

Project Number
18.01371



HUBBELL
Lighting

Date
8/23/2018

Lab 1
Sphere

Test Sample Description

Catalog Number: P560136-03130

Description: Small, Single-LED-Module Wall Lantern w/ Frosted Glass

Photometry

Test Method: IES LM-31-95
IES LM-79-08 §10

Preburn Time: 1:15

Time To Stabilize: 0:15

Total Operating Time: 3:05

Input Voltage (Volts): 120.0

Input Current (Amps): 0.112

Input Wattage (Watts): 12.3

Ambient Temp (°C): 25.3

PF @ 120V: 0.917

THD @ 120V (%): 44.56

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1

Preburn Time: 4:00

Time To Stabilize: 1:15

Total Operating Time: 5:15

Input Voltage (Volts): 120.0

Input Current (Amps): 0.110

Input Wattage (Watts): 12.0

Ambient Temp (°C): 24



Hubbell Lighting, Inc.

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

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

NVLAP[®]
TESTING
NVLAP LAB CODE: 201003-0

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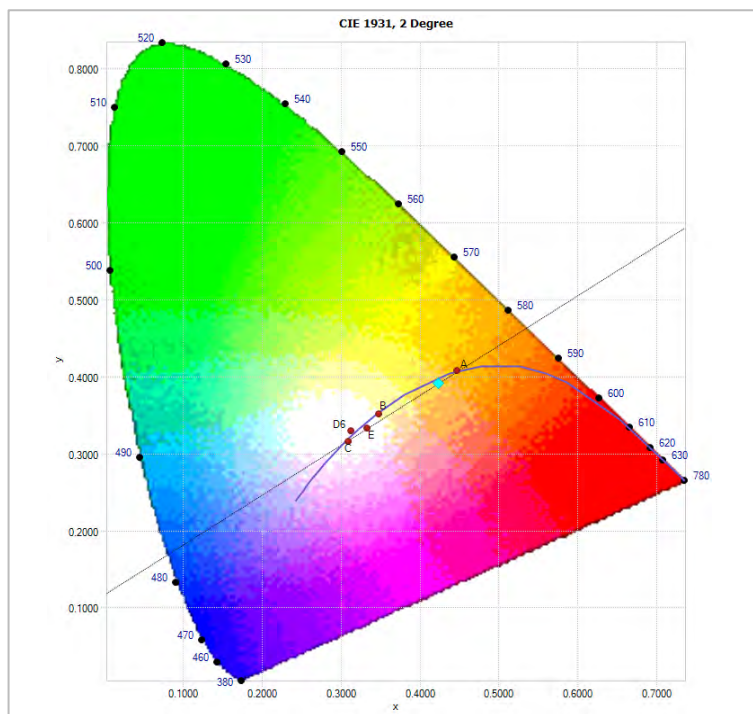
Lamp Cat#: CBAC-84-30135-120V-30

Lamp Desc: 1 - Paragon 3000K LED

Efficacy: 47.0 LPW

S/P Ratio: 1.4 LM/LM

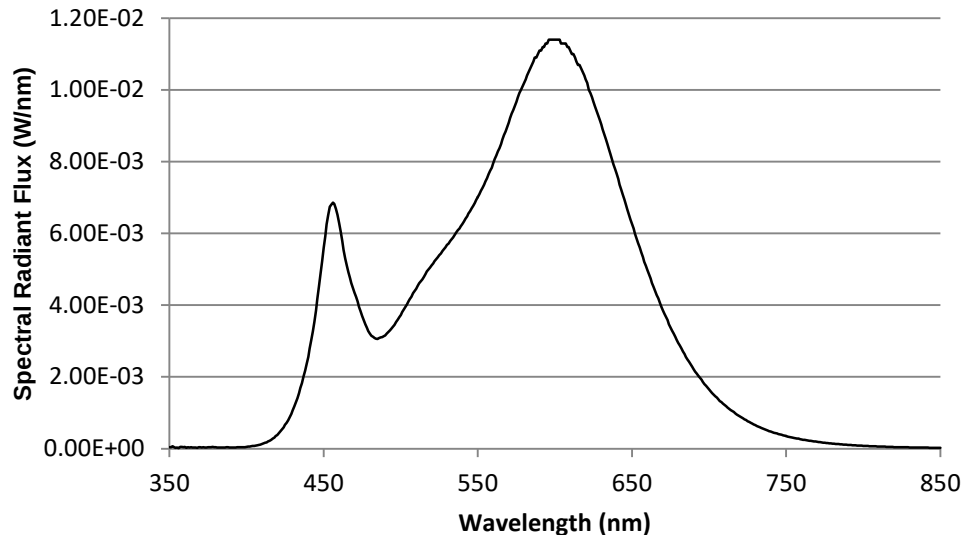
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	1.74	watts
$\Phi(v)$	564	lumens
$\Phi(v')$	810	lm'
Chrom x	0.4232	
Chrom y	0.3915	
Chrom u	0.2471	
Chrom v	0.3428	
Duv	0.0035	
Chrom u'	0.2471	
Chrom v'	0.5143	
CCT	3138	K
Purity	44.5	%
λ (dom)	583.5	nm
FWHM	123.8	nm
λ (peak)	601.3	nm
λ (center)	592.3	nm
λ (centroid)	577.1	nm
SDCM	Cool White	
RA	82	
Corr. Coef.	0.003102509	
Correlation	0.0054	
R1	80.8	
R2	93.1	
R3	93.0	
R4	77.5	
R5	81.3	
R6	90.9	
R7	80.0	
R8	56.7	
R9	4.3	
R10	83.7	
R11	75.8	
R12	73.8	
R13	84.2	
R14	96.9	

