

Project Number
17.02132



HUBBELL
Lighting

Date
8/4/2017

LAB 6
Sphere

Test Sample Description

Catalog Number: PCIAW-LED-2-35K
Description: 2' LED Wrap

Photometry

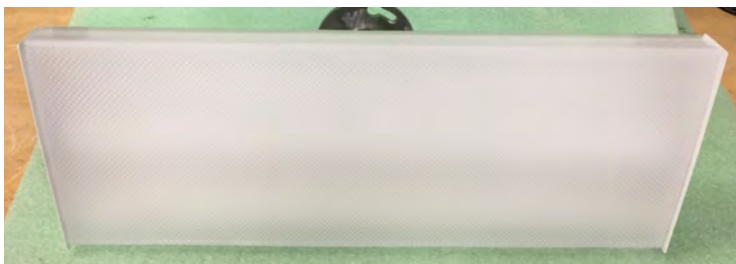
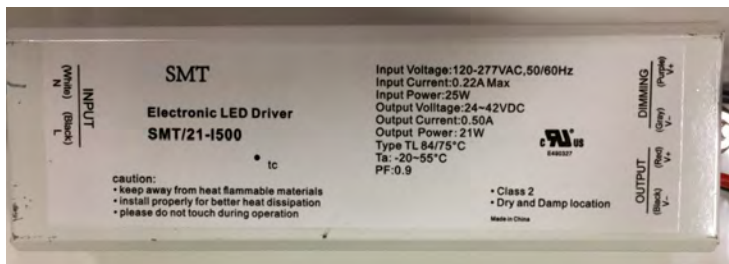
Test Method: IES LM-79-08 § 10
Preburn Time: 0:30
Time To Stabilize: 0:50
Total Operating Time: 2:00

Input Voltage (Volts): 119.9
Input Current (Amps): 0.153
Input Wattage (Watts): 17.8
Ambient Temp (°C): 24.3
PF @277V: 0.912
THD @ 277V (%): 15.78

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 1:00
Total Operating Time: 9:00

Input Voltage (Volts): 120.0
Input Current (Amps): 0.151
Input Wattage (Watts): 17.8
Ambient Temp (°C): 24.0



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. ELLMANN
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.

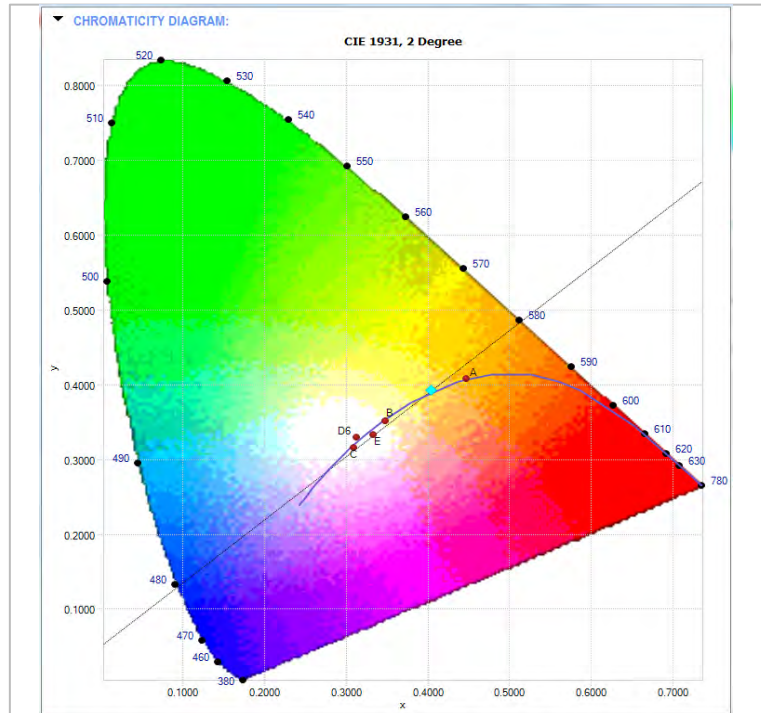


Lamp Cat#: 3528
 Lamp Desc: 80 - Bridgelux 3500K LEDs
 Driver Desc: 1 - Arcata Electronics SMT21-I500

