

Project Number
18.00029



Date
1/8/2018

Lab 1
Sphere

Test Sample Description

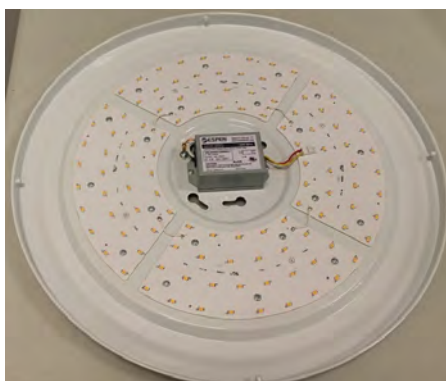
Catalog Number: P730003-030-30
Description: 17" Drum LED C-T-C w/ Etched Opal Acrylic Diffuser

Photometry
Test Method: IES LM-46-04
IES LM-79-08 § 10
Preburn Time: 00:05
Time To Stabilize: 0:55
Total Operating Time: 1:47

Input Voltage (Volts): 119.9
Input Current (Amps): 0.216
Input Wattage (Watts): 25.6
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: 1:02
Total Operating Time: 9:02

Input Voltage (Volts): 120.0
Input Current (Amps): 0.215
Input Wattage (Watts): 25.5
Ambient Temp (°C): 24.0



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

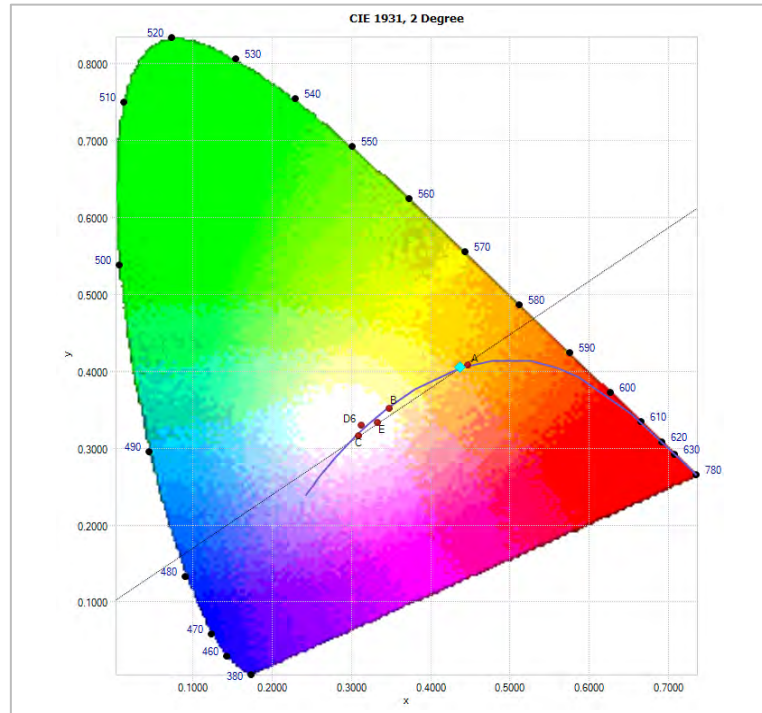




Lamp Cat#: 2835
 Lamp Desc: 112 - Samsung 3000K LEDs
 Driver Desc: 1 - ESPEN VEL25050120HDA-1
 Programmed to 500mA

