

Project Number
17.02769



Date
10/19/2017

LAB 5
Sphere

Test Sample Description

Catalog Number: P5675-3130K
Description: 5" 17W LED Direct/Indirect Cylinder

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 00:00
Time To Stabilize: 3:00
Total Operating Time: 4:00

Input Voltage (Volts): 120.1
Input Current (Amps): 0.301
Input Wattage (Watts): 33.6
Ambient Temp (°C): 26.0



Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 1:00
Time To Stabilize: 1:20
Total Operating Time: 2:20

Input Voltage (Volts): 120.0
Input Current (Amps): 0.300
Input Wattage (Watts): 33.3
Ambient Temp (°C): 24.0
PF @ 120V: 0.929
THD @ 120V (%): 40.5

Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): R. WILLIAMS
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.


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Lamp Cat#: n/a

Lamp Desc: 2 - 3000K LED Modules

Driver Desc: n/a

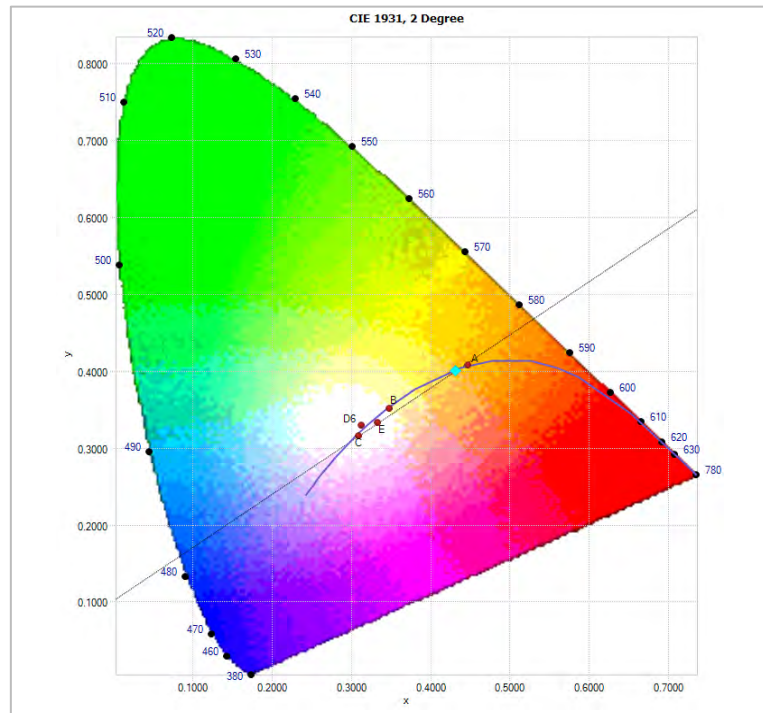
Efficacy: 35.4 LPW

S/P Ratio: 1.5 LM'/LM

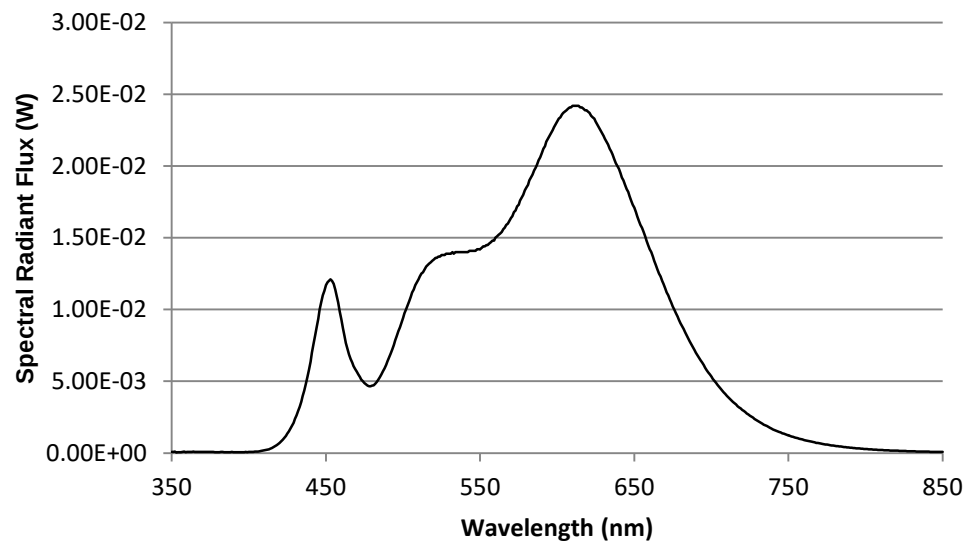
Spectral Results

Name	Value	Unit
Φ	3.88	watts
$\Phi(v)$	1180	lumens
$\Phi(v')$	1719	lm'
Chrom x	0.4315	
Chrom y	0.4012	
Chrom u	0.2483	
Chrom v	0.3463	
Duv	0.0004	
Chrom u'	0.2483	
Chrom v'	0.5194	
CCT	3068	K
Purity	49.9	%
λ (dom)	582.7	nm
FWHM	157.5	nm
λ (peak)	613.3	nm
λ (center)	588.9	nm
λ (centroid)	586.2	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000432643	
Correlation	0.0054	
R1	94.0	
R2	97.0	
R3	98.7	
R4	95.3	
R5	94.5	
R6	96.8	
R7	90.1	
R8	77.5	
R9	48.3	
R10	93.1	
R11	96.6	
R12	86.0	
R13	95.3	
R14	99.3	

