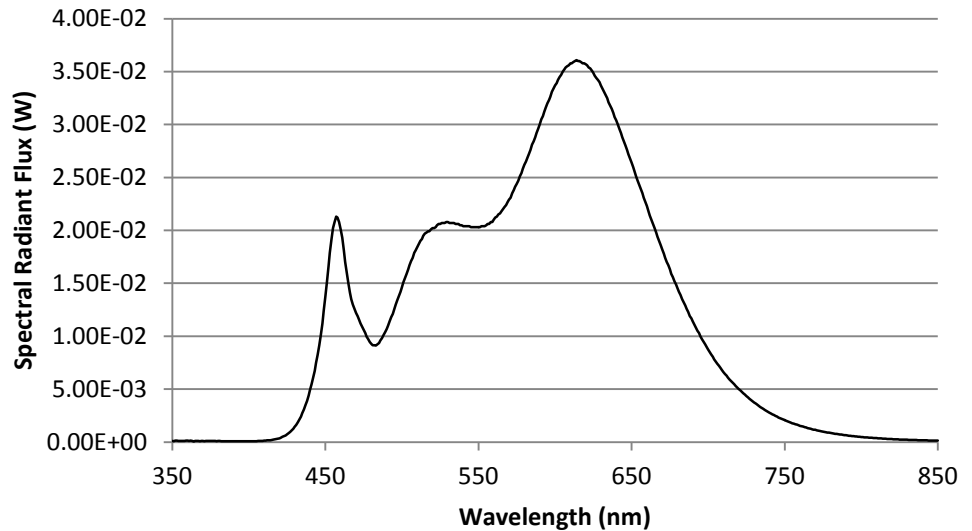
Efficacy: 70.2 LPW S/P Ratio: 1.5 LM/LM

Spectral Results

Name	Value	Unit
Φ	5.85	watts
$\Phi(v)$	1727	lumens
$\Phi(v')$	2640	lm'
Chrom x	0.4302	
Chrom y	0.4001	
Chrom u	0.248	
Chrom v	0.3459	
Duv	0.0012	
Chrom u'	0.248	
Chrom v'	0.5188	
CCT	3081	K
Purity	49.2	%
λ (dom)	582.7	nm
FWHM	161.9	nm
λ (peak)	614.5	nm
λ (center)	589.5	nm
λ (centroid)	588.2	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.000677501	
Correlation	0.0054	
R1	98.4	
R2	98.3	
R3	96.0	
R4	98.3	
R5	98.0	
R6	93.0	
R7	90.2	
R8	82.5	
R9	62.6	
R10	96.8	
R11	95.3	
R12	83.4	
R13	99.0	
R14	98.5	



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.



HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.00416

PAGE: 3 OF 9

ISSUE DATE: 02/14/17

PREPARED FOR: PROGRESS

CATALOG NUMBER: P350052-00930

LUMINAIRE: 1-Lt. LED Flush Mount.24W Sample "A" LED ENGINE WITH CLEAR LENS

LAMP CAT. NO.: 93058664-4130

LAMP: 40 - Nichia 3000K LEDs

INPUT ELECTRICAL: 119.9 VOLTS, 24.7 WATTS, 0.208 AMPS

REFRACTOR: Etched Glass

MOUNTING: Ceiling

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



HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

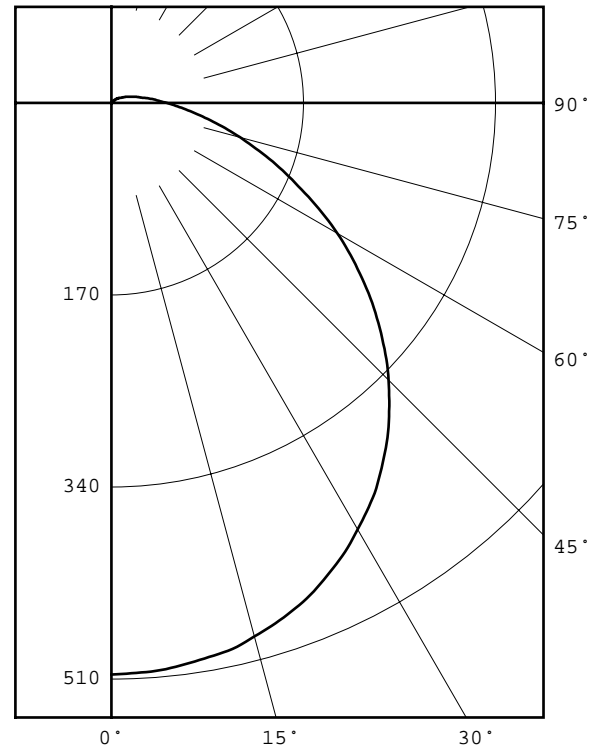
REPORT NUMBER: 17.00416
ISSUE DATE: 02/14/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350052-00930

