

Project Number
19.01082



HUBBELL
Lighting

Date
6/17/2019

Photometric Test Report

Lab 1
Sphere

Test Sample Description

Catalog Number: P560132-108-30

Description: 1-LT. LED Outdoor Wall Sconce w/ Etched Refractor

Photometry

Test Method: IES LM-31-95
IES LM-79-08 §10

Preburn Time: 0:10

Time To Stabilize: 3:00

Total Operating Time: 4:20

Input Voltage (Volts): 120.3

Input Current (Amps): 0.079

Input Wattage (Watts): 9.5

Ambient Temp (°C): 26

PF @ 120V: 0.992

THD @ 120V (%): 12.3

Sphere

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

Preburn Time: 0:01

Time To Stabilize: 0:38

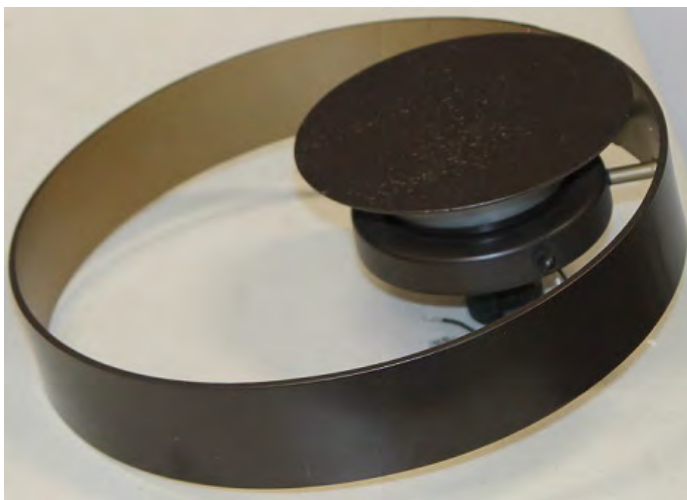
Total Operating Time: 0:39

Input Voltage (Volts): 120.1

Input Current (Amps): 0.079

Input Wattage (Watts): 9.4

Ambient Temp (°C): 24



Hubbell Lighting, Inc.

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

Checked (sphere): M. ELLMANN / B. LEE
Checked (photometry): D. ROBBINS
Approved: P. McCARTHY

NVLAP
TESTING
NVLAP LAB CODE: 201003-0

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



HUBBELL Lighting

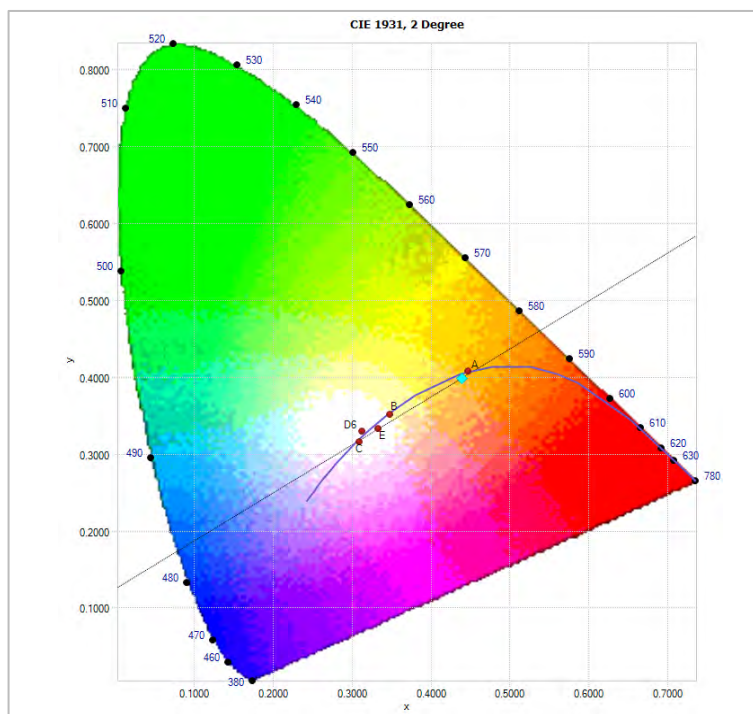
Lamp Cat#: 93070270-3130

Lamp Desc: 20 - Nichia 3000K LEDs

Efficacy: 11.3 LPW

S/P Ratio: 1.4 LM/LM

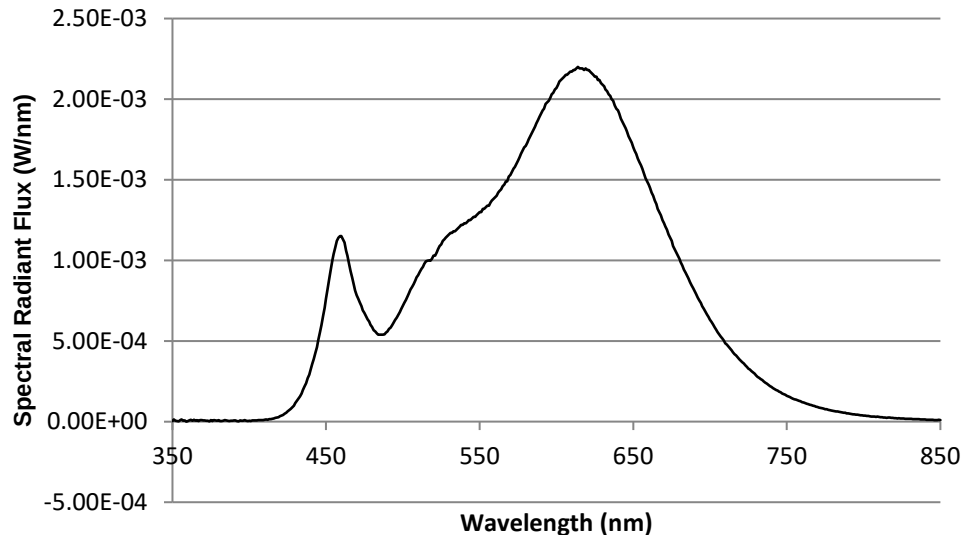
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	0.37	watts
$\Phi(v)$	106	lumens
$\Phi(v')$	150	lm'
Chrom x	0.439	
Chrom y	0.3992	
Chrom u	0.254	
Chrom v	0.3465	
Duv	0.0025	
Chrom u'	0.254	
Chrom v'	0.5197	
CCT	2923	K
Purity	51.6	%
λ (dom)	584.0	nm
FWHM	151.3	nm
λ (peak)	614.3	nm
λ (center)	600.2	nm
λ (centroid)	593.1	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.002240851	
Correlation	0.0054	
R1	93.1	
R2	98.4	
R3	96.6	
R4	91.0	
R5	93.0	
R6	96.1	
R7	88.3	
R8	77.2	
R9	52.1	
R10	95.1	
R11	92.4	
R12	81.6	
R13	95.1	
R14	99.3	

