

Project Number
16.03580



Date
1/3/2017

Lab 6
Sphere

Test Sample Description

Catalog Number: P560051-020-30
Description: 1-Lt. LED Small Wall Lantern

Photometry

Test Method: IES LM-79-08 § 10
Preburn Time: 17:00
Time To Stabilize: 1:05
Total Operating Time: 22:40

Input Voltage (Volts): 120.1
Input Current (Amps): 0.079
Input Wattage (Watts): 9.36
Ambient Temp (°C): 25.2



Sphere

Test Method: IES LM-79-08 § 9.1 & 12.1
Preburn Time: 0:00
Time To Stabilize: 1:01
Total Operating Time: 1:01

Input Voltage (Volts): 120.0
Input Current (Amps): 0.079
Input Wattage (Watts): 9.3
Ambient Temp (°C): 24
PF @ 120V: 0.991
THD @ 120V (%): 12.3

Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): M. ELLMANN
Approved: D. BLACK



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LUMINAIRE: 1-Lt. LED Small Wall Lantern

LAMP CAT. NO.: 93070270-3330

LAMP: 20-NICHIA 3000K LEDs

REFRACTOR : Clear / Clear Seeded Glass

MOUNTING: wall

NOTE: NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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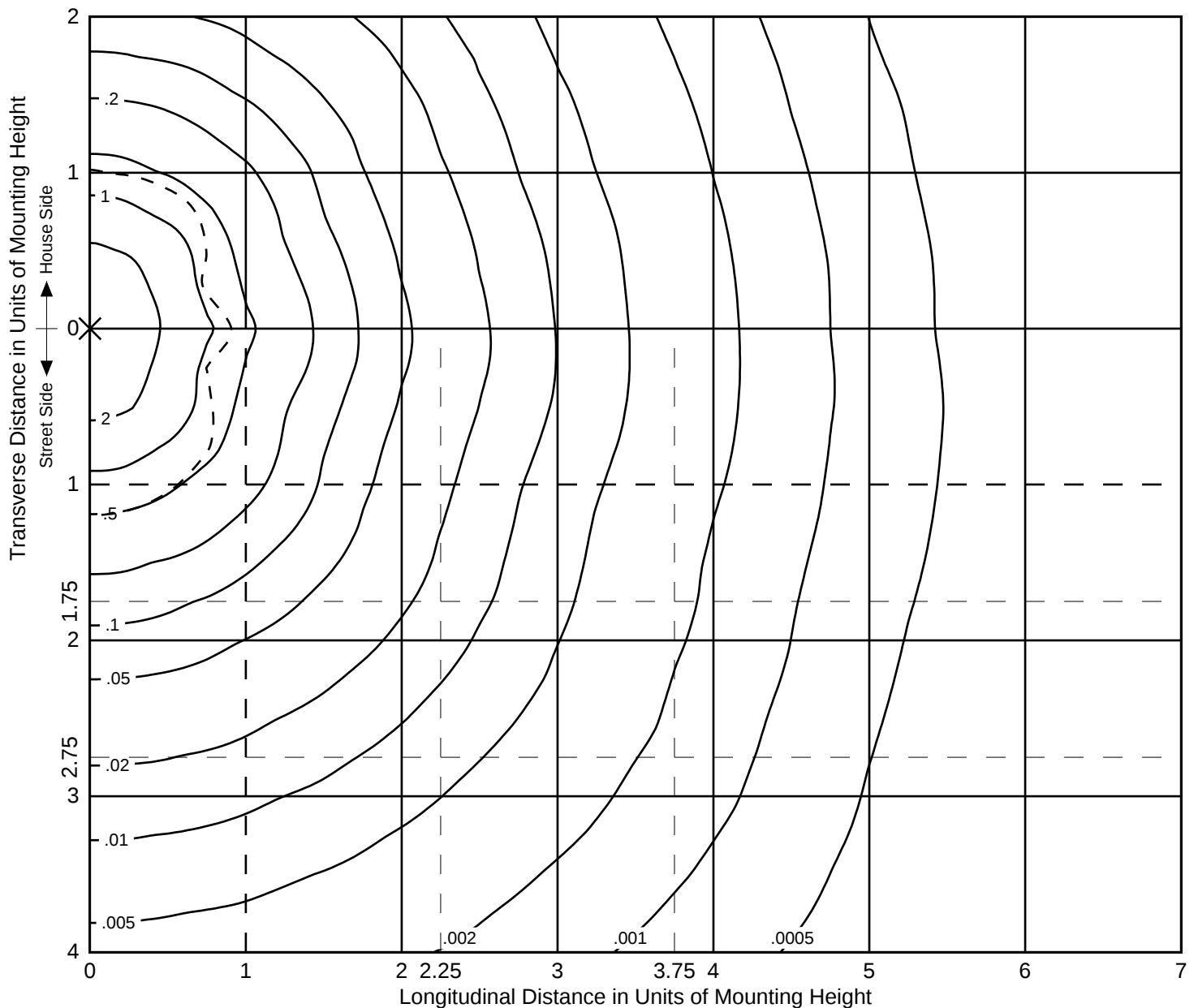
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION
Values based on 6.5-foot mounting height