PAGE: 4 OF 9

DEG	CANDELA	LUMENS
0	506	
5	504	48
15	489	138
25	458	211
35	411	257
45	347	268
55	271	242
65	189	188
75	118	126
85	66	73
90	49	
95	37	41
105	21	22
115	12	12
125	7	6
135	3	3
145	1	1
155	0	0
165	0	0
175	0	0
180	0	

ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	397	24.3
0- 40	654	40.0
0- 60	1164	71.2
0- 90	1551	94.8
90-120	75	4.6
90-130	81	5.0
90-150	85	5.2
90-180	85	5.2
0-180	1636	100.0

EFFICACY = 66.2 lm/W
CIE TYPE - DIRECT
LUMINAIRE SPACING CRITERION = 1.28





HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.00416
ISSUE DATE: 02/14/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350052-00930

PAGE: 5 OF 9

LUMINOUS DIAMETER: 10.500
HEIGHT OF SIDE : 3.250

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	6301.
55	5412.
65	4339.
75	3303.
85	2463.



HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.00416
ISSUE DATE: 02/14/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350052-00930

PAGE: 6 OF 9

CANDELA DISTRIBUTION

0.0	506
5.0	504
10.0	498
15.0	489
20.0	476
25.0	458
30.0	436
35.0	411
40.0	381
45.0	347
50.0	310
55.0	271
60.0	231
65.0	189
70.0	152
75.0	118
80.0	89
85.0	66
90.0	49
95.0	37
100.0	27
105.0	21
110.0	16
115.0	12
120.0	9
125.0	7
130.0	5
135.0	3
140.0	2
145.0	1
150.0	0
155.0	0
160.0	0
165.0	0
170.0	0
175.0	0
180.0	0



HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.00416
ISSUE DATE: 02/14/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350052-00930

PAGE: 7 OF 9

5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		12
5- 10		36
10- 15		59
15- 20		80
20- 25		98
25- 30		113
30- 35		125
35- 40		132
40- 45		135
45- 50		133
50- 55		126
55- 60		116
60- 65		102
65- 70		86
70- 75		70
75- 80		55
80- 85		42
85- 90		31
90- 95		23
95-100		17
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		1
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		48
10- 20		138
20- 30		211
30- 40		257
40- 50		268
50- 60		242
60- 70		188
70- 80		126
80- 90		73
90-100		41
100-110		22
110-120		12
120-130		6
130-140		3
140-150		1
150-160		0
160-170		0
170-180		0



HUBBELL
Lighting

701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.00416
ISSUE DATE: 02/14/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P350052-00930

PAGE: 8 OF 9

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	118	118	118	118	118	114	114	114	114	108	108	108	103	103	103	97	97	97	95
1	106	101	96	92	92	103	98	94	90	93	89	86	88	85	83	84	81	79	77
2	96	88	80	74	74	93	85	79	73	81	75	70	77	72	68	73	69	66	63
3	88	77	68	61	61	85	75	67	60	71	64	59	67	62	57	64	59	55	53
4	80	68	59	52	52	77	66	58	51	63	56	50	60	54	49	57	52	47	45
5	74	60	51	44	44	71	59	50	44	56	49	43	54	47	42	51	46	41	39
6	68	54	45	39	39	66	53	45	38	51	43	38	49	42	37	46	41	36	34
7	63	49	40	34	34	61	48	40	34	46	39	33	44	38	33	42	36	32	30
8	59	45	36	30	30	57	44	36	30	42	35	30	40	34	29	39	33	29	27
9	55	41	33	27	27	53	40	32	27	39	32	27	37	31	26	36	30	26	24
10	51	38	30	25	25	50	37	30	24	36	29	24	35	28	24	33	28	23	22

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.

Project Number
17.00416



HUBBELL
Lighting

Date
2/14/2017

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

Hubbell Lighting, Inc.

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

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