

Project Number
19.01538



HUBBELL
Lighting

Date
9/4/2019

Photometric Test Report

Lab 5
Sphere

Test Sample Description

Catalog Number: P710080-031-30

Description: P710080, P710081 sample with the frosted decorative glass installed

Photometry

Test Method: IES LM-46-04
IES LM-79-08 §10

Preburn Time: 15:00

Time To Stabilize: 0:10

Total Operating Time: 15:55

Input Voltage (Volts): 120.1

Input Current (Amps): 0.081

Input Wattage (Watts): 9.1

Ambient Temp (°C): 26

Sphere

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

Preburn Time: 0:10

Time To Stabilize: 0:46

Total Operating Time: 0:56

Input Voltage (Volts): 120.1

Input Current (Amps): 0.079

Input Wattage (Watts): 9.5

Ambient Temp (°C): 24



Yellow dot indicates goniometer center, vertically and position along the photometer axis

Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. OLALDE
Approved: N. DeVOL

NVLAP[®]
TESTING
NVLAP LAB CODE: 201003-0

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Lamp Cat#: 3528

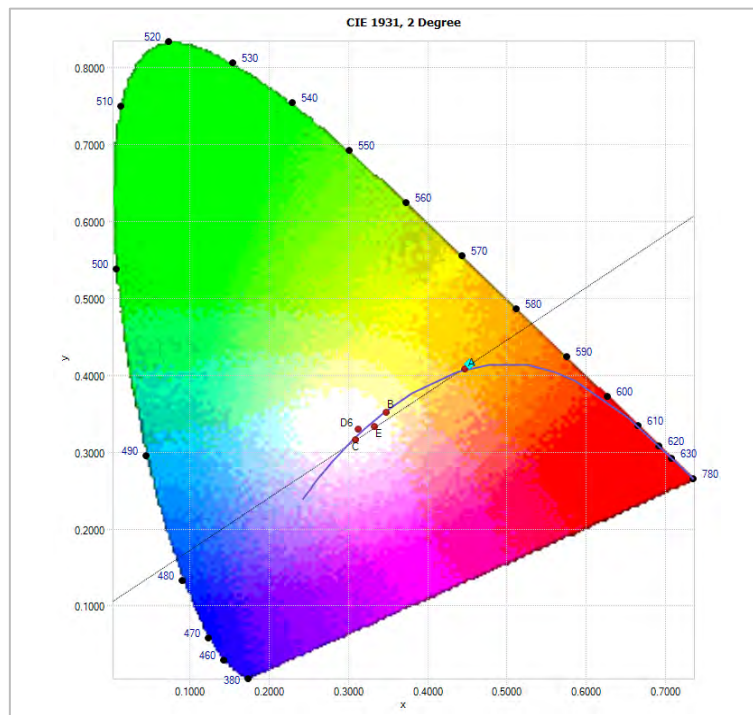
Lamp Desc: 28 - Seoul 3000K LEDs

Efficacy: 40.7 LPW

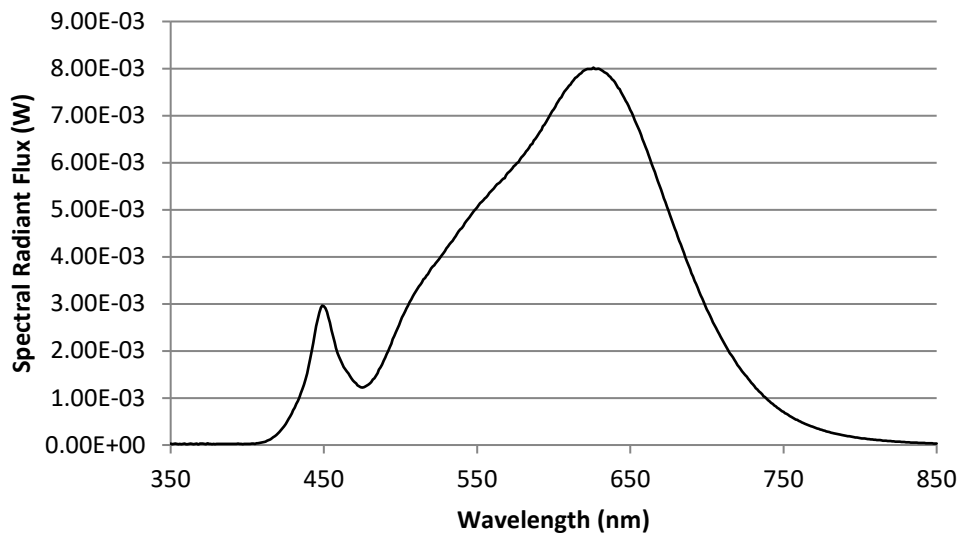
S/P Ratio: 1.3 LM'/LM

Spectral Results

Name	Value	Unit
Φ	1.37	watts
$\Phi(v)$	387	lumens
$\Phi(v')$	501	lm'
Chrom x	0.4531	
Chrom y	0.4151	
Chrom u	0.2562	
Chrom v	0.352	
Duv	0.0023	
Chrom u'	0.2562	
Chrom v'	0.528	
CCT	2830	K
Purity	60.6	%
λ (dom)	582.8	nm
FWHM	159.6	nm
λ (peak)	626	nm
λ (center)	606.1	nm
λ (centroid)	600.7	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.002299288	
Correlation	0.0054	
R1	91.5	
R2	93.7	
R3	94.7	
R4	92.7	
R5	90.6	
R6	92.0	
R7	94.0	
R8	83.5	
R9	60.6	
R10	84.5	
R11	92.9	
R12	79.2	
R13	91.7	
R14	96.2	



Spectral Distribution of Radiant Flux



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PREPARED FOR: PROGRESS

CATALOG NUMBER: P710080-031-30

LUMINAIRE: Small Wall Sconce with semi-circular cross-section diffuse glass enclosure and 8" Square, Frosted Glass Shade.

