



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

LSW4-SF-30

Order Number

12790877

Test Number

12790877.17

Test Date

2019-04-09

Prepared By

Josh Mitchell, Technician

Approved By

Alexa Lambert, Project Handler

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Luminaire Description: Cylindrical brass housing with circular brass domed faceplate, clear glass lens and PVC sleeve
Lamp: One (1) Cree MHD-E 3000K LED with 60° super flood acrylic optic
Mounting: VBU

Luminaire



Luminaire Characteristics

Luminous Length: 1.25 in.
Luminous Width: 2.250 in.
Luminous Height: 0.50 in.

Summary of Results

Roadway Classification: Type I, Very Short
Cutoff Classification: Semicutoff
BUG Rating: B0 U1 G0

Test Conditions

Test Temperature: 24.2 °C
Voltage: 12.03 VAC
Current: 0.4870 A
Power: 5.781 W
Power Factor: 0.987
Frequency: 60 Hz
Current THD: 9.23 %

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

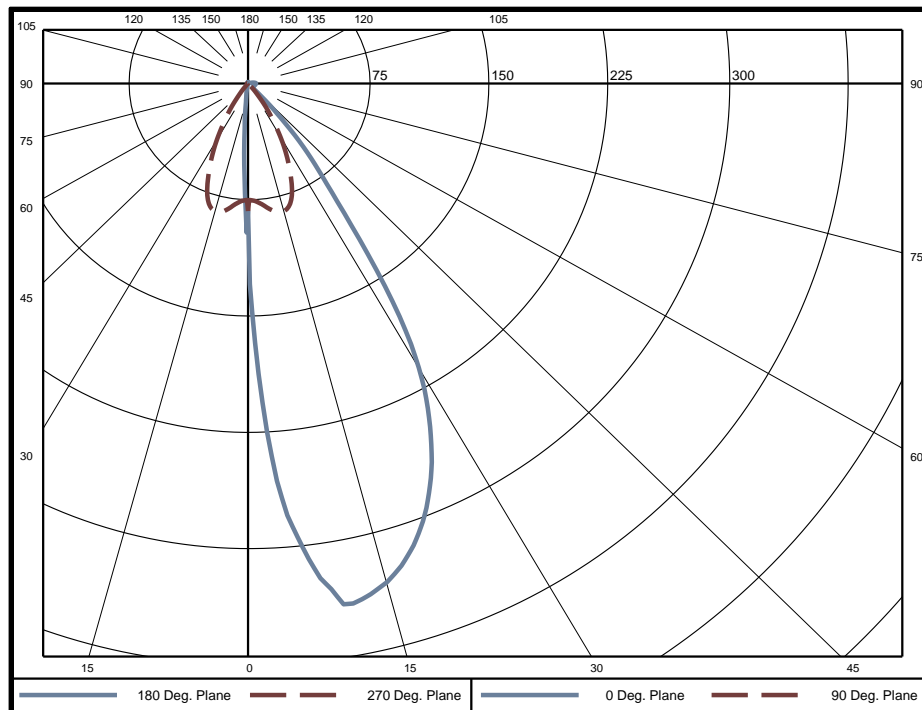
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.2 °C	12.03 VAC	0.4870 A	5.781 W	0.987	60 Hz	9.23 %