Spectral Distribution of Radiant Flux





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LUMINAIRE: Small, Single-LED-Module Wall Lantern w/ Frosted Glass

LAMP CAT. NO.: CBAC-84-30135-120V-30

LAMP: 1- Paragon 3000K LED

MOUNTING: Wall

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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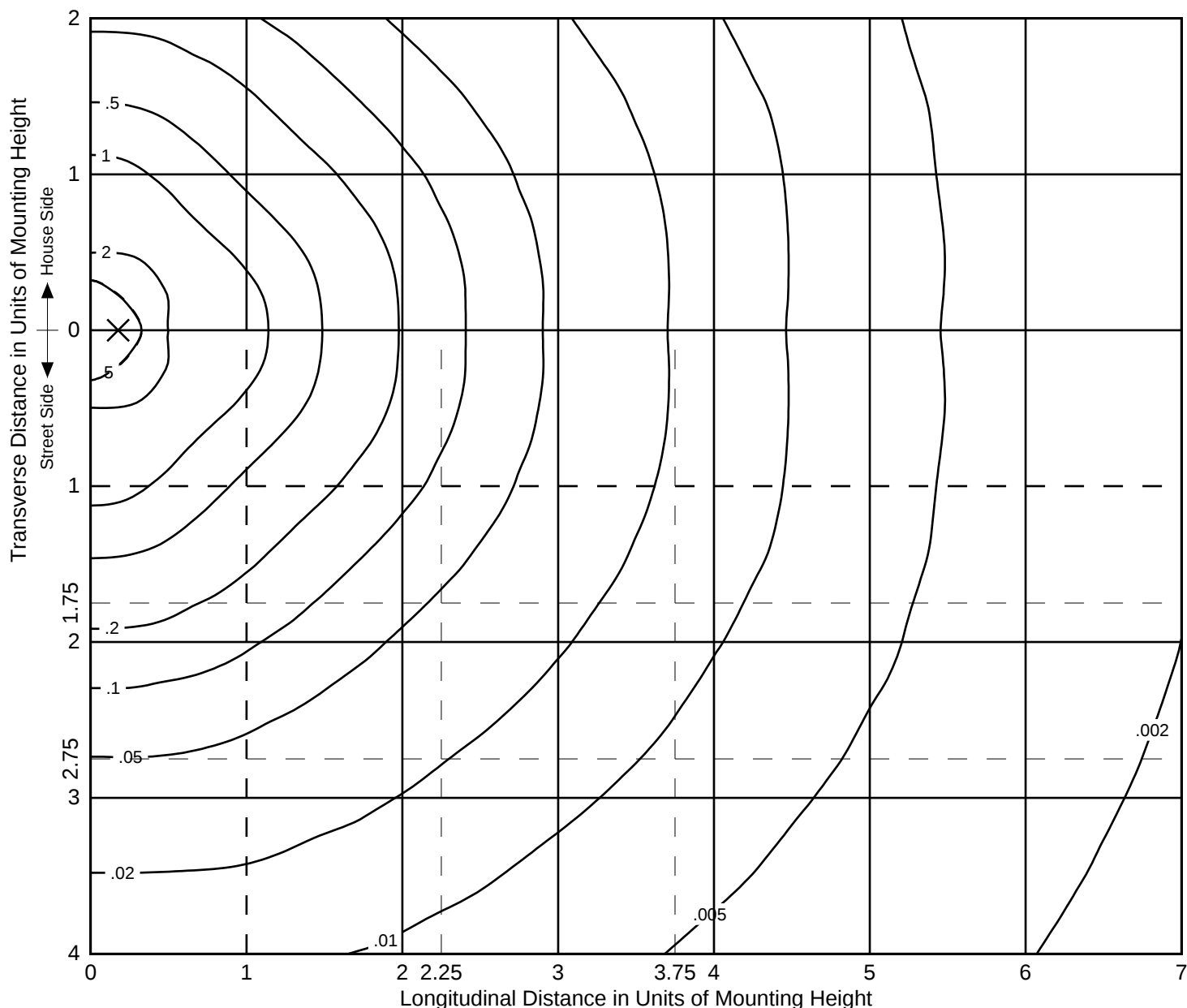
ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION
Values based on 6-foot mounting height

