



LAB 5
Sphere

Test Sample Description

Catalog Number: P500071-031-30
Description: 1-Lt. LED Black Wall Lantern with Etched, Seeded Glass

Photometry
Test Method: IES LM-31-95
IES LM-79-08 §10
Preburn Time: 0:00
Time To Stabilize: 0:45
Total Operating Time: 2:00

Input Voltage (Volts): 120.4
Input Current (Amps): 0.079
Input Wattage (Watts): 9.4
Ambient Temp (°C): 25.0

Sphere
Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 2:00
Time To Stabilize: 1:13
Total Operating Time: 3:13

Input Voltage (Volts): 120.0
Input Current (Amps): 0.079
Input Wattage (Watts): 9.4
Ambient Temp (°C): 24.2
PF @ 120V: 0.991
THD @ 120V (%): 12.4



Hubbell Lighting, Inc.

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

Checked (sphere): B. LEE
Checked (photometry): R. WILLIAMS
Approved: N. DeVOL



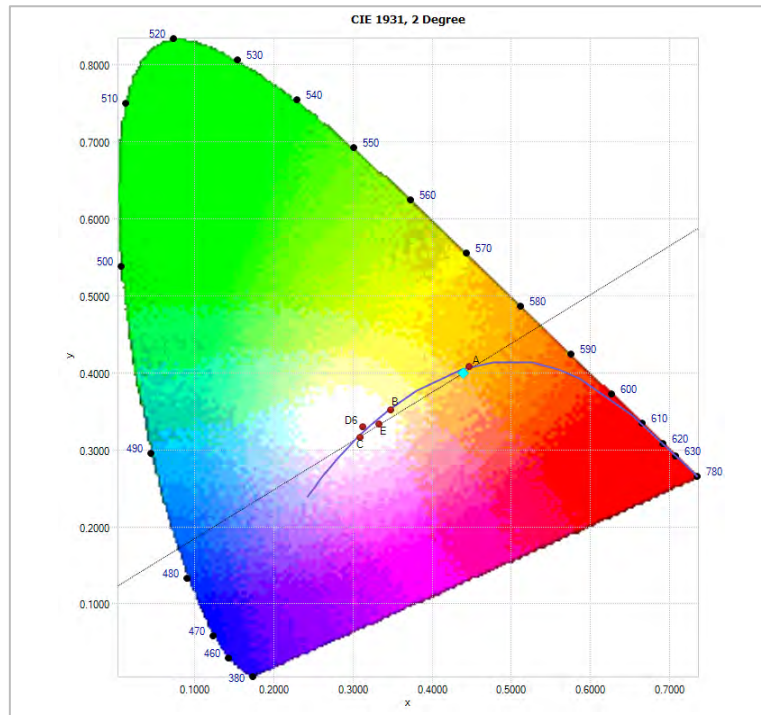


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Lamp Cat#: 93070270-3330
Lamp Desc: 20 - Nichia 3000K LEDs
Driver Desc:

Efficacy: 45.0 LPW S/P Ratio: 1.5 LM/LM

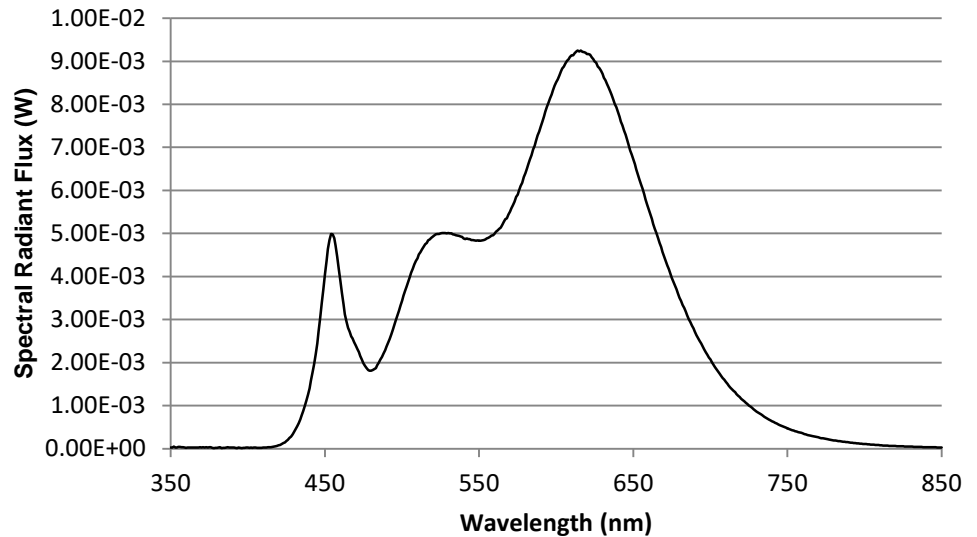
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	1.43	watts
Φ(v)	423	lumens
Φ(v')	619	lm'
Chrom x	0.4388	
Chrom y	0.4	
Chrom u	0.2535	
Chrom v	0.3467	
Duv	0.0021	
Chrom u'	0.2535	
Chrom v'	0.5201	
CCT	2934	K
Purity	51.8	%
λ (dom)	583.8	nm
FWHM	155.6	nm
λ (peak)	614.7	nm
λ (center)	590.7	nm
λ (centroid)	589.5	nm
SDCM	Cool White	
RA	94	
Corr. Coef.	0.001856799	
Correlation	0.0054	
R1	98.8	
R2	98.3	
R3	96.4	
R4	98.7	
R5	98.9	
R6	92.3	
R7	90.3	
R8	82.0	
R9	61.4	
R10	96.7	
R11	91.9	
R12	86.5	
R13	98.6	
R14	98.8	