Summary of Results

Spacing Criteria
 0-180: 1.51
 90-270: 0.95

Total Lumen Output: 168.4 Lumens
Luminaire Efficacy: 29.1 lm/w
Maximum Candela: 342 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	2.33	1.4%	60-65	0.69	0.4%	120-125	0.01	0.0%
5-10	9.10	5.4%	65-70	0.73	0.4%	125-130	0.01	0.0%
10-15	17.32	10.3%	70-75	0.78	0.5%	130-135	0.02	0.0%
15-20	24.55	14.6%	75-80	0.83	0.5%	135-140	0.03	0.0%
20-25	29.03	17.2%	80-85	0.86	0.5%	140-145	0.04	0.0%
25-30	29.83	17.7%	85-90	0.87	0.5%	145-150	0.06	0.0%
30-35	24.93	14.8%	90-95	0.84	0.5%	150-155	0.07	0.0%
35-40	14.53	8.6%	95-100	0.68	0.4%	155-160	0.08	0.0%
40-45	6.29	3.7%	100-105	0.43	0.3%	160-165	0.09	0.1%
45-50	1.64	1.0%	105-110	0.18	0.1%	165-170	0.08	0.0%
50-55	0.70	0.4%	110-115	0.03	0.0%	170-175	0.06	0.0%
55-60	0.69	0.4%	115-120	0.01	0.0%	175-180	0.02	0.0%

Zone	Lumens	% of Luminaire
0-40	152	90.0%
0-60	161	95.6%
0-90	166	98.4%
90-180	3	1.6%



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	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3	82.3
	5	279.6	231.2	196.4	136.9	77.4	43.3	23.2	16.7	21.9	16.7	23.2	43.3	77.4	136.9	231.2
	10	341.1	319.4	291.5	210.0	83.1	22.6	6.7	4.4	4.6	4.4	6.7	22.6	83.1	210.0	291.5
	15	332.9	339.4	331.7	257.7	85.0	11.8	3.1	1.8	1.8	1.8	3.1	11.8	85.0	257.7	331.7
	20	308.9	322.5	331.2	272.6	76.7	5.4	1.6	1.2	1.2	1.2	1.6	5.4	76.7	272.6	331.2
	25	269.4	286.0	297.7	259.9	57.6	2.6	1.2	0.9	0.9	0.9	1.2	2.6	57.6	259.9	297.7
	30	211.6	234.1	241.6	212.0	36.8	1.6	0.9	0.8	0.8	0.8	0.9	1.6	36.8	212.0	241.6
	35	111.3	146.7	151.9	132.6	19.0	1.1	0.9	0.9	0.9	0.9	1.1	19.0	132.6	151.9	146.7
	40	53.4	65.0	64.9	53.9	6.0	0.8	0.8	0.9	1.0	0.9	0.8	0.8	6.0	53.9	64.9
	45	11.3	20.3	20.5	16.4	1.3	0.7	0.6	0.7	0.9	0.7	0.6	0.7	1.3	16.4	20.5
	50	3.8	3.6	3.4	2.6	0.9	0.5	0.5	0.5	0.5	0.5	0.5	0.9	2.6	3.4	3.6
	55	3.7	3.2	3.0	2.3	0.8	0.4	0.3	0.3	0.4	0.3	0.3	0.4	0.8	2.3	3.0
	60	3.7	3.2	3.0	2.2	0.6	0.3	0.2	0.1	0.0	0.1	0.2	0.3	0.6	2.2	3.0
	65	3.7	3.2	3.0	2.2	0.6	0.3	0.1	0.0	0.0	0.0	0.1	0.3	0.6	2.2	3.0
	70	4.0	3.4	3.2	2.3	0.5	0.2	0.1	0.0	0.0	0.0	0.1	0.2	0.5	2.3	3.2
	75	4.3	3.8	3.4	2.3	0.4	0.1	0.0	0.0	0.0	0.0	0.1	0.4	2.3	3.4	3.8
	80	4.6	4.0	3.6	2.3	0.3	0.1	0.0	0.0	0.0	0.0	0.1	0.3	2.3	3.6	4.0
	85	4.8	4.1	3.6	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3	3.6	4.1
	90	5.0	4.1	3.6	2.3	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	2.3	3.6	4.1
	95	4.6	3.8	3.3	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	3.3	3.8
	100	3.4	2.8	2.3	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	2.3	2.8
	105	1.8	1.5	1.2	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	1.2	1.5
	110	0.2	0.4	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.4	0.4
	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	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0
	135	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0	0.0	0.0
	140	0.0	0.0	0.0	0.0	0.1	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.0	0.0	0.0
	145	0.0	0.0	0.0	0.1	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.2	0.2	0.1	0.0
	150	0.0	0.0	0.0	0.1	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.3	0.2	0.1	0.0
	155	0.0	0.0	0.1	0.2	0.3	0.5	0.6	0.7	0.7	0.7	0.6	0.5	0.3	0.2	0.1
	160	0.1	0.1	0.2	0.3	0.4	0.6	0.7	0.8	0.8	0.8	0.7	0.6	0.4	0.3	0.2
	165	0.3	0.3	0.4	0.5	0.6	0.7	0.8	0.9	0.9	0.9	0.8	0.7	0.6	0.5	0.4
	170	0.7	0.6	0.7	0.7	0.7	0.8	0.9	0.9	0.9	0.9	0.8	0.7	0.7	0.7	0.6
	175	0.9	0.8	0.8	0.8	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.8	0.8	0.8	0.8
	180	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

