

Project Number
17.00401



Date
2/13/2017

LAB 6
Sphere

Test Sample Description

Catalog Number: P7251-17430K9
Description: 32" Oval LED Flush Mount

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 3:30
Time To Stabilize: 0:40
Total Operating Time: 4:40

Input Voltage (Volts): 119.9
Input Current (Amps): 0.327
Input Wattage (Watts): 38.8
Ambient Temp (°C): 24.3
PF @ 277V: 0.944

Sphere

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

Input Voltage (Volts): 120.0
Input Current (Amps): 0.326
Input Wattage (Watts): 38.7
Ambient Temp (°C): 24.2



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. ELLMANN
Approved: D. BLACK



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#: STW9Q14C

Lamp Desc: 96 - Seoul 3000K LEDs

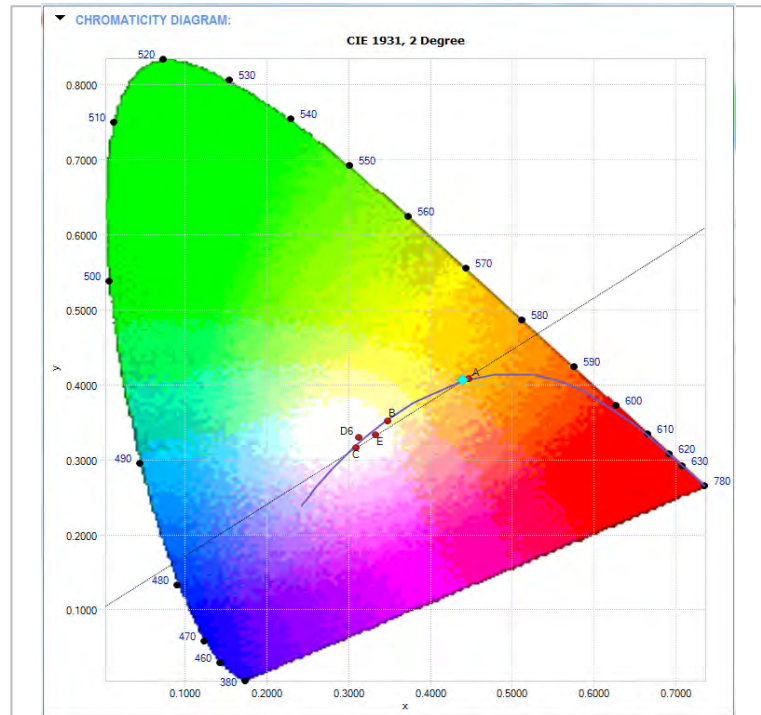
Driver Desc: 1 - ERP ESP040MVW-0700-56

Efficacy: 73.8 LPW

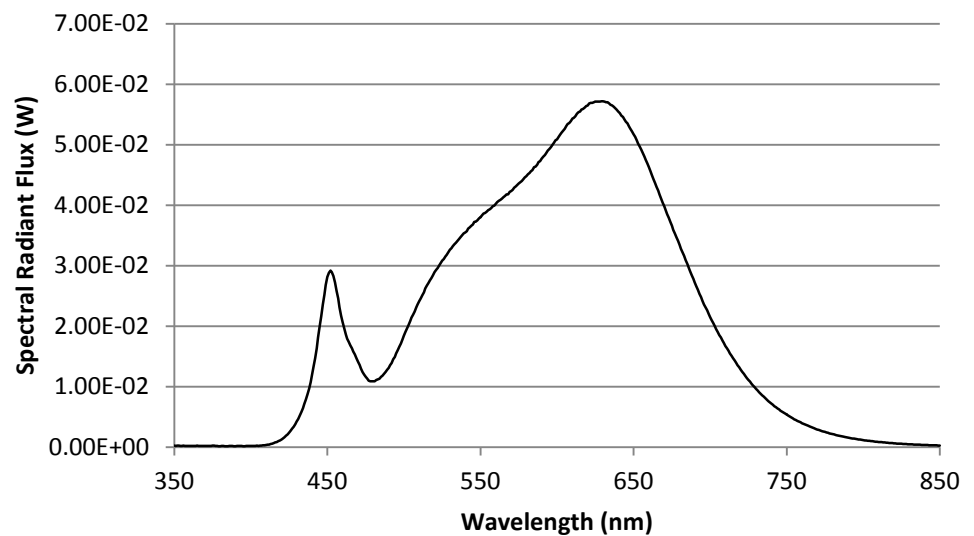
S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	10.18	watts
$\Phi(v)$	2857	lumens
$\Phi(v')$	3910	lm'
Chrom x	0.4395	
Chrom y	0.4063	
Chrom u	0.2513	
Chrom v	0.3484	
Duv	0.0004	
Chrom u'	0.2513	
Chrom v'	0.5227	
CCT	2973	K
Purity	53.9	%
λ (dom)	582.7	nm
FWHM	168.2	nm
λ (peak)	629.2	nm
λ (center)	603.5	nm
λ (centroid)	598.4	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.000575443	
Correlation	0.0054	
R1	92.8	
R2	94.3	
R3	93.8	
R4	92.9	
R5	91.4	
R6	91.9	
R7	94.6	
R8	86.3	
R9	66.9	
R10	85.0	
R11	92.4	
R12	75.4	
R13	93.0	
R14	95.6	



