

Project Number  
18.00099



**HUBBELL**  
Lighting

Date  
2/5/2018

LAB 1  
Sphere

*Test Sample Description*

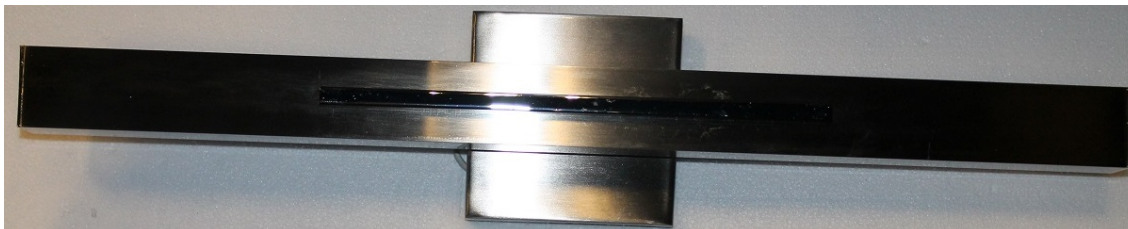
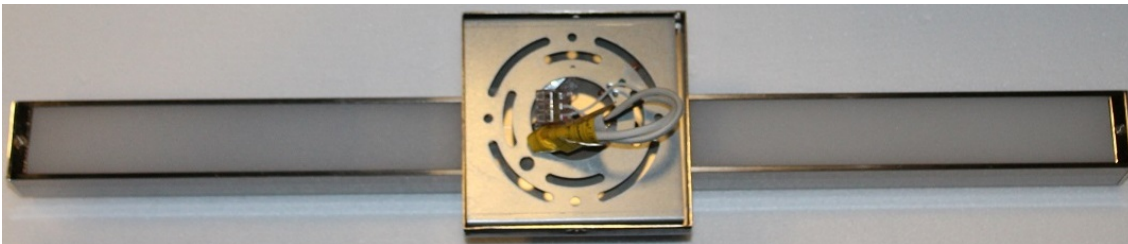
Catalog Number: P710052-009-30  
Description: 2-Lt. LED Wall Sconce w/ Polycarbonate Lens

*Photometry*  
Test Method: IES LM-46-04  
LM-79-08 §10  
Preburn Time: 0:10  
Time To Stabilize: 1:10  
Total Operating Time: 3:45

Input Voltage (Volts): 120.2  
Input Current (Amps): 0.273  
Input Wattage (Watts): 32.4  
Ambient Temp (°C): 26

*Sphere*  
Test Method: IES LM-16-93  
IES LM-79-08 §12.1  
Preburn Time: 8:00  
Time To Stabilize: 1:20  
Total Operating Time: 9:20

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.274  
Input Wattage (Watts): 32.5  
Ambient Temp (°C): 24  
PF @ 120V: 0.983  
THD @ 120V (%): 15.3



**Hubbell Lighting, Inc.**

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

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



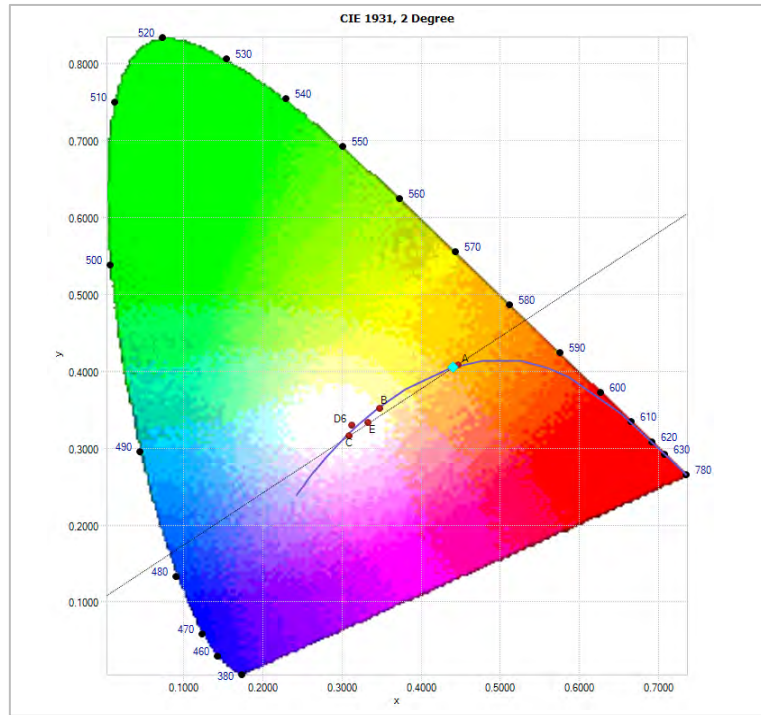
This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