LAMP CAT. NO.: 3528

LAMP: 28- Seoul 3000K LEDs

MOUNTING: wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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CANDELA DISTRIBUTION

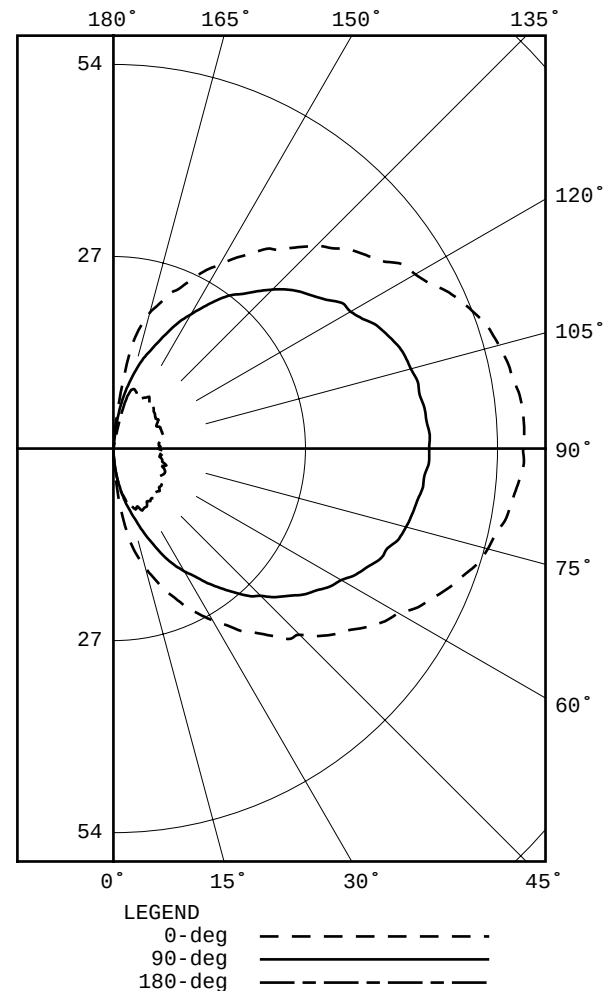
	0.0	45.0	90.0	135.0	180.0
0	0.2	0.2	0.2	0.2	0.2
5	5.4	5.0	2.5	2.1	2.9
15	17.4	21.4	9.1	6.6	8.4
25	24.7	27.9	16.6	10.1	9.6
35	31.3	30.0	23.1	11.7	9.0
45	37.0	31.2	29.3	12.6	8.6
55	43.7	32.0	34.8	13.2	8.3
65	49.6	33.8	39.4	13.9	8.0
75	54.5	36.0	42.6	14.1	7.1
85	57.1	37.4	43.9	13.7	6.2
90	57.6	37.8	44.4	14.0	6.3
95	57.8	37.8	44.2	13.9	6.4
105	56.1	36.9	43.3	14.2	7.2
115	52.0	35.2	40.9	13.6	7.2
125	46.0	33.4	36.5	13.0	7.3
135	40.3	32.3	31.6	12.6	8.0
145	33.4	31.1	25.5	11.8	8.8
155	26.3	28.9	18.0	10.0	8.2
165	19.8	23.9	10.7	6.3	7.6
175	2.7	0.9	0.2	0.0	0.0
180	0.1	0.1	0.1	0.1	0.1

FLUX

0
4
8
14
19
25
29
33
35
36
34
30
25
20
14
9
4
0

ZONAL	LUMEN	SUMMARY	
ZONE	LUMENS	%FIXT	
0- 30	13	3.7	
0- 40	26	7.7	
0- 60	70	20.6	
0- 90	168	49.4	
90-120	100	29.3	
90-130	125	36.7	
90-150	159	46.8	
90-180	172	50.6	
0-180	340	100.0	

EFFICACY = 37.6 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 8.000 2.500
HEIGHT OF SIDE : 8.000 8.000

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE	AVERAGE	AVERAGE	AVERAGE
IN DEG	0-DEG	90-DEG	180-DEG
45	2028.	765.	471.
55	2432.	844.	462.
65	2893.	919.	467.
75	3449.	986.	449.
85	4085.	1039.	444.



