

Project Number
17.00415



Date
2/11/2017

LAB 5
Sphere

Test Sample Description

Catalog Number: P300065-02030
Description: 3-Lt. LED Bath

Photometry

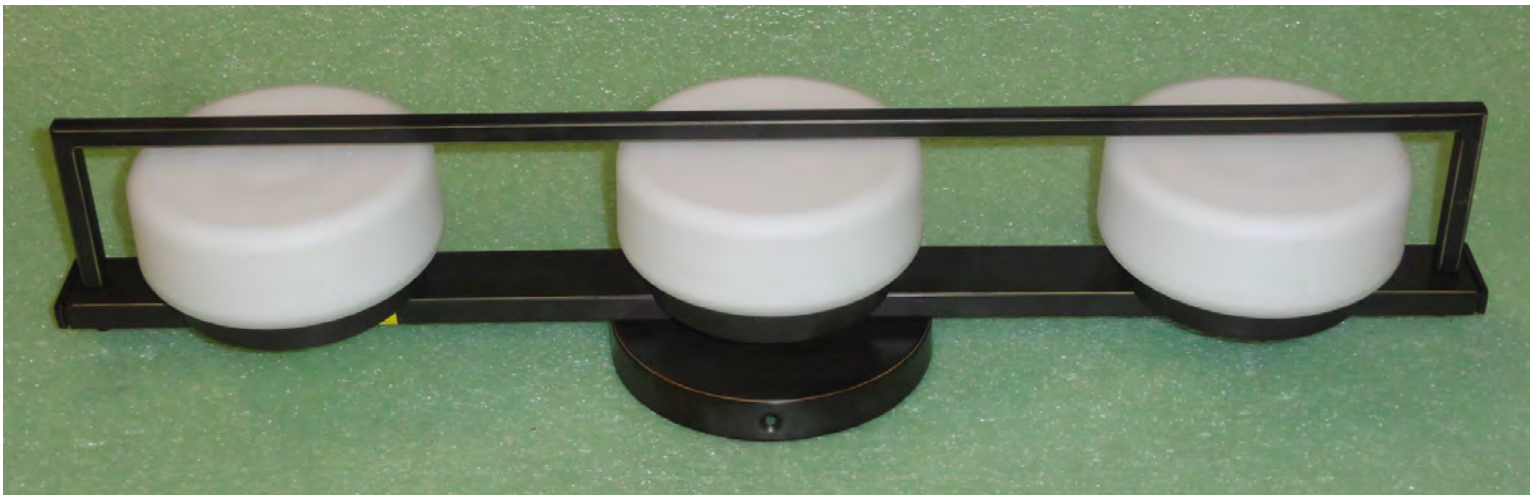
Test Method: IES LM-79-08 § 10
Preburn Time: 22:00
Time To Stabilize: 1:15
Total Operating Time: 23:50

Input Voltage (Volts): 120.2
Input Current (Amps): 0.237
Input Wattage (Watts): 28.2
Ambient Temp (°C): 24.4
PF @ 120V: 0.992
THD @ 120V (%): 12.39

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 22:00
Time To Stabilize: 1:00
Total Operating Time: 23:40

Input Voltage (Volts): 120.1
Input Current (Amps): 0.236
Input Wattage (Watts): 28.1
Ambient Temp (°C): 23.9



Hubbell Lighting, Inc.

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

Checked (sphere): M. ELLMANN
Checked (photometry): M. ELLMANN
Approved: D. BLACK



This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.

