

Project Number
17.01616



Date
6/8/2017

LAB 1
Sphere

Test Sample Description

Catalog Number: P560073-031-30
Description: 1-Lt. Led Small Wall Lantern w/ Clear Seeded Glass Enclosure

Photometry

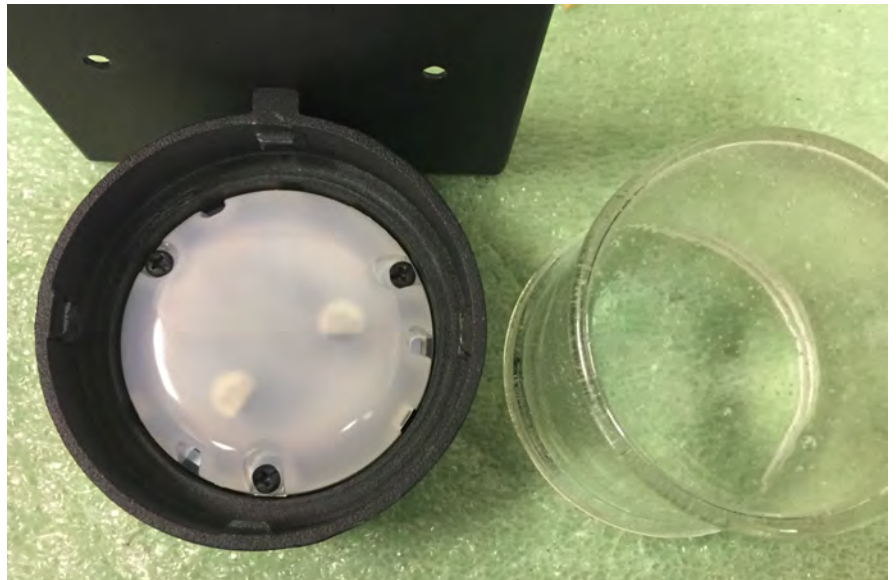
Test Method: IES LM-31-95
Preburn Time: 0:05
Time To Stabilize: 0:45
Total Operating Time: 6:17

Input Voltage (Volts): 119.9
Input Current (Amps): 0.080
Input Wattage (Watts): 9.5
Ambient Temp (°C): 24.2

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 8:00
Time To Stabilize: 1:20
Total Operating Time: 9:20

Input Voltage (Volts): 120.0
Input Current (Amps): 0.079
Input Wattage (Watts): 9.4
Ambient Temp (°C): 24.2



Hubbell Lighting, Inc.

