

Project Number
17.02603



Date
9/22/2017

Lab 6
Sphere

Test Sample Description

Catalog Number: P7278-3030K9

Description: 2' Linear Puff with White Finish; 20170828 Sample

Photometry

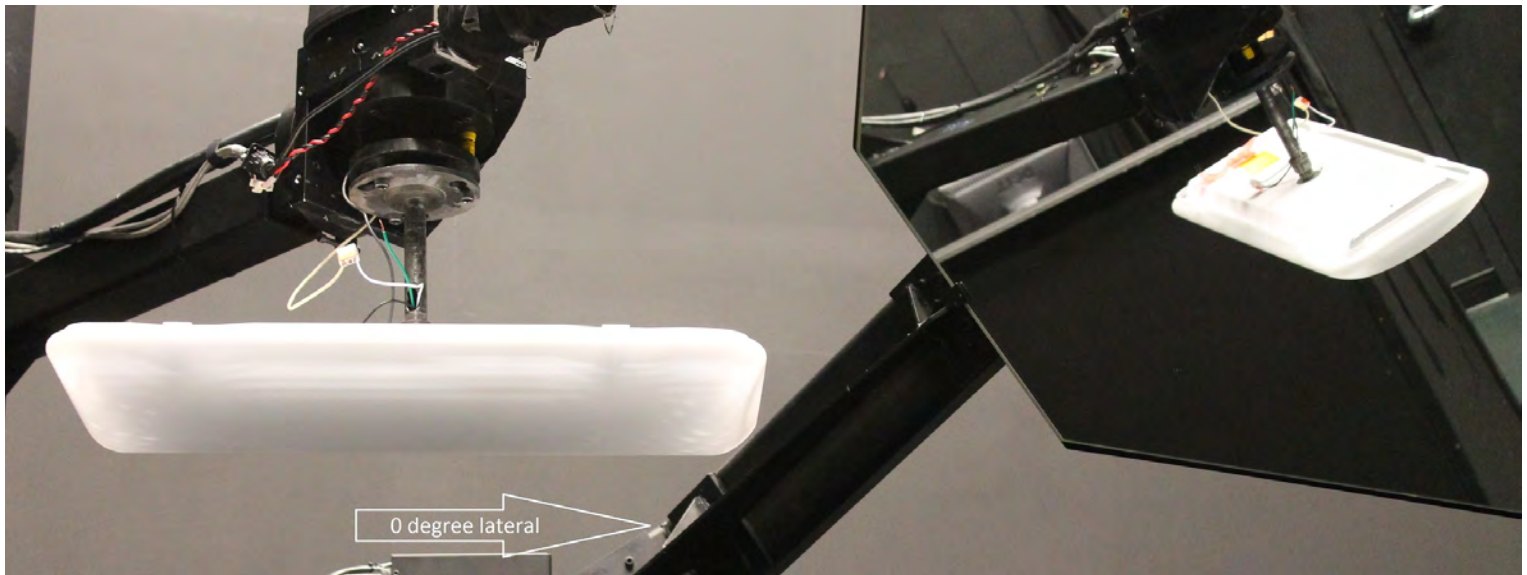
Test Method: IES LM-79-08 § 10
Preburn Time: 20:50
Time To Stabilize: 0:40
Total Operating Time: 22:35

Input Voltage (Volts): 120.0
Input Current (Amps): 0.224
Input Wattage (Watts): 26.8
Ambient Temp (°C): 24.4

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 1:00
Time To Stabilize: 1:09
Total Operating Time: 2:09

Input Voltage (Volts): 120.0
Input Current (Amps): 0.224
Input Wattage (Watts): 26.8
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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

