

Project Number
18.00963



HUBBELL
Lighting

Date
6/8/2018

Lab 1
Sphere

Test Sample Description

Catalog Number: P300210-009-30

Description: 4ft LED Rectangular-Cross-Section Vanity with Acrylic Refractor

Photometry

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

Preburn Time: 1:00

Time To Stabilize: 1:40

Total Operating Time: 2:20

Input Voltage (Volts): 120.1

Input Current (Amps): 0.378

Input Wattage (Watts): 44.4

Ambient Temp (°C): 25.1

Sphere

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

Preburn Time: 1:00

Time To Stabilize: 1:27

Total Operating Time: 2:27

Input Voltage (Volts): 120.0

Input Current (Amps): 0.376

Input Wattage (Watts): 44.1

Ambient Temp (°C): 24.5



Hubbell Lighting, Inc.

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


HUBBELL
 Lighting

Lamp Cat#: 2835 0.2W

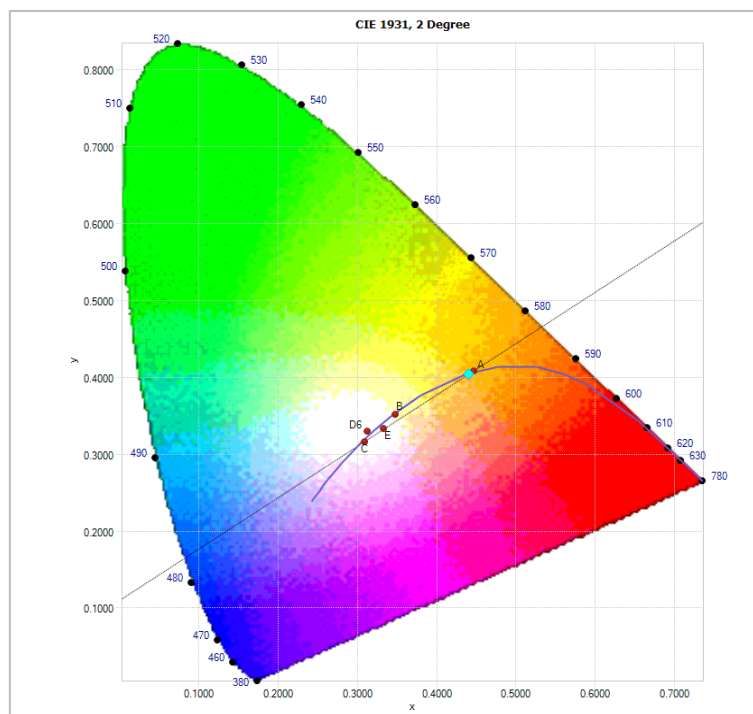
Lamp Desc: 220 - Edison 3000K LEDs

Driver Desc: 2 - Becky BQE36-0550-40-TD

Programmed to 550mA

Efficacy: 75.1 LPW S/P Ratio: 1.4 LM/LM

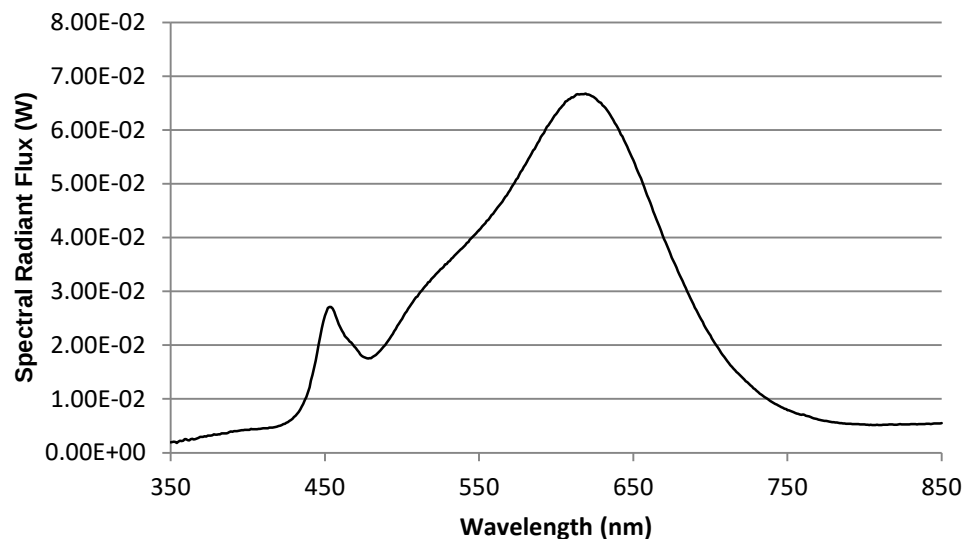
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	12.19	watts
$\Phi(v)$	3310	lumens
$\Phi(v')$	4646	lm'
Chrom x	0.4404	
Chrom y	0.4047	
Chrom u	0.2525	
Chrom v	0.3481	
Duv	0.0004	
Chrom u'	0.2525	
Chrom v'	0.5222	
CCT	2946	K
Purity	53.7	%
λ (dom)	583.1	nm
FWHM	157.1	nm
λ (peak)	617.6	nm
λ (center)	601.1	nm
λ (centroid)	598.4	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.000262863	
Correlation	0.0054	
R1	92.1	
R2	96.9	
R3	98.3	
R4	91.7	
R5	92.3	
R6	96.7	
R7	90.3	
R8	78.7	
R9	53.3	
R10	92.2	
R11	92.7	
R12	86.8	
R13	93.5	
R14	99.7	