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	5.0	10.0	15.0	20.0	22.5	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0
0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2.5	2.1	1.8	2.0	2.1	1.8	1.8	1.8	1.6	1.7	1.6	1.7	1.4	1.6	1.4
5.0	5.4	5.3	5.3	5.4	5.5	5.2	5.5	5.2	5.2	5.2	5.0	5.0	4.8	4.1
7.5	9.4	9.2	9.3	9.2	9.2	9.2	9.4	9.4	9.4	9.4	9.3	8.8	8.7	7.9
10.0	13.0	13.0	12.9	13.0	13.5	13.8	13.5	14.0	14.0	14.1	14.0	13.6	13.0	11.9
12.5	15.4	15.7	15.5	15.5	16.0	16.2	16.6	17.0	17.6	18.1	18.2	18.0	17.3	15.9
15.0	17.4	17.7	17.7	17.6	18.0	18.4	18.8	19.3	20.3	20.8	21.4	21.6	21.4	20.0
17.5	19.2	19.3	19.4	19.5	20.1	20.3	20.4	21.3	22.0	23.0	23.8	24.2	24.3	23.6
20.0	21.1	21.4	21.2	21.3	21.6	21.9	22.1	22.8	23.8	24.6	25.5	26.2	26.6	26.7
22.5	22.8	23.2	23.0	23.2	23.3	23.6	23.8	24.4	25.1	25.9	27.0	27.9	28.6	28.9
25.0	24.7	24.7	24.7	24.4	24.8	24.9	25.3	25.5	26.4	27.0	27.9	28.6	29.8	30.3
27.5	26.3	26.3	26.4	26.1	26.3	26.2	26.4	26.8	27.0	27.9	28.6	29.4	30.3	31.2
30.0	27.9	28.1	27.7	27.4	27.8	27.6	27.6	27.8	28.0	28.5	29.1	29.8	30.7	32.1
32.5	29.4	29.3	29.0	28.7	28.5	28.7	28.4	28.6	28.6	28.8	29.4	29.9	30.6	32.1
35.0	31.3	31.0	30.9	30.6	30.1	30.3	30.2	30.1	29.6	29.9	30.0	30.3	30.9	32.8
37.5	32.6	32.5	32.3	31.7	31.6	31.2	31.1	30.7	30.5	30.1	30.3	30.1	30.7	32.9
40.0	34.3	34.4	34.0	33.7	32.9	33.0	32.6	32.1	31.5	30.9	30.7	30.6	30.9	33.3
42.5	36.3	36.2	35.7	35.2	34.5	34.4	33.9	33.1	32.3	31.7	31.1	30.8	31.1	33.5
45.0	37.0	37.2	36.8	36.2	35.4	35.4	34.7	33.8	32.8	31.8	31.2	30.4	30.4	32.8
47.5	39.0	38.8	38.5	37.8	36.9	36.7	36.1	34.9	33.5	32.4	31.5	30.6	30.2	32.9
50.0	40.6	40.5	40.1	39.1	38.2	37.8	37.0	35.9	34.4	32.9	31.6	30.5	30.0	32.6
52.5	41.9	42.0	41.3	40.7	39.7	39.1	38.3	37.0	35.2	33.5	32.0	30.5	29.6	32.4
55.0	43.7	43.5	42.7	42.1	41.0	40.3	39.4	37.6	35.9	33.8	32.0	30.3	29.3	32.2
57.5	45.2	45.1	44.6	43.6	42.3	41.6	40.6	38.9	36.9	34.5	32.7	30.6	29.2	32.0
60.0	46.3	46.3	45.7	44.7	43.3	42.6	41.6	39.7	37.6	34.8	32.8	30.6	28.8	31.8
62.5	48.3	48.3	47.6	46.5	45.2	44.2	43.2	41.3	38.8	35.9	33.3	30.9	28.8	31.8
65.0	49.6	49.7	49.1	47.9	46.5	45.7	44.3	42.3	39.5	36.6	33.8	31.2	28.7	31.4
67.5	51.1	51.0	50.4	49.2	47.5	46.7	45.7	43.2	40.4	37.4	34.5	31.5	28.8	31.7
70.0	52.3	52.1	51.4	50.2	48.6	47.6	46.4	43.9	41.1	38.0	34.7	31.4	28.6	31.2
72.5	53.7	53.4	52.8	51.6	50.1	48.9	47.9	45.2	42.2	39.0	35.7	32.4	29.2	32.0
75.0	54.5	54.3	53.6	52.4	50.9	49.7	48.4	45.8	42.9	39.5	36.0	32.4	29.3	31.8
77.5	55.1	55.3	54.3	53.2	51.3	50.4	49.2	46.4	43.4	39.8	36.4	32.8	29.4	31.9
80.0	56.1	55.8	55.2	53.9	52.1	50.9	49.7	47.1	44.0	40.5	36.9	33.0	29.7	32.4
82.5	56.5	56.6	55.7	54.5	52.5	51.5	50.4	47.3	44.4	40.8	37.3	33.2	29.8	32.3
85.0	57.1	56.8	56.1	54.8	52.7	51.7	50.3	47.7	44.7	41.1	37.4	33.4	29.8	32.5
87.5	57.7	57.6	56.8	55.4	53.4	52.4	51.1	48.3	45.4	41.5	37.6	33.9	30.3	32.7
90.0	57.6	57.4	56.7	55.6	53.6	52.7	51.3	48.5	45.0	41.5	37.8	34.0	30.3	32.9
92.5	57.8	57.7	57.1	55.7	53.8	52.7	51.4	48.8	45.5	41.7	38.1	34.1	30.6	33.0
95.0	57.8	57.4	56.7	55.4	53.5	52.4	51.1	48.4	45.1	41.4	37.8	33.7	30.2	33.0
97.5	57.6	57.2	56.4	55.1	53.3	52.5	51.0	48.2	45.2	41.5	37.7	33.9	30.1	32.6
100.0	57.0	56.8	56.0	54.9	52.9	52.0	50.6	47.8	44.7	41.2	37.5	33.4	29.8	32.5
102.5	56.7	56.5	56.1	54.5	52.6	51.8	50.3	47.8	44.6	40.8	37.3	33.7	30.1	32.7
105.0	56.1	55.9	55.2	53.9	52.1	51.0	49.7	47.0	43.9	40.5	36.9	33.2	29.9	32.5
107.5	55.5	55.4	54.5	53.3	51.6	50.6	49.2	46.6	43.8	40.2	36.8	33.1	29.8	32.6
110.0	54.5	54.5	53.8	52.6	50.9	50.0	48.8	46.1	43.3	39.7	36.4	33.0	29.9	32.7
112.5	53.3	53.2	52.5	51.3	49.6	48.6	47.3	45.1	42.1	38.9	35.8	32.4	29.6	32.4
115.0	52.0	51.8	51.3	50.0	48.6	47.4	46.4	44.0	41.3	38.3	35.2	32.2	29.6	32.3
117.5	50.2	50.3	49.8	48.5	47.1	46.0	45.0	42.8	40.1	37.4	34.7	31.7	29.3	31.9
120.0	49.0	48.9	48.0	47.3	45.9	44.8	44.0	41.9	39.4	36.7	34.1	31.5	29.2	32.0
122.5	48.2	48.3	47.6	46.4	45.2	44.3	43.4	41.5	39.2	36.7	34.2	31.7	29.8	32.8
125.0	46.0	46.3	45.9	44.6	43.6	42.7	42.0	40.2	38.1	35.7	33.4	31.2	29.7	32.5
127.5	44.7	44.6	44.1	43.4	42.3	41.4	40.8	38.9	37.1	35.0	33.0	31.1	29.8	32.7
130.0	43.5	43.5	42.9	42.1	41.2	40.3	39.7	38.2	36.2	34.6	33.1	31.4	30.3	33.0
132.5	41.7	41.9	41.4	40.7	39.4	39.1	38.4	37.1	35.5	33.8	32.6	31.2	30.4	33.4
135.0	40.3	40.1	39.7	39.0	38.5	37.8	37.1	36.3	34.6	33.3	32.3	31.2	30.9	33.7
137.5	38.4	38.4	37.9	37.5	36.8	36.3	35.8	34.8	33.8	32.8	31.9	31.3	31.0	33.5
140.0	36.5	36.5	36.4	35.7	35.2	34.7	34.4	33.7	32.8	32.2	31.4	31.0	31.2	33.8
142.5	35.4	35.1	35.0	34.4	34.1	33.7	33.5	32.7	32.4	31.6	31.6	31.4	31.6	33.9
145.0	33.4	33.6	33.2	32.7	32.4	32.2	32.0	31.8	31.3	31.1	31.1	31.1	31.6	33.5
147.5	31.7	31.8	31.4	31.2	31.0	30.9	30.6	30.6	30.4	30.5	30.7	31.1	31.8	33.5