Spectral Distribution of Radiant Flux





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PREPARED FOR: PROGRESS

CATALOG NUMBER: P7251-17430K9

LUMINAIRE: 32" Oval LED Flush Mount

LAMP CAT. NO.: STW9Q14C

LAMP: 96-3000K Seoul LEDs

BALLAST CATALOG NUMBER: ESP040MVW-0700-56

BALLAST: 1-ERP

REFRACTOR: Acrylic

MOUNTING: Ceiling

NOTE:: NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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CANDELA DISTRIBUTION

	0.0	22.5	45.0	67.5	90.0
0	784	784	784	784	784
5	778	778	780	781	782
15	751	752	754	755	756
25	701	701	703	705	706
35	627	628	631	636	637
45	535	535	541	549	551
55	424	428	437	444	449
65	307	310	322	334	338
75	183	191	210	228	233
85	83	95	120	140	149
90	49	60	85	106	115
95	28	37	59	78	85
105	18	22	32	43	48
115	15	19	28	36	38
125	11	14	21	28	30
135	8	9	14	19	21
145	4	5	6	9	11
155	3	3	3	3	4
165	2	3	2	3	3
175	2	2	3	2	2
180	2	2	2	2	2

FLUX

74
213
324
395
418
390
319
222
130
65
36
27
19
11
4
1
1
0

ZONAL LUMEN SUMMARY

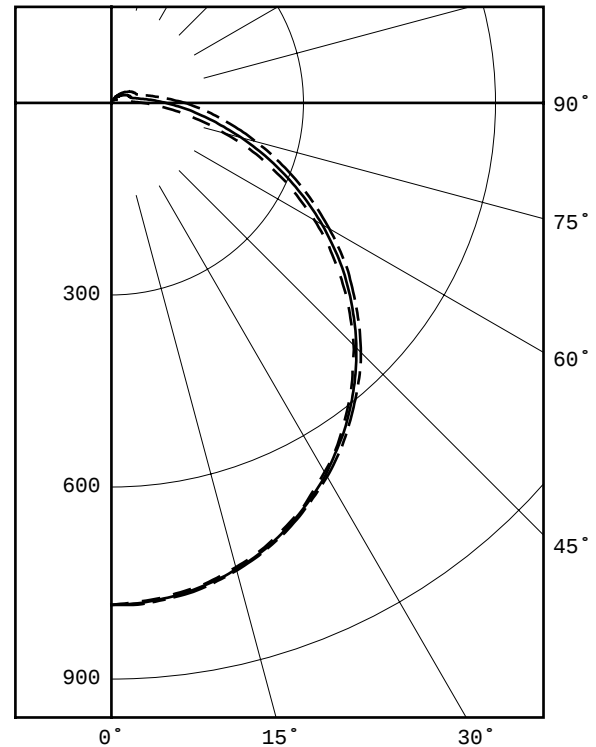
ZONE	LUMENS	%FIXT
0- 30	611	23.1
0- 40	1006	38.0
0- 60	1814	68.5
0- 90	2486	93.8
90-120	127	4.8
90-130	146	5.5
90-150	161	6.1
90-180	164	6.2
0-180	2649	100.0

EFFICACY = 68.3 lm/W

CIE TYPE - DIRECT

PLANE : 0-DEG 90-DEG

SPACING CRITERIA : 1.27 1.28



LEGEND
0-deg - - - - -
45-deg _____
90-deg - . - . - .