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	45370	45370
	45	6280	818
	55	2264	547
	65	2614	523
	75	3706	520
	85	5419	437



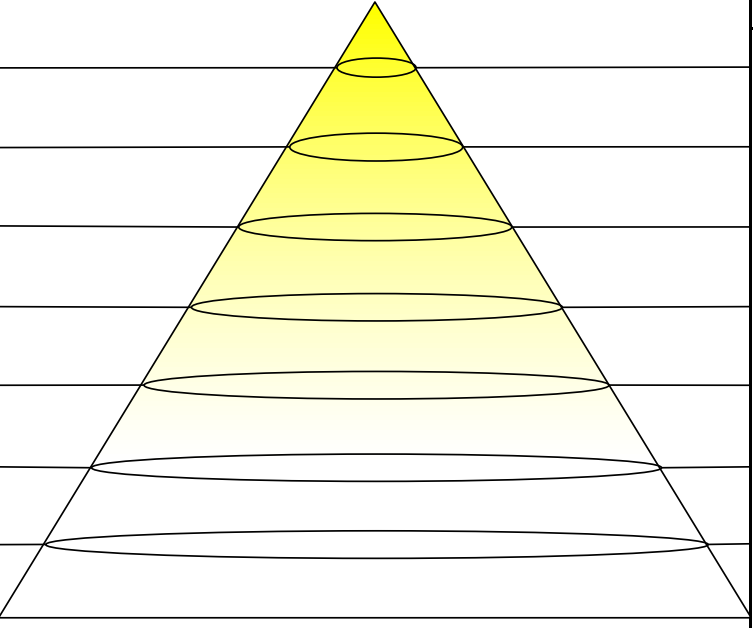
Utilization of Lumens - Zonal Cavity Method

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	200	200	200	200	195	195	195	195	186	186	186	177	177	177	169	169	169	166
1	189	184	179	175	185	180	176	172	173	169	166	166	163	161	160	158	156	152
2	179	170	163	156	175	167	160	154	161	155	151	156	151	147	150	147	144	141
3	169	158	149	142	166	155	147	140	150	143	138	146	140	135	142	137	133	130
4	160	147	137	129	157	145	135	128	141	133	126	137	130	125	133	128	123	120
5	152	137	126	119	149	135	125	118	132	123	117	128	121	115	125	119	114	111
6	144	128	117	109	141	126	116	109	123	114	108	121	113	107	118	111	106	103
7	136	119	109	101	133	118	108	101	116	107	100	113	105	99	111	104	99	96
8	129	112	101	94	127	111	101	94	109	100	93	107	99	93	105	98	92	90
9	122	105	95	88	120	104	94	87	102	93	87	101	92	87	99	92	86	84
10	116	99	89	82	114	98	88	82	97	88	81	95	87	81	94	86	81	78

Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	82.3 Candela
Central Cone Intensity:	93 Candela
Beam Flux:	151.2 Lumens
Beam Angle (0-180):	44.5 Degrees
Beam Angle (90-270):	58.0 Degrees
Field Angle (0-180):	52.8 Degrees
Field Angle (90-270):	77.4 Degrees

