

Lab 4  
Sphere

### Test Sample Description

Catalog Number: P563000-143-30K

Description: 3" Wall-Mount Cylinder, Graphite w/ Textured, Opal Glass Lens; Tested as Down-Light

### Photometry

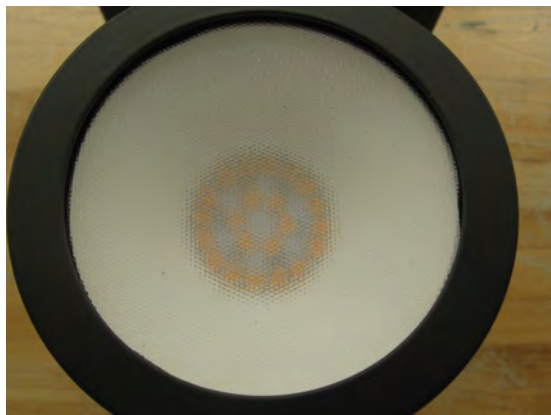
Test Method: IES LM-79-08 § 10  
Preburn Time: 0:50  
Time To Stabilize: 0:30  
Total Operating Time: 1:35

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.102  
Input Wattage (Watts): 12.2  
Ambient Temp (°C): 24.8

### Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1  
Preburn Time: 8:00  
Time To Stabilize: 0:56  
Total Operating Time: 8:56

Input Voltage (Volts): 120.0  
Input Current (Amps): 0.099  
Input Wattage (Watts): 11.8  
Ambient Temp (°C): 24.0



### Hubbell Lighting, Inc.

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Checked (sphere): B. LEE  
Checked (photometry): R. HALL  
Approved: P. McCARTHY



