

Project Number
18.00862



HUBBELL
Lighting

Date
5/23/2018

LAB 1
Sphere

Test Sample Description

Catalog Number: P6829-0930K
Description: LED Vertical-Hood Step-Light

Photometry

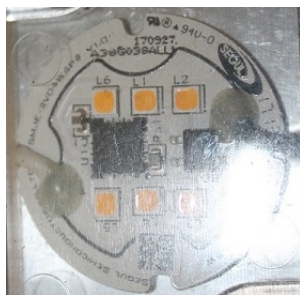
Test Method: IES LM-31-95
IES LM-79-08 §10
Preburn Time: 0:05
Time To Stabilize: 2:00
Total Operating Time: 2:49

Input Voltage (Volts): 119.9
Input Current (Amps): 0.038
Input Wattage (Watts): 4.6
Ambient Temp (°C): 26.0

Sphere

Test Method: IES LM-16-93
IES LM-79-08 §12.1
Preburn Time: 0:10
Time To Stabilize: 1:53
Total Operating Time: 2:03

Input Voltage (Volts): 120.0
Input Current (Amps): 0.038
Input Wattage (Watts): 4.6
Ambient Temp (°C): 24.0
PF @ 120V: 0.994
THD @ 120V (%): 11.4



Hubbell Lighting, Inc.

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

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



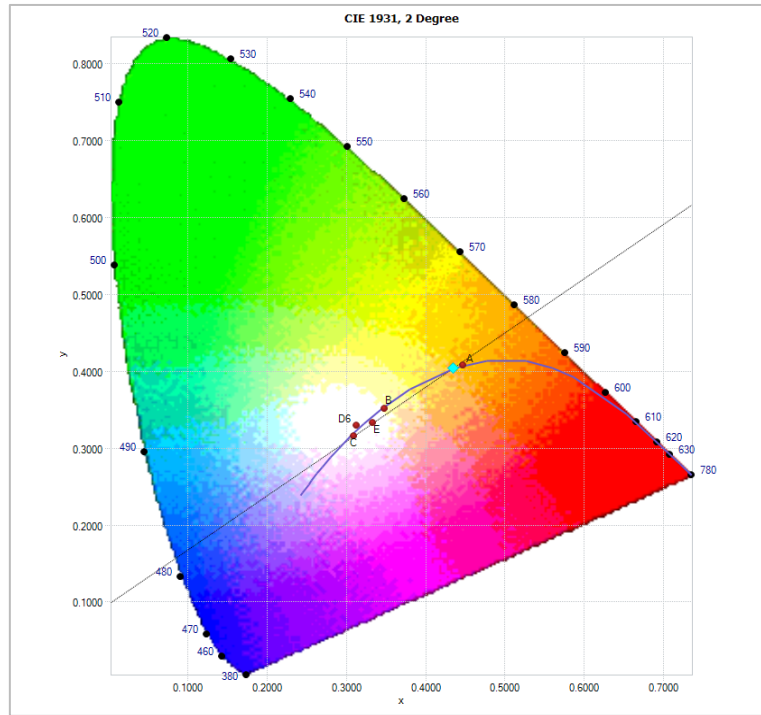
This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.



Lamp Cat#:
 Lamp Desc: 6 - SEOUL 3000K LEDs
 Driver Desc:

