

Project Number
17.02760



Date
10/12/2017

LAB 1
Sphere

Test Sample Description

Catalog Number: P5641-8230K
Description: 6" 29W LED Down-Light Cylinder

Photometry

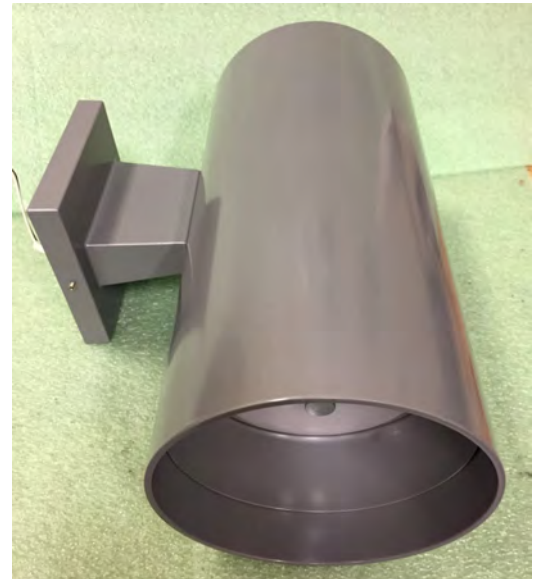
Test Method: IES LM-79-08 § 10
Preburn Time: 00:05
Time To Stabilize: 0:70
Total Operating Time: 1:53

Input Voltage (Volts): 120.0
Input Current (Amps): 0.262
Input Wattage (Watts): 29.2
Ambient Temp (°C): 25.3
PF @ 120V: 0.931

Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 3:00
Time To Stabilize: 1:32
Total Operating Time: 4:32

Input Voltage (Volts): 120.0
Input Current (Amps): 0.256
Input Wattage (Watts): 28.5
Ambient Temp (°C): 24.0



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.


