

Project Number  
17.02893



Date  
11/2/2017

LAB 5  
Sphere

**Test Sample Description**

Catalog Number: P7186-3030K8  
Description: 4' LED Wrap

**Photometry**

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

Preburn Time: 0:00  
Time To Stabilize: 0:45  
Total Operating Time: 2:00

Input Voltage (Volts): 120.2  
Input Current (Amps): 0.327  
Input Wattage (Watts): 37.9  
Ambient Temp (°C): 25.0

**Sphere**

Test Method: IES LM-16-93  
IES LM-79-08 § 9.1 & 12.1

Preburn Time: 3:00  
Time To Stabilize: 1:29  
Total Operating Time: 4:29

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.328  
Input Wattage (Watts): 37.8  
Ambient Temp (°C): 24.4



**Hubbell Lighting, Inc.**

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Greenville, SC 29607  
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Checked (sphere): B. LEE  
Checked (photometry): R. WILLIAMS  
Approved: P. McCARTHY



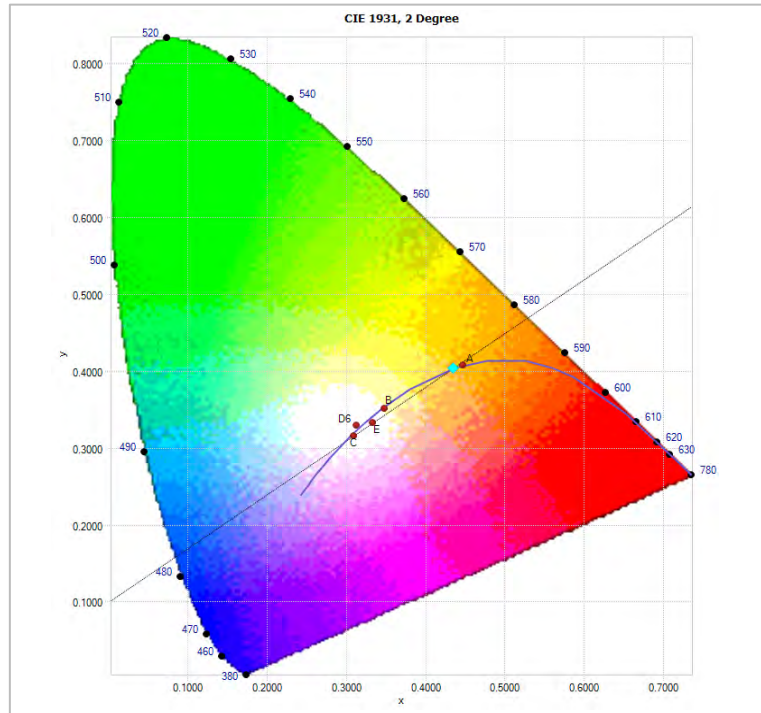
This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



Lamp Cat#: 2835  
 Lamp Desc: 128 - Bridgelux 3000K LEDs  
 Driver Desc: 1 - NT NT-GDA500700A