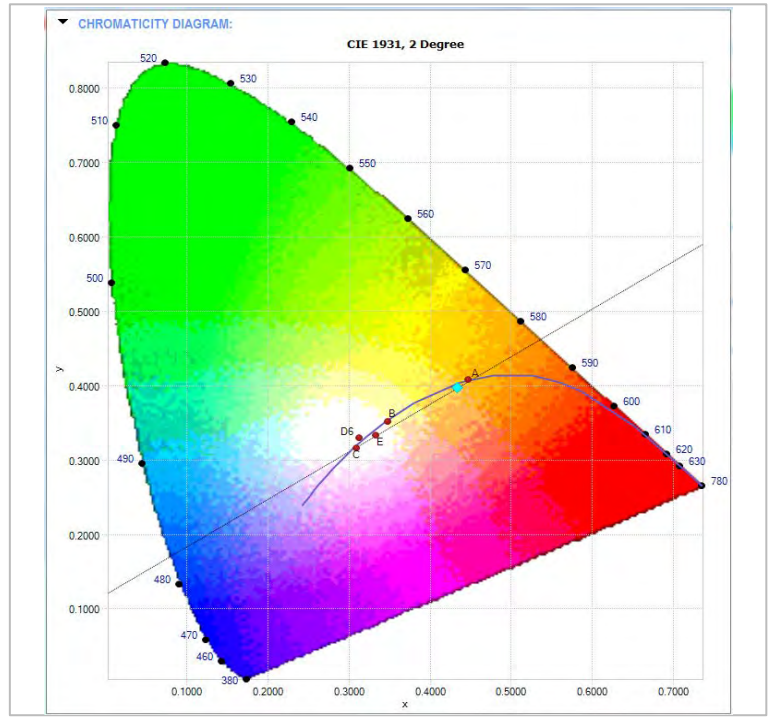


Lamp Cat#: NF2L757GRT-V1  
 Lamp Desc: 22 - Nichia 3000K LEDs  
 Driver Desc: NA

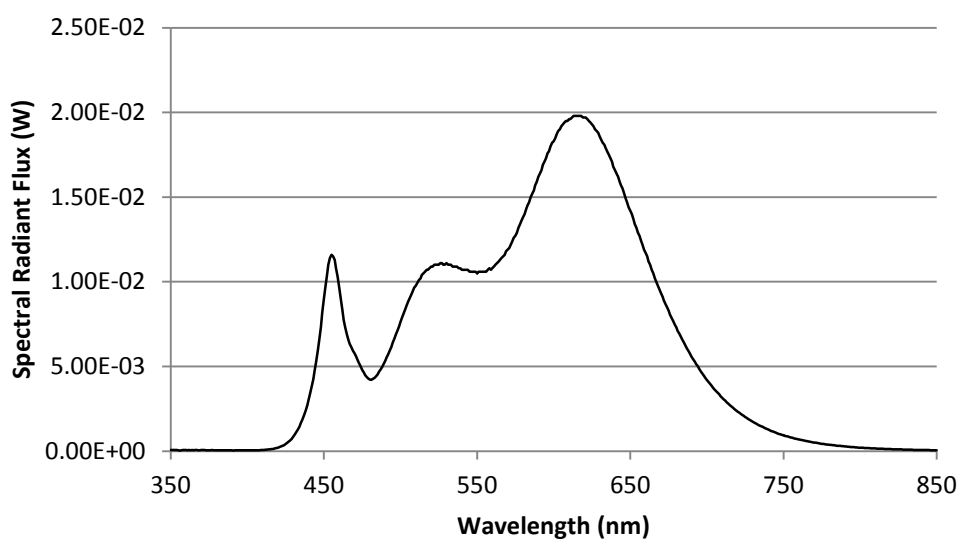
Efficacy: 77.9 LPW      S/P Ratio: 1.5 LM/LM

**Spectral Results**

Name	Value	Unit
$\Phi$	3.09	watts
$\Phi(v)$	919	lumens
$\Phi(v')$	1380	lm'
Chrom x	0.4332	
Chrom y	0.3971	
Chrom u	0.2511	
Chrom v	0.3454	
Duv	0.0024	
Chrom u'	0.2511	
Chrom v'	0.518	
CCT	3005	K
Purity	49.2	%
$\lambda$ (dom)	583.7	nm
FWHM	156.6	nm
$\lambda$ (peak)	614.8	nm
$\lambda$ (center)	589.2	nm
$\lambda$ (centroid)	587.2	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.00228973	
Correlation	0.0054	
R1	98.6	
R2	97.7	
R3	96.1	
R4	98.7	
R5	98.3	
R6	91.6	
R7	90.2	
R8	82.6	
R9	62.9	
R10	95.5	
R11	91.8	
R12	85.1	
R13	97.9	
R14	98.6	



**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: 17.02584  
ISSUE DATE: 09/28/17  
PREPARED FOR: PROGRESS  
CATALOG NUMBER: P563000-143-30K  
LUMINAIRE: 3" Wall-Mount Cylinder, Graphite w/ Textured,  
Opal Glass Lens; Tested as Down-Light  
LAMP CAT. NO.: NF2L757GRT-V1  
LAMP: 22- Nichia 3000K LEDs

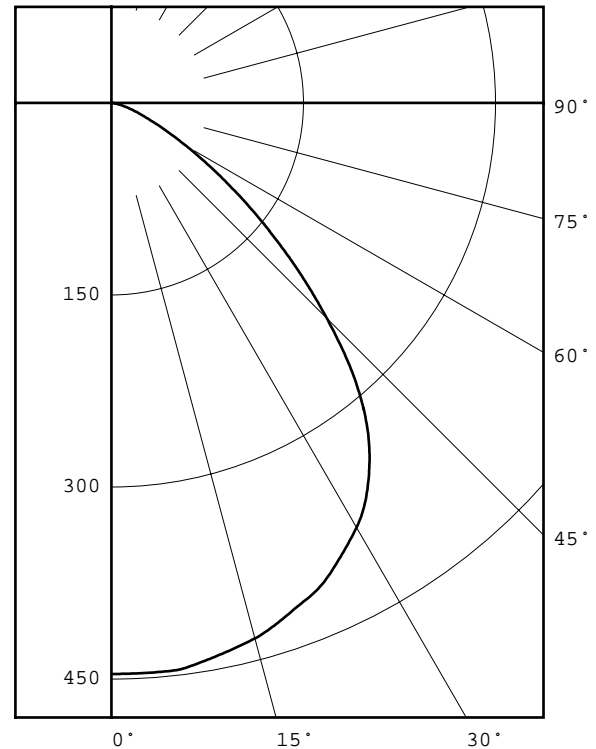
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DEG	CANDELA	LUMENS
0	446	
5	446	42
15	433	122
25	405	186
35	351	218
45	238	183
55	113	103
65	38	40
75	10	12
85	1	1
90	0	

