

Project Number
16.02503



Date
9/15/2016

Lab 6
Sphere

Test Sample Description

Catalog Number: P560030-03130
Description: 1-Lt. LED Wall Lantern 9W LED SAMPLE "A" WITH CLEAR LENS

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 00:30
Time To Stabilize: 8:27
Total Operating Time: 19:16

Input Voltage (Volts): 119.9
Input Current (Amps): 0.078
Input Wattage (Watts): 9.3
Ambient Temp (°C): 24.2

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 0:05
Time To Stabilize: 1:22
Total Operating Time: 1:27

Input Voltage (Volts): 120.0
Input Current (Amps): 0.078
Input Wattage (Watts): 9.3
Ambient Temp (°C): 24.2



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Checked (sphere): B. LEE
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#: 93070270-3XXX

Lamp Desc: 20 - Nichia 3000K LEDs

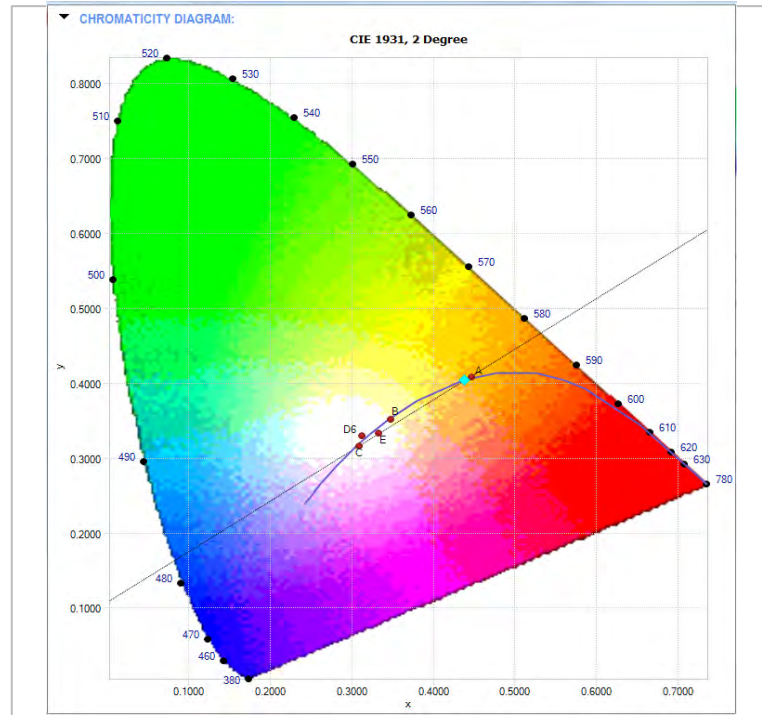
Driver Desc: n/a

Efficacy: 17.2 LPW

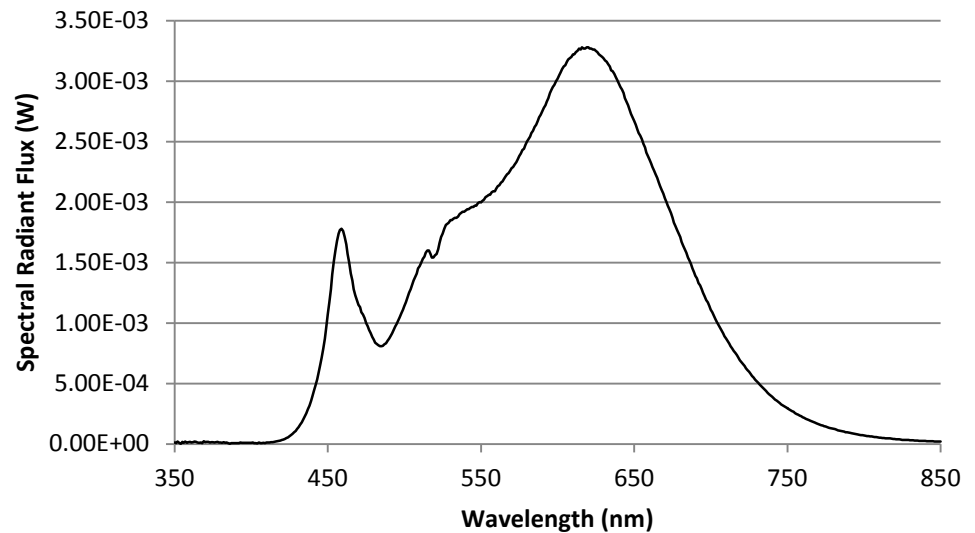
S/P Ratio: 1.4 LM'/LM

Spectral Results

Name	Value	Unit
Φ	0.56	watts
$\Phi(v)$	160	lumens
$\Phi(v')$	230	lm'
Chrom x	0.4384	
Chrom y	0.4043	
Chrom u	0.2514	
Chrom v	0.3478	
Duv	0.0003	
Chrom u'	0.2514	
Chrom v'	0.5217	
CCT	2975	K
Purity	53	%
λ (dom)	583.0	nm
FWHM	159.6	nm
λ (peak)	619.5	nm
λ (center)	602.4	nm
λ (centroid)	596.3	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.000210703	
Correlation	0.0054	
R1	95.4	
R2	98.8	
R3	98.8	
R4	93.9	
R5	94.6	
R6	96.9	
R7	91.4	
R8	82.9	
R9	63.0	
R10	95.5	
R11	95.8	
R12	80.1	
R13	96.9	
R14	99.4	



Spectral Distribution of Radiant Flux





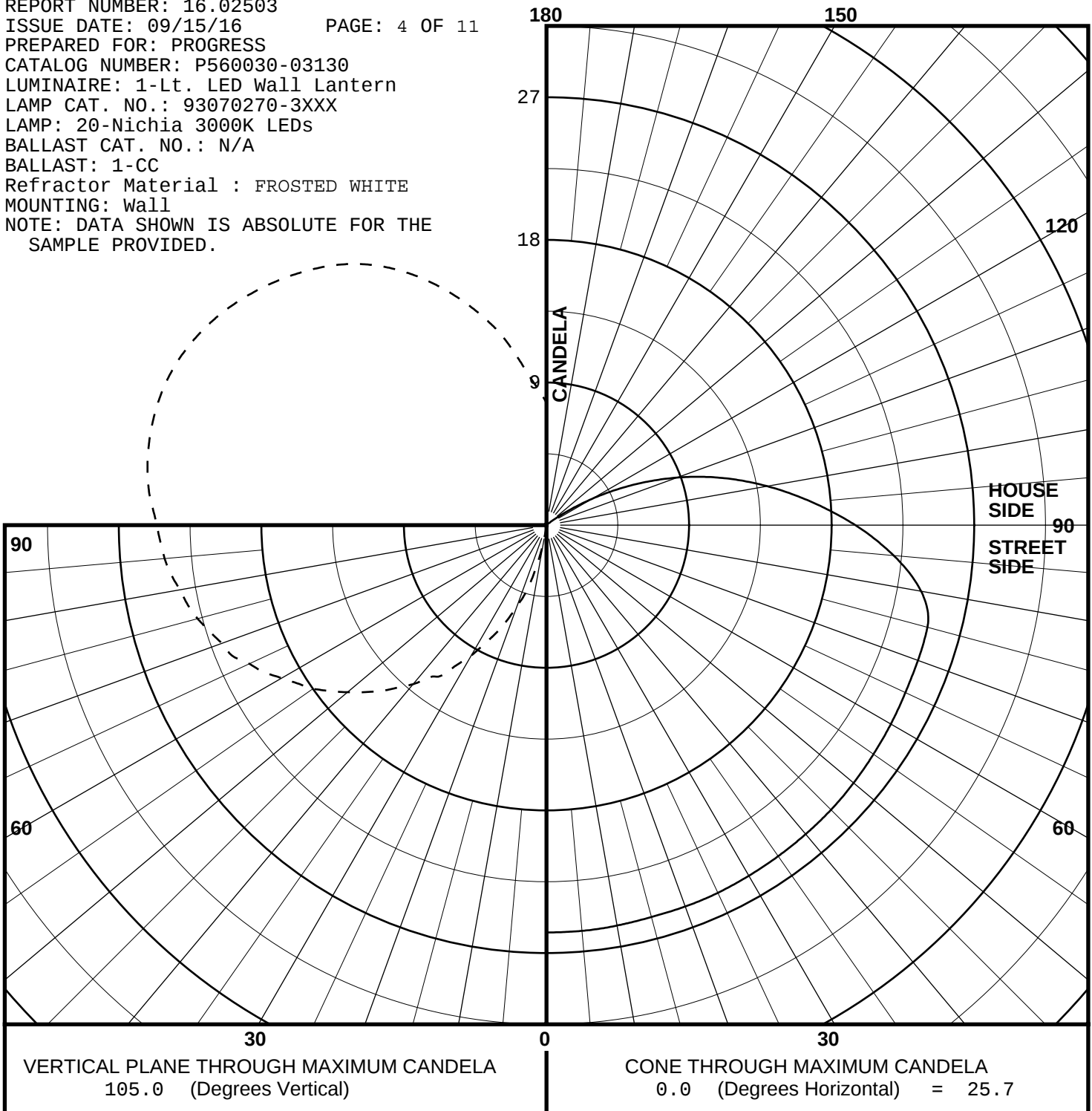
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NVLAP
NVLAP LAB CODE: 201003-0

