Project Number
17.02766

HUBBELL Lighting

Date
10/13/2017
Rev 1: **11/15/2017**

Lab 6
Sphere

Test Sample Description

Catalog Number: P5674-8230K
Description: 5" 17W LED Down-Light Cylinder; Gray

Revision 1: Changed report format from roadway

Photometry

Test Method:	IES LM-79-08 § 10
Preburn Time:	1:00
Time To Stabilize:	3:00
Total Operating Time:	4:45
Input Voltage (Volts):	120.1
Input Current (Amps):	0.155
Input Wattage (Watts):	17.3
Ambient Temp (°C):	24.1

Sphere

Test Method:	IES LM-79-08 § 9.1 & 12.1
Preburn Time:	8:00
Time To Stabilize:	1:15
Total Operating Time:	9:15
Input Voltage (Volts):	120.0
Input Current (Amps):	0.154
Input Wattage (Watts):	17.1
Ambient Temp (°C):	24.0
PF @ 120V:	0.929
THD @ 120V (%):	41

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Revised By: *D. ROBBINS*
Revision Approval: *P. McCARTHY*

NVLAP TESTING
NVLAP LAB CODE: 201003-0

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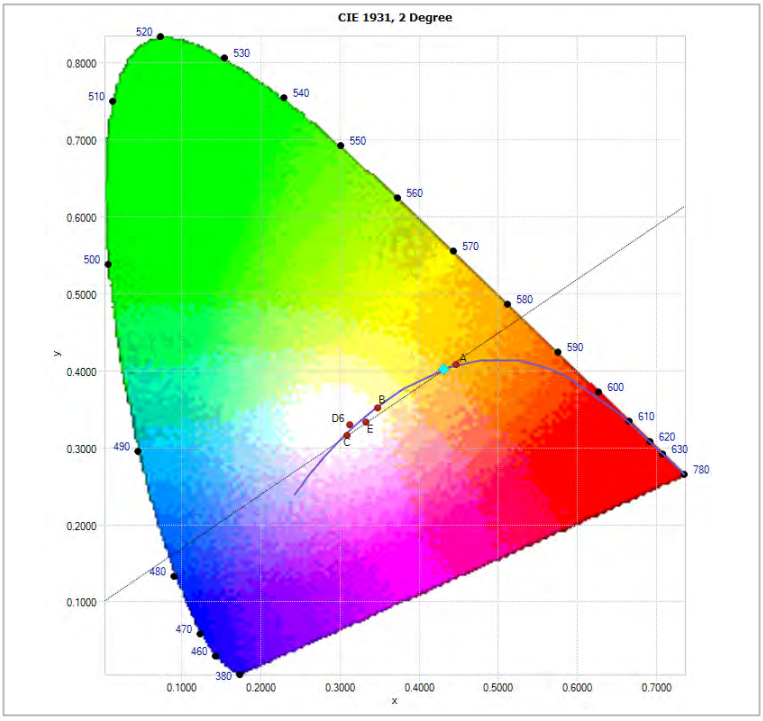
Test #: 17.02766 **Date:** 10/13/2017

