

Project Number
20.01100



HUBBELL
Lighting

Date
9/25/2020

Photometric Test Report

Lab 1
Sphere

Test Sample Description

Catalog Number: P300331-031-30
Description: 14" LED Linear Vanity w/ Acrylic Refractor

Photometry

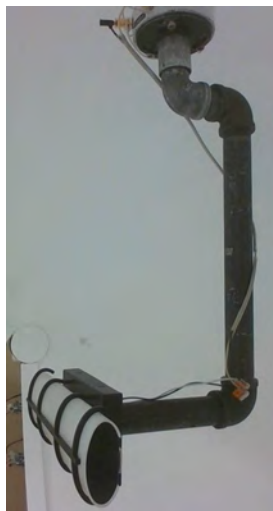
Test Method: IES LM-46-04
IES LM-79-08 §10
Preburn Time: 2:30
Time To Stabilize: 1:00
Total Operating Time: 3:00

Input Voltage (Volts): 120.0
Input Current (Amps): 0.110
Input Wattage (Watts): 12.9
Ambient Temp (°C): 25.5

Sphere

Test Method: IES LM-16-93
IES LM-79-08 § 12.1
Preburn Time: 2:00
Time To Stabilize: 1:10
Total Operating Time: 3:40

Input Voltage (Volts): 120.0
Input Current (Amps): 0.109
Input Wattage (Watts): 12.9
Ambient Temp (°C): 24
PF @ 120V: 0.981
THD @ 120V (%): 14.8



Hubbell Lighting, Inc.

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

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



* This customer-provided information was not verified by the laboratory and could affect the validity of the test results.
Note that the LED manufacturer and part number are unverifiable by the lab.