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

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PREPARED FOR: PROGRESS
CATALOG NUMBER: P560030-03130
LUMINAIRE: 1-Lt. LED Wall Lantern
LAMP CAT. NO.: 93070270-3XXX
LAMP: 20-Nichia 3000K LEDs
BALLAST CAT. NO.: N/A
BALLAST: 1-CC
Refractor Material : FROSTED WHITE
MOUNTING: Wall
NOTE: DATA SHOWN IS ABSOLUTE FOR THE
SAMPLE PROVIDED.





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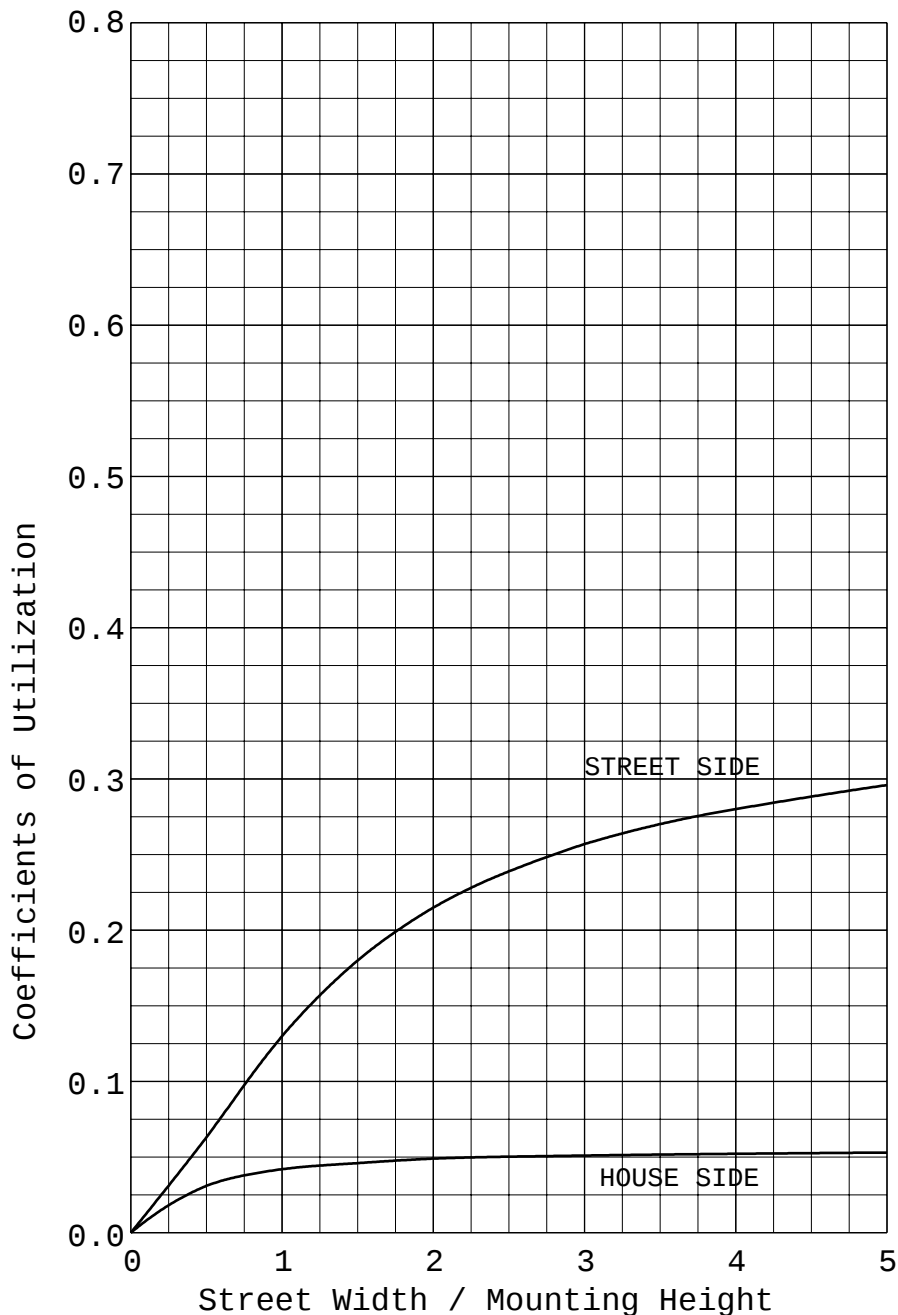
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	53.	36.2
DOWNWARD HOUSE SIDE	8.	5.8
DOWNWARD TOTAL	61.	42.0
UPWARD STREET SIDE	70.	47.8
UPWARD HOUSE SIDE	15.	10.1
UPWARD TOTAL	84.	58.0
TOTAL FLUX	145.	100.0
TOTAL INPUT WATTS = 9.32		
EFFICACY = 15.6 Lm/W		