IES Classification: (does not classify)

Cutoff Classification (deprecated): Full Cutoff

--- 1/2 Maximum Candela trace

× Maximum Candela point





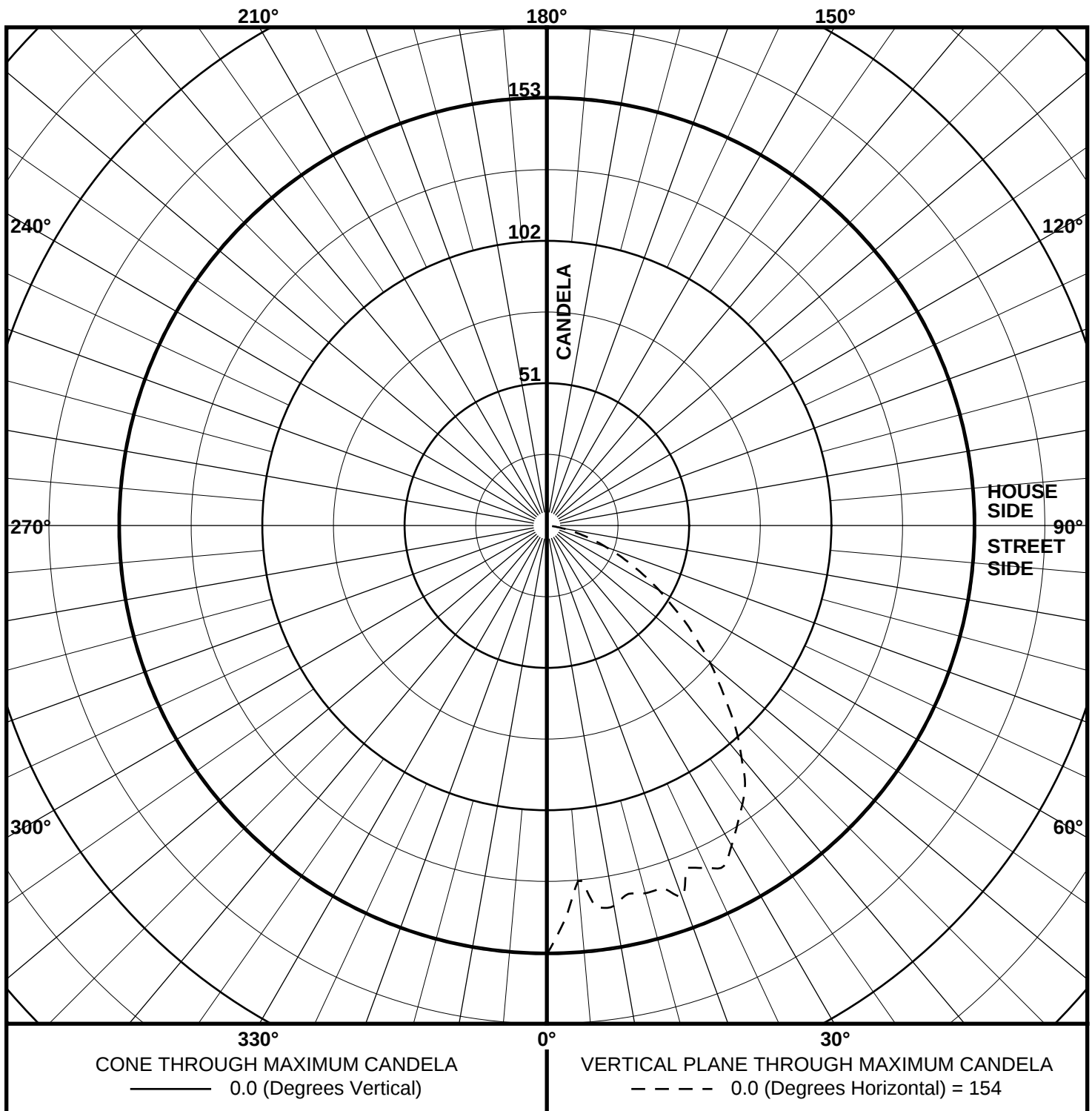
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

