

Project Number  
16.00749



Date  
4/1/2016 4/4/2016

LAB 6  
Sphere

### Test Sample Description

Catalog Number: P8046-28-30K  
Description: EYEBALL\_4inch 9W

### Photometry

Test Method: IES LM-79-08 § 10  
Preburn Time: 00:10  
Time To Stabilize: 1:16  
Total Operating Time: 2:24  
  
Input Voltage (Volts): 120.1  
Input Current (Amps): 0.077  
Input Wattage (Watts): 9.0  
Ambient Temp (°C): 24.8

### Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1  
Preburn Time: 12:15  
Time To Stabilize: 1:50  
Total Operating Time: 14:15  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.077  
Input Wattage (Watts): 9.1  
Ambient Temp (°C): 24.2



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



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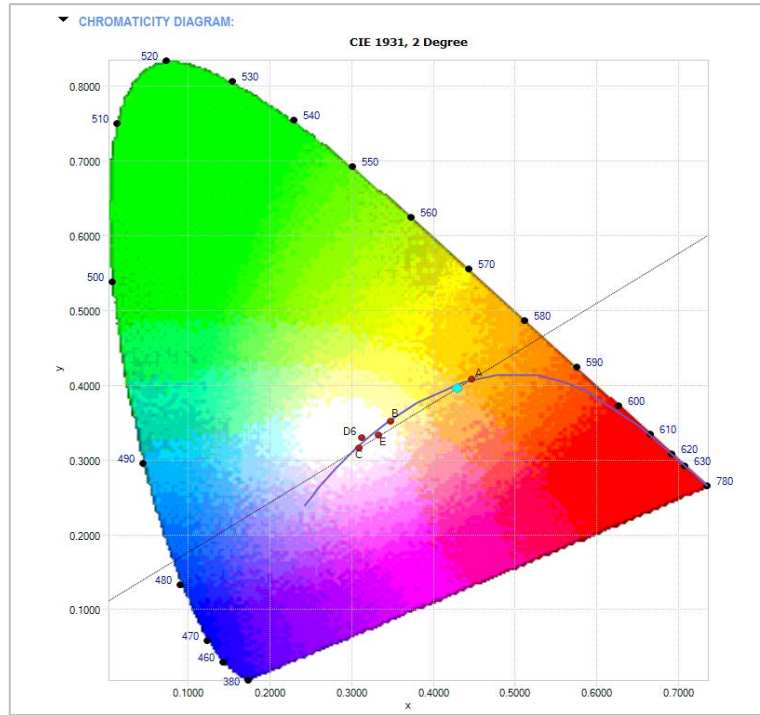


Lamp Cat#: UNKNOWN  
Lamp Desc: 12 - 3000K LEDs  
Driver Desc: 1 - CC driver

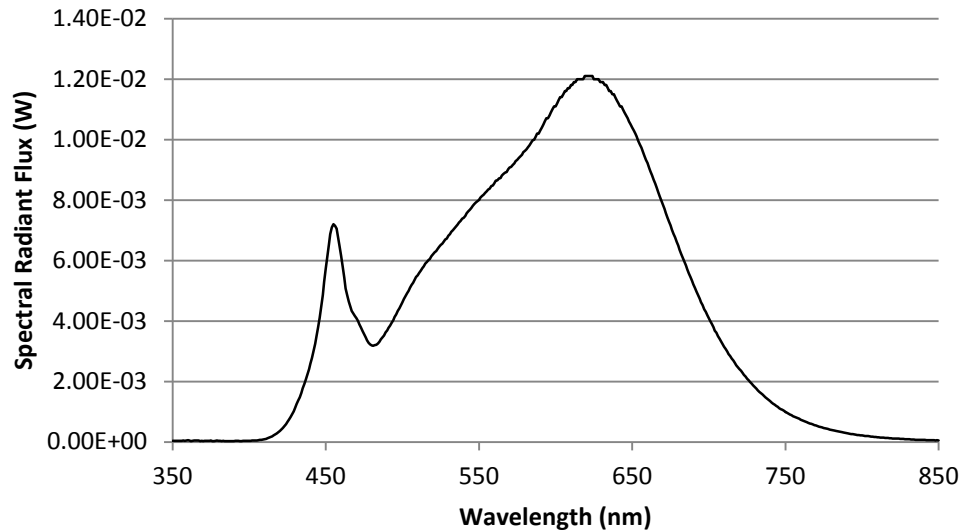
Efficacy: 67.6 LPW      S/P Ratio: 1.5 LM/LM

**Spectral Results**

Name	Value	Unit
$\Phi$	2.17	watts
$\Phi(v)$	615	lumens
$\Phi(v')$	904	lm'
Chrom x	0.4285	
Chrom y	0.3967	
Chrom u	0.2483	
Chrom v	0.3448	
Duv	0.0023	
Chrom u'	0.2483	
Chrom v'	0.5172	
CCT	3084	K
Purity	47.7	%
$\lambda$ (dom)	583.1	nm
FWHM	165.7	nm
$\lambda$ (peak)	621.2	nm
$\lambda$ (center)	600.5	nm
$\lambda$ (centroid)	592.7	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.001768915	
Correlation	0.0054	
R1	94.3	
R2	97.4	
R3	98.0	
R4	93.1	
R5	93.8	
R6	95.7	
R7	92.6	
R8	84.6	
R9	66.1	
R10	92.5	
R11	93.3	
R12	81.5	
R13	95.4	
R14	98.5	



