

Project Number
20.00302



HUBBELL
Lighting

Date
3/5/2020

Photometric Test Report

Lab 5
Sphere

Test Sample Description

Catalog Number: P550071-031-30
Description: Z-1060 Black Outdoor Flush-Mount Cylinder w/ AC LED Module and Etched Opal Glass

After operating for (3) hours, the sample did not meet the stabilization requirements per LM-79-08.

Photometry

Test Method:	IES LM-31-95
	IES LM-79-08 §10
Preburn Time:	0:10
Time To Stabilize:	3:10
Total Operating Time:	3:40
Input Voltage (Volts):	119.9
Input Current (Amps):	0.079
Input Wattage (Watts):	9.3
Ambient Temp (°C):	26
PF @ 120V:	0.988
THD @ 120V (%):	12.87

Sphere

Test Method:	IES LM-16-93
	IES LM-79-08 §12.1
Preburn Time:	1:30
Time To Stabilize:	1:25
Total Operating Time:	2:55
Input Voltage (Volts):	120.0
Input Current (Amps):	0.078
Input Wattage (Watts):	9.3
Ambient Temp (°C):	24



Hubbell Lighting, Inc.

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

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



* This customer-provided information was not verified by the laboratory. Note that LED manufacturer and part # are unverifiable by the lab.

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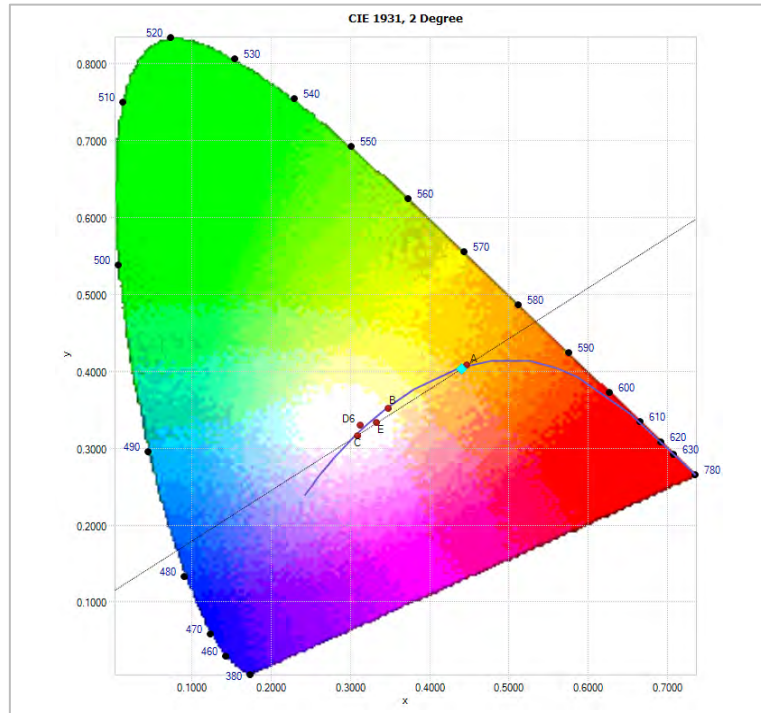
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Lamp Cat#: 93070270-3330
Lamp Desc: 20 - Nichia 3000K LEDs

