

Project Number
17.03111



HUBBELL
Lighting

Date
12/11/2017

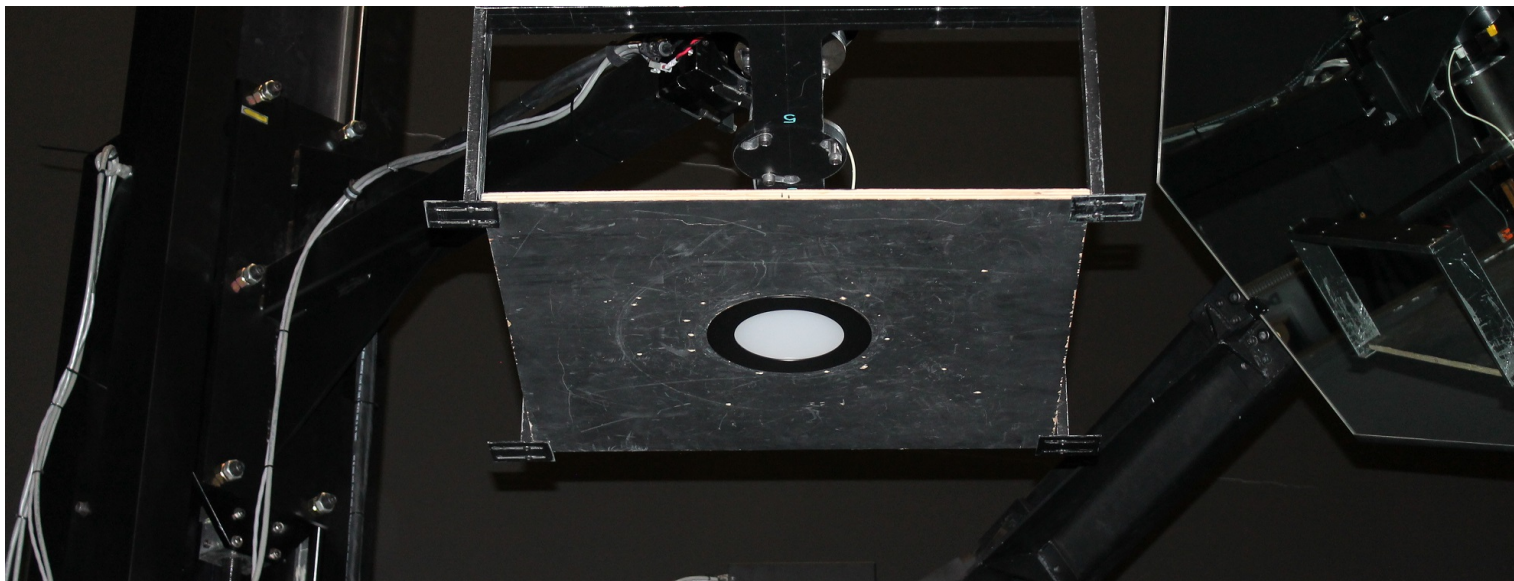
Lab#6
Sphere

Test Sample Description

Catalog Number: P800005-031-30
Description: 7" Recessed edgelit. T2 Sample. Black.

Photometry
Test Method: IES LM-46-04
IES LM-79-08 § 10
Preburn Time: 0:30
Time To Stabilize: 0:50
Total Operating Time: 2:45
Input Voltage (Volts): 120.0
Input Current (Amps): 0.101
Input Wattage (Watts): 12.1
Ambient Temp (°C): 24.0