Spectral Distribution of Radiant Flux





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LUMINAIRE: 1-LT. LED Outdoor Wall Sconce w/ Etched Refractor

LAMP: 20- Nichia 34000K LEDs

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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CANDELA DISTRIBUTION

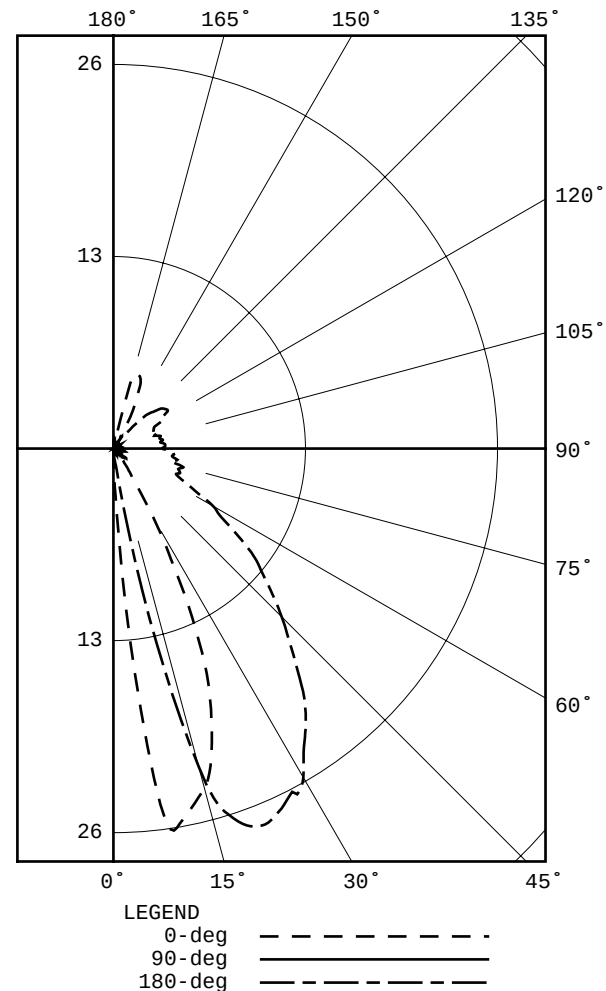
	0.0	45.0	90.0	135.0	180.0
0	0.2	0.2	0.2	0.2	0.2
5	13.1	7.1	0.1	0.2	0.5
15	23.8	25.8	0.4	6.3	22.3
25	12.6	21.0	0.0	25.1	26.9
35	1.8	12.6	0.2	26.9	22.7
45	0.9	4.1	0.3	25.2	16.1
55	0.6	1.5	0.5	22.4	10.3
65	0.0	0.4	0.2	19.0	5.3
75	0.4	0.9	0.7	17.6	4.9
85	0.0	0.6	0.5	15.7	4.1
90	0.0	0.5	0.3	15.1	3.3
95	0.0	0.5	0.5	14.8	3.5
105	0.0	0.5	0.3	14.2	3.3
115	0.1	0.6	0.4	11.7	3.0
125	0.6	0.8	0.3	6.2	4.5
135	0.4	2.0	0.2	1.7	3.3
145	1.0	6.3	0.0	0.8	1.1
155	3.6	6.4	0.0	0.4	0.4
165	5.1	3.3	0.1	0.7	0.4
175	0.0	0.1	0.1	0.1	0.1
180	0.0	0.0	0.0	0.0	0.0

FLUX

0.5
4.1
7.8
9.1
9.4
9.3
8.2
7.7
7.0
6.3
5.4
4.6
3.5
2.1
1.4
1.1
0.4
0.0

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		12.4	14.1
0- 40		21.6	24.5
0- 60		40.2	45.7
0- 90		63.2	71.8
90-120		16.3	18.5
90-130		19.8	22.5
90-150		23.2	26.4
90-180		24.8	28.2
0-180		88.0	100.0

EFFICACY = 9.3 lm/W
CIE TYPE - SEMI-DIRECT
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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LUMINOUS DIAMETER: 3.000
HEIGHT OF SIDE : 1.000

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 90-DEG	AVERAGE 180-DEG
45	196.	65.	3505.
55	143.	119.	2452.
65	0.	54.	1440.
75	131.	230.	1607.
85	0.	215.	1763.