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

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



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

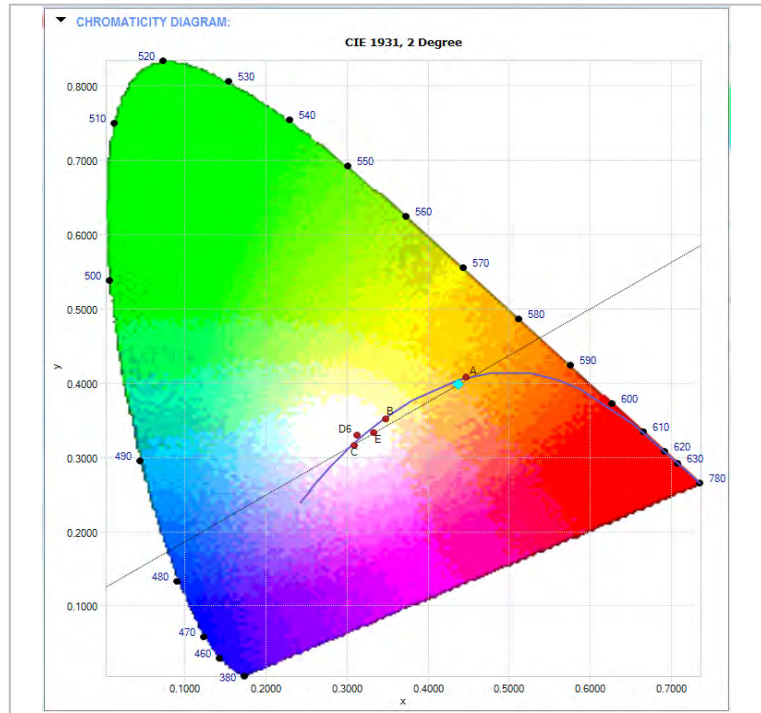


Lamp Cat#: 93070270-3330
 Lamp Desc: 20 - Nichia 3000K LEDs
 Driver Desc: NA

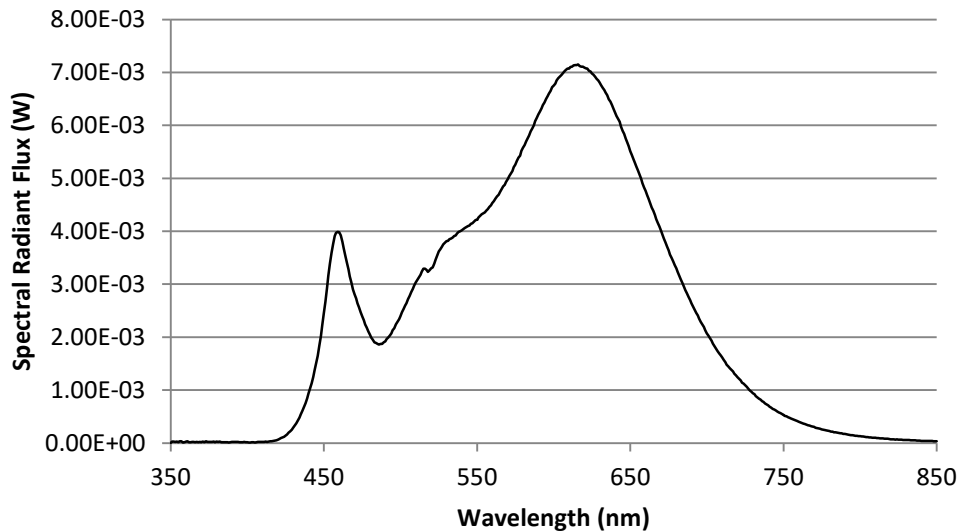
Efficacy: 36.8 LPW S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	1.20	watts
Φ(v)	346	lumens
Φ(v')	498	lm'
Chrom x	0.4368	
Chrom y	0.3982	
Chrom u	0.2531	
Chrom v	0.346	
Duv	0.0026	
Chrom u'	0.2531	
Chrom v'	0.519	
CCT	2951	K
Purity	50.6	%
λ (dom)	583.9	nm
FWHM	151.4	nm
λ (peak)	614.8	nm
λ (center)	600.1	nm
λ (centroid)	592.8	nm
SDCM	Cool White	
RA	92	
Corr. Coef.	0.002344642	
Correlation	0.0054	
R1	93.8	
R2	99.1	
R3	95.9	
R4	91.1	
R5	93.5	
R6	95.7	
R7	88.0	
R8	77.7	
R9	53.9	
R10	96.9	
R11	92.7	
R12	80.8	
R13	95.9	
R14	98.9	



Spectral Distribution of Radiant Flux



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LUMINAIRE: 1-Lt. Led Small Wall Lantern w/ Clear Seeded Refractor