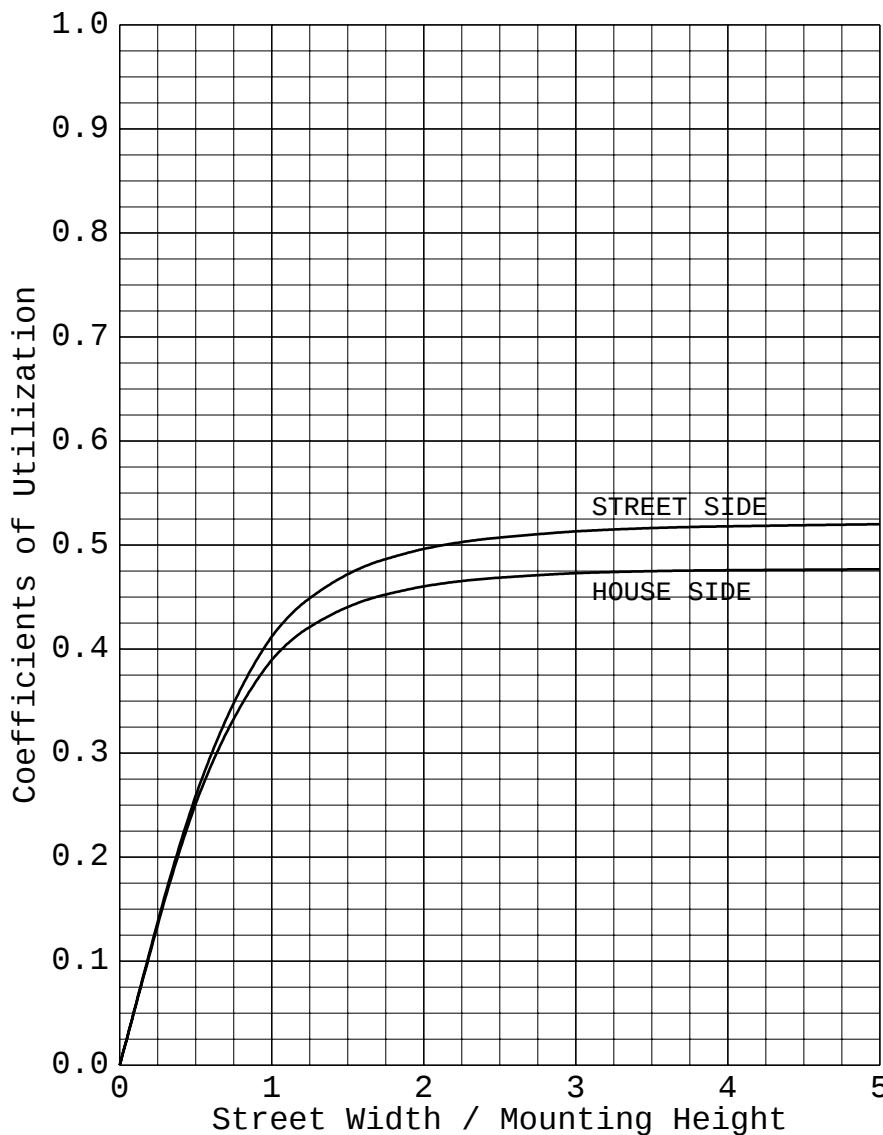




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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	160	52.2
DOWNWARD HOUSE SIDE	146	47.8
DOWNWARD TOTAL	306	100.0
UPWARD STREET SIDE	0	0.0
UPWARD HOUSE SIDE	0	0.0
UPWARD TOTAL	0	0.0
TOTAL FLUX	306	100.0

Total Input Watts = 9.36
EFFICACY = 32.6 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.



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BUG Rating

Zonal Summary

Lumens

% of Fixture

B0	U0	G0
Zone Ratings		
B	U	G