ALL CANDELA AND LUMENS 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.

THIS REPORT IS BASED ON PUBLISHED INDUSTRY PROCEDURES. FIELD PERFORMANCE MAY DIFFER FROM LABORATORY PERFORMANCE.



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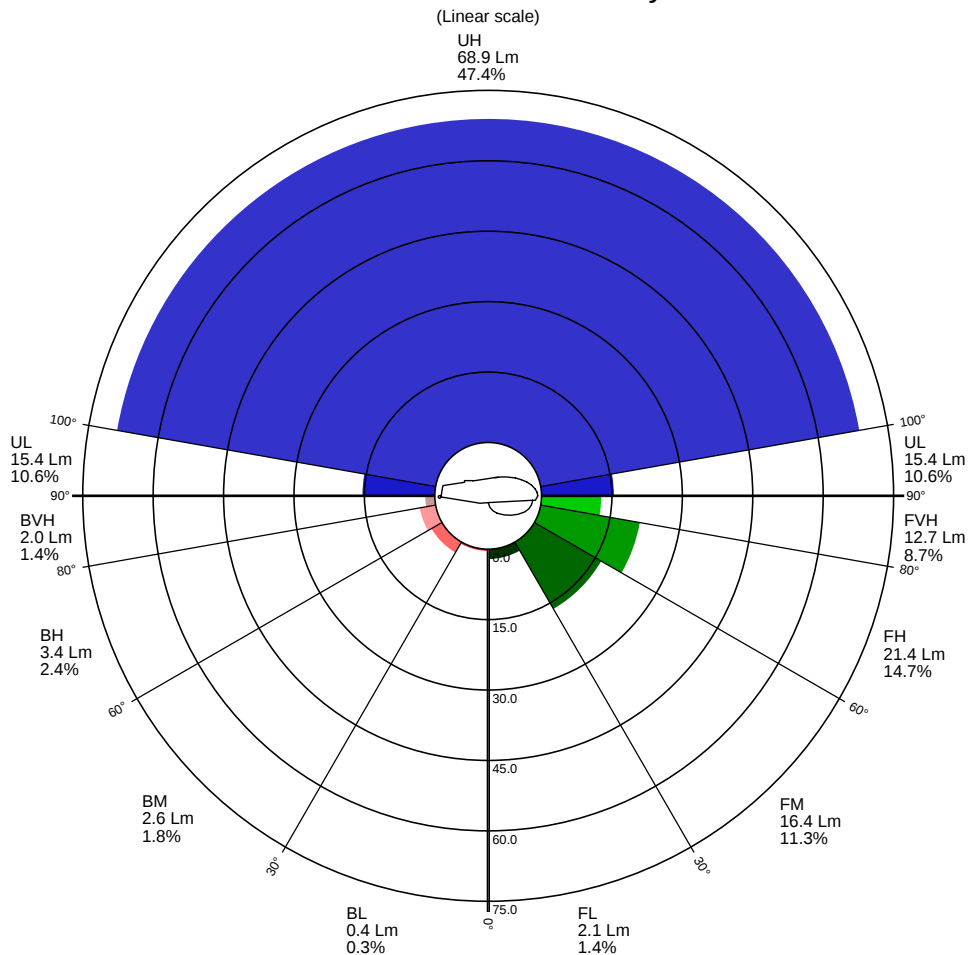