IES Classification: Type VS

Cutoff Classification (deprecated): Semicutoff

--- 1/2 Maximum Candela trace

× Maximum Candela point





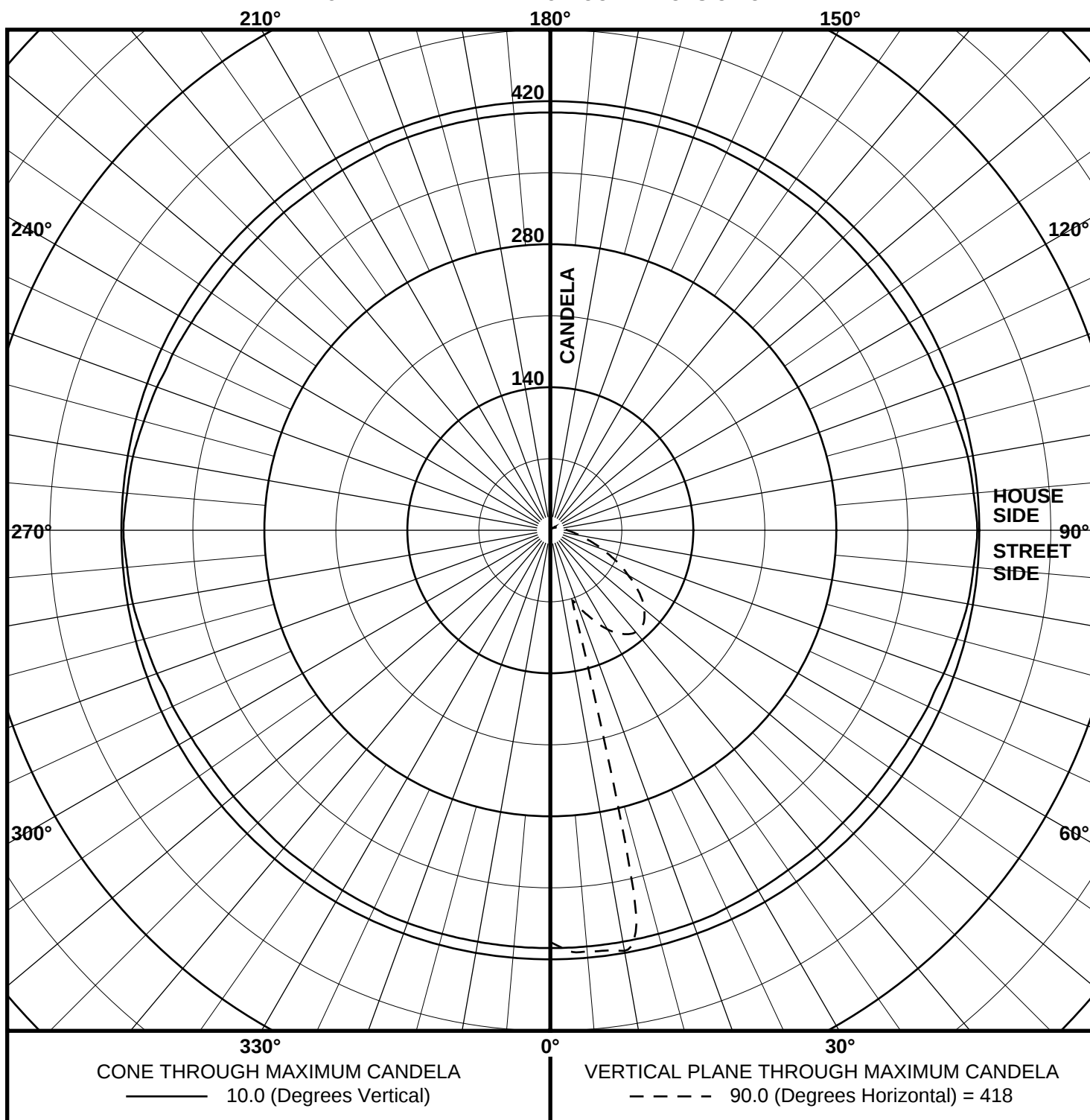
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