Checked (sphere): B.LEE
Checked (photometry): M.ELLMANN
Approved: P. McCARTHY



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Lamp Cat#: N/A

Lamp Desc: 54 - 3000K LEDs

Driver Desc: 1 - Ampco UFF25-1Q-800F/A

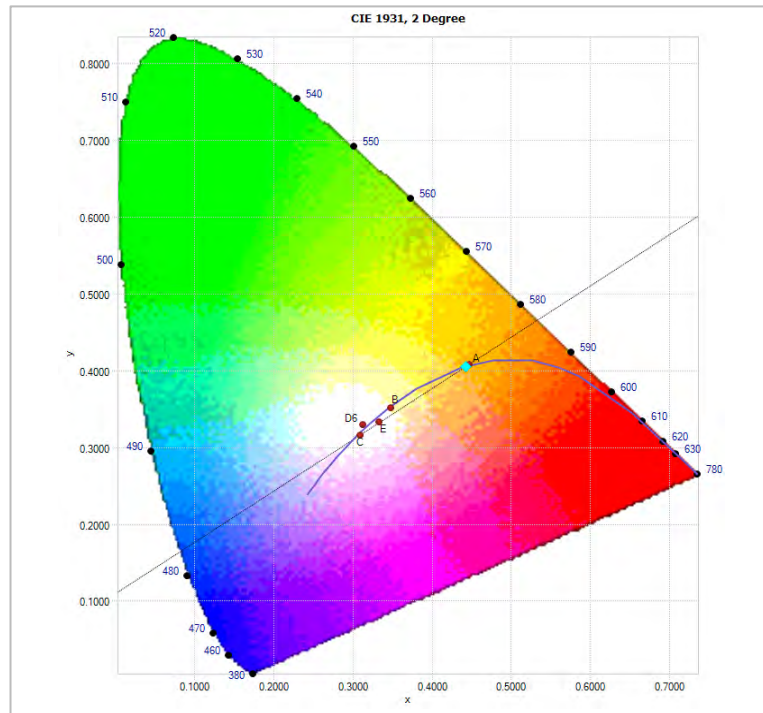
Efficacy: 78.7 LPW

S/P Ratio: 1.4 LM'/LM

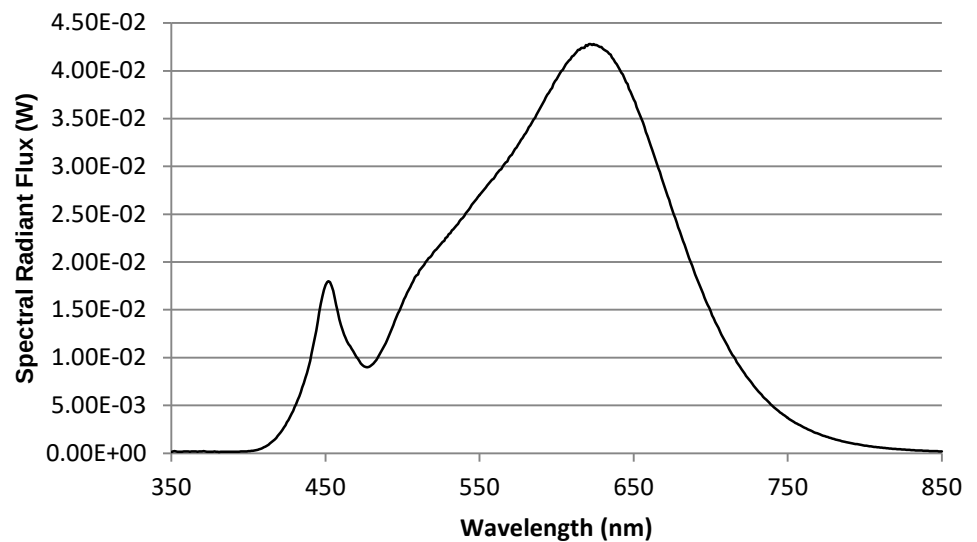
Spectral Results

Name	Value	Unit
Φ	7.46	watts
$\Phi(v)$	2109	lumens
$\Phi(v')$	2910	lm'
Chrom x	0.4421	
Chrom y	0.4058	
Chrom u	0.2531	
Chrom v	0.3486	
Duv	0.0003	
Chrom u'	0.2531	
Chrom v'	0.5228	
CCT	2927	K
Purity	54.5	%
λ (dom)	583.1	nm
FWHM	161.6	nm
λ (peak)	622.6	nm
λ (center)	603.1	nm
λ (centroid)	596.5	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.00017692	
Correlation	0.0054	
R1	93.1	
R2	96.0	
R3	97.7	
R4	93.4	
R5	92.8	
R6	95.4	
R7	92.8	
R8	83.0	
R9	61.5	
R10	90.0	
R11	94.3	
R12	85.1	
R13	93.8	
R14	98.1	

Chromaticity Diagram



Spectral Distribution of Radiant Flux



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ISSUE DATE: 10/03/17

PREPARED FOR: PROGRESS

CATALOG NUMBER: P7278-3030K9

LUMINAIRE: 2' Linear Puff with White Finish; 20170828 Sample

LAMP: 54- 3000K LEDs

BALLAST CATALOG NUMBER: UFF25-1Q-800F/A

BALLAST: 1- Ampco

REFRACTOR: Opal Acrylic

REFLECTOR: Steel, Painted White

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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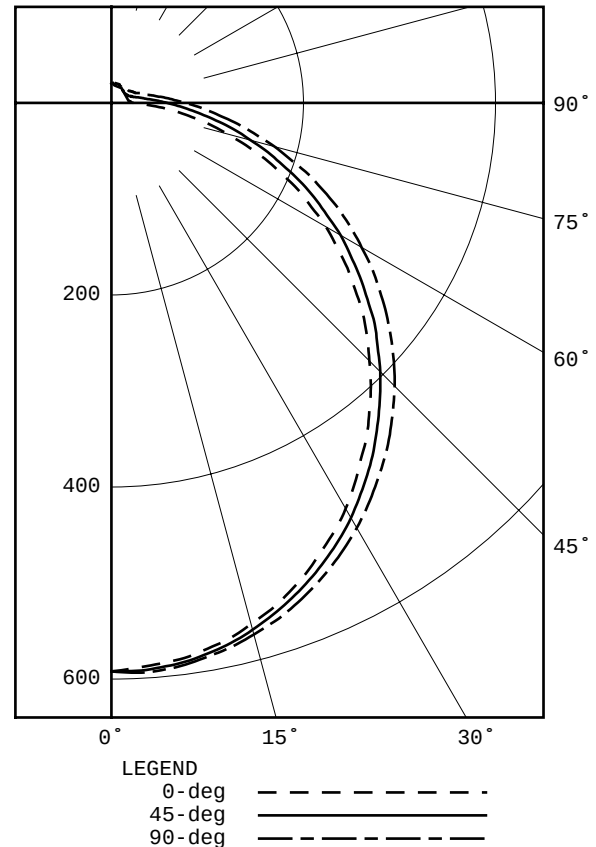
