

Project Number
18.00951



HUBBELL
Lighting

Date
6/8/2018

Lab 1
Sphere

Test Sample Description

Catalog Number: P300205-009-30

Description: 2ft LED Circular-Cross-Section Vanity with Acrylic Refractor and Decorative Trim

Photometry

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

Preburn Time: 0:45

Time To Stabilize: 1:15

Total Operating Time: 2:16

Input Voltage (Volts): 120.0

Input Current (Amps): 0.189

Input Wattage (Watts): 22.2

Ambient Temp (°C): 24.9

Sphere

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

Preburn Time: 8:00

Time To Stabilize: 0:59

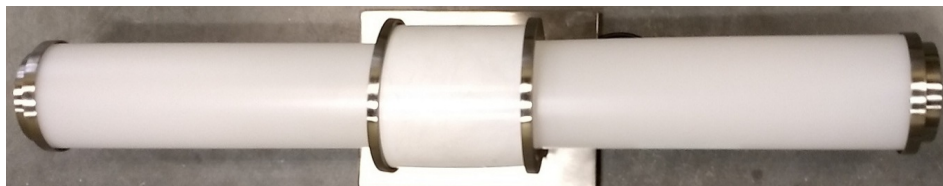
Total Operating Time: 8:59

Input Voltage (Volts): 120.0

Input Current (Amps): 0.188

Input Wattage (Watts): 22.1

Ambient Temp (°C): 24.3



Hubbell Lighting, Inc.