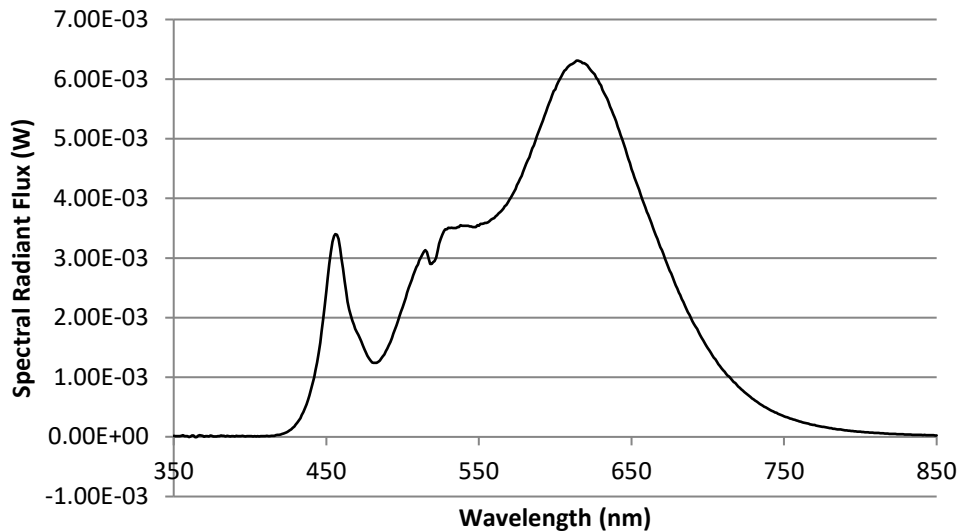
Efficacy: 31.6 LPW S/P Ratio: 1.4 LM/LM

Spectral Results

Name	Value	Unit
Φ	0.98	watts
$\Phi(v)$	294	lumens
$\Phi(v')$	419	lm'
Chrom x	0.4402	
Chrom y	0.4037	
Chrom u	0.2528	
Chrom v	0.3478	
Duv	0.0008	
Chrom u'	0.2528	
Chrom v'	0.5217	
CCT	2941	K
Purity	53.3	%
λ (dom)	583.3	nm
FWHM	146.2	nm
λ (peak)	614.6	nm
λ (center)	596.3	nm
λ (centroid)	590.8	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.000598627	
Correlation	0.0054	
R1	96.1	
R2	99.0	
R3	98.5	
R4	96.3	
R5	96.1	
R6	95.9	
R7	90.1	
R8	79.4	
R9	54.6	
R10	96.7	
R11	98.0	
R12	82.1	
R13	97.7	
R14	99.4	



Spectral Distribution of Radiant Flux



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LUMINAIRE: Z-1060 Black Outdoor Flush-Mount Cylinder w/ AC
LED Module and Etched Opal Glass

LAMP CAT. NO.: 93070270-3330

LAMP: 20- HAL 3000K LEDs

MOUNTING: Ceiling

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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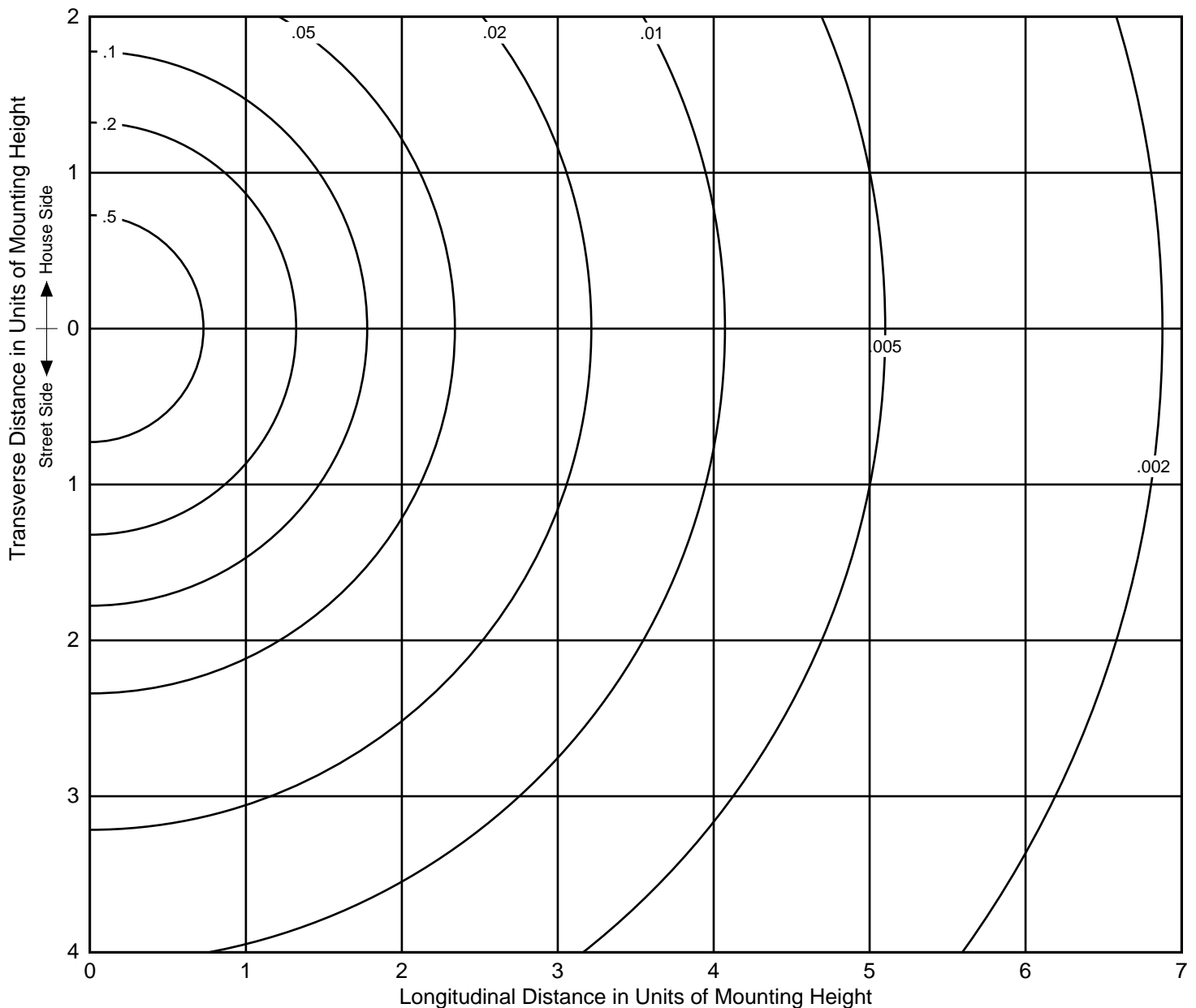
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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION Values based on 6-foot mounting height