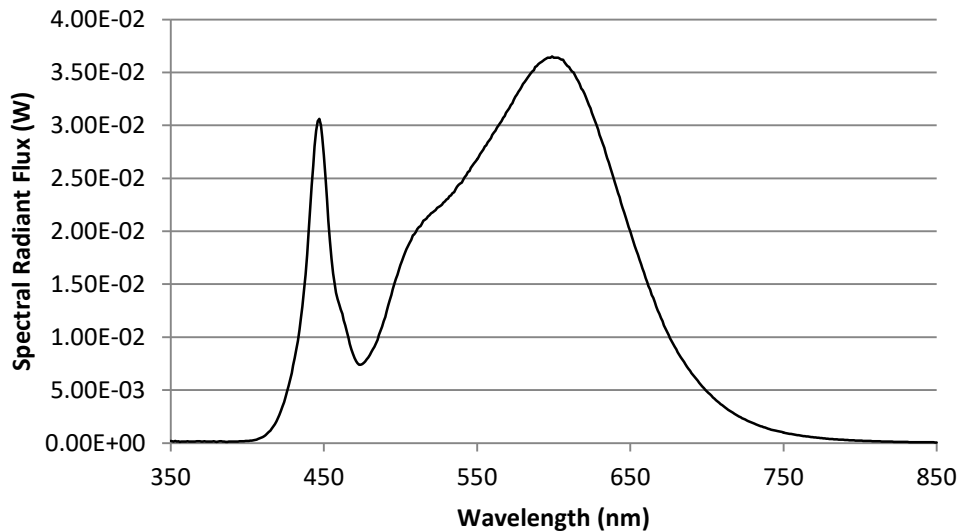
Efficacy: 112.1 LPW S/P Ratio: 1.5 LM/LM

Spectral Results

Name	Value	Unit
Φ	6.02	watts
$\Phi(v)$	1995	lumens
$\Phi(v')$	3055	lm'
Chrom x	0.4042	
Chrom y	0.393	
Chrom u	0.234	
Chrom v	0.3414	
Duv	0.0011	
Chrom u'	0.234	
Chrom v'	0.5121	
CCT	3541	K
Purity	39.3	%
λ (dom)	580.2	nm
FWHM	149.9	nm
λ (peak)	599.2	nm
λ (center)	578.9	nm
λ (centroid)	570.1	nm
SDCM	Cool White	
RA	83	
Corr. Coef.	0.001277827	
Correlation	0.0054	
R1	81.2	
R2	88.8	
R3	95.8	
R4	83.2	
R5	81.8	
R6	86.0	
R7	85.6	
R8	63.3	
R9	8.6	
R10	74.7	
R11	83.2	
R12	70.3	
R13	82.8	
R14	97.7	



Spectral Distribution of Radiant Flux



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PREPARED FOR: PROGRESS

CATALOG NUMBER: PCIAW-LED-2-35K

LUMINAIRE: 2' LED Wrap

LAMP CAT. NO.: 3528

LAMP: 80- Bridgelux 3500K LEDs

BALLAST CATALOG NUMBER: SMT21-I500

BALLAST: 1- Arcata Electronics

REFRACTOR: Acrylic

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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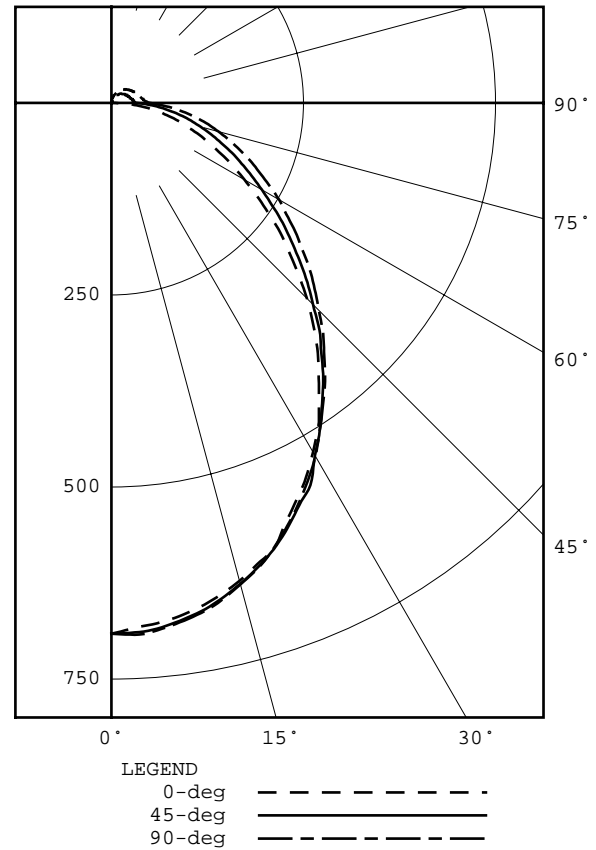
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CATALOG NUMBER: PCIAW-LED-2-35K

CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	691	691	691	691	691	
5	680	685	687	688	689	65
15	644	649	648	650	649	183
25	570	574	578	577	576	265
35	471	477	478	483	480	299
45	360	366	371	384	382	288
55	249	258	272	286	292	243
65	158	169	187	205	212	186
75	90	102	120	138	144	126
85	30	44	62	77	82	65
90	0	15	33	46	50	
95	0	13	29	40	42	28
105	1	11	25	34	37	24
115	1	11	23	30	33	20
125	2	10	20	27	29	16
135	2	8	17	23	25	12
145	2	7	13	18	19	8
155	3	5	9	12	14	4
165	3	4	6	7	8	2
175	3	3	4	4	4	0
180	3	3	3	3	3	

ZONAL ZONE	LUMEN LUMENS	SUMMARY %FIXT
0- 30	513	28.0
0- 40	812	44.3
0- 60	1343	73.3
0- 90	1719	93.8
90-120	72	3.9
90-130	88	4.8
90-150	108	5.9
90-180	114	6.2
0-180	1833	100.0

EFFICACY = 103.0 lm/W
 CIE TYPE - DIRECT
 PLANE : 0-DEG 90-DEG
 SPACING CRITERIA : 1.14 1.15





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CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	691	691	691	691	691
5.0	680	685	687	688	689
10.0	666	670	672	674	674
15.0	644	649	648	650	649
20.0	618	619	618	617	617
25.0	570	574	578	577	576
30.0	525	528	530	532	531
35.0	471	477	478	483	480
40.0	417	421	425	432	431
45.0	360	366	371	384	382
50.0	302	309	320	331	337
55.0	249	258	272	286	292
60.0	200	210	226	245	252
65.0	158	169	187	205	212
70.0	122	133	152	170	177
75.0	90	102	120	138	144
80.0	60	72	91	107	113
85.0	30	44	62	77	82
90.0	0	15	33	46	50
95.0	0	13	29	40	42
100.0	0	12	27	37	39
105.0	1	11	25	34	37
110.0	1	11	24	32	35
115.0	1	11	23	30	33
120.0	2	10	21	29	31
125.0	2	10	20	27	29
130.0	2	9	18	25	27
135.0	2	8	17	23	25
140.0	2	7	14	20	22
145.0	2	7	13	18	19
150.0	3	6	11	15	16
155.0	3	5	9	12	14
160.0	3	5	7	9	11
165.0	3	4	6	7	8
170.0	3	3	4	5	5
175.0	3	3	4	4	4
180.0	3	3	3	3	3



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5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	16
5- 10	49
10- 15	78
15- 20	104
20- 25	125
25- 30	140
30- 35	148
35- 40	151
40- 45	148
45- 50	140
50- 55	128
55- 60	115
60- 65	100
65- 70	85
70- 75	70
75- 80	56
80- 85	40
85- 90	24
90- 95	15
95-100	13
100-105	12
105-110	11
110-115	10
115-120	10
120-125	9
125-130	8
130-135	6
135-140	5
140-145	4
145-150	3
150-155	2
155-160	2
160-165	1
165-170	1
170-175	0
175-180	0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	65
10- 20	183
20- 30	265
30- 40	299
40- 50	288
50- 60	243
60- 70	186
70- 80	126
80- 90	65
90-100	28
100-110	24
110-120	20
120-130	16
130-140	12
140-150	8
150-160	4
160-170	2
170-180	0



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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	118	118	118	118	118	114	114	114	114	108	108	108	102	102	102	96	96	96	94
1	107	102	97	93	93	103	99	95	91	91	94	90	87	84	84	84	82	80	77
2	97	89	82	76	76	94	87	80	75	75	82	77	72	70	74	74	70	67	65
3	89	78	70	64	64	86	76	69	63	63	73	66	61	59	69	64	59	66	57
4	82	70	61	54	54	79	68	60	54	54	65	58	52	51	62	56	51	59	47
5	75	63	54	47	47	73	61	53	47	47	58	51	46	45	56	49	45	53	41
6	70	57	48	41	41	67	55	47	41	41	53	46	40	39	51	44	39	48	36
7	65	51	43	37	37	63	50	42	36	36	48	41	36	35	46	40	35	44	32
8	60	47	39	33	33	58	46	38	33	33	44	37	32	32	43	36	32	41	29
9	56	43	35	30	30	55	42	35	30	30	41	34	29	29	39	33	29	38	26
10	53	40	32	27	27	51	39	32	27	27	38	31	26	26	37	30	26	35	24

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: 09/2/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 6 - Test Distance: 31.3'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27076V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/7/2017

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	Calibrated Weekly
<i>Thermometer</i>	National Instruments / USB TC01	1912751	11/2/2017
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	11/1/2017
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	031159372	10/31/2017
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	12/1/2017
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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