

Project Number
17.02773



Date
10/11/2017

LAB 1
Sphere

Test Sample Description

Catalog Number: P5774-2030K
Description: 5" 17W LED Down-Light Cylinder

Photometry

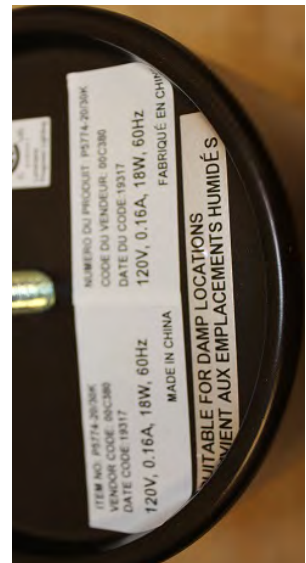
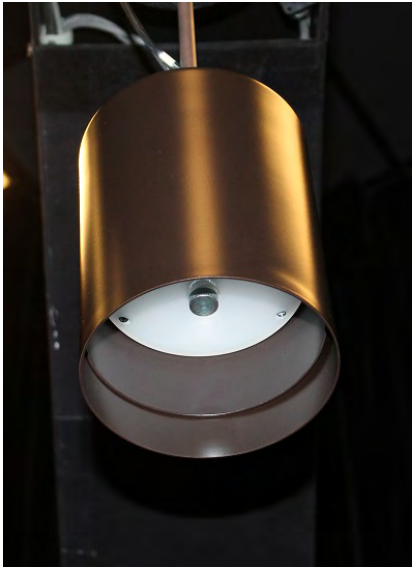
Test Method: IES LM-79-08 § 10
Preburn Time: 00:40
Time To Stabilize: 0:15
Total Operating Time: 15:46

Input Voltage (Volts): 120.1
Input Current (Amps): 0.151
Input Wattage (Watts): 16.9
Ambient Temp (°C): 25.3
PF @ 120V: 0.933

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 1:05
Total Operating Time: 9:05

Input Voltage (Volts): 120.0
Input Current (Amps): 0.149
Input Wattage (Watts): 16.6
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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

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



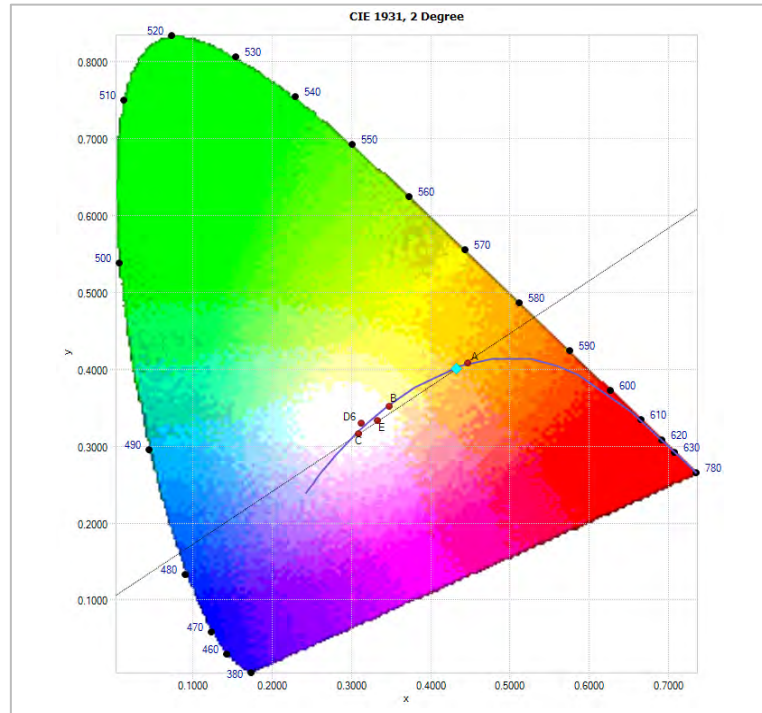
This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