IES Classification: Type V
Cutoff Classification (deprecated): Noncutoff





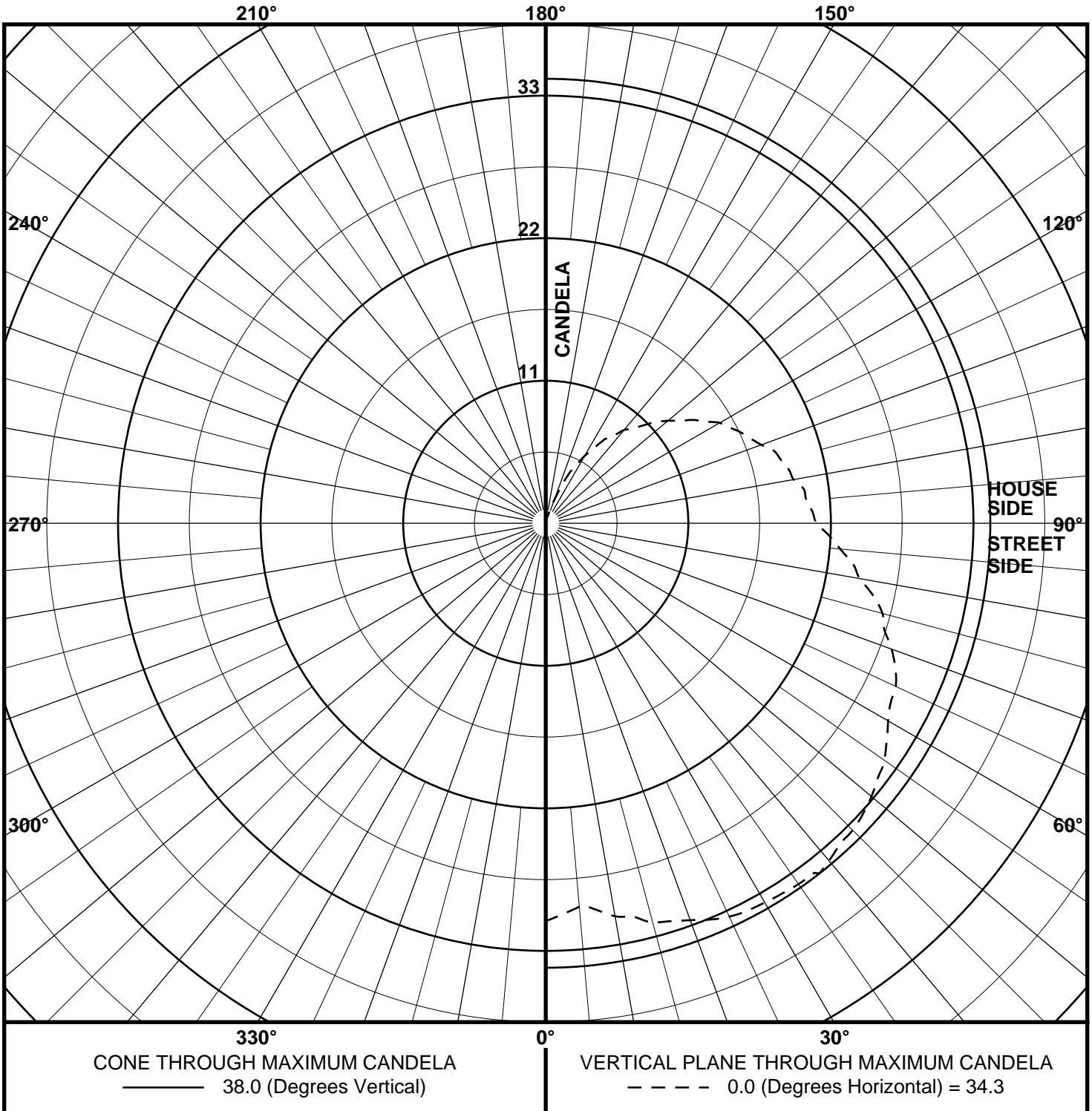
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA





