



Photometric Test Report

Lab 5
Sphere

Test Sample Description

Catalog Number: P710080-031-30
Description: Small Wall Sconce with Semi-Circular Cross-Section Diffuse Glass [MORE]Enclosure and 8" Square, Clear Crushed-Ice Glass Shade.

Photometry

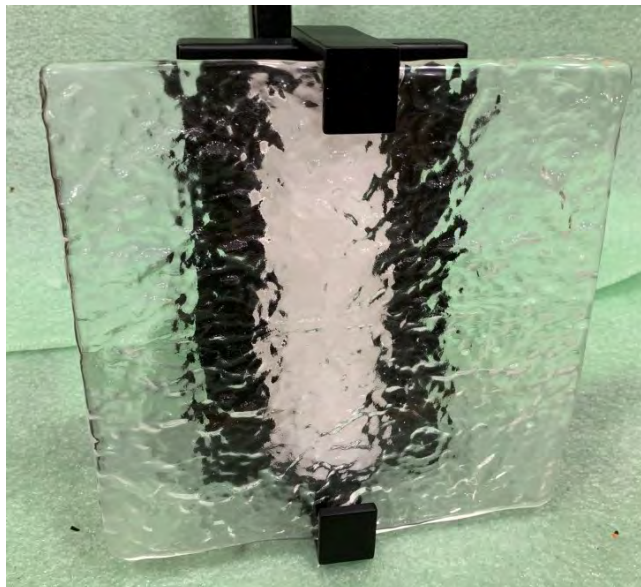
Test Method: IES LM-46-04
IES LM-79-08 §10
Preburn Time: 12:00
Time To Stabilize: 0:10
Total Operating Time: 12:55

Input Voltage (Volts): 120.2
Input Current (Amps): 0.081
Input Wattage (Watts): 9.2
Ambient Temp (°C): 26

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 1:00
Time To Stabilize: 0:30
Total Operating Time: 1:30

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.hubbellighting.com

Checked (sphere): B. LEE
Checked (photometry): M. OLALDE
Approved: P. McCARTHY





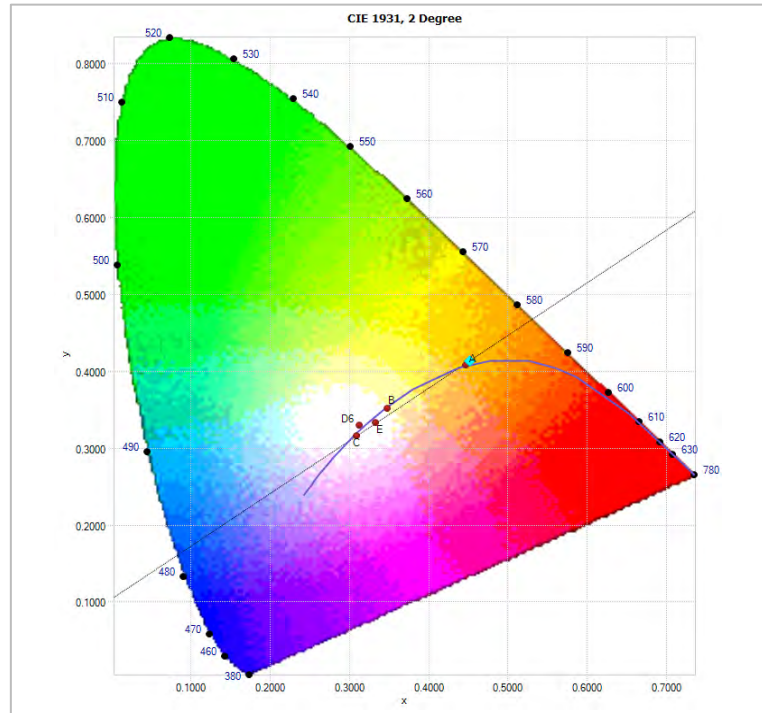
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Lamp Cat#: 3528
Lamp Desc: 28 - Seoul 3000K LEDs