Spectral Distribution of Radiant Flux





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REPORT NUMBER: 18.00254

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ISSUE DATE: 03/01/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P500071-031-30

LUMINAIRE: 1-Lt. LED Wall Lantern

LAMP CAT. NO.: 93070270-3330

LAMP: 20- Nichia 3000K LEDs

MOUNTING: Wall

REFRACTOR: Etched Seeded Glass

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



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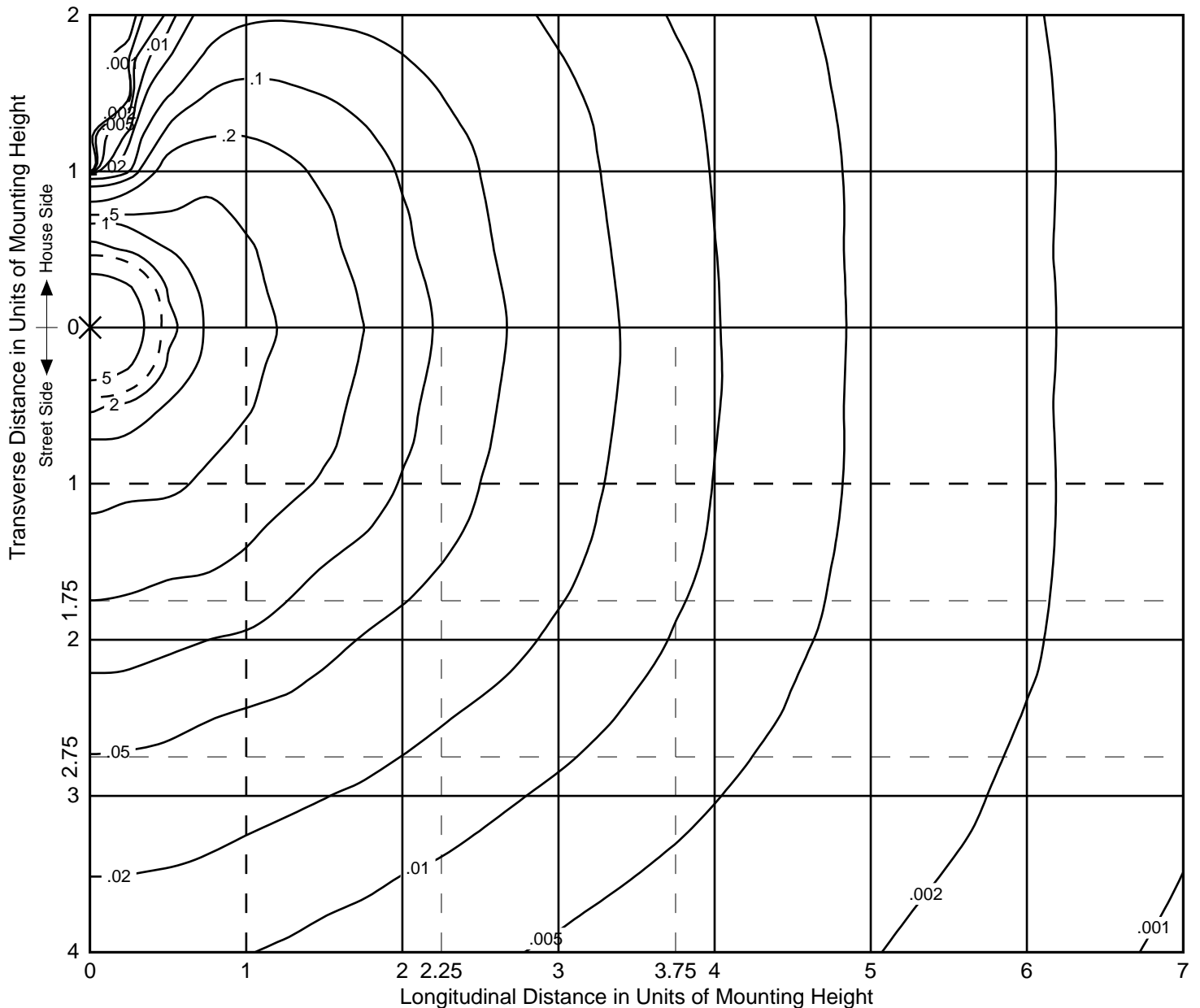
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ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION Values based on 6-foot mounting height

