



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-M-45 (2W, 25° OPTIC, 4500K)**

Order Number

12250114

Test Number

12250114.19

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.  
This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.  
This report must not be used by the client to claim product certification, approval, or endorsement by  
NVLAP, NIST, or any agency of the Federal Government.



**Luminaire Description:** Cylindrical metal housing, with adjustable knuckle, clear glass lens and internal LED module

**Lamp:** One (1) Cree XHP 4500K LED with 25°, medium optic

**Mounting:** Flood

**Ballast/Driver:** Integrated

**Note:** This report has been pro-rated using data from report numbers 12250114.17, 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: 24.6 °C  
Voltage: 12.02 VAC  
Current: 0.1593 A  
Power: 1.793 W  
Power Factor: 0.936  
Frequency: 60 Hz  
Current THD: 22.0 %

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
24.6 °C	12.02 VAC	0.1593 A	1.793 W	0.936	60 Hz	22.0 %

### Summary of Results

#### Spacing Criteria

0-180: 0.44

90-270: 0.44

#### Total Lumen Output:

95.28 Lumens

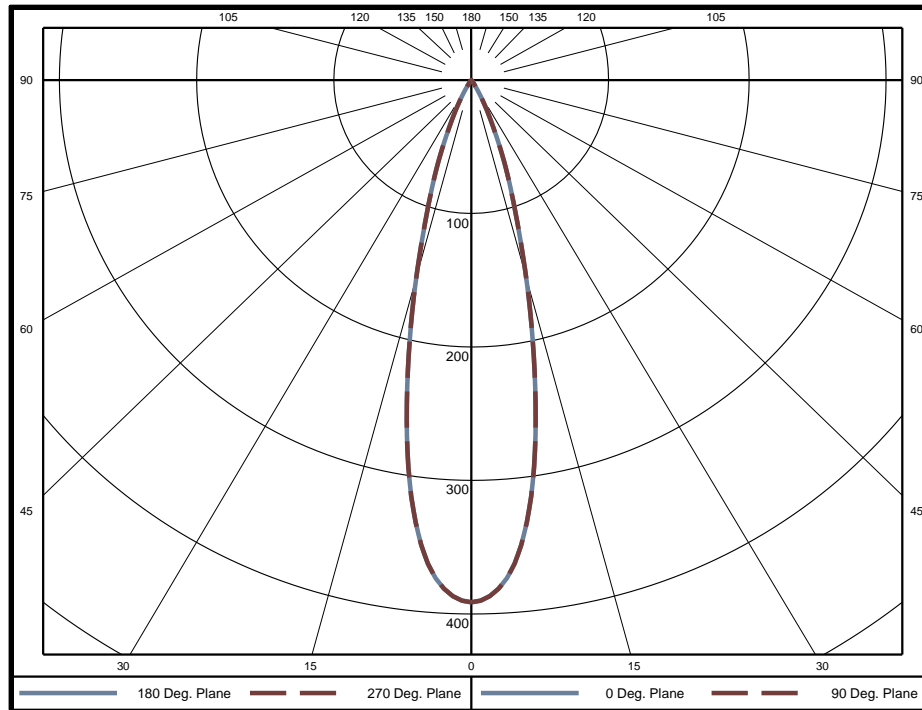
#### Luminaire Efficacy:

53.1 lm/w

#### Maximum Candela:

391 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	9.03	9.5%	60-65	0	0.0%	120-125	0	0.0%
5-10	22.68	23.8%	65-70	0	0.0%	125-130	0	0.0%
10-15	24.75	26.0%	70-75	0	0.0%	130-135	0	0.0%
15-20	18.63	19.6%	75-80	0	0.0%	135-140	0	0.0%
20-25	11.66	12.2%	80-85	0	0.0%	140-145	0	0.0%
25-30	5.62	5.9%	85-90	0	0.0%	145-150	0	0.0%
30-35	1.87	2.0%	90-95	0	0.0%	150-155	0	0.0%
35-40	0.64	0.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	0.27	0.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.10	0.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.02	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	95	99.6%
0-60	95	100.0%
0-90	95	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	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3	391.3
	5	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7	363.7
	10	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7	270.7
	15	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1	157.1
	20	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0	81.0
	25	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2	35.2
	30	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1	12.1
	35	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1	3.1
	40	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
	45	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	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	343200	343200
	45	532	532
	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	113	113	113	113	111	111	111	111	106	106	106	101	101	101	97	97	97	95
1	110	108	106	104	107	106	104	103	102	101	99	98	97	96	95	94	94	92
2	106	103	100	97	104	101	98	96	98	96	94	95	94	92	93	92	90	89
3	103	98	95	92	101	97	94	91	95	92	90	92	90	89	90	89	87	86
4	99	94	91	88	98	93	90	87	91	89	86	90	87	85	88	86	84	83
5	96	91	87	84	95	90	86	84	89	85	83	87	84	82	86	84	82	81
6	94	88	84	81	93	87	83	81	86	83	80	85	82	80	84	81	79	78
7	91	85	81	78	90	84	81	78	83	80	78	82	79	77	81	79	77	76
8	88	82	78	76	88	82	78	75	81	78	75	80	77	75	79	77	75	74
9	86	80	76	73	85	79	76	73	79	75	73	78	75	73	77	74	72	72
10	84	77	74	71	83	77	73	71	76	73	71	76	73	71	75	73	71	70

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	391.3 Candela
Central Cone Intensity:	382 Candela
Beam Flux:	47.7 Lumens
Beam Angle (0-180):	26.4 Degrees
Beam Angle (90-270):	26.4 Degrees
Field Angle (0-180):	48.9 Degrees
Field Angle (90-270):	48.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		10.9	2.67
10.0		3.91	4.45
14.0		2.00	6.23
18.0		1.21	8.01
22.0		0.808	9.79
26.0		0.579	11.6
30.0		0.435	13.3



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	46.2	48.6%
FM	(30-60)	1.3	1.4%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	46.2	48.6%
BM	(30-60)	1.3	1.4%
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		95.1	100.0%
<b>BUG Rating</b>	<b>B0 U0 G0</b>		