

Project Number  
16.00023



Date  
1/11/2016

LAB 5  
Sphere

### Test Sample Description

Catalog Number: P5774-3030K9

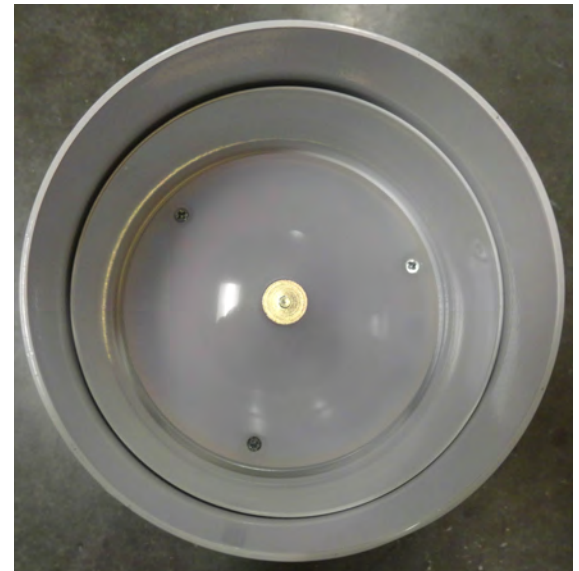
Description: 5" Diameter Pendant/ceiling mount LED cylinder with LEDs moved closer to the opening.

### Photometry

Test Method: IES LM-79-08 § 10  
Preburn Time: 0:00  
Time To Stabilize: 1:47  
Total Operating Time: 2:51  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.146  
Input Wattage (Watts): 16.3  
Ambient Temp (°C): 25.1

### Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1  
Preburn Time: 10:00  
Time To Stabilize: 1:12  
Total Operating Time: 11:12  
  
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.hubbellighting.com

Checked (sphere): B. LEE  
Checked (photometry): R. WILLIAMS  
Approved: D. BLACK



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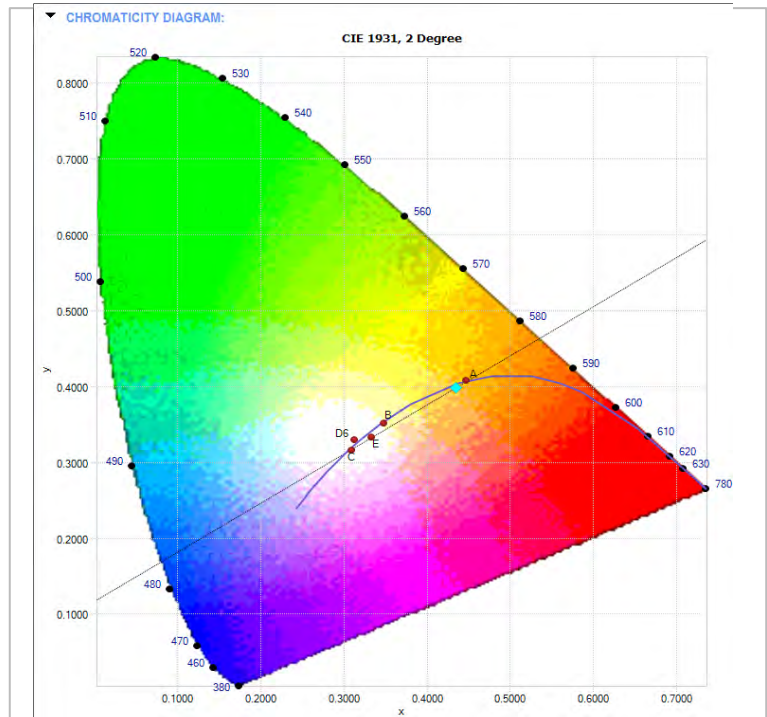


Lamp Cat#: 93047261-4030  
 Lamp Desc: 40 - Nichia 3000K LEDs  
 Driver Desc: N/A

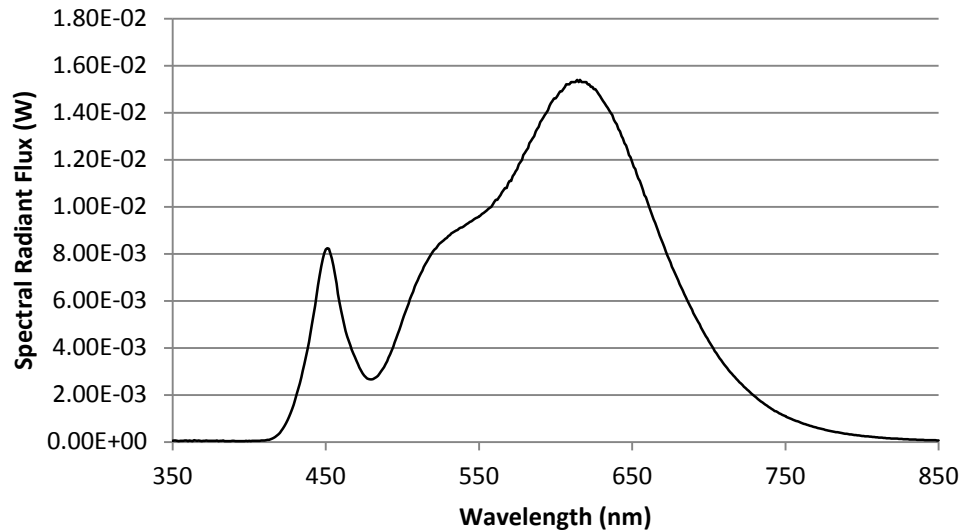
Efficacy: 47.2 LPW      S/P Ratio: 1.4 LM/LM