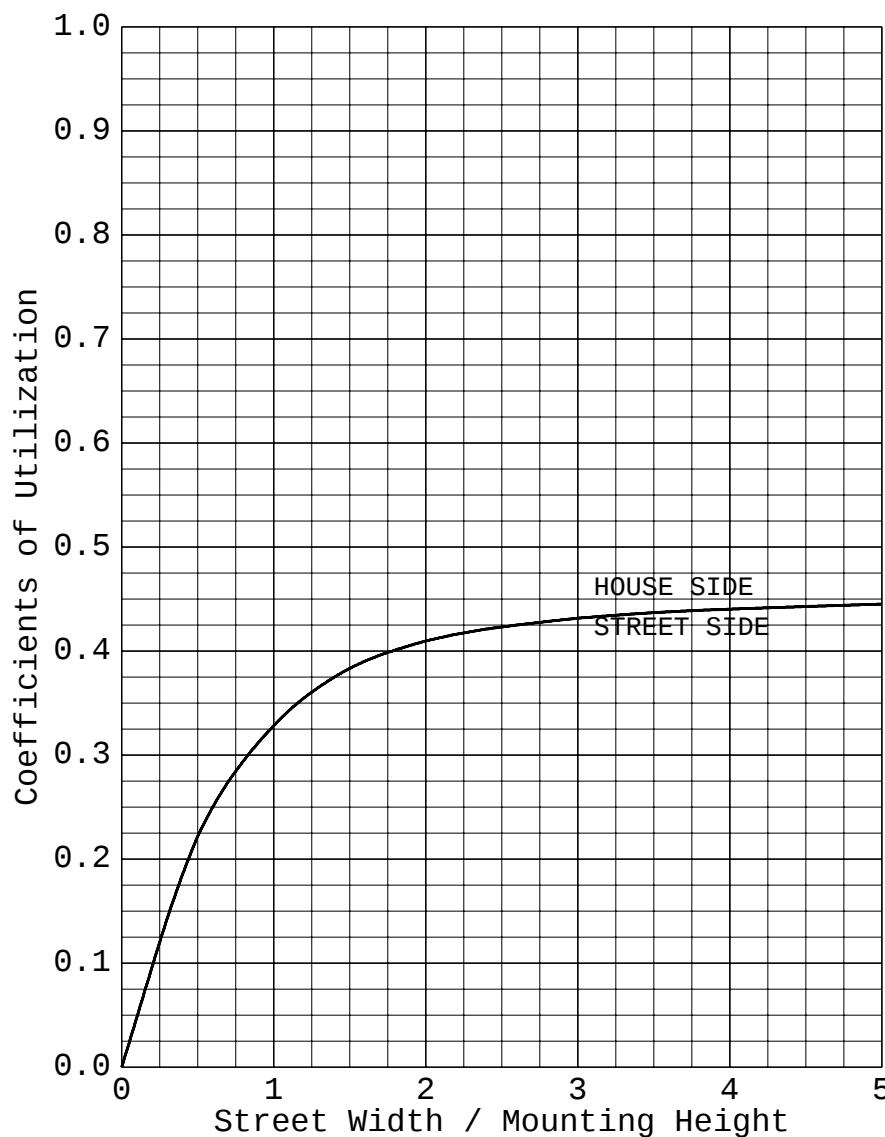




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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	258	46.2
DOWNWARD HOUSE SIDE	258	46.2
DOWNWARD TOTAL	516	92.4
UPWARD STREET SIDE	21	3.8
UPWARD HOUSE SIDE	21	3.8
UPWARD TOTAL	42	7.6
TOTAL FLUX	559	100.0
EFFICACY = 45.4 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				B0	U2	G1
Zonal Summary		Lumens	% of Fixture	Zone Ratings		
				B	U	G
Forward		258	46.2			
FL	(0° – 30°)	75.3	13.5			
FM	(30° – 60°)	119.3	21.4			
FH	(60° – 80°)	51.0	9.1			G0
FVH	(80° – 90°)	12.5	2.2			G1
Backward		258	46.2			
BL	(0° – 30°)	75.3	13.5	B0		
BM	(30° – 60°)	119.3	21.4	B0		
BH	(60° – 80°)	51.0	9.1	B0		G0
BVH	(80° – 90°)	12.5	2.2			G1
Upward		42	7.6			
UL	(90° – 100°)	16.4	2.9		U2	
UH	(100° – 180°)	26.0	4.7		U2	
Trapped Light		0	0.0			
Total Flux		559	100.0			