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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0	FLUX
0	592	592	592	592	592	
5	586	588	590	592	593	56
15	562	564	568	572	573	160
25	516	520	526	533	536	243
35	453	458	467	478	482	293
45	380	385	396	410	417	307
55	300	303	316	334	341	285
65	215	218	233	252	261	233
75	125	133	150	170	176	160
85	50	61	82	99	104	89
90	24	38	58	73	77	
95	19	26	41	54	58	44
105	18	18	24	32	35	27
115	18	16	19	23	26	20
125	18	16	17	20	22	17
135	18	18	17	20	21	14
145	17	19	18	20	21	12
155	17	18	18	20	20	9
165	19	18	18	20	21	5
175	19	20	20	20	20	2
180	20	20	20	20	20	

ZONAL ZONE	LUMEN LUMENS	SUMMARY LUMENS	%FIXT
0- 30		459	23.2
0- 40		751	38.1
0- 60		1343	68.0
0- 90		1824	92.4
90-120		92	4.6
90-130		108	5.5
90-150		135	6.8
90-180		150	7.6
0-180		1974	100.0

EFFICACY = 73.7 lm/W
CIE TYPE - DIRECT
PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 1.23 1.28





®

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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 26.000 10.000
HEIGHT OF SIDE : 2.500 2.500

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE AVERAGE AVERAGE
IN DEG 0-DEG 45-DEG 90-DEG
45 2923. 2682. 2813.
55 2742. 2434. 2612.
65 2514. 2155. 2397.
75 2119. 1806. 2097.
85 1629. 1477. 1844.