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CANDELA DISTRIBUTION LATERAL ANGLE														
	0.0	5.0	10.0	15.0	20.0	22.5	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0
150.0	29.8	29.9	29.6	29.5	29.3	29.2	29.3	29.3	29.5	29.8	30.3	30.4	31.5	33.2
152.5	28.3	28.1	28.0	27.8	27.8	27.7	28.1	28.2	28.4	28.9	29.7	30.2	31.1	32.4
155.0	26.3	26.8	26.3	26.1	26.2	26.4	26.6	27.0	27.5	28.1	28.9	29.7	30.7	31.5
157.5	24.4	24.6	24.6	24.5	24.6	24.8	24.9	25.7	26.3	26.9	27.8	28.9	29.8	30.3
160.0	23.2	23.1	23.3	23.0	23.1	23.6	23.9	24.4	25.3	26.3	27.4	28.0	28.5	29.0
162.5	21.3	21.6	21.5	21.3	21.7	22.1	22.1	23.2	23.9	24.9	26.0	26.3	26.9	26.4
165.0	19.8	19.6	19.5	19.7	19.9	20.2	20.5	21.4	21.9	23.0	23.9	24.0	24.0	22.6
167.5	17.5	17.4	17.5	17.6	17.7	18.2	18.4	19.2	19.8	20.4	20.9	20.5	19.5	18.3
170.0	14.4	14.6	14.5	14.5	14.7	14.9	15.1	15.8	16.3	16.3	16.0	15.2	14.4	13.0
172.5	7.9	8.1	8.2	8.5	8.8	9.2	9.7	9.4	9.7	9.2	8.9	8.2	8.4	7.1
175.0	2.7	2.6	2.8	2.3	2.0	1.9	1.9	1.5	1.3	1.5	0.9	0.6	0.9	0.3
177.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0
180.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1



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CANDELA DISTRIBUTION
LATERAL ANGLE

