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

ACCREDITED
Testing Laboratory

NVLAP LAB CODE 201042-0

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-WF-30 (2W, 60° OPTIC, 3000K)

Order Number
12250114
Test Number
12250114.26

Test Date

2018-04-23

Prepared By

Cordaryl Cousar, Technician

Approved By

Alexa Lambert, Project Handler

Luminaire Description: Cylindrical metal housing, with adjustable knuckle, clear glass lens and internal LED module
Lamp: One (1) Cree XHP 3000K LED with 60°, wide flood 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:	B0 U0 G0

Test Conditions

Test Temperature:	25.1	°C
Voltage:	12.00	VAC
Current:	0.1590	A
Power:	1.789	W
Power Factor:	0.938	
Frequency:	60	Hz
Current THD:	21.5	%

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

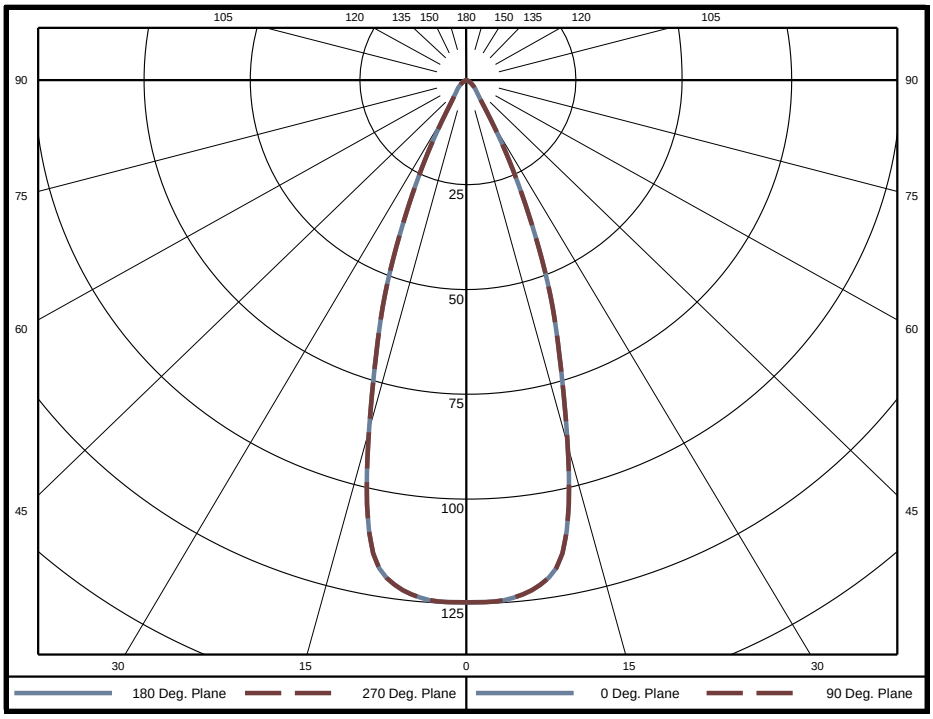
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	12.00 VAC	0.1590 A	1.789 W	0.938	60 Hz	21.5 %

Summary of Results

Spacing Criteria
0-180: 0.63
90-270: 0.63

Total Lumen Output: 57.96 Lumens
Luminaire Efficacy: 32.4 lm/w
Maximum Candela: 125 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	2.98	5.1%	60-65	0.34	0.6%	120-125	0	0.0%
5-10	8.70	15.0%	65-70	0.21	0.4%	125-130	0	0.0%
10-15	12.46	21.5%	70-75	0.10	0.2%	130-135	0	0.0%
15-20	11.81	20.4%	75-80	0.02	0.0%	135-140	0	0.0%
20-25	9.00	15.5%	80-85	0	0.0%	140-145	0	0.0%
25-30	5.08	8.8%	85-90	0	0.0%	145-150	0	0.0%
30-35	2.40	4.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	1.50	2.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	1.20	2.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	0.97	1.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	0.71	1.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.50	0.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	54	93.0%
0-60	57	98.9%
0-90	58	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	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6	124.6
5	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0	124.0
10	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3	118.3
15	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2	89.2
20	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6	57.6
25	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0
30	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3
35	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
40	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
45	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
50	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
55	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	1.3	1.3
60	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	0.9
65	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
70	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	0.3
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^2)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
0	109300	109300	109300
45	2569	2569	2569
55	1258	1258	1258
65	544	544	544
75	114	114	114
85	0	0	0