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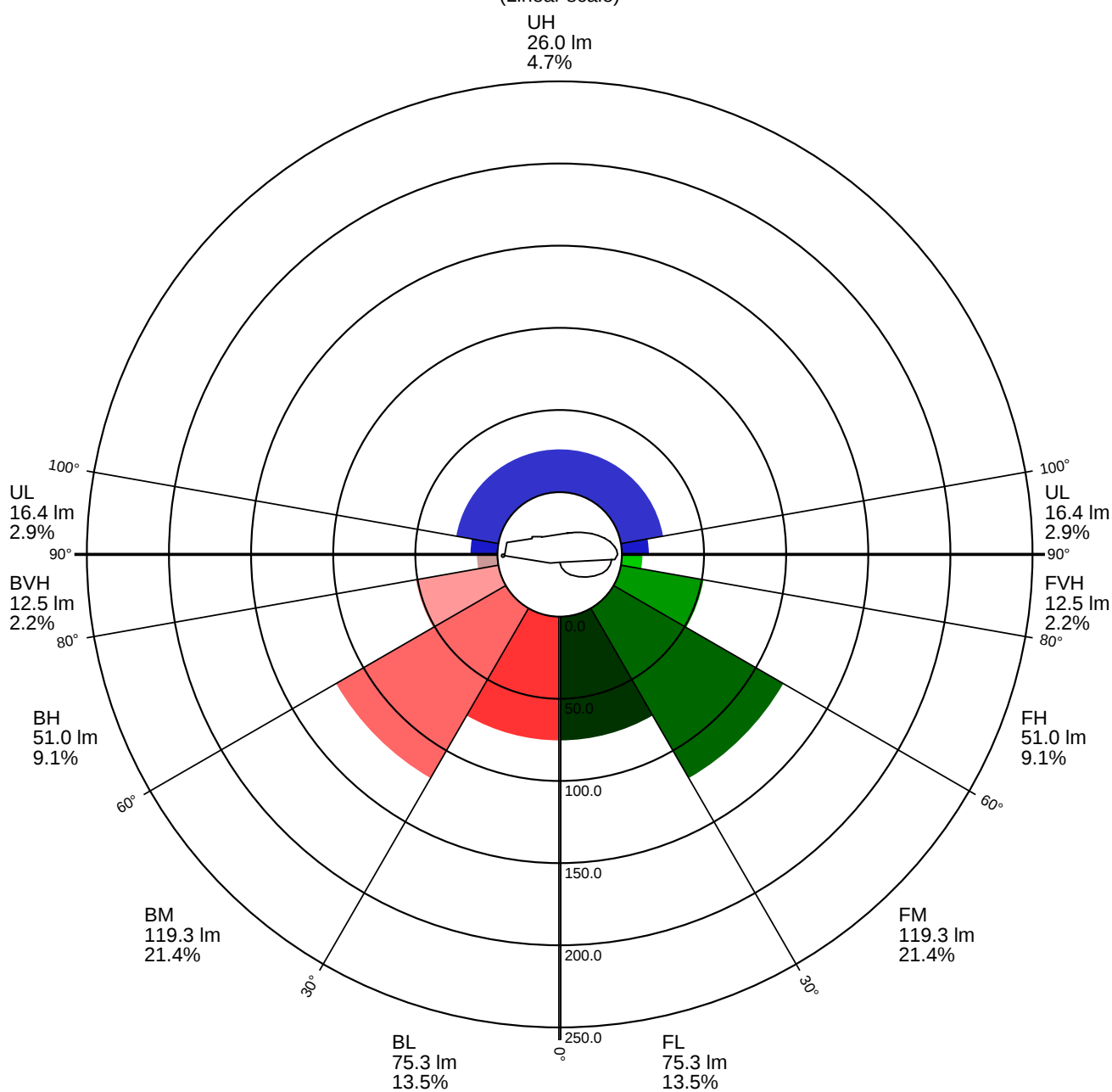
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Zonal Lumen Summary

(Linear scale)





