

Project Number  
17.02754



Date  
10/6/2017

LAB 1  
Sphere

### Test Sample Description

Catalog Number: P900000-031-27  
Description: LED Track Kit w/ One Medium, Black Track-Head

### Photometry

Test Method: IES LM-79-08 § 10  
Preburn Time: 00:45  
Time To Stabilize: 0:20  
Total Operating Time: 1:43  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.081  
Input Wattage (Watts): 9.6  
Ambient Temp (°C): 25.2

### Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1  
Preburn Time: 0:10  
Time To Stabilize: 1:00  
Total Operating Time: 1:10  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.080  
Input Wattage (Watts): 9.5  
Ambient Temp (°C): 24.0  
PF @ 120V: 0.993  
THD @ 120V (%): 12.3



### Hubbell Lighting, Inc.

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



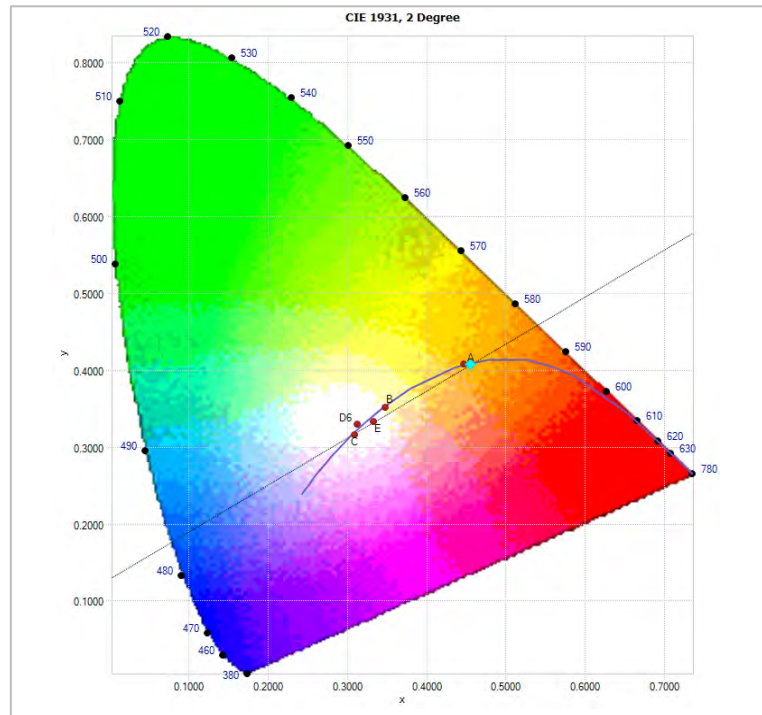
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Lamp Cat#: SAW9A32E-E1  
 Lamp Desc: 14 - Seoul Semiconductor 2700K LEDs  
 Driver Desc: 1 - Buckingham XYZ-PRS-001

Efficacy: 58.3 LPW      S/P Ratio: 1.3 LM/LM

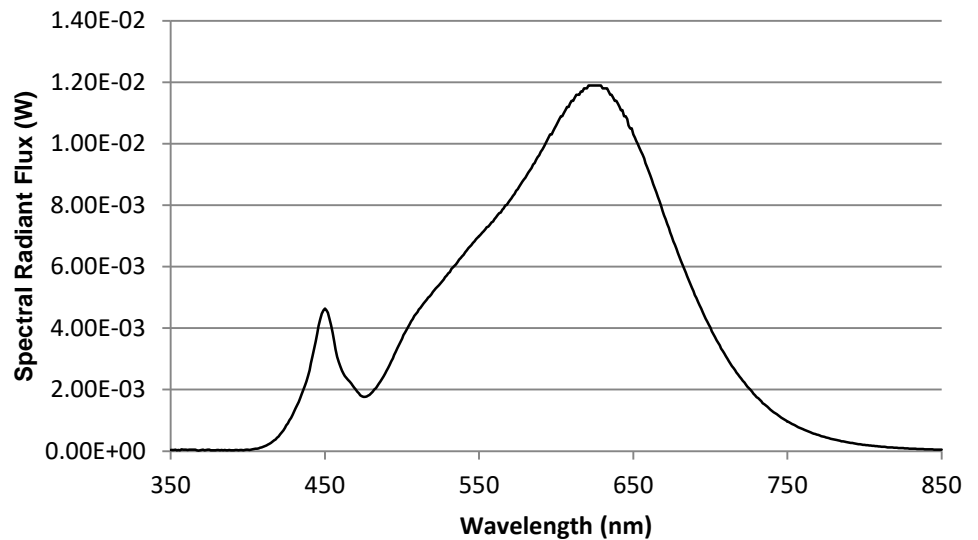
**Chromaticity Diagram**



**Spectral Results**

Name	Value	Unit
$\Phi$	1.97	watts
$\Phi(v)$	554	lumens
$\Phi(v')$	710	lm'
Chrom x	0.4546	
Chrom y	0.4074	
Chrom u	0.2605	
Chrom v	0.3502	
Duv	0.0009	
Chrom u'	0.2605	
Chrom v'	0.5253	
CCT	2748	K
Purity	58.8	%
$\lambda$ (dom)	584.2	nm
FWHM	150	nm
$\lambda$ (peak)	624	nm
$\lambda$ (center)	607.8	nm
$\lambda$ (centroid)	599.8	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.000745839	
Correlation	0.0054	
R1	92.2	
R2	95.1	
R3	96.3	
R4	92.4	
R5	91.8	
R6	94.2	
R7	91.9	
R8	81.7	
R9	59.2	
R10	87.7	
R11	93.2	
R12	84.6	
R13	92.9	
R14	97.1	

