

Project Number
19.00628



HUBBELL
Lighting

Date
4/12/2019

Photometric Test Report

LAB #1
Sphere

Test Sample Description

Catalog Number: P810014-028-30
Description: 7" DOWNLIGHT

Photometry

Test Method: IES LM-46-04
IES LM-79-08 §10
Preburn Time: 0:10
Time To Stabilize: 1:12
Total Operating Time: 1:45

Input Voltage (Volts): 120.1
Input Current (Amps): 0.129
Input Wattage (Watts): 15.3
Ambient Temp (°C): 26.3

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 0:20
Time To Stabilize: 1:46
Total Operating Time: 2:41

Input Voltage (Volts): 120.1
Input Current (Amps): 0.128
Input Wattage (Watts): 15.2
Ambient Temp (°C): 24
PF @ 120V: 0.991
THD @ 120V (%): 14.0



Hubbell Lighting, Inc.

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

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

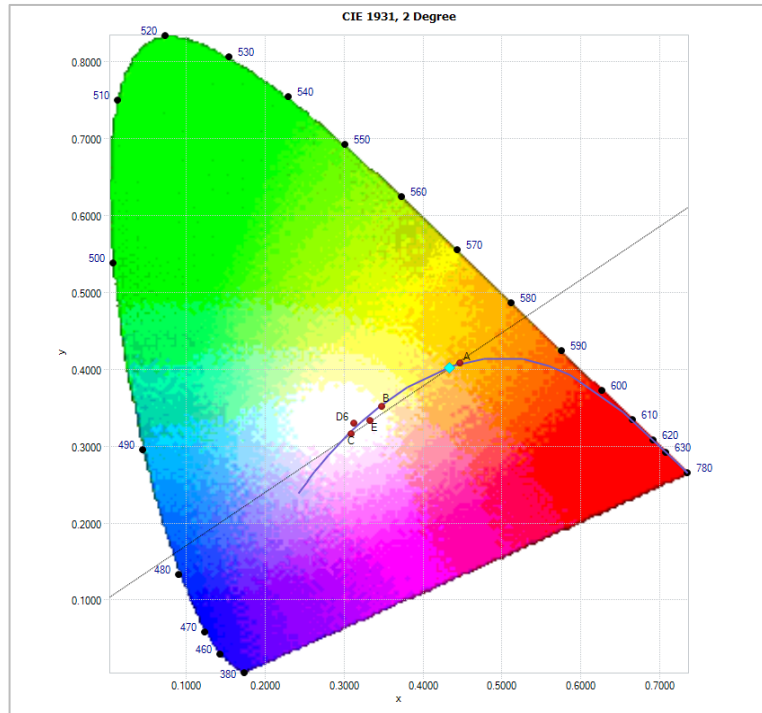
This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



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

Efficacy: 76.4 LPW S/P Ratio: 1.5 LM/LM

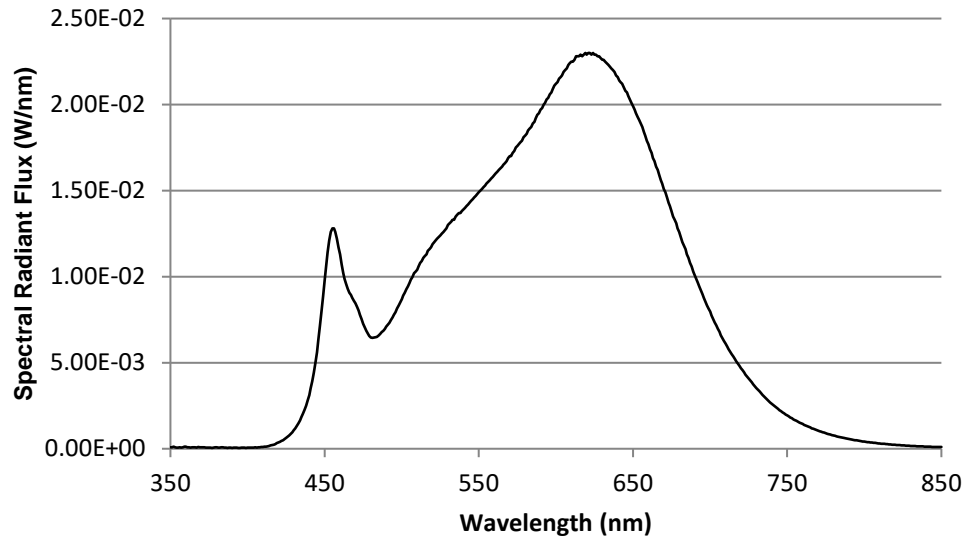
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	4.10	watts
Φ(v)	1161	lumens
Φ(v')	1696	lm'
Chrom x	0.4336	
Chrom y	0.4026	
Chrom u	0.2491	
Chrom v	0.3469	
Duv	0.0002	
Chrom u'	0.2491	
Chrom v'	0.5203	
CCT	3042	K
Purity	51	%
λ (dom)	582.7	nm
FWHM	167.2	nm
λ (peak)	620.4	nm
λ (center)	600.7	nm
λ (centroid)	594.7	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.000217641	
Correlation	0.0054	
R1	94.7	
R2	98.2	
R3	98.9	
R4	93.2	
R5	94.0	
R6	96.7	
R7	92.3	
R8	84.4	
R9	66.1	
R10	94.3	
R11	94.1	
R12	79.9	
R13	96.0	
R14	99.3	