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Lamp Cat#: 2835

Lamp Desc: 27 - Seoul 3000K LEDs

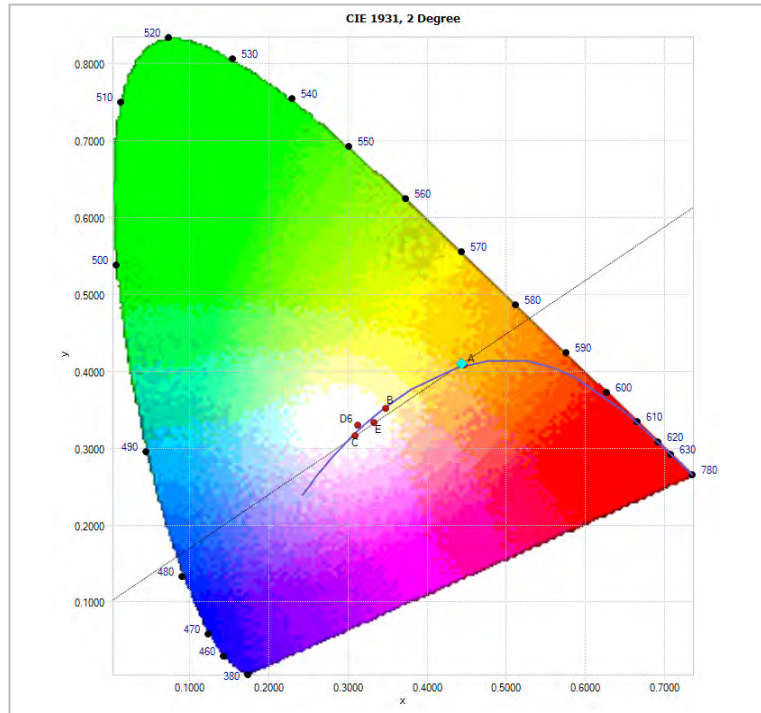
Driver Desc: 1 - Becky BQE12-0400-30-TD

Programmed to 400mA

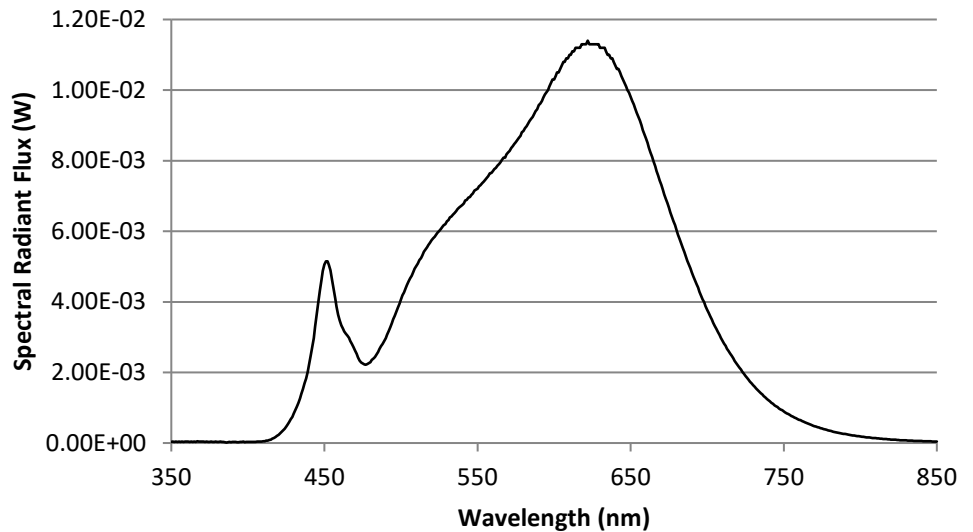
Efficacy: 43.5 LPW S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	1.96	watts
$\Phi(v)$	561	lumens
$\Phi(v')$	771	lm'
Chrom x	0.4432	
Chrom y	0.4098	
Chrom u	0.2521	
Chrom v	0.3497	
Duv	0.0012	
Chrom u'	0.2521	
Chrom v'	0.5246	
CCT	2942	K
Purity	56	%
λ (dom)	582.6	nm
FWHM	163.8	nm
λ (peak)	622.5	nm
λ (center)	601.0	nm
λ (centroid)	596.5	nm
SDCM	Cool White	
RA	93	
Corr. Coef.	0.001446811	
Correlation	0.0054	
R1	93.1	
R2	95.4	
R3	96.7	
R4	93.9	
R5	92.5	
R6	94.5	
R7	93.7	
R8	83.7	
R9	61.9	
R10	88.4	
R11	94.7	
R12	80.7	
R13	93.6	
R14	97.4	



Spectral Distribution of Radiant Flux



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PREPARED FOR: PROGRESS

CATALOG NUMBER: P300331-031-30

LUMINAIRE: 14" LED Linear Vanity w/ Acrylic Refractor

LAMP CAT. NO.: 2835

LAMP: 27- Seoul 3000K LEDs

BALLAST CATALOG NUMBER: BQE12-0400-30-TD

BALLAST: 1- Becky - Programmed to 400mA

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	43	43	43	43	43
5	47	46	43	40	39
15	55	50	41	34	33
25	62	53	38	29	28
35	76	56	32	24	27
45	89	61	26	21	27
55	102	67	19	19	24
65	112	72	12	15	22
75	120	76	6	14	25
85	124	78	1	14	26
90	125	79	1	14	27
95	125	78	1	14	27
105	120	76	5	13	25
115	112	72	12	15	22
125	102	67	19	19	24
135	89	61	26	21	27
145	75	55	32	24	27
155	62	53	37	29	28
165	55	50	41	34	32
175	48	46	43	40	40
180	43	43	43	43	43

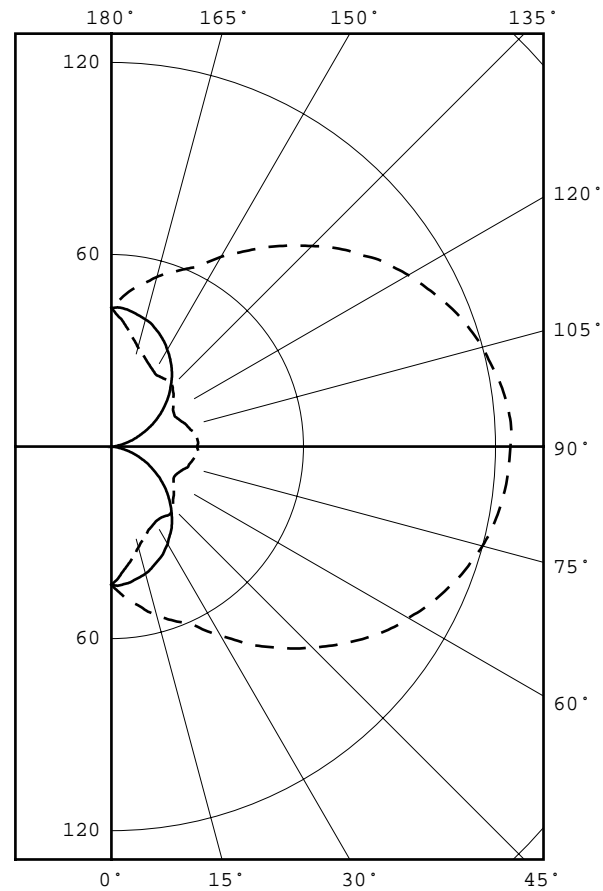
FLUX

4
12
19
26
32
37
41
44
46
47
44
41
37
32
26
19
12
4

ZONAL LUMEN SUMMARY

ZONE	LUMEN LUMENS	%FIXT
0- 30	35	6.7
0- 40	61	11.6
0- 60	130	24.9
0- 90	262	50.1
90-120	132	25.2
90-130	169	32.3
90-150	226	43.2
90-180	262	49.9
0-180	524	100.0

EFFICACY = 40.6 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 2.66 1.21 0.90
SHIELDING ANGLES : 90 90



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



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PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 1.500 14.000
HEIGHT OF SIDE : 3.500 3.500

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE AVERAGE AVERAGE
IN DEG 0-DEG 90-DEG 180-DEG
45 2781. 2188. 849.
55 3027. 1830. 704.
65 3264. 1398. 634.
75 3525. 826. 726.
85 3795. 198. 808.