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Lamp Cat#: n/a

Lamp Desc: 1 - 3000K LED Module

Driver Desc: n/a

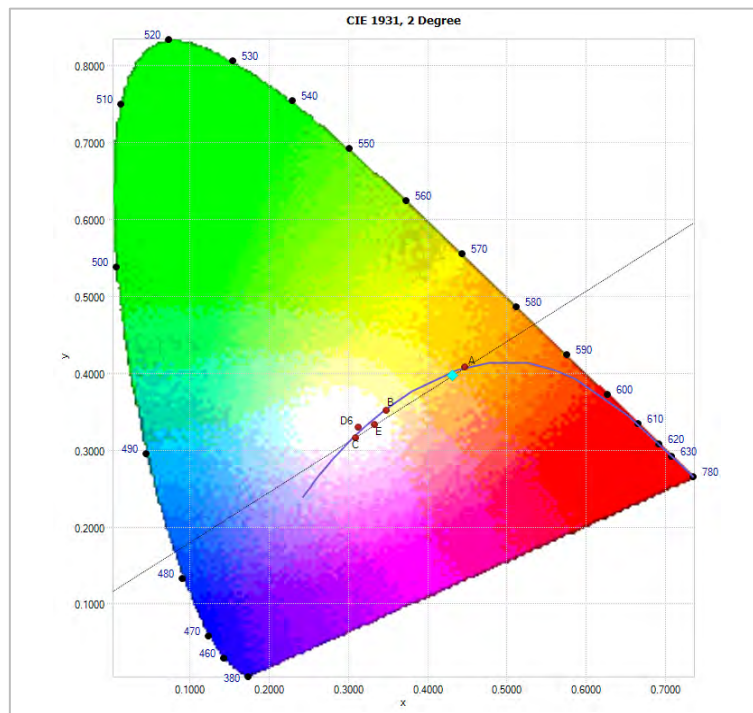
Efficacy: 35.7 LPW

S/P Ratio: 1.4 LM'/LM

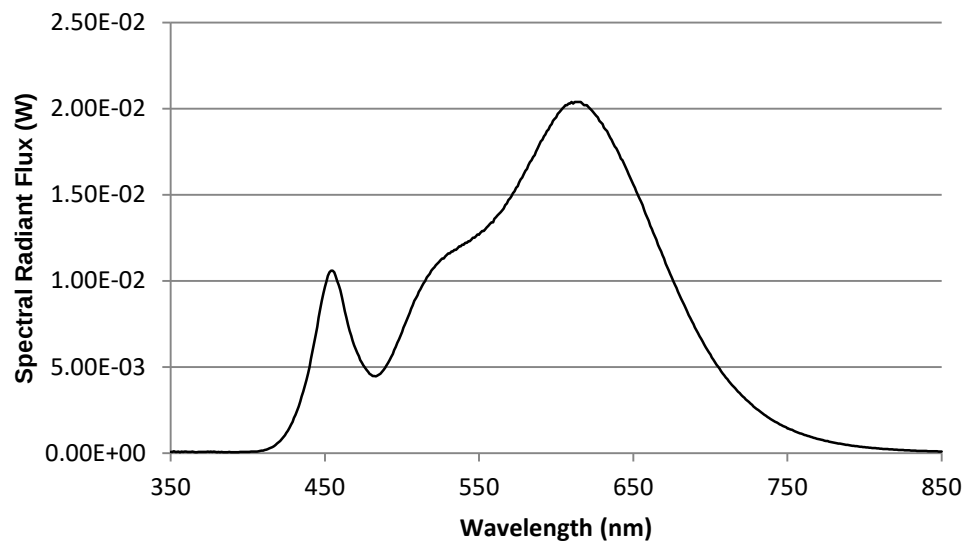
Spectral Results

Name	Value	Unit
Φ	3.46	watts
$\Phi(v)$	1017	lumens
$\Phi(v')$	1453	lm'
Chrom x	0.4316	
Chrom y	0.3976	
Chrom u	0.2499	
Chrom v	0.3453	
Duv	0.0019	
Chrom u'	0.2499	
Chrom v'	0.518	
CCT	3037	K
Purity	48.9	%
λ (dom)	583.4	nm
FWHM	158.5	nm
λ (peak)	613.2	nm
λ (center)	595.6	nm
λ (centroid)	590.2	nm
SDCM	Cool White	
RA	91	
Corr. Coef.	0.00184865	
Correlation	0.0054	
R1	92.0	
R2	96.0	
R3	97.9	
R4	91.7	
R5	91.8	
R6	95.1	
R7	89.7	
R8	77.4	
R9	49.3	
R10	89.9	
R11	92.9	
R12	81.3	
R13	93.3	
R14	98.7	

Chromaticity Diagram



Spectral Distribution of Radiant Flux



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LUMINAIRE: 6" 29W LED Down-Light Cylinder

