

Project Number
18.00252



Date
3/5/2018

LAB 5
Sphere

Test Sample Description

Catalog Number: P500065-020-30
Description: 1-Lt. LED Pendant with Glossy White Opal Refractor

Photometry

Test Method: IES LM-46-04
IES LM-79-08 §10
Preburn Time: 0:00
Time To Stabilize: 1:00
Total Operating Time: 2:00

Input Voltage (Volts): 120.0
Input Current (Amps): 0.080
Input Wattage (Watts): 9.5
Ambient Temp (°C): 26

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 1:00
Time To Stabilize: 1:11
Total Operating Time: 2:11

Input Voltage (Volts): 120.0
Input Current (Amps): 0.080
Input Wattage (Watts): 9.5
Ambient Temp (°C): 24
PF @ 120V: 0.992
THD @ 120V (%): 12.1



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): R. WILLIAMS
Approved: N. DeVOL

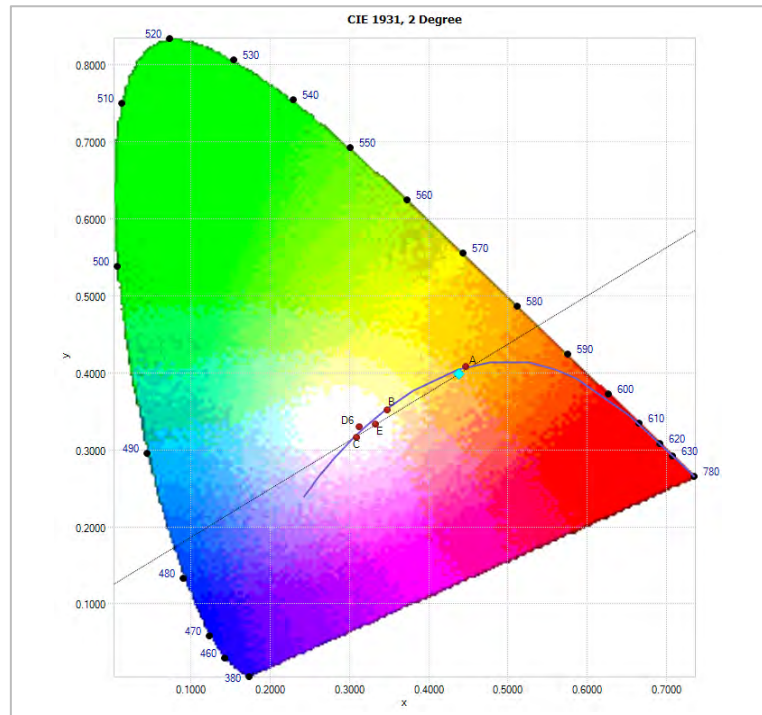




Lamp Cat#: 93070270-3330
 Lamp Desc: 20 - Nichia 3000K LEDs
 Driver Desc:

Efficacy: 61.2 LPW S/P Ratio: 1.5 LM/LM

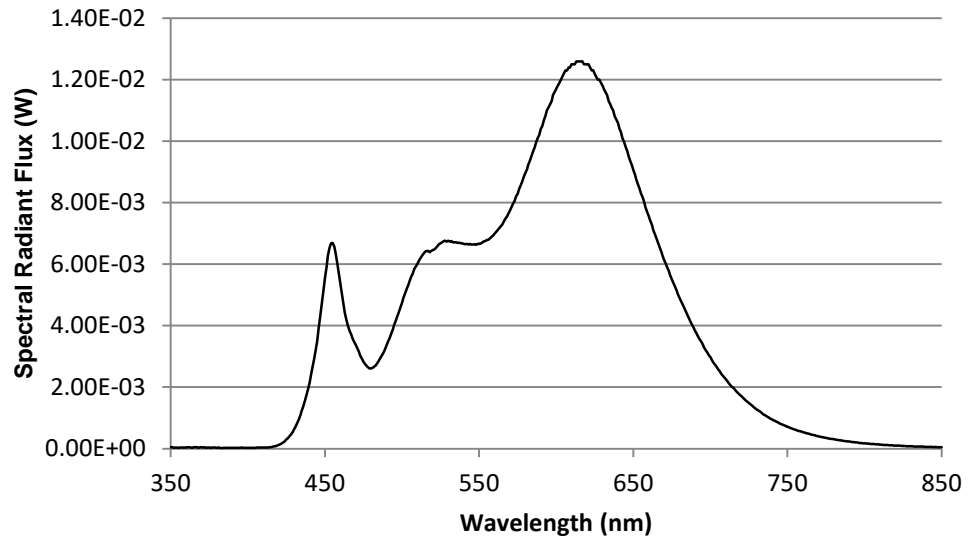
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	1.97	watts
Φ(v)	581	lumens
Φ(v')	850	lm'
Chrom x	0.4376	
Chrom y	0.3986	
Chrom u	0.2534	
Chrom v	0.3462	
Duv	0.0026	
Chrom u'	0.2534	
Chrom v'	0.5193	
CCT	2941	K
Purity	51	%
λ (dom)	583.9	nm
FWHM	155.5	nm
λ (peak)	614.3	nm
λ (center)	591.1	nm
λ (centroid)	589.8	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.002308018	
Correlation	0.0054	
R1	97.9	
R2	98.6	
R3	95.7	
R4	98.5	
R5	98.9	
R6	92.8	
R7	89.4	
R8	80.2	
R9	57.9	
R10	97.4	
R11	94.4	
R12	86.8	
R13	99.2	
R14	98.5	

Spectral Distribution of Radiant Flux





HUBBELL
Lighting

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

REPORT NUMBER: 18.00252

PAGE: 3 OF 8

ISSUE DATE: 03/06/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P500065-020-30

