

Project Number  
17.02749



Date  
10/9/2017

LAB 1  
Sphere

### Test Sample Description

Catalog Number: P900001-028-27  
Description: Track Kit w/ 1- Large White LED Track Head

### Photometry

Test Method: IES LM-79-08 § 10  
Preburn Time: 00:05  
Time To Stabilize: 0:65  
Total Operating Time: 1:46  
  
Input Voltage (Volts): 120.2  
Input Current (Amps): 0.123  
Input Wattage (Watts): 14.6  
Ambient Temp (°C): 25.3

### Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1  
Preburn Time: 0:10  
Time To Stabilize: 1:15  
Total Operating Time: 1:25  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.120  
Input Wattage (Watts): 14.3  
Ambient Temp (°C): 24  
PF @ 120V: 0.991  
THD @ 120V (%): 14.4



### Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE  
Checked (photometry): D. ROBBINS  
Approved: P. McCARTHY

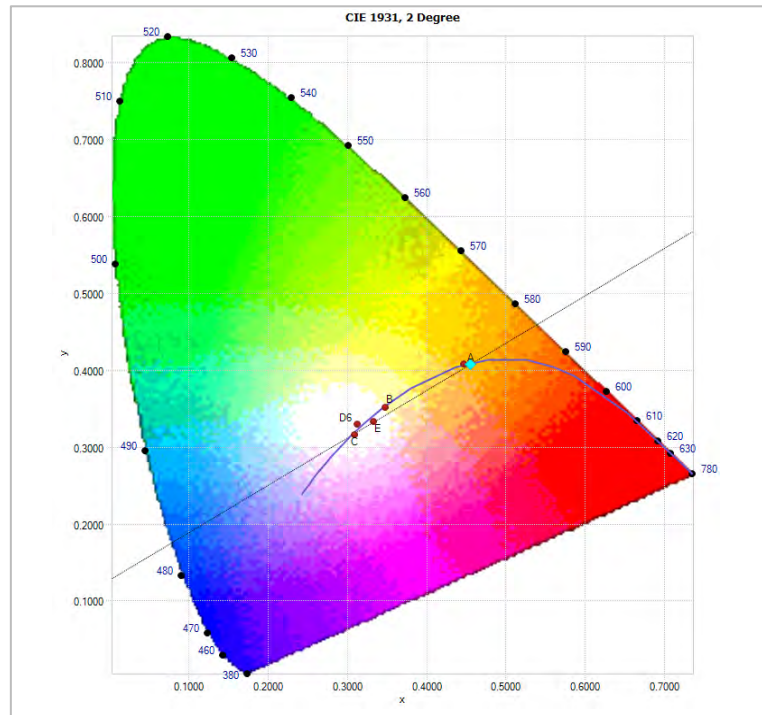




Lamp Cat#: SAW9A32E-E1  
 Lamp Desc: 28 - Seoul Semiconductor 2700K LEDs  
 Driver Desc: 1 - Buckingham XYZ-PRS-003