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5
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	3.2	3.8	3.8	3.4	3.8	3.4	3.2	3.3	3.6	2.8	3.1	2.7	3.1	2.3
5.0	13.1	13.3	12.4	12.9	12.2	12.2	12.2	11.7	11.5	11.2	11.3	10.6	10.0	9.5
7.5	24.3	24.3	24.3	24.3	24.1	23.9	23.9	22.9	22.9	22.4	21.8	20.1	20.2	18.7
10.0	25.8	26.0	25.9	26.0	26.0	26.1	26.0	26.1	26.0	26.3	26.3	26.3	26.2	26.0
12.5	24.8	24.7	24.7	24.8	24.9	25.0	25.0	25.1	25.1	25.2	25.3	25.4	25.5	25.6
15.0	23.8	23.9	23.9	23.9	24.0	23.9	24.1	24.1	24.2	24.4	24.6	24.8	24.9	25.0
17.5	22.0	22.0	22.0	22.2	22.0	22.4	22.5	22.6	22.7	23.0	23.1	23.4	23.3	23.9
20.0	19.4	19.4	19.6	19.7	19.8	20.0	20.2	20.5	20.7	21.0	21.1	21.6	21.9	22.2
22.5	16.5	16.4	16.5	16.7	16.8	17.0	17.3	17.8	18.0	18.4	18.8	19.6	19.8	20.4
25.0	12.6	12.5	12.5	12.9	13.1	13.6	13.7	14.3	14.8	15.4	16.0	16.6	17.1	18.0
27.5	8.4	8.3	8.6	8.7	9.1	9.5	9.9	10.3	11.1	11.9	12.4	13.4	14.3	15.1
28.0	7.9	7.8	7.9	8.3	8.7	9.0	9.6	9.9	10.6	11.4	12.0	13.1	13.7	14.8
30.0	5.4	5.2	5.5	5.5	5.7	6.2	6.4	7.2	7.6	8.5	9.0	10.2	11.0	12.3
32.5	2.8	2.6	2.8	2.8	3.1	3.2	3.4	3.8	4.3	4.9	5.7	6.6	7.3	8.6
35.0	1.8	1.5	1.6	1.7	1.8	1.9	2.1	2.3	2.6	2.9	3.3	4.0	4.7	5.7
37.5	1.2	1.2	1.1	1.3	1.3	1.3	1.4	1.4	1.7	1.8	2.1	2.5	3.0	3.8
40.0	0.9	1.0	0.9	1.0	0.8	1.0	0.9	1.2	1.1	1.4	1.3	1.6	1.7	2.4
42.5	0.5	0.8	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	1.1	1.0	1.3	1.4
45.0	0.9	1.0	1.0	0.9	1.0	0.9	0.8	1.0	0.8	1.0	0.9	1.0	1.1	1.3
47.5	0.5	0.7	0.7	0.7	0.6	0.5	0.8	0.7	0.8	0.8	0.8	0.7	0.7	0.9
50.0	0.8	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
52.5	1.1	1.0	1.0	1.1	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.2	1.1	1.2
55.0	0.6	0.8	1.0	1.0	1.0	0.9	1.1	1.0	1.0	1.0	1.0	0.9	1.1	1.0
57.5	0.6	0.3	0.3	0.2	0.4	0.5	0.4	0.3	0.4	0.5	0.3	0.4	0.3	0.5
60.0	0.6	0.8	0.6	0.5	0.8	0.7	0.7	0.6	0.7	0.7	0.8	0.9	0.9	0.8
62.5	0.7	0.3	0.3	0.4	0.2	0.3	0.3	0.5	0.4	0.5	0.5	0.5	0.5	0.7
65.0	0.0	0.1	0.3	0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.3	0.2	0.3	0.2
67.5	0.0	0.1	0.0	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.2
70.0	0.4	0.4	0.4	0.2	0.4	0.2	0.3	0.3	0.4	0.4	0.5	0.4	0.5	0.5
72.5	0.1	0.3	0.4	0.3	0.4	0.3	0.2	0.3	0.4	0.3	0.3	0.4	0.2	0.4
75.0	0.4	0.7	0.6	0.6	0.5	0.7	0.6	0.8	0.6	0.7	0.7	0.6	0.7	0.8
77.5	0.0	0.0	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
80.0	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.5	0.4	0.5	0.3	0.5	0.4	0.5
82.5	0.2	0.3	0.1	0.2	0.1	0.2	0.2	0.1	0.2	0.2	0.2	0.3	0.2	0.2
85.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.4	0.3	0.4	0.4	0.5
87.5	0.0	0.4	0.2	0.3	0.2	0.2	0.3	0.2	0.2	0.2	0.5	0.3	0.4	0.2
90.0	0.0	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2
92.5	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.1	0.1	0.2	0.1	0.2	0.2
95.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.2	0.3	0.1	0.3	0.3	0.4
97.5	0.4	0.1	0.2	0.0	0.2	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
100.0	0.1	0.4	0.5	0.5	0.5	0.4	0.4	0.5	0.5	0.4	0.5	0.3	0.5	0.5
102.5	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.2	0.2	0.3	0.2	0.4
105.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1	0.0	0.2	0.2	0.1	0.2	0.3	0.3
107.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.2	0.0	0.2
110.0	0.0	0.4	0.3	0.3	0.4	0.4	0.3	0.3	0.4	0.4	0.4	0.3	0.5	0.4
112.5	0.4	0.2	0.2	0.3	0.1	0.2	0.2	0.2	0.2	0.2	0.4	0.2	0.4	0.5
115.0	0.1	0.3	0.0	0.2	0.2	0.3	0.3	0.2	0.5	0.3	0.4	0.3	0.6	0.4
117.5	0.4	0.2	0.4	0.2	0.2	0.2	0.2	0.4	0.3	0.4	0.3	0.4	0.4	0.5
120.0	0.4	0.6	0.5	0.5	0.6	0.6	0.5	0.6	0.6	0.6	0.6	0.7	0.8	0.8
122.5	0.2	0.1	0.2	0.1	0.3	0.4	0.2	0.2	0.3	0.4	0.3	0.3	0.4	0.4
125.0	0.6	0.4	0.4	0.3	0.4	0.3	0.5	0.4	0.4	0.5	0.6	0.6	0.5	0.5
127.5	0.1	0.4	0.5	0.4	0.5	0.4	0.5	0.4	0.5	0.5	0.6	0.6	0.7	0.6
130.0	0.3	0.2	0.3	0.2	0.2	0.3	0.2	0.4	0.2	0.5	0.3	0.4	0.2	0.3
132.5	0.3	0.2	0.2	0.4	0.3	0.3	0.4	0.2	0.3	0.2	0.3	0.2	0.3	0.3
135.0	0.4	0.4	0.2	0.1	0.2	0.4	0.4	0.3	0.2	0.3	0.3	0.3	0.5	0.6
137.5	0.7	0.4	0.5	0.3	0.3	0.4	0.4	0.5	0.6	0.6	0.5	0.6	0.7	0.7
140.0	0.2	0.2	0.3	0.3	0.3	0.2	0.2	0.4	0.4	0.5	0.3	0.6	0.5	0.9
142.5	0.3	0.2	0.2	0.3	0.4	0.4	0.3	0.4	0.6	0.5	0.7	0.8	0.9	1.2
145.0	1.0	0.7	0.6	0.8	0.7	0.8	0.9	0.9	0.9	1.1	1.4	1.6	2.0	2.4