	65.0	67.5	70.0	75.0	80.0	85.0	90.0	95.0	100.0	105.0	110.0	112.5	115.0	120.0
0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2.5	1.4	1.5	1.2	1.2	1.1	1.0	1.0	0.8	0.8	0.8	1.1	0.7	0.8	1.0
5.0	3.9	4.1	3.7	3.4	3.2	2.5	2.5	2.3	1.9	1.9	1.9	1.7	1.8	1.9
7.5	7.6	7.3	6.8	6.0	5.4	4.9	4.3	3.9	3.6	3.3	3.1	3.4	3.2	3.2
10.0	11.1	10.8	10.3	9.1	7.9	6.8	5.9	5.3	5.0	4.7	4.7	4.3	4.3	4.5
12.5	14.7	14.1	13.1	11.9	10.0	8.6	7.6	6.6	6.1	5.7	5.4	5.3	5.3	5.1
15.0	18.5	17.5	16.7	14.9	12.6	10.9	9.1	8.2	7.7	7.0	6.5	6.2	6.1	6.0
17.5	22.2	21.1	20.1	17.7	15.4	13.0	10.7	9.7	8.8	8.2	7.6	7.2	6.8	6.7
20.0	25.7	24.6	23.5	20.8	17.9	14.9	12.7	11.4	10.3	9.7	8.4	7.9	7.7	7.4
22.5	28.4	27.8	26.8	23.7	20.6	17.7	14.5	13.0	12.0	10.7	9.7	9.1	8.7	8.5
25.0	30.6	30.4	29.6	26.8	23.3	19.9	16.6	14.8	13.3	12.2	10.8	9.8	9.2	9.2
27.5	32.1	32.2	32.0	29.9	25.6	21.7	18.4	16.4	14.9	13.4	11.5	10.8	9.9	9.9
30.0	33.4	33.6	33.8	32.4	28.3	24.0	19.9	17.7	16.1	14.5	12.5	11.4	10.2	10.4
32.5	34.1	34.7	35.4	34.7	30.4	25.9	21.3	18.9	17.2	15.4	13.2	12.0	10.6	10.8
35.0	35.3	36.2	37.2	37.4	33.0	27.9	23.1	20.7	18.9	16.7	14.0	12.9	11.4	11.4
37.5	35.8	36.8	38.4	39.4	35.1	29.9	24.7	21.9	20.0	17.6	14.9	13.4	11.7	11.7
40.0	36.4	38.3	40.0	41.7	37.8	32.1	26.4	23.7	21.5	19.1	16.1	14.4	12.6	12.6
42.5	37.0	39.4	41.6	44.1	40.2	34.2	28.1	25.4	23.1	20.4	16.9	15.1	13.3	13.2
45.0	37.1	39.5	42.1	45.5	41.9	35.7	29.3	26.2	23.6	21.1	17.2	15.5	13.5	13.0
47.5	37.4	40.5	43.3	47.6	44.3	37.4	30.9	27.6	24.9	21.9	18.0	16.0	14.0	13.6
50.0	37.5	41.0	44.2	49.6	46.1	39.1	32.2	28.9	26.1	23.0	18.7	16.6	14.3	14.0
52.5	37.9	41.4	45.0	50.9	48.2	40.9	33.7	30.0	27.3	23.8	19.4	17.2	14.7	14.5
55.0	37.9	41.6	45.6	52.6	49.7	42.4	34.8	31.0	28.2	24.5	19.9	17.5	15.0	14.5
57.5	38.2	42.0	46.6	54.2	51.6	43.9	36.1	32.6	29.0	25.4	20.8	18.3	15.6	15.1
60.0	37.9	42.1	46.8	55.4	53.2	45.0	37.0	33.2	29.9	25.9	21.2	18.4	15.6	15.1
62.5	38.5	43.1	47.8	57.3	55.0	46.8	38.4	34.4	31.2	27.0	21.9	19.2	16.3	15.7
65.0	38.7	43.4	48.2	58.5	56.4	47.8	39.4	35.2	32.0	27.6	22.4	19.7	16.6	16.1
67.5	38.6	43.7	48.8	59.6	57.8	49.2	40.6	36.4	32.6	28.2	22.9	20.1	17.0	16.2
70.0	38.6	43.6	49.1	60.5	58.6	49.8	41.0	36.8	32.9	28.6	23.1	20.1	16.8	16.2
72.5	39.3	44.3	50.0	61.4	60.0	51.1	42.1	37.8	33.8	29.4	23.8	20.6	17.5	16.6
75.0	39.2	44.3	50.1	62.3	60.7	51.7	42.6	38.1	34.3	29.6	24.1	20.8	17.5	16.7
77.5	39.4	44.7	50.5	62.6	61.6	52.1	43.0	38.7	34.7	29.9	24.3	21.0	17.8	16.8
80.0	39.8	45.1	50.8	63.3	62.0	52.7	43.3	38.9	34.9	30.4	24.5	21.3	17.7	16.9
82.5	40.0	45.2	51.3	63.7	62.7	53.4	43.8	39.3	35.4	30.7	24.6	21.3	18.1	16.8
85.0	39.9	45.3	51.5	64.3	62.9	53.8	43.9	39.4	35.4	30.5	24.6	21.1	17.6	16.7
87.5	40.6	45.9	51.9	64.5	63.4	54.0	44.4	39.8	35.8	31.1	24.7	21.5	18.0	17.0
90.0	40.6	46.1	51.9	64.7	63.6	53.9	44.4	39.8	35.6	31.0	24.9	21.5	18.0	16.7
92.5	40.7	46.2	52.1	64.8	63.7	54.2	44.5	40.1	36.0	31.1	25.0	21.5	18.0	17.0
95.0	40.4	46.1	52.0	64.4	63.4	53.8	44.2	39.8	35.8	30.8	24.8	21.4	17.9	16.8
97.5	40.4	45.7	51.8	64.3	63.2	53.6	44.1	39.7	35.3	30.9	24.7	21.4	17.9	16.9
100.0	40.1	45.6	51.5	64.1	62.8	53.4	43.7	39.4	35.4	30.6	24.7	21.3	17.7	16.7
102.5	40.3	45.5	51.2	64.1	62.4	53.2	43.8	39.4	35.4	30.6	24.6	21.4	17.8	16.9
105.0	40.0	45.4	51.3	63.2	62.0	52.5	43.3	39.2	35.0	30.4	24.4	21.1	17.8	16.8
107.5	40.0	45.3	51.1	62.8	61.2	52.1	43.0	38.6	34.8	30.0	24.2	21.0	17.7	16.8
110.0	40.0	44.9	50.7	62.3	60.6	51.7	42.5	38.3	34.4	29.9	24.0	20.9	17.8	16.8
112.5	39.8	44.6	49.9	61.1	59.3	50.3	41.7	37.4	33.3	29.1	23.4	20.1	17.1	16.2
115.0	39.5	44.2	49.3	59.9	57.9	49.3	40.9	36.5	32.8	28.4	23.0	19.8	16.8	15.9
117.5	38.8	43.5	48.5	58.5	56.5	47.9	39.5	35.3	31.9	27.6	22.1	19.1	16.0	15.3
120.0	38.6	43.0	48.0	57.3	54.8	46.5	38.5	34.6	30.9	27.1	21.6	18.6	15.8	15.0
122.5	39.0	43.2	48.0	56.6	54.0	45.8	38.1	34.2	30.7	26.9	21.8	19.0	16.3	15.4
125.0	38.7	42.7	46.9	54.8	51.9	44.3	36.5	32.7	29.6	25.5	20.9	18.4	15.7	14.9
127.5	38.4	42.0	45.9	53.2	50.0	42.6	35.3	31.9	28.6	24.8	20.3	17.4	15.1	14.6
130.0	38.6	41.9	45.6	51.8	48.6	41.3	34.3	30.9	27.8	24.2	19.8	17.2	15.0	14.2
132.5	38.3	41.4	44.6	50.1	46.6	39.8	33.1	29.6	26.6	23.4	19.2	16.7	14.6	13.9
135.0	38.1	40.9	43.8	48.4	44.7	38.0	31.6	28.3	25.7	22.3	18.2	16.1	14.2	13.5
137.5	37.8	40.3	42.7	46.4	42.4	36.1	30.0	27.2	24.4	21.5	17.6	15.7	13.7	13.0
140.0	37.3	39.5	41.3	44.1	40.1	34.2	28.4	25.6	23.0	20.4	16.8	14.7	13.2	12.6
142.5	37.0	38.6	40.5	42.5	38.0	32.5	27.2	24.4	22.3	19.5	16.3	14.5	12.9	12.3
145.0	36.3	37.9	39.2	39.9	35.7	30.4	25.5	22.7	20.9	18.5	15.4	13.8	12.4	11.9
147.5	35.5	36.5	37.6	37.4	32.9	28.4	23.6	21.4	19.2	17.0	14.4	12.9	11.9	11.4