Spectral Distribution of Radiant Flux





HUBBELL
Lighting

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

REPORT NUMBER: 18.00963

PAGE: 3 OF 9

ISSUE DATE: 06/08/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P300210-009-30

LUMINAIRE: 4ft LED Rectangular-Cross-Section
Vanity with Acrylic Refractor

LAMP CAT. NO.: 2835 0.2W

LAMP: 220- Edison 3000K LEDs

BALLAST CATALOG NUMBER: BQE36-0550-40-TD

BALLAST: 2- Becky - Programmed to 550mA

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



HUBBELL
Lighting

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

REPORT NUMBER: 18.00963
ISSUE DATE: 06/08/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300210-009-30

PAGE: 4 OF 9

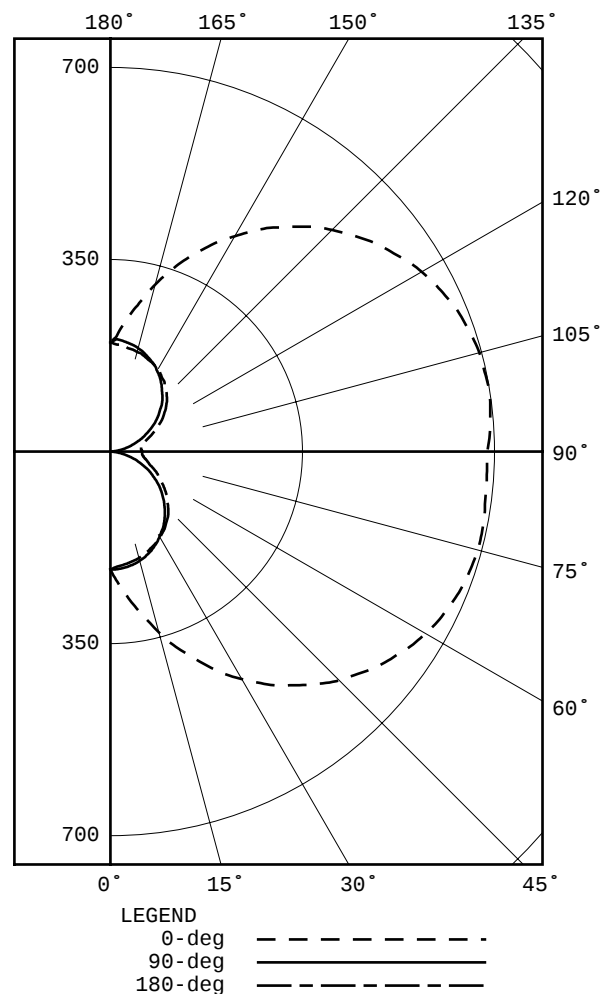
CANDELA DISTRIBUTION

	0.0	45.0	90.0	135.0	180.0	
0	215	215	215	215	215	
5	252	238	214	209	209	22
15	341	293	206	201	201	69
25	435	349	190	186	188	121
35	520	398	168	167	172	171
45	590	436	139	144	149	213
55	642	462	108	116	121	242
65	678	473	73	83	94	256
75	693	471	37	54	70	254
85	688	456	7	37	58	244
90	687	452	0	35	58	
95	695	459	7	36	56	246
105	696	471	36	52	64	253
115	673	470	69	84	89	253
125	630	452	103	114	119	237
135	571	421	134	139	145	206
145	497	379	159	160	164	163
155	409	326	180	176	179	114
165	315	269	195	188	188	64
175	227	216	204	195	195	20
180	199	199	199	199	199	

FLUX

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		212	6.7
0- 40		382	12.1
0- 60		837	26.6
0- 90		1592	50.6
90-120		752	23.9
90-130		989	31.4
90-150		1358	43.1
90-180		1556	49.4
0-180		3148	100.0

EFFICACY = 70.9 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 3.05 1.24 1.25
SHIELDING ANGLES : 90 90





®

HUBBELL
Lighting701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com**REPORT NUMBER:** 18.00963**ISSUE DATE:** 06/08/18**PREPARED FOR:** PROGRESS**CATALOG NUMBER:** P300210-009-30**PAGE:** 5 OF 9

PLANE	:	0-DEG	90-DEG
LUMINOUS LENGTH	:	46.500	1.750
HEIGHT OF SIDE	:	3.000	3.000

LUMINANCE DATA IN CANDELA/SQ M			
ANGLE	AVERAGE	AVERAGE	AVERAGE
IN DEG	0-DEG	90-DEG	180-DEG
45	14930.	1379.	3770.
55	19521.	1040.	3679.
65	26844.	704.	3722.
75	41104.	368.	4152.
85	86542.	74.	7296.