LAMP CAT. NO.: 93070270-3330

LAMP: 20- Nichia 3000K LEDs

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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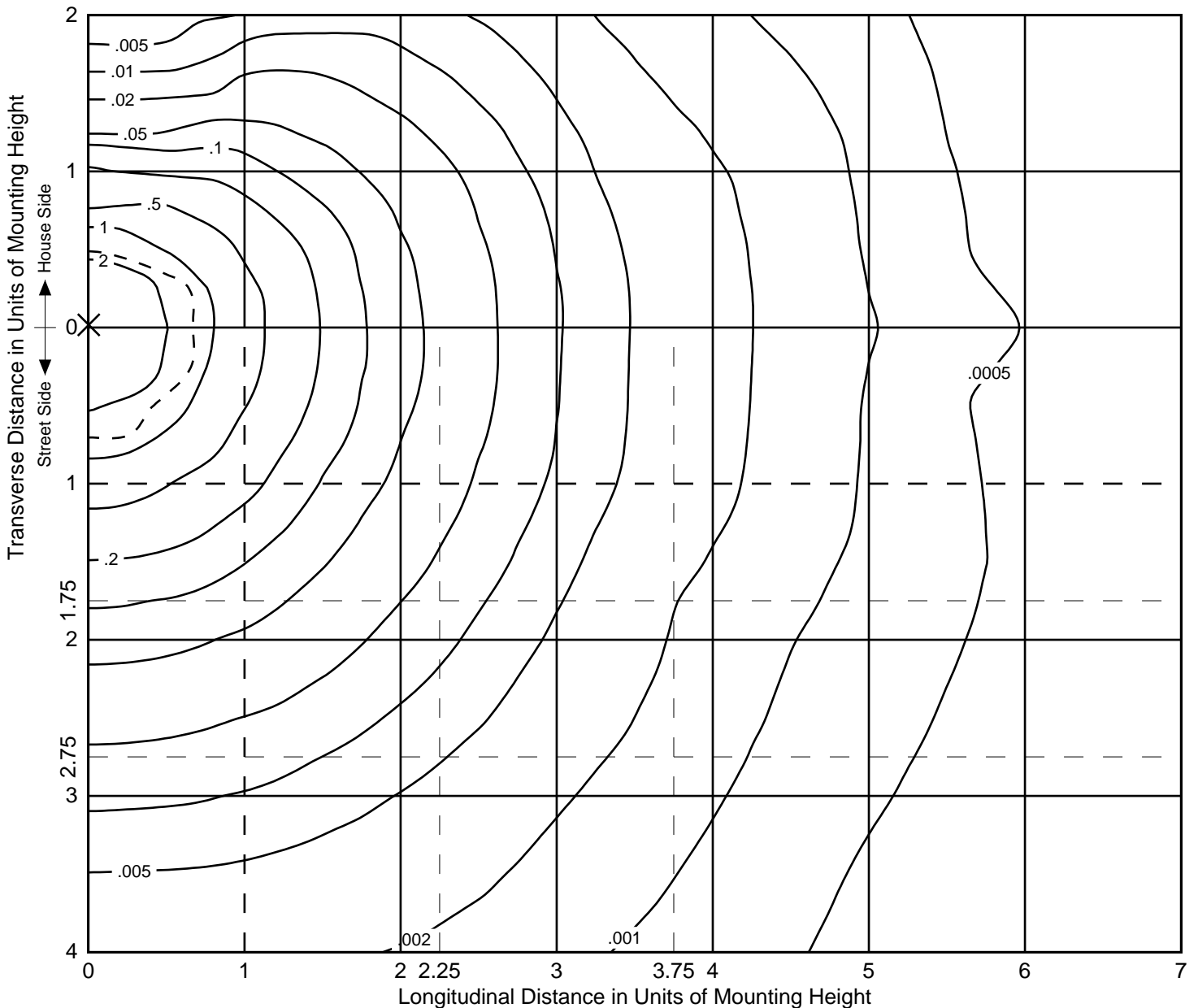
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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION
Values based on 6.6-foot mounting height

IES Classification: (does not classify)
Cutoff Classification (deprecated): Full Cutoff

--- 1/2 Maximum Candela trace
X Maximum Candela point





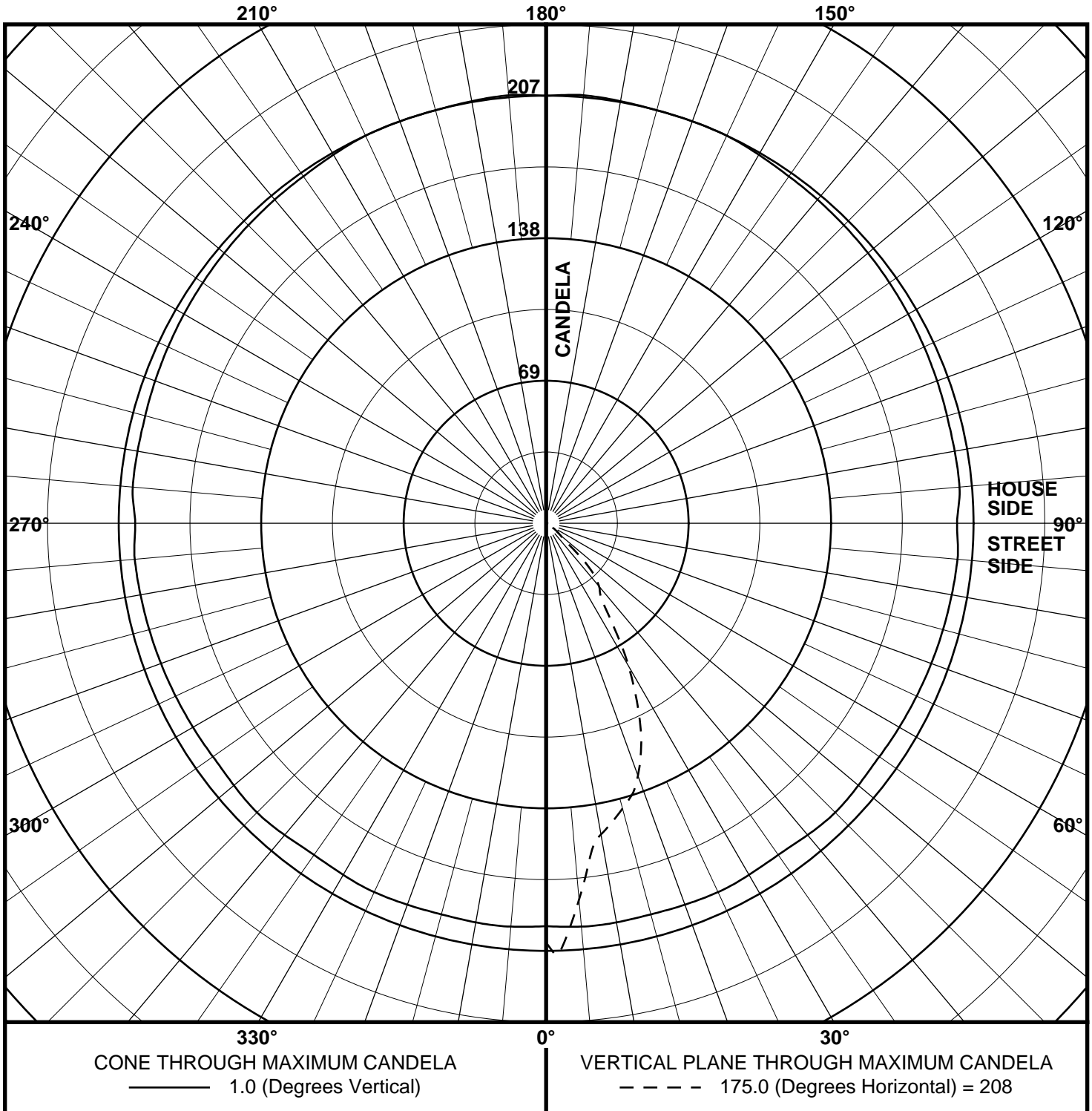
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