Efficacy: 11.3 LPW S/P Ratio: 1.4 LM/LM

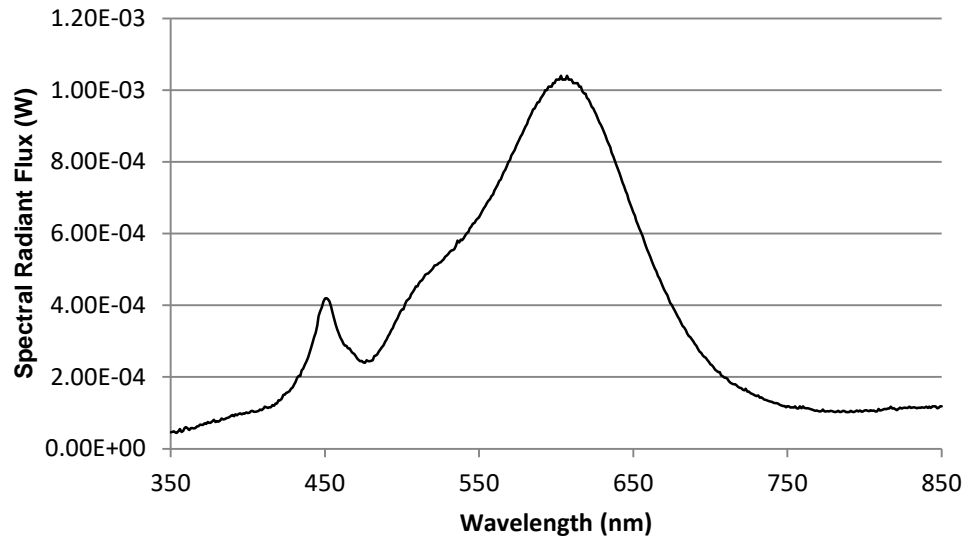
Chromaticity Diagram



Spectral Results

Name	Value	Unit
Φ	0.18	watts
Φ(v)	52	lumens
Φ(v')	72	lm'
Chrom x	0.4343	
Chrom y	0.4044	
Chrom u	0.2487	
Chrom v	0.3474	
Duv	0.0005	
Chrom u'	0.2487	
Chrom v'	0.5211	
CCT	3046	K
Purity	51.8	%
λ (dom)	582.4	nm
FWHM	138.7	nm
λ (peak)	606.7	nm
λ (center)	593.3	nm
λ (centroid)	592.1	nm
SDCM	Cool White	
RA	85	
Corr. Coef.	0.000538946	
Correlation	0.0054	
R1	83.9	
R2	92.4	
R3	97.0	
R4	84.4	
R5	84.6	
R6	91.8	
R7	85.3	
R8	64.5	
R9	19.1	
R10	83.0	
R11	84.4	
R12	81.9	
R13	85.9	
R14	98.8	

Spectral Distribution of Radiant Flux





®

HUBBELL
Lighting

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

REPORT NUMBER: 18.00862

PAGE: 3 OF 12

ISSUE DATE: 05/23/18

PREPARED FOR: PROGRESS

CATALOG NUMBER: P6829-0930K

LUMINAIRE: LED Vertical-Hood Step-Light

LAMP: 1- SEOUL 3000K LED

MOUNTING: Surface

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.