LAMP: 1- 3000K LED Module

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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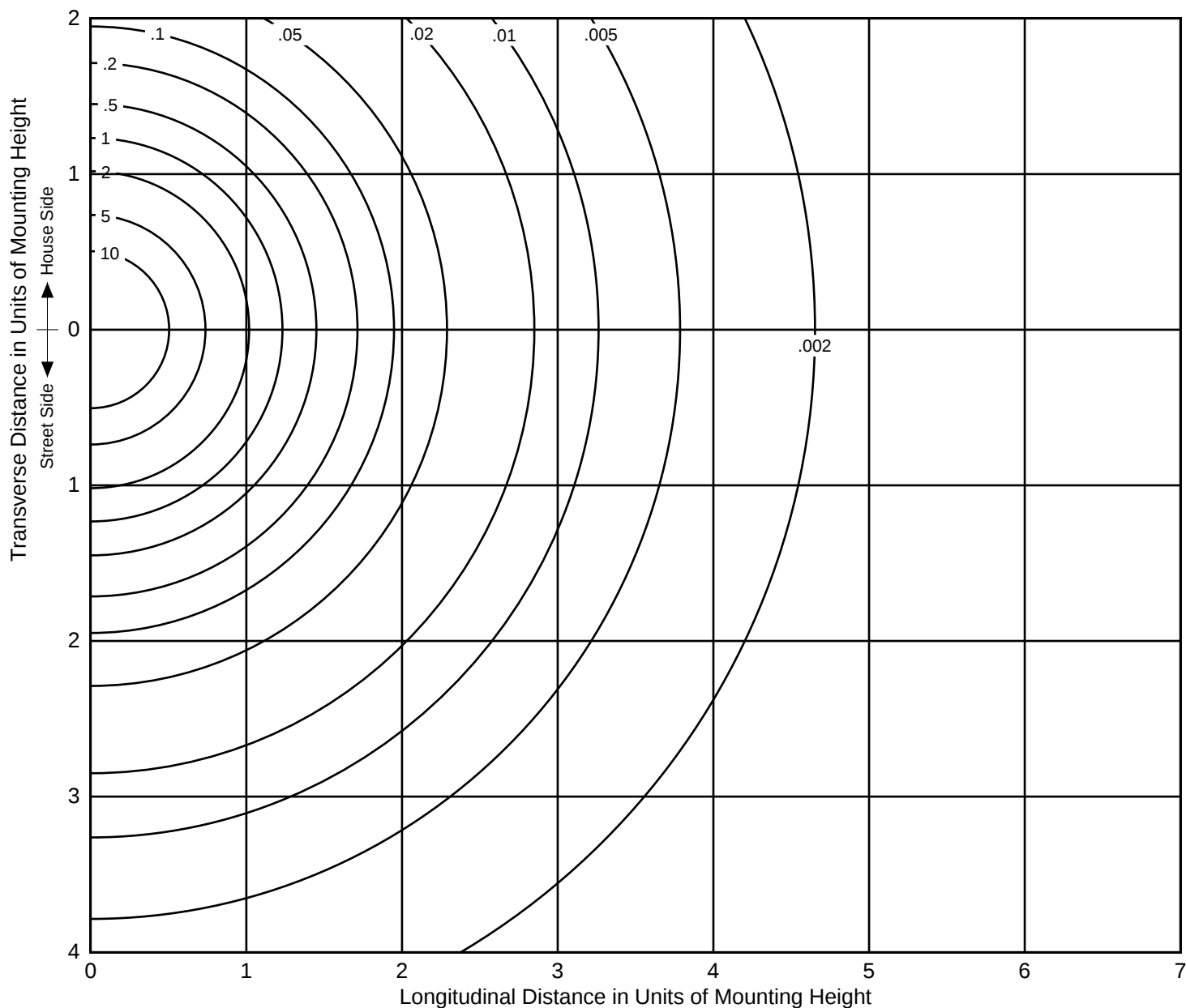
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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION Values based on 6-foot mounting height

IES Classification: Type V

Cutoff Classification (deprecated): Full Cutoff





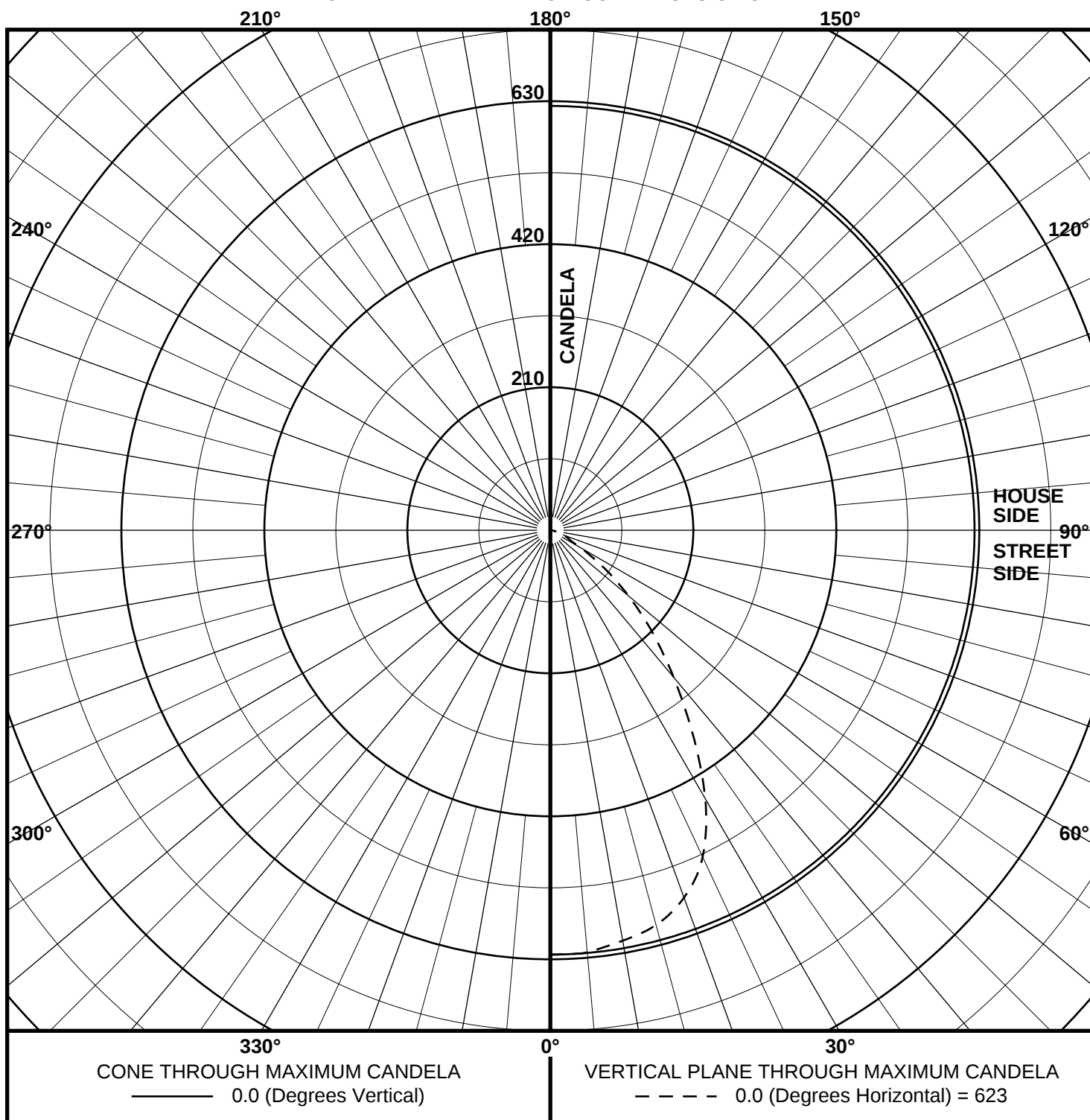
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