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

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





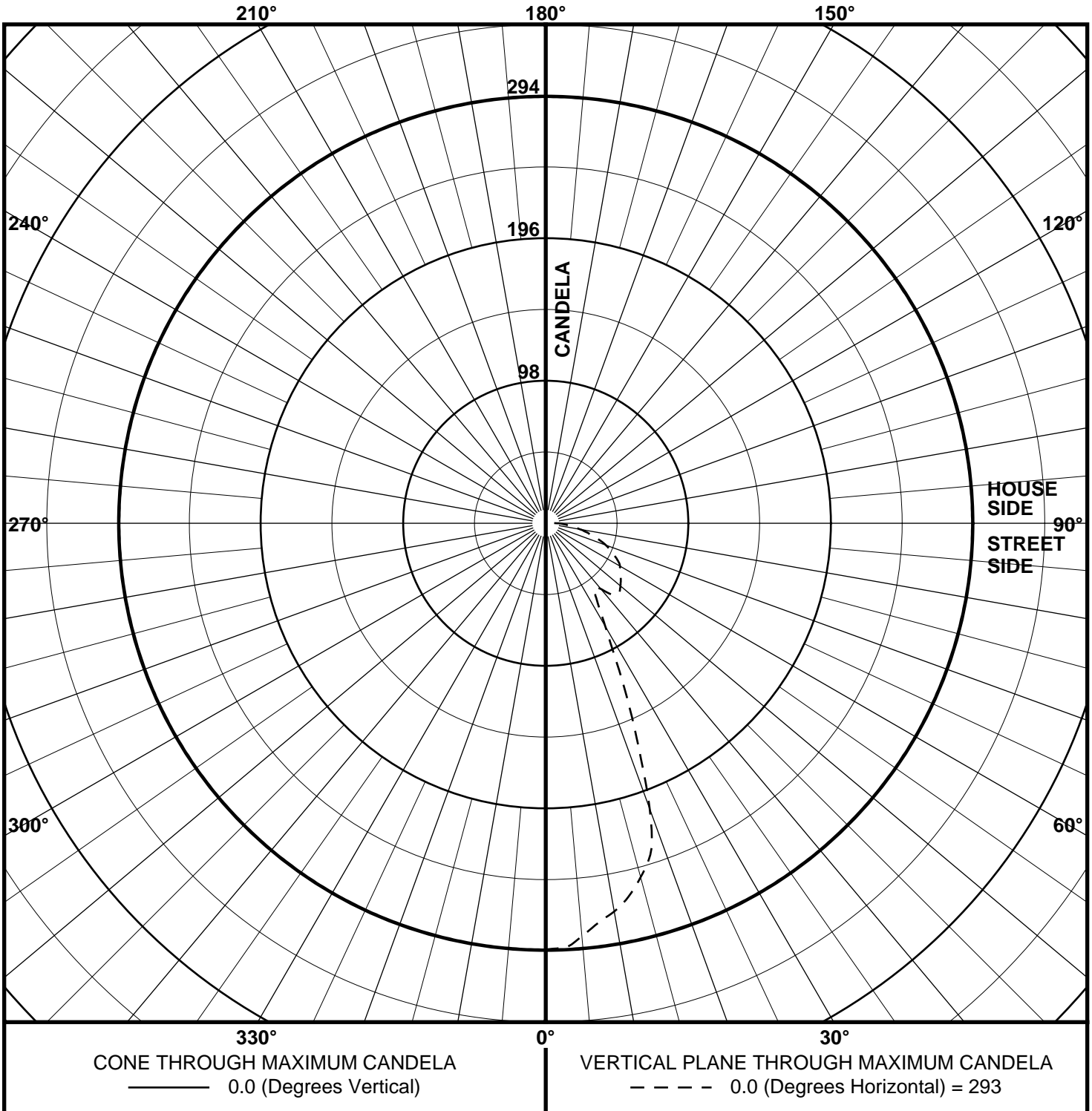
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MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA





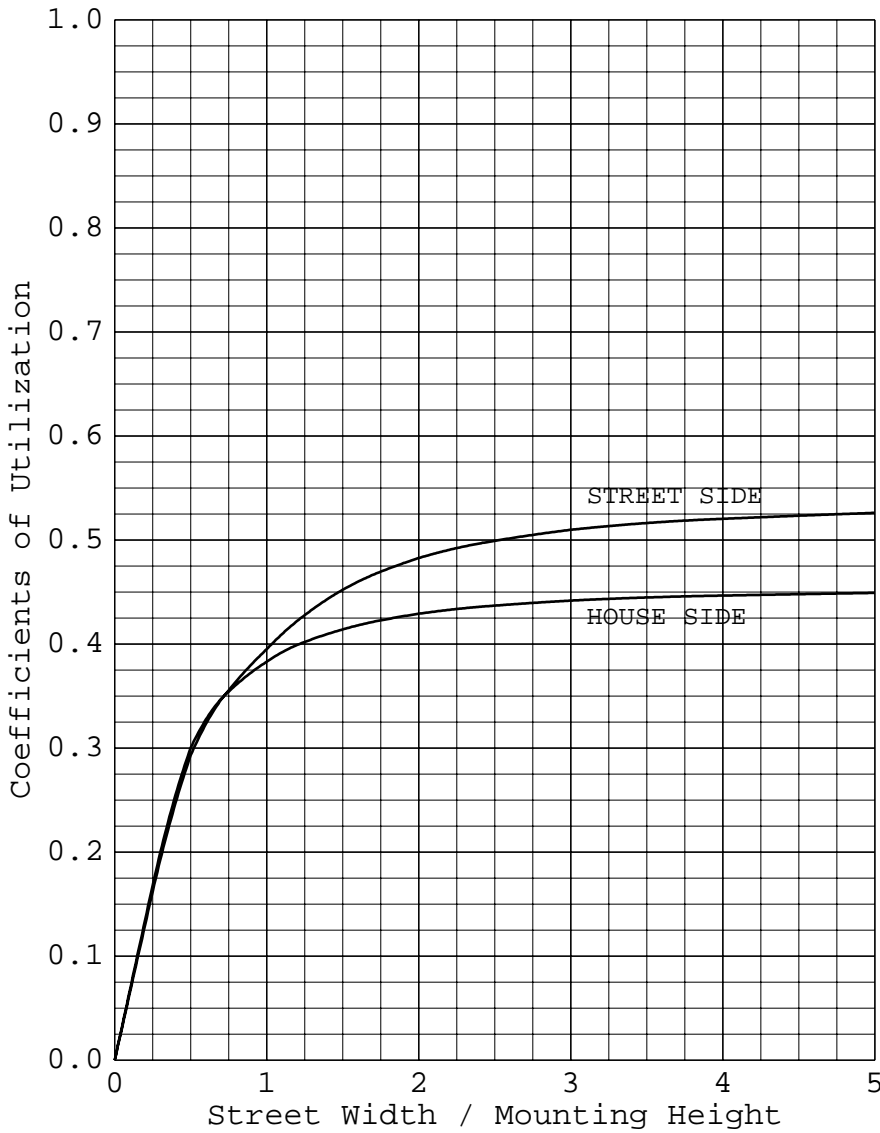
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COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	201	54.1
DOWNWARD HOUSE SIDE	169	45.7
DOWNWARD TOTAL	370	99.8
UPWARD STREET SIDE	1	0.1
UPWARD HOUSE SIDE	0	0.1
UPWARD TOTAL	1	0.2
TOTAL FLUX	371	100.0
EFFICACY = 39.5 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	201	54.1			
FL (0° – 30°)	80.2	21.6			
FM (30° – 60°)	72.6	19.6			
FH (60° – 80°)	40.6	10.9			G0
FVH (80° – 90°)	7.5	2.0			G0
Backward	169	45.7			
BL (0° – 30°)	82.6	22.2	B0		
BM (30° – 60°)	54.5	14.7	B0		
BH (60° – 80°)	27.3	7.4	B0		G0
BVH (80° – 90°)	5.1	1.4			G0
Upward	1	0.2			
UL (90° – 100°)	0.9	0.2		U1	
UH (100° – 180°)	0.0	0.0		U0	
Trapped Light	0	0.0			
Total Flux	371	100.0			