Lamp Cat #: EVAC120C-3528SE-L42-14S3P-145  
 Lamp Desc: 42 - Seoul 3000K LEDs

Efficacy: 35.3 LPW      S/P Ratio: 1.4 LM/LM

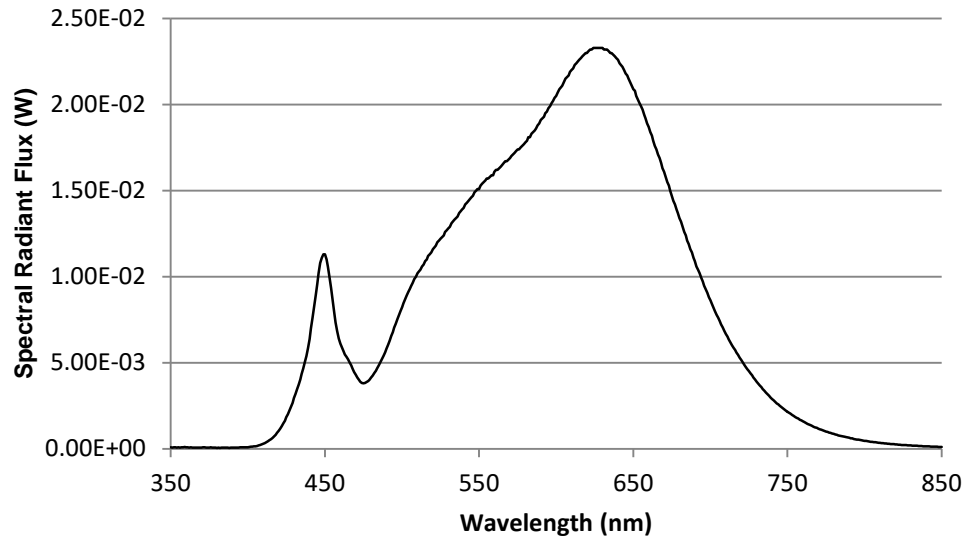
**Chromaticity Diagram**



**Spectral Results**

Name	Value	Unit
Φ	4.11	watts
Φ(v)	1147	lumens
Φ(v')	1566	lm'
Chrom x	0.4406	
Chrom y	0.4059	
Chrom u	0.2522	
Chrom v	0.3484	
Duv	0	
Chrom u'	0.2522	
Chrom v'	0.5227	
CCT	2952	K
Purity	54.1	%
λ (dom)	582.9	nm
FWHM	166.2	nm
λ (peak)	628.8	nm
λ (center)	603.8	nm
λ (centroid)	598.0	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000288311	
Correlation	0.0054	
R1	93.6	
R2	94.6	
R3	93.9	
R4	93.8	
R5	92.7	
R6	92.8	
R7	94.3	
R8	87.0	
R9	68.6	
R10	86.2	
R11	94.3	
R12	81.4	
R13	93.6	
R14	95.8	