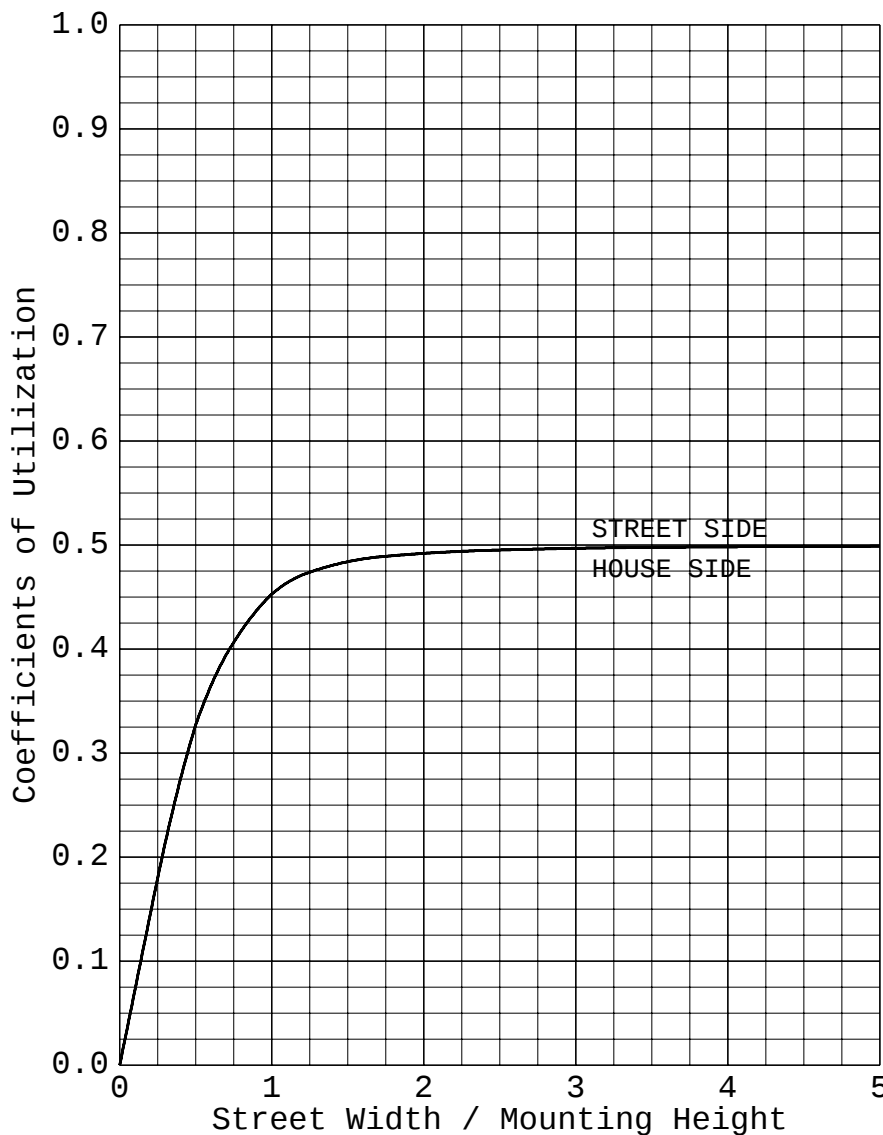




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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	497	50.0
DOWNWARD HOUSE SIDE	497	50.0
DOWNWARD TOTAL	993	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	993	100.0

EFFICACY = 34.0 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				B1	U0	G0
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		497	50.0			
FL	(0° – 30°)	234.2	23.6			
FM	(30° – 60°)	239.1	24.1			
FH	(60° – 80°)	21.9	2.2			G0
FVH	(80° – 90°)	1.4	0.1			G0
Backward		497	50.0			
BL	(0° – 30°)	234.2	23.6	B1		
BM	(30° – 60°)	239.1	24.1	B1		
BH	(60° – 80°)	21.9	2.2	B0		G0
BVH	(80° – 90°)	1.4	0.1			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		993	100.0			



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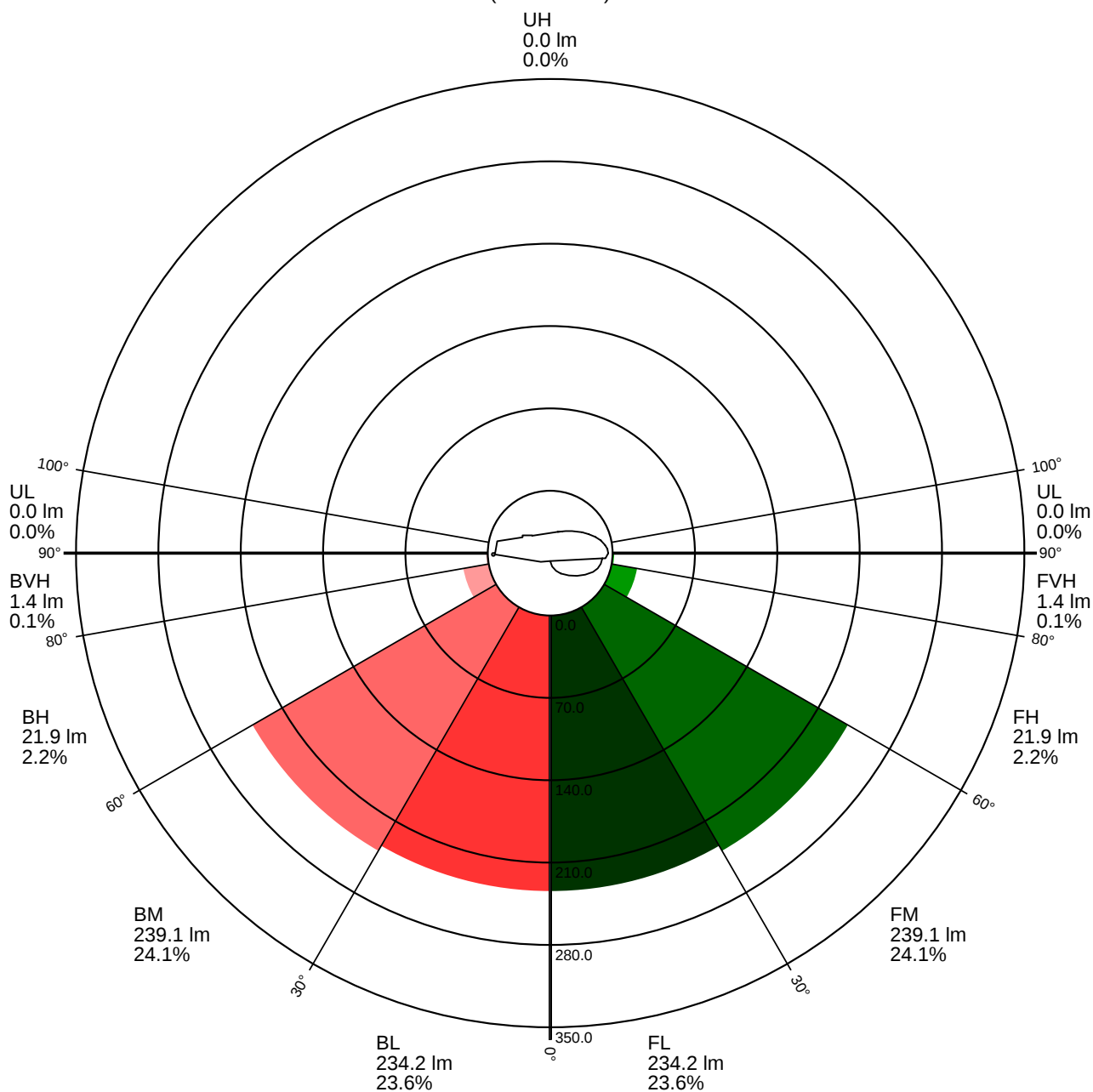
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Zonal Lumen Summary