HUBBELL
Lighting

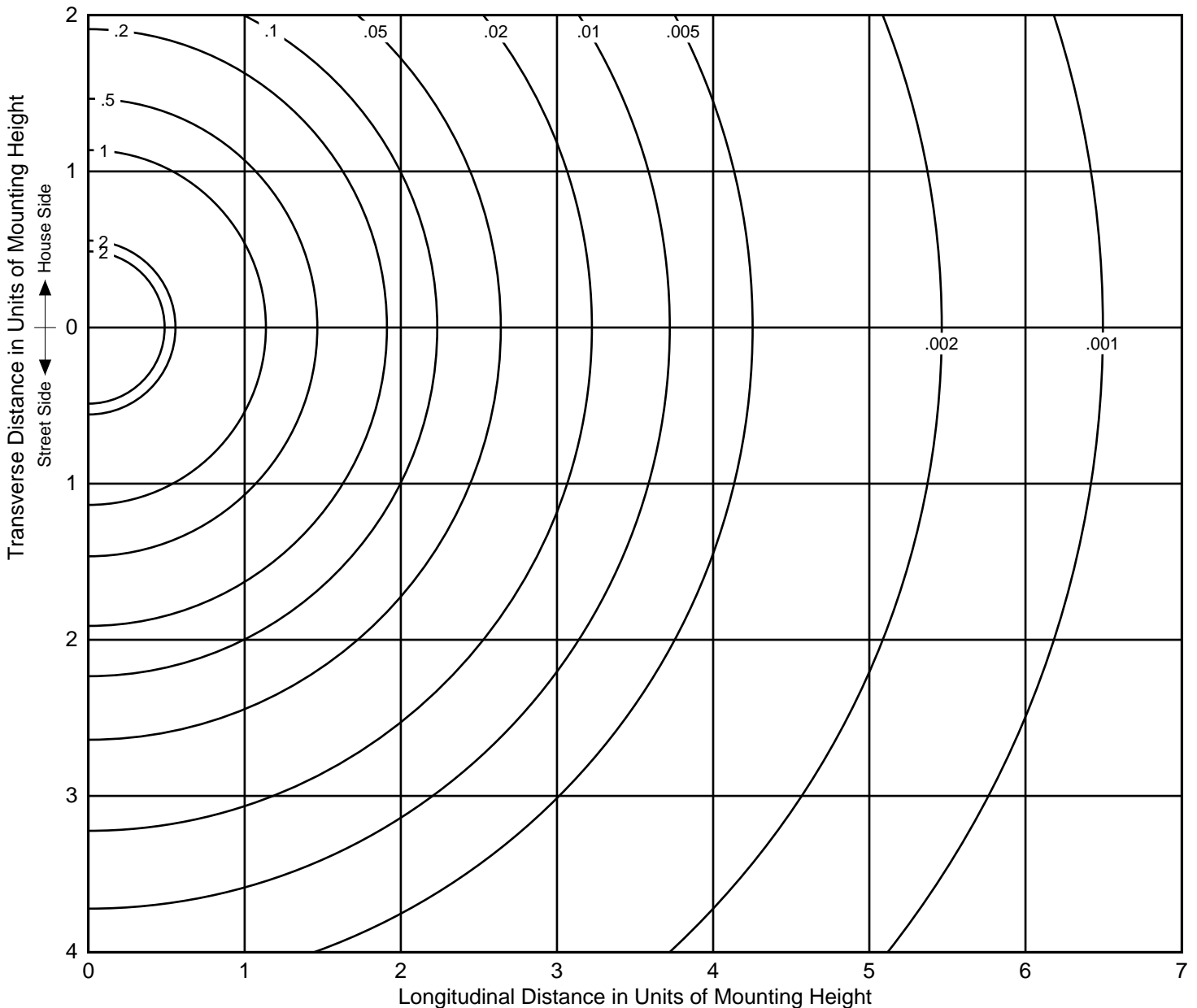
701 Millennium Blvd
Greenville, SC 29607
www.hubbellighting.com

REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 4 OF 12

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINATION Values based on 2-foot mounting height