HUBBELL
Lighting

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

REPORT NUMBER: 18.00963

PAGE: 6 OF 9

ISSUE DATE: 06/08/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P300210-009-30

CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	215	215	215	215	215	215	215	215	215
5.0	252	248	238	227	214	211	209	209	209
10.0	294	285	265	238	211	207	206	207	205
15.0	341	327	293	247	206	201	201	202	201
20.0	388	370	321	256	199	195	194	195	195
25.0	435	411	349	264	190	186	186	188	188
30.0	479	450	374	270	179	176	177	180	180
35.0	520	486	398	275	168	164	167	171	172
40.0	555	519	418	278	154	152	156	160	161
45.0	590	548	436	279	139	138	144	148	149
50.0	618	573	451	278	124	124	130	134	136
55.0	642	594	462	275	108	109	116	120	121
60.0	663	611	469	270	90	93	100	104	106
65.0	678	623	473	262	73	76	83	90	94
70.0	688	630	474	254	55	59	68	76	80
75.0	693	632	471	243	37	42	54	65	70
80.0	692	628	464	231	20	27	43	57	62
85.0	688	624	456	220	7	18	37	52	58
90.0	687	623	452	214	0	13	35	53	58
95.0	695	630	459	222	7	18	36	51	56
100.0	699	634	466	232	20	28	41	53	58
105.0	696	633	471	242	36	43	52	60	64
110.0	687	628	473	251	52	60	67	73	75
115.0	673	618	470	257	69	76	84	88	89
120.0	655	602	463	262	86	92	99	104	105
125.0	630	582	452	265	103	107	114	118	119
130.0	603	559	439	266	118	121	127	132	133
135.0	571	531	421	265	134	134	139	144	145
140.0	535	500	401	262	146	146	150	154	155
145.0	497	466	379	257	159	157	160	164	164
150.0	453	427	353	251	170	167	168	171	172
155.0	409	388	326	244	180	176	176	178	179
160.0	363	347	297	236	188	184	182	184	184
165.0	315	302	269	226	195	190	188	188	188
170.0	267	261	240	217	200	195	192	192	191
175.0	227	225	216	207	204	199	195	195	195
180.0	199	199	199	199	199	199	199	199	199



HUBBELL
Lighting

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

REPORT NUMBER: 18.00963
ISSUE DATE: 06/08/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300210-009-30

PAGE: 7 OF 9

5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		5
5- 10		16
10- 15		28
15- 20		41
20- 25		54
25- 30		67
30- 35		79
35- 40		91
40- 45		102
45- 50		111
50- 55		118
55- 60		124
60- 65		127
65- 70		129
70- 75		128
75- 80		126
80- 85		123
85- 90		121
90- 95		122
95-100		124
100-105		126
105-110		127
110-115		128
115-120		126
120-125		122
125-130		115
130-135		108
135-140		98
140-145		87
145-150		75
150-155		63
155-160		51
160-165		38
165-170		26
170-175		15
175-180		5

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		22
0- 20		91
0- 30		212
0- 40		382
0- 50		595
0- 60		837
0- 70		1094
0- 80		1348
0- 90		1592
0-100		1838
0-110		2092
0-120		2345
0-130		2582
0-140		2787
0-150		2950
0-160		3064
0-170		3128
0-180		3148



HUBBELL
Lighting

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

REPORT NUMBER: 18.00963
ISSUE DATE: 06/08/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300210-009-30

PAGE: 8 OF 9

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC RW	80				70				50			30			10			0
	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	84	84	84	70	70	70	57	57	57	51
1	94	88	83	78	86	81	76	72	68	64	61	55	53	50	44	42	40	35
2	84	75	67	61	77	69	62	56	57	52	47	46	42	39	37	34	31	26
3	76	65	56	49	69	59	51	45	49	43	38	40	35	31	31	28	25	20
4	69	56	47	40	63	52	43	37	43	36	31	35	30	26	27	23	20	16
5	63	50	40	34	57	46	37	31	38	31	26	31	26	22	24	20	17	14
6	58	44	35	29	52	41	32	27	34	27	22	27	22	18	22	18	15	11
7	53	40	31	25	48	36	28	23	30	24	19	25	20	16	19	16	13	10
8	49	36	27	21	45	33	25	20	27	21	17	22	18	14	18	14	11	8
9	46	32	24	19	42	30	23	18	25	19	15	21	16	12	16	13	10	7
10	42	30	22	17	39	27	20	16	23	17	13	19	14	11	15	11	9	7

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
18.00963



HUBBELL
Lighting

Date
6/8/2018

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

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	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	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

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	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

Hubbell Lighting, Inc.

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

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