

Project Number  
18.00107



Date  
2/1/2018

Lab 4  
Sphere

**Test Sample Description**

Catalog Number: P700005-020-30  
Description: Bronze Puck-Style Ceiling Light w/ Clear Plastic Lens

**Photometry**

Test Method: IES LM-41-14  
IES LM-79-08 §10

Preburn Time: 0:45  
Time To Stabilize: 0:30  
Total Operating Time: 1:15

Input Voltage (Volts): 120.1  
Input Current (Amps): 0.027  
Input Wattage (Watts): 3.1  
Ambient Temp (°C): 24.2

**Sphere**

Test Method: IES LM-16-93  
IES LM-79-08 §9.1 & 12.1

Preburn Time: 3:00  
Time To Stabilize: 1:11  
Total Operating Time: 4:11

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.023  
Input Wattage (Watts): 2.7  
Ambient Temp (°C): 24.0



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Checked (sphere): B. LEE  
Checked (photometry): R. HALL  
Approved: P. McCARTHY



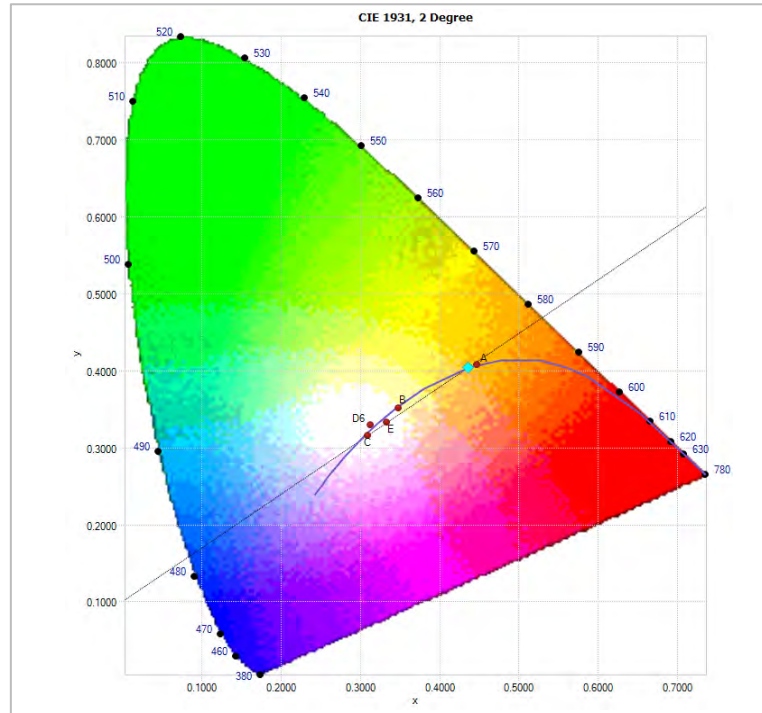
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Lamp Cat#: 3030  
 Lamp Desc: 3 - Seoul 3000K LEDs  
 Driver Desc: NA