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





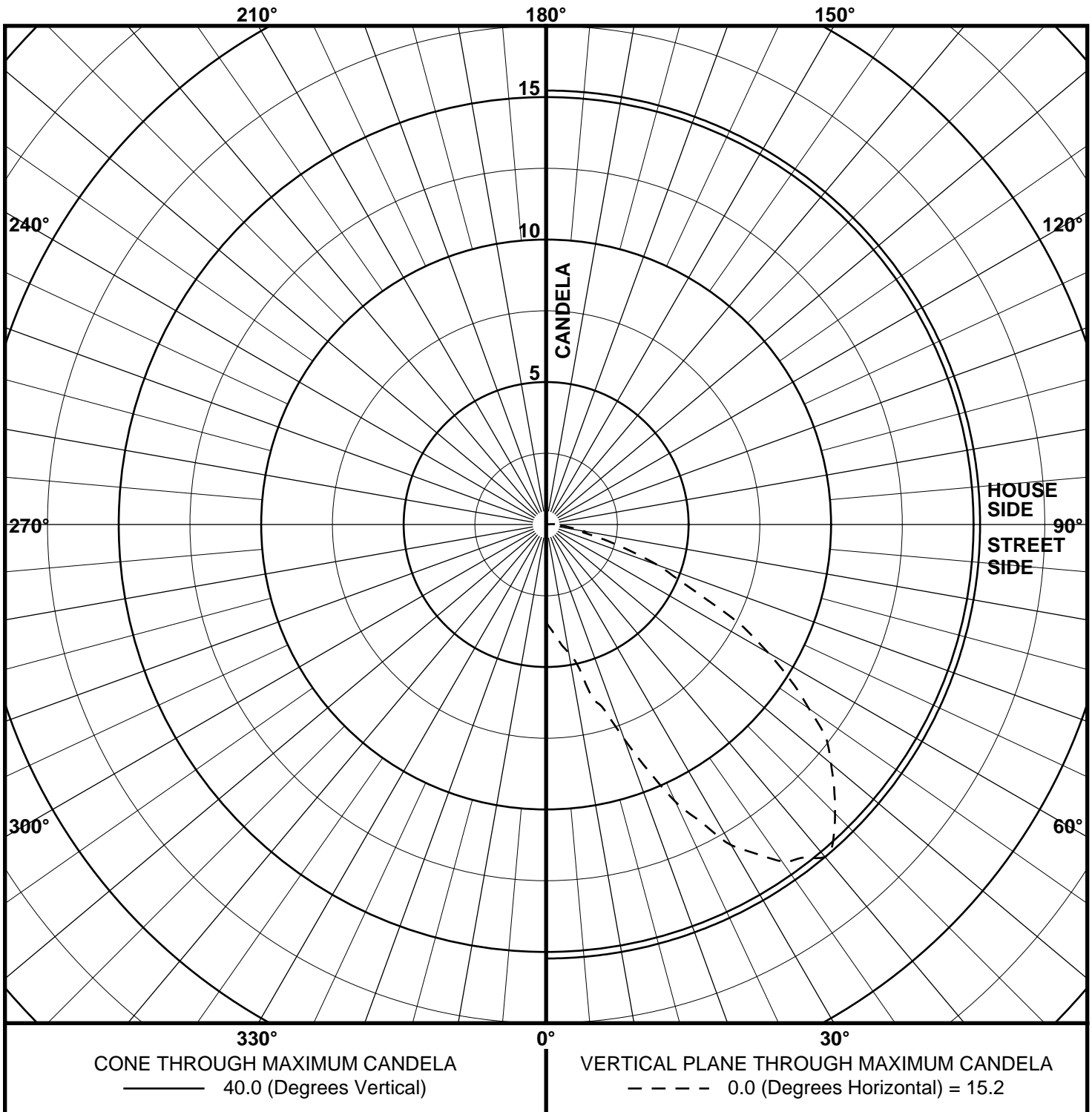
HUBBELL
Lighting

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

REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 5 OF 12

MAXIMUM PLANE AND MAXIMUM CONE PLOTS OF CANDELA

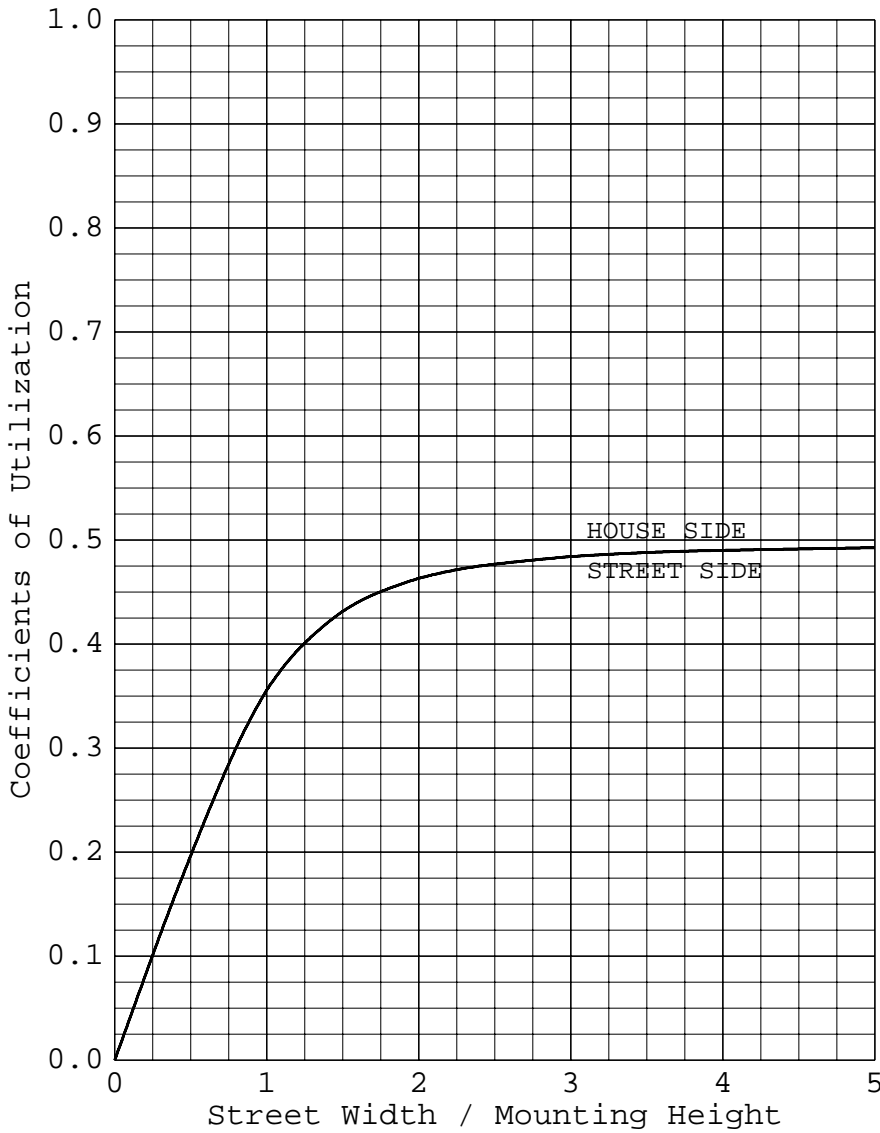




REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 6 OF 12

COEFFICIENTS OF UTILIZATION AND FLUX DISTRIBUTION



	LUMENS	PERCENT OF FIXTURE
DOWNWARD STREET SIDE	23.4	49.8
DOWNWARD HOUSE SIDE	23.4	49.8
DOWNWARD TOTAL	46.8	99.6
UPWARD STREET SIDE	0.1	0.2
UPWARD HOUSE SIDE	0.1	0.2
UPWARD TOTAL	0.2	0.4
TOTAL FLUX	47.0	100.0

EFFICACY = 10.3 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.



HUBBELL Lighting

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

REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 7 OF 12

BUG Rating Zonal Summary	Lumens	% of Fixture	Zone Ratings		
			B0	U1	G0
			B	U	G
Forward	23.4	49.8			
FL (0° – 30°)	3.6	7.6			
FM (30° – 60°)	15.0	32.0			
FH (60° – 80°)	4.4	9.4			G0
FVH (80° – 90°)	0.4	0.8			G0
Backward	23.4	49.8			
BL (0° – 30°)	3.6	7.6	B0		
BM (30° – 60°)	15.0	32.0	B0		
BH (60° – 80°)	4.4	9.4	B0		G0
BVH (80° – 90°)	0.4	0.8			G0
Upward	0.2	0.4			
UL (90° – 100°)	0.2	0.4		U1	
UH (100° – 180°)	0.0	0.0		U1	
Trapped Light	0	0.0			
Total Flux	47.0	100.0			