Forward		160	52.2
FL	(0° - 30°)	52.1	17.0
FM	(30° - 60°)	86.5	28.3
FH	(60° - 80°)	20.3	6.6
FVH	(80° - 90°)	0.8	0.3
Backward		146	47.8
BL	(0° - 30°)	50.6	16.5
BM	(30° - 60°)	78.6	25.7
BH	(60° - 80°)	16.5	5.4
BVH	(80° - 90°)	0.4	0.1
Upward		0	0.0
UL	(90° - 100°)	0.0	0.0
UH	(100° - 180°)	0.0	0.0
Trapped Light		0	0.0
Total Flux		306	100.0

G0
G0

B0
B0
B0

G0
G0

U0
U0



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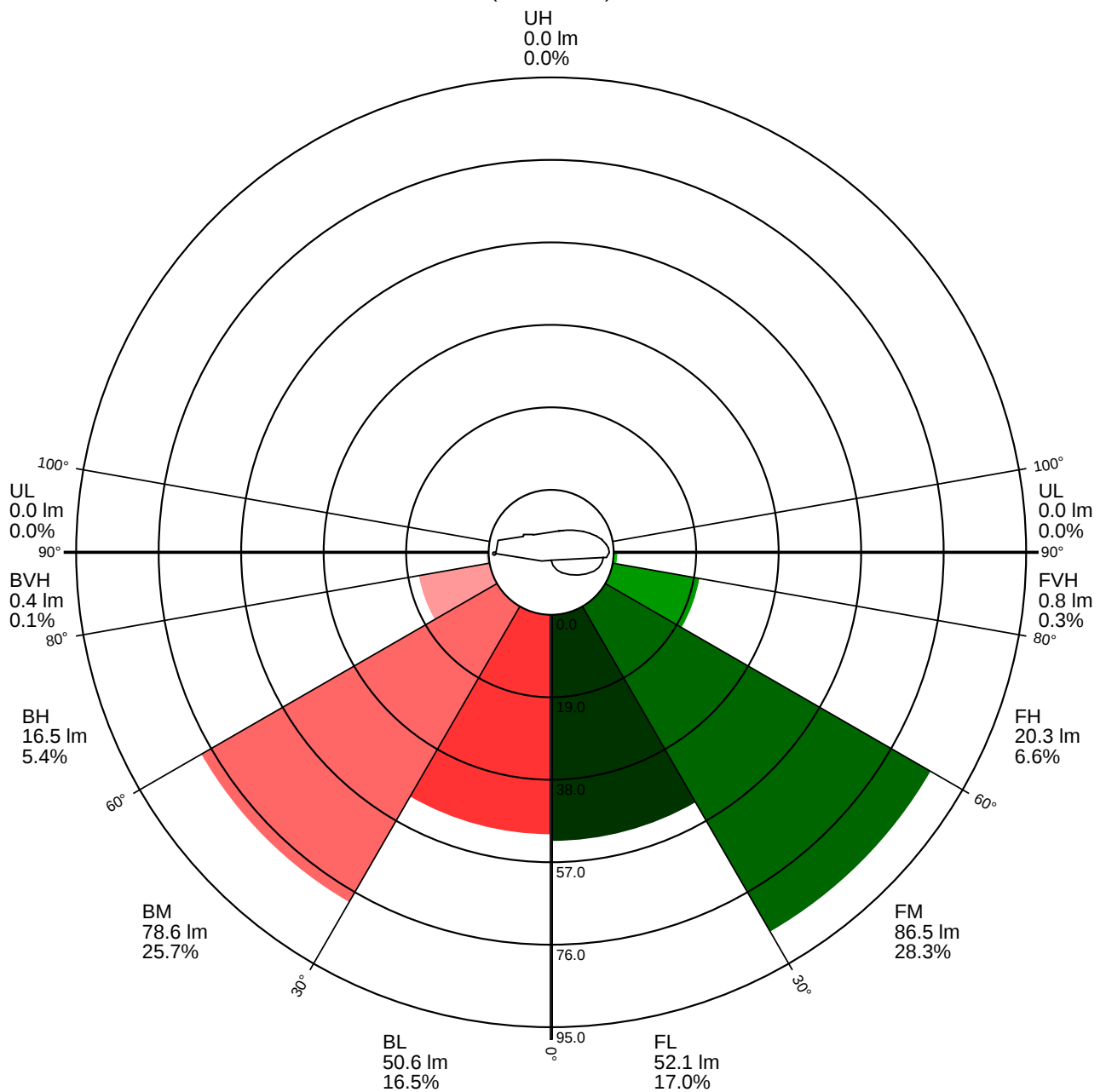
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Zonal Lumen Summary