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HUBBELL
Lighting

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

REPORT NUMBER: 19.01538

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ISSUE DATE: 09/04/19

PREPARED FOR: PROGRESS

CATALOG NUMBER: P710080-031-30

CANDELA DISTRIBUTION
LATERAL ANGLE

	65.0	67.5	70.0	75.0	80.0	85.0	90.0	95.0	100.0	105.0	110.0	112.5	115.0	120.0
150.0	34.6	35.2	35.6	34.8	30.6	25.8	21.8	19.5	17.8	15.8	13.5	12.2	11.1	10.6
152.5	33.4	33.6	33.8	32.0	27.9	23.5	20.1	17.8	16.1	14.3	12.1	11.4	10.5	9.9
155.0	32.3	32.2	31.7	28.8	24.9	21.4	18.0	16.3	14.6	13.2	11.4	10.4	9.7	9.5
157.5	30.5	29.8	28.9	25.9	22.4	18.8	16.0	14.5	13.1	11.8	10.2	9.5	9.0	8.8
160.0	27.9	27.2	25.6	22.9	19.8	17.0	14.3	13.1	12.1	10.7	9.5	9.0	8.4	8.1
162.5	24.9	23.5	22.5	19.7	17.3	14.8	12.7	11.4	10.4	9.5	8.6	8.1	7.7	7.3
165.0	21.0	19.8	18.9	16.7	14.7	12.3	10.7	9.6	8.8	8.0	7.2	6.9	6.4	6.1
167.5	16.7	15.9	14.9	13.3	11.6	10.0	8.7	7.7	6.9	6.6	5.8	5.6	5.2	4.9
170.0	12.2	11.3	10.9	9.6	8.5	7.6	6.6	5.8	5.1	4.8	4.4	4.2	3.8	3.4
172.5	7.0	6.9	6.2	6.1	5.2	4.2	3.8	3.5	3.1	2.3	2.3	2.0	1.8	1.6
175.0	0.5	0.5	0.1	0.0	0.1	0.0	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0
177.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1



HUBBELL
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PREPARED FOR: PROGRESS