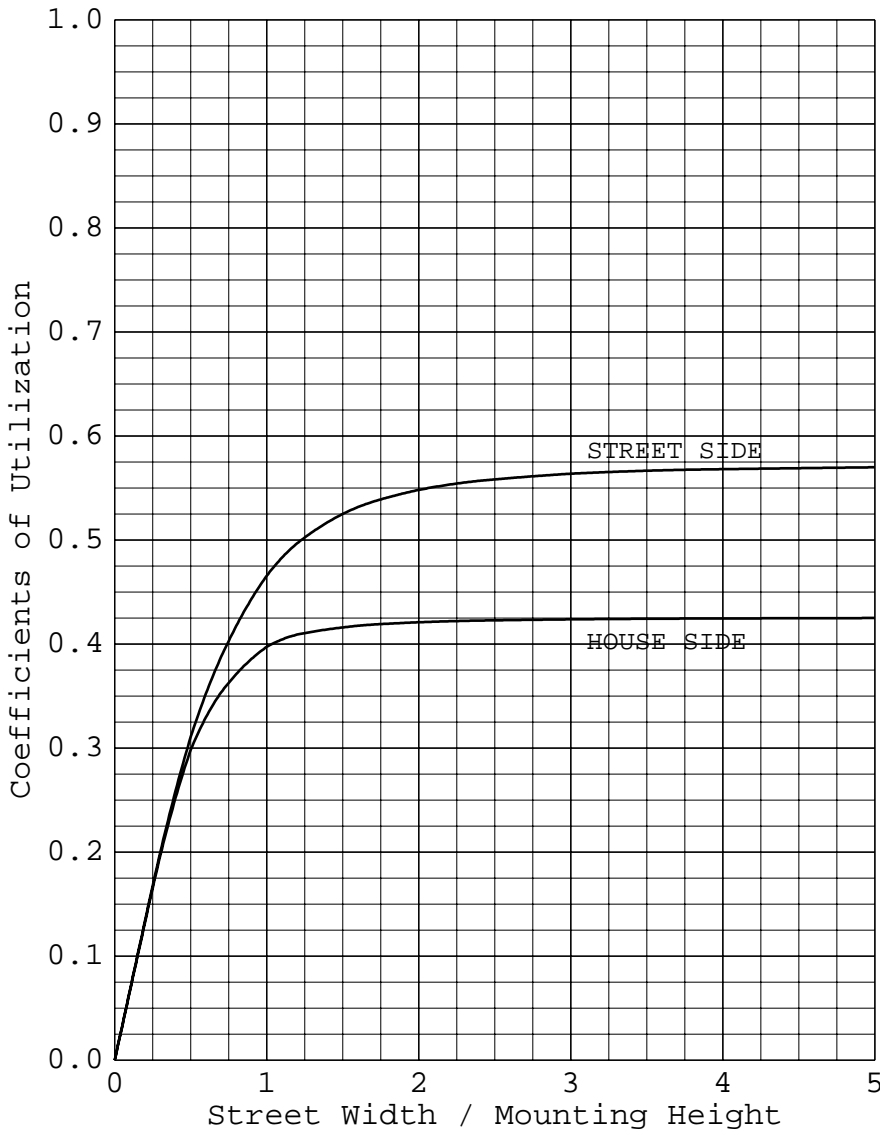




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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	168	57.4
DOWNWARD HOUSE SIDE	125	42.6
DOWNWARD TOTAL	293	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	293	100.0

EFFICACY = 30.9 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.



