

Project Number
18.00028



Date
1/8/2018

Lab 1
Sphere

Test Sample Description

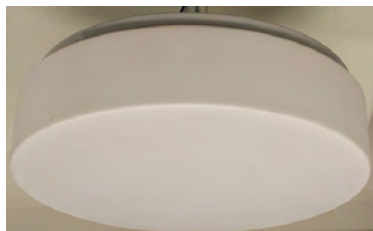
Catalog Number: P730002-030-30
Description: 14" Drum LED C-T-C w/ Etched Opal Acrylic Diffuser

Photometry
Test Method: IES LM-46-04
 IES LM-79-08 § 10
Preburn Time: 00:05
Time To Stabilize: 0:55
Total Operating Time: 1:49

Input Voltage (Volts): 120.0
Input Current (Amps): 0.184
Input Wattage (Watts): 21.8
Ambient Temp (°C): 26.1

Sphere
Test Method: IES LM-16-93
 IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 1:05
Total Operating Time: 9:05

Input Voltage (Volts): 120.0
Input Current (Amps): 0.183
Input Wattage (Watts): 21.7
Ambient Temp (°C): 24.0



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

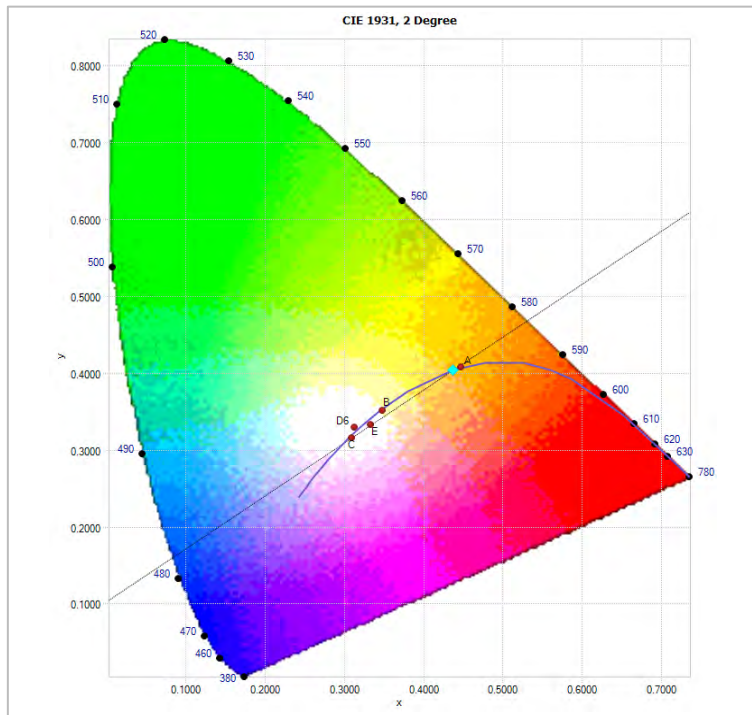




Lamp Cat#: 2835
 Lamp Desc: 90 - Samsung 3000K LEDs
 Driver Desc: 1 - JWY JWD022W-0660-32
 Programmed to 660mA