Efficacy: 51.9 LPW      S/P Ratio: 1.4 LM/LM

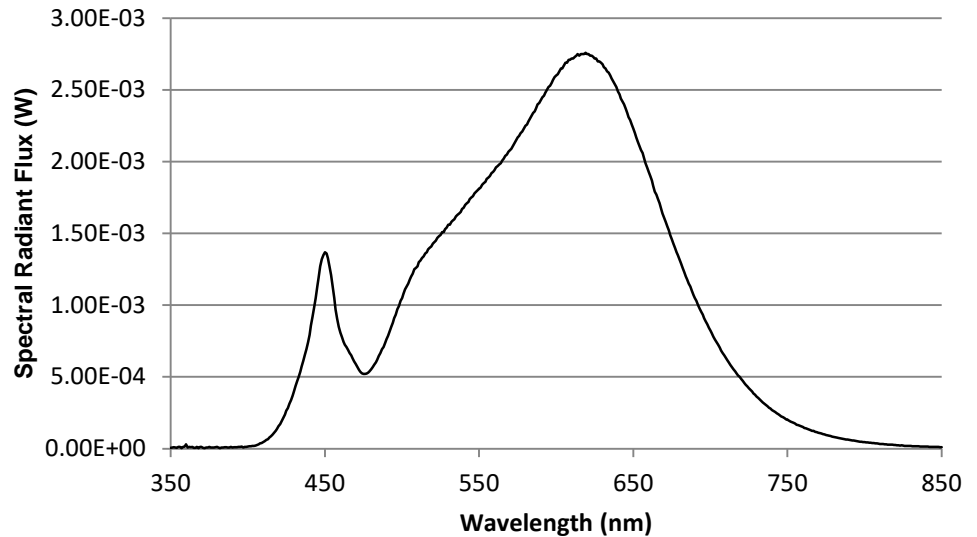
**Chromaticity Diagram**



**Spectral Results**

Name	Value	Unit
Φ	0.48	watts
Φ(v)	140	lumens
Φ(v')	196	lm'
Chrom x	0.4356	
Chrom y	0.4044	
Chrom u	0.2496	
Chrom v	0.3475	
Duv	0.0002	
Chrom u'	0.2496	
Chrom v'	0.5213	
CCT	3023	K
Purity	52.1	%
λ (dom)	582.6	nm
FWHM	161.5	nm
λ (peak)	618.9	nm
λ (center)	597.1	nm
λ (centroid)	591.5	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.000338713	
Correlation	0.0054	
R1	90.7	
R2	94.1	
R3	96.5	
R4	91.6	
R5	90.5	
R6	93.0	
R7	91.5	
R8	79.3	
R9	51.8	
R10	85.9	
R11	92.4	
R12	81.8	
R13	91.4	
R14	97.5	

**Spectral Distribution of Radiant Flux**





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**ISSUE DATE:** 02/01/18

**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P700005-020-30

**LUMINAIRE:** Bronze Puck-Style Ceiling Light w/ Clear Plastic Lens

**LAMP CAT. NO.:** 3030

**LAMP:** 3- Seoul Semiconductor 3000K LEDs



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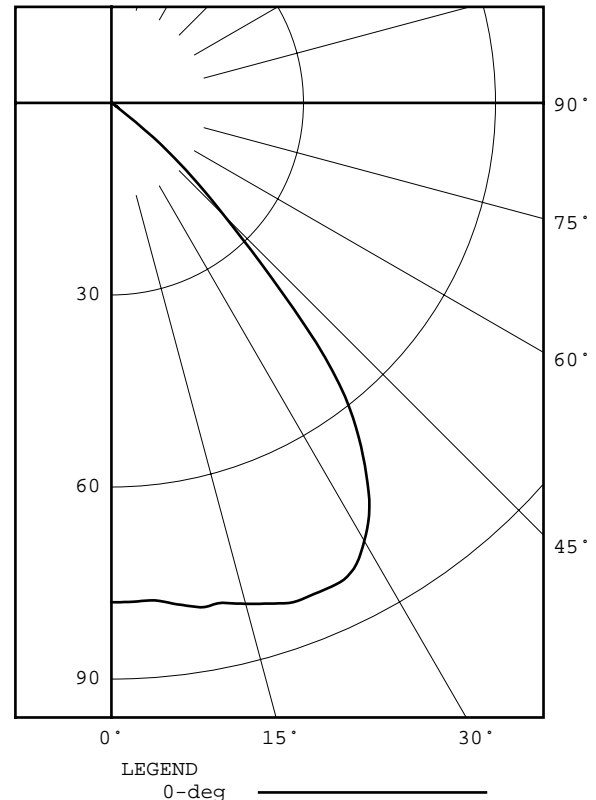
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DEG	CANDELA	LUMENS
0	78.0	
5	78.0	8
15	81.0	23
25	83.0	38
35	69.0	42
45	25.0	21
55	1.0	2
65	0.0	0
75	0.0	0
85	0.0	0
90	0.0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	69	51.3
0- 40	111	82.9
0- 60	134	100.0
0- 90	134	100.0
90-180	0	0.0
0-180	134	100.0