**Spectral Distribution of Radiant Flux**





®

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**ISSUE DATE:** 02/05/18

**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P710052-009-30

**LUMINAIRE:** 2-Lt. LED Wall Sconce w/ Polycarbonate Lens

**LAMP CAT. NO.:** EVAC120C-3528SE-L42-14S3P-145

**LAMP:** 42- Seoul 3000K LEDs

**MOUNTING:** Wall

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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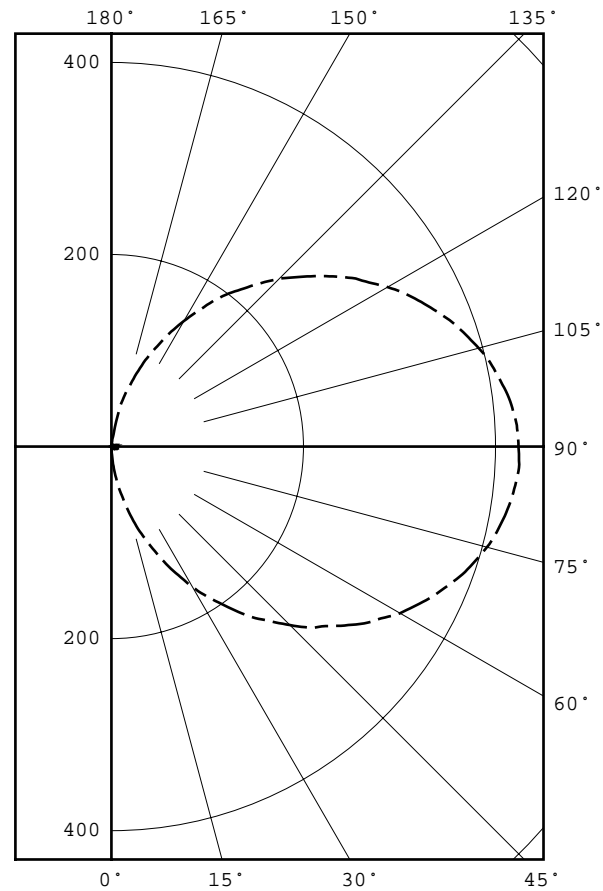
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CANDELA DISTRIBUTION						FLUX
	0.0	45.0	90.0	135.0	180.0	
0	1	1	1	1	1	
5	1	0	1	9	16	1
15	1	1	1	44	71	6
25	1	1	1	82	135	18
35	1	1	2	122	200	37
45	0	1	2	161	263	59
55	1	2	4	197	321	83
65	2	2	6	225	369	104
75	1	2	7	226	405	115
85	0	0	5	190	423	113
90	0	0	5	188	424	
95	0	0	4	181	420	112
105	1	2	5	205	396	111
115	1	1	3	191	356	96
125	1	2	3	166	306	75
135	1	1	1	131	247	51
145	2	2	2	91	185	31
155	2	1	1	64	118	15
165	1	0	1	24	58	4
175	1	1	1	2	3	0
180	0	0	0	0	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	25	2.4
0- 40	62	6.0
0- 60	203	19.7
0- 90	535	52.0
90-120	319	31.0
90-130	393	38.2
90-150	474	46.1
90-180	493	48.0
0-180	1028	100.0

EFFICACY = 31.7 lm/W  
CIE TYPE - GENERAL DIFFUSE  
PLANE : 0-DEG 90-DEG  
LUMINOUS LENGTH : 1.500 20.000  
HEIGHT OF SIDE : 1.500 1.500

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE IN DEG	AVERAGE 0-DEG	AVERAGE 90-DEG	AVERAGE 180-DEG
45	0.	136.	9608.
55	37.	325.	11908.
65	78.	632.	14346.
75	42.	1092.	17085.



