



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
LSW16-WF-40 (60° OPTIC, 4000K)

Order Number
12043087
Test Number
12043087.24

Report Date

2018-02-15

Prepared By

Alexa Lambert, Project Handler

Approved By

Kevin Rodriguez, 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 brass housing with circular brass domed faceplate, clear glass lens and PVC sleeve
Lamp: One (1) Cree XP-L 4000K LED with 60° wide flood silicone optic
Mounting: Recessed - Wall
Ballast/Driver: Integrated
Note: This report has been pro-rated using data from report number 12043087.01, 12043087.02, 12043087.03, and 12043087.22 to account for differences in color temperature.

Luminaire



Luminaire Characteristics

Luminous Length: 0.75 in.
Luminous Width: 1.750 in.
Luminous Height: 0.75 in.

Summary of Results

Roadway Classification: Type I, Very Short
Cutoff Classification: Noncutoff
BUG Rating: B0 U1 G1

Test Conditions

Test Temperature: 24.7 °C
Voltage: 11.99 VAC
Current: 0.4267 A
Power: 3.088 W
Power Factor: 0.604
Frequency: 60 Hz
Current THD: 83.2 %

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
24.7 °C	11.99 VAC	0.4267 A	3.088 W	0.604	60 Hz	83.2 %

Summary of Results

Spacing Criteria

0-180: 0.85
90-270: 1.42

Total Lumen Output:

57.73 Lumens

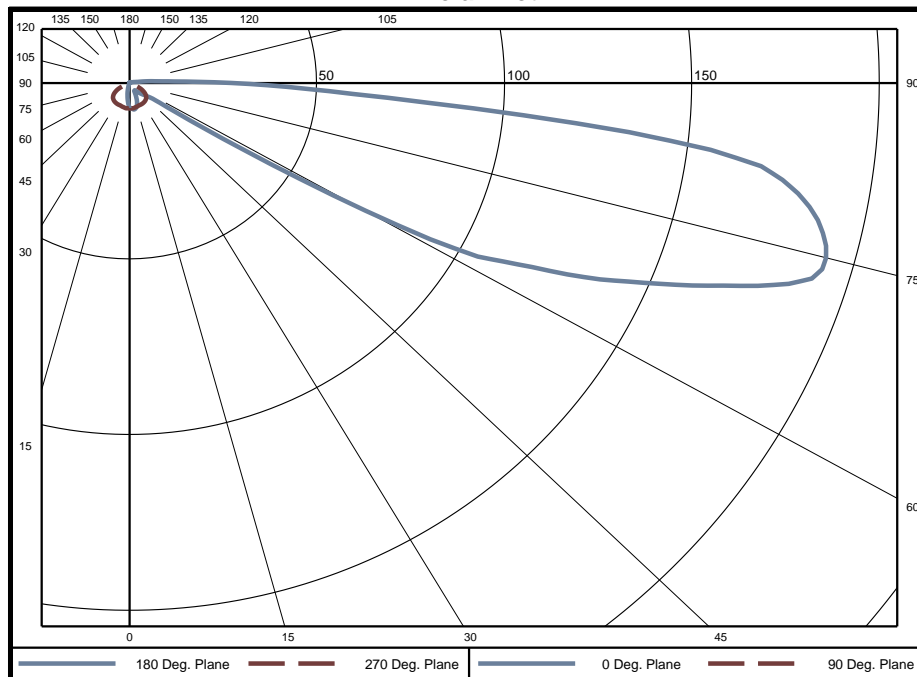
Luminaire Efficacy:

18.7 lm/w

Maximum Candela:

192 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.16	0.3%	60-65	4.59	8.0%	120-125	0.04	0.1%
5-10	0.46	0.8%	65-70	8.08	14.0%	125-130	0.02	0.0%
10-15	0.68	1.2%	70-75	11.32	19.6%	130-135	0.01	0.0%
15-20	0.83	1.4%	75-80	11.62	20.1%	135-140	0.00	0.0%
20-25	0.91	1.6%	80-85	7.67	13.3%	140-145	0.00	0.0%
25-30	0.92	1.6%	85-90	2.41	4.2%	145-150	0.00	0.0%
30-35	0.91	1.6%	90-95	0.57	1.0%	150-155	0.00	0.0%
35-40	0.93	1.6%	95-100	0.19	0.3%	155-160	0.00	0.0%
40-45	0.98	1.7%	100-105	0.11	0.2%	160-165	0.00	0.0%
45-50	1.06	1.8%	105-110	0.08	0.1%	165-170	0.00	0.0%
50-55	1.12	1.9%	110-115	0.07	0.1%	170-175	0.00	0.0%
55-60	1.91	3.3%	115-120	0.05	0.1%	175-180	0.00	0.0%