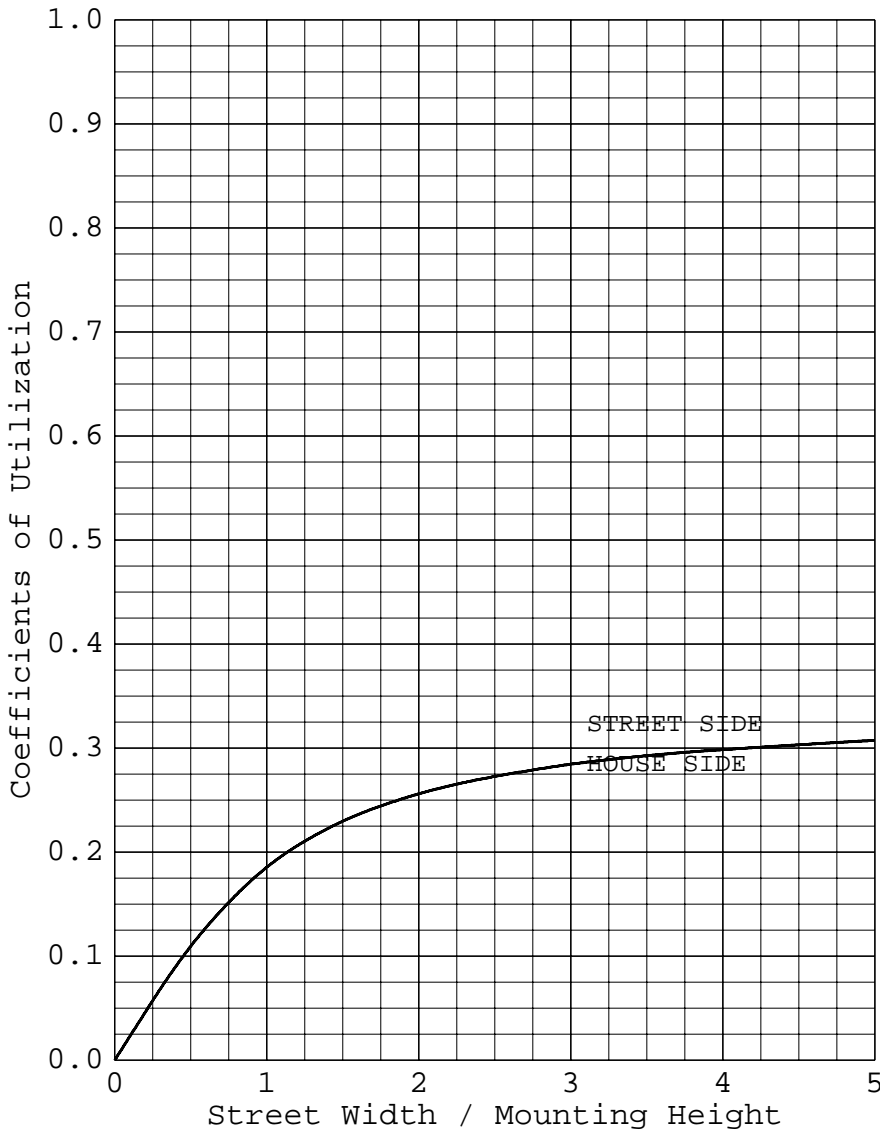
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	93	34.1
DOWNWARD HOUSE SIDE	93	34.1
DOWNWARD TOTAL	186	68.3
UPWARD STREET SIDE	43	15.9
UPWARD HOUSE SIDE	43	15.9
UPWARD TOTAL	86	31.7
TOTAL FLUX	272	100.0
EFFICACY = 29.2 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			Zone Ratings		
Zonal Summary			B0	U3	G1
			B	U	G
Forward		93			
FL	(0° – 30°)	13.7			
FM	(30° – 60°)	37.9			
FH	(60° – 80°)	28.8			G0
FVH	(80° – 90°)	12.5			G1
Backward		93			
BL	(0° – 30°)	13.7	B0		
BM	(30° – 60°)	37.9	B0		
BH	(60° – 80°)	28.8	B0		G0
BVH	(80° – 90°)	12.5			G1
Upward		86			
UL	(90° – 100°)	22.1		U2	
UH	(100° – 180°)	64.2		U3	
Trapped Light		0			
Total Flux		272			