LUMINAIRE: 1-Lt. LED Pendant

LAMP CAT. NO.: 93070270-3330

LAMP: 20- Nichia 3000K LEDs

MOUNTING: Ceiling

REFRACTOR: Glossy Opal

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



HUBBELL
Lighting

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

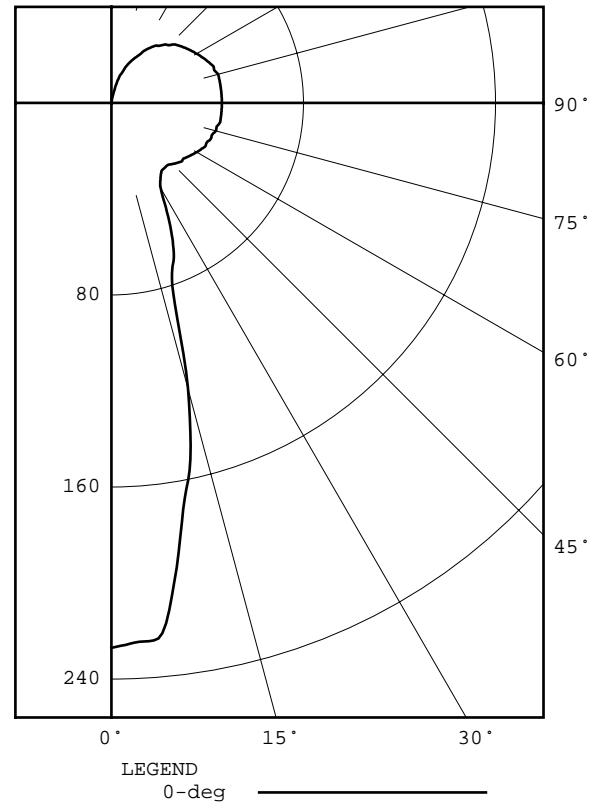
REPORT NUMBER: 18.00252
ISSUE DATE: 03/06/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P500065-020-30

PAGE: 4 OF 8

DEG	CANDELA	LUMENS
0	227	
5	224	19
15	123	33
25	59	27
35	36	23
45	36	28
55	39	35
65	43	42
75	45	47
85	46	50
90	46	
95	46	50
105	46	48
115	43	43
125	39	35
135	34	27
145	28	18
155	19	9
165	9	3
175	0	0
180	0	

ZONAL LUMEN ZONE	SUMMARY LUMENS	%FIXT
0- 30	79	14.7
0- 40	102	19.0
0- 60	165	30.8
0- 90	305	56.8
90-120	141	26.3
90-130	176	32.8
90-150	220	41.0
90-180	232	43.2
0-180	537	100.0

EFFICACY = 56.1 lm/W
CIE TYPE - GENERAL DIFFUSE





HUBBELL
Lighting

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

REPORT NUMBER: 18.00252
ISSUE DATE: 03/06/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P500065-020-30

PAGE: 5 OF 8

CANDELA DISTRIBUTION

0.0	227
5.0	224
10.0	172
15.0	123
20.0	74
25.0	59
30.0	41
35.0	36
40.0	35
45.0	36
50.0	38
55.0	39
60.0	41
65.0	43
70.0	44
75.0	45
80.0	46
85.0	46
90.0	46
95.0	46
100.0	46
105.0	46
110.0	45
115.0	43
120.0	41
125.0	39
130.0	37
135.0	34
140.0	31
145.0	28
150.0	23
155.0	19
160.0	14
165.0	9
170.0	2
175.0	0
180.0	0



HUBBELL
Lighting

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

REPORT NUMBER: 18.00252
ISSUE DATE: 03/06/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P500065-020-30

PAGE: 6 OF 8

5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		5
5- 10		14
10- 15		18
15- 20		15
20- 25		14
25- 30		12
30- 35		11
35- 40		12
40- 45		13
45- 50		15
50- 55		17
55- 60		18
60- 65		20
65- 70		22
70- 75		23
75- 80		24
80- 85		25
85- 90		25
90- 95		25
95-100		25
100-105		25
105-110		24
110-115		22
115-120		20
120-125		18
125-130		17
130-135		14
135-140		12
140-145		10
145-150		8
150-155		5
155-160		4
160-165		2
165-170		1
170-175		0
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		19
0- 20		52
0- 30		79
0- 40		102
0- 50		130
0- 60		165
0- 70		207
0- 80		255
0- 90		305
0-100		355
0-110		403
0-120		446
0-130		481
0-140		508
0-150		525
0-160		534
0-170		537
0-180		537



HUBBELL
Lighting

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

REPORT NUMBER: 18.00252
ISSUE DATE: 03/06/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P500065-020-30

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
0	109	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	95	89	84	79	88	83	78	73	70	67	63	59	56	54	49	47	45	40	40
2	86	76	69	62	79	71	64	58	60	55	50	50	46	43	41	38	35	31	31
3	78	67	58	51	72	62	54	48	53	46	41	44	39	35	36	33	29	25	25
4	71	59	50	43	65	55	47	40	47	40	35	39	34	30	32	28	25	22	22
5	65	53	44	37	60	49	41	35	42	35	30	35	30	26	29	25	22	19	19
6	61	47	39	32	56	44	36	30	38	32	27	32	27	23	27	23	20	17	17
7	56	43	35	29	52	40	33	27	35	29	24	30	25	21	25	21	18	15	15
8	52	39	31	26	49	37	30	24	32	26	22	28	23	19	23	19	16	14	14
9	49	36	29	23	46	34	27	22	30	24	20	26	21	17	22	18	15	13	13
10	46	34	26	21	43	32	25	20	28	22	18	24	19	16	21	17	14	12	12

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.



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: 09/08/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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	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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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

Hubbell Lighting, Inc.

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