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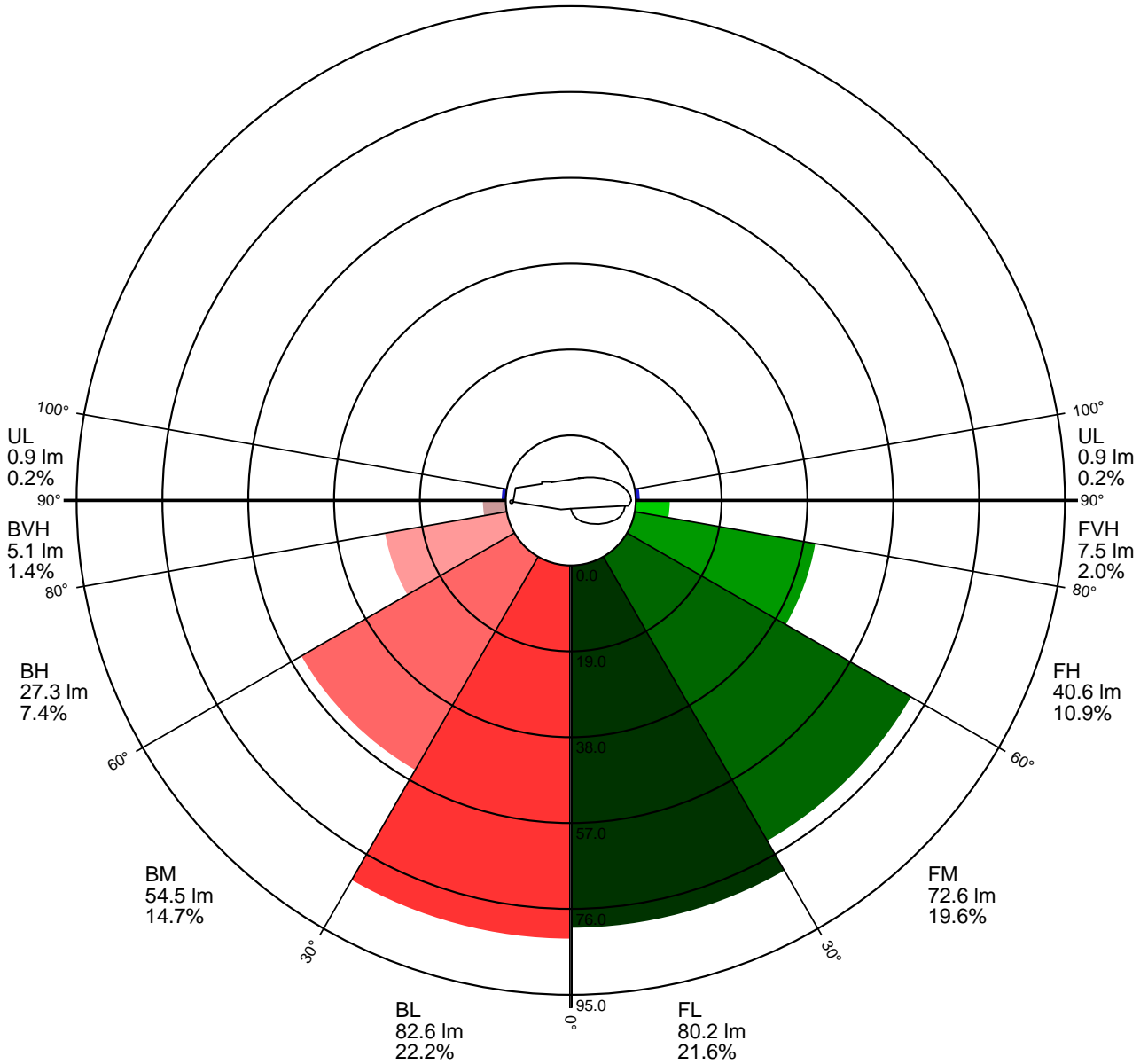
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Zonal Lumen Summary

(Linear scale)

UH
0.0 lm
0.0%





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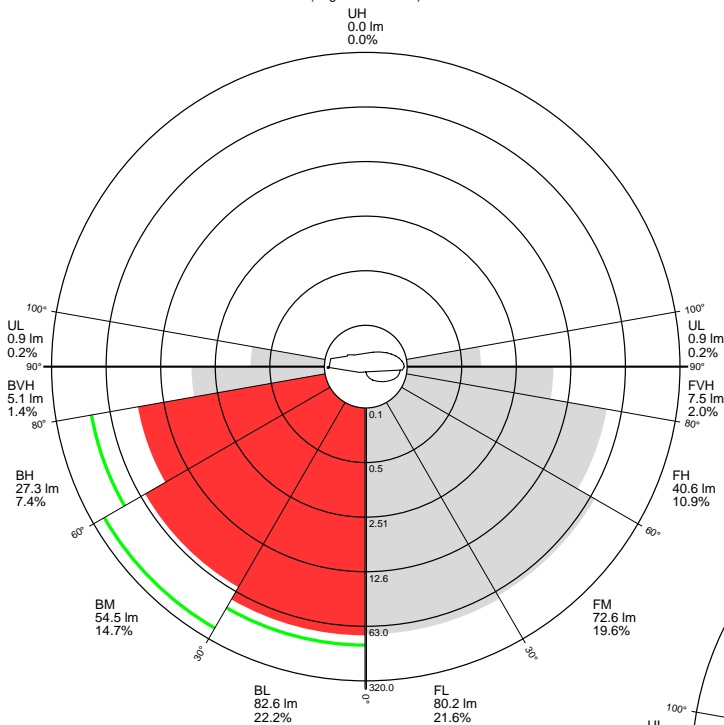
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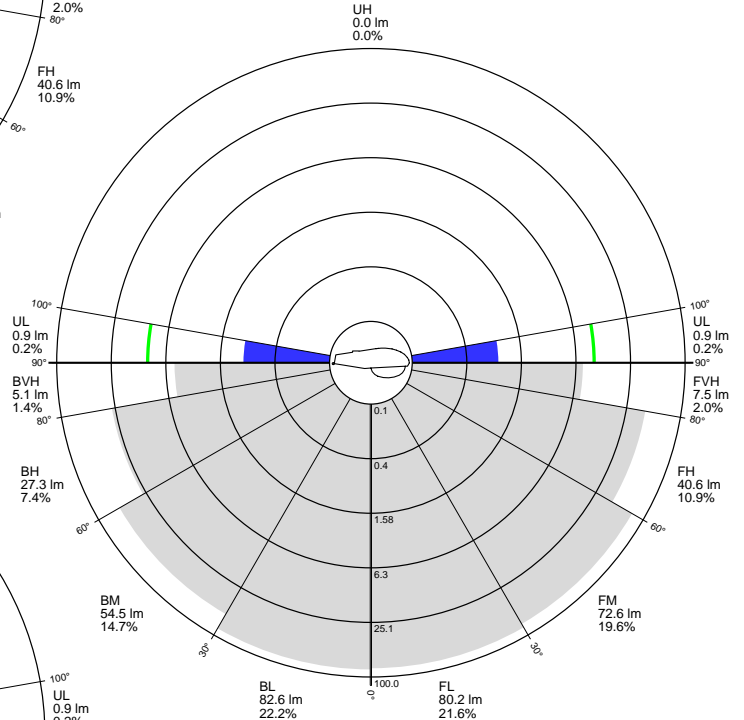
Backlight Rating Details