Lamp Cat#: n/a
 Lamp Desc: 1 - 3000K LED Module
 Driver Desc: n/a

Efficacy: 30.3 LPW S/P Ratio: 1.5 LM/LM

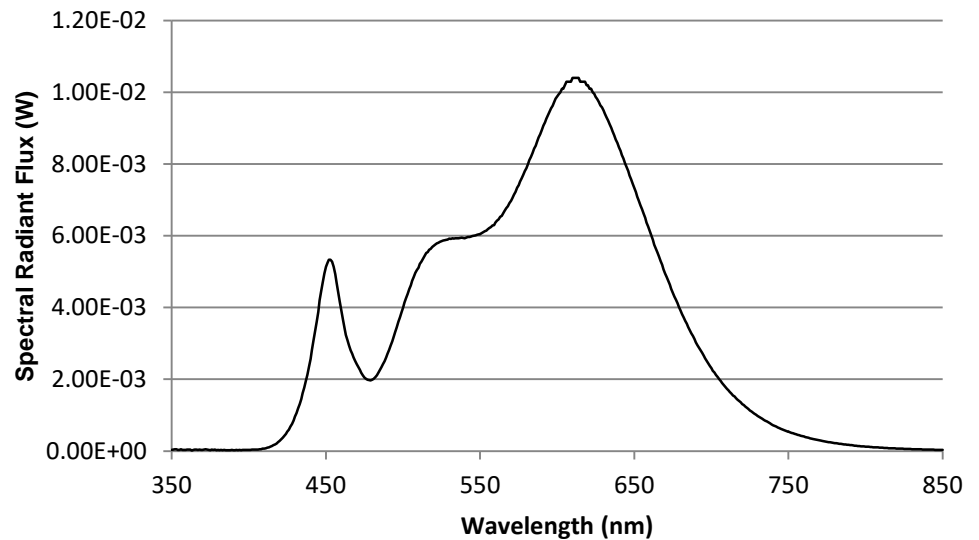
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	1.66	watts
Φ(v)	503	lumens
Φ(v')	731	lm'
Chrom x	0.4325	
Chrom y	0.4012	
Chrom u	0.2489	
Chrom v	0.3464	
Duv	0.0006	
Chrom u'	0.2489	
Chrom v'	0.5196	
CCT	3050	K
Purity	50.2	%
λ (dom)	582.8	nm
FWHM	157.2	nm
λ (peak)	612.9	nm
λ (center)	589.3	nm
λ (centroid)	586.8	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000556588	
Correlation	0.0054	
R1	94.1	
R2	97.1	
R3	98.6	
R4	95.3	
R5	94.6	
R6	96.8	
R7	90.0	
R8	77.4	
R9	48.3	
R10	93.4	
R11	96.6	
R12	85.9	
R13	95.4	
R14	99.4	

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 Millenium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 17.02773
ISSUE DATE: 10/10/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P5774-2030K
LUMINAIRE: 5" 17W LED Down-Light Cylinder
LAMP: 1- 3000K LED Module
MOUNTING: Pendant
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

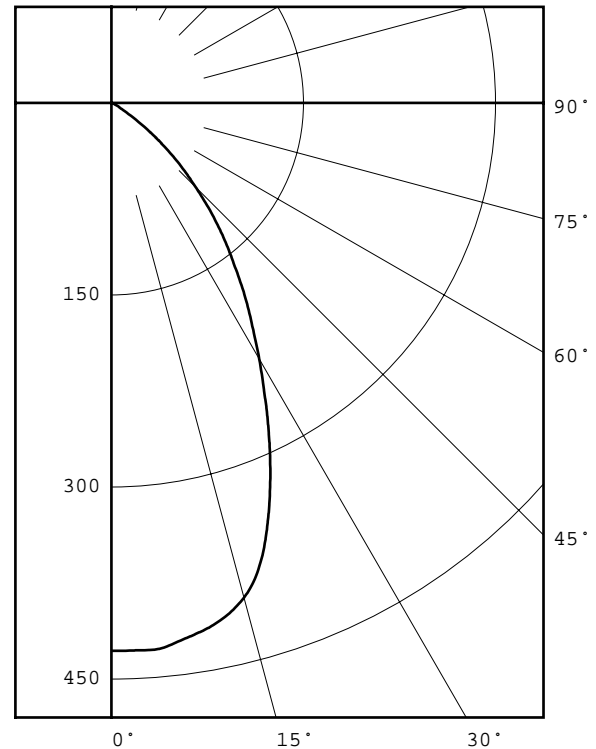
PAGE: 3 OF 8

DEG	CANDELA	LUMENS
0	428	
5	428	40
15	400	111
25	292	134
35	180	112
45	93	72
55	26	25
65	4	4
75	0	0
85	0	0
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	285	57.1
0- 40	397	79.6
0- 60	495	99.1
0- 90	500	100.0
90-180	0	0.0
0-180	500	100.0

TOTAL INPUT WATTS = 16.9
EFFICACY = 29.6 Lm/W
CIE TYPE - DIRECT
LUMINAIRE SPACING CRITERION = 0.9
LUMINOUS DIAMETER: 5.000

LUMINANCE DATA IN CANDELA/SQ METER	
ANGLE	AVERAGE
IN DEG	
45	10379.
55	3577.
65	747.
75	0.
85	0.