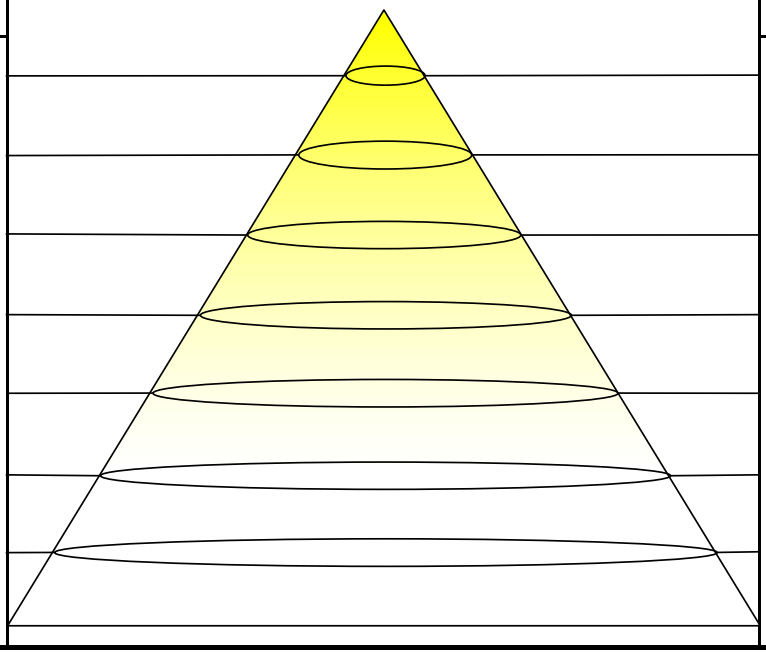
Utilization of Lumens - Zonal Cavity Method

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	69	69	69	69	67	67	67	67	64	64	64	62	62	62	59	59	59	58
1	66	65	63	62	65	63	62	61	61	60	59	59	58	58	57	56	56	55
2	63	61	59	57	62	60	58	56	58	57	55	56	55	54	55	54	53	52
3	61	57	55	53	60	57	54	53	55	53	52	54	52	51	53	51	50	49
4	58	54	52	50	57	54	51	49	53	50	49	52	50	48	50	49	48	47
5	56	52	49	47	55	51	49	47	50	48	46	49	47	46	48	47	45	45
6	54	49	46	44	53	49	46	44	48	46	44	47	45	44	47	45	43	43
7	52	47	44	42	51	47	44	42	46	44	42	45	43	42	45	43	41	41
8	50	45	42	40	49	45	42	40	44	42	40	44	41	40	43	41	40	39
9	48	43	40	38	47	43	40	38	43	40	38	42	40	38	42	40	38	37
10	46	42	39	37	46	41	39	37	41	38	37	41	38	37	40	38	37	36

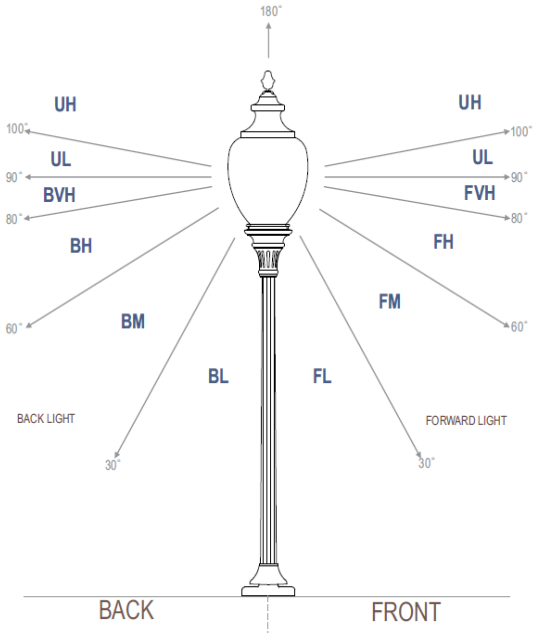
Beam and Field Information	
CIE Type:	Direct
Center Beam Intenisty:	124.6 Candela
Central Cone Intensity:	125 Candela
Beam Flux:	34.1 Lumens
Beam Angle (0-180):	38.3 Degrees
Beam Angle (90-270):	38.3 Degrees
Field Angle (0-180):	59.9 Degrees
Field Angle (90-270):	59.9 Degrees

Cone of Light Tabulation

Mounting Height (Feet)	Footcandles at Nadir	Diameter (Feet)
6.00	3.46	3.78
10.0	1.25	6.30
14.0	0.636	8.82
18.0	0.385	11.3
22.0	0.258	13.9
26.0	0.184	16.4
30.0	0.138	18.9



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	25.0	43.4%
FM	(30-60)	3.6	6.3%
FH	(60-80)	0.2	0.3%
FVH	(80-90)	0.0	0.0%
BL	(0-30)	25.0	43.4%
BM	(30-60)	3.6	6.3%
BH	(60-80)	0.2	0.3%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		57.7	100.0%
BUG Rating	**B0 U0 G0**		