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CANDELA DISTRIBUTION LATERAL ANGLE														
	0.0	2.5	5.0	7.5	10.0	12.5	15.0	17.5	20.0	22.5	25.0	27.5	30.0	32.5
147.5	0.8	0.9	0.8	0.8	0.8	1.0	1.3	1.2	1.4	1.6	2.0	2.3	2.9	3.4
150.0	1.3	1.6	1.6	1.4	1.7	1.7	1.9	2.1	2.5	2.8	3.1	3.6	4.0	4.6
152.5	2.7	2.7	2.9	3.0	3.1	3.2	3.4	3.6	3.9	4.2	4.5	4.9	5.3	5.7
155.0	3.6	3.7	3.6	3.7	3.8	4.0	4.2	4.2	4.6	4.8	5.1	5.3	5.6	5.8
157.5	4.8	4.7	4.8	4.9	5.0	5.0	5.2	5.3	5.3	5.6	5.7	5.9	5.9	6.1
160.0	5.2	5.2	5.2	5.1	5.2	5.3	5.4	5.5	5.4	5.4	5.5	5.5	5.5	5.4
162.5	5.3	5.4	5.4	5.3	5.4	5.3	5.3	5.3	5.2	5.3	5.2	5.2	5.0	5.1
165.0	5.1	5.1	5.2	5.1	5.0	5.0	4.9	4.8	4.3	4.0	3.7	3.7	3.6	3.6
167.5	0.2	0.4	0.4	0.8	1.1	1.3	1.4	1.6	1.5	1.7	1.7	1.7	1.7	1.9
170.0	0.0	0.4	0.4	0.5	0.5	0.4	0.4	0.2	0.3	0.4	0.3	0.4	0.4	0.6
172.5	0.0	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.1	0.1
175.0	0.0	0.1	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2
177.5	0.6	0.2	0.4	0.3	0.2	0.3	0.3	0.1	0.2	0.1	0.3	0.2	0.3	0.1
180.0	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	0.0



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CANDELA DISTRIBUTION
LATERAL ANGLE