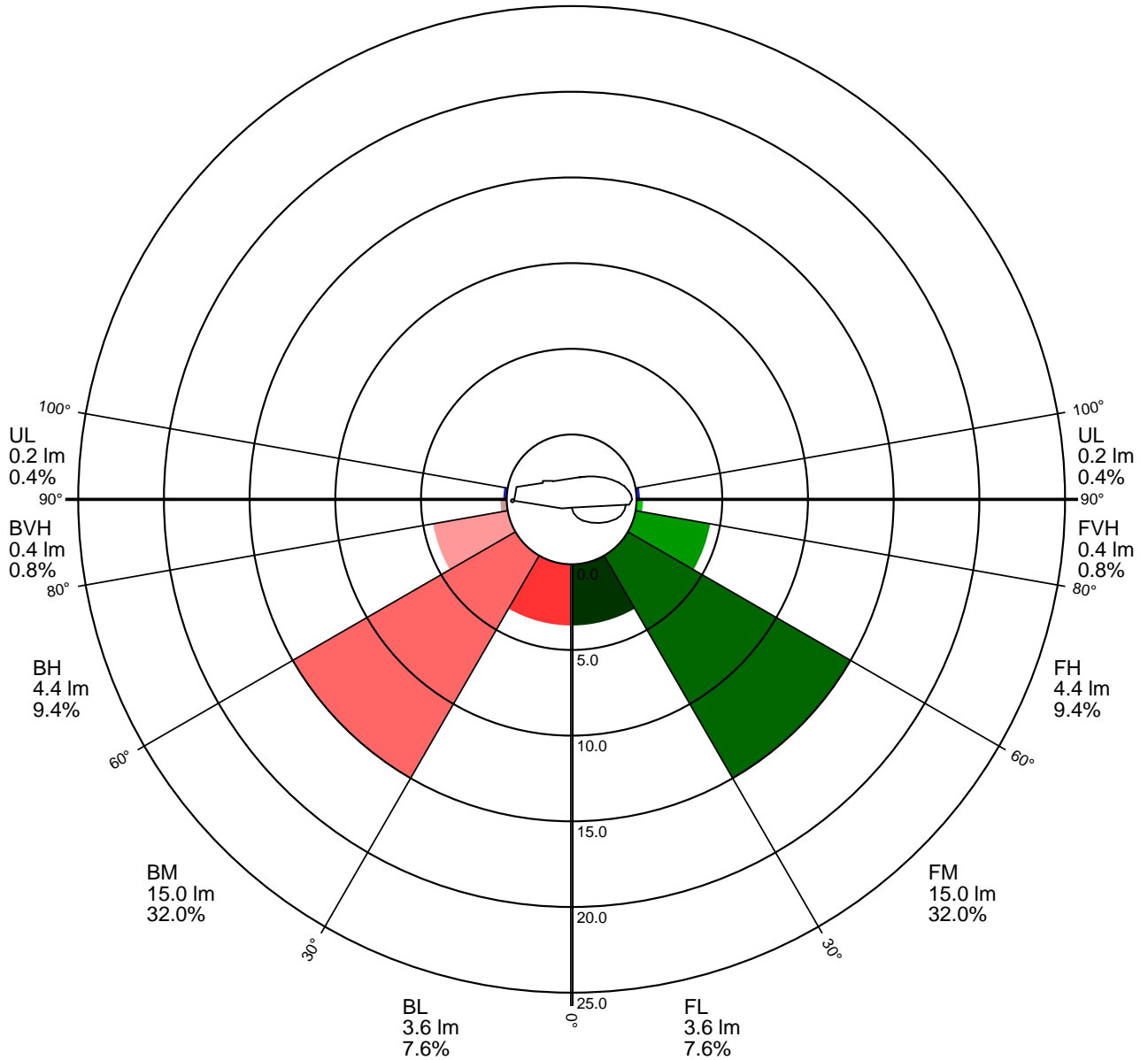
REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 8 OF 12

Zonal Lumen Summary

(Linear scale)