**Spectral Distribution of Radiant Flux**



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ISSUE DATE: 04/04/16  
PREPARED FOR: PROGRESS  
CATALOG NUMBER:  
LUMINAIRE: 4" \_EYEBALL\_ 9W\_600LM\_30K\_CRI90\_\_WHITE LAMP CAT.  
NO. :  
LAMP: 12- 3000K LEDs  
MOUNTING: Recessed  
NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

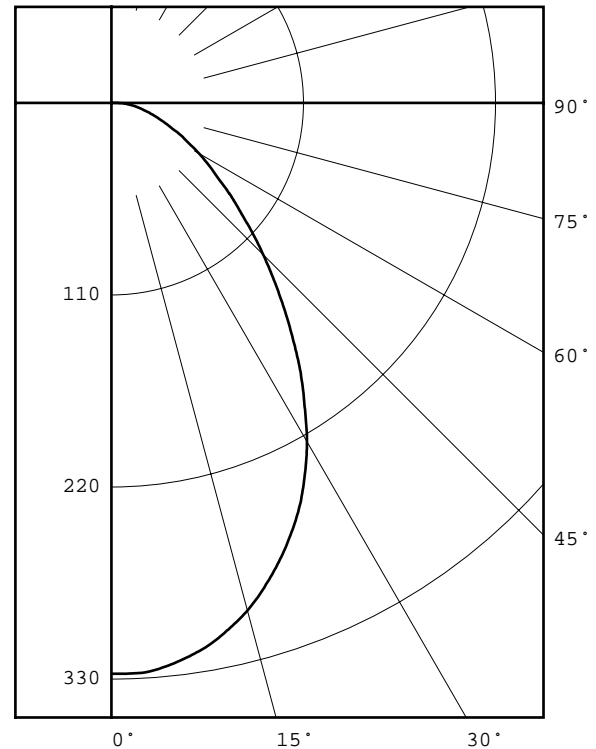
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DEG	CANDELA	LUMENS
0	327	
5	325	31
15	301	84
25	255	117
35	189	118
45	123	95
55	74	67
65	44	44
75	23	25
85	10	11
90	5	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	232	39.2
0- 40	350	59.1
0- 60	512	86.5
0- 90	592	100.0
90-180	0	0.0
0-180	592	100.0

TOTAL INPUT WATTS = 9.04  
EFFICACY = 65.5 Lm/W  
CIE TYPE - DIRECT  
LUMINAIRE SPACING CRITERION = 1.1  
LUMINOUS DIAMETER: 3.000  
HEIGHT OF SIDE : 1.000

LUMINANCE DATA IN CANDELA/SQ METER	
ANGLE AVERAGE	IN DEG
45	26769.
55	17608.
65	11948.
75	7539.
85	4298.





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CANDELA DISTRIBUTION

	0.0
0.0	327
2.5	327
5.0	325
7.5	321
10.0	316
12.5	309
15.0	301
17.5	291
20.0	280
22.5	268
25.0	255
27.5	240
30.0	224
32.5	206
35.0	189
37.5	171
40.0	154
42.5	138
45.0	123
47.5	109
50.0	96
52.5	85
55.0	74
57.5	66
60.0	58
62.5	50
65.0	44
67.5	37
70.0	32
72.5	27
75.0	23
77.5	19
80.0	16
82.5	13
85.0	10
87.5	7
90.0	5



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ZONAL LUMEN SUMMARY

0- 5	8.
5- 10	23.
10- 15	37.
15- 20	48.
20- 25	56.
25- 30	61.
30- 35	61.
35- 40	57.
40- 45	51.
45- 50	44.
50- 55	37.
55- 60	30.
60- 65	25.
65- 70	19.
70- 75	14.
75- 80	10.
80- 85	7.
85- 90	4.



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	8
5- 10	23
10- 15	37
15- 20	48
20- 25	56
25- 30	61
30- 35	61
35- 40	57
40- 45	51
45- 50	44
50- 55	37
55- 60	30
60- 65	25
65- 70	19
70- 75	14
75- 80	10
80- 85	7
85- 90	4
90- 95	1
95-100	0
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	31
0- 20	115
0- 30	232
0- 40	350
0- 50	445
0- 60	512
0- 70	556
0- 80	580
0- 90	591
0-100	592
0-110	592
0-120	592
0-130	592
0-140	592
0-150	592
0-160	592
0-170	592
0-180	592



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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

RC	80				70				50			30			10			0
	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	102	102	102	100
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	86
2	102	94	88	83	99	93	87	82	89	84	81	86	82	79	83	80	77	75
3	94	85	77	72	92	83	76	71	80	75	70	78	73	69	75	71	67	65
4	87	76	69	63	85	75	68	62	73	66	61	70	65	61	68	64	60	58
5	81	69	61	55	79	68	61	55	66	60	54	64	58	54	63	57	53	51
6	75	63	55	49	73	62	55	49	61	54	49	59	53	48	57	52	48	46
7	70	58	50	44	69	57	50	44	56	49	44	54	48	44	53	48	43	42
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38
9	62	50	42	37	61	49	42	37	48	41	37	47	41	36	46	40	36	35
10	58	46	39	34	57	46	39	34	45	38	34	44	38	34	43	37	33	32

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 LUMINAIRE SAMPLE.

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Date  
4/1/2016

### *Goniophotometer Calibration*

*Calibration Lamp:* GE 1000W, 120V, T6, CL (FEL)

*Lamp Number:* ITL78966-1000-14

*Calibration Current:* 8.300 Amps DC

*Total Luminous Flux:* 23413.0 Lumens

*Calibration Date:* 07/18/2015

### *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	11/10/2016
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/10/2016

### *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	11/10/2016
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	11/10/2016
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	11/10/2016
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	11/10/2016
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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