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



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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	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2.5	0	0	0	0	0	0	0	1	0	0	0	0	0	0
5.0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
7.5	1	0	0	1	0	1	0	0	0	0	0	0	0	0
10.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12.5	0	1	1	1	0	1	0	0	1	0	0	0	1	0
15.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
17.5	1	1	1	1	1	2	1	1	2	1	1	1	1	1
20.0	1	2	1	2	2	1	2	2	2	2	1	2	1	1
22.5	0	0	0	0	1	0	1	0	1	0	0	0	0	0
25.0	1	1	1	1	1	1	1	1	1	1	1	1	0	1
27.5	2	2	2	2	2	2	2	2	2	2	2	2	2	2
30.0	1	1	1	1	0	0	0	0	1	0	1	1	1	1
32.5	2	1	1	1	1	1	1	1	1	1	1	1	1	1
35.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
37.5	2	1	2	1	2	2	2	2	2	2	2	2	2	2
40.0	1	1	1	1	1	1	1	1	1	1	1	1	1	1
42.5	1	1	1	1	1	1	1	1	1	1	1	1	1	2
45.0	0	1	1	1	1	1	1	1	1	1	1	1	1	2
47.5	1	1	1	1	1	1	1	1	1	1	1	2	1	2
50.0	1	1	1	0	1	1	1	1	1	1	1	2	2	2
52.5	1	1	1	1	1	1	1	1	1	2	1	2	2	2
55.0	1	1	1	1	2	2	2	2	2	2	2	2	2	2
57.5	0	1	1	1	1	1	1	1	1	1	1	1	2	1
60.0	2	2	2	2	2	2	2	2	2	2	3	3	3	3
62.5	2	2	2	2	2	2	1	1	2	2	2	2	2	2
65.0	2	1	1	1	1	2	1	2	2	2	2	2	2	2
67.5	0	0	0	0	0	1	0	0	1	1	1	1	1	1
70.0	1	1	1	1	1	1	1	1	1	1	1	1	1	2
72.5	0	0	0	0	0	0	0	0	1	1	1	1	1	1
75.0	1	1	1	1	1	2	1	2	1	2	2	2	2	2
77.5	0	0	0	0	0	0	1	1	1	1	1	1	1	2
80.0	0	0	0	0	0	0	0	0	1	1	1	1	1	1
82.5	0	0	0	0	0	0	0	0	0	0	1	1	1	0
85.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
87.5	0	0	0	0	0	0	0	0	1	0	1	1	1	1
90.0	0	0	0	0	0	0	1	1	1	0	0	1	1	1
92.5	0	0	0	0	0	0	0	0	0	0	1	0	0	0
95.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97.5	1	1	1	1	1	1	1	1	1	2	2	1	1	2
100.0	0	0	0	0	1	0	0	1	0	1	1	1	1	1
102.5	0	0	1	1	1	1	1	1	1	1	2	1	1	2
105.0	1	1	1	1	1	1	1	1	1	1	2	2	2	2
107.5	1	2	1	2	2	2	2	2	2	3	2	3	2	3
110.0	1	1	1	1	1	1	1	1	1	1	1	2	2	2
112.5	1	0	0	1	1	1	1	1	1	1	1	2	2	2
115.0	1	1	0	1	1	1	1	1	1	1	1	1	2	2
117.5	1	1	1	1	1	1	1	1	1	2	1	1	2	2
120.0	1	1	1	2	2	2	2	2	2	2	2	2	3	3
122.5	1	1	1	1	1	1	2	1	2	2	2	2	2	2
125.0	1	2	2	2	2	2	2	2	2	2	2	3	3	3
127.5	1	1	1	1	1	1	1	1	2	1	1	1	2	2
130.0	1	2	2	2	1	1	2	2	2	2	2	2	2	2
132.5	1	1	2	2	2	2	2	2	2	2	2	3	2	2
135.0	1	1	0	1	1	1	1	1	1	1	1	1	1	1
137.5	1	1	1	1	1	1	1	1	1	1	1	1	2	2
140.0	0	1	1	1	1	1	1	1	1	1	1	1	1	1
142.5	2	2	2	2	2	2	2	2	2	2	2	2	2	2
145.0	2	2	2	2	2	2	2	2	2	2	2	2	2	2
147.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1



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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	1	1	1	1	1	1	1	1	2	2	1	1	1	2
152.5	2	2	2	2	2	2	2	2	2	2	2	2	2	2
155.0	2	2	1	1	1	1	1	1	1	1	1	1	1	1
157.5	1	0	0	0	1	0	1	1	0	0	1	0	1	0
160.0	1	1	1	1	2	1	2	1	1	1	1	2	1	1
162.5	1	1	1	1	1	1	1	1	1	1	1	1	1	1
165.0	1	1	0	1	0	1	1	1	1	1	0	1	1	1
167.5	1	1	0	1	1	0	1	1	1	1	0	1	1	1
170.0	1	0	1	0	1	1	1	1	1	1	1	0	1	1
172.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175.0	1	1	1	1	0	1	0	1	0	0	1	1	1	1
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