(Linear scale)





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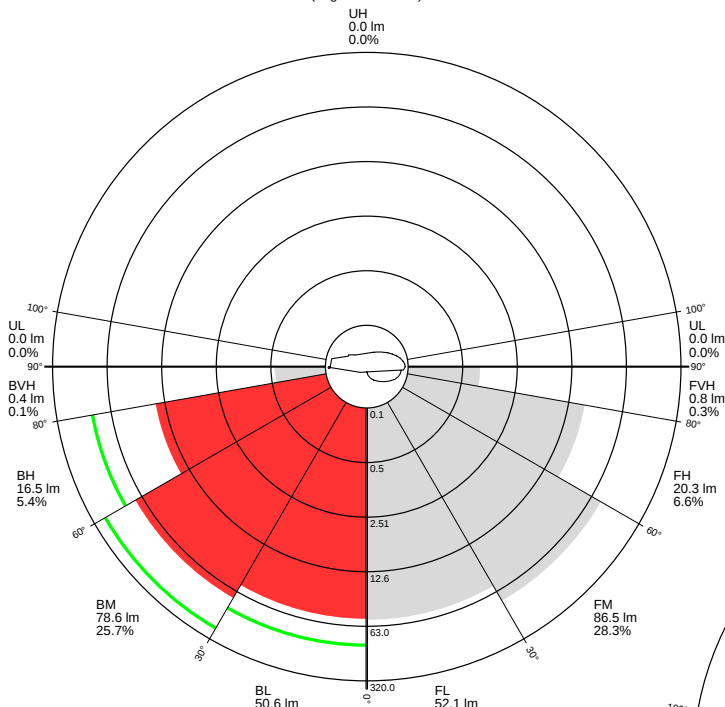
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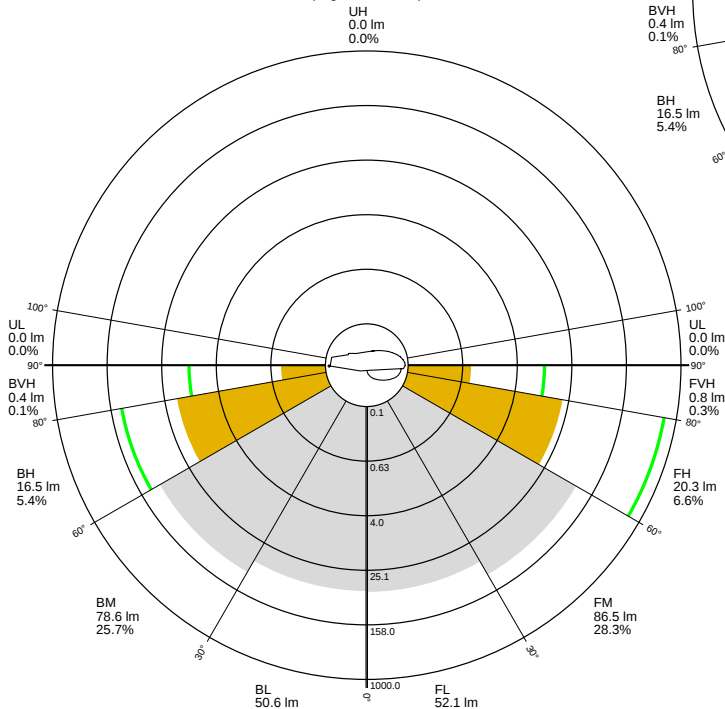
Backlight Rating Details