**Spectral Results**

Name	Value	Unit
$\Phi$	2.59	watts
$\Phi(v)$	764	lumens
$\Phi(v')$	1061	lm'
Chrom x	0.4344	
Chrom y	0.3988	
Chrom u	0.2512	
Chrom v	0.3459	
Duv	0.0019	
Chrom u'	0.2512	
Chrom v'	0.5189	
CCT	2998	K
Purity	50.1	%
$\lambda$ (dom)	583.5	nm
FWHM	158.6	nm
$\lambda$ (peak)	615	nm
$\lambda$ (center)	595.3	nm
$\lambda$ (centroid)	591.0	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.001762603	
Correlation	0.0054	
R1	91.5	
R2	94.6	
R3	96.5	
R4	91.7	
R5	91.2	
R6	93.7	
R7	90.2	
R8	77.9	
R9	49.3	
R10	86.8	
R11	92.9	
R12	80.5	
R13	92.5	
R14	97.4	



**Spectral Distribution of Radiant Flux**



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PREPARED FOR: PROGRESS

CATALOG NUMBER: P5774-3030K9

LUMINAIRE: P5774-3030K9 5" diameter pendant/ceiling mount LED cylinder  
with LEDs moved closer to the opening.

REFRACTOR: #lens 93047259-3 Sabic polycarbonate LUX7430C-NAT

LAMP CAT. NO.: 93047261-4030

LAMP: 40- Nichia 3000K LEDs

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
SAMPLE PROVIDED.

DEG	CANDELA	LUMENS
0	431	
5	428	41
15	412	115
25	329	151
35	233	146
45	158	122
55	94	85
65	57	56
75	29	31
85	9	10
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	306	40.5
0- 40	452	59.7
0- 60	659	87.1
0- 90	757	100.0
90-180	0	0.0
0-180	757	100.0

TOTAL INPUT WATTS = 16.3

EFFICACY = 46.4 Lm/W

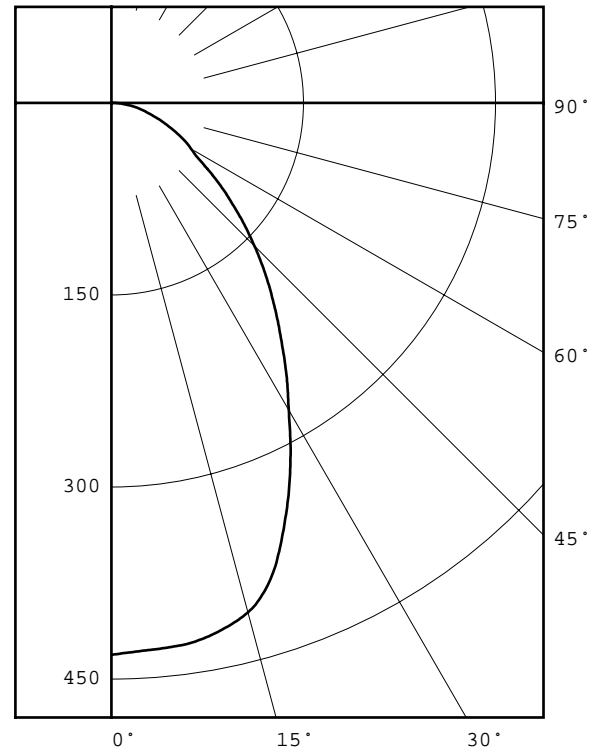
CIE TYPE - DIRECT

LUMINAIRE SPACING CRITERION = 1.0

LUMINOUS DIAMETER: 5.000

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE AVERAGE	
IN DEG	
45	17633.
55	12932.
65	10643.
75	8842.
85	8149.





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CANDELA DISTRIBUTION

	0.0
0.0	431
2.5	429
5.0	428
7.5	427
10.0	424
12.5	419
15.0	412
17.5	399
20.0	379
22.5	354
25.0	329
27.5	303
30.0	277
32.5	255
35.0	233
37.5	213
40.0	194
42.5	176
45.0	158
47.5	141
50.0	124
52.5	109
55.0	94
57.5	80
60.0	72
62.5	65
65.0	57
67.5	49
70.0	42
72.5	35
75.0	29
77.5	24
80.0	19
82.5	14
85.0	9
87.5	5
90.0	0



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ZONAL LUMEN SUMMARY

0- 5	10.
5- 10	31.
10- 15	50.
15- 20	65.
20- 25	74.
25- 30	77.
30- 35	75.
35- 40	71.
40- 45	65.
45- 50	57.
50- 55	47.
55- 60	38.
60- 65	31.
65- 70	25.
70- 75	18.
75- 80	13.
80- 85	8.
85- 90	3.



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	10
5- 10	31
10- 15	50
15- 20	65
20- 25	74
25- 30	77
30- 35	75
35- 40	71
40- 45	65
45- 50	57
50- 55	47
55- 60	38
60- 65	31
65- 70	25
70- 75	18
75- 80	13
80- 85	8
85- 90	3

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	41
0- 20	156
0- 30	306
0- 40	452
0- 50	574
0- 60	659
0- 70	716
0- 80	747
0- 90	757



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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	
0	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87	87
2	102	95	89	84	99	93	88	83	90	85	81	86	83	79	83	80	78	76	76
3	94	85	78	72	92	84	77	72	81	75	70	78	73	69	76	72	68	66	66
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	60	58	58
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47
7	71	59	51	45	69	58	50	45	56	50	45	55	49	44	54	48	44	42	42
8	66	54	46	41	65	53	46	41	52	46	41	51	45	41	50	44	40	39	39
9	62	50	43	38	61	50	42	38	49	42	37	48	41	37	47	41	37	35	35
10	59	47	39	35	58	46	39	35	45	39	34	44	38	34	44	38	34	33	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.

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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: 08/04/2015

#### **Test Equipment Used**

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL / HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	11/10/2016
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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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