Zone	Lumens	% of Luminaire
0-40	6	10.0%
0-60	11	18.8%
0-90	57	98.0%
90-180	1	2.0%



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	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2	7.2
	5	7.4	7.3	7.3	7.4	7.2	6.6	5.9	5.5	5.2	5.5	5.9	6.6	7.2	7.4	7.3
	10	7.6	7.6	7.6	7.3	7.2	5.8	4.4	3.6	3.2	3.6	4.4	5.8	7.2	7.3	7.6
	15	7.0	7.2	7.5	7.3	7.0	4.9	3.1	2.1	1.7	2.1	3.1	4.9	7.0	7.3	7.5
	20	5.8	6.2	7.0	7.3	6.9	4.1	1.9	1.0	0.8	1.0	1.9	4.1	6.9	7.3	7.0
	25	3.9	4.4	6.3	7.3	6.8	3.4	1.1	0.5	0.3	0.5	1.1	3.4	6.8	7.3	6.3
	30	2.5	2.7	5.1	7.1	6.8	2.8	0.7	0.0	0.0	0.0	0.7	2.8	6.8	7.1	5.1
	35	2.6	2.4	3.7	6.8	6.7	2.2	0.4	0.0	0.0	0.0	0.4	2.2	6.7	6.8	3.7
	40	3.4	2.8	2.5	6.4	6.5	1.7	0.0	0.0	0.0	0.0	0.0	1.7	6.5	6.4	2.5
	45	4.3	3.4	2.3	5.8	6.2	1.3	0.0	0.0	0.0	0.0	0.0	1.3	6.2	5.8	2.3
	50	5.7	4.2	2.2	4.8	5.6	1.0	0.0	0.0	0.0	0.0	0.0	1.0	5.6	4.8	2.2
	55	9.8	5.2	2.2	3.6	4.8	0.7	0.0	0.0	0.0	0.0	0.0	0.7	4.8	3.6	2.2
	60	72.7	7.6	2.3	2.4	3.6	0.5	0.0	0.0	0.0	0.0	0.0	0.5	3.6	2.4	2.3
	65	128.8	28.2	2.2	1.4	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.3	1.8	1.4	2.2
	70	168.4	67.5	1.8	0.8	0.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.8	1.8
	75	192.2	84.6	1.1	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.6	1.1
	80	181.0	62.5	0.7	0.5	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.5	0.7
	85	105.4	11.0	0.5	0.4	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.4	0.5
	90	27.1	2.4	0.4	0.3	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.3	0.4
	95	5.7	1.0	0.3	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.3
	100	1.6	0.5	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2
	105	0.8	0.7	0.2	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.2
	110	0.6	0.6	0.1	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1
	115	0.5	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	120	0.4	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1
	125	0.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
	130	0.3	0.1	0.0	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/m²)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
		0	45	90
	0	8472	8472	8472
	45	3625	1893	7203
	55	8319	1819	6123
	65	114400	1944	2554
	75	185300	1063	707
	85	114800	517	291



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	68	68	68	68	67	67	67	67	64	64	64	61	61	61	58	58	58	57
1	55	49	44	39	53	48	43	39	45	41	37	42	39	35	39	37	34	32
2	47	38	31	25	44	37	30	24	34	28	23	31	27	23	29	25	22	20
3	41	31	23	17	39	29	22	17	27	21	16	25	20	15	23	19	15	13
4	36	26	18	13	34	25	18	12	23	17	12	21	16	11	20	15	11	9
5	33	23	15	10	31	22	15	10	20	14	9	19	13	9	17	13	9	7
6	30	20	13	8	29	19	13	8	18	12	8	17	12	8	16	11	7	6
7	28	18	12	7	27	17	11	7	16	11	7	15	10	7	14	10	6	5
8	26	16	10	6	25	16	10	6	15	10	6	14	9	6	13	9	6	4
9	24	15	9	6	23	15	9	5	14	9	5	13	8	5	12	8	5	4
10	23	14	9	5	22	14	8	5	13	8	5	12	8	5	12	8	5	3