	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5
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	2.6	2.1	2.1	1.6	1.7	1.4	1.2	1.1	0.9	0.7	0.4	0.4	0.1	0.0
5.0	9.3	8.4	8.0	7.4	7.1	6.6	6.2	5.4	4.9	4.4	3.8	3.3	2.6	2.3
7.5	18.1	17.1	15.9	15.0	14.0	13.0	11.8	10.9	9.7	8.7	7.5	6.6	5.7	4.8
10.0	26.0	25.5	25.1	24.0	23.1	21.3	19.5	17.9	16.0	14.9	12.8	11.6	9.8	8.3
12.5	25.6	25.9	25.8	26.2	26.2	26.0	25.6	24.7	23.1	21.1	18.6	16.3	14.1	12.2
15.0	25.2	25.4	25.5	25.6	25.8	26.0	26.2	26.4	26.3	25.7	24.4	22.0	18.9	16.1
17.5	23.9	24.3	24.4	24.7	24.9	25.3	25.4	25.8	25.9	26.2	26.2	25.6	23.8	20.7
20.0	22.6	23.0	23.3	23.7	23.9	24.4	24.7	25.0	25.3	25.6	25.8	26.2	25.8	24.6
22.5	20.7	21.2	21.7	22.3	22.6	23.1	23.6	24.1	24.6	24.9	25.4	25.5	25.9	25.7
25.0	18.5	19.3	19.7	20.5	21.0	21.8	22.3	22.9	23.4	23.9	24.5	24.9	25.3	25.7
27.5	15.9	17.0	17.6	18.6	19.3	20.3	21.1	21.8	22.6	23.2	23.9	24.4	25.0	25.4
28.0	15.6	16.6	17.5	18.5	19.4	20.3	21.1	21.9	22.6	23.4	24.0	24.5	25.2	25.6
30.0	13.3	14.3	15.6	16.7	17.8	18.9	19.9	20.7	21.6	22.6	23.3	24.0	24.7	25.2
32.5	9.6	11.0	12.3	13.8	15.0	16.5	17.7	18.9	20.1	21.1	22.0	23.0	23.7	24.4
35.0	6.7	8.3	9.4	11.2	12.6	14.2	15.7	17.3	18.7	20.0	21.2	22.0	23.2	23.9
37.5	4.5	5.6	6.8	8.5	10.2	11.8	13.6	15.4	17.0	18.6	20.0	21.2	22.3	23.4
40.0	2.7	3.7	4.7	6.1	7.5	9.5	11.4	13.1	15.1	17.0	18.7	20.1	21.5	22.6
42.5	1.7	2.3	3.1	4.3	5.5	7.0	9.0	11.1	13.1	15.1	17.1	18.9	20.6	21.9
45.0	1.4	1.9	2.2	3.0	4.1	5.6	7.3	9.4	11.4	13.7	15.8	17.7	19.9	21.4
47.5	1.0	1.3	1.5	2.1	2.8	4.0	5.5	7.4	9.5	11.9	14.2	16.5	18.6	20.5
50.0	1.0	1.1	1.3	1.7	2.1	3.1	4.4	6.2	8.1	10.5	13.0	15.4	17.8	19.7
52.5	1.1	1.3	1.4	1.7	1.9	2.6	3.6	5.2	7.0	9.4	11.9	14.4	17.0	19.2
55.0	1.1	1.1	1.2	1.3	1.5	2.0	2.8	4.1	5.8	7.9	10.5	13.1	15.7	18.2
57.5	0.4	0.6	0.5	0.8	0.8	1.1	1.7	2.8	4.2	6.2	8.9	11.3	14.1	16.8
60.0	0.9	0.8	1.0	1.0	1.1	1.3	1.6	2.4	3.7	5.6	8.1	10.8	13.7	16.4
62.5	0.4	0.6	0.5	0.7	0.7	0.9	1.1	1.8	3.0	4.7	6.7	9.6	12.6	15.3
65.0	0.4	0.3	0.4	0.4	0.4	0.6	0.9	1.3	2.2	3.8	5.9	8.6	11.5	14.5
67.5	0.2	0.3	0.1	0.4	0.3	0.5	0.6	1.1	1.7	3.1	5.2	7.6	10.7	13.7
70.0	0.5	0.6	0.5	0.7	0.6	0.7	0.9	1.2	1.8	3.1	5.0	7.5	10.5	13.6
72.5	0.4	0.4	0.5	0.5	0.4	0.7	0.7	1.0	1.5	2.7	4.3	6.8	9.9	12.9
75.0	0.7	0.9	0.9	0.9	0.9	0.9	1.0	1.2	1.7	2.9	4.4	6.8	10.0	13.0
77.5	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.8	1.1	2.1	3.6	5.9	8.9	12.3
80.0	0.5	0.8	0.6	0.9	0.6	0.7	0.7	1.0	1.3	2.2	3.7	6.0	9.0	12.3
82.5	0.3	0.3	0.4	0.4	0.5	0.5	0.7	0.8	1.0	1.9	3.3	5.6	8.6	11.9
85.0	0.4	0.5	0.5	0.6	0.6	0.7	0.8	0.8	1.2	2.0	3.2	5.5	8.6	12.0
87.5	0.4	0.4	0.5	0.5	0.5	0.6	0.6	0.9	0.9	1.9	3.0	5.4	8.5	12.0
90.0	0.2	0.4	0.2	0.3	0.5	0.4	0.3	0.6	0.9	1.5	2.8	5.1	8.3	11.8
92.5	0.2	0.2	0.2	0.3	0.4	0.5	0.4	0.6	1.0	1.6	3.0	5.2	8.4	12.0
95.0	0.3	0.4	0.4	0.5	0.5	0.5	0.7	0.8	1.1	1.8	3.0	5.4	8.6	12.2
97.5	0.3	0.4	0.5	0.5	0.5	0.6	0.5	0.8	1.0	1.9	3.3	5.6	8.8	12.6
100.0	0.6	0.6	0.7	0.7	0.8	0.8	0.8	1.1	1.3	2.0	3.6	6.1	9.3	13.1
102.5	0.2	0.4	0.3	0.4	0.4	0.4	0.6	0.8	1.1	2.0	3.5	6.0	9.4	13.1
105.0	0.3	0.3	0.6	0.4	0.5	0.5	0.5	0.8	1.1	2.1	3.7	6.3	9.7	13.4
107.5	0.1	0.2	0.3	0.2	0.2	0.4	0.4	0.7	0.9	2.0	3.9	6.6	10.0	13.7
110.0	0.6	0.7	0.7	0.6	0.7	0.6	0.8	1.2	1.5	2.8	4.6	7.5	11.0	14.5
112.5	0.3	0.5	0.4	0.5	0.6	0.6	0.8	1.1	1.7	2.8	4.9	8.0	11.4	14.6
115.0	0.5	0.6	0.5	0.5	0.6	0.7	0.9	1.2	1.9	3.3	5.6	8.7	12.0	15.0
117.5	0.4	0.6	0.6	0.5	0.5	0.8	1.1	1.3	2.2	3.9	6.3	9.4	12.6	15.2
120.0	0.8	0.8	0.9	0.8	0.9	1.1	1.3	1.8	3.1	4.9	7.4	10.5	13.4	15.5
122.5	0.4	0.4	0.4	0.5	0.6	0.9	1.1	1.9	3.2	5.3	7.8	10.8	13.2	14.9
125.0	0.5	0.6	0.5	0.7	0.8	1.0	1.5	2.6	4.1	6.3	9.0	11.6	13.6	14.5
127.5	0.6	0.4	0.7	0.9	1.0	1.3	2.2	3.3	4.9	7.3	9.7	12.0	13.5	13.7
130.0	0.4	0.4	0.5	0.7	1.0	1.5	2.5	4.0	5.8	8.1	10.4	12.1	12.8	12.6
132.5	0.5	0.6	0.7	1.0	1.4	2.1	3.4	4.8	6.8	8.8	10.7	11.7	12.2	11.6
135.0	0.5	0.8	1.0	1.5	2.0	3.0	4.4	6.1	8.0	9.5	10.8	11.4	11.2	10.5
137.5	0.9	1.2	1.5	2.1	3.0	4.2	5.7	7.3	8.8	10.0	10.7	10.8	10.5	9.6
140.0	1.0	1.4	2.0	2.9	3.9	5.1	6.6	7.8	8.9	9.7	9.9	9.6	9.3	8.3
142.5	1.8	2.3	3.2	4.0	5.2	6.3	7.4	8.2	8.8	9.3	9.2	8.8	8.2	7.2
145.0	2.9	3.7	4.5	5.4	6.3	7.3	8.0	8.4	8.8	8.7	8.6	8.1	7.4	6.5

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HUBBELL
Lighting

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

REPORT NUMBER: 19.01082

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ISSUE DATE: 06/17/19

PREPARED FOR: PROGRESS

CATALOG NUMBER: P560132-108-30

	CANDELA DISTRIBUTION LATERAL ANGLE													
	35.0	37.5	40.0	42.5	45.0	47.5	50.0	52.5	55.0	57.5	60.0	62.5	65.0	67.5
147.5	4.2	4.8	5.5	6.2	7.0	7.5	7.9	8.2	8.1	8.0	7.5	6.9	6.3	5.8
150.0	5.1	5.5	6.3	6.7	7.2	7.4	7.5	7.4	7.4	7.0	6.6	6.0	5.6	5.1
152.5	6.1	6.4	6.8	7.0	7.2	7.2	7.1	7.0	6.8	6.5	6.0	5.5	5.1	4.7
155.0	6.0	6.3	6.4	6.4	6.4	6.2	6.1	5.9	5.5	5.3	4.9	4.5	4.2	3.9
157.5	6.1	6.2	6.0	6.0	5.8	5.7	5.4	5.2	4.9	4.7	4.5	4.2	3.8	3.6
160.0	5.4	5.4	5.2	5.1	4.8	4.7	4.5	4.3	4.0	3.8	3.6	3.5	3.3	3.0
162.5	4.8	4.8	4.6	4.5	4.3	4.3	4.1	3.8	3.7	3.5	3.3	3.2	3.1	2.8
165.0	3.6	3.6	3.3	3.4	3.3	3.2	3.1	3.0	3.0	2.9	2.8	2.7	2.5	2.2
167.5	1.7	1.9	1.8	1.9	1.8	1.8	1.8	1.8	1.7	1.7	1.7	1.5	1.3	1.2
170.0	0.5	0.5	0.6	0.7	0.8	0.8	0.8	0.9	0.9	0.8	0.8	0.8	0.7	0.7
172.5	0.2	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.1	0.1
175.0	0.0	0.1	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.1
177.5	0.3	0.3	0.3	0.3	0.2	0.1	0.2	0.2	0.2	0.2	0.4	0.3	0.2	0.2
180.0	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	0.0