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BUG Rating Zonal Summary	Lumens	% of Fixture	Zone Ratings		
			B	U	G
Forward	168	57.4			
FL (0° – 30°)	59.0	20.1			
FM (30° – 60°)	87.9	30.0			
FH (60° – 80°)	19.9	6.8			G0
FVH (80° – 90°)	1.6	0.5			G0
Backward	125	42.6			
BL (0° – 30°)	56.2	19.1	B0		
BM (30° – 60°)	58.8	20.0	B0		
BH (60° – 80°)	9.4	3.2	B0		G0
BVH (80° – 90°)	0.7	0.2			G0
Upward	0	0.0			
UL (90° – 100°)	0.0	0.0		U0	
UH (100° – 180°)	0.0	0.0		U0	
Trapped Light	0	0.0			
Total Flux	293	100.0			



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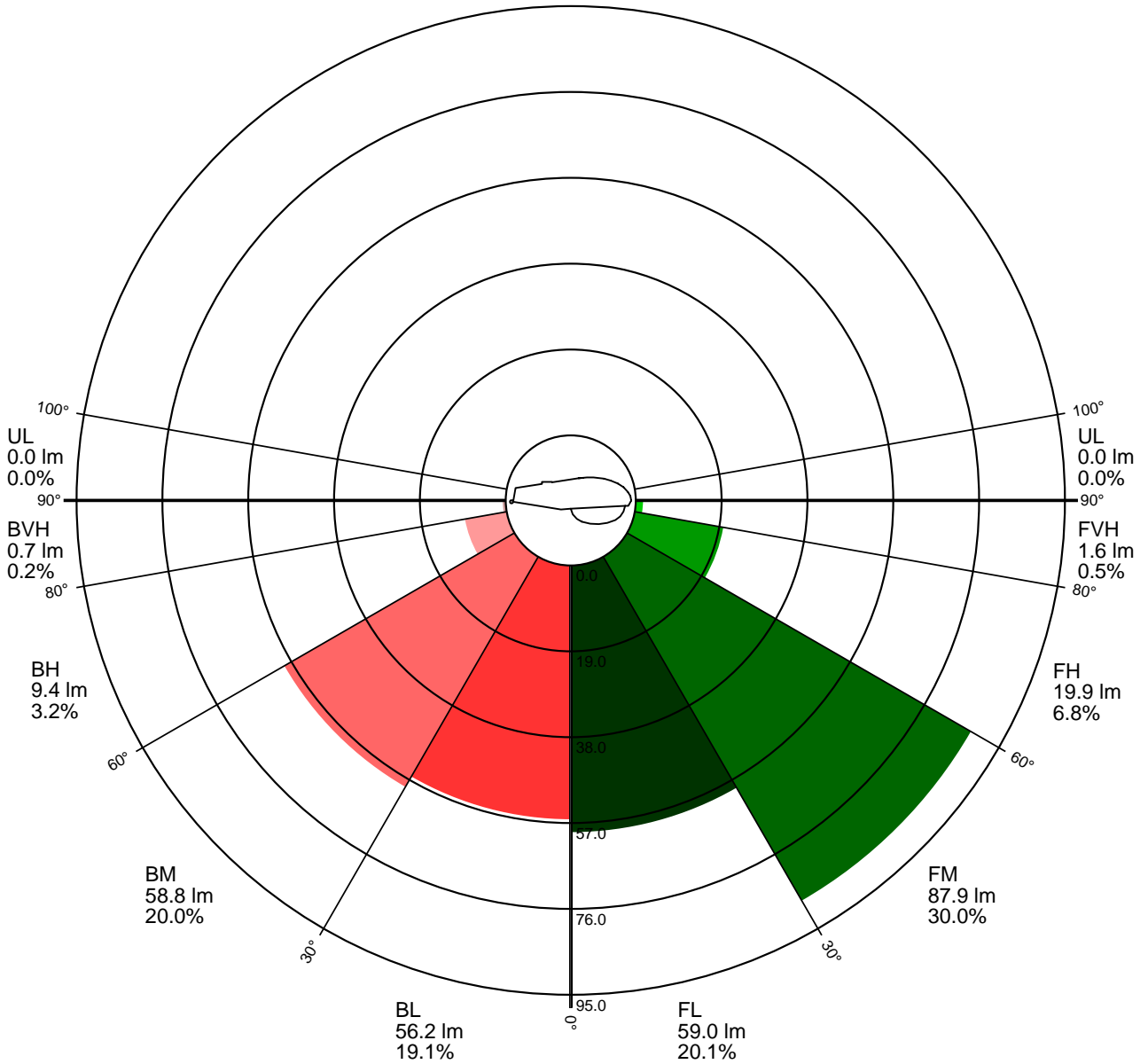
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Zonal Lumen Summary