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

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



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Lamp Cat#: 2835 0.5W

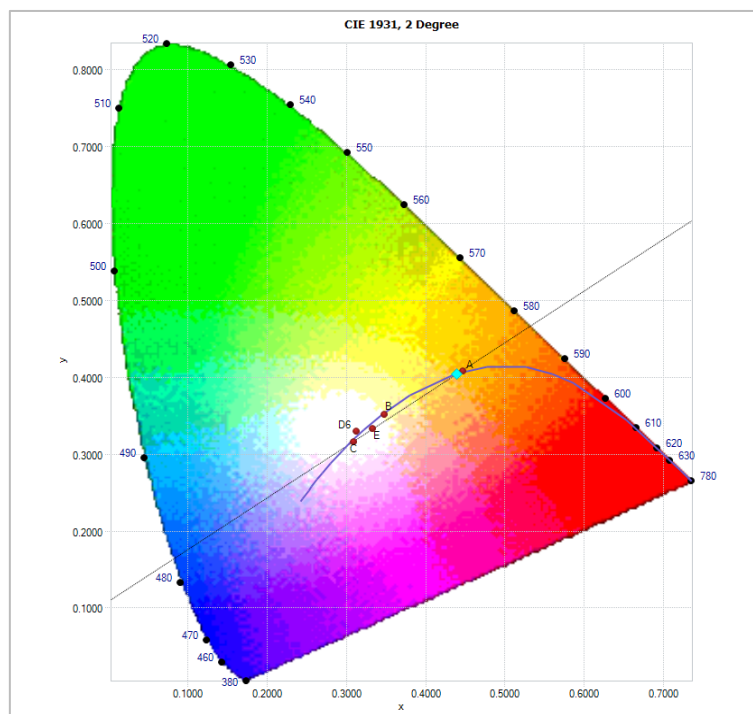
Lamp Desc: 44 - Edison 3000K LEDs

Driver Desc: 1 - Becky BQE36-0550-40-TD

Programmed to 550mA

Efficacy: 71.7 LPW S/P Ratio: 1.4 LM/LM

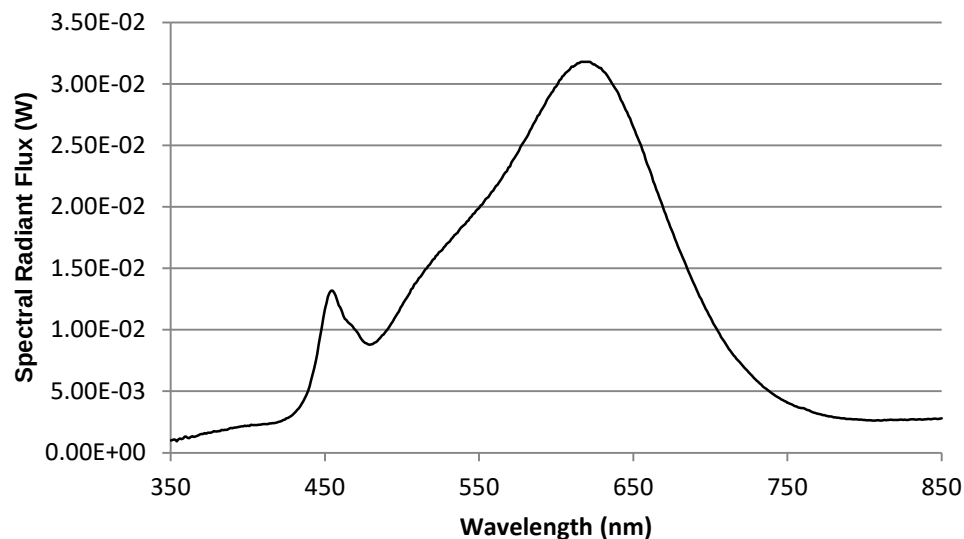
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	5.92	watts
$\Phi(v)$	1585	lumens
$\Phi(v')$	2245	lm'
Chrom x	0.4394	
Chrom y	0.4046	
Chrom u	0.2519	
Chrom v	0.348	
Duv	0.0003	
Chrom u'	0.2519	
Chrom v'	0.522	
CCT	2961	K
Purity	53.4	%
λ (dom)	583.0	nm
FWHM	160.6	nm
λ (peak)	621.6	nm
λ (center)	601.7	nm
λ (centroid)	599.4	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.000220583	
Correlation	0.0054	
R1	92.8	
R2	97.3	
R3	98.5	
R4	92.2	
R5	92.9	
R6	97.1	
R7	91.0	
R8	80.3	
R9	57.0	
R10	92.9	
R11	93.1	
R12	86.9	
R13	94.1	
R14	99.7	

Spectral Distribution of Radiant Flux





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LUMINAIRE: 2ft LED Circular-Cross-Section Vanity
with Acrylic Refractor and Decorative Trim

LAMP CAT. NO.: 2835 0.5W

LAMP: 44- Edison 3000K LEDs

BALLAST CATALOG NUMBER: BQE36-0550-40-TD

BALLAST: 1- Becky - Programmed to 550mA

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	155	155	155	155	155	
5	163	160	156	149	147	15
15	184	173	150	130	124	43
25	205	182	138	110	103	67
35	225	187	121	89	83	86
45	241	188	100	67	63	98
55	256	187	75	46	41	102
65	268	184	48	25	20	100
75	274	178	21	6	6	92
85	278	174	0	0	0	87
90	278	174	0	0	0	
95	293	190	7	9	13	98
105	291	194	30	16	17	105
115	285	198	58	33	29	111
125	274	202	84	53	48	112
135	261	203	108	73	68	106
145	242	201	130	95	88	93
155	222	196	146	116	107	72
165	199	186	159	137	129	46
175	175	171	165	155	152	16
180	164	164	164	164	164	

FLUX

ZONAL ZONE	LUMEN	SUMMARY LUMENS	%FIXT
0- 30		125	8.6
0- 40		211	14.6
0- 60		412	28.4
0- 90		691	47.7
90-120		314	21.7
90-130		426	29.4
90-150		625	43.1
90-180		758	52.3
0-180		1449	100.0