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PREPARED FOR: PROGRESS

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CANDELA DISTRIBUTION
LATERAL ANGLE

	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0	95.0	105.0	115.0	125.0	135.0
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	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
5.0	1.6	1.2	0.6	0.3	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.2
7.5	3.9	3.0	2.1	1.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3
10.0	6.8	5.7	4.0	3.1	1.8	0.9	0.1	0.2	0.2	0.1	0.2	0.3	0.8	1.2
12.5	9.8	7.8	6.0	4.5	2.9	1.6	0.4	0.0	0.0	0.0	0.3	0.6	1.1	2.0
15.0	13.5	11.1	8.5	6.3	4.3	2.6	0.9	0.3	0.4	0.5	0.6	1.1	2.1	6.3
17.5	17.1	13.9	10.7	7.9	5.5	3.3	1.3	0.3	0.3	0.2	0.5	1.4	4.0	12.0
20.0	20.6	17.0	13.2	10.1	6.8	4.3	1.9	0.4	0.2	0.2	0.5	1.7	8.2	17.5
22.5	24.1	20.3	15.8	11.9	8.2	4.9	2.3	0.6	0.1	0.2	0.8	2.4	12.2	22.5
25.0	25.4	23.1	18.2	13.7	9.4	5.8	2.7	0.6	0.0	0.1	0.7	3.8	16.3	25.1
27.5	25.7	24.8	20.8	15.8	11.0	6.7	3.3	0.8	0.1	0.2	0.9	6.2	20.2	26.1
28.0	26.0	25.4	21.7	16.6	11.7	7.3	3.7	1.1	0.5	0.5	1.2	6.9	21.1	26.4
30.0	25.9	25.9	23.5	18.2	12.8	8.0	4.1	1.3	0.4	0.4	1.2	9.0	23.3	27.0
32.5	25.0	25.4	24.3	19.6	14.0	8.5	4.4	1.1	0.1	0.2	1.2	10.9	24.5	26.9
35.0	24.7	25.2	25.1	21.4	15.4	9.6	4.9	1.3	0.2	0.3	1.4	13.1	25.5	26.9
37.5	24.1	25.0	25.3	22.7	16.7	10.5	5.3	1.7	0.3	0.2	1.5	15.3	25.9	26.8
40.0	23.6	24.5	25.3	23.6	17.8	11.2	5.7	1.7	0.2	0.1	1.8	17.0	26.0	26.2
42.5	23.0	24.0	24.8	24.0	18.7	11.9	6.1	1.7	0.0	0.2	1.9	18.4	26.1	25.5
45.0	22.7	23.7	24.8	24.4	19.8	12.8	6.7	2.4	0.3	0.4	2.5	19.6	26.2	25.2
47.5	21.9	23.4	24.3	24.4	20.4	13.3	6.9	2.2	0.1	0.2	2.6	20.3	25.8	24.4
50.0	21.4	22.9	24.2	24.5	20.9	13.9	7.3	2.6	0.3	0.4	3.2	21.1	25.8	23.7
52.5	21.1	22.7	24.1	24.8	21.6	14.6	7.9	3.0	0.6	0.6	3.8	21.8	25.8	23.3
55.0	20.3	22.0	23.6	24.4	21.6	14.7	8.1	3.0	0.5	0.7	3.9	21.5	25.3	22.4
57.5	19.1	21.1	22.6	23.5	21.2	14.4	7.6	2.6	0.1	0.1	3.5	21.0	24.5	21.2
60.0	18.9	20.8	22.7	23.7	21.5	14.9	8.1	3.1	0.6	0.4	4.0	21.3	24.5	20.9
62.5	18.0	20.1	22.0	23.3	21.3	14.8	8.0	2.7	0.5	0.1	3.6	20.9	24.0	19.9
65.0	17.2	19.6	21.6	22.9	21.0	14.6	7.8	2.7	0.2	0.0	3.5	20.5	23.4	19.0
67.5	16.8	19.0	21.1	22.5	20.7	14.2	7.6	2.5	0.2	0.0	3.2	20.1	22.7	18.3
70.0	16.6	19.3	21.4	22.8	20.8	14.5	8.0	2.9	0.5	0.3	3.4	20.1	22.9	18.3
72.5	16.1	18.8	21.1	22.4	20.3	14.0	7.8	2.8	0.3	0.2	3.2	19.6	22.4	17.5
75.0	16.3	19.0	21.4	22.7	20.4	14.3	8.1	3.2	0.7	0.6	3.3	19.4	22.5	17.6
77.5	15.4	18.2	20.6	22.0	19.3	13.5	7.4	2.6	0.3	0.1	2.3	18.1	21.6	16.5
80.0	15.7	18.6	21.1	22.0	19.3	13.3	7.6	2.8	0.6	0.6	2.6	17.6	21.6	16.7
82.5	15.3	18.3	20.6	21.6	18.5	12.7	7.0	2.7	0.4	0.3	2.0	16.4	21.2	16.1
85.0	15.5	18.4	20.9	21.5	17.9	12.4	7.0	2.8	0.5	0.3	1.6	15.6	20.8	15.7
87.5	15.4	18.5	20.9	20.9	17.2	11.9	6.7	2.7	0.4	0.4	1.5	14.1	20.2	15.5
90.0	15.3	18.4	20.5	20.3	16.4	11.2	6.2	2.3	0.3	0.1	1.1	12.7	19.2	15.1
92.5	15.6	18.6	20.7	19.8	15.6	10.7	6.1	2.2	0.3	0.1	1.0	11.6	18.6	15.0
95.0	15.8	18.8	20.6	19.2	15.0	10.1	5.9	2.3	0.5	0.3	0.9	10.4	18.1	14.8
97.5	16.0	19.0	20.5	18.6	14.3	9.8	5.6	2.3	0.4	0.3	0.9	9.3	17.5	15.0
100.0	16.6	19.3	20.3	17.9	13.7	9.4	5.5	2.4	0.6	0.7	1.1	8.4	16.8	15.1
102.5	16.4	19.0	19.4	16.6	12.5	8.6	4.9	1.9	0.4	0.4	0.8	6.9	15.4	14.7
105.0	16.7	18.7	18.7	15.5	11.8	8.1	4.6	1.8	0.3	0.3	0.7	5.7	14.0	14.2
107.5	16.8	18.4	17.6	14.3	10.7	7.4	4.2	1.6	0.3	0.1	0.4	4.3	12.4	13.6
110.0	17.3	18.4	17.0	13.6	10.4	7.2	4.4	1.9	0.3	0.5	0.8	3.8	11.2	13.5
112.5	17.1	17.6	15.7	12.5	9.6	6.6	3.8	1.6	0.3	0.4	0.7	2.7	9.3	12.8
115.0	16.8	16.8	14.5	11.6	8.9	6.3	3.7	1.6	0.4	0.3	0.7	2.1	8.0	11.7
117.5	16.5	15.7	13.5	10.7	8.1	5.8	3.4	1.3	0.4	0.4	0.7	1.6	6.6	10.5
120.0	16.1	14.9	12.7	10.0	7.8	5.7	3.5	1.7	0.6	0.6	1.1	1.6	5.7	9.4
122.5	14.8	13.3	11.0	8.8	6.9	4.8	2.8	1.2	0.2	0.4	0.7	0.9	3.8	7.4
125.0	13.9	12.3	10.2	8.2	6.5	4.7	2.8	1.2	0.3	0.4	0.7	0.9	3.1	6.2
127.5	12.9	11.4	9.3	7.4	6.0	4.3	2.6	1.1	0.5	0.4	0.8	0.9	2.2	4.8
130.0	11.6	9.9	8.3	6.6	5.4	3.9	2.2	0.9	0.1	0.2	0.5	0.6	1.5	3.4
132.5	10.5	8.7	7.3	6.0	4.8	3.5	1.9	0.7	0.1	0.3	0.5	0.6	1.0	2.3
135.0	9.2	7.8	6.7	5.4	4.5	3.1	1.6	0.5	0.2	0.2	0.5	0.6	0.6	1.7
137.5	8.4	7.2	6.2	5.2	4.1	3.0	1.7	0.6	0.2	0.3	0.5	0.8	0.8	1.3
140.0	7.2	6.2	5.3	4.5	3.6	2.5	1.3	0.4	0.1	0.1	0.3	0.5	0.5	0.7
142.5	6.4	5.6	4.9	4.2	3.4	2.3	1.1	0.4	0.0	0.1	0.5	0.4	0.4	0.5
145.0	6.0	5.2	4.6	3.9	3.2	2.2	1.2	0.6	0.0	0.5	0.7	0.7	0.6	0.8

