

Project Number
16.00019



HUBBELL
Lighting

Date
1/8/2016

LAB 6
Sphere

Test Sample Description

Catalog Number: P5674-3030K9

Description: 5" diameter wall-mount, down-light, LED cylinder LEDs moved closer to opening.

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 0:00
Time To Stabilize: 3:02
Total Operating Time: 3:32

Input Voltage (Volts): 120.0
Input Current (Amps): 0.147
Input Wattage (Watts): 16.4
Ambient Temp (°C): 24.5

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 12:00
Time To Stabilize: 1:11
Total Operating Time: 13:11

Input Voltage (Volts): 120.0
Input Current (Amps): 0.146
Input Wattage (Watts): 16.2
Ambient Temp (°C): 24.3



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): B. FLAUM / D. ROBBINS
Approved: P. McCARTHY



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#: 93047261-4030

Lamp Desc: 40 - Nichia 3000K LEDs

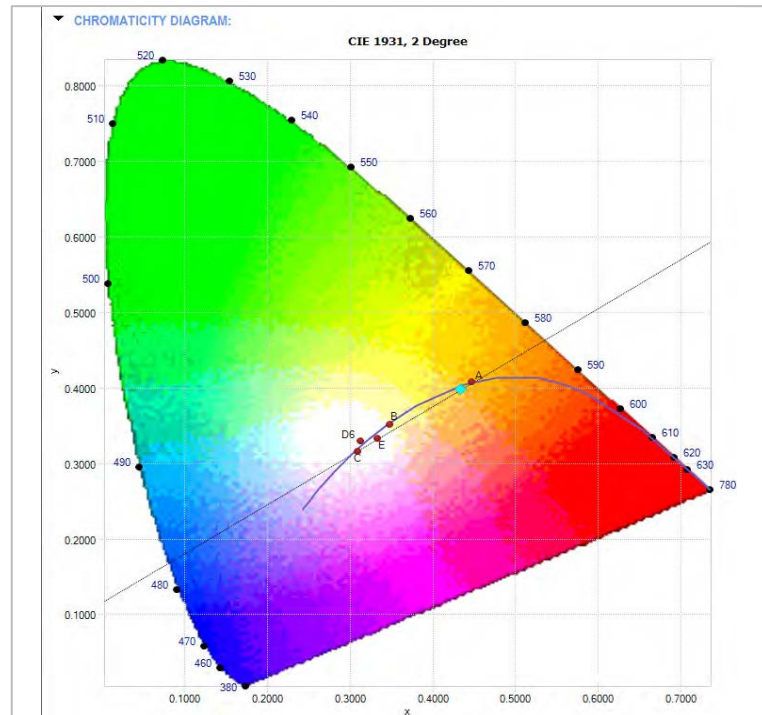
Driver Desc: N/A

Efficacy: 48.5 LPW

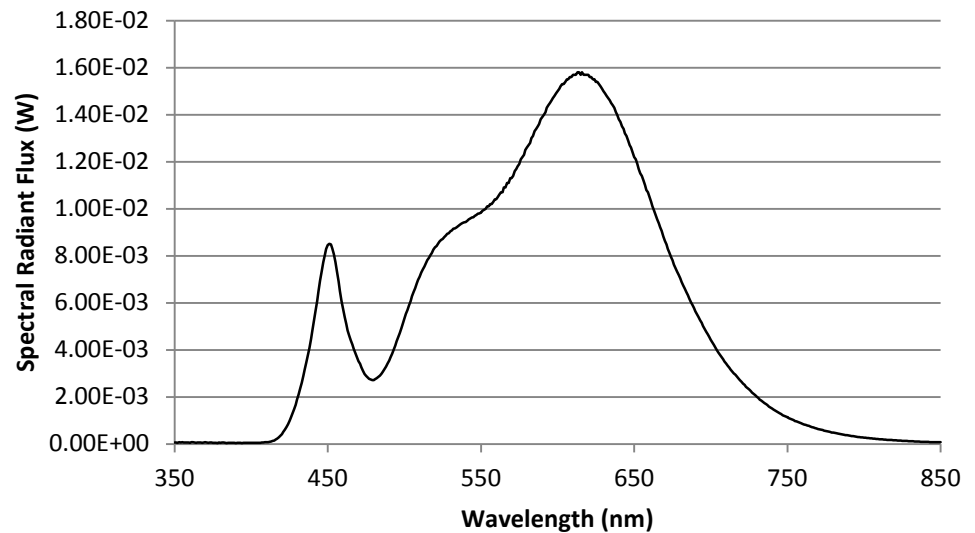
S/P Ratio: 1.4 LM'/LM

Spectral Results

Name	Value	Unit
Φ	2.67	watts
$\Phi(v)$	785	lumens
$\Phi(v')$	1094	lm'
Chrom x	0.4337	
Chrom y	0.3984	
Chrom u	0.2509	