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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	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2.5	0	0	0	0	1	0	0	1	1	1	1	1	2	2
5.0	0	0	0	0	0	1	1	1	1	2	3	3	3	5
7.5	0	0	0	0	0	0	0	1	2	3	5	6	7	9
10.0	0	0	0	0	0	0	0	1	2	5	7	9	11	15
12.5	0	0	0	1	1	0	1	2	4	7	11	14	16	21
15.0	1	1	1	1	1	1	1	3	6	10	16	19	21	28
17.5	1	1	1	1	1	1	1	3	7	13	19	23	26	34
20.0	1	1	1	1	1	1	2	4	9	16	24	28	32	40
22.5	0	0	0	0	0	0	1	4	9	18	27	32	36	46
25.0	0	0	0	0	0	0	1	4	12	21	31	36	42	52
27.5	2	1	1	1	1	1	2	7	14	26	36	43	48	59
30.0	0	0	0	0	0	0	1	6	15	27	39	45	51	64
32.5	1	1	1	1	1	0	1	7	18	30	43	50	56	70
35.0	1	1	1	0	0	0	2	8	19	33	46	54	61	76
37.5	2	2	2	1	1	1	2	9	22	36	50	59	66	83
40.0	1	1	1	1	0	0	2	9	23	38	53	61	70	88
42.5	1	1	1	1	1	0	2	10	25	40	56	65	74	93
45.0	1	2	1	1	1	1	2	11	26	42	59	68	78	99
47.5	2	2	2	1	1	1	3	12	28	44	62	72	83	105
50.0	2	2	2	2	1	1	3	13	28	45	64	75	86	110
52.5	2	2	2	2	2	1	4	14	30	47	67	79	90	115
55.0	2	3	3	3	2	2	4	15	31	49	70	82	95	121
57.5	2	2	2	2	2	1	4	14	31	49	72	85	98	125
60.0	3	3	3	3	3	2	5	16	32	51	75	89	102	131
62.5	3	3	3	3	3	2	5	15	32	52	77	91	105	135
65.0	3	3	3	3	3	2	6	15	32	53	79	94	108	138
67.5	1	2	2	2	2	2	5	13	30	53	80	95	110	140
70.0	2	2	2	2	2	2	5	14	31	54	82	97	113	144
72.5	1	1	2	2	2	2	6	13	30	54	83	98	114	145
75.0	2	2	3	3	4	3	7	14	31	55	84	100	115	146
77.5	2	1	2	2	2	3	6	13	30	54	82	97	112	138
80.0	1	1	1	1	2	2	6	13	30	52	78	92	104	124
82.5	1	1	1	1	1	1	5	13	29	49	71	83	93	107
85.0	0	0	1	1	1	1	5	13	28	46	64	73	82	97
87.5	0	1	0	0	0	1	5	14	29	44	60	69	78	95
90.0	1	1	1	1	0	1	5	14	30	45	61	69	78	95
92.5	0	0	0	0	1	1	5	14	28	44	62	71	80	97
95.0	0	0	1	1	1	1	4	13	28	47	68	78	86	102
97.5	2	2	2	2	3	3	6	14	30	51	76	88	99	115
100.0	1	1	2	2	2	3	5	12	29	53	81	95	108	127
102.5	2	2	2	2	3	3	6	13	29	53	83	98	113	134
105.0	2	2	2	3	3	3	5	13	29	53	82	98	113	136
107.5	3	3	3	3	4	3	6	13	30	53	81	97	112	134
110.0	2	2	2	2	3	2	4	12	29	51	79	94	109	131
112.5	2	2	2	2	3	2	4	12	29	50	77	91	106	129
115.0	2	2	2	2	2	2	3	12	28	49	74	88	103	126
117.5	2	2	2	2	2	2	3	12	29	48	72	85	99	122
120.0	3	3	3	3	3	2	3	13	29	47	70	83	96	119
122.5	2	2	3	3	2	2	3	12	28	45	67	79	92	114
125.0	3	3	3	3	3	2	3	12	28	44	65	76	88	109
127.5	2	2	2	2	2	1	2	10	26	42	61	72	84	104
130.0	2	2	2	2	2	1	2	10	25	41	59	69	80	99
132.5	3	2	2	2	2	1	2	9	24	39	56	66	76	94
135.0	1	1	1	1	0	0	1	7	21	36	52	60	71	87
137.5	2	2	2	1	1	0	1	6	20	35	50	58	66	81
140.0	1	1	1	1	0	0	1	5	17	32	46	54	62	76
142.5	2	2	2	2	1	1	1	5	16	30	44	51	59	72
145.0	2	2	2	2	1	1	2	5	14	27	41	47	54	66
147.5	1	1	0	0	0	0	0	3	11	23	36	41	47	58

THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.



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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	1	1	1	1	0	1	1	3	9	20	31	36	41	51
152.5	2	2	2	2	1	1	1	3	8	17	26	31	36	46
155.0	1	1	1	0	1	1	1	2	5	12	21	25	30	38
157.5	0	0	0	0	0	0	0	1	3	8	14	19	23	30
160.0	1	1	1	1	1	1	1	1	3	6	11	15	18	25
162.5	0	1	1	1	1	0	1	1	2	4	7	10	12	18
165.0	1	1	0	1	1	1	1	1	1	3	5	6	7	12
167.5	1	1	1	1	0	1	1	1	1	2	3	4	5	7
170.0	1	1	1	1	1	1	1	1	1	1	2	3	3	4
172.5	0	0	0	0	0	0	0	0	0	0	0	1	1	2
175.0	1	0	1	1	1	1	1	1	1	1	1	1	1	1
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0