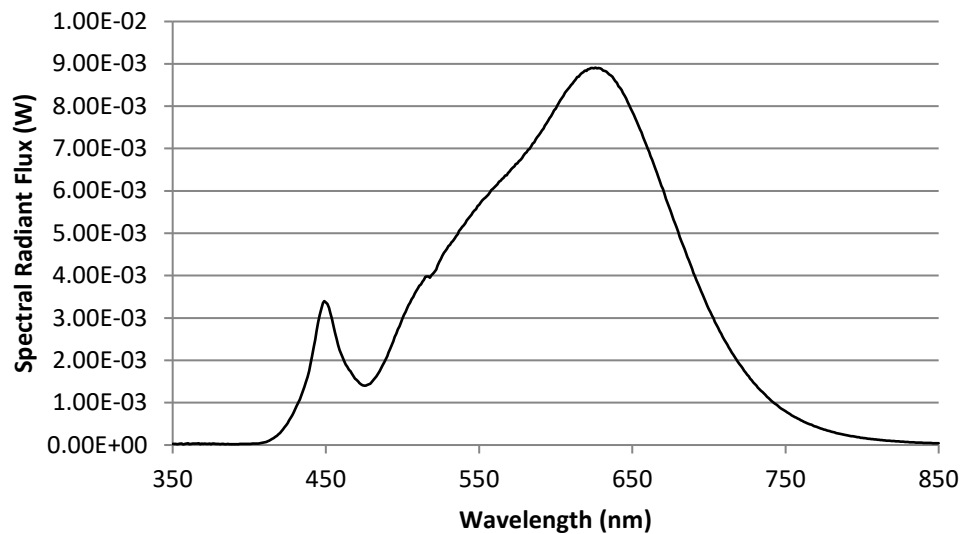
Efficacy: 45.6 LPW S/P Ratio: 1.3 LM/LM

Spectral Results

Name	Value	Unit
Φ	1.53	watts
$\Phi(v)$	433	lumens
$\Phi(v')$	564	lm'
Chrom x	0.4513	
Chrom y	0.414	
Chrom u	0.2555	
Chrom v	0.3516	
Duv	0.0021	
Chrom u'	0.2555	
Chrom v'	0.5274	
CCT	2848	K
Purity	59.8	%
λ (dom)	582.8	nm
FWHM	160.1	nm
λ (peak)	624.4	nm
λ (center)	605.8	nm
λ (centroid)	600.3	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.00210707	
Correlation	0.0054	
R1	91.4	
R2	93.7	
R3	94.7	
R4	92.5	
R5	90.5	
R6	91.9	
R7	93.9	
R8	83.3	
R9	60.4	
R10	84.4	
R11	92.5	
R12	79.1	
R13	91.6	
R14	96.2	



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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REPORT NUMBER: 19.01537

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ISSUE DATE: 09/04/19

PREPARED FOR: PROGRESS

CATALOG NUMBER: P710080-031-30

LUMINAIRE: Small Wall Sconce with Semi-Circular Cross-Section Diffuse Glass Enclosure and 8" Square, Clear Crushed-Ice 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	0.9	0.9	0.9	0.9	0.9
5	4.2	4.1	2.5	1.1	1.1
15	13.9	17.0	9.6	4.2	3.7
25	23.4	22.9	16.3	6.7	4.4
35	37.5	29.6	23.4	8.4	3.3
45	53.5	38.6	29.7	8.5	2.4
55	69.0	49.6	34.8	8.1	1.8
65	82.4	61.0	39.3	7.9	1.1
75	91.3	69.6	42.2	7.4	0.6
85	95.6	73.0	43.6	7.1	0.3
90	96.4	73.2	44.6	7.5	0.5
95	95.8	72.3	44.3	7.5	0.1
105	92.0	67.8	43.1	7.6	0.4
115	82.7	59.9	40.7	7.8	0.8
125	68.0	49.1	36.3	7.6	0.7
135	51.5	39.0	31.8	8.6	1.5
145	34.2	30.9	25.5	9.0	2.2
155	22.0	24.8	18.3	7.1	3.7
165	14.0	19.1	11.0	4.8	3.6
175	0.8	0.8	0.7	0.5	0.2
180	0.2	0.2	0.2	0.2	0.2

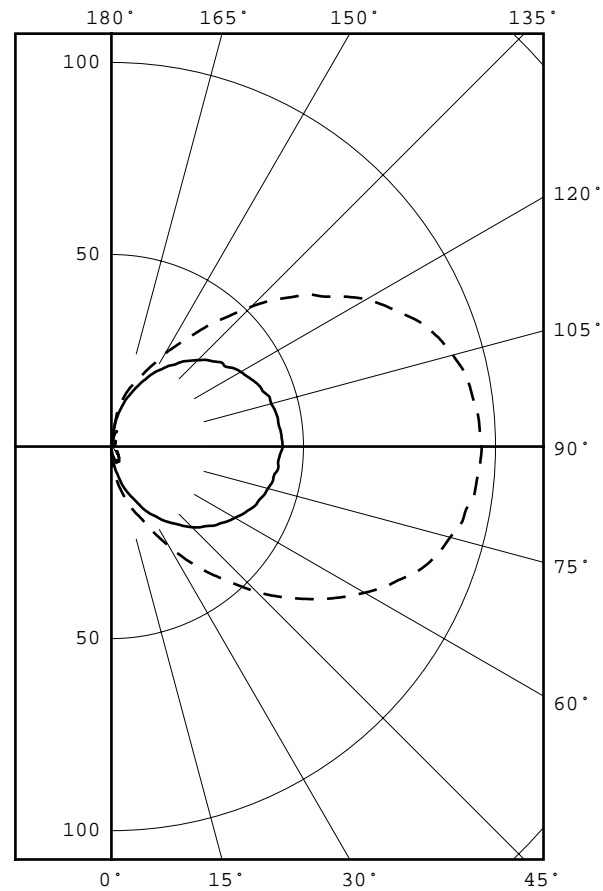
FLUX

0
3
7
13
20
28
36
42
45
45
42
36
29
21
13
7
3
0

ZONAL LUMEN SUMMARY

ZONE	LUMENS	%FIXT
0- 30	10	2.7
0- 40	23	6.0
0- 60	72	18.3
0- 90	194	49.8
90-120	123	31.5
90-130	152	38.8
90-150	185	47.5
90-180	196	50.2
0-180	391	100.0

EFFICACY = 42.6 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90



LEGEND
0-deg - - - - -
90-deg - - - - -
180-deg - - - - -



®

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

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE AVERAGE AVERAGE
IN DEG 0-DEG 45-DEG 90-DEG
45 1396. 1066. 1628.
55 1674. 1279. 1936.
65 1922. 1518. 2292.
75 2112. 1725. 2670.
85 2262. 1858. 3119.



