

Project Number
17.03113



HUBBELL
Lighting

Date
12/11/2017

Lab#6
Sphere

Test Sample Description

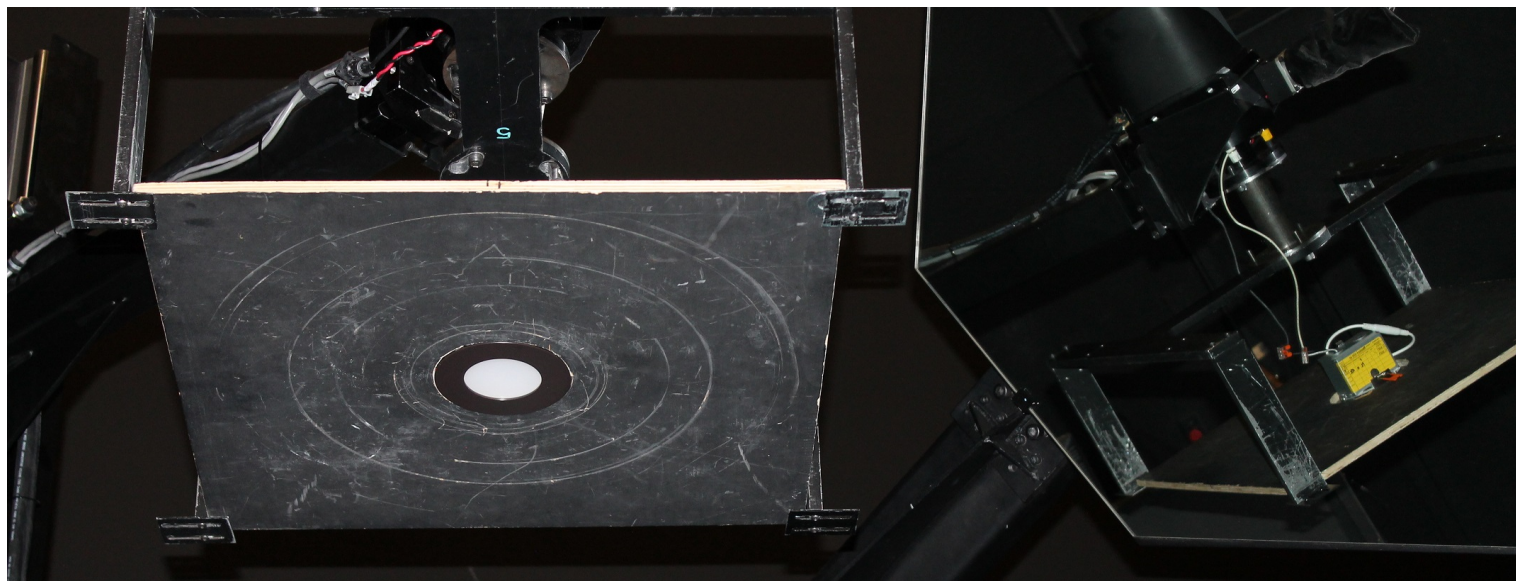
Catalog Number: P800004-020-30
Description: 5" Recessed edgelit. T2 Sample. Antique Bronze

Photometry

<i>Test Method:</i>	IES LM-46-04 IES LM-79-08 § 10
<i>Preburn Time:</i>	0:30
<i>Time To Stabilize:</i>	15:10
<i>Total Operating Time:</i>	21:55
<i>Input Voltage (Volts):</i>	119.9
<i>Input Current (Amps):</i>	0.070
<i>Input Wattage (Watts):</i>	8.2
<i>Ambient Temp (°C):</i>	24.5

Sphere

<i>Test Method:</i>	IES LM-16-93 IES LM-79-08 § 9.1 & 12.1
<i>Preburn Time:</i>	3:00
<i>Time To Stabilize:</i>	1:06
<i>Total Operating Time:</i>	4:06
<i>Input Voltage (Volts):</i>	120.0
<i>Input Current (Amps):</i>	0.069
<i>Input Wattage (Watts):</i>	8.2
<i>Ambient Temp (°C):</i>	24.0