Chrom v	0.3458	
Duv	0.0019	
Chrom u'	0.2509	
Chrom v'	0.5187	
CCT	3007	K
Purity	49.8	%
λ (dom)	583.5	nm
FWHM	158.7	nm
λ (peak)	614.8	nm
λ (center)	595.1	nm
λ (centroid)	590.9	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.001823694	
Correlation	0.0054	
R1	91.8	
R2	94.7	
R3	96.4	
R4	91.9	
R5	91.5	
R6	93.7	
R7	90.4	
R8	78.3	
R9	50.1	
R10	86.9	
R11	93.2	
R12	80.8	
R13	92.6	
R14	97.4	



Spectral Distribution of Radiant Flux





HUBBELL
Lighting

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



REPORT NUMBER: 16.00019

PAGE: 3 OF 8

ISSUE DATE: 01/07/16

PREPARED FOR: PROGRESS

CATALOG NUMBER: P5674-3030K9

LUMINAIRE: 5" diameter cylinder down-light wall-mount LED. LEDs moved closer to opening.

LAMP CAT. NO.: 93047261-4030

LAMP: 40- Nichia 3000K LEDs

REFRACTOR: Sabic polycarbonate LUX7430C-NAT, Lens 93047259-3

MOUNTING: wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE
SAMPLE PROVIDED.

DEG	CANDELA	LUMENS
0	452	
5	452	43
15	439	122
25	344	158
35	242	152
45	164	127
55	97	88
65	58	58
75	29	31
85	9	10
90	0	

ZONAL LUMEN	SUMMARY	
ZONE	LUMENS	%FIXT
0- 30	323	41.0
0- 40	475	60.2
0- 60	690	87.5
0- 90	788	100.0
90-180	0	0.0
0-180	788	100.0