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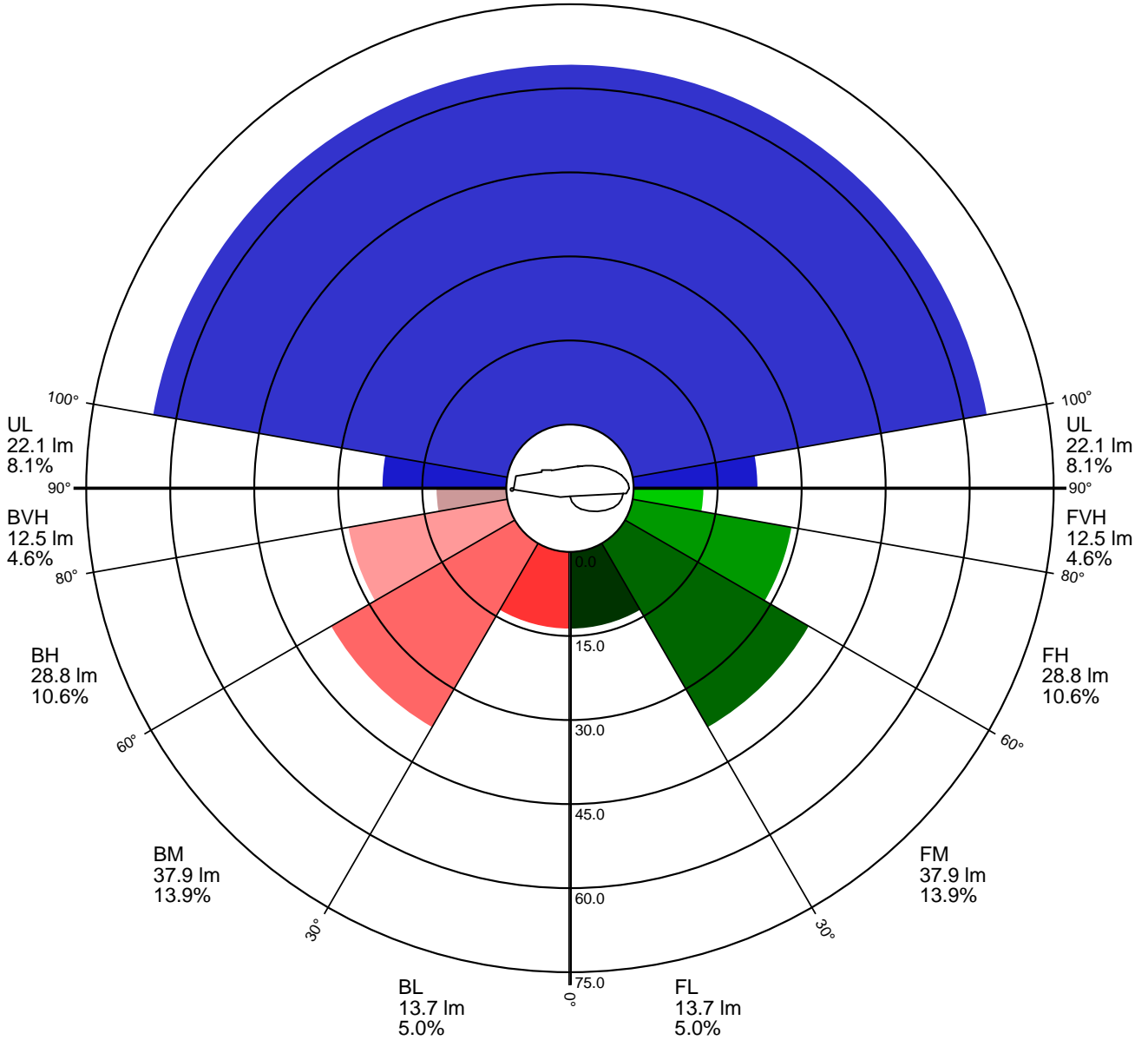
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Zonal Lumen Summary

