



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**  
**HSL11-2-N-45 (2W, 15° OPTIC, 4500K)**

Order Number

12250114

Test Number

12250114.22

Report Date

2018-05-07

Prepared By

Sean Gregory, Project Handler

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 15°, narrow optic

**Mounting:** Flood

**Ballast/Driver:** Integrated

**Note:** This report has been pro-rated using data from report numbers 12250114.20, 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: 24.4 °C  
Voltage: 12.02 VAC  
Current: 0.1591 A  
Power: 1.794 W  
Power Factor: 0.937  
Frequency: 60 Hz  
Current THD: 21.6 %

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
24.4 °C	12.02 VAC	0.1591 A	1.794 W	0.937	60 Hz	21.6 %

### Summary of Results

#### Spacing Criteria

0-180: 0.29

90-270: 0.29

#### Total Lumen Output:

91.90 Lumens

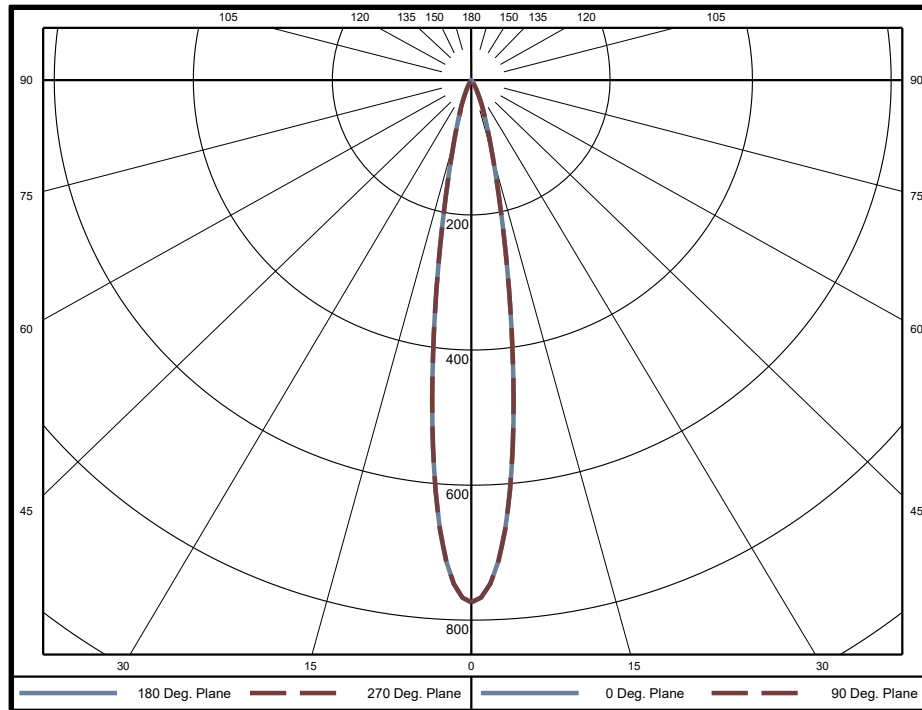
#### Luminaire Efficacy:

51.2 lm/w

#### Maximum Candela:

774 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	16.52	18.0%	60-65	0	0.0%	120-125	0	0.0%
5-10	30.56	33.3%	65-70	0	0.0%	125-130	0	0.0%
10-15	20.93	22.8%	70-75	0	0.0%	130-135	0	0.0%
15-20	11.86	12.9%	75-80	0	0.0%	135-140	0	0.0%
20-25	6.78	7.4%	80-85	0	0.0%	140-145	0	0.0%
25-30	3.25	3.5%	85-90	0	0.0%	145-150	0	0.0%
30-35	1.25	1.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	0.48	0.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	0.21	0.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.07	0.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.00	0.0%	110-115	0	0.0%	170-175	0	0.0%
55-60	0	0.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	92	99.7%
0-60	92	100.0%
0-90	92	100.0%
90-180	0	0.0%



### Candela Tabulation

Horizontal Angle (Degrees)

Vertical 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	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6	773.6
	5	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2	610.2
	10	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5	285.5
	15	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8	107.8
	20	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3	48.3
	25	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9	19.9
	30	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
	35	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	40	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
	45	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	50	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
	55	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
	60	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
	65	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
	70	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
	75	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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
	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

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	678500	678500
	45	388	388
	55	0	0
	65	0	0
	75	0	0
	85	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	109	109	109	109	107	107	107	107	102	102	102	98	98	98	94	94	94	92
1	106	104	103	101	104	102	101	100	99	98	97	95	95	94	92	92	91	90
2	103	100	98	96	101	99	97	95	96	94	93	93	92	91	91	90	89	88
3	100	97	94	91	99	95	93	91	93	91	89	91	89	88	89	88	87	86
4	98	94	90	88	97	93	90	88	91	88	87	89	87	86	88	86	85	84
5	96	91	88	85	94	90	87	85	89	86	84	87	85	83	86	84	83	82
6	93	88	85	83	92	88	85	83	87	84	82	86	83	82	85	83	81	80
7	91	86	83	81	90	86	83	81	85	82	80	84	82	80	83	81	79	79
8	89	84	81	79	89	84	81	79	83	80	78	82	80	78	82	79	78	77
9	88	82	79	77	87	82	79	77	81	79	77	81	78	77	80	78	76	76
10	86	81	78	76	85	80	78	76	80	77	75	79	77	75	79	77	75	74

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	773.6 Candela
Central Cone Intensity:	715 Candela
Beam Flux:	37.4 Lumens
Beam Angle (0-180):	16.7 Degrees
Beam Angle (90-270):	16.7 Degrees
Field Angle (0-180):	33.9 Degrees
Field Angle (90-270):	33.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		21.5	1.72
10.0		7.74	2.86
14.0		3.95	4.01
18.0		2.39	5.15
22.0		1.60	6.30
26.0		1.14	7.45
30.0		0.860	8.59



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	45.1	49.1%
FM	(30-60)	0.9	0.9%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	45.1	49.1%
BM	(30-60)	0.9	0.9%
BH	(60-80)	0.0	0.0%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		91.9	100.0%
<b>BUG Rating</b>	<b>B0 U0 G0</b>		