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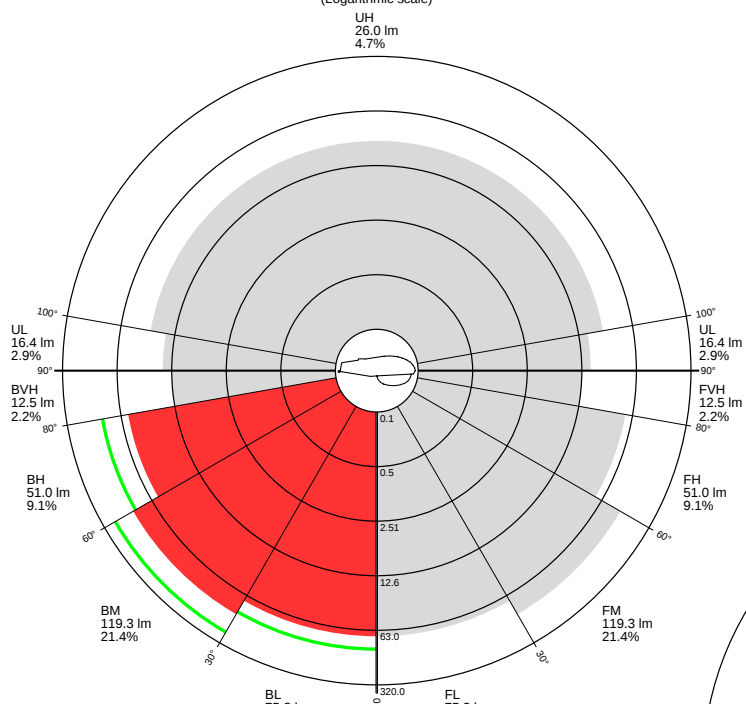
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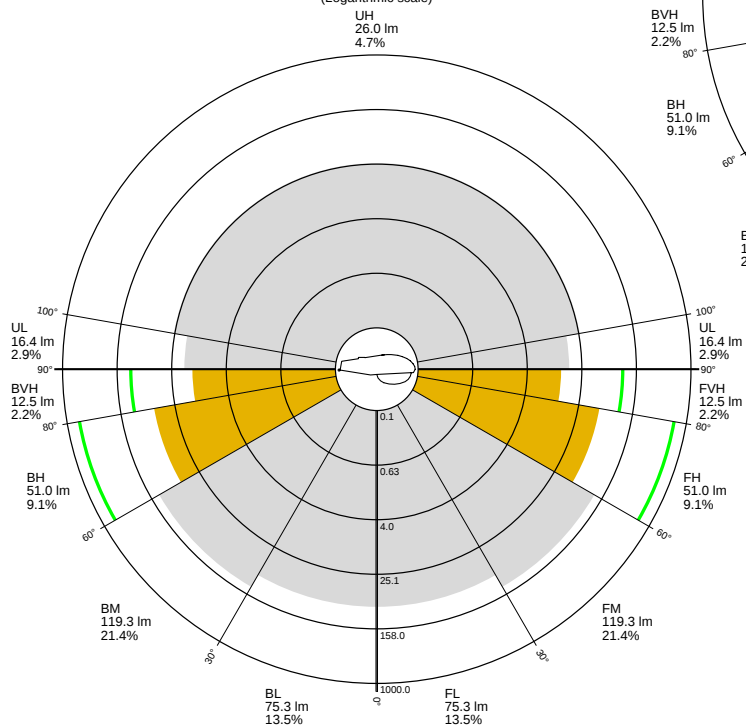
Backlight Rating Details

(Logarithmic scale)



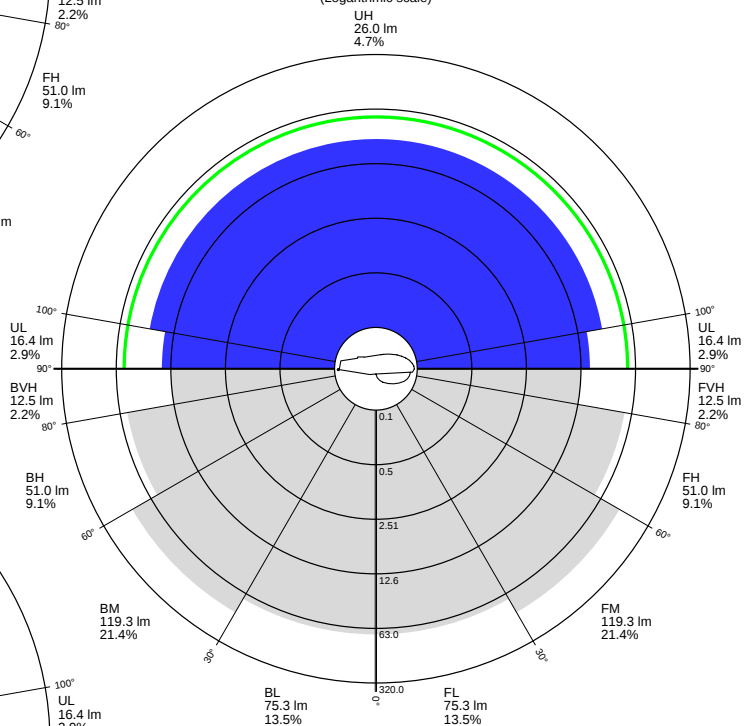
Glare Rating Details

(Logarithmic scale)