(Logarithmic scale)



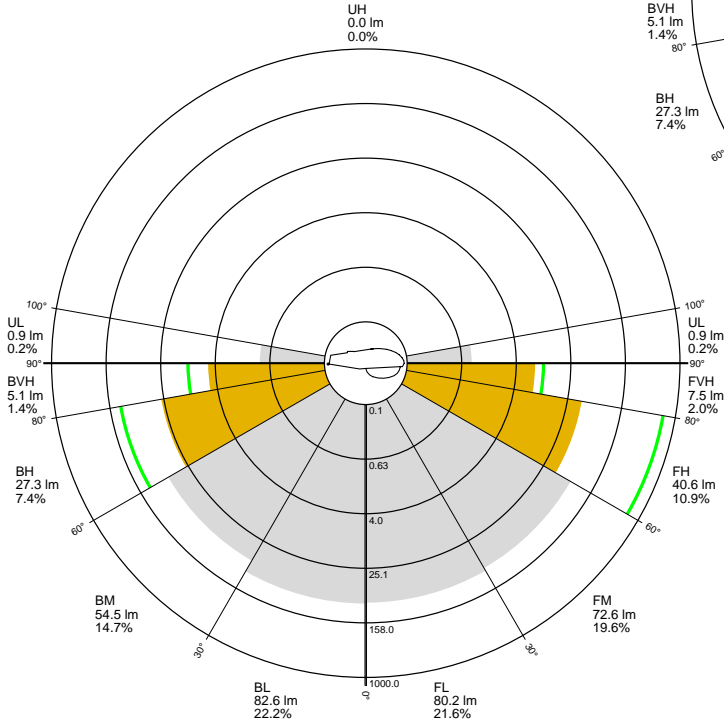
Uplight Rating Details

(Logarithmic scale)



Glare Rating Details

(Logarithmic scale)