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	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	1	1	1	1	1	1	1	1	1	1	1	1	1
2.5	2	3	3	4	4	4	5	4	5	5	5	5	5
5.0	6	7	9	10	11	12	13	14	15	15	16	15	16
7.5	12	14	17	19	21	22	24	25	25	26	28	27	28
10.0	18	22	25	28	30	33	36	36	37	38	40	40	42
12.5	26	30	34	38	42	45	48	49	51	52	55	55	55
15.0	34	39	44	49	54	58	62	63	65	67	69	69	71
17.5	40	48	54	60	65	70	75	77	78	81	84	85	87
20.0	49	57	64	71	78	83	88	91	94	97	100	101	102
22.5	55	64	72	81	88	95	102	104	108	110	114	115	118
25.0	62	73	82	92	101	109	116	119	122	127	130	132	135
27.5	71	83	93	104	115	123	131	134	139	143	148	150	151
30.0	77	90	102	114	125	135	144	148	152	157	163	166	169
32.5	84	99	113	127	138	149	160	164	169	175	180	183	185
35.0	92	108	122	137	150	163	174	179	184	190	196	199	200
37.5	100	117	133	149	164	177	188	194	199	206	212	214	217
40.0	106	125	142	159	176	190	203	207	213	220	227	230	233
42.5	113	133	153	170	188	202	216	221	227	235	242	246	247
45.0	120	141	161	182	199	214	229	235	241	250	257	260	263
47.5	127	149	171	192	210	228	242	248	255	264	271	276	279
50.0	133	158	180	201	221	238	254	260	267	277	285	290	291
52.5	140	166	190	211	232	250	266	273	280	292	300	304	306
55.0	147	173	197	220	241	261	277	285	293	305	312	318	321
57.5	153	180	205	229	251	271	289	297	304	317	326	331	333
60.0	159	187	213	238	260	281	300	308	316	329	338	343	347
62.5	164	192	219	245	268	290	309	318	327	340	349	355	358
65.0	168	198	225	252	277	299	319	328	337	351	360	367	369
67.5	172	202	230	258	283	306	326	336	344	359	369	376	379
70.0	176	206	236	263	288	310	329	339	349	366	377	386	389
72.5	177	209	236	260	283	307	328	340	351	370	384	394	397
75.0	176	202	226	250	275	301	327	340	351	374	391	402	405
77.5	163	186	211	238	267	296	324	339	352	377	395	408	411
80.0	143	167	197	226	259	292	324	340	354	381	401	414	416
82.5	125	154	189	225	260	295	327	343	358	385	405	417	420
85.0	119	152	190	226	262	297	329	345	360	387	407	420	423
87.5	119	153	191	227	263	298	330	346	361	388	409	422	425
90.0	118	151	188	224	261	297	330	346	361	388	408	421	424
92.5	117	147	183	222	260	297	329	344	360	387	407	420	423
95.0	118	145	181	220	258	294	327	343	357	384	404	417	420
97.5	129	154	188	222	258	293	324	340	354	381	401	413	416
100.0	140	164	195	227	259	291	323	338	352	377	396	408	410
102.5	149	173	203	231	260	291	322	338	351	375	391	402	404
105.0	152	177	205	232	260	289	320	336	348	371	384	393	396
107.5	152	177	205	231	259	286	317	332	345	365	377	386	387
110.0	148	173	202	228	253	280	310	326	339	358	368	375	378
112.5	145	168	197	223	248	273	301	317	330	350	358	365	367
115.0	141	163	191	217	241	265	293	307	320	339	348	355	356
117.5	138	158	184	209	233	256	284	298	310	328	336	343	345
120.0	133	155	178	202	224	248	273	287	298	316	324	330	332
122.5	126	148	173	194	215	237	262	275	286	303	311	317	318
125.0	122	140	166	188	207	227	251	263	274	290	299	304	306
127.5	116	133	157	179	199	217	233	247	258	277	284	289	291
130.0	110	127	149	169	189	203	213	223	233	250	261	274	276
132.5	104	121	141	159	178	185	201	213	223	236	244	261	261
135.0	96	112	131	149	159	169	189	201	209	223	230	246	247
137.5	91	105	124	136	145	157	178	187	194	209	218	230	231
140.0	85	98	112	122	134	147	165	174	183	196	206	216	215
142.5	79	90	101	112	125	139	153	162	169	182	193	200	201
145.0	73	78	91	104	116	128	142	149	155	167	179	183	185
147.5	66	73	81	94	106	115	128	135	142	152	164	167	167

THIS REPORT WITH THE USE OF THE NVLAP LOGO SHALL NOT BE USED BY THE CLIENT TO CLAIM PRODUCT CERTIFICATION, APPROVAL, OR ENDORSEMENT BY NVLAP, NIST, OR ANY AGENCY OF THE FEDERAL GOVERNMENT.