(Logarithmic scale)



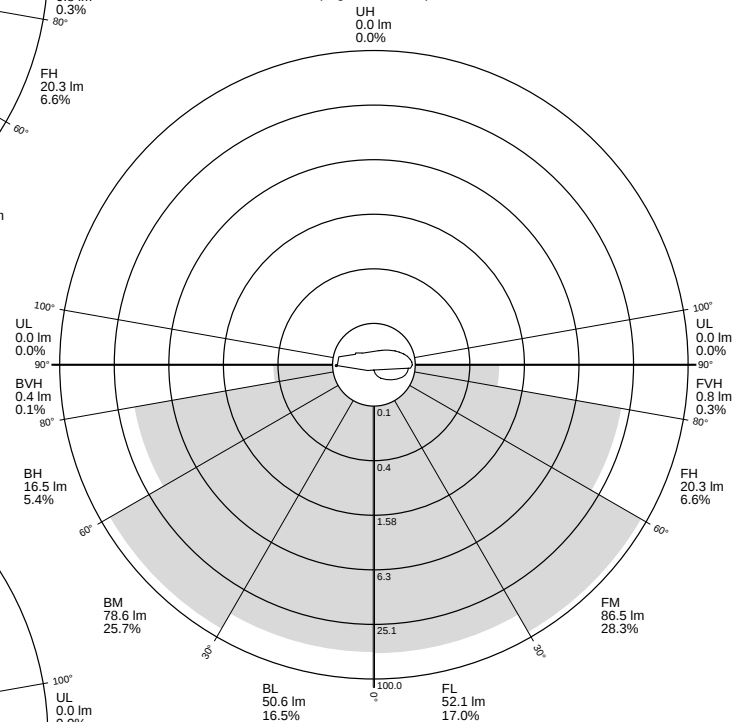
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)