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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	0.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2.5	1.7	1.9	1.7	1.6	1.8	1.7	1.6	1.8	1.6	1.7	1.4	1.7	1.7	1.7
5.0	4.2	3.9	3.9	3.8	3.7	3.7	3.8	4.0	4.1	4.0	4.1	4.2	4.0	4.0
7.5	6.8	6.7	6.8	7.0	7.0	7.1	7.0	7.3	7.3	7.2	7.5	7.5	7.2	7.1
10.0	9.8	9.7	9.8	9.8	9.7	10.0	10.2	10.5	10.9	11.2	11.5	11.4	11.0	10.8
12.5	11.7	11.7	11.8	12.0	12.0	12.2	12.4	12.9	13.6	14.1	14.5	14.7	14.3	14.0
15.0	13.9	13.9	13.9	14.0	14.2	14.2	14.4	15.1	15.7	16.3	17.0	17.7	17.8	17.3
17.5	16.3	16.3	16.2	15.9	16.3	16.4	16.6	17.0	17.6	18.5	18.9	19.9	20.3	20.5
20.0	18.3	18.1	18.1	17.7	17.8	17.9	18.1	18.6	19.0	19.6	20.3	21.0	21.7	21.9
22.5	20.2	20.3	20.1	20.1	19.7	19.8	20.2	20.0	20.4	20.8	21.4	22.2	22.7	23.6
25.0	23.4	23.3	22.9	22.9	22.7	22.6	22.4	22.5	22.4	22.5	22.9	23.5	24.2	24.9
27.5	26.5	26.8	26.2	25.8	25.6	25.3	25.1	25.0	24.8	24.7	24.6	24.7	25.4	26.3
30.0	29.9	29.9	29.8	29.2	28.6	28.3	28.1	27.6	27.1	26.7	26.2	26.2	26.3	27.2
32.5	33.8	33.3	33.1	32.4	31.8	31.3	31.0	30.3	29.6	28.5	27.8	27.2	27.3	27.9
35.0	37.5	37.2	36.5	35.9	35.2	34.8	34.7	33.4	32.4	31.1	29.6	28.7	28.1	28.6
37.5	41.3	40.9	40.3	39.5	38.8	38.0	38.0	36.6	35.1	33.3	31.6	30.1	29.0	29.3
40.0	44.9	44.7	44.1	43.2	42.4	42.1	41.4	40.4	38.5	36.1	33.9	31.6	29.7	30.2
42.5	49.1	48.9	48.1	47.3	46.7	45.8	45.4	44.0	42.0	39.4	36.1	33.1	30.9	30.7
45.0	53.5	53.0	52.3	51.3	50.4	49.9	49.5	47.8	45.6	42.2	38.6	35.1	32.1	32.0
47.5	57.6	57.3	56.4	55.4	54.4	53.9	53.3	52.1	49.4	45.7	41.4	36.9	33.4	32.7
50.0	61.3	61.2	60.3	59.5	58.7	57.9	57.4	55.6	53.2	49.1	43.8	38.8	34.8	33.5
52.5	65.2	65.0	64.2	63.3	62.3	62.0	61.3	59.2	56.5	52.3	46.8	40.7	36.1	34.4
55.0	69.0	69.0	67.9	66.9	66.1	65.5	65.2	63.5	60.6	55.9	49.6	43.0	37.2	35.3
57.5	72.6	72.4	71.3	70.4	69.6	69.1	68.8	67.0	64.4	59.1	52.4	45.3	38.8	36.1
60.0	76.1	75.7	74.7	73.4	72.9	72.2	71.7	70.3	67.7	62.2	55.7	47.4	40.2	37.0
62.5	79.6	79.2	78.0	76.9	75.9	75.3	75.0	73.7	71.1	65.4	58.2	49.9	42.1	38.2
65.0	82.4	82.2	81.0	79.9	78.9	78.2	78.0	76.5	74.3	69.0	61.0	52.1	43.5	39.2
67.5	85.6	85.1	84.0	82.7	81.5	81.1	80.8	79.5	76.8	71.4	63.9	54.6	45.4	40.3
70.0	88.1	87.4	86.0	84.8	83.6	83.1	82.8	81.5	79.4	73.8	66.0	56.4	46.6	41.3
72.5	89.9	89.7	87.8	86.7	85.5	85.1	84.5	83.5	81.4	75.9	68.0	58.3	48.1	42.3
75.0	91.3	91.0	89.5	88.3	87.1	86.4	86.2	84.7	82.7	77.4	69.6	59.6	49.2	43.1
77.5	93.2	92.7	91.2	89.8	88.5	88.0	87.6	86.5	84.4	78.9	71.0	61.2	50.7	44.5
80.0	93.8	93.6	91.8	90.8	89.1	88.3	88.1	86.9	85.0	79.5	71.7	61.6	51.3	44.6
82.5	95.3	94.7	93.1	91.9	90.4	89.8	89.1	88.0	86.2	80.8	72.8	62.8	52.1	45.7
85.0	95.6	95.2	93.3	92.0	90.7	89.8	89.5	88.3	86.3	80.8	73.0	63.2	52.5	45.9
87.5	96.1	95.5	94.0	92.3	91.1	90.3	89.7	88.6	86.6	81.2	73.2	63.5	52.7	46.2
90.0	96.4	95.9	94.1	92.7	91.1	90.5	90.0	88.7	86.5	81.1	73.2	63.3	52.8	46.4
92.5	96.0	95.6	93.9	92.5	90.9	90.2	89.8	88.3	86.1	80.6	73.1	62.9	52.4	46.0
95.0	95.8	95.3	93.6	92.0	90.7	89.8	89.1	87.9	85.8	80.1	72.3	62.4	51.7	45.6
97.5	95.0	94.7	92.9	91.9	89.9	89.1	88.7	87.2	84.9	79.4	71.3	61.5	51.2	44.9
100.0	94.5	94.1	92.4	90.7	89.3	88.6	88.1	86.5	84.0	78.6	70.7	61.0	50.7	45.0
102.5	93.6	93.0	91.2	89.8	88.2	87.5	87.0	85.5	82.7	77.3	69.6	59.8	49.6	44.3
105.0	92.0	91.4	90.0	88.4	87.0	86.3	85.7	84.0	81.2	76.0	67.8	58.4	48.9	43.6
107.5	90.4	89.7	88.3	86.9	85.2	84.4	83.9	82.3	79.4	74.1	66.2	56.8	47.8	43.0
110.0	88.4	87.5	85.9	84.4	82.8	82.4	81.9	80.0	77.5	72.1	64.4	55.4	46.6	42.2
112.5	86.0	85.3	83.8	82.1	80.8	80.2	79.4	77.9	75.2	69.8	62.2	53.4	45.6	41.4
115.0	82.7	82.4	80.9	79.5	78.2	77.5	76.9	75.2	72.3	67.3	59.9	51.7	44.0	40.6
117.5	79.8	79.3	77.8	76.4	75.0	74.5	74.0	72.3	69.4	64.4	57.4	49.7	42.7	39.5
120.0	76.6	76.0	74.3	73.3	72.1	71.5	71.1	69.1	66.5	61.5	54.7	47.6	41.3	38.8
122.5	72.6	72.4	70.9	70.1	68.8	68.3	67.8	66.0	63.0	58.5	52.2	45.5	39.8	38.0
125.0	68.0	68.1	66.8	65.9	64.7	64.5	63.6	61.7	59.0	54.9	49.1	43.0	38.0	37.0
127.5	64.9	64.5	63.4	62.5	61.5	61.2	60.7	58.8	56.2	52.3	47.3	41.4	37.3	36.5
130.0	60.4	60.1	59.2	58.5	57.4	56.7	56.6	54.6	52.1	48.7	44.2	39.7	36.0	35.7
132.5	56.3	55.9	55.1	54.2	53.2	52.9	52.6	51.0	48.8	45.8	41.7	37.5	34.8	35.0
135.0	51.5	51.5	50.7	49.9	49.1	48.8	48.2	46.9	45.0	42.5	39.0	35.8	33.5	34.0
137.5	46.6	47.0	46.4	45.5	44.9	44.5	44.4	43.3	41.4	39.5	36.7	34.1	32.4	33.3
140.0	42.5	42.3	42.0	41.4	40.9	40.6	40.4	39.5	38.3	36.6	34.7	32.8	31.6	32.8
142.5	38.3	38.1	37.8	37.3	37.1	36.6	36.6	35.9	35.0	33.9	32.4	30.7	30.5	31.7
145.0	34.2	34.5	34.3	33.9	33.6	33.4	33.4	32.8	32.3	31.4	30.9	30.0	29.9	31.3
147.5	31.0	30.8	30.8	30.3	30.0	30.4	30.2	29.9	29.7	29.4	29.1	28.8	29.2	30.3