CATALOG NUMBER: P710080-031-30

CANDELA DISTRIBUTION
LATERAL ANGLE

	125.0	130.0	135.0	140.0	145.0	150.0	155.0	157.5	160.0	165.0	170.0	175.0	180.0
0.0	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
2.5	0.9	0.7	1.0	0.8	1.1	1.2	1.3	1.2	1.2	1.4	1.4	1.4	1.1
5.0	1.8	2.0	2.1	2.1	2.3	2.4	2.7	2.6	2.6	2.7	2.9	2.9	2.9
7.5	3.1	3.2	3.3	3.3	3.8	3.9	4.1	4.1	4.1	4.3	4.4	4.3	4.4
10.0	4.2	4.4	4.6	4.9	5.0	5.3	5.5	5.5	5.7	5.9	5.9	6.0	6.1
12.5	5.0	5.2	5.6	5.7	6.0	6.3	6.5	6.7	6.7	6.9	6.9	6.9	7.0
15.0	6.1	6.4	6.6	7.0	7.3	7.6	7.7	7.9	7.9	8.0	8.1	7.9	8.4
17.5	7.0	7.3	7.5	7.9	8.1	8.5	8.7	8.8	8.5	8.7	8.6	8.6	8.5
20.0	7.7	8.2	8.4	8.8	9.0	9.0	9.0	9.1	9.1	8.9	9.0	9.0	9.1
22.5	8.8	9.4	9.5	9.5	9.8	9.7	9.8	9.6	9.6	9.6	9.5	9.3	8.8
25.0	9.5	10.1	10.1	10.2	10.0	10.0	10.0	9.9	9.7	9.6	9.6	9.4	9.6
27.5	10.3	10.5	10.9	10.5	10.4	10.2	10.0	9.9	9.8	9.7	9.4	9.5	9.4
30.0	10.7	10.9	11.0	10.8	10.5	10.2	10.1	9.9	9.8	9.5	9.3	9.2	9.4
32.5	11.1	11.2	11.1	10.9	10.6	10.2	9.7	9.6	9.4	9.1	9.0	9.0	8.8
35.0	11.7	11.9	11.7	11.4	10.9	10.3	10.0	9.9	9.6	9.6	9.2	9.0	9.0
37.5	12.1	11.9	11.8	11.3	10.8	10.2	9.8	9.7	9.4	9.2	8.9	8.8	8.8
40.0	12.9	12.8	12.4	12.0	11.1	10.3	10.1	9.8	9.7	9.3	9.3	9.1	9.1
42.5	13.5	13.2	12.9	12.2	11.3	10.8	10.1	9.9	9.7	9.5	9.2	9.3	9.1
45.0	13.5	13.2	12.6	12.0	11.1	10.3	9.7	9.4	9.2	8.9	8.7	8.4	8.6
47.5	13.6	13.5	13.1	12.0	11.2	10.5	9.9	9.5	9.3	9.0	8.8	8.6	8.8
50.0	14.0	13.8	13.0	12.1	11.3	10.2	9.7	9.4	9.3	8.7	8.5	8.5	8.4
52.5	14.6	13.9	13.3	12.4	11.5	10.4	9.8	9.4	9.1	8.7	8.5	8.6	8.5
55.0	14.7	14.1	13.2	12.1	11.0	10.2	9.7	9.0	9.0	8.7	8.3	8.2	8.3
57.5	15.0	14.5	13.6	12.4	11.2	10.4	9.6	9.4	8.9	8.8	8.2	8.2	8.3
60.0	15.2	14.4	13.5	12.4	11.1	10.0	9.2	9.0	8.6	8.1	7.8	7.7	7.7
62.5	15.6	14.9	13.7	12.8	11.5	10.3	9.7	9.1	8.8	8.4	8.3	8.1	7.9
65.0	15.8	15.1	13.9	12.8	11.4	10.4	9.3	9.2	8.8	8.1	8.0	7.8	8.0
67.5	16.1	15.2	14.1	12.6	11.5	10.3	9.2	8.9	8.3	8.0	7.6	7.5	7.8
70.0	15.8	15.1	13.7	12.4	11.1	9.9	8.9	8.2	8.0	7.4	7.3	7.0	7.3
72.5	16.4	15.5	14.3	12.9	11.2	10.0	9.2	8.9	8.5	7.6	7.5	7.6	7.8
75.0	16.5	15.5	14.1	12.7	11.0	9.7	8.6	8.3	7.9	7.3	6.9	7.0	7.1
77.5	16.3	15.4	14.2	12.6	10.9	9.7	8.7	8.0	7.8	6.9	7.0	6.8	7.0
80.0	16.5	15.6	14.3	12.6	11.0	9.6	8.4	8.0	7.6	6.8	6.7	6.7	6.6
82.5	16.6	15.5	14.1	12.7	11.1	9.7	8.4	7.9	7.5	6.7	6.5	6.5	6.8
85.0	16.4	15.5	13.7	12.4	10.8	9.4	8.3	7.6	7.0	6.3	6.1	6.2	6.2
87.5	16.6	15.4	14.2	12.7	10.9	9.6	8.3	7.7	7.1	6.4	6.2	6.5	6.9
90.0	16.5	15.6	14.0	12.4	11.0	9.5	8.2	7.3	6.9	6.4	6.2	6.3	6.3
92.5	16.7	15.6	14.3	12.8	11.1	9.5	7.9	7.6	7.1	6.4	6.2	6.2	6.6
95.0	16.3	15.3	13.9	12.4	10.8	9.4	8.1	7.3	6.7	6.2	5.9	6.2	6.4
97.5	16.4	15.4	14.1	12.6	10.7	9.3	8.1	7.5	7.2	6.3	6.2	6.3	6.5
100.0	16.3	15.4	13.9	12.4	10.7	9.4	8.1	7.4	6.9	6.4	6.1	6.4	6.7
102.5	16.5	15.7	14.1	12.7	11.2	9.7	8.5	7.6	7.1	6.6	6.6	6.8	7.0
105.0	16.3	15.4	14.2	12.7	11.2	9.7	8.4	7.7	7.4	6.7	6.8	6.7	7.2
107.5	16.5	15.5	14.1	12.8	11.3	9.8	8.8	8.0	7.5	7.1	6.9	7.0	7.2
110.0	16.4	15.7	14.1	12.6	11.4	10.2	8.9	8.1	7.8	7.3	6.9	7.3	7.2
112.5	16.1	15.1	13.9	12.5	11.1	9.8	8.6	7.9	7.5	7.0	6.9	6.8	7.2
115.0	15.7	14.9	13.6	12.5	10.9	10.0	8.4	7.9	7.4	7.0	7.0	7.0	7.2
117.5	15.2	14.6	13.3	12.1	10.6	9.7	8.4	7.7	7.1	7.0	6.6	6.5	6.8
120.0	15.0	14.2	13.2	12.1	10.8	9.5	8.4	7.7	7.2	7.2	6.8	7.1	7.1
122.5	15.2	14.7	13.6	12.5	11.3	10.3	9.1	8.3	8.2	7.7	7.5	7.2	7.5
125.0	14.7	13.9	13.0	12.1	11.0	9.9	9.0	8.2	7.8	7.8	7.3	6.9	7.3
127.5	14.3	13.7	12.9	11.9	10.6	9.9	8.8	8.0	7.7	7.3	6.9	6.6	7.4
130.0	14.2	13.8	13.1	12.0	11.0	10.2	9.0	8.5	8.2	7.8	7.0	7.0	7.6
132.5	13.9	13.5	12.8	12.0	11.0	10.0	9.1	8.5	8.1	7.7	6.7	6.7	7.7
135.0	13.8	13.3	12.6	11.8	10.8	10.0	9.3	8.7	8.0	7.7	6.6	7.0	8.0
137.5	13.4	13.0	12.4	11.7	11.0	10.1	9.4	8.7	8.0	7.5	6.5	7.2	8.0
140.0	12.8	12.5	12.2	11.4	10.8	10.1	9.3	8.7	8.1	7.5	6.6	7.0	7.8
142.5	12.5	12.4	12.1	11.4	10.7	10.3	9.5	8.8	8.4	7.7	7.1	7.5	8.3
145.0	12.2	12.2	11.8	11.2	10.9	10.2	9.6	9.0	8.5	7.7	7.4	7.8	8.8
147.5	11.6	11.6	11.5	10.9	10.6	10.0	9.5	9.0	8.7	7.5	7.2	7.7	8.5