(Linear scale)

UH
0.0 lm
0.0%





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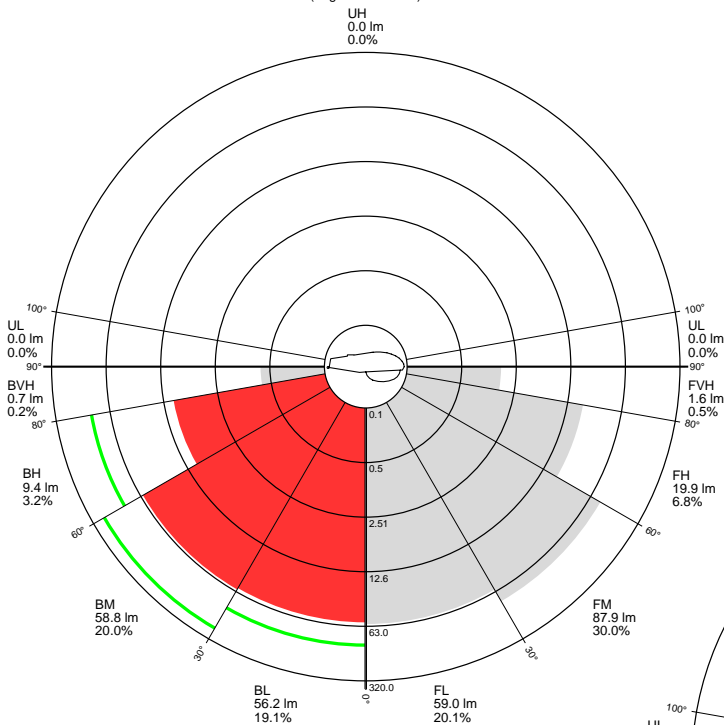
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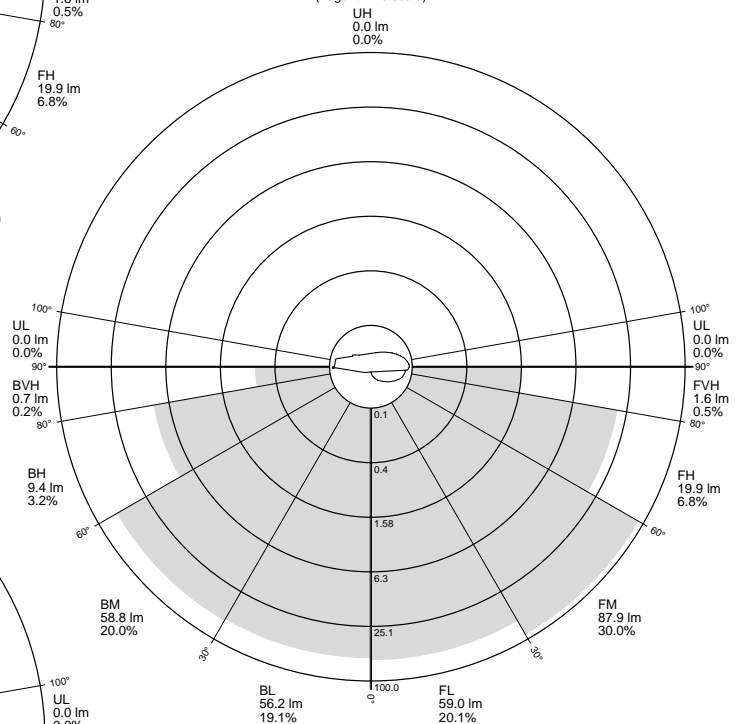
Backlight Rating Details

(Logarithmic scale)