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CANDELA TABULATION

LATERAL ANGLE

	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	105.0
90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
87.5	1.	0.	1.	1.	0.	0.	0.	0.	0.	0.	0.
85.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.
82.5	2.	2.	2.	2.	2.	2.	2.	1.	2.	2.	2.
80.0	5.	4.	4.	4.	4.	4.	3.	3.	3.	3.	3.
77.5	8.	7.	7.	6.	6.	6.	6.	5.	5.	5.	5.
75.0	11.	10.	9.	8.	8.	9.	8.	8.	8.	8.	8.
72.5	15.	13.	12.	11.	11.	12.	12.	12.	11.	11.	11.
70.0	18.	17.	15.	15.	15.	15.	16.	15.	15.	14.	14.
67.5	23.	20.	19.	18.	18.	19.	19.	19.	19.	18.	18.
65.0	27.	24.	22.	21.	22.	23.	23.	24.	23.	22.	21.
V 62.5	31.	29.	26.	25.	26.	27.	28.	28.	27.	26.	25.
E 60.0	36.	33.	31.	29.	30.	31.	32.	32.	31.	31.	29.
R 57.5	41.	38.	35.	34.	35.	36.	38.	38.	36.	35.	34.
T 55.0	47.	43.	40.	38.	39.	42.	43.	43.	42.	40.	39.
I 52.5	53.	48.	44.	43.	45.	47.	49.	49.	47.	45.	44.
C 50.0	60.	54.	50.	48.	50.	53.	55.	55.	53.	51.	49.
A 47.5	66.	60.	55.	53.	56.	59.	61.	62.	59.	57.	54.
L 45.0	73.	66.	61.	59.	62.	65.	68.	68.	65.	62.	60.
42.5	80.	73.	68.	65.	68.	71.	75.	75.	72.	69.	66.
A 40.0	87.	80.	74.	71.	74.	78.	81.	82.	78.	75.	72.
N 37.5	95.	86.	80.	77.	80.	84.	88.	88.	84.	81.	77.
G 35.0	100.	91.	84.	82.	85.	90.	94.	94.	89.	86.	82.
L 32.5	105.	95.	88.	86.	90.	95.	99.	100.	94.	90.	86.
E 30.0	110.	100.	93.	91.	95.	100.	105.	105.	99.	95.	91.
27.5	113.	104.	98.	96.	100.	105.	109.	110.	103.	100.	96.
25.0	114.	105.	100.	98.	102.	106.	110.	110.	104.	101.	98.
22.5	114.	107.	102.	101.	105.	108.	112.	112.	106.	103.	100.
20.0	123.	115.	112.	109.	111.	115.	118.	118.	112.	110.	108.
17.5	121.	115.	110.	109.	112.	114.	116.	117.	114.	112.	110.
15.0	120.	115.	110.	108.	109.	111.	113.	113.	111.	110.	109.
12.5	125.	123.	122.	123.	126.	129.	131.	130.	128.	125.	123.
10.0	136.	137.	135.	135.	135.	136.	137.	137.	137.	136.	136.
7.5	140.	138.	136.	134.	132.	132.	131.	132.	133.	135.	137.
5.0	124.	123.	123.	122.	122.	122.	122.	122.	123.	124.	124.
2.5	135.	133.	132.	131.	130.	129.	128.	127.	126.	125.	124.
0.0<<	154.	154.	154.	154.	154.	154.	154.	154.	154.	154.	154.

CONE OF MAXIMUM CANDELA



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CANDELA TABULATION

HOUSE SIDE		LATERAL ANGLE										
		110.0	115.0	120.0	125.0	130.0	135.0	140.0	145.0	150.0	155.0	160.0
VERTICAL ANGLE	90.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	87.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	85.0	1.	1.	1.	1.	1.	1.	1.	1.	1.	1.	0.
	82.5	2.	1.	2.	2.	2.	1.	1.	1.	1.	1.	1.
	80.0	3.	3.	3.	3.	3.	3.	3.	3.	2.	2.	2.
	77.5	5.	5.	5.	6.	6.	6.	6.	6.	5.	4.	4.
	75.0	8.	8.	8.	9.	9.	9.	9.	9.	8.	8.	7.
	72.5	11.	11.	11.	12.	13.	13.	13.	13.	12.	12.	11.
	70.0	14.	14.	15.	16.	17.	17.	17.	17.	17.	16.	16.
	67.5	17.	18.	18.	20.	21.	21.	22.	21.	21.	21.	21.
	65.0	21.	21.	22.	24.	26.	26.	26.	26.	26.	26.	26.
	62.5	25.	26.	27.	28.	30.	31.	31.	32.	32.	32.	31.
	60.0	29.	29.	31.	33.	35.	36.	37.	37.	37.	37.	37.
	57.5	34.	34.	36.	38.	41.	42.	43.	43.	43.	43.	43.
	55.0	38.	39.	41.	44.	46.	48.	49.	49.	49.	49.	49.
	52.5	43.	44.	46.	50.	53.	55.	56.	56.	56.	56.	56.
	50.0	48.	49.	51.	56.	59.	62.	62.	63.	63.	62.	63.
	47.5	53.	55.	57.	62.	66.	69.	70.	70.	70.	70.	70.
	45.0	59.	60.	63.	69.	74.	77.	78.	78.	78.	78.	78.
	42.5	65.	67.	70.	76.	81.	84.	86.	86.	86.	86.	85.
	40.0	70.	72.	77.	83.	89.	93.	94.	94.	93.	93.	93.
	37.5	76.	78.	83.	90.	96.	100.	101.	101.	101.	101.	101.
	35.0	81.	84.	89.	96.	103.	107.	108.	108.	108.	108.	108.
	32.5	86.	88.	93.	102.	108.	112.	114.	114.	113.	114.	114.
	30.0	90.	93.	99.	107.	114.	118.	120.	120.	120.	120.	120.
	27.5	95.	99.	104.	112.	119.	123.	125.	126.	126.	126.	126.
	25.0	98.	102.	108.	116.	122.	127.	128.	129.	129.	129.	130.
	22.5	100.	102.	108.	115.	122.	127.	129.	130.	131.	130.	130.
	20.0	108.	112.	117.	122.	127.	129.	130.	131.	131.	132.	133.
	17.5	111.	115.	120.	124.	127.	128.	127.	127.	127.	128.	131.
	15.0	110.	113.	116.	119.	119.	117.	115.	113.	114.	115.	119.
	12.5	121.	122.	123.	124.	124.	123.	122.	120.	120.	120.	122.
	10.0	135.	133.	132.	130.	128.	126.	124.	123.	123.	123.	123.
	7.5	138.	137.	135.	132.	128.	123.	121.	119.	119.	121.	124.
	5.0	125.	125.	124.	122.	120.	119.	118.	118.	119.	121.	123.
	2.5	123.	123.	122.	122.	122.	121.	121.	121.	120.	120.	120.
	0.0<<	154.	154.	154.	154.	154.	154.	154.	154.	154.	154.	154.