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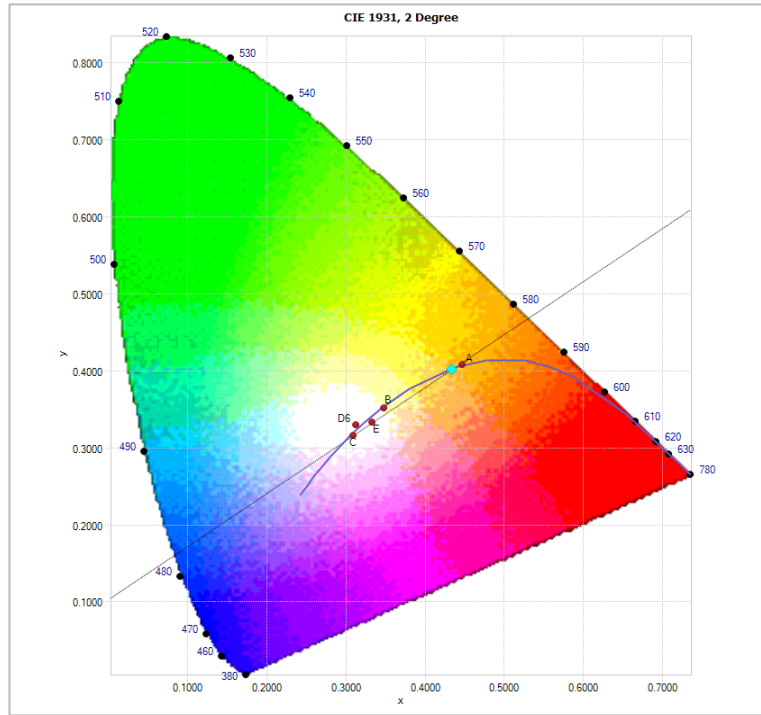
Checked (sphere): B.LEE
Checked (photometry): M.ELLMANN
Approved: _____



Lamp Cat#: 2835
 Lamp Desc: 28 - Seoul 3000K LEDs
 Driver Desc: 1 - Alpha D-PL-A53-01-A V2.0-Y2
 Programmed to 78mA

Efficacy: 66.0 LPW S/P Ratio: 1.4 LM/LM

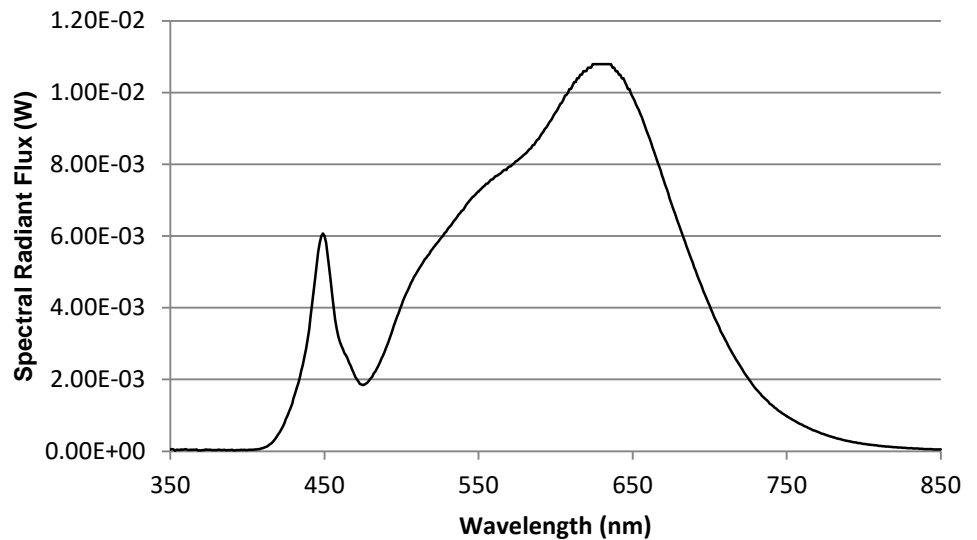
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	1.95	watts
$\Phi(v)$	541	lumens
$\Phi(v')$	765	lm'
Chrom x	0.4332	
Chrom y	0.402	
Chrom u	0.249	
Chrom v	0.3467	
Duv	0.0003	
Chrom u'	0.249	
Chrom v'	0.52	
CCT	3045	K
Purity	50.7	%
λ (dom)	582.7	nm
FWHM	171.2	nm
λ (peak)	629.2	nm
λ (center)	601.9	nm
λ (centroid)	596.1	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.00034627	
Correlation	0.0054	
R1	94.7	
R2	94.9	
R3	93.2	
R4	94.3	
R5	93.7	
R6	92.9	
R7	94.7	
R8	89.4	
R9	74.0	
R10	86.8	
R11	94.7	
R12	81.8	
R13	94.5	
R14	95.4	

Spectral Distribution of Radiant Flux



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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LUMINAIRE: 5" Recessed edgelit. T2 Sample. Antique Bronze.