®

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PLANE	:	0-DEG	90-DEG
LUMINOUS LENGTH	:	31.500	17.000
HEIGHT OF SIDE	:	4.000	4.000

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE	AVERAGE	AVERAGE	AVERAGE
IN DEG	0-DEG	45-DEG	90-DEG
45	1943.	1763.	1826.
55	1811.	1615.	1696.
65	1653.	1423.	1539.
75	1389.	1201.	1387.
85	1124.	1015.	1341.



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**CANDELA DISTRIBUTION
LATERAL ANGLE**

	0.0	22.5	45.0	67.5	90.0
0.0	784	784	784	784	784
5.0	778	778	780	781	782
10.0	768	768	770	771	773
15.0	751	752	754	755	756
20.0	729	730	732	733	734
25.0	701	701	703	705	706
30.0	666	668	670	672	674
35.0	627	628	631	636	637
40.0	583	584	588	594	595
45.0	535	535	541	549	551
50.0	481	483	490	498	500
55.0	424	428	437	444	449
60.0	366	370	380	389	393
65.0	307	310	322	334	338
70.0	246	252	265	279	284
75.0	183	191	210	228	233
80.0	129	139	161	179	188
85.0	83	95	120	140	149
90.0	49	60	85	106	115
95.0	28	37	59	78	85
100.0	20	25	41	56	63
105.0	18	22	32	43	48
110.0	17	21	30	38	41
115.0	15	19	28	36	38
120.0	13	17	24	32	35
125.0	11	14	21	28	30
130.0	10	11	17	24	26
135.0	8	9	14	19	21
140.0	5	6	10	14	16
145.0	4	5	6	9	11
150.0	4	3	4	5	6
155.0	3	3	3	3	4
160.0	2	2	2	3	3
165.0	2	3	2	3	3
170.0	2	2	2	3	3
175.0	2	2	3	2	2
180.0	2	2	2	2	2



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		19
5- 10		55
10- 15		90
15- 20		122
20- 25		150
25- 30		174
30- 35		192
35- 40		204
40- 45		209
45- 50		209
50- 55		201
55- 60		189
60- 65		170
65- 70		148
70- 75		124
75- 80		99
80- 85		75
85- 90		55
90- 95		38
95-100		26
100-105		19
105-110		16
110-115		14
115-120		13
120-125		10
125-130		8
130-135		6
135-140		4
140-145		3
145-150		2
150-155		1
155-160		1
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		74
10- 20		213
20- 30		324
30- 40		395
40- 50		418
50- 60		390
60- 70		319
70- 80		222
80- 90		130
90-100		65
100-110		36
110-120		27
120-130		19
130-140		11
140-150		4
150-160		1
160-170		1
170-180		0



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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	118	118	118	118	114	114	114	114	108	108	108	102	102	102	96	96	96	94
1	106	100	95	91	102	97	93	89	92	88	85	87	84	81	82	80	78	75
2	96	87	79	73	92	84	77	72	80	74	69	75	71	66	71	67	64	61
3	87	76	67	60	84	74	66	59	70	63	57	66	60	55	63	58	54	51
4	79	67	57	50	76	65	56	50	62	54	48	58	52	47	56	50	46	43
5	73	59	50	43	70	58	49	43	55	47	42	52	46	41	50	44	40	37
6	67	53	44	38	65	52	43	37	50	42	36	47	41	35	45	39	35	32
7	62	48	39	33	60	47	39	33	45	37	32	43	36	31	41	35	31	29
8	58	44	35	29	56	43	35	29	41	34	28	39	33	28	38	32	27	25
9	54	40	32	26	52	39	31	26	38	31	26	36	30	25	35	29	25	23
10	51	37	29	24	49	36	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
2/13/2017

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 09/02/2016

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	11/30/7136	11/2/2017

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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