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CANDELA DISTRIBUTION
LATERAL ANGLE

	125.0	130.0	135.0	140.0	145.0	150.0	155.0	157.5	160.0	165.0	170.0	175.0	180.0
150.0	10.9	11.1	10.9	10.7	10.3	9.8	9.3	8.7	8.2	7.6	7.2	7.5	8.2
152.5	10.2	10.5	10.5	10.3	10.0	9.7	9.1	8.6	8.1	7.5	7.2	7.5	8.4
155.0	9.5	9.8	10.0	9.8	9.7	9.4	8.8	8.5	8.1	7.6	7.3	7.6	8.2
157.5	9.0	9.1	9.4	9.4	9.2	8.8	8.5	8.3	8.0	7.5	7.2	7.6	8.5
160.0	8.1	8.5	8.7	8.9	8.8	8.8	8.6	8.2	8.0	7.6	7.4	8.0	8.8
162.5	7.4	7.4	7.7	7.9	8.1	7.7	7.6	7.6	7.2	7.2	7.2	7.9	8.7
165.0	6.1	6.2	6.3	6.7	6.3	6.6	6.3	6.2	6.2	6.2	6.6	7.0	7.6
167.5	4.7	4.4	4.5	4.4	4.6	4.7	4.6	4.2	4.3	4.3	4.3	4.5	4.5
170.0	3.1	2.7	2.4	2.3	2.0	1.5	1.1	1.2	1.0	0.6	0.5	0.1	0.0
172.5	1.0	0.5	0.6	0.2	0.2	0.2	0.1	0.1	0.0	0.0	0.1	0.0	0.0
175.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
177.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		0
5- 10		0
10- 15		1
15- 20		2
20- 25		4
25- 30		5
30- 35		6
35- 40		8
40- 45		9
45- 50		10
50- 55		12
55- 60		13
60- 65		14
65- 70		15
70- 75		16
75- 80		17
80- 85		17
85- 90		18
90- 95		18
95-100		18
100-105		17
105-110		17
110-115		16
115-120		14
120-125		13
125-130		12
130-135		11
135-140		9
140-145		8
145-150		6
150-155		5
155-160		4
160-165		3
165-170		1
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		0
0- 20		4
0- 30		13
0- 40		26
0- 50		46
0- 60		70
0- 70		100
0- 80		133
0- 90		168
0-100		204
0-110		238
0-120		268
0-130		293
0-140		313
0-150		327
0-160		336
0-170		340
0-180		340



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	49
1	92	86	80	75	84	79	73	69	65	61	57	52	49	47	41	39	36	31
2	82	72	64	57	75	66	58	52	54	48	43	43	39	35	33	30	27	22
3	74	62	52	45	67	56	48	41	46	40	34	36	31	27	28	24	21	16
4	67	54	44	37	60	49	40	34	40	33	28	31	26	22	24	20	16	12
5	61	47	37	30	55	43	34	28	35	28	23	28	22	18	21	17	13	10
6	56	42	32	26	50	38	30	23	31	24	19	25	19	15	19	14	11	8
7	51	37	28	22	46	34	26	20	28	21	16	22	17	13	17	13	10	7
8	47	33	25	19	43	31	23	17	25	19	14	20	15	11	15	11	8	6
9	44	30	22	16	40	28	20	15	23	17	12	18	13	10	14	10	7	5
10	41	28	20	14	37	25	18	13	21	15	11	17	12	9	13	9	6	4

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.

Project Number
19.01538



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Date
9/4/2019

Goniophotometer Calibration

Calibration Lamp : GE 1000W, 120V, T6, CL (FEL)

Lamp Number: ITL78966-1000-66

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 23013 Lumens

Calibration Date: 08/20/2019

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/31/2019
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	10/31/2019

3-Meter-Sphere Calibration

Calibration Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-K136

Calibration Current: 2.679 Amps

Total Luminous Flux: 1429 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	10/31/2019
<i>Power Analyzer</i>	Yokogawa / WT332	C2QA27074V	10/31/2019
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	GW Instek / PSU 150-10	GER221028	N/A
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	N/A
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

Hubbell Lighting, Inc.

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This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.