

Project Number
19.01880



HUBBELL
Lighting

Date
10/25/2019

Photometric Test Report

LAB 5
Sphere

Test Sample Description

Catalog Number: P810014-020-30
Description: 7" Round LED Surface Mount BRONZE

Photometry

Test Methods: IES LM-41-14
IES LM-79-08 §10

Preburn Time: 1:00
Time To Stabilize: 0:16
Total Operating Time: 4:16

Input Voltage (Volts): 120.4
Input Current (Amps): 0.133
Input Wattage (Watts): 15.6
Ambient Temp (°C): 26.0
PF @ 120V: 0.977
THD @ 120V (%): 17.12

Sphere

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

Preburn Time: 0:10
Time To Stabilize: 1:01
Total Operating Time: 1:11

Input Voltage (Volts): 120.0
Input Current (Amps): 0.130
Input Wattage (Watts): 15.4
Ambient Temp (°C): 24



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. OLALDE
Approved: N. DeVOL



* 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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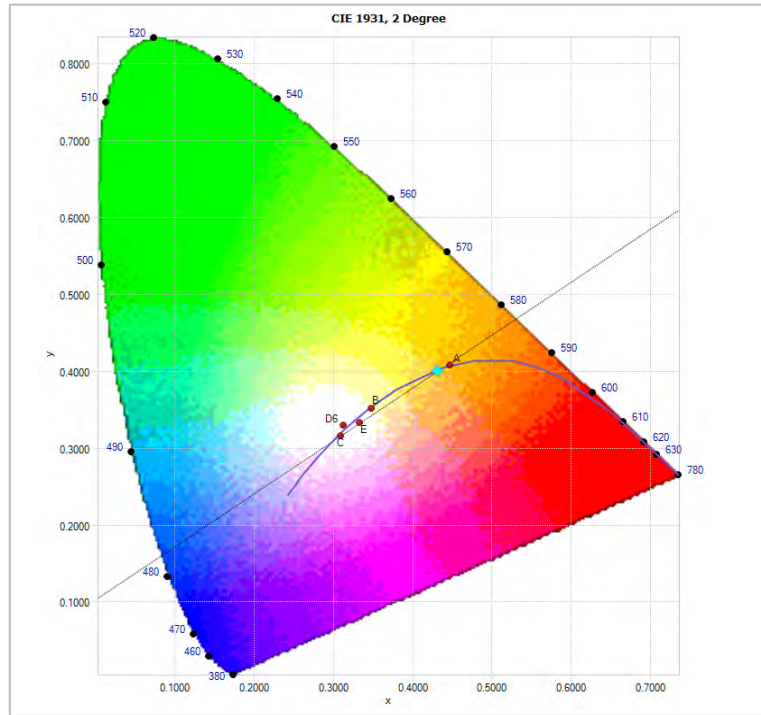