Spectral Distribution of Radiant Flux





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ISSUE DATE: 04/12/19

PREPARED FOR: PROGRESS

CATALOG NUMBER: P810014-028-30

LUMINAIRE: 7" DOWNLIGHT

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

LAMP: 28- Bridgelux 3000K LEDs

MOUNTING: Surface

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



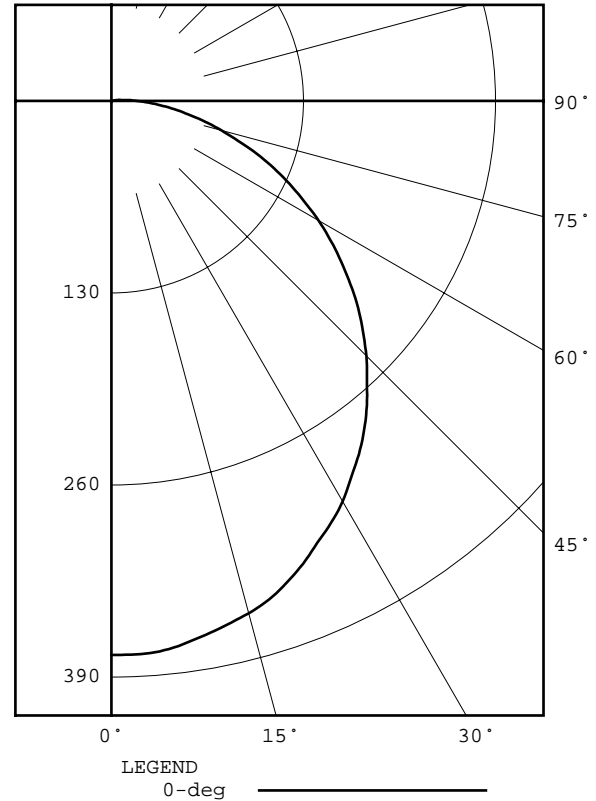
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DEG	CANDELA	LUMENS
0	375	
5	374	35
15	359	101
25	330	152
35	292	183
45	244	188
55	190	170
65	133	132
75	77	82
85	33	37
90	17	
95	7	9
105	0	0
115	0	0
125	0	0
135	0	0
145	0	0
155	0	0
165	0	0
175	0	0
180	0	

ZONAL ZONE	LUMEN LUMENS	SUMMARY LUMENS	%FIXT
0- 30		289	26.5
0- 40		472	43.3
0- 60		830	76.1
0- 90		1081	99.1
90-120		9	0.9
90-130		9	0.9
90-150		9	0.9
90-180		9	0.9
0-180		1090	100.0

EFFICACY = 71.2 lm/W
CIE TYPE - DIRECT
SPACING CRITERION: 1.24
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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LUMINOUS DIAMETER: 4.500
HEIGHT OF SIDE : 0.500

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	29462.
55	26857.
65	23531.
75	18976.
85	14100.



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CANDELA DISTRIBUTION

0.0	375
5.0	374
10.0	367
15.0	359
20.0	347
25.0	330
30.0	313
35.0	292
40.0	269
45.0	244
50.0	218
55.0	190
60.0	162
65.0	133
70.0	105
75.0	77
80.0	53
85.0	33
90.0	17
95.0	7
100.0	2
105.0	0
110.0	0
115.0	0
120.0	0
125.0	0
130.0	0
135.0	0
140.0	0
145.0	0
150.0	0
155.0	0
160.0	0
165.0	0
170.0	0
175.0	0
180.0	0



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	9
5- 10	27
10- 15	43
15- 20	58
20- 25	71
25- 30	81
30- 35	89
35- 40	94
40- 45	95
45- 50	93
50- 55	89
55- 60	81
60- 65	72
65- 70	60
70- 75	47
75- 80	35
80- 85	23
85- 90	14
90- 95	7
95-100	3
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	137
0- 30	289
0- 40	472
0- 50	660
0- 60	830
0- 70	962
0- 80	1044
0- 90	1081
0-100	1090
0-110	1090
0-120	1090
0-130	1090
0-140	1090
0-150	1090
0-160	1090
0-170	1090
0-180	1090



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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	101	101	101	99
1	108	103	98	94	105	100	96	92	96	93	89	92	89	86	88	86	84	82
2	98	89	82	76	95	87	81	75	84	78	73	80	76	71	77	73	70	67
3	89	78	70	63	87	77	69	63	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	60	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	35	29	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: ITL78966-1000-38

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 25889.0 Lumens

Calibration Date: 07/10/2017

<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 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	10/31/2019
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/31/2019

3-Meter-Sphere Calibration

Calibration Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-J136

Calibration Current: 2.679 Amps

Total Luminous Flux: 1427 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	Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/31/2019
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	10/31/2019
<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>	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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