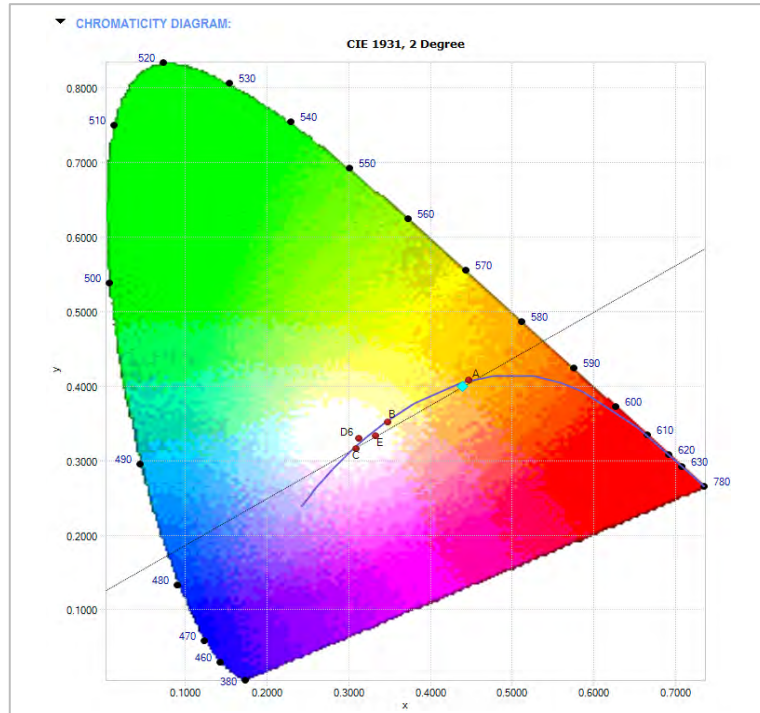


Lamp Cat#: 93070270-3130
Lamp Desc: 60 - Nichia 3000K LEDs

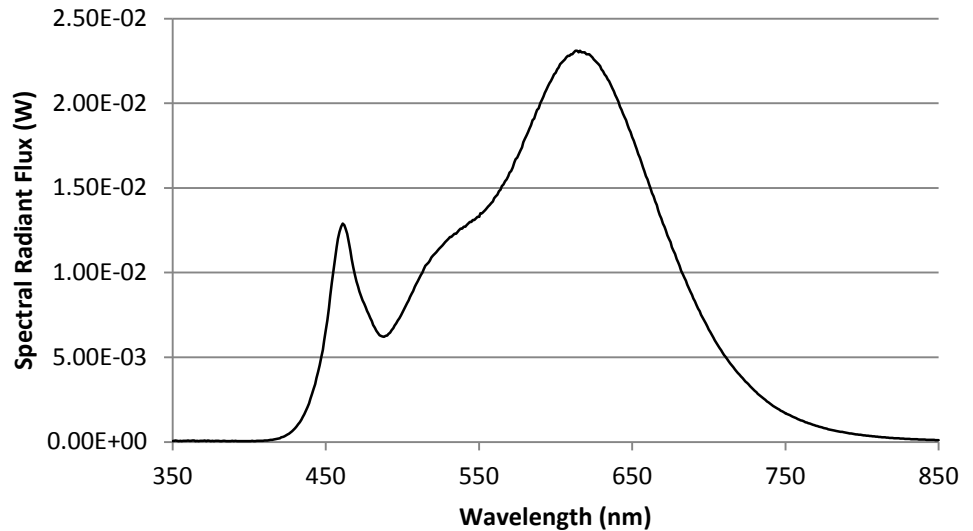
Efficacy: 39.4 LPW S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	3.84	watts
$\Phi(v)$	1108	lumens
$\Phi(v')$	1590	lm'
Chrom x	0.4396	
Chrom y	0.3998	
Chrom u	0.2542	
Chrom v	0.3467	
Duv	0.0024	
Chrom u'	0.2542	
Chrom v'	0.5201	
CCT	2919	K
Purity	52	%
λ (dom)	583.9	nm
FWHM	150.8	nm
λ (peak)	615	nm
λ (center)	600.5	nm
λ (centroid)	593.4	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.002048292	
Correlation	0.0054	
R1	94.2	
R2	99.3	
R3	94.8	
R4	91.0	
R5	93.9	
R6	95.2	
R7	87.4	
R8	77.5	
R9	54.3	
R10	98.7	
R11	93.0	
R12	81.1	
R13	96.5	
R14	98.3	



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.



HUBBELL
Lighting

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

REPORT NUMBER: 17.00415

ISSUE DATE: 02/13/17

PREPARED FOR: PROGRESS

CATALOG NUMBER: P300065-02030

LUMINAIRE: 3-Lt. LED Bath

LAMP CAT. NO.: 93070270-3130

LAMP: 60 - Nichia 3000K LEDs

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.