(Linear scale)





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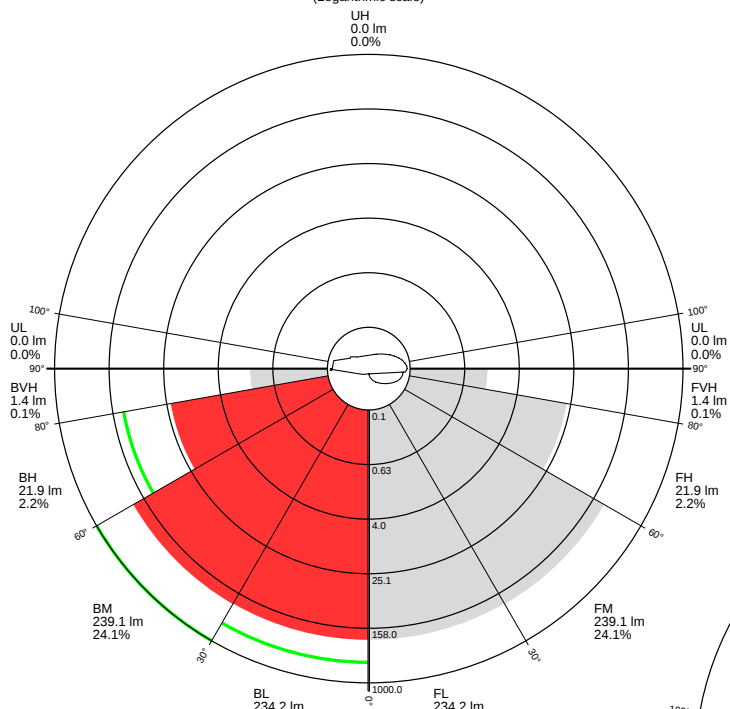
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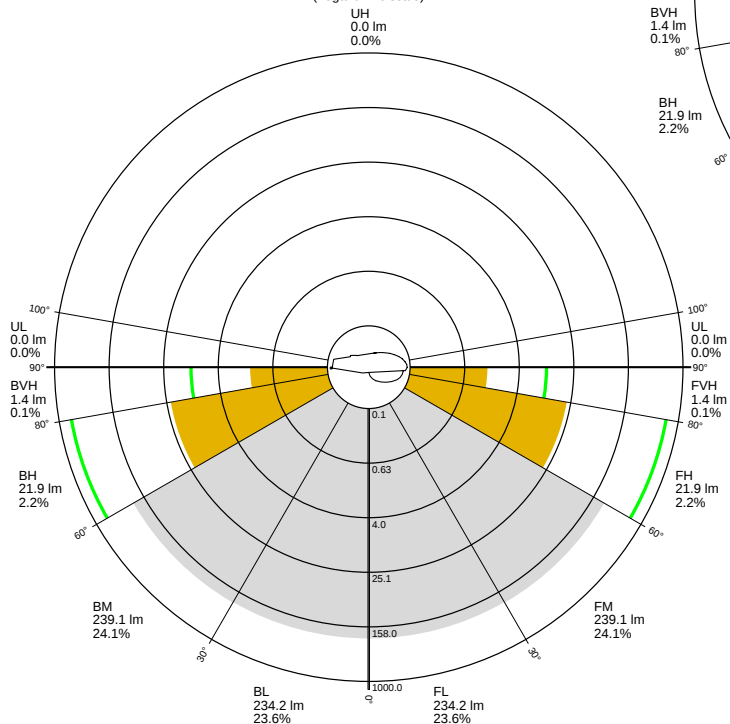
Backlight Rating Details