Uplight Rating Details

(Logarithmic scale)





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CANDELA TABULATION

		LATERAL ANGLE										
		0.0	5.0	10.0	15.0	20.0	22.5	25.0	30.0	35.0	40.0	45.0
VERTICAL ANGLE	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	1.	1.	1.	1.	1.	1.	1.	2.	2.	2.	2.
	135.0	1.	2.	2.	2.	2.	2.	2.	3.	3.	3.	4.
	125.0	2.	2.	3.	3.	4.	4.	4.	5.	5.	6.	6.
	115.0	4.	4.	4.	5.	6.	7.	7.	8.	8.	9.	9.
	105.0	7.	7.	8.	9.	10.	10.	11.	11.	12.	12.	13.
	95.0	10.	10.	11.	12.	13.	14.	14.	15.	16.	16.	17.
	92.5	11.	12.	13.	14.	15.	16.	16.	17.	18.	18.	19.
	90.0	13.	14.	15.	16.	17.	17.	18.	19.	19.	20.	21.
	87.5	15.	15.	16.	17.	18.	19.	19.	20.	21.	22.	22.
	85.0	17.	17.	18.	20.	21.	21.	22.	22.	23.	24.	24.
	82.5	19.	20.	21.	22.	23.	24.	24.	25.	26.	26.	27.
	80.0	23.	24.	25.	26.	27.	27.	28.	28.	29.	30.	30.
	77.5	27.	27.	29.	29.	30.	31.	31.	31.	32.	32.	33.
	75.0	32.	32.	33.	35.	35.	35.	35.	36.	36.	36.	37.
	72.5	37.	38.	39.	40.	40.	40.	40.	40.	40.	40.	41.
	70.0	44.	45.	46.	46.	46.	46.	46.	45.	45.	45.	45.
	67.5	52.	53.	54.	54.	54.	53.	53.	52.	51.	51.	51.
	65.0	61.	62.	62.	62.	61.	61.	60.	58.	57.	56.	56.
	62.5	70.	71.	71.	71.	69.	68.	67.	65.	63.	62.	61.
	60.0	80.	81.	80.	79.	78.	76.	75.	72.	69.	67.	66.
	57.5	91.	91.	91.	90.	87.	85.	83.	80.	76.	74.	73.
	55.0	101.	101.	100.	98.	95.	93.	91.	86.	82.	80.	79.
	52.5	109.	109.	108.	106.	102.	99.	97.	92.	87.	84.	83.
	50.0	116.	117.	115.	112.	109.	106.	103.	98.	93.	89.	88.
	47.5	122.	122.	121.	118.	113.	111.	108.	102.	97.	94.	93.
	45.0	126.	125.	124.	121.	116.	114.	111.	105.	100.	96.	95.
	42.5	128.	127.	126.	123.	118.	115.	113.	107.	102.	99.	98.
	40.0	128.	127.	126.	123.	118.	116.	113.	108.	104.	101.	99.
	37.5	126.	125.	123.	121.	117.	114.	112.	108.	104.	101.	100.
	35.0	122.	121.	120.	117.	114.	112.	110.	106.	103.	100.	99.
	32.5	117.	116.	114.	112.	109.	108.	106.	103.	101.	99.	98.
	30.0	110.	109.	108.	106.	104.	103.	102.	99.	97.	96.	95.
	25.0	93.	93.	92.	91.	89.	89.	88.	87.	86.	85.	85.
	20.0	77.	77.	76.	76.	75.	75.	75.	79.	89.	112.	133.
	15.0	163.	166.	174.	193.	231.	254.	277.	324.	374.	402.	412.
	10.0<<	409.	409.	409.	409.	409.	409.	408.	407.	406.	406.	405.
	5.0	405.	406.	407.	407.	407.	407.	407.	405.	405.	404.	404.
	0.0	403.	403.	403.	403.	403.	403.	403.	403.	403.	403.	403.