Sphere
Test Method: IES LM-16-93
IES LM-79-08 § 9.1 & 12.1
Preburn Time: 2:00
Time To Stabilize: 1:09
Total Operating Time: 3:09
Input Voltage (Volts): 120.0
Input Current (Amps): 0.101
Input Wattage (Watts): 12.0
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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Greenville, SC 29607
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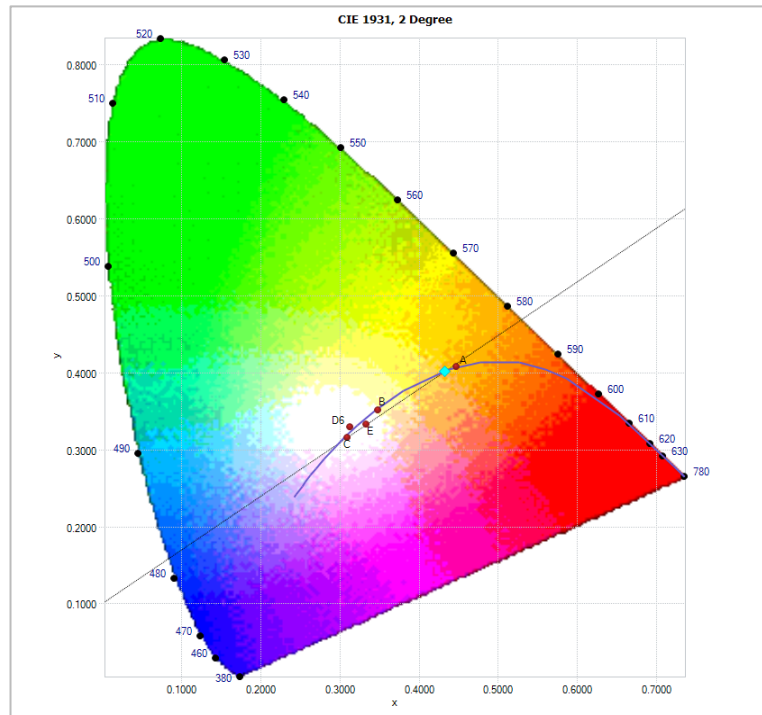
Checked (sphere): B.LEE
Checked (photometry): M.ELLMANN
Approved: _____



Lamp Cat#: 2835
 Lamp Desc: 28 - Seoul 3000K LEDs
 Driver Desc: 1 - Alpha D-PL-A53-01-A V2.0-Y2
 Programmed to 100mA

Efficacy: 70.9 LPW S/P Ratio: 1.4 LM/LM

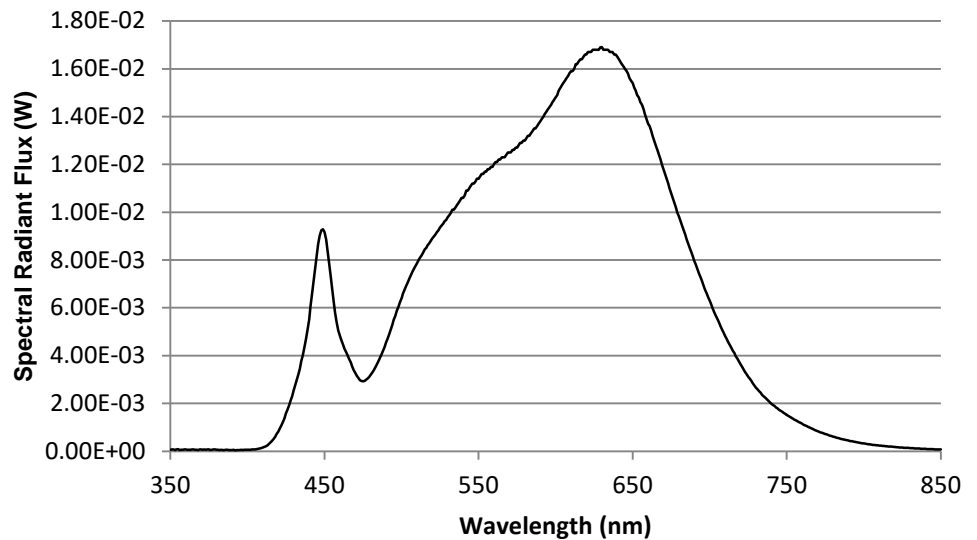
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	3.05	watts
Φ(v)	851	lumens
Φ(v')	1206	lm'
Chrom x	0.4321	
Chrom y	0.402	
Chrom u	0.2483	
Chrom v	0.3466	
Duv	0.0002	
Chrom u'	0.2483	
Chrom v'	0.5198	
CCT	3064	K
Purity	50.4	%
λ (dom)	582.6	nm
FWHM	172.6	nm
λ (peak)	629.4	nm
λ (center)	601.2	nm
λ (centroid)	595.5	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000229536	
Correlation	0.0054	
R1	94.4	
R2	94.6	
R3	93.0	
R4	94.0	
R5	93.4	
R6	92.6	
R7	94.5	
R8	89.0	
R9	72.9	
R10	86.2	
R11	94.5	
R12	81.5	
R13	94.2	
R14	95.3	