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BUG Rating:				Zone Ratings		
Zonal Summary				B	U	G
				B U G		
Forward		Lumens	% of Fixture			
FL	(0° - 30°)	53	36.2			
FM	(30° - 60°)	2.1	1.4			
FH	(60° - 80°)	16.4	11.3			G0
FVH	(80° - 90°)	21.4	14.7			G1
Backward		12.7	8.7			
BL	(0° - 30°)	8	5.8	B0		
BM	(30° - 60°)	0.4	0.3	B0		
BH	(60° - 80°)	2.6	1.8	B0		G0
BVH	(80° - 90°)	3.4	2.4			G0
Upward		2.0	1.4			
UL	(90° - 100°)	84	58.0		U2	
UH	(100° - 180°)	15.4	10.6		U3	
Trapped Light		68.9	47.4			
Total Flux		0	0.0			
		146	100.0			

Zonal Lumen Summary





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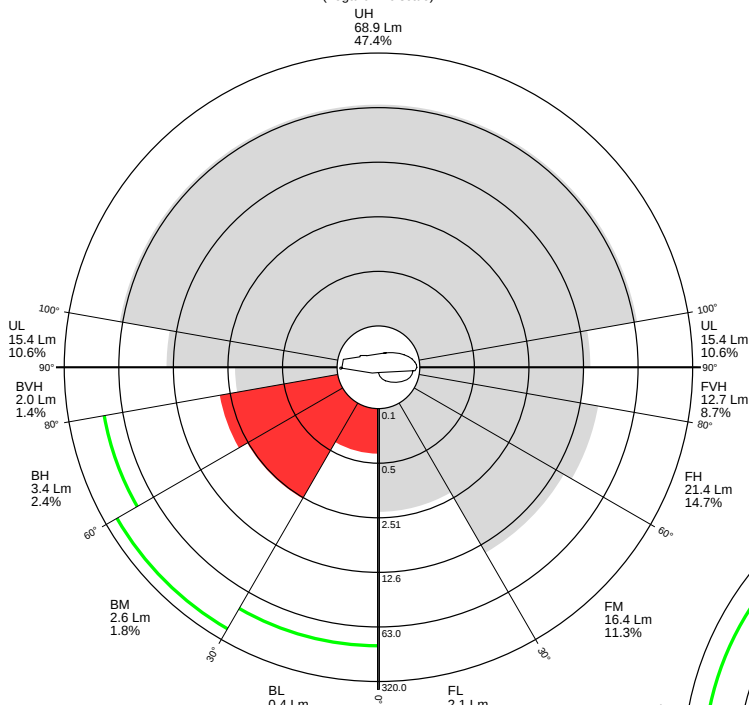
NVLAP
NVLAP LAB CODE: 201003-0