(Linear scale)

UH
64.2 lm
23.6%





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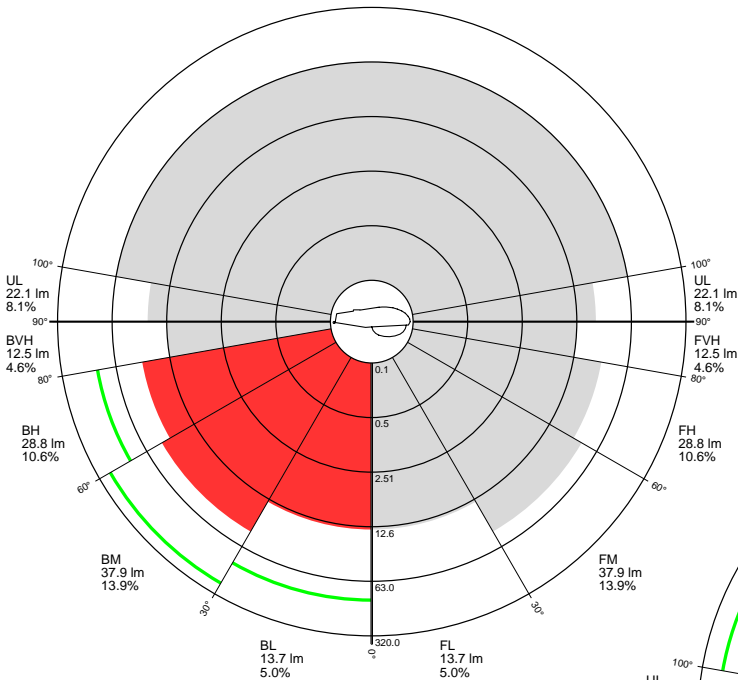
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Backlight Rating Details

(Logarithmic scale)

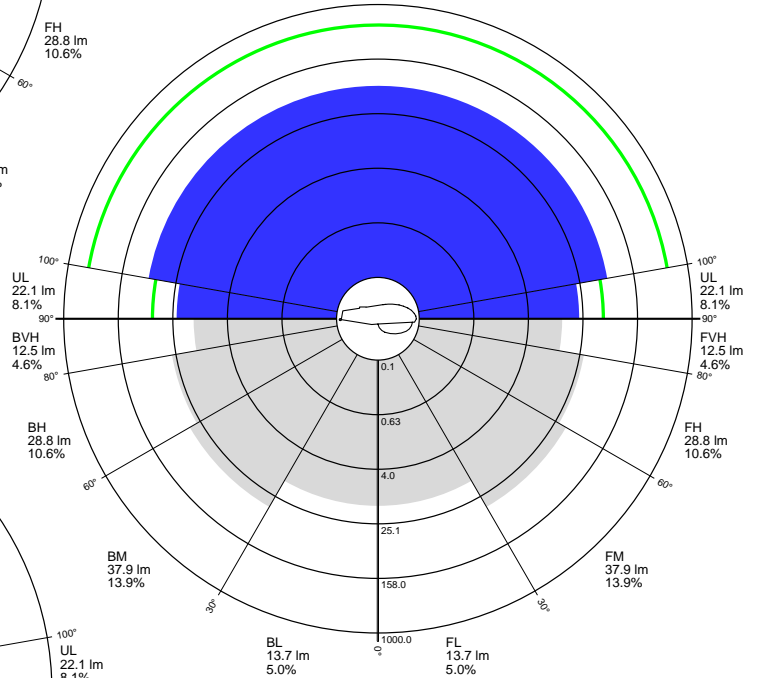
UH
64.2 lm
23.6%



Uplight Rating Details

(Logarithmic scale)