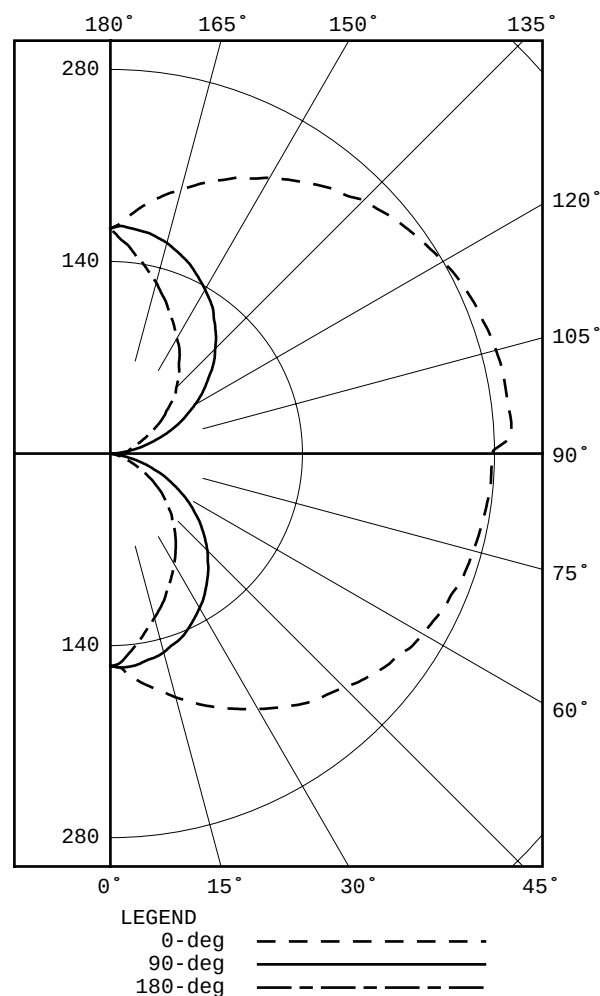
EFFICACY = 65.3 lm/W

CIE TYPE - GENERAL DIFFUSE

PLANE : 0-DEG 90-DEG 180-DEG

SPACING CRITERIA : 2.15 1.25 0.92

SHIELDING ANGLES : 90 90





®

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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 3.000 22.500
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 3913. 2865. 1023.
55 4221. 2522. 676.
65 4631. 2028. 346.
75 5137. 1244. 112.
85 5893. 0. 0.



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	155	155	155	155	155	155	155	155	155
5.0	163	161	160	157	156	152	149	148	147
10.0	173	171	167	159	153	146	139	137	135
15.0	184	180	173	161	150	139	130	126	124
20.0	195	189	178	160	145	130	121	116	114
25.0	205	198	182	159	138	121	110	106	103
30.0	215	206	184	156	130	111	100	94	93
35.0	225	214	187	151	121	101	89	84	83
40.0	234	220	188	146	111	89	78	74	73
45.0	241	226	188	140	100	78	67	64	63
50.0	250	232	188	133	88	66	56	54	52
55.0	256	237	187	125	75	53	46	43	41
60.0	263	240	185	116	62	42	35	32	30
65.0	268	244	184	107	48	30	25	21	20
70.0	272	246	181	98	34	20	14	12	12
75.0	274	247	178	89	21	9	6	5	6
80.0	276	249	177	81	7	1	1	0	1
85.0	278	249	174	75	0	0	0	0	0
90.0	278	249	174	71	0	0	0	0	0
95.0	293	264	190	88	7	6	9	11	13
100.0	292	264	191	94	18	10	12	13	14
105.0	291	264	194	101	30	18	16	16	17
110.0	288	262	196	110	44	28	24	22	22
115.0	285	261	198	119	58	38	33	30	29
120.0	280	258	200	128	71	49	43	39	38
125.0	274	254	202	137	84	61	53	49	48
130.0	268	250	204	145	97	72	63	59	58
135.0	261	244	203	152	108	84	73	70	68
140.0	252	238	203	159	119	96	84	79	78
145.0	242	231	201	164	130	107	95	89	88
150.0	232	223	199	168	138	118	106	99	97
155.0	222	214	196	171	146	128	116	109	107
160.0	211	205	192	173	153	137	127	120	118
165.0	199	196	186	173	159	145	137	131	129
170.0	188	186	180	172	163	153	146	141	140
175.0	175	174	171	168	165	159	155	152	152
180.0	164	164	164	164	164	164	164	164	164



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		4
5- 10		11
10- 15		18
15- 20		25
20- 25		31
25- 30		36
30- 35		41
35- 40		45
40- 45		48
45- 50		50
50- 55		51
55- 60		51
60- 65		51
65- 70		49
70- 75		47
75- 80		45
80- 85		44
85- 90		43
90- 95		48
95-100		50
100-105		52
105-110		53
110-115		55
115-120		56
120-125		56
125-130		56
130-135		54
135-140		52
140-145		48
145-150		44
150-155		39
155-160		33
160-165		26
165-170		19
170-175		12
175-180		4

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		15
0- 20		58
0- 30		125
0- 40		211
0- 50		309
0- 60		412
0- 70		511
0- 80		603
0- 90		691
0-100		789
0-110		894
0-120		1005
0-130		1117
0-140		1223
0-150		1316
0-160		1387
0-170		1433
0-180		1449



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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	98	98	98	98	82	82	82	67	67	67	54	54	54	48
1	94	89	84	80	86	82	77	73	68	65	62	55	53	50	43	42	40	34
2	85	76	69	63	77	70	64	58	58	53	49	47	43	40	37	34	32	27
3	77	66	58	51	70	61	53	47	50	45	40	41	36	33	32	29	26	22
4	70	58	49	43	64	53	46	40	44	38	33	36	31	28	28	25	22	18
5	64	51	43	36	58	47	39	33	39	33	28	32	27	23	25	21	19	15
6	59	46	37	31	54	42	34	29	35	29	24	29	24	20	22	19	16	13
7	54	41	33	27	49	38	30	25	32	26	21	26	21	18	20	17	14	11
8	50	37	29	23	46	34	27	22	29	23	19	24	19	16	19	15	12	10
9	47	34	26	21	43	31	24	19	26	21	17	22	17	14	17	14	11	9
10	44	31	23	18	40	29	22	17	24	19	15	20	15	12	16	12	10	8

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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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

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