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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	27.9	27.8	27.5	27.4	27.3	27.5	27.4	27.3	27.6	27.5	27.8	27.7	28.4	29.5
152.5	24.5	24.7	24.4	24.4	24.4	24.6	24.8	25.0	25.1	25.7	26.5	26.8	27.5	28.7
155.0	22.0	22.0	21.9	21.6	21.8	22.2	22.2	22.8	23.4	24.1	24.8	25.6	26.8	27.7
157.5	19.5	19.4	19.3	19.4	19.7	19.8	20.2	21.0	21.7	22.8	23.6	24.3	25.3	26.0
160.0	17.5	17.5	17.6	17.5	18.0	18.2	18.7	19.5	20.5	21.5	22.5	23.4	24.4	24.4
162.5	16.0	15.7	15.8	15.9	16.3	16.7	17.2	18.0	18.9	20.2	21.2	22.1	22.5	22.2
165.0	14.0	14.0	13.9	14.1	14.6	15.0	15.4	16.1	17.1	18.3	19.1	19.5	19.8	19.0
167.5	11.9	12.0	12.0	12.4	12.7	13.0	13.3	14.2	15.0	15.6	16.2	16.5	16.0	15.4
170.0	9.4	9.5	9.5	9.8	10.3	10.2	10.4	11.3	11.6	12.3	12.2	12.1	11.9	11.2
172.5	3.8	4.0	4.1	4.7	5.1	5.7	6.3	6.4	6.9	6.9	6.5	6.5	6.7	6.6
175.0	0.8	1.1	1.2	1.3	0.9	1.1	1.0	1.0	0.9	0.9	0.8	0.9	0.7	0.9
177.5	0.0	0.2	0.1	0.2	0.4	0.2	0.2	0.2	0.1	0.3	0.5	0.3	0.3	0.5
180.0	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