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CANDELA DISTRIBUTION LATERAL ANGLE														
	70.0	72.5	75.0	77.5	80.0	82.5	85.0	87.5	90.0	95.0	105.0	115.0	125.0	135.0
147.5	5.3	4.7	4.2	3.6	2.7	1.7	0.9	0.3	0.1	0.2	0.4	0.6	0.4	0.6
150.0	4.6	4.2	3.8	3.2	2.4	1.6	0.8	0.3	0.2	0.2	0.4	0.6	0.7	0.4
152.5	4.4	4.0	3.6	3.1	2.3	1.4	0.9	0.6	0.3	0.4	0.6	0.8	0.7	0.7
155.0	3.7	3.3	3.0	2.3	1.6	0.9	0.4	0.1	0.0	0.2	0.2	0.4	0.3	0.4
157.5	3.4	3.0	2.7	1.9	1.4	0.7	0.3	0.0	0.1	0.1	0.2	0.4	0.4	0.4
160.0	2.7	2.4	1.8	1.3	0.9	0.4	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.1
162.5	2.5	2.1	1.6	1.2	0.8	0.5	0.2	0.1	0.1	0.0	0.3	0.4	0.4	0.4
165.0	1.9	1.5	1.3	1.0	0.9	0.4	0.3	0.3	0.1	0.0	0.3	0.4	0.5	0.7
167.5	0.9	0.7	0.6	0.4	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.2	0.4
170.0	0.5	0.7	0.5	0.3	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4
172.5	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1	0.1
175.0	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.1	0.0	0.0	0.2	0.2	0.1
177.5	0.2	0.1	0.2	0.3	0.3	0.3	0.2	0.4	0.2	0.2	0.1	0.3	0.2	0.2
180.0	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	0.0



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CANDELA DISTRIBUTION
LATERAL ANGLE