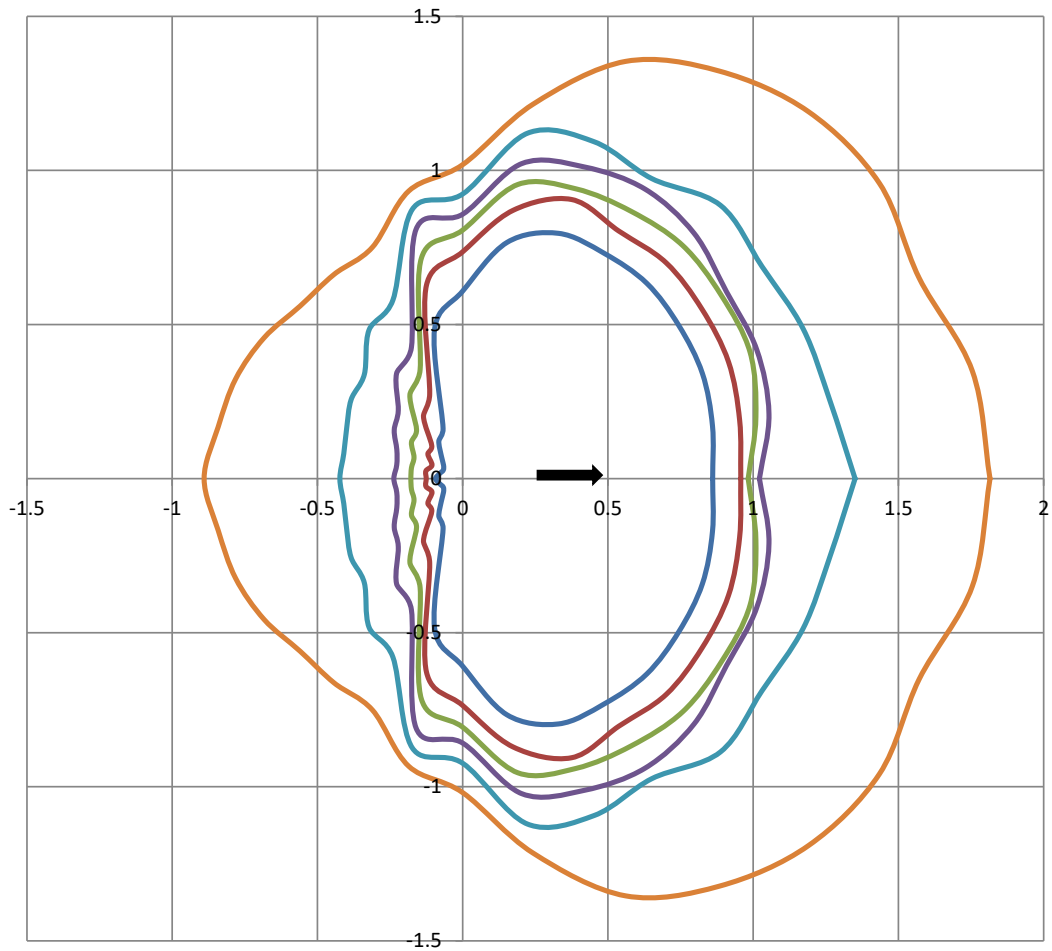
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		5.15	5.40
6.00		2.29	8.10
8.00		1.29	10.8
10.0		0.823	13.5
12.0		0.572	16.2
14.0		0.420	18.9
16.0		0.322	21.6



ISOFootcandle Plot

Mounting Height - 2 Feet



Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc



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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	107.9	63.7%
FM	(30-60)	48.6	28.7%
FH	(60-80)	2.9	1.7%
FVH	(80-90)	1.7	1.0%
BL	(0-30)	4.4	2.6%
BM	(30-60)	1.1	0.6%
BH	(60-80)	0.1	0.1%
BVH	(80-90)	0.0	0.0%
UL	(90-100)	1.5	0.9%
UH	(100-180)	1.2	0.7%
Total		169.5	100.0%
BUG Rating	B0 U1 G0		