Efficacy: 86.9 LPW S/P Ratio: 1.4 LM/LM

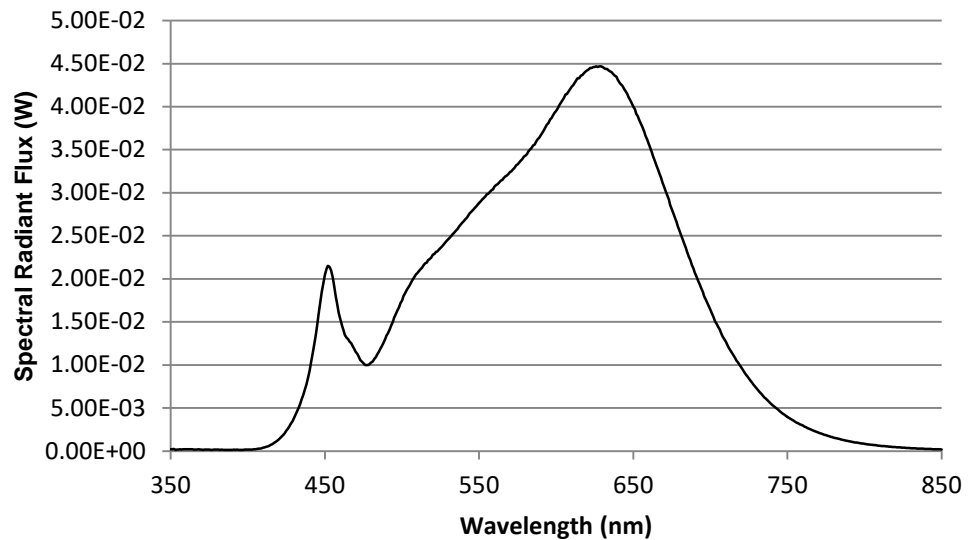
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	7.94	watts
Φ(v)	2216	lumens
Φ(v')	3165	lm'
Chrom x	0.4372	
Chrom y	0.4054	
Chrom u	0.2501	
Chrom v	0.348	
Duv	0.0004	
Chrom u'	0.2501	
Chrom v'	0.522	
CCT	3005	K
Purity	52.9	%
λ (dom)	582.6	nm
FWHM	168.6	nm
λ (peak)	626.5	nm
λ (center)	602.4	nm
λ (centroid)	596.8	nm
SDCM	Cool White	
RA	95	
Corr. Coef.	0.000534025	
Correlation	0.0054	
R1	95.2	
R2	97.0	
R3	97.4	
R4	95.6	
R5	94.8	
R6	96.2	
R7	94.9	
R8	87.8	
R9	71.8	
R10	92.0	
R11	96.4	
R12	84.1	
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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PREPARED FOR: PROGRESS

CATALOG NUMBER: P730003-030-30

LUMINAIRE: 17" Drum LED C-T-C w/ Etched Opal Acrylic Diffuser

LAMP CAT. NO.: 2835

LAMP: 112- SAMSUNG 3000K LEDs

BALLAST CATALOG NUMBER: VEL25050120HDA-1

BALLAST: 1- ESPEN

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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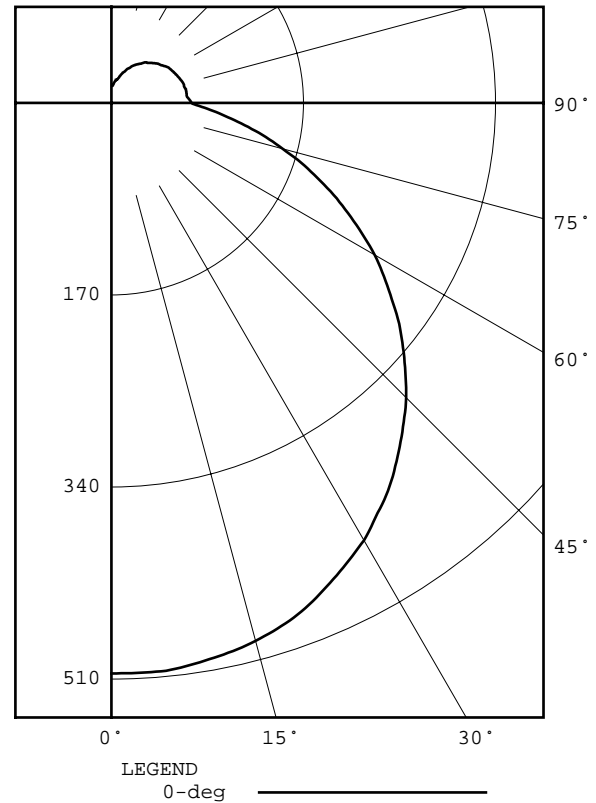
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DEG	CANDELA	LUMENS
0	505	
5	505	48
15	493	139
25	465	215
35	424	265
45	369	284
55	303	271
65	231	229
75	157	167
85	93	103
90	71	
95	67	74
105	66	69
115	62	62
125	57	51
135	50	39
145	42	27
155	33	15
165	22	7
175	16	2
180	15	

ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	402	19.4
0- 40	667	32.3
0- 60	1223	59.2
0- 90	1722	83.3
90-120	205	9.9
90-130	256	12.4
90-150	322	15.6
90-180	345	16.7
0-180	2067	100.0

EFFICACY = 80.7 lm/W
CIE TYPE - SEMI-DIRECT
SPACING CRITERION: 1.31
PLANE : 0-DEG 90-DEG
SHIELDING ANGLES : 90 90





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LUMINOUS DIAMETER: 17.000
HEIGHT OF SIDE : 3.000

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE
IN DEG

45	2910.
55	2731.
65	2519.
75	2253.
85	2042.



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CANDELA DISTRIBUTION

0.0	505
5.0	505
10.0	500
15.0	493
20.0	482
25.0	465
30.0	447
35.0	424
40.0	397
45.0	369
50.0	337
55.0	303
60.0	269
65.0	231
70.0	194
75.0	157
80.0	123
85.0	93
90.0	71
95.0	67
100.0	67
105.0	66
110.0	64
115.0	62
120.0	60
125.0	57
130.0	54
135.0	50
140.0	47
145.0	42
150.0	38
155.0	33
160.0	28
165.0	22
170.0	20
175.0	16
180.0	15



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		12
5- 10		36
10- 15		59
15- 20		80
20- 25		99
25- 30		115
30- 35		128
35- 40		137
40- 45		142
45- 50		143
50- 55		139
55- 60		132
60- 65		121
65- 70		108
70- 75		92
75- 80		75
80- 85		58
85- 90		44
90- 95		38
95-100		36
100-105		35
105-110		34
110-115		32
115-120		30
120-125		27
125-130		24
130-135		21
135-140		18
140-145		15
145-150		12
150-155		9
155-160		6
160-165		4
165-170		2
170-175		1
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		48
0- 20		187
0- 30		402
0- 40		667
0- 50		951
0- 60		1223
0- 70		1452
0- 80		1619
0- 90		1722
0-100		1796
0-110		1865
0-120		1927
0-130		1978
0-140		2017
0-150		2044
0-160		2059
0-170		2065
0-180		2067



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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	115	115	115	115	110	110	110	110	110	102	102	102	94	94	94	87	87	87	83
1	103	98	93	88	99	94	89	85	86	83	80	80	77	74	73	71	69	66	66
2	93	84	77	71	89	81	74	68	75	69	64	69	64	60	63	60	57	53	53
3	84	73	65	58	80	70	63	56	65	59	53	60	55	50	55	51	47	44	44
4	77	65	55	48	73	62	54	47	57	50	45	53	47	42	49	44	40	37	37
5	71	57	48	41	67	55	47	40	51	44	38	48	41	36	44	39	35	32	32
6	65	51	42	36	62	50	41	35	46	39	33	43	37	32	40	34	30	28	28
7	60	46	38	31	57	45	37	31	42	35	29	39	33	28	36	31	27	24	24
8	56	42	34	28	53	41	33	27	38	31	26	36	29	25	33	28	24	22	22
9	52	39	30	25	50	37	30	24	35	28	23	33	27	22	31	25	21	19	19
10	49	36	28	22	47	34	27	22	32	26	21	30	24	20	28	23	19	17	17

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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