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**CANDELA DISTRIBUTION
LATERAL ANGLE**

	0.0	22.5	45.0	67.5	90.0
0.0	592	592	592	592	592
5.0	586	588	590	592	593
10.0	577	579	582	584	585
15.0	562	564	568	572	573
20.0	542	545	549	554	557
25.0	516	520	526	533	536
30.0	488	490	499	507	511
35.0	453	458	467	478	482
40.0	418	422	432	445	451
45.0	380	385	396	410	417
50.0	342	345	358	372	380
55.0	300	303	316	334	341
60.0	258	261	276	293	301
65.0	215	218	233	252	261
70.0	170	174	190	211	219
75.0	125	133	150	170	176
80.0	85	94	114	131	137
85.0	50	61	82	99	104
90.0	24	38	58	73	77
95.0	19	26	41	54	58
100.0	18	20	31	41	44
105.0	18	18	24	32	35
110.0	18	17	21	26	30
115.0	18	16	19	23	26
120.0	18	16	18	21	24
125.0	18	16	17	20	22
130.0	18	17	17	20	22
135.0	18	18	17	20	21
140.0	17	18	18	20	21
145.0	17	19	18	20	21
150.0	17	19	19	20	20
155.0	17	18	18	20	20
160.0	18	18	18	20	21
165.0	19	18	18	20	21
170.0	19	19	19	20	20
175.0	19	20	20	20	20
180.0	20	20	20	20	20



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		14
5- 10		42
10- 15		68
15- 20		92
20- 25		113
25- 30		130
30- 35		142
35- 40		150
40- 45		154
45- 50		153
50- 55		147
55- 60		138
60- 65		124
65- 70		108
70- 75		90
75- 80		70
80- 85		52
85- 90		36
90- 95		26
95-100		19
100-105		15
105-110		12
110-115		10
115-120		9
120-125		9
125-130		8
130-135		7
135-140		7
140-145		6
145-150		6
150-155		5
155-160		4
160-165		3
165-170		2
170-175		1
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		56
10- 20		160
20- 30		243
30- 40		293
40- 50		307
50- 60		285
60- 70		233
70- 80		160
80- 90		89
90-100		44
100-110		27
110-120		20
120-130		17
130-140		14
140-150		12
150-160		9
160-170		5
170-180		2



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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	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	92
1	106	100	96	91	102	97	93	89	92	88	85	86	83	81	81	79	77	74
2	96	87	79	73	92	84	77	72	79	74	69	75	70	66	71	67	64	61
3	87	76	67	60	84	74	66	59	69	63	57	66	60	55	62	57	53	51
4	79	67	58	51	76	65	57	50	62	54	49	58	52	47	55	50	46	43
5	73	60	50	44	70	58	49	43	55	48	42	52	46	41	50	44	39	37
6	67	54	44	38	65	52	44	37	50	42	36	47	41	36	45	39	35	32
7	62	48	40	33	60	47	39	33	45	38	32	43	36	31	41	35	31	29
8	58	44	36	30	56	43	35	29	41	34	29	39	33	28	38	32	27	25
9	54	40	32	27	52	40	32	26	38	31	26	36	30	25	35	29	25	23
10	51	37	29	24	49	37	29	24	35	28	23	34	27	23	32	27	22	21

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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Date
9/22/2017

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: 09/2/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 6 - Test Distance: 31.3'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27076V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	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

<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	031159372	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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