Lamp Cat#: 2835 BXEN-27E-13H-9A
 Lamp Desc: 28 - Bridgelux 3000K LEDs

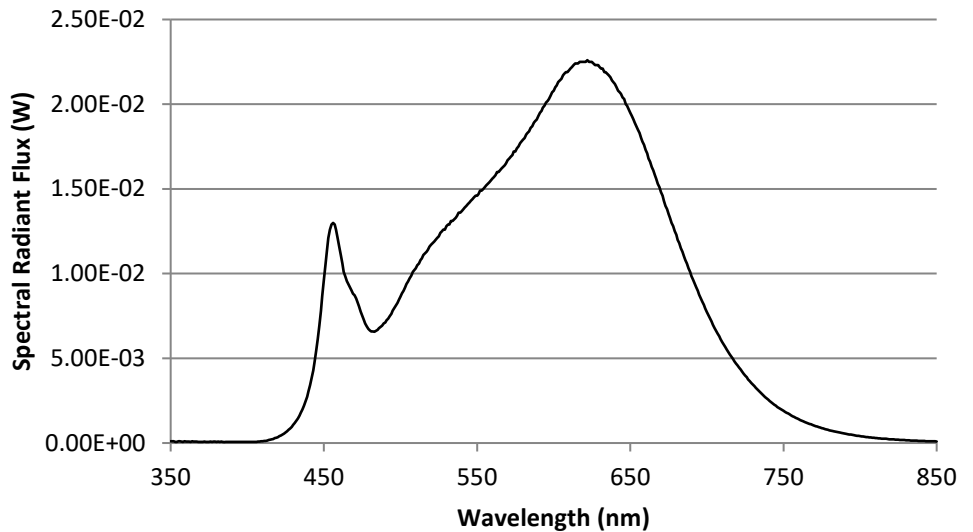
Efficacy: 74.2 LPW S/P Ratio: 1.5 LM/LM

Spectral Results

Name	Value	Unit
Φ	4.04	watts
Φ(v)	1142	lumens
Φ(v')	1688	lm'
Chrom x	0.4317	
Chrom y	0.4011	
Chrom u	0.2485	
Chrom v	0.3463	
Duv	0.0005	
Chrom u'	0.2485	
Chrom v'	0.5194	
CCT	3063	K
Purity	50	%
λ (dom)	582.7	nm
FWHM	167.4	nm
λ (peak)	621.6	nm
λ (center)	600.4	nm
λ (centroid)	594.0	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.00048444	
Correlation	0.0054	
R1	95.0	
R2	98.6	
R3	98.7	
R4	93.2	
R5	94.3	
R6	96.8	
R7	92.1	
R8	84.5	
R9	66.9	
R10	95.2	
R11	94.2	
R12	80.0	
R13	96.4	
R14	99.5	



Spectral Distribution of Radiant Flux



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PREPARED FOR: PROGRESS

CATALOG NUMBER: P810014-020-30

LUMINAIRE: 7" Round LED Surface Mount

LAMP CAT. NO.: 2835 BXEN-27E-13H-9A

LAMP: 28- Bridgelux 3000K LEDs

MOUNTING: Surface

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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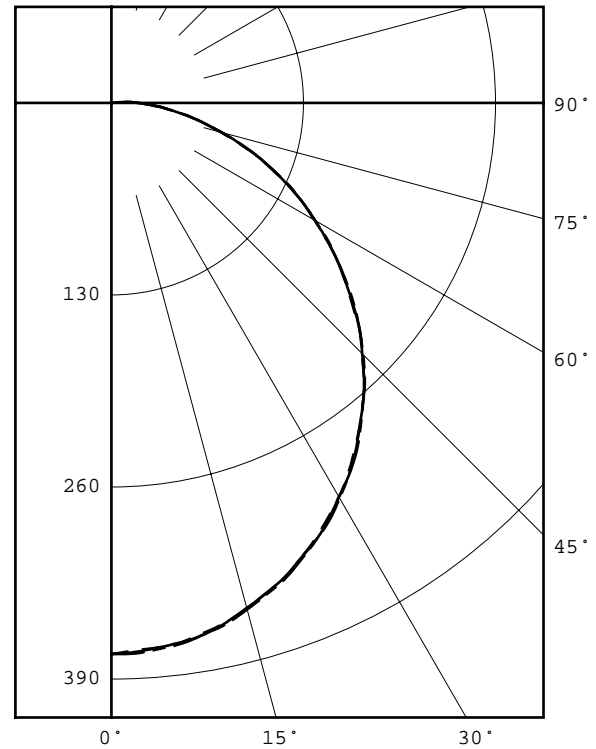
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CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	373	373	373	373	373	
5	370	370	370	370	371	35
15	354	354	354	354	355	100
25	326	326	327	327	327	150
35	287	288	288	288	289	180
45	240	241	240	241	241	186
55	187	187	187	187	187	167
65	132	132	132	132	133	131
75	77	78	77	77	77	82
85	34	34	34	34	34	38
90	18	18	18	18	18	
95	0	0	0	0	0	6
105	0	0	0	0	0	0
115	0	0	0	0	0	0
125	0	0	0	0	0	0
135	0	0	0	0	0	0
145	0	0	0	0	0	0
155	0	0	0	0	0	0
165	0	0	0	0	0	0
175	0	0	0	0	0	0
180	0	0	0	0	0	0