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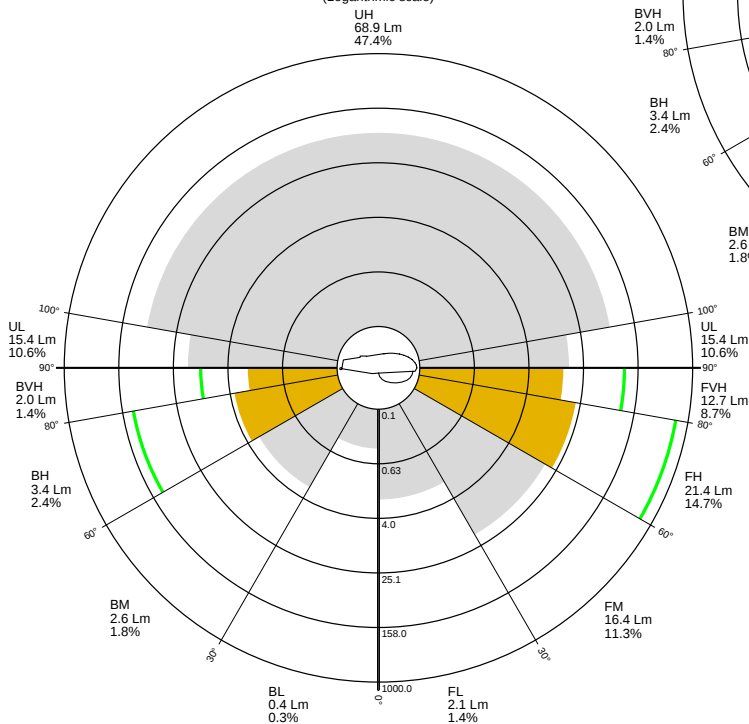
Backlight Rating Details

(Logarithmic scale)



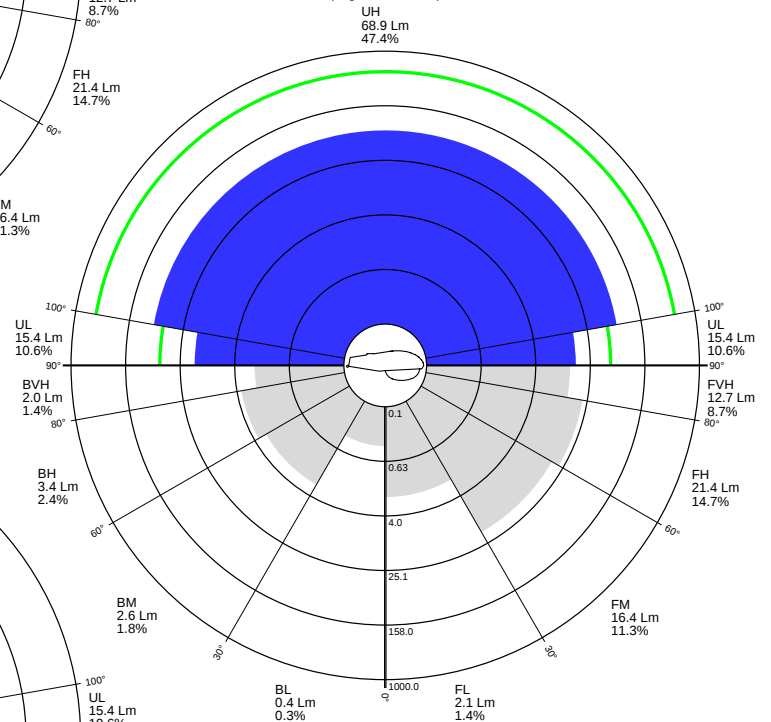
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)





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CANDELA TABULATION
STREET SIDE

