



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300

## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002

**Prepared For**  
**Auroralight Inc**

2742 Loker Ave W  
#100  
Carlsbad, CA 92010-6619  
United States

**Catalog Number**  
**HSL11-4-WF-45 (4W, 60° OPTIC, 4500K)**

Order Number  
12250114  
Test Number  
12250114.40

Report Date

2018-05-07

Prepared By

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Approved By

Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Cylindrical metal housing, with adjustable knuckle, clear glass lens and internal LED module

**Lamp:** One (1) Cree XHP 4500K LED with 60°, wide flood optic

**Mounting:** Flood

**Ballast/Driver:** Integrated

**Note:** This report has been pro-rated using data from report numbers 12250114.38, 12250114.01, 12250114.02, 12250114.03, 12250114.04, 12250114.05, and 12250114.06 to account for differences in color temperature.

#### Luminaire



#### Luminaire Characteristics

Luminous Diameter: 1.50 in.

Luminous Height: 1.000 in.

#### Summary of Results

Roadway Classification: Type V, Very Short  
Cutoff Classification: Full Cutoff  
BUG Rating: B0 U0 G0

#### Test Conditions

Test Temperature: 24.3 °C  
Voltage: 12.02 VAC  
Current: 0.3501 A  
Power: 4.130 W  
Power Factor: 0.981  
Frequency: 60 Hz  
Current THD: 10.3 %

Tested in 30 planes left side, 30 planes right side, left and right averaged  
Vertical test increments are 2.5 degrees  
Test distance exceeds five times the greatest luminous opening of luminaire

Laboratory results may not be representative of field performance  
Ballast factors have not been applied



## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.3 °C	12.02 VAC	0.3501 A	4.130 W	0.981	60 Hz	10.3 %

### Summary of Results

#### Spacing Criteria

0-180: 0.63

90-270: 0.63

#### Total Lumen Output:

130.4 Lumens

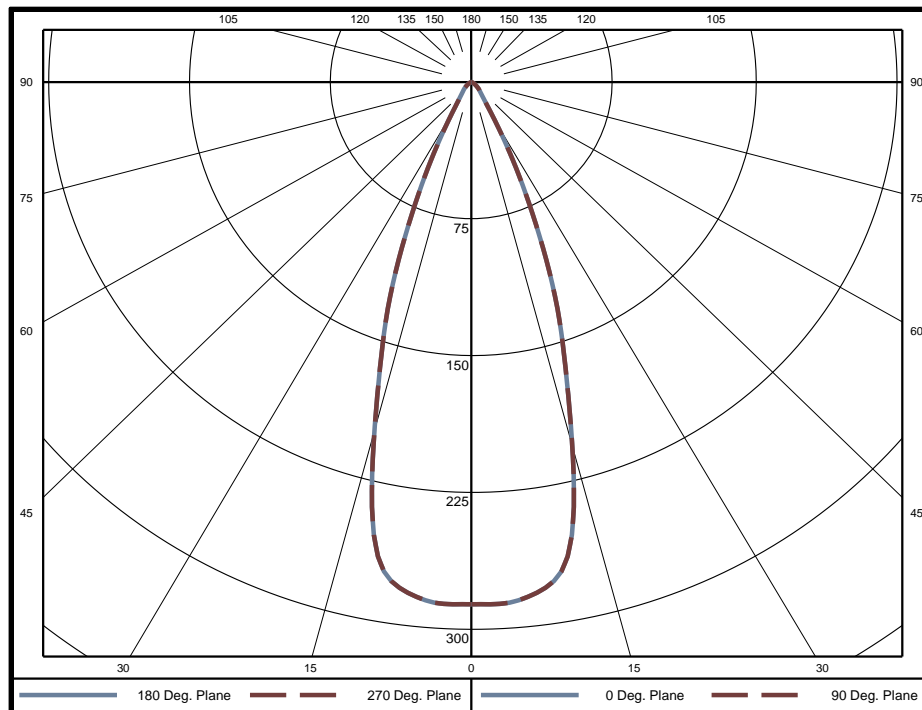
#### Luminaire Efficacy:

31.6 lm/w

#### Maximum Candela:

286 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	6.84	5.2%	60-65	0.64	0.5%	120-125	0	0.0%
5-10	20.01	15.3%	65-70	0.38	0.3%	125-130	0	0.0%
10-15	28.64	22.0%	70-75	0.17	0.1%	130-135	0	0.0%
15-20	27.06	20.8%	75-80	0.02	0.0%	135-140	0	0.0%
20-25	20.46	15.7%	80-85	0	0.0%	140-145	0	0.0%
25-30	11.22	8.6%	85-90	0	0.0%	145-150	0	0.0%
30-35	5.12	3.9%	90-95	0	0.0%	150-155	0	0.0%
35-40	3.12	2.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	2.42	1.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	1.93	1.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	1.39	1.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.96	0.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	122	93.9%
0-60	129	99.1%
0-90	130	100.0%
90-180	0	0.0%



### Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)															
	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3	286.3
5	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2	285.2
10	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4	272.4
15	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0	204.0
20	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2	132.2
25	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5	67.5
30	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5	26.5
35	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8	11.8
40	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
45	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
50	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
55	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6
60	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
65	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
80	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

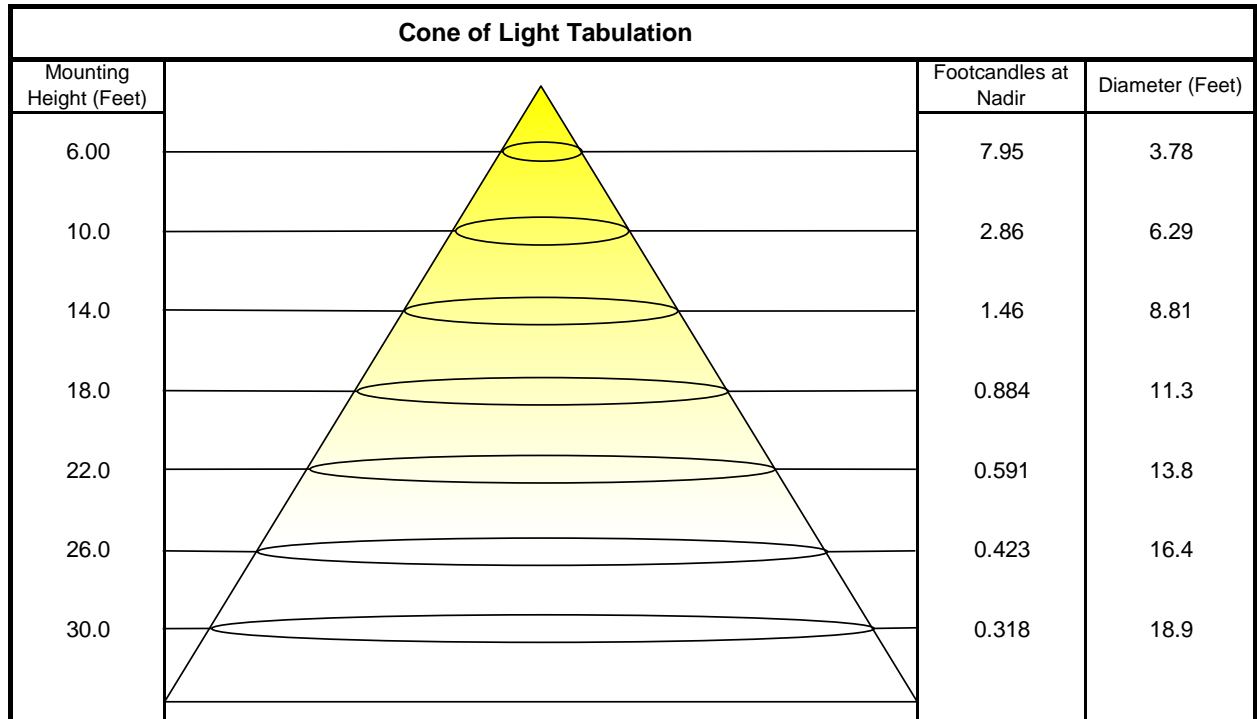
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	251100	251100	251100
45	7011	7011	7011
55	3965	3965	3965
65	2091	2091	2091
75	506	506	506
85	0	0	0



### Utilization of Lumens - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	155	155	155	155	152	152	152	152	145	145	145	139	139	139	133	133	133	130
1	149	146	143	140	146	143	140	138	138	136	134	133	131	130	128	127	126	124
2	143	137	133	129	140	135	131	127	131	128	125	127	124	122	124	121	120	117
3	137	130	124	120	135	128	123	119	125	120	117	122	118	115	119	116	113	112
4	132	123	117	112	129	122	116	112	119	114	110	117	112	109	114	111	108	106
5	126	117	111	106	124	116	110	106	114	109	105	112	107	104	110	106	103	101
6	122	112	105	100	120	111	105	100	109	104	100	107	102	99	106	101	98	97
7	117	107	100	96	115	106	100	95	105	99	95	103	98	94	102	97	94	92
8	113	102	96	91	111	102	96	91	100	95	91	99	94	90	98	94	90	89
9	109	98	92	88	108	98	92	87	97	91	87	96	90	87	95	90	87	85
10	105	94	88	84	104	94	88	84	93	87	84	92	87	83	91	87	83	82

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	286.3 Candela
Central Cone Intensity:	286 Candela
Beam Flux:	78.2 Lumens
Beam Angle (0-180):	38.3 Degrees
Beam Angle (90-270):	38.3 Degrees
Field Angle (0-180):	59.3 Degrees
Field Angle (90-270):	59.3 Degrees





**IES "BUG" Rating**  
(Back Light, Uplight, Glare)  
Per IES TM-15-11



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	57.1	44.2%
FM	(30-60)	7.3	5.7%
FH	(60-80)	0.2	0.1%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	57.1	44.2%
BM	(30-60)	7.3	5.7%
BH	(60-80)	0.2	0.1%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		129.2	100.0%
<b>BUG Rating</b>	<b>B0 U0 G0</b>		