UH
0.0 lm
0.0%



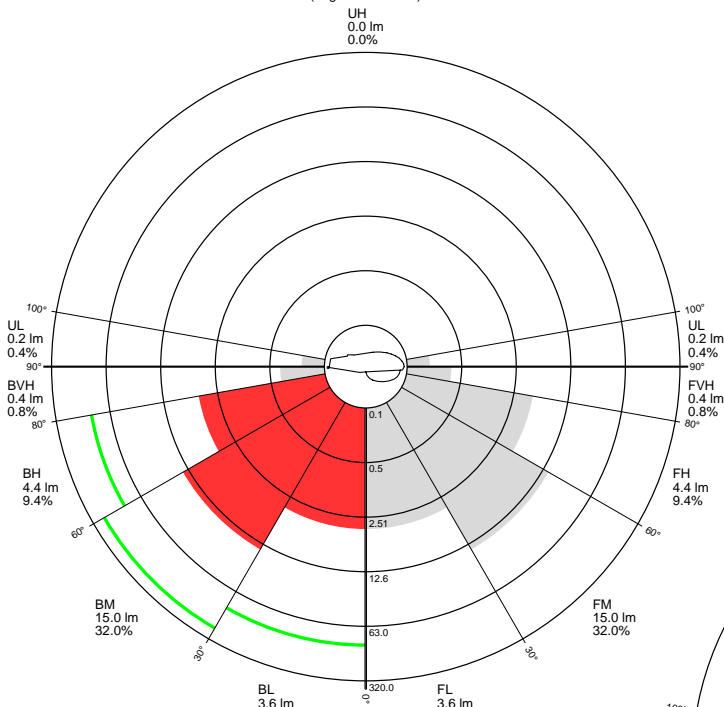


REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 9 OF 12

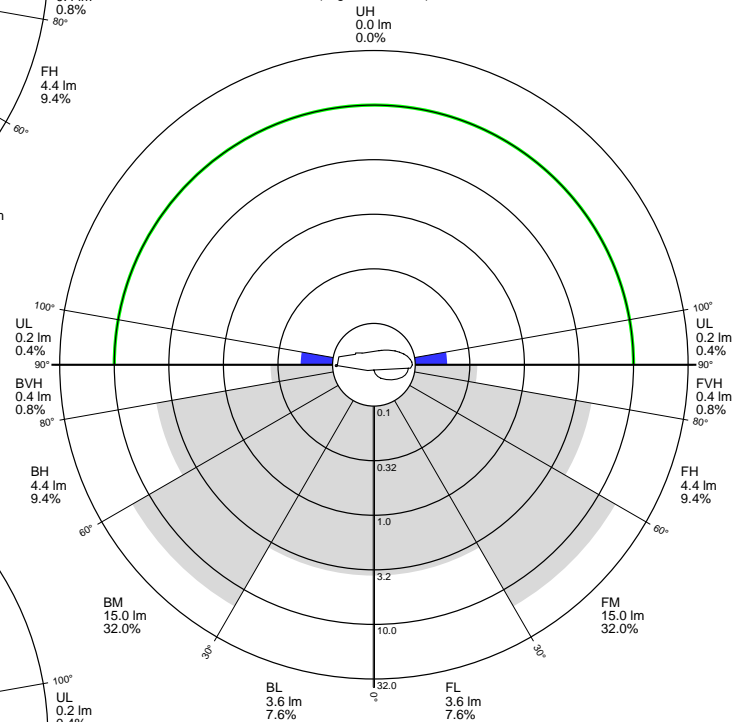
Backlight Rating Details

(Logarithmic scale)