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0- 30	286	26.6
0- 40	466	43.3
0- 60	818	76.1
0- 90	1069	99.5
90-120	6	0.5
90-130	6	0.5
90-150	6	0.5
90-180	6	0.5
0-180	1075	100.0

EFFICACY = 68.9 lm/W
CIE TYPE - DIRECT
PLANE : 0-DEG 90-DEG
SPACING CRITERIA : 1.23 1.23



LEGEND
0-deg - - - - -
45-deg ————
90-deg - - - - -



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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	373	373	373	373	373
5.0	370	370	370	370	371
10.0	364	364	365	365	365
15.0	354	354	354	354	355
20.0	342	342	342	342	343
25.0	326	326	327	327	327
30.0	308	309	308	309	309
35.0	287	288	288	288	289
40.0	265	265	265	265	265
45.0	240	241	240	241	241
50.0	213	214	214	214	215
55.0	187	187	187	187	187
60.0	159	159	159	159	159
65.0	132	132	132	132	133
70.0	105	104	105	105	105
75.0	77	78	77	77	77
80.0	54	54	54	54	54
85.0	34	34	34	34	34
90.0	18	18	18	18	18
95.0	0	0	0	0	0
100.0	0	0	0	0	0
105.0	0	0	0	0	0
110.0	0	0	0	0	0
115.0	0	0	0	0	0
120.0	0	0	0	0	0
125.0	0	0	0	0	0
130.0	0	0	0	0	0
135.0	0	0	0	0	0
140.0	0	0	0	0	0
145.0	0	0	0	0	0
150.0	0	0	0	0	0
155.0	0	0	0	0	0
160.0	0	0	0	0	0
165.0	0	0	0	0	0
170.0	0	0	0	0	0
175.0	0	0	0	0	0
180.0	0	0	0	0	0



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		9
5- 10		26
10- 15		43
15- 20		57
20- 25		70
25- 30		80
30- 35		88
35- 40		92
40- 45		94
45- 50		92
50- 55		87
55- 60		80
60- 65		71
65- 70		60
70- 75		48
75- 80		35
80- 85		24
85- 90		14
90- 95		6
95-100		0
100-105		0
105-110		0
110-115		0
115-120		0
120-125		0
125-130		0
130-135		0
135-140		0
140-145		0
145-150		0
150-155		0
155-160		0
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		35
0- 20		135
0- 30		286
0- 40		466
0- 50		651
0- 60		818
0- 70		949
0- 80		1031
0- 90		1069
0-100		1075
0-110		1075
0-120		1075
0-130		1075
0-140		1075
0-150		1075
0-160		1075
0-170		1075
0-180		1075



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	99
1	108	103	98	94	105	100	96	92	96	93	89	92	89	87	88	86	84	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	72	77	73	70	68
3	89	78	70	63	87	77	69	62	73	67	61	71	65	60	68	63	59	57
4	82	69	60	53	79	68	59	53	65	58	52	63	56	51	61	55	51	48
5	75	62	53	46	73	61	52	46	58	51	45	56	50	44	54	49	44	42
6	69	56	47	40	67	55	46	40	53	45	39	51	44	39	49	43	39	36
7	64	50	42	35	62	50	41	35	48	40	35	46	40	35	45	39	34	32
8	60	46	37	32	58	45	37	31	44	36	31	43	36	31	41	35	31	29
9	56	42	34	28	54	42	34	28	40	33	28	39	33	28	38	32	28	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	36	30	25	23

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: ITL78966-1000-66

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 23013.0 Lumens

Calibration Date: 08/20/2019

<i>Test Equipment Used</i>			
<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/31/2020
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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

<i>Test Equipment Used - Color & SPD; THD & Power Factor</i>			
<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>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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