Efficacy: 91.2 LPW S/P Ratio: 1.4 LM/LM

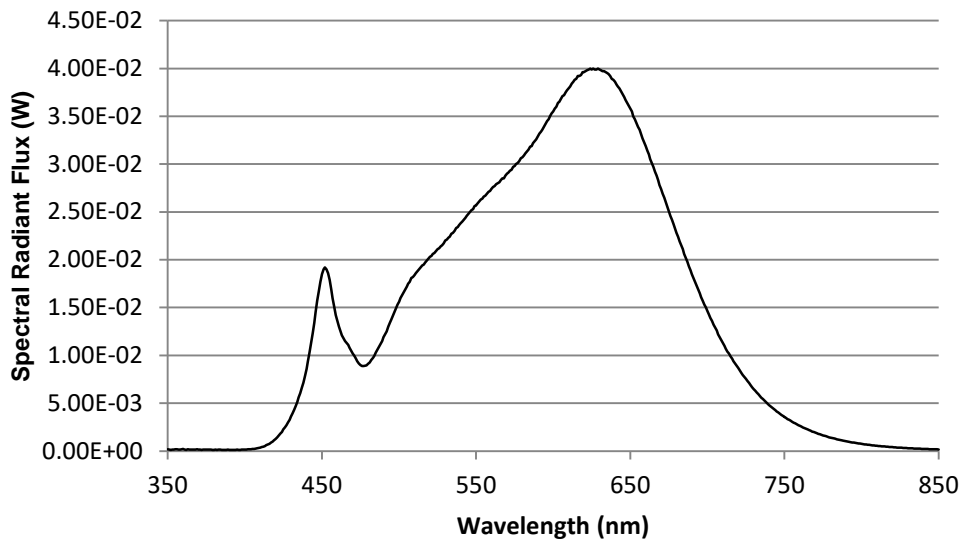
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	7.10	watts
Φ(v)	1980	lumens
Φ(v')	2823	lm'
Chrom x	0.4373	
Chrom y	0.4048	
Chrom u	0.2505	
Chrom v	0.3478	
Duv	0.0001	
Chrom u'	0.2505	
Chrom v'	0.5217	
CCT	2998	K
Purity	52.7	%
λ (dom)	582.7	nm
FWHM	167.9	nm
λ (peak)	621.5	nm
λ (center)	602.5	nm
λ (centroid)	596.7	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.000289183	
Correlation	0.0054	
R1	95.2	
R2	97.0	
R3	97.4	
R4	95.5	
R5	94.8	
R6	96.2	
R7	94.7	
R8	87.6	
R9	71.3	
R10	92.0	
R11	96.3	
R12	84.5	
R13	95.7	
R14	97.8	

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.



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REPORT NUMBER: 18.00028

PAGE: 3 OF 9

ISSUE DATE: 01/05/18

PREPARED FOR: PROGRESS

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LUMINAIRE: 14" Drum LED C-T-C w/ Etched Opal Acrylic Diffuser

LAMP CAT. NO.: 2835

LAMP: 90- SAMSUNG 3000K LEDs

BALLAST CATALOG NUMBER: JWD022W-0660-32

BALLAST: 1- JWY

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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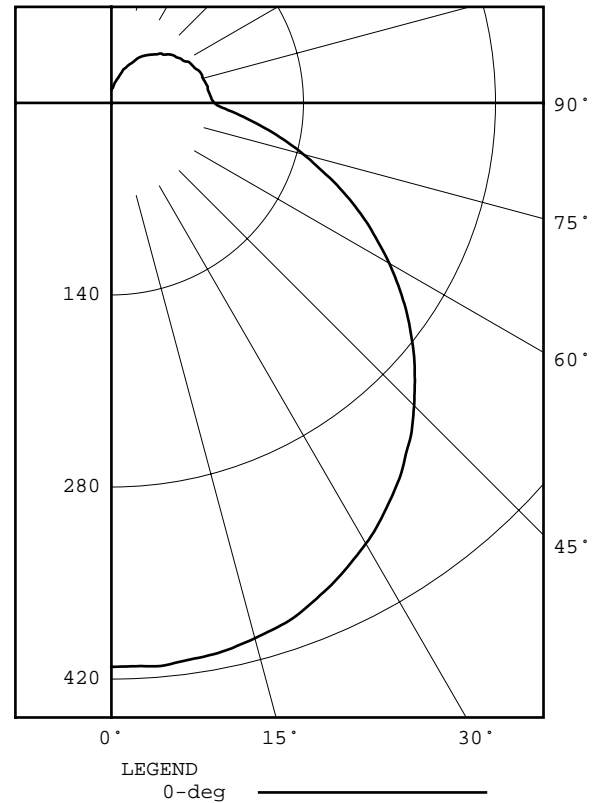
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ISSUE DATE: 01/05/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P730002-030-30