PAGE: 3 OF 9



HUBBELL
Lighting

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

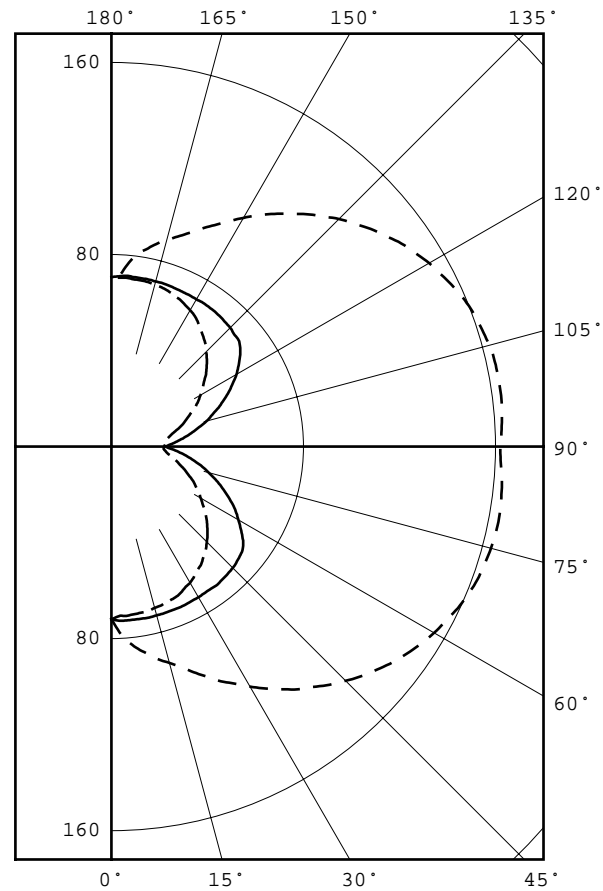
REPORT NUMBER: 17.00415
ISSUE DATE: 02/13/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300065-02030

PAGE: 4 OF 9

CANDELA DISTRIBUTION						FLUX
	0.0	45.0	90.0	135.0	180.0	
0	72	72	72	72	72	
5	82	79	73	71	71	7
15	93	88	73	71	70	22
25	108	96	73	70	68	38
35	123	106	72	68	63	54
45	138	116	72	64	56	68
55	150	124	67	58	48	79
65	159	131	55	51	39	85
75	164	138	42	42	30	87
85	163	142	29	39	23	87
90	162	143	23	38	22	
95	163	141	28	38	22	86
105	163	136	41	42	29	86
115	157	129	54	50	38	83
125	148	121	65	57	47	77
135	134	112	70	64	56	66
145	118	101	71	68	63	52
155	102	91	71	70	68	37
165	89	84	71	71	70	22
175	76	74	71	71	71	7
180	71	71	71	71	71	

ZONAL ZONE	LUMEN LUMENS	SUMMARY	%FIXT
0- 30		67	6.5
0- 40		121	11.6
0- 60		268	25.7
0- 90		526	50.5
90-120		256	24.5
90-130		333	31.9
90-150		451	43.2
90-180		516	49.5
0-180		1043	100.0

EFFICACY = 37.0 lm/W
CIE TYPE - GENERAL DIFFUSE
PLANE : 0-DEG 90-DEG 180-DEG
SPACING CRITERIA : 2.49 1.54 1.35





®

HUBBELL
Lighting

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

REPORT NUMBER: 17.00415
ISSUE DATE: 02/13/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300065-02030

PAGE: 5 OF 9

PLANE : 0-DEG 90-DEG
LUMINOUS LENGTH : 2.000 21.000
HEIGHT OF SIDE : 5.000 5.000

LUMINANCE DATA IN CANDELA/SQ M
ANGLE AVERAGE AVERAGE AVERAGE
IN DEG 0-DEG 90-DEG 180-DEG
45 2058. 3014. 838.
55 2116. 3207. 670.
65 2185. 3197. 530.
75 2260. 3171. 409.
85 2338. 3266. 325.