HUBBELL Lighting

Lamp Desc: 1 - 3000K LED Module

Efficacy: 36.0 LPW S/P Ratio: 1.5 LM'/LM

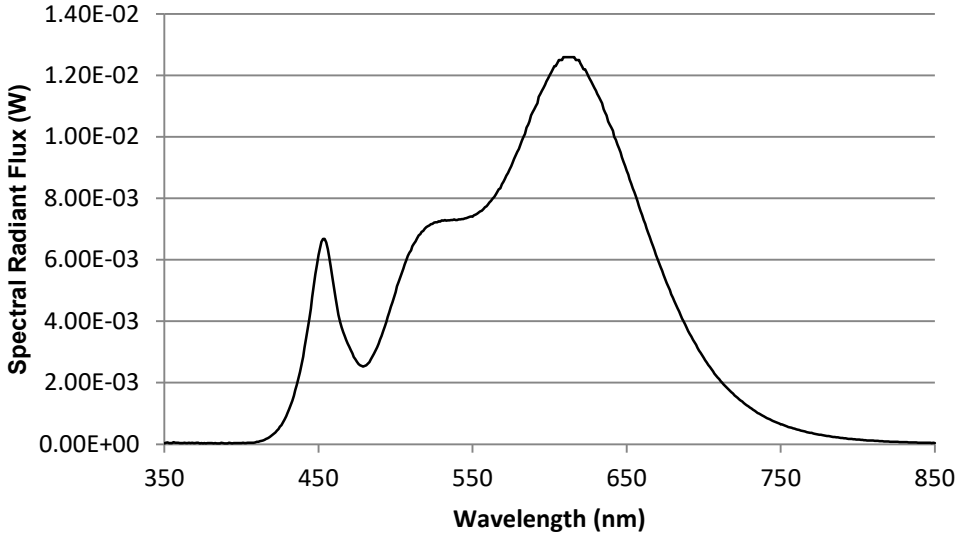
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	2.03	watts
Φ(v)	616	lumens
Φ(v')	902	lm'
Chrom x	0.4314	
Chrom y	0.4019	
Chrom u	0.2479	
Chrom v	0.3465	
Duv	0.0001	
Chrom u'	0.2479	
Chrom v'	0.5197	
CCT	3076	K
Purity	50.1	%
λ (dom)	582.5	nm
FWHM	158	nm
λ (peak)	613.4	nm
λ (center)	589.0	nm
λ (centroid)	586.6	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000195637	
Correlation	0.0054	
R1	94.2	
R2	97.3	
R3	98.6	
R4	95.5	
R5	94.7	
R6	96.8	
R7	90.1	
R8	77.7	
R9	49.0	
R10	93.9	
R11	97.2	
R12	84.7	
R13	95.6	
R14	99.6	

Spectral Distribution of Radiant Flux



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REPORT NUMBER: 17.02766
ISSUE DATE: 10/18/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P5674-8230K
LUMINAIRE: 5" 17W LED Down-Light Cylinder; Gray
LAMP: 1- 3000K LED Module
MOUNTING: Wall
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

DEG	CANDELA	LUMENS
0	436	
5	437	42
15	419	117
25	325	148
35	214	134
45	128	99
55	57	52
65	23	22
75	9	10
85	2	2
90	0	

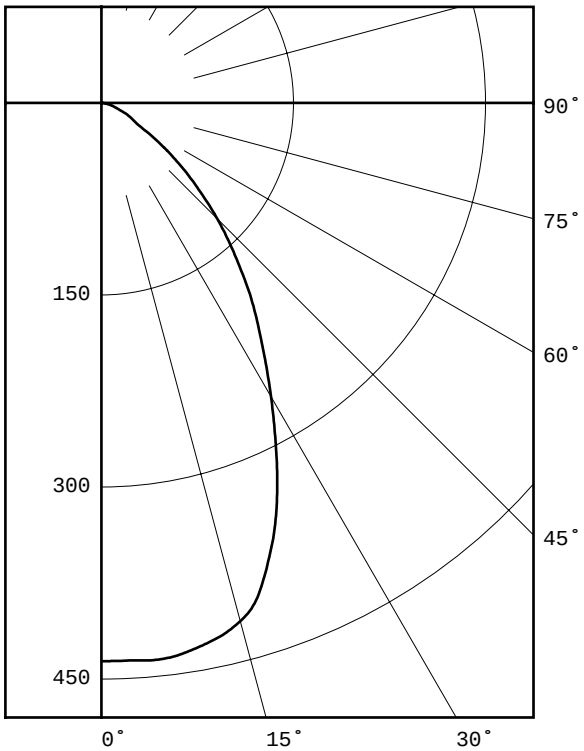
ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	307	49.1
0- 40	441	70.5
0- 60	591	94.5
0- 90	625	100.0
90-180	0	0.0
0-180	625	100.0

TOTAL INPUT WATTS = 17.3
EFFICACY = 36.1 Lm/W
CIE TYPE - DIRECT
LUMINAIRE SPACING CRITERION = 1.0
LUMINOUS DIAMETER: 4.875

LUMINANCE DATA IN CANDELA/SQ METER

ANGLE IN DEG	AVERAGE
45	15027.
55	8249.
65	4518.
75	2887.
85	1905.



THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.

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CANDELA DISTRIBUTION

	0.0
0.0	436
2.5	436
5.0	437
7.5	436
10.0	432
12.5	427
15.0	419
17.5	405
20.0	381
22.5	355
25.0	325
27.5	294
30.0	265
32.5	238
35.0	214
37.5	192
40.0	169
42.5	148
45.0	128
47.5	108
50.0	90
52.5	73
55.0	57
57.5	42
60.0	31
62.5	27
65.0	23
67.5	18
70.0	14
72.5	11
75.0	9
77.5	7
80.0	5
82.5	3
85.0	2
87.5	1
90.0	0

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ZONAL LUMEN SUMMARY

0- 5	10.
5- 10	31.
10- 15	51.
15- 20	66.
20- 25	74.
25- 30	74.
30- 35	70.
35- 40	64.
40- 45	55.
45- 50	44.
50- 55	32.
55- 60	20.
60- 65	13.
65- 70	9.
70- 75	6.
75- 80	4.
80- 85	2.
85- 90	1.

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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	10
5- 10	31
10- 15	51
15- 20	66
20- 25	74
25- 30	74
30- 35	70
35- 40	64
40- 45	55
45- 50	44
50- 55	32
55- 60	20
60- 65	13
65- 70	9
70- 75	6
75- 80	4
80- 85	2
85- 90	1

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	42
0- 20	158
0- 30	307
0- 40	441
0- 50	539
0- 60	591
0- 70	613
0- 80	623
0- 90	625

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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	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	103	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	98	90	83	78	95	88	82	78	85	80	76	83	79	75	80	77	74	72
4	91	82	75	70	89	81	74	69	78	73	68	76	71	68	74	70	67	65
5	85	75	68	63	84	74	67	62	72	66	62	70	65	61	69	64	61	59
6	80	69	62	57	78	68	61	56	67	61	56	65	60	56	64	59	55	53
7	75	64	57	52	74	63	56	51	62	56	51	60	55	51	59	54	51	49
8	71	59	52	47	69	59	52	47	58	51	47	56	51	47	55	50	46	45
9	67	55	48	44	65	55	48	43	54	48	43	53	47	43	52	47	43	41
10	63	52	45	40	62	51	45	40	50	44	40	49	44	40	49	44	40	38

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: ITL78966-1000-38
Calibration Current: 8.300 Amps DC
Total Luminous Flux: 25889.0 Lumens
Calibration Date: 09/2/2016

Test Equipment Used			
Instrument	*Manufacturer / Model*	*S/N*	*Calibration Due:*
Goniophotometer	ITL/HLI LAB 6 - Test Distance: 31.3'	N/A	N/A
Power Analyzer	Yokogawa / WT 332	C2QA27076V	11/2/2017
Power Source	Voltage-Regulated House Power	N/A	N/A
Thermometer	National Instruments / USB-TC01	1912745	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			
Instrument	*Manufacturer / Model*	*S/N*	*Calibration Due:*
3-Meter Sphere	Labsphere / LMS-3M	N/A	Calibrated Weekly
Thermometer	National Instruments / USB TC01	1912751	11/2/2017
LAMP Power Meter	Yokogawa / WT332	C2QA27075V	11/1/2017
Power Supply	Chroma / 61602	616020002113	N/A
Power Supply PF/THD	Voltage-Regulated House Power	N/A	N/A
Aux Lamp Supply	Labsphere / LPS-100-0833	0331159372	10/31/2017
Cal Lamp Supply	Labsphere / LPS-150-0268	1218148505	12/1/2017
Spectrometer	Labsphere / CDS 1100	0624117792	N/A

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