Efficacy: 57.4 LPW      S/P Ratio: 1.3 LM/LM

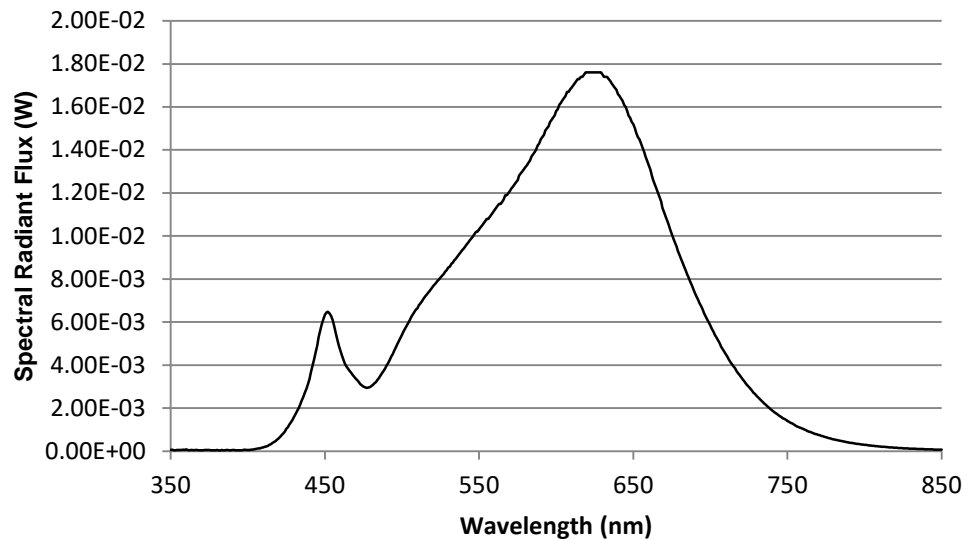
**Chromaticity Diagram**



**Spectral Results**

Name	Value	Unit
Φ	2.90	watts
Φ(v)	821	lumens
Φ(v')	1057	lm'
Chrom x	0.4551	
Chrom y	0.4084	
Chrom u	0.2604	
Chrom v	0.3505	
Duv	0.0006	
Chrom u'	0.2604	
Chrom v'	0.5258	
CCT	2748	K
Purity	59.2	%
λ (dom)	584.1	nm
FWHM	148.2	nm
λ (peak)	623.4	nm
λ (center)	607.6	nm
λ (centroid)	599.6	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.000449133	
Correlation	0.0054	
R1	92.2	
R2	95.5	
R3	97.3	
R4	92.3	
R5	91.8	
R6	94.8	
R7	91.7	
R8	81.0	
R9	57.9	
R10	88.6	
R11	92.9	
R12	84.3	
R13	93.0	
R14	97.7	

**Spectral Distribution of Radiant Flux**



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



**HUBBELL**  
Lighting

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

**REPORT NUMBER:** 17.02749

**PAGE:** 3 OF 8

**ISSUE DATE:** 10/06/17

**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P900001-028-27

**LUMINAIRE:** Track Kit w/ 1 - Large White LED Track Head

**LAMP CAT. NO.:** SAW9A32E-E1

**LAMP:** 28- Seoul Semiconductor 2700K LEDs

**BALLAST CATALOG NUMBER:** XYZ-PRS-003

**BALLAST:** 1- Buckingham

**MOUNTING:** Ceiling

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



**HUBBELL**  
Lighting

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

**REPORT NUMBER:** 17.02749  
**ISSUE DATE:** 10/06/17  
**PREPARED FOR:** PROGRESS  
**CATALOG NUMBER:** P900001-028-27

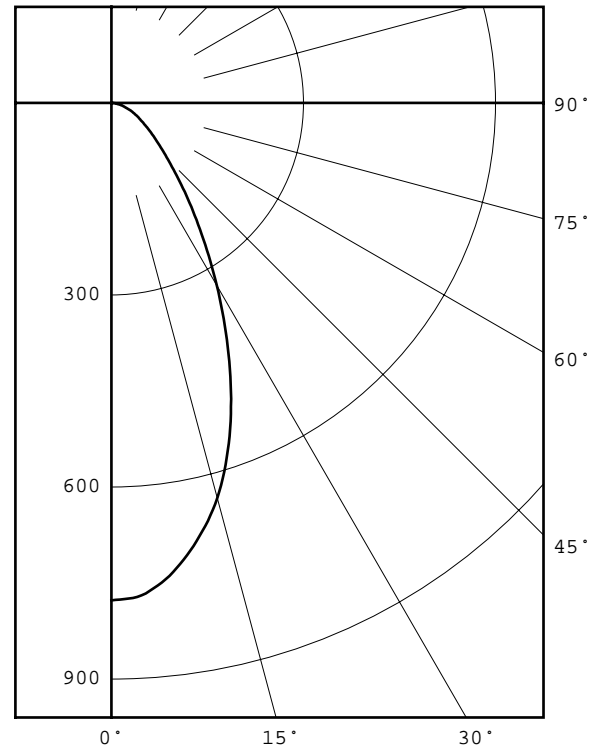
**PAGE:** 4 OF 8

DEG	CANDELA	LUMENS
0	777	
5	761	71
15	639	177
25	433	198
35	241	152
45	125	98
55	69	63
65	40	40
75	19	20
85	5	6
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	446	54.1
0- 40	598	72.6
0- 60	759	92.1
0- 90	825	100.0
90-180	0	0.0
0-180	825	100.0