HUBBELL
Lighting

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

REPORT NUMBER: 17.02773
ISSUE DATE: 10/10/17
PREPARED FOR: PROGRESS

PAGE:4 OF 8

CANDELA DISTRIBUTION

	0.0
0.0	428
2.5	428
5.0	428
7.5	423
10.0	418
12.5	411
15.0	400
17.5	382
20.0	355
22.5	324
25.0	292
27.5	260
30.0	231
32.5	204
35.0	180
37.5	156
40.0	135
42.5	114
45.0	93
47.5	75
50.0	57
52.5	41
55.0	26
57.5	14
60.0	8
62.5	6
65.0	4
67.5	3
70.0	1
72.5	1
75.0	0
77.5	0
80.0	0
82.5	0
85.0	0
87.5	0
90.0	0



®

HUBBELL
Lighting

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

REPORT NUMBER: 17.02773
ISSUE DATE: 10/10/17
PREPARED FOR: PROGRESS

PAGE: 5 OF 8

ZONAL LUMEN SUMMARY

0- 5	10.
5- 10	30.
10- 15	49.
15- 20	62.
20- 25	68.
25- 30	66.
30- 35	60.
35- 40	52.
40- 45	42.
45- 50	30.
50- 55	18.
55- 60	7.
60- 65	3.
65- 70	1.
70- 75	0.
75- 80	0.
80- 85	0.
85- 90	0.



HUBBELL
Lighting

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

REPORT NUMBER: 17.02773
ISSUE DATE: 10/10/17
PREPARED FOR: PROGRESS

PAGE: 6 OF 8

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	10
5- 10	30
10- 15	49
15- 20	62
20- 25	68
25- 30	66
30- 35	60
35- 40	52
40- 45	42
45- 50	30
50- 55	18
55- 60	7
60- 65	3
65- 70	1
70- 75	0
75- 80	0
80- 85	0
85- 90	0
90- 95	0
95-100	0
100-105	0
105-110	0
110-115	0
115-120	0
120-125	0
125-130	0
130-135	0
135-140	0
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	40
0- 20	152
0- 30	285
0- 40	397
0- 50	470
0- 60	495
0- 70	499
0- 80	500
0- 90	500
0-100	500
0-110	500
0-120	500
0-130	500
0-140	500
0-150	500
0-160	500
0-170	500
0-180	500



HUBBELL
Lighting

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

REPORT NUMBER: 17.02773
ISSUE DATE: 10/10/17

PAGE: 7 OF 8

PREPARED FOR: PROGRESS

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					
0	119	119	119	119	119	116	116	116	116	116	111	111	111	111	111	106	106	106	106	102	102	102	102	100
1	113	110	107	105	105	110	108	105	103	103	104	102	100	100	98	97	96	95	94	94	92			
2	106	101	97	93	93	104	99	95	92	92	96	93	90	90	88	88	90	88	86	86	84			
3	100	93	87	83	83	98	92	86	82	82	89	85	81	81	80	80	86	83	80	80	84	81	78	77
4	94	86	80	75	75	92	85	79	74	74	82	77	73	73	73	73	80	76	73	73	78	75	72	70
5	89	79	73	68	68	87	78	72	68	68	76	71	67	67	67	67	75	70	66	66	73	69	66	64
6	84	74	67	62	62	82	73	66	62	62	71	66	61	61	61	61	70	65	61	61	68	64	61	59
7	79	68	62	57	57	77	68	61	57	57	66	61	57	57	57	57	65	60	56	56	64	59	56	54
8	74	64	57	53	53	73	63	57	53	53	62	56	52	52	52	52	61	56	52	52	60	55	52	50
9	70	60	53	49	49	69	59	53	49	49	58	53	49	49	49	49	57	52	48	48	56	52	48	47
10	67	56	50	45	45	66	56	50	45	45	55	49	45	45	45	45	54	49	45	45	53	48	45	44

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
17.02773



HUBBELL
Lighting

Date
10/11/2017

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: 07/10/2017

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	11/7/2017

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	0331159372	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