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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	60	68	78	86	95	106	116	123	128	140	147	150	151
152.5	56	65	72	80	88	96	106	112	117	127	133	134	135
155.0	47	56	64	72	78	85	94	99	104	112	116	119	118
157.5	37	45	52	60	67	75	80	85	88	95	99	102	103
160.0	31	37	43	50	56	62	70	74	78	82	85	87	87
162.5	24	29	33	38	43	49	55	58	61	68	71	72	71
165.0	16	21	24	28	32	36	40	43	45	50	55	57	58
167.5	10	13	16	20	22	25	28	29	30	33	35	41	44
170.0	6	7	10	12	15	16	18	18	19	20	21	23	16
172.5	3	3	4	5	6	8	9	10	10	9	7	6	6
175.0	2	2	2	2	2	2	3	3	3	3	3	3	3
177.5	0	0	0	0	0	0	0	0	0	0	0	0	0
180.0	0	0	0	0	0	0	0	0	0	0	0	0	0



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		0
5- 10		1
10- 15		2
15- 20		4
20- 25		7
25- 30		11
30- 35		16
35- 40		21
40- 45		26
45- 50		32
50- 55		38
55- 60		44
60- 65		50
65- 70		54
70- 75		57
75- 80		58
80- 85		56
85- 90		56
90- 95		56
95-100		56
100-105		56
105-110		54
110-115		50
115-120		45
120-125		40
125-130		34
130-135		28
135-140		22
140-145		18
145-150		13
150-155		9
155-160		6
160-165		3
165-170		1
170-175		0
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		1
0- 20		7
0- 30		25
0- 40		62
0- 50		120
0- 60		203
0- 70		307
0- 80		422
0- 90		535
0-100		647
0-110		758
0-120		854
0-130		928
0-140		979
0-150		1009
0-160		1024
0-170		1028
0-180		1028



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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	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58	52
1	92	86	79	74	85	78	73	68	65	61	57	53	50	47	42	40	37	32
2	82	71	63	55	74	65	58	51	54	48	43	43	39	35	33	30	27	22
3	73	61	51	43	66	55	47	40	45	39	33	36	31	27	28	24	20	16
4	66	52	42	35	60	48	39	32	39	32	26	31	26	21	24	19	16	12
5	60	46	36	29	54	42	33	26	34	27	22	27	21	17	21	16	13	9
6	55	40	31	24	50	37	28	22	30	23	18	24	18	14	18	14	10	7
7	50	36	27	20	46	33	25	19	27	20	15	21	16	12	16	12	9	6
8	46	32	24	17	42	30	22	16	24	18	13	19	14	10	15	10	7	5
9	43	29	21	15	39	27	19	14	22	16	11	18	12	9	13	9	6	4
10	40	27	19	13	36	24	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.



**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: 07/10/2017

<b>Test Equipment Used</b>			
<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
Goniophotometer	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
Power Analyzer	Yokogawa / WT 332	C2QA27071V	10/25/2018
Power Source	Voltage-Regulated House Power	N/A	N/A
Thermometer	National Instruments / USB-TC01	176F4E3	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

<b>Test Equipment Used - Color &amp; SPD; THD &amp; Power Factor</b>			
<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
3-Meter Sphere	Labsphere / LMS-3M	N/A	Checked Daily
Thermometer	National Instruments / USB TC01	1912751	10/26/2018
LAMP Power Meter	Yokogawa / WT332	C2QA27075V	10/25/2018
Power Supply	Chroma / 61602	616020002113	N/A
Power Supply PF/THD	Voltage-Regulated House Power	N/A	N/A
Aux Lamp Supply	Labsphere / LPS-100-0833	0331159372	N/A
Cal Lamp Supply	Labsphere / LPS-150-0268	1218148505	N/A
Spectrometer	Labsphere / CDS 1100	0624117792	N/A

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