PAGE: 4 OF 9

DEG	CANDELA	LUMENS
0	411	
5	412	39
15	404	114
25	385	178
35	354	222
45	312	241
55	262	234
65	205	203
75	145	153
85	92	102
90	75	
95	72	79
105	69	73
115	65	64
125	58	52
135	51	39
145	42	26
155	31	14
165	19	6
175	11	1
180	10	

ZONAL ZONE	LUMEN LUMENS	SUMMARY LUMENS	%FIXT
0- 30		331	18.0
0- 40		553	30.0
0- 60		1028	55.8
0- 90		1486	80.7
90-120		217	11.8
90-130		269	14.6
90-150		334	18.2
90-180		356	19.3
0-180		1842	100.0

EFFICACY = 84.5 lm/W
CIE TYPE - SEMI-DIRECT
SPACING CRITERION: 1.34
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





®

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CATALOG NUMBER: P730002-030-30

PAGE: 5 OF 9

LUMINOUS DIAMETER: 14.000
HEIGHT OF SIDE : 3.000

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	3490.
55	3310.
65	3081.
75	2795.
85	2581.



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CATALOG NUMBER: P730002-030-30

PAGE: 6 OF 9

CANDELA DISTRIBUTION

0.0	411
5.0	412
10.0	409
15.0	404
20.0	397
25.0	385
30.0	371
35.0	354
40.0	334
45.0	312
50.0	288
55.0	262
60.0	234
65.0	205
70.0	175
75.0	145
80.0	117
85.0	92
90.0	75
95.0	72
100.0	71
105.0	69
110.0	68
115.0	65
120.0	61
125.0	58
130.0	55
135.0	51
140.0	46
145.0	42
150.0	37
155.0	31
160.0	26
165.0	19
170.0	15
175.0	11
180.0	10



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ISSUE DATE: 01/05/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P730002-030-30

PAGE: 7 OF 9

5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		10
5- 10		29
10- 15		48
15- 20		66
20- 25		82
25- 30		96
30- 35		107
35- 40		115
40- 45		120
45- 50		121
50- 55		120
55- 60		115
60- 65		107
65- 70		96
70- 75		83
75- 80		70
80- 85		57
85- 90		45
90- 95		40
95-100		39
100-105		37
105-110		36
110-115		34
115-120		31
120-125		28
125-130		25
130-135		21
135-140		18
140-145		15
145-150		12
150-155		8
155-160		6
160-165		4
165-170		2
170-175		1
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		39
0- 20		153
0- 30		331
0- 40		553
0- 50		794
0- 60		1028
0- 70		1231
0- 80		1384
0- 90		1486
0-100		1565
0-110		1638
0-120		1702
0-130		1755
0-140		1794
0-150		1820
0-160		1835
0-170		1840
0-180		1842



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PAGE: 8 OF 9

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	114	114	114	114	114	110	110	110	110	110	100	100	100	92	92	92	84	84	84	81
1	102	97	92	87	87	97	92	88	84	84	85	81	78	77	75	72	71	69	66	63
2	92	83	76	69	69	88	79	73	67	67	73	67	62	67	62	58	61	57	54	51
3	83	72	64	57	57	79	69	61	55	55	63	57	51	58	53	48	53	49	45	42
4	76	64	54	47	47	72	61	52	46	46	56	49	43	51	45	41	47	42	38	35
5	70	56	47	40	40	66	54	46	39	39	50	43	37	46	40	35	42	37	33	30
6	64	50	41	35	35	61	49	40	34	34	45	37	32	41	35	30	38	33	28	26
7	59	46	37	30	30	56	44	36	30	30	41	33	28	37	31	27	35	29	25	23
8	55	41	33	27	27	52	40	32	26	26	37	30	25	34	28	24	32	26	22	20
9	51	38	30	24	24	49	36	29	23	23	34	27	22	31	25	21	29	24	20	18
10	48	35	27	22	22	46	34	26	21	21	31	25	20	29	23	19	27	22	18	16

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: 07/10/17

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	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	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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