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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	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2.5	1.8	1.9	1.5	1.8	1.5	1.5	1.2	1.0	1.1	1.0	1.1	0.9	1.1	0.9
5.0	3.9	3.6	3.7	3.5	3.0	2.8	2.5	2.3	1.9	1.6	1.5	1.6	1.5	1.3
7.5	6.8	6.5	6.6	6.0	5.4	5.0	4.3	3.8	3.3	2.8	2.6	2.5	2.4	2.2
10.0	9.9	9.7	9.3	8.6	7.8	6.9	6.1	5.3	4.7	4.2	3.5	3.7	3.4	3.1
12.5	12.9	12.4	11.8	11.2	9.9	8.8	7.6	6.6	5.9	5.3	4.7	4.2	3.9	3.6
15.0	16.2	15.9	15.2	13.8	12.4	11.1	9.6	8.3	7.2	6.2	5.5	5.1	4.7	4.4
17.5	19.8	19.4	18.5	16.7	15.0	13.1	11.5	10.1	8.6	7.5	6.3	6.0	5.5	5.1
20.0	21.7	21.3	21.1	19.3	17.0	14.9	13.0	10.9	9.5	8.3	7.0	6.3	5.9	5.2
22.5	23.5	23.5	23.4	21.5	19.0	16.8	14.5	12.1	10.6	9.1	7.4	6.5	5.9	5.2
25.0	25.4	25.7	25.5	24.3	21.8	19.0	16.3	13.8	12.2	10.1	8.3	7.6	6.5	6.7
27.5	27.2	27.5	27.5	27.1	24.6	21.5	18.5	15.6	13.6	11.7	9.3	8.4	7.2	6.9
30.0	28.5	28.9	29.3	29.4	26.6	23.5	20.2	17.4	15.0	12.7	10.0	8.9	7.7	7.2
32.5	29.3	30.2	30.7	31.2	29.1	25.3	21.6	18.6	16.0	13.5	10.7	9.3	7.9	7.7
35.0	30.6	31.3	32.5	33.5	31.4	27.4	23.4	19.9	17.2	14.5	11.4	9.8	8.3	8.0
37.5	31.3	32.5	33.7	35.2	33.4	29.3	24.9	21.4	18.4	15.3	12.0	10.1	8.5	8.4
40.0	32.3	33.5	35.0	37.3	35.6	31.0	26.3	22.7	19.5	16.1	12.5	10.5	8.9	8.5
42.5	33.3	34.5	36.2	39.1	37.6	33.0	28.1	23.8	20.5	17.1	13.2	11.3	9.4	8.9
45.0	34.0	35.9	37.7	40.8	39.7	34.5	29.7	25.4	21.7	18.0	13.9	11.7	9.4	9.1
47.5	34.9	36.7	38.8	42.6	41.6	36.2	31.1	26.5	22.8	18.7	14.4	12.0	9.6	9.2
50.0	35.6	37.5	39.7	44.2	43.4	38.0	32.2	27.7	23.8	19.4	14.7	12.3	9.8	9.3
52.5	36.5	38.3	40.9	45.5	45.0	39.4	33.8	28.7	24.6	20.2	15.2	12.6	9.8	9.1
55.0	37.5	39.2	41.8	47.3	46.8	40.7	34.8	29.8	25.5	20.9	15.5	13.0	10.1	9.3
57.5	38.0	40.2	42.8	48.8	48.4	42.1	36.1	30.8	26.4	21.5	16.2	13.1	10.3	9.4
60.0	38.7	40.7	43.7	49.7	49.6	43.3	37.1	31.7	27.0	21.9	16.3	13.1	10.2	9.2
62.5	39.8	41.5	44.6	51.2	51.1	44.7	38.3	32.8	28.0	22.6	16.9	13.5	10.4	9.2
65.0	40.5	42.8	45.7	52.5	52.6	45.8	39.3	33.5	28.6	22.9	17.1	13.9	10.4	9.4
67.5	41.2	43.3	46.6	53.6	53.8	47.0	40.4	34.4	29.4	23.7	17.4	14.0	10.3	9.2
70.0	42.0	44.2	46.9	54.4	54.7	47.6	40.9	35.0	29.7	23.8	17.4	13.9	10.2	9.0
72.5	42.8	44.8	47.7	55.5	55.8	48.7	41.7	35.7	30.3	24.2	17.7	13.9	10.4	9.0
75.0	43.4	45.1	48.3	55.9	56.5	49.0	42.2	36.2	30.2	24.6	17.5	14.0	10.0	8.7
77.5	44.6	46.3	49.2	56.9	57.5	50.0	42.9	36.8	30.9	24.8	17.8	14.3	10.3	8.8
80.0	44.6	46.5	49.6	57.2	57.4	50.0	43.0	36.5	31.1	24.6	17.8	13.9	10.1	8.7
82.5	45.4	47.5	50.5	58.2	58.5	50.9	43.8	37.5	31.8	25.4	18.2	14.3	10.5	9.1
85.0	45.8	47.8	50.7	58.5	58.5	50.8	43.6	37.5	31.9	25.4	18.2	14.1	10.1	8.8
87.5	46.1	48.1	51.2	59.1	58.9	51.0	44.0	37.9	32.0	25.7	18.2	14.2	10.3	8.8
90.0	46.4	48.1	51.3	59.4	59.3	51.7	44.6	38.1	32.1	25.7	18.4	14.5	10.4	9.0
92.5	45.9	47.9	51.5	59.1	59.3	51.3	44.4	38.0	32.2	25.6	18.2	14.3	10.5	8.9
95.0	45.8	48.2	51.3	59.3	58.9	51.4	44.3	37.8	32.0	25.7	18.2	14.4	10.5	8.9
97.5	45.9	47.7	51.0	58.9	58.8	50.7	43.9	37.6	31.8	25.4	18.2	14.3	10.5	8.8
100.0	45.7	47.7	51.1	59.1	58.5	50.9	43.9	37.8	31.9	25.6	18.2	14.8	10.6	9.1
102.5	45.4	47.4	50.8	58.5	58.1	50.7	43.6	37.6	31.7	25.5	18.4	14.7	10.6	9.0
105.0	44.8	47.0	50.6	58.4	57.8	50.1	43.1	37.2	31.5	25.4	18.5	14.5	10.9	9.2
107.5	44.4	46.7	50.3	58.0	57.1	49.6	43.1	36.9	31.6	25.3	18.5	14.5	10.7	9.3
110.0	43.7	46.2	49.7	56.9	56.2	48.8	42.0	36.6	30.8	25.0	18.3	14.5	10.8	9.4
112.5	43.2	45.8	49.2	56.3	55.4	48.0	41.6	36.1	30.5	24.7	18.0	14.5	11.0	9.6
115.0	42.7	45.1	48.9	55.3	54.3	47.1	40.7	35.3	30.1	24.5	17.9	14.5	11.3	9.7
117.5	42.2	44.6	48.0	54.2	52.9	45.9	39.7	34.6	29.6	24.0	17.7	14.2	11.1	9.6
120.0	41.3	44.0	47.1	53.3	51.7	44.9	38.9	33.8	29.0	23.5	17.5	14.2	11.2	9.8
122.5	40.8	43.4	46.6	51.9	50.3	43.9	37.9	32.7	28.3	23.0	17.4	14.2	11.2	9.8
125.0	39.5	42.3	45.3	50.2	48.4	42.0	36.3	31.6	27.0	22.2	16.4	13.6	10.7	9.3
127.5	39.5	41.9	44.7	49.3	47.2	41.3	36.0	31.4	26.9	22.1	16.9	13.8	11.2	10.0
130.0	38.9	40.9	43.4	47.6	45.4	39.5	34.5	30.2	25.8	21.1	16.3	13.4	11.0	9.9
132.5	38.0	40.2	42.6	46.0	43.7	38.2	33.4	29.2	25.0	20.6	16.0	13.1	11.2	9.8
135.0	37.0	39.4	41.3	44.2	41.8	36.6	31.8	27.8	23.9	19.9	15.1	12.9	10.7	9.8
137.5	36.0	38.0	39.8	42.1	39.7	34.8	30.3	26.7	23.0	19.0	14.6	12.3	10.3	9.3
140.0	35.1	37.0	38.7	40.0	37.5	32.9	28.9	25.2	21.9	18.2	14.2	11.9	10.3	9.4
142.5	34.3	35.3	36.8	37.8	35.1	30.5	26.9	23.5	20.4	16.9	13.2	11.1	9.5	8.8
145.0	33.2	34.4	35.5	36.0	33.0	29.0	25.5	22.5	19.5	16.3	13.0	10.9	9.5	8.8
147.5	32.2	33.2	33.7	33.6	30.7	26.8	23.7	21.0	18.2	15.3	12.1	10.4	9.2	8.1