EFFICACY = 43.2 lm/W  
CIE TYPE - DIRECT  
SPACING CRITERION: 1.24  
LUMINOUS DIAMETER: 1.281

LUMINANCE DATA IN CANDELA/SQ M	
ANGLE	AVERAGE
IN DEG	
45	42521.
55	2097.
65	0.
75	0.
85	0.





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CANDELA DISTRIBUTION

0.0	78.0
2.5	78.0
5.0	78.0
7.5	79.0
10.0	80.0
12.5	80.0
15.0	81.0
17.5	82.0
20.0	83.0
22.5	83.0
25.0	83.0
27.5	82.0
30.0	79.0
32.5	75.0
35.0	69.0
37.5	62.0
40.0	52.0
42.5	37.0
45.0	25.0
47.5	17.0
50.0	10.0
52.5	2.0
55.0	1.0
57.5	1.0
60.0	0.0
62.5	0.0
65.0	0.0
67.5	0.0
70.0	0.0
72.5	0.0
75.0	0.0
77.5	0.0
80.0	0.0
82.5	0.0
85.0	0.0
87.5	0.0
90.0	0.0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	5	2
5-	10	6
10-	15	10
15-	20	14
20-	25	17
25-	30	21
30-	35	22
35-	40	20
40-	45	14
45-	50	7
50-	55	2
55-	60	0
60-	65	0
65-	70	0
70-	75	0
75-	80	0
80-	85	0
85-	90	0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	10	8
0-	20	31
0-	30	69
0-	40	111
0-	50	132
0-	60	134
0-	70	134
0-	80	134
0-	90	134



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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	119	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100	
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	96	95	94	92
2	106	101	96	93	104	99	95	92	96	92	90	93	90	88	90	88	86	90	88	86	84
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78	84	81	78	76
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71	78	74	71	70
5	88	79	72	67	86	78	71	67	76	70	66	74	69	66	72	68	65	72	68	65	63
6	83	73	66	61	81	72	65	61	70	64	60	69	64	60	67	63	59	67	63	59	58
7	78	67	60	55	76	66	60	55	65	59	55	64	59	55	63	58	54	63	58	54	53
8	73	62	55	51	72	62	55	51	60	55	50	59	54	50	58	53	50	58	53	50	48
9	69	58	51	47	68	57	51	46	56	50	46	55	50	46	54	50	46	54	50	46	44
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	42	51	46	42	41

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 : Osram ST8-HA4-250-840 22W / 4000K

Lamp Number: RM B6-28

Ballast: Vossloh Schwabe LN 36.149

Ballast Number: RM B6-28

Calibration Voltage/Frequency: 220Vac / 50hz

Total Luminous Flux: 2463 Lumens

Calibration Date: 01/19/2017

### Test Equipment Used

Instrument	Manufacturer / Model	S/N	Calibration Due:
Goniophotometer	LMT/GO-DS 1600 Lab 4- Test Dist.: 31.0'	N/A	N/A
Power Analyzer	Yokogawa / WT 332	C2QA27074V	10/25/2018
Power Source	Chroma / 61604 AC P/S	616040003897	N/A
Thermometer	LMT / ATS-4Ch	10B623-3	10/26/2018

### 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	Calibration Checked Daily
Thermometer	National Instruments / USB TC01	1912751	10/26/2018
LAMP Power Meter	Yokogawa / WT332	C2QA27075V	10/25/2018
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	N/A
Cal Lamp Supply	Labsphere / LPS-150-0268	1218148505	N/A
Spectrometer	Labsphere / CDS 1100	0624117792	N/A

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