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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	43	43	43	43	43	43	43	43	43
5.0	47	47	46	44	43	42	40	40	39
10.0	51	50	48	45	42	39	38	36	36
15.0	55	53	50	46	41	37	34	33	33
20.0	58	56	52	46	39	35	32	30	30
25.0	62	59	53	45	38	32	29	29	28
30.0	68	64	54	44	35	29	27	27	27
35.0	76	69	56	43	32	26	24	26	27
40.0	82	75	58	41	29	23	23	26	28
45.0	89	81	61	40	26	20	21	26	27
50.0	96	86	64	38	23	17	20	24	25
55.0	102	92	67	37	19	15	19	22	24
60.0	107	96	70	36	16	13	17	20	22
65.0	112	101	72	35	12	11	15	19	22
70.0	117	105	75	35	9	9	14	19	23
75.0	120	107	76	34	6	8	14	20	25
80.0	123	110	78	34	3	7	14	20	26
85.0	124	111	78	34	1	8	14	20	26
90.0	125	111	79	34	1	9	14	19	27
95.0	125	111	78	34	1	8	14	19	27
100.0	123	110	77	34	3	7	14	21	26
105.0	120	107	76	34	5	7	13	20	25
110.0	117	104	74	34	8	9	14	20	23
115.0	112	101	72	35	12	11	15	19	22
120.0	107	96	69	35	16	12	17	20	22
125.0	102	91	67	36	19	14	19	22	24
130.0	96	86	64	37	23	17	20	24	25
135.0	89	81	61	39	26	20	21	25	27
140.0	82	75	58	41	29	23	22	25	27
145.0	75	69	55	43	32	25	24	25	27
150.0	68	63	54	44	35	28	26	26	27
155.0	62	59	53	45	37	32	29	28	28
160.0	58	57	52	46	40	34	31	30	30
165.0	55	54	50	46	41	37	34	33	32
170.0	51	50	48	46	42	40	37	36	35
175.0	48	47	46	45	43	42	40	40	40
180.0	43	43	43	43	43	43	43	43	43



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		1
5- 10		3
10- 15		5
15- 20		7
20- 25		9
25- 30		10
30- 35		12
35- 40		14
40- 45		15
45- 50		17
50- 55		18
55- 60		19
60- 65		20
65- 70		21
70- 75		22
75- 80		23
80- 85		23
85- 90		23
90- 95		23
95-100		23
100-105		23
105-110		22
110-115		21
115-120		20
120-125		19
125-130		18
130-135		17
135-140		15
140-145		14
145-150		12
150-155		10
155-160		9
160-165		7
165-170		5
170-175		3
175-180		1

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		4
0- 20		16
0- 30		35
0- 40		61
0- 50		93
0- 60		130
0- 70		172
0- 80		216
0- 90		262
0-100		309
0-110		353
0-120		394
0-130		431
0-140		463
0-150		489
0-160		508
0-170		520
0-180		524



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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	94	87	82	77	77	86	80	75	71	67	63	60	54	52	49	43	41	39	33
2	84	74	66	60	60	76	68	61	55	56	51	46	45	41	38	35	32	30	25
3	75	64	55	48	48	69	58	51	44	48	42	37	39	34	30	30	27	24	19
4	68	56	47	39	39	62	51	43	36	42	36	31	34	29	25	26	23	19	16
5	62	49	40	33	33	57	45	37	31	37	31	26	30	25	21	23	20	16	13
6	57	44	35	28	28	52	40	32	26	33	27	22	27	22	18	21	17	14	11
7	53	39	30	24	24	48	36	28	23	30	24	19	24	19	16	19	15	12	9
8	49	35	27	21	21	45	33	25	20	27	21	17	22	17	14	17	14	11	8
9	45	32	24	19	19	41	30	22	17	25	19	15	20	16	12	16	12	9	7
10	42	29	22	17	17	39	27	20	15	23	17	13	19	14	11	15	11	9	6

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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9/25/2020

Goniophotometer Calibration

Calibration Lamp: EIKO 75Q/CL/E10 28V75W

Lamp Number: K136

Calibration Current: 2.679 Amps DC

Total Luminous Flux: 1429 Lumens

Calibration Date: 8/28/2020

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	10/31/2020
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/31/2020

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	10/31/2020
<i>Power Analyzer</i>	Yokogawa / WT332	C2QA27075V	10/31/2020
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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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