		LATERAL ANGLE									
		0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0
	180.0	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
	175.0	9.0	9.0	9.0	8.9	9.0	9.0	9.0	8.9	8.9	8.9
	165.0	13.0	12.9	12.9	13.0	12.9	12.9	12.8	12.7	12.6	11.5
	155.0	16.8	16.7	16.7	16.7	16.7	16.6	16.5	16.3	16.2	14.4
	145.0	20.1	19.9	19.8	19.8	19.8	19.6	19.5	19.4	19.3	17.1
	135.0	22.4	22.5	22.4	22.4	22.2	22.2	22.2	21.9	21.8	19.3
	125.0	24.2	24.3	24.3	24.2	24.1	24.0	24.0	23.7	23.6	20.9
	115.0	25.4	25.4	25.3	25.1	25.3	25.1	25.0	24.8	24.7	21.7
	105.0<<	25.7	25.7	25.6	25.6	25.5	25.4	25.2	25.0	24.9	22.0
	95.0	25.2	25.2	25.2	25.1	24.9	24.9	24.7	24.5	24.4	21.5
	90.0	24.6	24.7	24.5	24.5	24.4	24.2	24.1	23.9	23.8	21.1
	87.5	24.4	24.4	24.4	24.3	24.3	24.0	23.9	23.7	23.6	20.9
	85.0	24.2	24.2	24.1	24.0	24.0	23.8	23.6	23.4	23.2	20.6
V	82.5	23.9	23.8	23.8	23.7	23.5	23.4	23.3	22.9	22.9	20.3
E	80.0	23.5	23.6	23.5	23.3	23.3	23.2	23.0	22.7	22.6	20.0
R	77.5	23.2	23.2	23.1	23.1	22.9	22.8	22.6	22.3	22.2	19.6
T	75.0	22.8	22.7	22.7	22.7	22.4	22.3	22.1	21.8	21.7	19.2
I	72.5	22.3	22.3	22.3	22.2	22.0	21.8	21.7	21.4	21.2	18.9
C	70.0	21.8	21.8	21.8	21.7	21.6	21.4	21.2	21.0	20.8	18.5
A	67.5	21.5	21.4	21.4	21.3	21.1	21.0	20.8	20.5	20.3	18.1
L	65.0	20.7	20.6	20.5	20.4	20.3	20.1	19.9	19.7	19.4	17.3
	62.5	20.1	20.0	20.0	19.9	19.7	19.6	19.3	19.0	18.9	16.7
A	60.0	19.3	19.3	19.2	19.1	19.0	18.8	18.5	18.2	18.0	16.1
N	57.5	18.6	18.6	18.6	18.5	18.3	18.0	17.9	17.6	17.4	15.4
G	55.0	18.0	18.1	18.0	17.9	17.7	17.5	17.2	17.0	16.8	14.9
L	52.5	17.2	17.2	17.0	16.9	16.8	16.7	16.4	16.1	15.9	14.3
E	50.0	16.4	16.4	16.4	16.3	16.2	15.9	15.7	15.4	15.2	13.5
	47.5	15.6	15.6	15.6	15.5	15.4	15.2	15.0	14.8	14.5	12.9
	45.0	14.8	14.7	14.6	14.5	14.4	14.2	14.0	13.7	13.5	12.1
	42.5	13.9	13.8	13.7	13.7	13.5	13.3	13.0	12.7	12.5	11.2
	40.0	13.1	13.0	12.9	12.9	12.8	12.6	12.3	12.1	11.8	10.6
	37.5	12.1	12.1	12.1	11.9	11.8	11.7	11.4	11.1	10.9	9.7
	35.0	11.6	11.4	11.4	11.3	11.1	10.9	10.6	10.4	10.1	9.1
	30.0	9.5	9.6	9.5	9.4	9.2	9.1	8.8	8.5	8.3	7.5
	25.0	7.5	7.5	7.4	7.4	7.2	7.1	6.9	6.7	6.5	5.9
	20.0	5.4	5.6	5.5	5.4	5.4	5.2	5.0	4.8	4.6	4.4
	15.0	3.4	3.5	3.4	3.3	3.3	3.1	3.1	3.0	2.8	2.8
	10.0	1.0	0.9	0.9	0.9	0.9	0.9	0.8	0.9	0.8	0.8
	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
		PLANE OF MAXIMUM CANDELA									
		CONE OF MAXIMUM CANDELA									



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CANDELA TABULATION
HOUSE SIDE

