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## 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-N-30 (4W, 15° OPTIC, 3000K)**

Order Number  
12250114  
Test Number  
12250114.32

Test Date

2018-04-25

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 3000K LED with 15°, narrow optic  
**Mounting:** Flood  
**Ballast/Driver:** Integrated

**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: B1 U0 G0

**Test Conditions**

Test Temperature: 24.8 °C  
Voltage: 12.02 VAC  
Current: 0.3497 A  
Power: 4.123 W  
Power Factor: 0.981  
Frequency: 60 Hz  
Current THD: 10.4 %

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
24.8 °C	12.02 VAC	0.3497 A	4.123 W	0.981	60 Hz	10.4 %

### Summary of Results

#### Spacing Criteria

0-180: 0.28

90-270: 0.28

#### Total Lumen Output:

251.8 Lumens

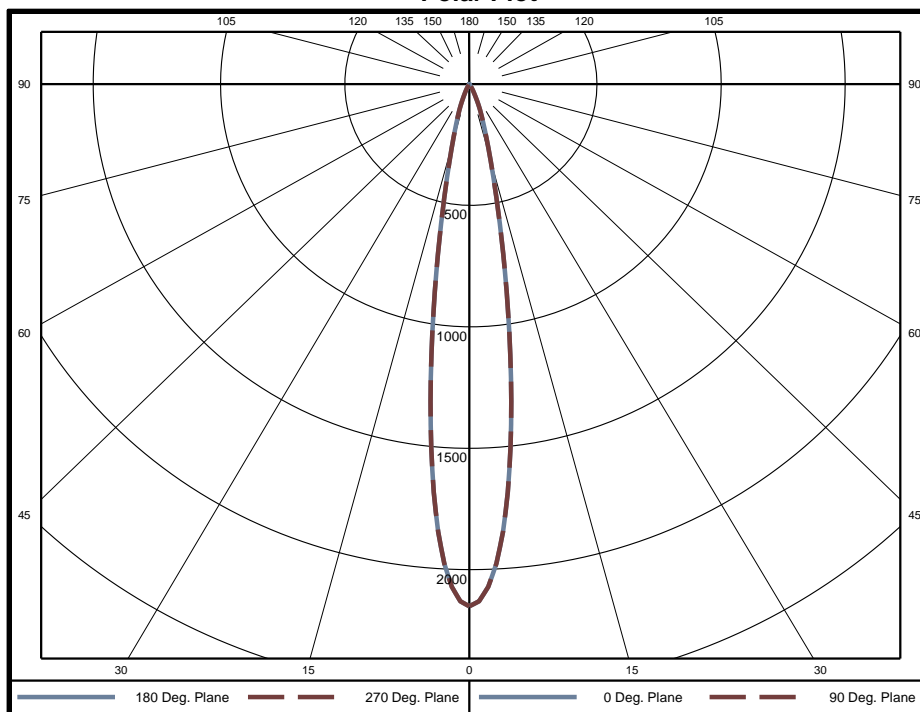
#### Luminaire Efficacy:

61.1 lm/w

#### Maximum Candela:

2151 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	45.78	18.2%	60-65	0	0.0%	120-125	0	0.0%
5-10	84.24	33.5%	65-70	0	0.0%	125-130	0	0.0%
10-15	57.49	22.8%	70-75	0	0.0%	130-135	0	0.0%
15-20	32.75	13.0%	75-80	0	0.0%	135-140	0	0.0%
20-25	18.62	7.4%	80-85	0	0.0%	140-145	0	0.0%
25-30	8.31	3.3%	85-90	0	0.0%	145-150	0	0.0%
30-35	2.95	1.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	1.07	0.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	0.42	0.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.12	0.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.00	0.0%	110-115	0	0.0%	170-175	0.00	0.0%
55-60	0	0.0%	115-120	0	0.0%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	251	99.8%
0-60	252	100.0%
0-90	252	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	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151	2151
	5	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688	1688
	10	784	784	784	784	784	784	784	784	784	784	784	784	784	784	784
	15	297	297	297	297	297	297	297	297	297	297	297	297	297	297	297
	20	134	134	134	134	134	134	134	134	134	134	134	134	134	134	134
	25	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53
	30	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	35	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	40	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	45	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	55	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
	65	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
	75	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
	85	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
	95	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
	105	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
	115	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
	125	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
	135	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
	145	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
	155	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
	165	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
	175	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

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

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	1887000	1887000
	45	574	574
	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	300	300	300	300	293	293	293	293	280	280	280	268	268	268	257	257	257	252
1	291	286	282	278	285	281	277	274	271	268	265	262	259	257	253	252	250	246
2	283	275	268	262	278	271	265	260	263	258	254	256	252	249	249	246	244	240
3	275	265	257	251	271	262	255	249	256	250	245	250	245	241	245	241	238	235
4	269	257	248	242	265	254	246	240	249	243	238	245	239	235	241	236	232	230
5	262	249	241	234	259	247	239	233	244	236	231	240	234	229	237	231	227	225
6	256	243	234	227	253	241	233	227	238	231	225	235	229	224	232	227	223	220
7	251	237	228	222	248	236	227	221	233	226	220	231	224	219	228	223	218	216
8	246	232	223	217	243	230	222	216	228	221	216	226	220	215	224	218	214	212
9	241	227	218	212	239	226	217	212	224	216	211	222	215	211	220	214	210	208
10	236	222	214	208	234	221	213	208	220	212	207	218	212	207	217	211	206	204

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2151 Candela
Central Cone Intensity:	1983 Candela
Beam Flux:	101.7 Lumens
Beam Angle (0-180):	16.6 Degrees
Beam Angle (90-270):	16.6 Degrees
Field Angle (0-180):	33.8 Degrees
Field Angle (90-270):	33.8 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
6.00		59.7	1.71
10.0		21.5	2.85
14.0		11.0	3.98
18.0		6.64	5.12
22.0		4.44	6.26
26.0		3.18	7.40
30.0		2.39	8.54



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	124.1	49.2%
FM	(30-60)	2.1	0.8%
FH	(60-80)	0.0	0.0%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	124.1	49.2%
BM	(30-60)	2.1	0.8%
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		252.3	100.0%
<b>BUG Rating</b>	<b>B1 U0 G0</b>		