CONE OF MAXIMUM CANDELA



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CANDELA TABULATION

	HOUSE SIDE		LATERAL ANGLE		
	165.0	170.0	175.0	180.0	
	90.0	0.	0.	0.	0.
	87.5	0.	0.	0.	0.
	85.0	0.	0.	0.	0.
	82.5	1.	1.	1.	0.
	80.0	2.	1.	1.	1.
	77.5	3.	3.	3.	2.
	75.0	7.	6.	6.	6.
	72.5	11.	11.	11.	11.
	70.0	16.	16.	16.	16.
	67.5	21.	21.	21.	21.
	65.0	26.	26.	27.	26.
V	62.5	32.	31.	31.	32.
E	60.0	37.	37.	37.	37.
R	57.5	43.	43.	43.	43.
T	55.0	49.	49.	49.	50.
I	52.5	56.	55.	56.	56.
C	50.0	63.	63.	63.	63.
A	47.5	69.	70.	70.	70.
L	45.0	77.	77.	78.	78.
	42.5	85.	86.	86.	85.
A	40.0	93.	94.	94.	94.
N	37.5	101.	101.	102.	102.
G	35.0	108.	109.	109.	110.
L	32.5	115.	115.	116.	116.
E	30.0	121.	121.	121.	122.
	27.5	126.	127.	127.	128.
	25.0	130.	131.	132.	132.
	22.5	129.	129.	129.	129.
	20.0	133.	133.	133.	134.
	17.5	133.	135.	137.	138.
	15.0	123.	128.	131.	132.
	12.5	125.	127.	129.	129.
	10.0	124.	126.	126.	127.
	7.5	127.	130.	132.	132.
	5.0	126.	128.	129.	130.
	2.5	120.	120.	120.	120.
	0.0<<	154.	154.	154.	154.

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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		3
5- 10		9
10- 15		15
15- 20		20
20- 25		25
25- 30		30
30- 35		32
35- 40		32
40- 45		30
45- 50		27
50- 55		24
55- 60		20
60- 65		15
65- 70		11
70- 75		7
75- 80		3
80- 85		1
85- 90		0

10-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 10		12
10- 20		35
20- 30		55
30- 40		64
40- 50		58
50- 60		43
60- 70		26
70- 80		10
80- 90		1

Project Number
16.03580



Date
1/3/2017

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:

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	11/2/2017
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912745	11/2/2017

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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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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