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HUBBELL
Lighting

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

REPORT NUMBER: 19.01537
ISSUE DATE: 09/04/19
PREPARED FOR: PROGRESS
CATALOG NUMBER: P710080-031-30

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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
150.0	31.0	31.9	32.2	31.5	28.5	24.9	22.2	19.6	17.0	14.5	11.5	10.0	9.0	8.1
152.5	29.6	30.2	30.4	28.9	25.9	23.0	20.2	18.2	15.6	13.4	10.9	9.4	8.5	7.6
155.0	28.0	28.3	28.1	26.2	23.4	20.9	18.3	16.3	14.3	12.1	10.1	8.8	8.0	7.1
157.5	26.4	26.0	25.3	23.4	20.8	18.4	16.5	14.8	12.9	11.0	9.0	8.1	7.3	6.5
160.0	24.3	23.7	22.7	20.8	18.6	16.8	14.6	13.4	11.7	9.8	8.3	7.7	6.9	6.2
162.5	21.5	20.7	19.7	18.0	16.3	14.5	13.1	11.8	10.6	9.0	7.8	7.2	6.7	6.0
165.0	17.9	17.0	16.4	15.2	13.8	12.1	11.0	9.7	8.8	7.7	6.7	6.3	5.7	5.2
167.5	14.5	13.7	13.2	12.1	11.0	10.1	9.1	8.2	7.5	6.4	5.8	5.2	4.9	4.5
170.0	10.6	10.1	9.8	9.0	8.3	7.5	6.9	6.3	5.7	5.0	4.4	4.2	3.8	3.2
172.5	6.2	6.1	5.8	5.5	5.1	4.2	3.9	3.6	3.0	2.4	2.3	1.8	1.4	1.2
175.0	0.7	0.8	0.7	0.5	0.4	0.6	0.7	0.6	0.7	0.6	0.4	0.5	0.5	0.5
177.5	0.1	0.4	0.4	0.2	0.3	0.6	0.3	0.2	0.4	0.2	0.2	0.2	0.3	0.3
180.0	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