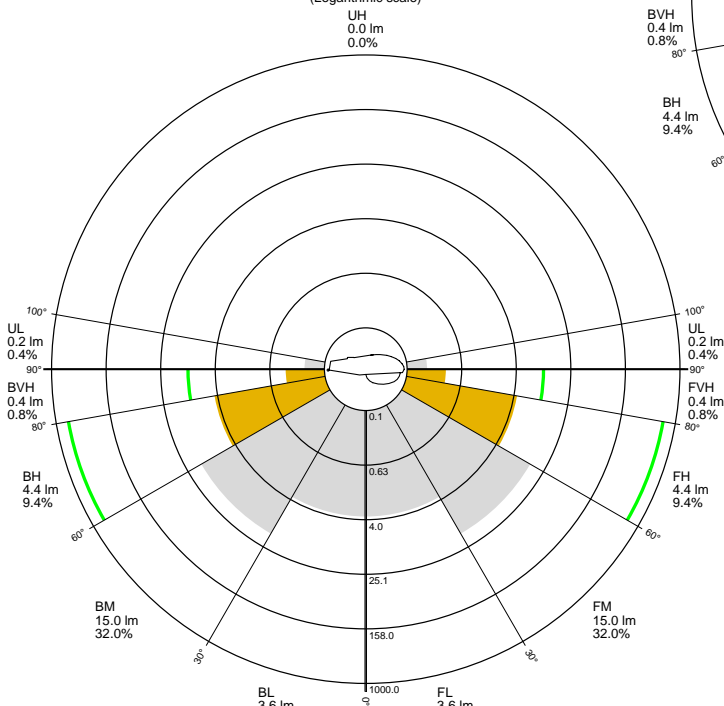
Uplight Rating Details

(Logarithmic scale)



Glare Rating Details

(Logarithmic scale)





HUBBELL
Lighting

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

REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 10 OF 12

CANDELA TABULATION

	TYPE	V
	180.0	0.0
	175.0	0.0
	165.0	0.0
	155.0	0.0
	145.0	0.0
	135.0	0.0
	125.0	0.0
	115.0	0.0
	105.0	0.0
	95.0	0.1
	92.5	0.3
	90.0	0.4
	87.5	0.3
	85.0	0.6
V	82.5	0.9
E	80.0	1.4
R	77.5	1.4
T	75.0	2.3
I	72.5	3.1
C	70.0	4.2
A	67.5	5.0
L	65.0	6.2
	62.5	7.8
A	60.0	9.0
N	57.5	10.2
G	55.0	11.3
L	52.5	12.4
E	50.0	13.1
	47.5	13.7
	45.0	14.3
	42.5	14.9
	40.0<<	15.2
	37.5	14.7
	35.0	14.4
	32.5	13.7
	30.0	13.0
	25.0	10.7
	20.0	8.0
	15.0	6.3
	10.0	4.6
	5.0	4.0
	0.0	3.4

CONE OF MAXIMUM CANDELA



HUBBELL
Lighting

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

REPORT NUMBER: 18.00862
ISSUE DATE: 05/23/18
PREPARED FOR: PROGRESS
CATALOG NUMBER: P6829-0930K

PAGE: 11 OF 12

5-DEGREE
ZONAL LUMEN SUMMARY

0- 5	0.1
5- 10	0.3
10- 15	0.6
15- 20	1.2
20- 25	2.0
25- 30	3.0
30- 35	4.0
35- 40	4.9
40- 45	5.5
45- 50	5.5
50- 55	5.3
55- 60	4.7
60- 65	3.7
65- 70	2.6
70- 75	1.7
75- 80	0.9
80- 85	0.5
85- 90	0.2
90- 95	0.2
95-100	0.0
100-105	0.0
105-110	0.0
110-115	0.0
115-120	0.0
120-125	0.0
125-130	0.0
130-135	0.0
135-140	0.0
140-145	0.0
145-150	0.0
150-155	0.0
155-160	0.0
160-165	0.0
165-170	0.0
170-175	0.0
175-180	0.0

10-DEGREE
ZONAL LUMEN SUMMARY

0- 10	0.4
0- 20	2.2
0- 30	7.1
0- 40	16.1
0- 50	27.2
0- 60	37.2
0- 70	43.5
0- 80	46.0
0- 90	46.8
0-100	47.0
0-110	47.0
0-120	47.0
0-130	47.0
0-140	47.0
0-150	47.0
0-160	47.0
0-170	47.0
0-180	47.0



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>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.

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