LATERAL ANGLE

	90.0	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
180.0	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
175.0	8.9	9.0	9.0	8.9	8.5	8.1	7.8	7.5	7.4	7.3	7.5
165.0	10.8	10.1	8.7	7.4	6.2	5.6	5.3	5.1	5.0	4.9	4.9
155.0	13.3	12.2	9.8	7.6	5.4	4.5	4.4	4.2	4.2	4.1	4.1
145.0	15.5	14.0	10.7	7.5	4.5	3.4	3.1	3.0	2.9	2.8	2.7
135.0	17.4	15.3	11.4	7.2	3.2	2.0	1.7	1.6	1.5	1.4	1.5
125.0	18.5	16.2	11.4	6.5	2.0	0.5	0.4	0.3	0.2	0.2	0.1
115.0	19.3	16.7	11.3	6.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
105.0<<	19.5	16.8	11.5	6.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0
95.0	19.1	16.5	11.2	5.9	1.2	0.1	0.0	0.0	0.0	0.0	0.0
90.0	18.7	16.1	10.9	5.7	1.1	0.0	0.0	0.0	0.0	0.0	0.0
87.5	18.5	16.0	10.8	5.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0
85.0	18.3	15.8	10.6	5.6	1.1	0.0	0.0	0.0	0.0	0.0	0.0
V 82.5	18.0	15.5	10.5	5.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0
E 80.0	17.8	15.3	10.4	5.4	1.0	0.0	0.0	0.0	0.0	0.0	0.0
R 77.5	17.5	15.1	10.2	5.3	0.9	0.0	0.0	0.0	0.0	0.0	0.0
T 75.0	17.1	14.8	10.0	5.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0
I 72.5	16.8	14.5	9.8	5.2	0.9	0.0	0.0	0.0	0.0	0.0	0.0
C 70.0	16.4	14.3	9.6	5.1	1.0	0.0	0.0	0.0	0.0	0.0	0.0
A 67.5	16.1	13.9	9.6	5.0	1.1	0.2	0.1	0.0	0.0	0.2	0.0
L 65.0	15.4	13.3	9.0	4.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0
62.5	14.9	12.9	8.8	4.5	0.8	0.0	0.0	0.0	0.0	0.0	0.0
A 60.0	14.4	12.4	8.4	4.3	0.6	0.0	0.0	0.0	0.0	0.0	0.0
N 57.5	13.8	11.8	8.0	4.2	0.7	0.0	0.0	0.0	0.0	0.0	0.0
G 55.0	13.3	11.6	7.9	4.1	0.8	0.0	0.0	0.0	0.0	0.0	0.0
L 52.5	12.6	11.0	7.3	3.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0
E 50.0	12.1	10.4	7.0	3.7	0.7	0.0	0.0	0.0	0.0	0.0	0.0
47.5	11.5	9.9	6.7	3.6	0.7	0.0	0.0	0.0	0.0	0.0	0.0
45.0	10.7	9.3	6.2	3.2	0.5	0.0	0.0	0.0	0.0	0.0	0.0
42.5	10.0	8.6	5.7	2.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0
40.0	9.4	8.1	5.5	2.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0
37.5	8.6	7.5	5.0	2.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0
35.0	8.1	7.1	4.8	2.5	0.6	0.0	0.0	0.0	0.0	0.0	0.0
30.0	6.7	5.8	3.9	2.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0
25.0	5.5	4.9	3.2	1.8	0.6	0.1	0.0	0.0	0.0	0.0	0.0
20.0	4.1	3.6	2.4	1.5	0.6	0.1	0.1	0.0	0.0	0.0	0.0
15.0	2.5	2.4	1.9	1.2	0.7	0.4	0.2	0.0	0.1	0.0	0.0
10.0	0.8	0.7	0.7	0.7	0.4	0.3	0.2	0.2	0.0	0.1	0.0
5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

CONE OF MAXIMUM CANDELA



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**5-DEGREE
ZONAL LUMEN SUMMARY**

0- 5	0
5- 10	0
10- 15	0
15- 20	0
20- 25	1
25- 30	1
30- 35	2
35- 40	2
40- 45	3
45- 50	3
50- 55	4
55- 60	5
60- 65	5
65- 70	6
70- 75	7
75- 80	7
80- 85	7
85- 90	8
90- 95	8
95-100	8
100-105	8
105-110	8
110-115	7
115-120	7
120-125	6
125-130	6
130-135	5
135-140	5
140-145	4
145-150	4
150-155	3
155-160	2
160-165	2
165-170	1
170-175	1
175-180	0

**10-DEGREE
ZONAL LUMEN SUMMARY**

0- 10	0
0- 20	1
0- 30	2
0- 40	6
0- 50	13
0- 60	22
0- 70	33
0- 80	46
0- 90	61
0-100	77
0-110	92
0-120	106
0-130	118
0-140	129
0-150	137
0-160	142
0-170	145
0-180	145

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Lighting

Date
9/15/2016

Goniophotometer Calibration

Calibration Lamp: GE 1000W, 120V, T6, CL (FEL)

Lamp Number: ITL78966-1000-14

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 23413.0 Lumens

Calibration Date: 07/18/2015

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	11/10/2016
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/10/2016

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	11/10/2016
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	11/10/2016
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	031159372	11/10/2016
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148605	11/10/2016
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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