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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CATALOG NUMBER: P800005-031-30
LUMINAIRE: 7" Recessed edgelit. T2 Sample. Black.
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 100mA
MOUNTING: Recessed
REFLECTOR: PET
REFRACTOR: Polycarbonate
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

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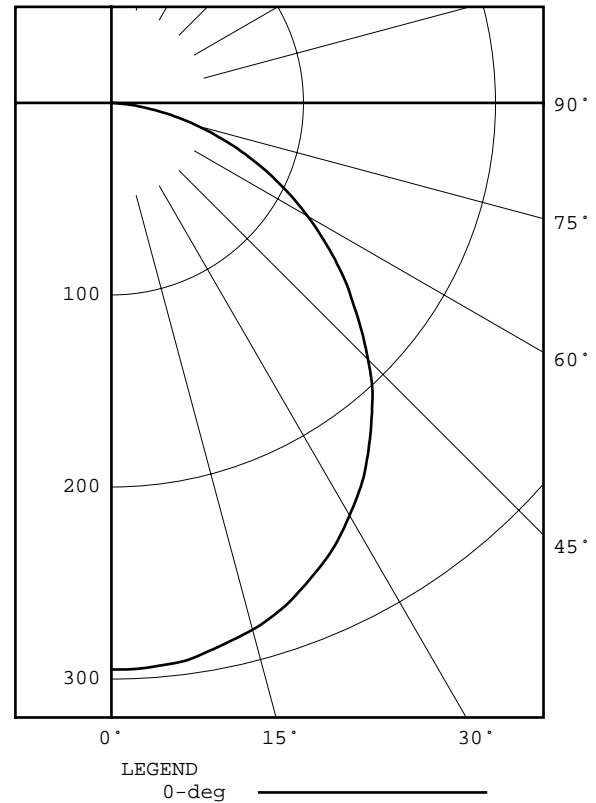
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DEG	CANDELA	LUMENS
0	295	
5	294	28
15	284	80
25	263	121
35	231	144
45	189	146
55	142	127
65	94	93
75	47	50
85	8	10
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	229	28.7
0- 40	373	46.7
0- 60	646	80.8
0- 90	799	100.0
90-180	0	0.0
0-180	799	100.0

EFFICACY = 66.0 lm/W
CIE TYPE - DIRECT
SPACING CRITERION: 1.25
LUMINOUS DIAMETER: 4.625

LUMINANCE DATA IN CANDELA/SQ M	
ANGLE	AVERAGE
IN DEG	
45	24660.
55	22841.
65	20521.
75	16754.
85	8469.





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CANDELA DISTRIBUTION

0.0	295
2.5	295
5.0	294
7.5	293
10.0	290
12.5	287
15.0	284
17.5	280
20.0	275
22.5	269
25.0	263
27.5	256
30.0	248
32.5	240
35.0	231
37.5	221
40.0	211
42.5	201
45.0	189
47.5	177
50.0	165
52.5	154
55.0	142
57.5	130
60.0	118
62.5	106
65.0	94
67.5	82
70.0	70
72.5	58
75.0	47
77.5	36
80.0	25
82.5	16
85.0	8
87.5	2
90.0	0



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		7
5- 10		21
10- 15		34
15- 20		46
20- 25		56
25- 30		65
30- 35		71
35- 40		74
40- 45		74
45- 50		71
50- 55		67
55- 60		60
60- 65		52
65- 70		41
70- 75		30
75- 80		19
80- 85		9
85- 90		2

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		28
0- 20		108
0- 30		229
0- 40		373
0- 50		519
0- 60		646
0- 70		739
0- 80		789
0- 90		799



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	105	100	97	106	102	99	95	98	95	92	94	92	89	91	89	87	85
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	70	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	53	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	58	49	42	69	57	48	42	55	47	42	53	46	41	52	46	41	39
7	66	52	44	37	64	51	43	37	50	42	37	48	42	37	47	41	36	35
8	61	48	39	33	60	47	39	33	46	38	33	44	38	33	43	37	33	31
9	57	44	36	30	56	43	35	30	42	35	30	41	34	30	40	34	30	28
10	54	40	33	27	52	40	32	27	39	32	27	38	32	27	37	31	27	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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