HUBBELL
Lighting

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

REPORT NUMBER: 17.00415

PAGE: 6 OF 9

ISSUE DATE: 02/13/17

PREPARED FOR: PROGRESS

CATALOG NUMBER: P300065-02030

CANDELA DISTRIBUTION
LATERAL ANGLE

	0.0	22.5	45.0	67.5	90.0	112.5	135.0	157.5	180.0
0.0	72	72	72	72	72	72	72	72	72
5.0	82	81	79	75	73	71	71	71	71
10.0	88	87	84	79	73	71	71	71	70
15.0	93	92	88	81	73	71	71	71	70
20.0	100	98	92	84	73	71	71	70	69
25.0	108	105	96	86	73	71	70	69	68
30.0	116	112	101	87	73	71	69	67	66
35.0	123	119	106	88	72	71	68	65	63
40.0	131	126	111	90	72	71	66	62	60
45.0	138	132	116	92	72	70	64	59	56
50.0	145	138	120	93	70	68	61	55	52
55.0	150	144	124	95	67	66	58	51	48
60.0	155	149	128	96	61	62	54	47	43
65.0	159	153	131	97	55	56	51	43	39
70.0	162	156	135	98	49	51	47	39	34
75.0	164	159	138	100	42	46	42	36	30
80.0	164	162	140	101	35	41	39	33	26
85.0	163	163	142	102	29	37	39	31	23
90.0	162	163	143	103	23	35	38	31	22
95.0	163	162	141	102	28	36	38	31	22
100.0	164	160	139	100	34	40	39	33	25
105.0	163	158	136	98	41	45	42	35	29
110.0	161	155	133	96	48	50	46	39	33
115.0	157	151	129	95	54	56	50	42	38
120.0	153	146	125	93	60	61	53	47	43
125.0	148	141	121	91	65	65	57	51	47
130.0	141	135	117	89	69	67	61	54	52
135.0	134	128	112	88	70	69	64	58	56
140.0	126	121	106	87	71	70	66	61	60
145.0	118	114	101	85	71	71	68	64	63
150.0	110	106	96	84	71	71	69	67	66
155.0	102	99	91	82	71	71	70	69	68
160.0	95	93	87	80	71	71	71	70	69
165.0	89	88	84	77	71	71	71	70	70
170.0	83	83	80	74	71	71	71	70	70
175.0	76	75	74	71	71	71	71	71	71
180.0	71	71	71	71	71	71	71	71	71



HUBBELL
Lighting

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

REPORT NUMBER: 17.00415
ISSUE DATE: 02/13/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300065-02030

PAGE: 7 OF 9

5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		2
5- 10		5
10- 15		9
15- 20		13
20- 25		17
25- 30		21
30- 35		25
35- 40		29
40- 45		32
45- 50		36
50- 55		38
55- 60		40
60- 65		42
65- 70		43
70- 75		43
75- 80		44
80- 85		44
85- 90		43
90- 95		43
95-100		43
100-105		43
105-110		43
110-115		42
115-120		41
120-125		40
125-130		37
130-135		35
135-140		31
140-145		28
145-150		24
150-155		20
155-160		17
160-165		13
165-170		9
170-175		5
175-180		2

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		7
10- 20		22
20- 30		38
30- 40		54
40- 50		68
50- 60		79
60- 70		85
70- 80		87
80- 90		87
90-100		86
100-110		86
110-120		83
120-130		77
130-140		66
140-150		52
150-160		37
160-170		22
170-180		7



HUBBELL
Lighting

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

REPORT NUMBER: 17.00415
ISSUE DATE: 02/13/17
PREPARED FOR: PROGRESS
CATALOG NUMBER: P300065-02030

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	107	107	107	107	107	99	99	99	99	84	84	84	70	70	70	57	57	57	50
1	94	88	82	77	77	86	81	76	71	67	64	60	55	52	50	44	42	40	34
2	84	74	67	60	60	76	68	61	55	57	51	47	46	42	38	36	33	30	25
3	76	64	55	48	48	69	59	51	45	49	43	38	39	35	31	31	27	24	20
4	69	56	47	40	40	62	51	43	37	42	36	31	34	29	25	27	23	20	16
5	63	49	40	33	33	57	45	37	31	37	31	26	30	25	21	24	20	17	13
6	57	44	35	28	28	52	40	32	26	33	27	22	27	22	18	21	17	14	11
7	53	39	30	24	24	48	36	28	23	30	24	19	24	19	16	19	15	12	9
8	49	35	27	21	21	45	33	25	20	27	21	17	22	17	14	17	14	11	8
9	45	32	24	19	19	41	30	22	17	25	19	15	20	15	12	16	12	9	7
10	42	29	22	16	16	39	27	20	15	23	17	13	19	14	11	15	11	8	6

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.

Project Number
17.00415



HUBBELL
Lighting

Date
2/11/2017

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: 09/02/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 6 - Test Distance: 31.3'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27076V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/2/2017

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

Hubbell Lighting, Inc.

701 Millennium Boulevard

Greenville, SC 29607

www.hubbellighting.com

This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.