ZONAL LUMEN SUMMARY		
ZONE	LUMENS	%FIXT
0- 30	351	38.7
0- 40	569	62.7
0- 60	855	94.2
0- 90	907	100.0
90-180	0	0.0
0-180	907	100.0

TOTAL INPUT WATTS = 12.204  
EFFICACY = 74.3 Lm/W  
CIE TYPE - DIRECT  
LUMINAIRE SPACING CRITERION = 1.3  
LUMINOUS DIAMETER: 2.625

LUMINANCE DATA IN CANDELA/SQ METER	
ANGLE	AVERAGE
IN DEG	
45	96365.
55	56405.
65	25743.
75	11062.
85	3285.





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CANDELA DISTRIBUTION

	0.0
0.0	446
2.5	446
5.0	446
7.5	445
10.0	441
12.5	437
15.0	433
17.5	427
20.0	420
22.5	414
25.0	405
27.5	394
30.0	383
32.5	369
35.0	351
37.5	330
40.0	304
42.5	273
45.0	238
47.5	204
50.0	171
52.5	141
55.0	113
57.5	89
60.0	68
62.5	51
65.0	38
67.5	28
70.0	21
72.5	15
75.0	10
77.5	7
80.0	4
82.5	2
85.0	1
87.5	0
90.0	0



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ZONAL LUMEN SUMMARY

0- 5	11.
5- 10	32.
10- 15	52.
15- 20	70.
20- 25	87.
25- 30	100.
30- 35	108.
35- 40	110.
40- 45	101.
45- 50	82.
50- 55	61.
55- 60	41.
60- 65	25.
65- 70	15.
70- 75	8.
75- 80	4.
80- 85	1.
85- 90	0.



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5-DEGREE  
ZONAL LUMEN SUMMARY

0- 5	11
5- 10	32
10- 15	52
15- 20	70
20- 25	87
25- 30	100
30- 35	108
35- 40	110
40- 45	101
45- 50	82
50- 55	61
55- 60	41
60- 65	25
65- 70	15
70- 75	8
75- 80	4
80- 85	1
85- 90	0

10-DEGREE  
ZONAL LUMEN SUMMARY

0- 10	42
0- 20	165
0- 30	351
0- 40	569
0- 50	752
0- 60	855
0- 70	894
0- 80	906
0- 90	907



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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	119	119	119	119	116	116	116	116	111	111	111	111	106	106	106	102	102	102	100
1	111	108	105	102	109	106	103	100	102	99	97	98	98	96	94	94	93	91	89
2	104	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	81	79	
3	96	87	81	75	94	86	80	75	83	78	74	80	76	72	78	74	71	69	
4	89	79	72	66	87	78	71	66	75	69	65	73	68	64	71	67	63	61	
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54	
6	77	65	57	52	75	64	57	52	63	56	51	61	55	51	60	54	50	49	
7	72	60	52	47	70	59	52	46	58	51	46	56	50	46	55	50	45	44	
8	67	55	47	42	66	54	47	42	53	46	42	52	46	41	51	45	41	39	
9	63	51	43	38	62	50	43	38	49	42	38	48	42	38	47	42	38	36	
10	59	47	40	35	58	46	39	35	45	39	35	45	39	35	44	38	34	33	

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.

Project Number  
17.02584



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Date  
09/28/2017

### *Goniophotometer Calibration*

Calibration Lamp: Osram ST8-HA4-250-840 22 W/4000 K

Lamp Number: RM B6-28

Ballast: Vossloh Schwabe LN 36.149

Ballast Number: RM B6-28

Calibration Voltage/Frequency: 220Vac / 50hz

Total Luminous Flux: 2463 Lumens

Calibration Date: 01/19/2017

### *Test Equipment Used*

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	LMT/GO-DS 1600 Lab 4- Test Dist.: 31.0'	10B6231	02/17/2019
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27074V	11/02/2017
<i>Power Source</i>	Chroma / 61604	616040003897	10/27/2017
<i>Thermometer</i>	LMT / ATS-4Ch	10B623-3	12/14/2017

### *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>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

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