(Logarithmic scale)



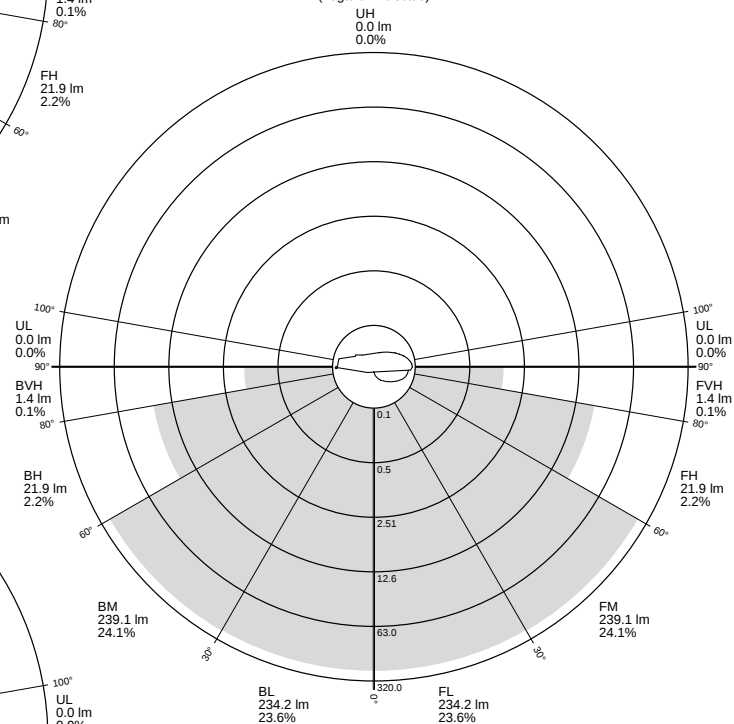
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)





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CANDELA TABULATION

	TYPE	V
	180.0	0.
	175.0	0.
	165.0	0.
	155.0	0.
	145.0	0.
	135.0	0.
	125.0	0.
	115.0	0.
	105.0	0.
	95.0	0.
	92.5	0.
	90.0	0.
	87.5	1.
	85.0	2.
V	82.5	4.
E	80.0	6.
R	77.5	8.
T	75.0	11.
I	72.5	15.
C	70.0	21.
A	67.5	26.
L	65.0	30.
	62.5	35.
A	60.0	51.
N	57.5	72.
G	55.0	96.
L	52.5	122.
E	50.0	150.
	47.5	180.
	45.0	212.
	42.5	245.
	40.0	282.
	37.5	321.
	35.0	364.
	32.5	410.
	30.0	455.
	25.0	529.
	20.0	574.
	15.0	600.
	10.0	612.
	5.0	622.
	0.0<<	623.

CONE OF MAXIMUM CANDELA



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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		15
5- 10		44
10- 15		72
15- 20		97
20- 25		116
25- 30		125
30- 35		120
35- 40		107
40- 45		91
45- 50		73
50- 55		53
55- 60		34
60- 65		18
65- 70		13
70- 75		8
75- 80		4
80- 85		2
85- 90		1
90- 95		0
95-100		0
100-105		0
105-110		0
110-115		0
115-120		0
120-125		0
125-130		0
130-135		0
135-140		0
140-145		0
145-150		0
150-155		0
155-160		0
160-165		0
165-170		0
170-175		0
175-180		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		59
10- 20		169
20- 30		241
30- 40		228
40- 50		164
50- 60		87
60- 70		31
70- 80		13
80- 90		3
90-100		0
100-110		0
110-120		0
120-130		0
130-140		0
140-150		0
150-160		0
160-170		0
170-180		0

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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: 07/10/2017

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	176F4E3	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	0331159372	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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