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CANDELA TABULATION

LATERAL ANGLE

	50.0	55.0	60.0	65.0	67.5	70.0	75.0	80.0	85.0	90.0	95.0
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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
92.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.0	8.	8.	8.	8.	8.	8.	8.	7.	7.	6.	6.
87.5	11.	11.	11.	11.	11.	11.	11.	10.	9.	9.	9.
85.0	14.	14.	14.	14.	14.	13.	13.	12.	11.	11.	11.
V 82.5	18.	18.	18.	18.	18.	18.	17.	16.	15.	15.	15.
E 80.0	22.	22.	23.	22.	22.	22.	21.	20.	19.	19.	19.
R 77.5	26.	27.	27.	27.	27.	26.	25.	24.	23.	23.	23.
T 75.0	32.	32.	33.	32.	32.	32.	30.	29.	29.	28.	28.
I 72.5	37.	38.	38.	38.	37.	36.	35.	34.	34.	34.	33.
C 70.0	42.	43.	43.	43.	42.	41.	40.	39.	39.	40.	39.
A 67.5	46.	48.	48.	48.	47.	47.	45.	44.	45.	45.	44.
L 65.0	51.	52.	52.	52.	52.	51.	49.	48.	50.	51.	50.
62.5	54.	56.	56.	56.	55.	54.	52.	52.	55.	56.	55.
A 60.0	57.	59.	59.	59.	58.	57.	55.	56.	59.	60.	59.
N 57.5	57.	60.	60.	60.	59.	58.	56.	57.	60.	62.	60.
G 55.0	59.	61.	61.	61.	61.	60.	58.	59.	62.	63.	61.
L 52.5	61.	64.	63.	63.	62.	62.	59.	60.	64.	65.	64.
E 50.0	62.	65.	65.	64.	63.	62.	60.	62.	65.	66.	65.
47.5	64.	67.	66.	65.	65.	64.	62.	65.	69.	70.	71.
45.0	65.	67.	67.	67.	67.	66.	64.	68.	71.	72.	72.
42.5	61.	64.	64.	64.	63.	62.	59.	62.	65.	65.	65.
40.0	53.	55.	56.	56.	55.	53.	49.	51.	56.	57.	57.
37.5	51.	53.	54.	54.	54.	53.	49.	52.	57.	57.	57.
35.0	64.	66.	66.	68.	68.	67.	65.	67.	69.	71.	72.
32.5	77.	81.	82.	83.	82.	82.	79.	82.	83.	84.	83.
30.0	90.	91.	91.	92.	93.	92.	92.	93.	93.	94.	94.
25.0	130.	130.	131.	131.	131.	133.	131.	132.	134.	135.	136.
20.0	216.	217.	217.	219.	219.	218.	219.	220.	219.	220.	221.
15.0	255.	255.	258.	258.	259.	259.	258.	259.	259.	259.	259.
10.0	272.	272.	273.	274.	274.	274.	275.	275.	275.	275.	275.
5.0	288.	288.	288.	288.	288.	289.	289.	289.	289.	288.	289.
0.0<<	293.	293.	293.	293.	293.	293.	293.	293.	293.	293.	293.

CONE OF MAXIMUM CANDELA

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REPORT NUMBER: 18.00254

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ISSUE DATE: 03/01/18

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CANDELA TABULATION

	HOUSE SIDE		LATERAL ANGLE								
	100.0	105.0	110.0	112.5	115.0	120.0	125.0	130.0	135.0	140.0	145.0
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	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
135.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
125.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
115.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
105.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
95.0	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
92.5	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.
90.0	7.	7.	8.	8.	8.	8.	8.	8.	8.	7.	5.
87.5	10.	11.	11.	11.	11.	11.	12.	11.	11.	9.	7.
85.0	12.	13.	14.	14.	14.	14.	15.	14.	13.	11.	8.
V 82.5	16.	17.	18.	18.	18.	18.	18.	18.	17.	14.	10.
E 80.0	20.	21.	22.	22.	23.	23.	23.	22.	21.	17.	13.
R 77.5	24.	25.	26.	27.	27.	27.	28.	26.	24.	20.	16.
T 75.0	28.	29.	31.	32.	32.	32.	32.	31.	28.	23.	19.
I 72.5	33.	34.	36.	37.	37.	38.	38.	36.	33.	28.	22.
C 70.0	38.	39.	41.	42.	42.	43.	42.	41.	37.	32.	26.
A 67.5	43.	43.	46.	46.	47.	47.	47.	46.	42.	36.	30.
L 65.0	47.	47.	49.	50.	51.	51.	51.	49.	45.	40.	33.
62.5	51.	50.	52.	53.	54.	54.	54.	51.	48.	43.	37.
A 60.0	55.	53.	55.	56.	56.	57.	57.	54.	51.	46.	40.
N 57.5	56.	54.	55.	56.	57.	58.	58.	55.	52.	48.	40.
G 55.0	58.	55.	56.	58.	59.	59.	59.	57.	55.	51.	43.
L 52.5	60.	56.	58.	59.	60.	61.	61.	59.	57.	53.	45.
E 50.0	62.	58.	60.	61.	63.	64.	64.	62.	60.	57.	47.
47.5	68.	64.	65.	67.	69.	69.	70.	66.	65.	62.	52.
45.0	70.	66.	66.	68.	69.	71.	72.	69.	67.	64.	53.
42.5	60.	57.	59.	61.	63.	65.	65.	62.	59.	56.	46.
40.0	53.	49.	53.	54.	56.	57.	56.	54.	50.	46.	40.
37.5	53.	50.	54.	56.	57.	59.	58.	56.	53.	50.	47.
35.0	69.	66.	66.	68.	69.	69.	69.	68.	68.	67.	63.
32.5	82.	79.	81.	82.	84.	84.	84.	84.	82.	83.	81.
30.0	94.	94.	95.	96.	96.	97.	97.	97.	98.	98.	97.
25.0	137.	136.	139.	138.	139.	140.	140.	143.	142.	146.	146.
20.0	222.	221.	221.	222.	222.	222.	224.	223.	224.	224.	224.
15.0	258.	258.	257.	257.	256.	256.	255.	254.	253.	253.	253.
10.0	275.	274.	274.	274.	274.	273.	272.	272.	271.	272.	271.
5.0	289.	289.	288.	288.	288.	289.	288.	288.	288.	288.	288.
0.0<<	293.	293.	293.	293.	293.	293.	293.	293.	293.	293.	293.