**Spectral Distribution of Radiant Flux**



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**PREPARED FOR:** PROGRESS

**CATALOG NUMBER:** P900000-031-27

**LUMINAIRE:** LED Track Kit w/ One Medium, Black Track-Head

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

**LAMP:** 14- Seoul Semiconductor 2700K LEDs

**BALLAST CATALOG NUMBER:** XYZ-PRS-001

**BALLAST:** 1- Buckingham

**MOUNTING:** Ceiling

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



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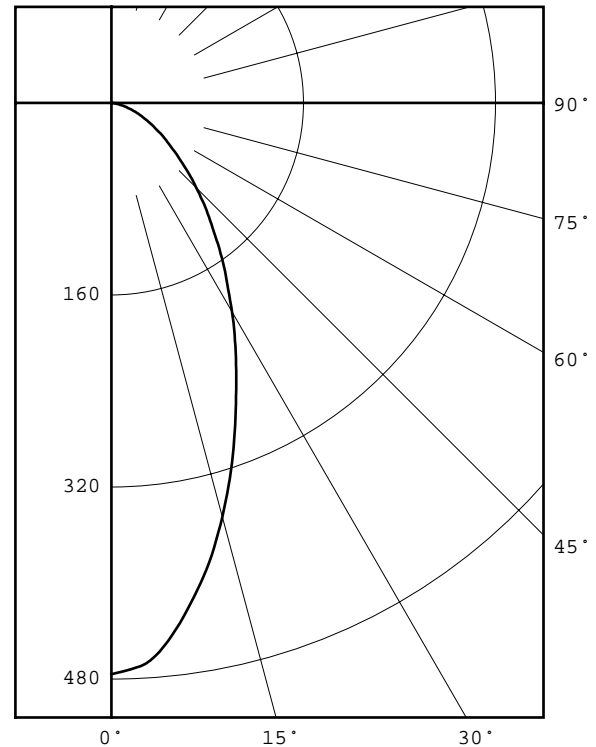
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DEG	CANDELA	LUMENS
0	476	
5	459	42
15	357	99
25	246	113
35	162	101
45	100	78
55	57	52
65	30	30
75	12	13
85	1	2
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	255	48.1
0- 40	356	67.2
0- 60	486	91.6
0- 90	530	100.0
90-180	0	0.0
0-180	530	100.0

EFFICACY = 55.1 lm/W  
CIE TYPE - DIRECT  
LUMINAIRE SPACING CRITERION = 0.76  
PLANE : 0-DEG 90-DEG  
SHIELDING ANGLES : 90 90  
LUMINOUS DIAMETER: 1.750

LUMINANCE DATA IN CANDELA/SQ M	
ANGLE	AVERAGE
IN DEG	
45	91134.
55	64040.
65	45745.
75	29878.
85	7394.





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CANDELA DISTRIBUTION

0.0	476
2.5	471
5.0	459
7.5	437
10.0	412
12.5	386
15.0	357
17.5	328
20.0	299
22.5	271
25.0	246
27.5	223
30.0	201
32.5	180
35.0	162
37.5	144
40.0	128
42.5	114
45.0	100
47.5	88
50.0	76
52.5	66
55.0	57
57.5	50
60.0	42
62.5	36
65.0	30
67.5	25
70.0	20
72.5	15
75.0	12
77.5	8
80.0	5
82.5	3
85.0	1
87.5	0
90.0	0



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	5	11
5-	10	31
10-	15	46
15-	20	54
20-	25	57
25-	30	56
30-	35	53
35-	40	48
40-	45	42
45-	50	36
50-	55	29
55-	60	23
60-	65	17
65-	70	13
70-	75	8
75-	80	4
80-	85	2
85-	90	0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0-	10	42
10-	20	99
20-	30	113
30-	40	101
40-	50	78
50-	60	52
60-	70	30
70-	80	13
80-	90	2



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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	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89	89
2	104	98	92	88	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79	79
3	97	89	82	77	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71	71
4	90	81	74	68	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63	63
5	85	74	67	61	61	83	73	66	61	71	65	60	69	64	60	67	63	59	57	57
6	79	68	61	55	55	78	67	60	55	66	59	55	64	59	54	63	58	54	52	52
7	74	63	56	51	50	73	62	55	50	61	55	50	60	54	50	58	53	50	48	48
8	70	59	51	46	46	69	58	51	46	57	51	46	56	50	46	55	49	46	44	44
9	66	55	48	43	43	65	54	47	43	53	47	43	52	47	43	51	46	42	41	41
10	63	51	44	40	40	62	51	44	40	50	44	40	49	43	40	48	43	39	38	38

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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10/6/2017

### *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	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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