LAMP CAT. NO.: 2835

LAMP: 28 - Seoul 3000K LEDs

BALLAST CATALOG NUMBER: D-PL-A53-01-A V2.0-Y2

BALLAST: 1-Alpha- set to 78mA

MOUNTING: Recessed

REFLECTOR: PET

REFRACTOR: Polycarbonate

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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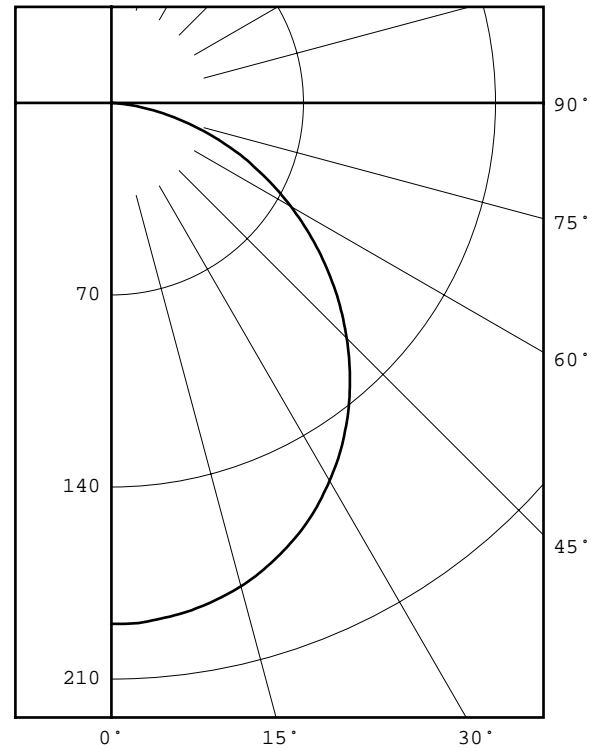
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DEG	CANDELA	LUMENS
0	190	
5	189	18
15	182	51
25	169	78
35	148	92
45	121	94
55	91	81
65	60	59
75	29	31
85	4	6
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	147	28.8
0- 40	240	46.9
0- 60	415	81.2
0- 90	511	100.0
90-180	0	0.0
0-180	511	100.0

EFFICACY = 62.0 lm/W
CIE TYPE - DIRECT
SPACING CRITERION: 1.24
LUMINOUS DIAMETER: 2.875

LUMINANCE DATA IN CANDELA/SQ M	
ANGLE	AVERAGE
IN DEG	
45	40958.
55	37964.
65	33785.
75	27030.
85	11506.



LEGEND
0-deg —————



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CANDELA DISTRIBUTION

0.0	190
2.5	190
5.0	189
7.5	188
10.0	187
12.5	185
15.0	182
17.5	180
20.0	176
22.5	173
25.0	169
27.5	164
30.0	159
32.5	154
35.0	148
37.5	142
40.0	135
42.5	128
45.0	121
47.5	114
50.0	107
52.5	99
55.0	91
57.5	83
60.0	76
62.5	68
65.0	60
67.5	52
70.0	44
72.5	37
75.0	29
77.5	22
80.0	15
82.5	9
85.0	4
87.5	1
90.0	0



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		5
5- 10		13
10- 15		22
15- 20		30
20- 25		36
25- 30		41
30- 35		45
35- 40		47
40- 45		47
45- 50		46
50- 55		43
55- 60		39
60- 65		33
65- 70		26
70- 75		19
75- 80		12
80- 85		5
85- 90		1

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		18
0- 20		69
0- 30		147
0- 40		240
0- 50		333
0- 60		415
0- 70		474
0- 80		505
0- 90		511



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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	111	106	106	106	102	102	102	100
1	109	105	101	97	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85	85	85
2	100	92	85	79	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71	71	71
3	91	81	73	66	66	88	79	72	66	76	70	64	73	68	63	71	66	62	60	60	60
4	83	72	63	56	56	81	70	62	56	68	61	55	65	59	54	63	58	54	51	51	51
5	77	64	55	49	49	75	63	55	48	61	53	48	59	52	47	57	51	47	45	45	45
6	71	58	49	42	42	69	57	48	42	55	47	42	53	47	42	52	46	41	39	39	39
7	66	52	44	38	38	64	52	43	37	50	43	37	49	42	37	47	41	37	35	35	35
8	61	48	39	34	34	60	47	39	33	46	38	33	45	38	33	43	37	33	31	31	31
9	57	44	36	30	30	56	43	35	30	42	35	30	41	35	30	40	34	30	28	28	28
10	54	41	33	27	27	52	40	32	27	39	32	27	38	32	27	37	31	27	25	25	25

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: 09/02/16

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	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	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

<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	Calibration Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/26/2018
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	10/25/2018
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	N/A
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	N/A
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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