	145.0	155.0	165.0	175.0	180.0
0.0	0.2	0.2	0.2	0.2	0.2
2.5	0.0	0.0	0.0	0.0	0.0
5.0	0.3	0.3	0.5	0.4	0.5
7.5	0.4	0.8	0.9	1.1	1.0
10.0	1.7	2.2	3.9	4.3	4.3
12.5	5.0	9.3	12.0	13.3	13.5
15.0	12.5	17.0	20.6	21.4	22.3
17.5	19.3	23.8	26.0	26.0	26.0
20.0	24.8	26.1	26.7	27.0	27.2
22.5	25.9	27.0	27.5	27.5	27.4
25.0	26.7	27.2	27.0	26.9	26.9
27.5	27.2	27.1	26.6	26.4	26.2
28.0	27.6	27.3	26.7	26.5	26.5
30.0	27.5	26.9	26.1	25.8	25.7
32.5	26.8	25.7	24.6	24.2	24.0
35.0	26.1	24.8	23.5	22.8	22.7
37.5	25.4	23.5	22.1	21.2	21.2
40.0	24.2	22.4	20.5	19.5	19.3
42.5	23.2	20.8	18.8	17.7	17.6
45.0	22.5	19.6	17.4	16.4	16.1
47.5	21.2	18.1	15.8	14.7	14.6
50.0	20.1	16.9	14.5	13.3	13.2
52.5	19.4	16.0	13.4	12.3	12.0
55.0	18.2	14.6	11.8	10.7	10.3
57.5	16.6	12.8	10.1	8.9	8.7
60.0	15.9	11.9	9.2	8.0	7.8
62.5	14.7	10.7	7.8	6.6	6.3
65.0	13.6	9.4	6.7	5.5	5.3
67.5	12.7	8.5	5.6	4.5	4.6
70.0	12.5	8.1	5.3	4.8	4.8
72.5	11.5	7.2	4.8	4.6	4.6
75.0	11.6	7.0	5.1	4.9	4.9
77.5	10.5	6.0	4.4	4.1	4.0
80.0	10.4	5.9	4.7	4.3	4.4
82.5	9.9	5.3	4.4	4.1	4.0
85.0	9.6	5.3	4.3	4.0	4.1
87.5	9.5	5.2	4.2	3.8	3.8
90.0	9.2	4.9	4.0	3.4	3.3
92.5	9.1	4.9	4.0	3.3	3.5
95.0	9.3	5.2	3.9	3.2	3.5
97.5	9.4	5.3	3.9	3.2	3.2
100.0	9.7	5.6	3.9	3.2	3.4
102.5	9.6	5.6	3.6	3.1	3.2
105.0	9.6	5.8	3.4	3.0	3.3
107.5	9.7	5.9	3.3	2.8	2.9
110.0	10.4	6.6	3.9	3.0	3.2
112.5	10.5	6.9	4.1	2.9	2.9
115.0	10.6	7.3	4.6	2.9	3.0
117.5	10.4	7.9	4.9	3.3	3.1
120.0	10.2	8.5	5.8	3.9	3.8
122.5	8.9	8.1	5.9	4.0	3.9
125.0	8.1	8.1	6.1	4.4	4.5
127.5	6.8	7.4	6.3	4.1	4.4
130.0	5.4	6.1	5.7	3.6	4.2
132.5	3.9	5.0	4.8	3.3	3.7
135.0	2.7	3.7	4.0	2.9	3.3
137.5	2.0	2.7	2.9	2.5	2.4
140.0	1.2	1.6	1.8	1.6	1.4
142.5	0.8	0.9	1.1	1.0	1.2
145.0	0.8	0.8	0.9	0.9	1.1



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CANDELA DISTRIBUTION
LATERAL ANGLE

	145.0	155.0	165.0	175.0	180.0
147.5	0.6	0.6	0.5	0.6	0.5
150.0	0.5	0.5	0.5	0.5	0.5
152.5	0.7	0.6	0.4	0.6	0.5
155.0	0.4	0.2	0.2	0.3	0.4
157.5	0.4	0.4	0.3	0.4	0.2
160.0	0.3	0.1	0.3	0.2	0.2
162.5	0.4	0.3	0.4	0.4	0.4
165.0	0.7	0.5	0.6	0.6	0.4
167.5	0.3	0.3	0.3	0.4	0.3
170.0	0.3	0.3	0.4	0.5	0.5
172.5	0.2	0.1	0.2	0.2	0.3
175.0	0.1	0.2	0.0	0.1	0.1
177.5	0.3	0.1	0.2	0.2	0.3
180.0	0.0	0.0	0.0	0.0	0.0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		0.0
5- 10		0.5
10- 15		1.4
15- 20		2.6
20- 25		3.6
25- 30		4.2
30- 35		4.5
35- 40		4.6
40- 45		4.7
45- 50		4.7
50- 55		4.8
55- 60		4.5
60- 65		4.3
65- 70		4.0
70- 75		4.0
75- 80		3.8
80- 85		3.6
85- 90		3.4
90- 95		3.2
95-100		3.1
100-105		2.9
105-110		2.6
110-115		2.4
115-120		2.2
120-125		1.9
125-130		1.6
130-135		1.2
135-140		0.9
140-145		0.7
145-150		0.7
150-155		0.6
155-160		0.5
160-165		0.3
165-170		0.1
170-175		0.0
175-180		0.0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		0.5
0- 20		4.6
0- 30		12.4
0- 40		21.6
0- 50		31.0
0- 60		40.2
0- 70		48.5
0- 80		56.2
0- 90		63.2
0-100		69.5
0-110		74.9
0-120		79.5
0-130		83.0
0-140		85.1
0-150		86.5
0-160		87.6
0-170		88.0
0-180		88.0



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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	112	112	112	112	106	106	106	106	95	95	95	85	85	85	76	76	76	72
1	99	93	88	83	93	88	83	79	79	75	71	70	67	64	62	59	57	53
2	89	80	72	65	84	75	68	62	67	61	57	59	55	51	53	49	46	42
3	80	69	60	53	75	65	57	51	58	52	46	52	46	42	46	41	38	34
4	73	60	51	44	69	57	49	42	51	44	39	45	40	35	40	36	32	28
5	67	54	44	37	63	51	42	36	45	38	33	40	35	30	36	31	27	24
6	62	48	39	32	58	45	37	31	41	34	28	36	30	26	32	27	23	21
7	57	43	34	28	53	41	33	27	37	30	25	33	27	22	29	24	20	18
8	53	39	30	24	49	37	29	23	33	26	22	30	24	20	27	22	18	16
9	49	35	27	22	46	34	26	21	30	24	19	27	22	18	25	20	16	14
10	46	32	24	19	43	31	23	18	28	22	17	25	20	16	23	18	14	12

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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Date
6/17/2019

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: 07/10/17

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	10/31/2019
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/31/2019

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>Power Analyzer</i>	Yokogawa / WT332	C2QA27075V	10/25/2018
<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

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