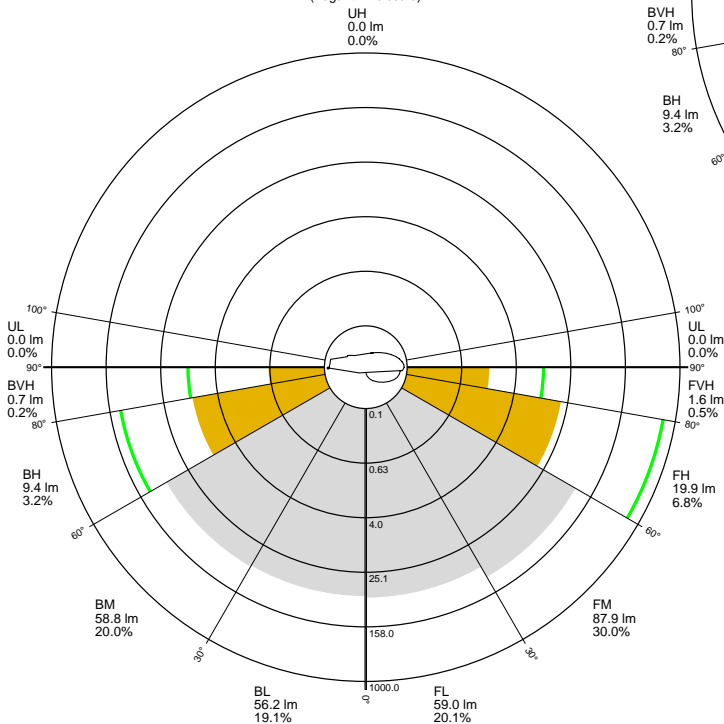
Uplight Rating Details

(Logarithmic scale)



Glare Rating Details

(Logarithmic scale)





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CANDELA TABULATION

	LATERAL ANGLE											
	STREET SIDE	0.0	5.0	15.0	25.0	35.0	45.0	55.0	65.0	75.0	85.0	90.0
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.	2.
	85.0	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.	3.
	82.5	4.	4.	4.	5.	4.	4.	4.	4.	4.	4.	4.
	80.0	5.	5.	6.	6.	6.	6.	5.	5.	5.	4.	5.
	77.5	6.	6.	7.	8.	8.	7.	7.	6.	7.	7.	7.
	75.0	8.	8.	9.	10.	10.	10.	9.	8.	9.	8.	8.
	72.5	14.	14.	15.	15.	15.	15.	14.	14.	14.	13.	13.
	70.0	19.	19.	19.	20.	20.	19.	19.	18.	18.	17.	17.
	67.5	23.	23.	24.	24.	25.	24.	23.	23.	23.	23.	22.
	65.0	29.	29.	29.	30.	30.	29.	28.	28.	28.	29.	28.
	62.5	34.	34.	35.	35.	36.	35.	33.	33.	34.	34.	34.
V	60.0	39.	39.	40.	41.	41.	40.	38.	38.	39.	39.	38.
E	57.5	46.	46.	47.	47.	48.	47.	46.	45.	45.	46.	45.
R	55.0	53.	53.	54.	55.	56.	55.	53.	52.	52.	53.	53.
T	52.5	60.	60.	61.	61.	61.	61.	59.	59.	57.	57.	56.
I	50.0	68.	68.	68.	68.	68.	68.	68.	66.	64.	64.	62.
C	47.5	79.	80.	79.	79.	80.	81.	80.	79.	75.	73.	73.
A	45.0	93.	93.	92.	91.	92.	93.	92.	90.	87.	85.	84.
L	42.5	100.	99.	98.	96.	94.	93.	92.	92.	91.	90.	90.
	40.0	99.	99.	99.	98.	97.	94.	92.	92.	93.	95.	94.
A	37.5	97.	97.	98.	98.	97.	94.	91.	90.	91.	93.	92.
N	35.0	95.	95.	96.	97.	98.	95.	92.	90.	91.	94.	94.
G	32.5	98.	99.	101.	103.	104.	104.	102.	101.	101.	102.	103.
L	30.0	110.	111.	113.	115.	118.	121.	120.	118.	116.	113.	111.
E	27.5	126.	125.	124.	123.	126.	131.	131.	130.	127.	122.	120.
	25.0	136.	136.	132.	130.	131.	134.	137.	137.	134.	131.	130.
	22.5	140.	140.	138.	137.	137.	138.	139.	139.	139.	140.	139.
	20.0	141.	141.	142.	144.	145.	143.	141.	141.	144.	146.	147.
	17.5	141.	141.	145.	149.	150.	148.	144.	142.	145.	150.	151.
	15.0	141.	143.	148.	153.	153.	152.	146.	144.	146.	150.	152.
	12.5	146.	146.	150.	155.	155.	153.	148.	146.	146.	148.	149.
	10.0	151.	151.	152.	155.	155.	153.	151.	149.	147.	146.	146.
	7.5	155.	156.	156.	157.	156.	156.	156.	155.	153.	151.	151.
	5.0	162.	163.	163.	164.	163.	165.	167.	169.	169.	169.	169.
	2.5	182.	183.	182.	185.	185.	185.	187.	189.	189.	191.	193.
	1.0<<	195.	196.	196.	197.	196.	198.	197.	198.	199.	200.	199.
	0.0	203.	203.	203.	203.	203.	203.	203.	203.	203.	203.	203.