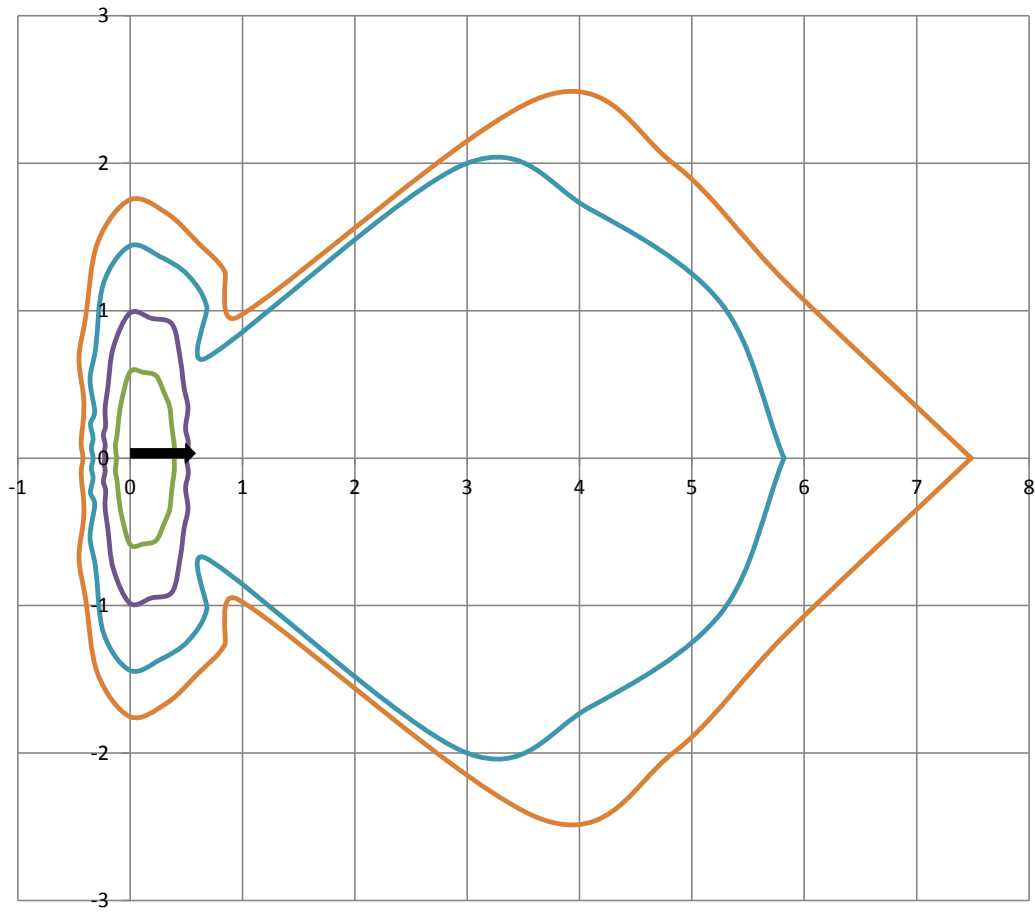
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7.2 Candela
Central Cone Intensity:	7 Candela
Beam Flux:	53.7 Lumens
Beam Angle (0-180):	105.9 Degrees
Beam Angle (90-270):	120.3 Degrees
Field Angle (0-180):	126.6 Degrees
Field Angle (90-270):	139.0 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		0.448	3.18
6.00		0.199	4.77
8.00		0.112	6.36
10.0		0.0717	7.94
12.0		0.0498	9.53
14.0		0.0366	11.1
16.0		0.0280	12.7

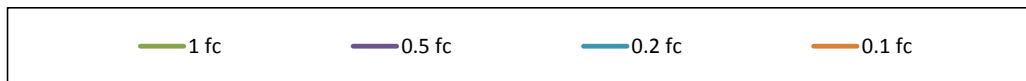


ISOFootcandle Plot

Mounting Height - 2 Feet



Grid Lines in Units of Mounting Height





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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	2.7	4.5%
FM	(30-60)	5.9	9.8%
FH	(60-80)	36.6	60.8%
FVH	(80-90)	11.4	18.9%
BL	(0-30)	1.3	2.1%
BM	(30-60)	1.1	1.8%
BH	(60-80)	0.1	0.2%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	0.7	1.2%
UH	(100-180)	0.4	0.6%
Total		60.2	100.0%
BUG Rating	B0 U1 G1		