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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	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
2.5	0.9	0.9	0.9	0.9	0.6	0.8	0.8	0.7	0.8	0.8	0.7	0.8	0.8
5.0	1.2	1.1	1.1	1.3	1.3	1.2	1.2	1.2	1.3	1.1	1.2	1.0	1.1
7.5	2.2	1.9	1.9	1.8	1.7	1.9	1.9	2.0	2.0	1.9	2.0	1.8	2.1
10.0	3.0	2.6	2.5	2.6	2.7	2.5	2.7	2.7	2.6	2.6	2.7	2.7	2.7
12.5	3.3	3.2	3.2	3.2	3.0	3.4	3.2	3.3	3.1	3.0	3.0	3.0	3.0
15.0	4.1	4.2	4.2	4.1	4.3	4.2	4.1	4.0	4.0	3.8	3.9	3.8	3.7
17.5	5.2	5.1	5.2	5.2	5.2	5.2	4.9	5.0	4.6	4.5	4.3	4.2	4.3
20.0	5.4	5.3	5.4	5.5	5.4	5.5	5.1	5.1	4.9	4.5	4.5	4.5	4.4
22.5	5.7	5.7	5.9	5.9	6.0	5.8	5.5	5.2	5.0	4.5	4.4	4.2	3.9
25.0	6.3	6.6	6.7	6.8	6.6	6.3	5.9	5.6	5.4	4.9	4.7	4.2	4.4
27.5	7.1	7.3	7.6	7.5	7.5	6.8	6.2	6.0	5.6	5.1	4.7	4.7	4.4
30.0	7.7	7.8	7.9	7.8	7.3	6.9	6.2	5.8	5.5	4.9	4.6	4.3	4.0
32.5	7.9	8.2	8.2	7.8	7.2	6.4	5.7	5.4	5.0	4.5	4.3	3.8	3.7
35.0	8.1	8.5	8.4	7.7	7.0	6.3	5.5	5.2	4.8	4.3	3.9	3.7	3.3
37.5	8.6	8.6	8.4	7.8	6.8	6.0	5.1	4.7	4.4	3.7	3.4	3.0	3.0
40.0	8.9	8.9	8.5	7.6	6.6	5.6	4.8	4.3	4.0	3.4	2.9	2.9	2.4
42.5	9.0	8.8	8.4	7.6	6.5	5.4	4.4	4.1	3.8	3.1	2.7	2.6	2.6
45.0	9.3	9.2	8.5	7.5	6.5	5.1	4.3	3.7	3.4	3.1	2.6	2.4	2.4
47.5	9.4	9.3	8.5	7.5	6.2	5.0	4.1	3.6	3.4	2.7	2.4	2.4	2.1
50.0	9.4	9.0	8.3	7.3	5.9	4.9	3.9	3.4	2.9	2.4	2.4	2.1	1.9
52.5	9.3	8.8	8.1	7.0	5.7	4.7	3.6	3.2	2.8	2.5	2.1	1.9	1.7
55.0	9.2	8.8	8.1	7.1	5.7	4.5	3.7	3.3	2.7	2.3	2.0	1.6	1.8
57.5	9.3	8.7	8.1	6.9	5.5	4.5	3.5	3.0	2.7	2.3	1.9	1.9	1.4
60.0	9.1	8.4	7.7	6.7	5.6	4.2	3.3	2.8	2.4	1.9	1.6	1.2	1.2
62.5	9.2	8.6	7.7	6.8	5.5	4.3	3.3	2.8	2.4	1.8	1.6	1.5	1.3
65.0	9.1	8.5	7.9	6.7	5.4	4.3	3.3	2.9	2.3	1.6	1.4	1.1	1.1
67.5	8.8	8.3	7.8	6.8	5.5	4.1	3.1	2.7	2.1	1.5	1.1	1.0	1.1
70.0	8.7	8.1	7.6	6.5	5.3	4.1	2.8	2.5	2.0	1.3	1.1	1.0	1.0
72.5	8.7	8.0	7.5	6.7	5.2	4.1	2.9	2.2	2.1	1.4	1.1	0.9	0.8
75.0	8.4	7.9	7.4	6.3	5.1	3.9	2.7	2.1	1.4	1.1	0.8	0.6	0.6
77.5	8.6	8.1	7.5	6.6	5.2	3.9	2.9	2.1	1.8	1.2	1.0	0.9	0.7
80.0	8.1	7.7	7.2	6.1	4.8	3.6	2.5	1.9	1.5	0.8	0.6	0.4	0.1
82.5	8.8	8.4	7.5	6.7	5.3	4.0	2.7	2.4	1.8	1.3	1.0	0.9	0.6
85.0	8.4	7.9	7.1	6.3	5.2	3.8	2.6	2.0	1.5	1.0	0.7	0.5	0.3
87.5	8.4	7.9	7.5	6.4	5.1	3.7	2.5	1.9	1.5	0.9	0.6	0.5	0.4
90.0	8.8	8.1	7.5	6.6	5.2	3.9	2.7	2.1	1.6	1.0	0.9	0.7	0.5
92.5	8.4	7.9	7.3	6.5	5.1	3.6	2.4	1.9	1.4	0.8	0.2	0.3	0.1
95.0	8.4	7.9	7.5	6.6	4.9	3.6	2.4	1.8	1.5	0.8	0.5	0.3	0.1
97.5	8.3	7.8	7.4	6.1	4.8	3.8	2.2	1.7	1.1	0.8	0.4	0.3	0.1
100.0	8.7	7.9	7.4	6.6	5.3	3.7	2.6	1.9	1.5	1.0	0.5	0.4	0.4
102.5	8.7	8.2	7.5	6.5	5.2	3.8	2.7	2.0	1.8	0.8	0.7	0.4	0.4
105.0	9.0	8.2	7.6	6.6	5.1	3.7	2.6	2.0	1.6	1.1	0.7	0.6	0.4
107.5	9.1	8.4	7.6	6.6	5.3	4.0	2.6	2.0	1.6	1.3	0.9	0.6	0.7
110.0	9.1	8.3	7.4	6.4	5.0	3.8	2.7	1.9	1.5	1.2	0.7	0.6	0.4
112.5	9.1	8.5	7.7	6.6	5.2	4.2	2.7	2.1	1.8	1.2	0.8	0.9	0.6
115.0	9.4	8.7	7.8	6.6	5.1	4.1	2.9	2.1	1.9	1.4	0.9	0.7	0.8
117.5	9.2	8.6	7.7	6.3	5.2	4.0	2.6	2.2	1.9	1.3	1.0	0.9	0.7
120.0	9.4	8.7	7.8	6.6	5.2	4.0	3.0	2.3	2.1	1.5	1.0	0.9	0.8
122.5	9.6	8.9	7.8	6.7	5.4	4.2	2.9	2.4	2.2	1.5	1.2	1.0	0.8
125.0	9.2	8.6	7.6	6.2	4.9	3.8	2.6	2.2	2.0	1.5	0.9	0.5	0.7
127.5	9.9	9.2	8.3	7.3	5.8	4.7	3.5	2.8	2.6	2.2	1.6	1.2	1.0
130.0	9.8	9.1	8.4	7.3	5.9	4.7	3.6	2.8	2.7	2.1	1.7	1.3	1.2
132.5	9.7	9.5	8.7	7.3	6.0	4.9	3.6	3.1	2.9	2.4	1.6	1.6	1.5
135.0	9.8	9.3	8.6	7.5	6.3	4.9	3.8	3.3	3.1	2.3	1.8	1.7	1.5
137.5	9.5	9.2	8.8	7.7	6.3	5.3	4.1	3.6	3.1	2.6	2.0	1.7	1.6
140.0	9.5	9.3	8.9	8.0	6.8	5.6	4.4	3.8	3.3	2.8	2.2	2.1	1.8
142.5	8.9	8.8	8.4	7.7	6.6	5.6	4.4	3.8	3.5	2.8	2.2	2.0	1.7
145.0	9.0	8.8	9.0	8.0	7.2	6.1	5.0	4.5	3.9	3.5	2.8	2.3	2.2
147.5	8.5	8.5	8.5	8.0	7.2	6.3	5.2	4.5	4.1	3.5	3.0	2.6	2.5