EFFICACY = 56.5 lm/W  
CIE TYPE - DIRECT  
LUMINAIRE SPACING CRITERION = 0.82  
PLANE : 0-DEG 90-DEG  
SHIELDING ANGLES : 90 90  
LUMINOUS DIAMETER: 2.750

LUMINANCE DATA IN CANDELA/SQ M	
ANGLE	AVERAGE
IN DEG	
45	46132.
55	31393.
65	24700.
75	19157.
85	14971.





**HUBBELL**  
Lighting

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

**REPORT NUMBER:** 17.02749  
**ISSUE DATE:** 10/06/17  
**PREPARED FOR:** PROGRESS  
**CATALOG NUMBER:** P900001-028-27

**PAGE:** 5 OF 8

CANDELA DISTRIBUTION

0.0	777
2.5	774
5.0	761
7.5	739
10.0	710
12.5	677
15.0	639
17.5	593
20.0	542
22.5	488
25.0	433
27.5	380
30.0	329
32.5	283
35.0	241
37.5	205
40.0	174
42.5	147
45.0	125
47.5	107
50.0	92
52.5	80
55.0	69
57.5	60
60.0	52
62.5	46
65.0	40
67.5	34
70.0	28
72.5	23
75.0	19
77.5	15
80.0	11
82.5	8
85.0	5
87.5	2
90.0	0



**HUBBELL**  
Lighting

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

**REPORT NUMBER:** 17.02749  
**ISSUE DATE:** 10/06/17  
**PREPARED FOR:** PROGRESS  
**CATALOG NUMBER:** P900001-028-27

**PAGE:** 6 OF 8

5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		18
5- 10		53
10- 15		80
15- 20		97
20- 25	102	
25- 30		96
30- 35		83
35- 40		69
40- 45		55
45- 50		43
50- 55		35
55- 60		28
60- 65		22
65- 70		17
70- 75		12
75- 80		8
80- 85		4
85- 90		1

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		71
10- 20		177
20- 30		198
30- 40		152
40- 50		98
50- 60		63
60- 70		40
70- 80		20
80- 90		6



**HUBBELL**  
Lighting

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

**REPORT NUMBER:** 17.02749  
**ISSUE DATE:** 10/06/17  
**PREPARED FOR:** PROGRESS  
**CATALOG NUMBER:** P900001-028-27

**PAGE:** 7 OF 8

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	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	101	102	100	97	98	98	96	95	95	93	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81	81
3	98	90	84	79	96	88	83	78	86	81	77	83	79	76	81	77	74	73	73
4	92	82	76	71	90	81	75	70	79	73	69	77	72	68	75	71	68	66	66
5	86	76	69	64	84	75	68	63	73	67	63	71	66	62	70	65	62	60	60
6	81	70	63	58	79	70	63	58	68	62	58	66	61	57	65	60	57	55	55
7	76	66	58	54	75	65	58	53	63	57	53	62	57	53	61	56	52	51	51
8	72	61	54	49	71	61	54	49	59	53	49	58	53	49	57	52	49	47	47
9	68	57	51	46	67	57	50	46	56	50	46	55	49	46	54	49	45	44	44
10	65	54	47	43	64	53	47	43	53	47	43	52	46	43	51	46	42	41	41

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.

Project Number  
17.02749



**HUBBELL**  
Lighting

Date  
10/9/2017

### *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: 07/10/2017

### *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	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	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

## **Hubbell Lighting, Inc.**

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