CONE OF MAXIMUM CANDELA

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CANDELA TABULATION

		LATERAL ANGLE									
		50.0	55.0	60.0	65.0	67.5	70.0	75.0	80.0	85.0	90.0
VERTICAL ANGLE	180.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	175.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	165.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	155.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
	145.0	2.	2.	2.	2.	2.	2.	2.	2.	3.	2.
	135.0	4.	4.	4.	4.	3.	3.	3.	3.	3.	3.
	125.0	6.	6.	6.	6.	5.	5.	5.	4.	4.	4.
	115.0	9.	9.	9.	8.	8.	8.	7.	7.	6.	6.
	105.0	13.	13.	13.	12.	12.	12.	11.	10.	9.	9.
	95.0	17.	17.	17.	16.	16.	16.	15.	14.	13.	13.
	92.5	19.	19.	19.	19.	18.	18.	17.	16.	15.	15.
	90.0	21.	21.	21.	21.	20.	20.	19.	18.	17.	17.
	87.5	23.	23.	23.	23.	22.	22.	21.	20.	19.	19.
	85.0	25.	25.	25.	25.	25.	25.	24.	23.	22.	22.
	82.5	27.	28.	28.	28.	28.	28.	28.	27.	26.	25.
	80.0	31.	31.	32.	32.	33.	32.	32.	31.	31.	30.
	77.5	34.	35.	35.	36.	36.	37.	37.	36.	35.	34.
	75.0	38.	39.	40.	41.	42.	42.	42.	42.	41.	40.
	72.5	42.	43.	45.	46.	47.	47.	48.	48.	48.	47.
	70.0	46.	48.	50.	52.	53.	54.	55.	55.	55.	54.
	67.5	52.	54.	56.	59.	60.	61.	63.	63.	63.	62.
	65.0	57.	59.	62.	65.	67.	68.	70.	72.	72.	71.
	62.5	62.	65.	68.	72.	74.	75.	78.	80.	80.	80.
	60.0	67.	70.	75.	79.	81.	83.	86.	88.	88.	88.
	57.5	74.	77.	81.	86.	89.	91.	95.	97.	98.	98.
	55.0	80.	83.	88.	93.	96.	98.	102.	105.	106.	106.
	52.5	84.	87.	93.	98.	102.	105.	109.	112.	113.	114.
	50.0	89.	93.	98.	104.	107.	110.	115.	118.	119.	120.
	47.5	94.	97.	103.	109.	112.	115.	120.	123.	124.	125.
	45.0	97.	100.	106.	112.	115.	118.	123.	126.	128.	129.
	42.5	99.	103.	108.	113.	117.	119.	124.	128.	130.	130.
	40.0	101.	104.	109.	114.	117.	120.	124.	127.	130.	130.
	37.5	101.	104.	108.	113.	116.	118.	122.	125.	127.	128.
	35.0	100.	103.	107.	111.	113.	115.	119.	121.	123.	124.
	32.5	99.	101.	104.	107.	109.	111.	113.	116.	117.	119.
	30.0	96.	97.	99.	102.	104.	105.	107.	109.	111.	112.
	25.0	85.	86.	87.	89.	89.	90.	92.	93.	94.	95.
	20.0	106.	85.	75.	75.	75.	75.	76.	77.	78.	78.
	15.0	411.	398.	350.	292.	275.	244.	209.	175.	168.	161.
	10.0<<	405.	405.	406.	408.	408.	410.	412.	415.	416.	418.
	5.0	403.	402.	403.	404.	405.	406.	409.	412.	413.	414.
	0.0	403.	403.	403.	403.	403.	403.	403.	403.	403.	403.

||
PLANE OF MAXIMUM CANDELA

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5-DEGREE		
ZONAL	LUMEN	SUMMARY
0- 5		10
5- 10		29
10- 15		44
15- 20		26
20- 25		18
25- 30		24
30- 35		32
35- 40		38
40- 45		42
45- 50		44
50- 55		43
55- 60		39
60- 65		34
65- 70		28
70- 75		22
75- 80		18
80- 85		14
85- 90		11
90- 95		9
95-100		7
100-105		6
105-110		5
110-115		4
115-120		3
120-125		2
125-130		2
130-135		1
135-140		1
140-145		1
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		39
0- 20		108
0- 30		151
0- 40		220
0- 50		307
0- 60		389
0- 70		451
0- 80		491
0- 90		516
0-100		533
0-110		544
0-120		551
0-130		555
0-140		558
0-150		559
0-160		559
0-170		559
0-180		559

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Date
8/23/2018

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	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	176F4E3	10/26/2018

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	Checked Daily
<i>Thermometer</i>	National Instruments / USB TC01	1912751	10/26/2018
<i>LAMP Power Meter</i>	Yokogawa / WT332	C2QA27075V	10/25/2018
<i>Power Supply</i>	Chroma / 61602	616020002113	N/A
<i>Aux Lamp Supply</i>	Labsphere / LPS-100-0833	0331159372	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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