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CANDELA TABULATION

	HOUSE SIDE		LATERAL ANGLE					
	150.0	155.0	157.5	160.0	165.0	170.0	175.0	180.0
180.0	0.	0.	0.	0.	0.	0.	0.	0.
175.0	0.	0.	0.	0.	0.	0.	0.	0.
165.0	0.	0.	0.	0.	0.	0.	0.	0.
155.0	0.	0.	0.	0.	0.	0.	0.	0.
145.0	0.	0.	0.	0.	0.	0.	0.	0.
135.0	0.	0.	0.	0.	0.	0.	0.	0.
125.0	0.	0.	0.	0.	0.	0.	0.	0.
115.0	0.	0.	0.	0.	0.	0.	0.	0.
105.0	0.	0.	0.	0.	0.	0.	0.	0.
95.0	0.	0.	0.	0.	0.	0.	0.	0.
92.5	0.	0.	0.	0.	0.	0.	0.	0.
90.0	4.	3.	2.	2.	1.	0.	0.	0.
87.5	5.	4.	3.	2.	1.	0.	0.	0.
85.0	6.	5.	3.	3.	1.	0.	0.	0.
V 82.5	8.	6.	5.	4.	1.	0.	0.	0.
E 80.0	11.	8.	7.	5.	1.	0.	0.	0.
R 77.5	13.	10.	8.	6.	2.	0.	0.	0.
T 75.0	16.	13.	11.	8.	2.	0.	0.	0.
I 72.5	20.	15.	13.	9.	2.	0.	0.	1.
C 70.0	23.	18.	14.	11.	3.	0.	0.	0.
A 67.5	26.	20.	16.	11.	3.	0.	0.	0.
L 65.0	29.	21.	17.	12.	3.	0.	0.	0.
62.5	30.	22.	18.	13.	3.	0.	0.	0.
A 60.0	33.	24.	19.	13.	4.	1.	0.	0.
N 57.5	33.	24.	19.	14.	3.	0.	0.	0.
G 55.0	34.	25.	20.	14.	4.	0.	0.	0.
L 52.5	36.	26.	21.	15.	4.	1.	0.	0.
E 50.0	37.	27.	21.	15.	4.	0.	0.	0.
47.5	41.	31.	24.	17.	5.	1.	0.	1.
45.0	43.	33.	27.	19.	6.	1.	1.	0.
42.5	37.	29.	25.	20.	8.	2.	1.	0.
40.0	34.	28.	26.	23.	11.	5.	3.	3.
37.5	42.	36.	34.	31.	23.	17.	14.	13.
35.0	58.	52.	49.	46.	40.	36.	34.	33.
32.5	76.	70.	68.	66.	61.	57.	55.	55.
30.0	94.	90.	89.	87.	84.	82.	80.	79.
25.0	147.	147.	146.	147.	147.	146.	147.	148.
20.0	225.	225.	225.	224.	224.	224.	225.	224.
15.0	254.	253.	253.	253.	252.	253.	254.	254.
10.0	271.	270.	271.	271.	272.	272.	272.	272.
5.0	288.	288.	288.	288.	288.	288.	288.	288.
0.0<<	293.	293.	293.	293.	293.	293.	293.	293.

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5-DEGREE		
ZONAL LUMEN SUMMARY		
0- 5		7
5- 10		20
10- 15		31
15- 20		39
20- 25		37
25- 30		28
30- 35		22
35- 40		17
40- 45		20
45- 50		23
50- 55		23
55- 60		23
60- 65		22
65- 70		19
70- 75		16
75- 80		11
80- 85		8
85- 90		5
90- 95		1
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		27
0- 20		98
0- 30		163
0- 40		202
0- 50		245
0- 60		290
0- 70		331
0- 80		358
0- 90		370
0-100		371
0-110		371
0-120		371
0-130		371
0-140		371
0-150		371
0-160		371
0-170		371
0-180		371



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: 09/08/2016

Test Equipment Used

<i>Instrument</i>	<i>Manufacturer / Model</i>	<i>S/N</i>	<i>Calibration Due:</i>
<i>Goniophotometer</i>	ITL/HLI LAB 5 - Test Distance: 56.0'	N/A	N/A
<i>Power Analyzer</i>	Yokogawa / WT 332	C2QA27072V	10/25/2018
<i>Power Source</i>	Voltage-Regulated House Power	N/A	N/A
<i>Thermometer</i>	National Instruments / USB-TC01	1912722	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>Power Supply PF/THD</i>	Voltage-Regulated House Power	N/A	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

Hubbell Lighting, Inc.

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