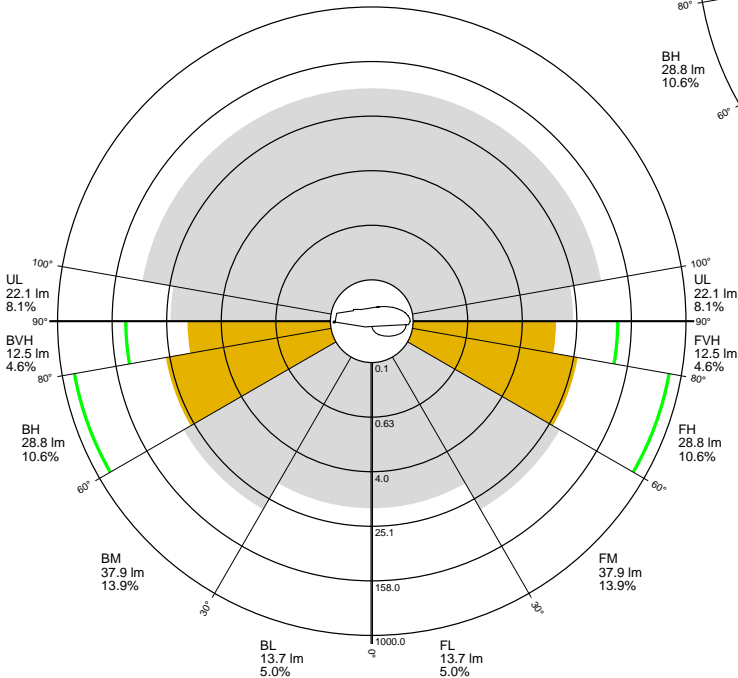
UH
64.2 lm
23.6%



Glare Rating Details

(Logarithmic scale)

UH
64.2 lm
23.6%





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CANDELA TABULATION

	TYPE	V
	180.0	0.4
	175.0	0.2
	165.0	0.5
	155.0	4.2
	145.0	7.9
	135.0	10.7
	125.0	13.9
	115.0	16.6
	105.0	18.8
	95.0	20.2
	92.5	20.6
	90.0	20.9
	87.5	21.9
	85.0	22.8
V	82.5	23.9
E	80.0	24.6
R	77.5	25.9
T	75.0	26.9
I	72.5	27.4
C	70.0	28.4
A	67.5	29.2
L	65.0	29.8
	62.5	30.0
A	60.0	30.5
N	57.5	31.2
G	55.0	31.9
L	52.5	32.3
E	50.0	32.8
	47.5	33.2
	45.0	33.5
	42.5	33.6
	40.0	34.0
	38.0 <<	34.3
	37.5	34.0
	35.0	34.0
	30.0	33.8
	25.0	33.5
	20.0	32.6
	15.0	31.9
	10.0	30.8
	5.0	29.7
	0.0	30.7

CONE OF MAXIMUM CANDELA



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5-DEGREE ZONAL LUMEN SUMMARY		
0- 5		1
5- 10		2
10- 15		4
15- 20		5
20- 25		7
25- 30		9
30- 35		10
35- 40		11
40- 45		12
45- 50		13
50- 55		14
55- 60		14
60- 65		15
65- 70		15
70- 75		14
75- 80		14
80- 85		13
85- 90		12
90- 95		11
95-100		11
100-105		10
105-110		10
110-115		9
115-120		8
120-125		7
125-130		6
130-135		5
135-140		4
140-145		3
145-150		2
150-155		1
155-160		1
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE ZONAL LUMEN SUMMARY		
0- 10		3
0- 20		12
0- 30		27
0- 40		49
0- 50		75
0- 60		103
0- 70		132
0- 80		161
0- 90		186
0-100		208
0-110		228
0-120		244
0-130		256
0-140		265
0-150		270
0-160		272
0-170		272
0-180		272

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Goniophotometer Calibration

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

Lamp Number: ITL78966-1000-66

Calibration Current: 8.300 Amps DC

Total Luminous Flux: 23013.0 Lumens

Calibration Date: 08/20/2019

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	10/31/2020
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	10/31/2020

3-Meter-Sphere Calibration

Calibration Lamp: EIKO 28V75W/E10

Lamp Number: SCL-1400-K136

Calibration Current: 2.679 Amps

Total Luminous Flux: 1429 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	Calibration Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/31/2020
<i>Power Analyzer</i>	Yokogawa / WT332	C2QA27075V	10/31/2020
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	GW Instek / PSU 150-10	GER221028	N/A
<i>Cal Lamp Supply</i>	Labsphere / LPS-150-0268	1218148505	N/A
<i>Spectrometer</i>	Labsphere / CDS 1100	0624117792	N/A

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