Chromaticity Diagram



Spectral Distribution of Radiant Flux



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ISSUE DATE: 10/19/17

PREPARED FOR: PROGRESS

CATALOG NUMBER: P5675-8230K

LUMINAIRE: 5" 17W LED Direct/Indirect Cylinder

LAMP: 2- 3000K LED Modules

MOUNTING: Wall



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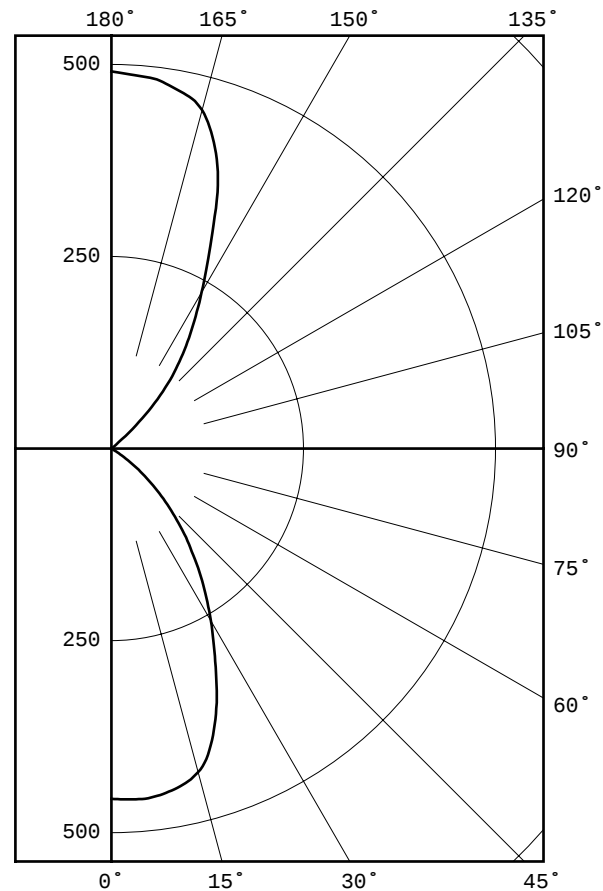
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DEG	CANDELA	LUMENS
0	456	
5	458	44
15	436	121
25	322	148
35	203	126
45	103	79
55	23	23
65	0	0
75	0	0
85	0	0
90	0	
95	0	0
105	0	0
115	0	0
125	0	0
135	63	47
145	176	110
155	311	143
165	456	126
175	486	46
180	491	

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		312	30.8
0- 40		439	43.2
0- 60		541	53.3
0- 90		542	53.4
90-120		0	0.0
90-130		0	0.0
90-150		158	15.5
90-180		473	46.6
0-180		1015	100.0

EFFICACY = 30.2 lm/W
CIE TYPE - GENERAL DIFFUSE
LUMINAIRE SPACING CRITERION = 0.97
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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LUMINOUS DIAMETER: 5.000

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	11499.
55	3165.
65	0.
75	0.
85	0.



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CANDELA DISTRIBUTION

0.0	456
5.0	458
10.0	452
15.0	436
20.0	390
25.0	322
30.0	259
35.0	203
40.0	151
45.0	103
50.0	60
55.0	23
60.0	3
65.0	0
70.0	0
75.0	0
80.0	0
85.0	0
90.0	0
95.0	0
100.0	0
105.0	0
110.0	0
115.0	0
120.0	0
125.0	0
130.0	4
135.0	63
140.0	123
145.0	176
150.0	235
155.0	311
160.0	401
165.0	456
170.0	476
175.0	486
180.0	491



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		11
5- 10		33
10- 15		53
15- 20		68
20- 25		75
25- 30		73
30- 35		68
35- 40		59
40- 45		47
45- 50		33
50- 55		18
55- 60		5
60- 65		0
65- 70		0
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		13
135-140		34
140-145		50
145-150		60
150-155		69
155-160		75
160-165		71
165-170		55
170-175		34
175-180		12

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		44
10- 20		121
20- 30		148
30- 40		126
40- 50		79
50- 60		23
60- 70		0
70- 80		0
80- 90		0
90-100		0
100-110		0
110-120		0
120-130		0
130-140		47
140-150		110
150-160		143
160-170		126
170-180		46



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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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	53
1	101	97	94	91	93	90	88	86	78	76	74	66	65	64	56	55	54	49
2	94	88	83	79	87	82	78	74	71	68	65	61	59	57	52	51	49	45
3	87	79	73	68	81	74	69	65	65	61	58	56	54	51	48	47	45	41
4	81	72	65	60	75	68	62	57	60	55	52	52	49	46	45	43	41	38
5	75	66	59	54	70	62	56	51	55	50	47	48	45	42	42	39	38	35
6	70	60	53	48	66	57	51	46	50	46	42	45	41	38	39	36	34	32
7	66	55	48	43	62	52	46	42	47	42	38	41	38	35	36	34	32	29
8	62	51	44	39	58	48	42	38	43	38	35	39	35	32	34	31	29	27
9	58	47	40	36	54	45	39	35	40	35	32	36	32	30	32	29	27	25
10	54	44	37	33	51	42	36	32	38	33	30	34	30	27	30	27	25	23

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.

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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: 09/08/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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

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