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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	8.3	8.3	8.2	7.8	7.3	6.2	5.5	5.1	4.7	4.0	3.6	3.1	3.1
152.5	7.8	7.7	7.7	7.4	7.1	6.3	5.7	5.2	4.8	4.4	3.6	3.0	3.2
155.0	7.1	7.2	7.1	6.9	6.6	6.1	5.4	5.1	4.9	4.4	3.8	3.4	3.7
157.5	6.5	6.4	6.5	6.5	6.0	5.6	5.1	5.2	4.7	4.4	3.7	3.6	3.6
160.0	6.1	6.1	6.0	5.7	5.7	5.5	5.0	5.0	4.8	4.3	3.7	3.6	4.0
162.5	5.7	5.5	5.6	5.4	5.2	5.2	4.8	4.7	4.4	4.0	3.5	3.8	4.2
165.0	5.0	4.8	4.8	4.6	4.6	4.1	3.7	3.8	3.5	3.2	3.0	3.2	3.6
167.5	4.1	3.7	3.4	3.4	3.4	3.3	2.8	2.7	2.6	2.4	1.9	1.4	1.4
170.0	2.6	2.1	1.7	1.3	0.8	0.4	0.3	0.2	0.1	0.0	0.1	0.0	0.0
172.5	0.9	0.6	0.2	0.3	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0
175.0	0.4	0.4	0.5	0.4	0.3	0.3	0.5	0.5	0.4	0.4	0.3	0.3	0.2
177.5	0.2	0.4	0.2	0.4	0.2	0.3	0.2	0.3	0.4	0.1	0.3	0.3	0.2
180.0	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



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	0
5- 10	0
10- 15	1
15- 20	2
20- 25	3
25- 30	4
30- 35	6
35- 40	7
40- 45	9
45- 50	11
50- 55	13
55- 60	15
60- 65	17
65- 70	19
70- 75	20
75- 80	21
80- 85	22
85- 90	23
90- 95	23
95-100	22
100-105	22
105-110	20
110-115	19
115-120	17
120-125	15
125-130	13
130-135	11
135-140	9
140-145	7
145-150	6
150-155	4
155-160	3
160-165	2
165-170	1
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	0
0- 20	3
0- 30	10
0- 40	23
0- 50	43
0- 60	72
0- 70	108
0- 80	149
0- 90	194
0-100	239
0-110	281
0-120	317
0-130	346
0-140	367
0-150	380
0-160	387
0-170	390
0-180	391



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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	107	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	92	85	79	73	73	84	78	72	67	64	60	56	52	48	45	40	38	35	30
2	81	71	62	55	55	74	65	57	51	53	47	42	42	37	33	32	29	25	20
3	73	60	51	43	43	66	55	47	40	45	38	33	35	30	26	26	23	19	15
4	66	52	43	35	35	59	48	39	32	39	32	26	30	25	21	23	19	15	11
5	60	46	36	29	29	54	42	33	26	34	27	22	27	21	17	20	16	12	9
6	55	41	31	24	24	49	37	28	22	30	23	18	24	18	14	18	13	10	7
7	50	36	27	21	21	45	33	25	19	27	20	15	21	16	12	16	12	8	6
8	46	33	24	18	18	42	30	22	16	24	18	13	19	14	10	14	10	7	5
9	43	29	21	15	15	39	27	19	14	22	16	11	17	12	9	13	9	6	4
10	40	27	19	14	14	36	25	17	12	20	14	10	16	11	8	12	8	5	3

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
19.01537



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Date
9/4/2019

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: 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.