Efficacy: 108.1 LPW      S/P Ratio: 1.4 LM/LM

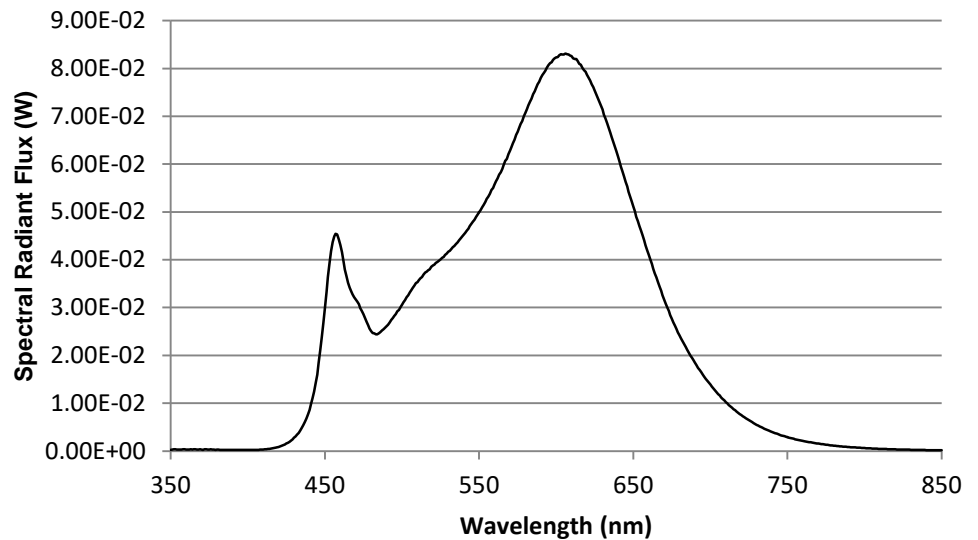
**Chromaticity Diagram**



**Spectral Results**

Name	Value	Unit
Φ	12.74	watts
Φ(v)	4086	lumens
Φ(v')	5870	lm'
Chrom x	0.4344	
Chrom y	0.404	
Chrom u	0.249	
Chrom v	0.3473	
Duv	0.0003	
Chrom u'	0.249	
Chrom v'	0.521	
CCT	3040	K
Purity	51.7	%
λ (dom)	582.5	nm
FWHM	129.9	nm
λ (peak)	606.2	nm
λ (center)	594.5	nm
λ (centroid)	582.4	nm
SDCM	Cool White	
RA	85	
Corr. Coef.	0.000372601	
Correlation	0.0054	
R1	85.6	
R2	96.1	
R3	92.6	
R4	82.3	
R5	85.9	
R6	95.3	
R7	82.3	
R8	62.9	
R9	20.0	
R10	90.8	
R11	82.7	
R12	76.4	
R13	88.6	
R14	96.5	

**Spectral Distribution of Radiant Flux**



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**ISSUE DATE:** 11/03/17

**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P7186-3030K8

**LUMINAIRE:** 4ft LED Wrap

**LAMP CAT. NO.:** 2835

**LAMP:** 128- Bridgelux 3000K LEDs

**BALLAST CATALOG NUMBER:** NT-GDA500700A

**BALLAST:** 1- NT

**MOUNTING:** Ceiling

**REFRACTOR:** Prismatic Acrylic

**NOTE:** DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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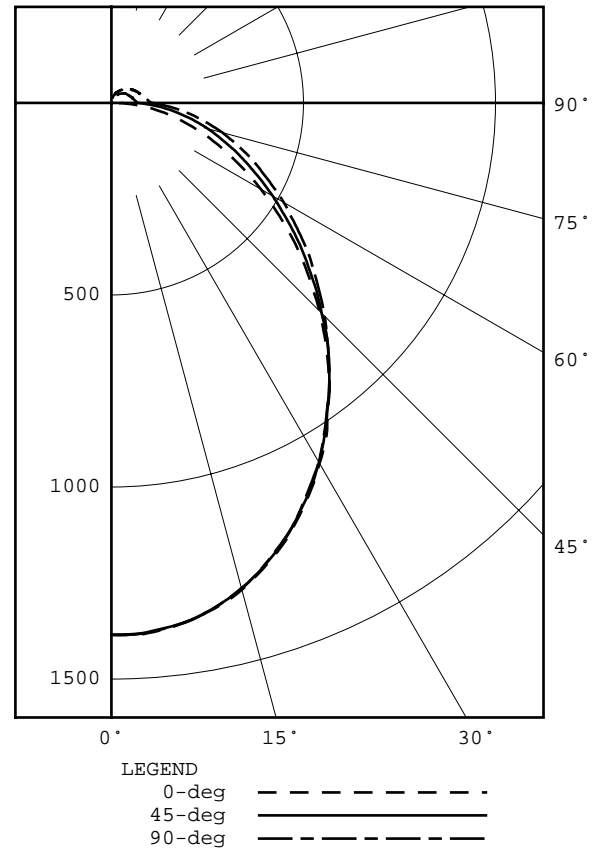
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CANDELA DISTRIBUTION						FLUX
	0.0	22.5	45.0	67.5	90.0	
0	1385	1385	1385	1385	1385	
5	1380	1379	1377	1373	1378	131
15	1312	1310	1309	1304	1308	368
25	1172	1172	1168	1164	1166	538
35	982	987	980	979	978	614
45	766	770	774	780	785	599
55	549	560	576	595	601	517
65	356	374	401	428	437	398
75	200	226	260	289	299	271
85	67	96	131	159	167	137
90	5	34	70	98	107	
95	3	29	62	86	94	62
105	5	26	55	75	82	53
115	7	24	48	65	71	44
125	8	21	43	57	62	35
135	9	18	34	47	53	25
145	11	16	25	36	40	16
155	12	14	20	25	28	9
165	13	13	15	17	19	4
175	13	12	11	10	10	1
180	10	10	10	10	10	