TOTAL INPUT WATTS = 16.4

EFFICACY = 48.0 Lm/W

CIE TYPE - DIRECT

LUMINAIRE SPACING CRITERION = 1.0

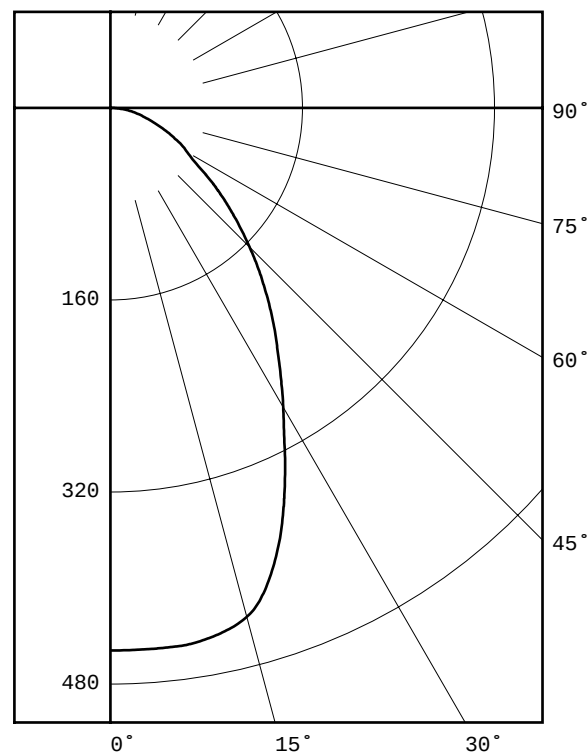
LUMINOUS DIAMETER: 5.000

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE

IN DEG

45	18302.
55	13345.
65	10830.
75	8842.
85	8149.





®

HUBBELL
Lighting701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

NVLAP LAB CODE: 201003-0

REPORT NUMBER: 16.00019
ISSUE DATE: 01/07/16
PREPARED FOR: PROGRESS

PAGE: 4 OF 8

CANDELA DISTRIBUTION

	0.0
0.0	452
2.5	452
5.0	452
7.5	452
10.0	450
12.5	446
15.0	439
17.5	424
20.0	401
22.5	374
25.0	344
27.5	314
30.0	288
32.5	264
35.0	242
37.5	222
40.0	202
42.5	183
45.0	164
47.5	146
50.0	129
52.5	113
55.0	97
57.5	83
60.0	74
62.5	67
65.0	58
67.5	50
70.0	42
72.5	35
75.0	29
77.5	24
80.0	19
82.5	14
85.0	9
87.5	4
90.0	0



®

HUBBELL
Lighting

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



REPORT NUMBER: 16.00019
ISSUE DATE: 01/07/16
PREPARED FOR: PROGRESS

PAGE: 5 OF 8

ZONAL LUMEN SUMMARY

0- 5	11.
5- 10	32.
10- 15	53.
15- 20	69.
20- 25	78.
25- 30	80.
30- 35	78.
35- 40	74.
40- 45	68.
45- 50	59.
50- 55	49.
55- 60	39.
60- 65	32.
65- 70	25.
70- 75	18.
75- 80	13.
80- 85	8.
85- 90	2.



HUBBELL
Lighting

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



REPORT NUMBER: 16.00019
ISSUE DATE: 01/07/16
PREPARED FOR: PROGRESS

PAGE: 6 OF 8

**5-DEGREE
ZONAL LUMEN SUMMARY**

0- 5	11
5- 10	32
10- 15	53
15- 20	69
20- 25	78
25- 30	80
30- 35	78
35- 40	74
40- 45	68
45- 50	59
50- 55	49
55- 60	39
60- 65	32
65- 70	25
70- 75	18
75- 80	13
80- 85	8
85- 90	2

**10-DEGREE
ZONAL LUMEN SUMMARY**

0- 10	43
0- 20	165
0- 30	323
0- 40	475
0- 50	602
0- 60	690
0- 70	747
0- 80	778
0- 90	788



HUBBELL
Lighting

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



REPORT NUMBER: 16.00019
ISSUE DATE: 01/07/16

PAGE: 7 OF 8

PREPARED FOR: PROGRESS

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	103	100	108	104	101	98	100	97	95	96	94	92	93	91	89	87
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	66
4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59
5	81	70	62	56	80	69	62	56	67	60	55	65	59	55	63	58	54	52
6	76	64	56	50	74	63	56	50	62	55	50	60	54	49	58	53	49	47
7	71	59	51	46	69	58	51	45	57	50	45	55	49	45	54	49	45	43
8	67	54	47	41	65	54	46	41	53	46	41	51	45	41	50	45	41	39
9	63	50	43	38	61	50	43	38	49	42	38	48	42	38	47	41	37	36
10	59	47	40	35	58	47	40	35	46	39	35	45	39	35	44	38	34	33

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.

Project Number
16.00019



HUBBELL
Lighting

Date
1/8/2016

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

Hubbell Lighting, Inc.

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

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