CONE OF MAXIMUM CANDELA



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CANDELA TABULATION

	HOUSE SIDE		LATERAL ANGLE							
	95.0	105.0	115.0	125.0	135.0	145.0	155.0	165.0	175.0	180.0
	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	2.	2.	1.	1.	1.	0.	0.	0.	0.
	85.0	3.	3.	2.	2.	1.	1.	0.	0.	0.
	82.5	4.	3.	3.	2.	2.	1.	0.	0.	0.
	80.0	4.	4.	4.	3.	2.	1.	1.	0.	0.
	77.5	7.	7.	5.	5.	3.	2.	1.	1.	1.
	75.0	8.	7.	6.	5.	4.	2.	1.	0.	0.
	72.5	13.	12.	11.	9.	6.	3.	1.	1.	1.
	70.0	17.	17.	15.	12.	9.	4.	2.	1.	1.
	67.5	22.	21.	20.	15.	11.	5.	2.	1.	1.
	65.0	27.	27.	24.	19.	14.	8.	3.	2.	1.
	62.5	33.	32.	29.	23.	17.	10.	4.	2.	2.
V	60.0	38.	37.	34.	26.	20.	12.	4.	2.	2.
E	57.5	44.	43.	40.	31.	24.	15.	6.	4.	3.
R	55.0	52.	51.	47.	37.	30.	20.	10.	6.	5.
T	52.5	56.	56.	53.	42.	35.	24.	13.	8.	7.
I	50.0	62.	62.	59.	48.	39.	28.	14.	9.	9.
C	47.5	73.	72.	69.	58.	48.	38.	23.	15.	13.
A	45.0	84.	84.	81.	71.	61.	51.	37.	30.	27.
L	42.5	90.	91.	87.	77.	68.	60.	47.	39.	35.
	40.0	95.	94.	90.	79.	71.	63.	52.	44.	40.
A	37.5	92.	93.	89.	80.	72.	65.	56.	48.	43.
N	35.0	94.	95.	91.	84.	77.	71.	64.	56.	50.
G	32.5	102.	103.	102.	97.	89.	83.	77.	70.	64.
L	30.0	110.	112.	115.	112.	103.	92.	86.	83.	80.
E	27.5	118.	120.	123.	123.	114.	104.	96.	94.	94.
	25.0	129.	129.	131.	130.	124.	115.	109.	107.	108.
	22.5	139.	137.	136.	135.	132.	126.	121.	120.	120.
	20.0	146.	144.	140.	138.	138.	137.	135.	133.	130.
	17.5	151.	148.	143.	142.	143.	146.	148.	144.	138.
	15.0	152.	150.	147.	145.	148.	153.	153.	149.	143.
	12.5	149.	150.	148.	149.	152.	155.	155.	151.	148.
	10.0	147.	149.	150.	151.	153.	154.	154.	154.	153.
	7.5	151.	152.	153.	156.	158.	159.	160.	162.	163.
	5.0	169.	169.	171.	172.	175.	179.	180.	183.	183.
	2.5	193.	194.	195.	197.	198.	200.	202.	203.	203.
	1.0<<	201.	201.	202.	203.	204.	205.	207.	207.	208.
	0.0	203.	203.	203.	203.	203.	203.	203.	203.	203.

PLANE OF MAXIMUM CANDELA

CONE OF MAXIMUM CANDELA



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		4
5- 10		11
10- 15		18
15- 20		24
20- 25		28
25- 30		30
30- 35		28
35- 40		28
40- 45		29
45- 50		25
50- 55		20
55- 60		16
60- 65		12
65- 70		9
70- 75		5
75- 80		3
80- 85		2
85- 90		1

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		16
10- 20		42
20- 30		58
30- 40		56
40- 50		55
50- 60		36
60- 70		21
70- 80		8
80- 90		2

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17.01616



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Date
6/8/2017

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: 12/05/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 1 - Test Distance: 31.74'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27071V	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4EB	11/7/2017

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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