ZONAL ZONE	LUMEN LUMENS	SUMMARY LUMENS	%FIXT
0- 30		1037	27.1
0- 40		1651	43.2
0- 60		2766	72.4
0- 90		3572	93.5
90-120		159	4.2
90-130		194	5.1
90-150		235	6.2
90-180		250	6.5
0-180		3822	100.0

EFFICACY = 100.8 lm/W  
 CIE TYPE - DIRECT  
 PLANE : 0-DEG 90-DEG  
 SPACING CRITERIA : 1.17 1.17  
 SHIELDING ANGLES : 90 90





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PLANE : 0-DEG 90-DEG  
LUMINOUS LENGTH : 48.000 9.000  
HEIGHT OF SIDE : 2.000 2.000

LUMINANCE DATA IN CANDELA/SQ M  
ANGLE AVERAGE AVERAGE AVERAGE  
IN DEG 0-DEG 45-DEG 90-DEG  
45 3731. 3310. 3259.  
55 3241. 2845. 2854.  
65 2774. 2431. 2513.  
75 2399. 2125. 2266.  
85 1868. 1721. 1942.



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CANDELA DISTRIBUTION  
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0
0.0	1385	1385	1385	1385	1385
5.0	1380	1379	1377	1373	1378
10.0	1354	1354	1353	1349	1354
15.0	1312	1310	1309	1304	1308
20.0	1250	1249	1246	1243	1244
25.0	1172	1172	1168	1164	1166
30.0	1084	1084	1080	1075	1079
35.0	982	987	980	979	978
40.0	876	878	881	881	882
45.0	766	770	774	780	785
50.0	656	662	672	686	690
55.0	549	560	576	595	601
60.0	449	464	485	509	518
65.0	356	374	401	428	437
70.0	275	296	327	356	366
75.0	200	226	260	289	299
80.0	132	159	194	223	232
85.0	67	96	131	159	167
90.0	5	34	70	98	107
95.0	3	29	62	86	94
100.0	4	27	58	80	87
105.0	5	26	55	75	82
110.0	6	25	51	70	76
115.0	7	24	48	65	71
120.0	8	22	46	61	66
125.0	8	21	43	57	62
130.0	9	19	38	53	58
135.0	9	18	34	47	53
140.0	10	17	30	42	46
145.0	11	16	25	36	40
150.0	11	15	21	30	34
155.0	12	14	20	25	28
160.0	12	13	17	21	23
165.0	13	13	15	17	19
170.0	13	12	13	13	14
175.0	13	12	11	10	10
180.0	10	10	10	10	10



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		33
5- 10		98
10- 15		158
15- 20		211
20- 25		253
25- 30		285
30- 35		304
35- 40		310
40- 45		306
45- 50		292
50- 55		272
55- 60		245
60- 65		215
65- 70		183
70- 75		152
75- 80		119
80- 85		86
85- 90		52
90- 95		33
95-100		30
100-105		27
105-110		25
110-115		23
115-120		21
120-125		19
125-130		16
130-135		14
135-140		11
140-145		9
145-150		7
150-155		5
155-160		4
160-165		3
165-170		2
170-175		1
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		131
10- 20		368
20- 30		538
30- 40		614
40- 50		599
50- 60		517
60- 70		398
70- 80		271
80- 90		137
90-100		62
100-110		53
110-120		44
120-130		35
130-140		25
140-150		16
150-160		9
160-170		4
170-180		1



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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	117	117	117	117	114	114	114	114	107	107	107	102	102	102	96	96	96	93
1	107	102	97	93	103	99	95	91	93	90	87	88	86	83	84	81	80	77
2	97	89	82	76	94	86	80	74	82	76	72	77	73	69	73	70	67	64
3	89	78	70	63	86	76	68	62	72	66	60	68	63	59	65	61	57	54
4	81	69	61	54	78	68	59	53	64	57	52	61	55	50	58	53	49	47
5	75	62	53	47	72	61	52	46	58	50	45	55	49	44	53	47	43	41
6	69	56	47	41	67	55	46	40	52	45	40	50	44	39	48	42	38	36
7	64	51	42	36	62	50	42	36	48	40	35	46	39	34	44	38	34	32
8	60	47	38	32	58	46	38	32	44	37	32	42	36	31	40	35	30	28
9	56	43	35	29	54	42	34	29	40	33	28	39	33	28	37	32	28	26
10	53	40	32	27	51	39	31	26	37	31	26	36	30	26	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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Date  
11/2/2017

### *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: 09/08/16

### *Test Equipment Used*

<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	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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	Calibration 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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