



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

Stacia Elmore
2742 Loker Ave W
#100
Carlsbad, CA 92010-6619
United States

Catalog Number
HSL16/HSL20-LM-4-WF-30 (4W, 50° WIDE FLOOD OPTIC, 3000K)

Order Number
13931356
Test Number
13931356.28

Test Date

2021-07-30

Prepared By

A handwritten signature in black ink, appearing to read 'Josh Mitchell'.

Josh Mitchell, Technician

Approved By

A handwritten signature in black ink, appearing to read 'Alexa Lambert'.

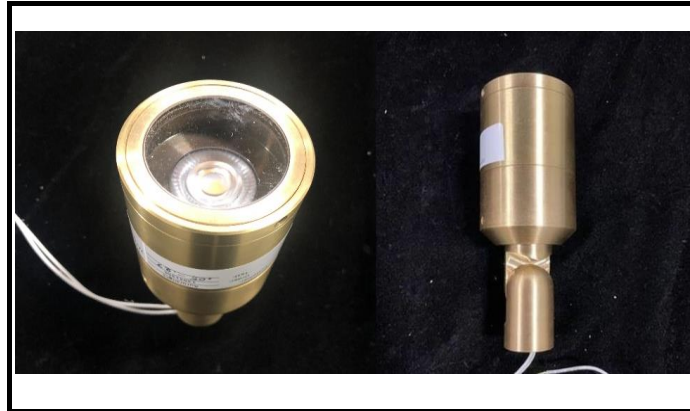
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Cylindrical brass body with adjustable knuckle
Lamp: One white LED
Mounting: Flood
Ballast/Driver: Integral
Note: Report extrapolated using data from Test Numbers 13931356.05, 13931356.08, and 13931356.13

Luminaire



Luminaire Characteristics

Luminous Diameter: 1.88 in.

Summary of Results

Roadway Classification: Type V, Very Short
Cutoff Classification: Full Cutoff
BUG Rating: B1 U0 G0

Test Conditions

Test Temperature: 25.0 °C
Voltage: 12.21 VAC
Current: 0.3481 A
Power: 3.706 W
Power Factor: 0.872
Frequency: 60 Hz
Current THD: 47.8 %

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
25.0 °C	12.21 VAC	0.3481 A	3.706 W	0.872	60 Hz	47.8 %

Summary of Results

Spacing Criteria

0-180: 0.79

90-270: 0.79

Total Lumen Output:

343.5 Lumens

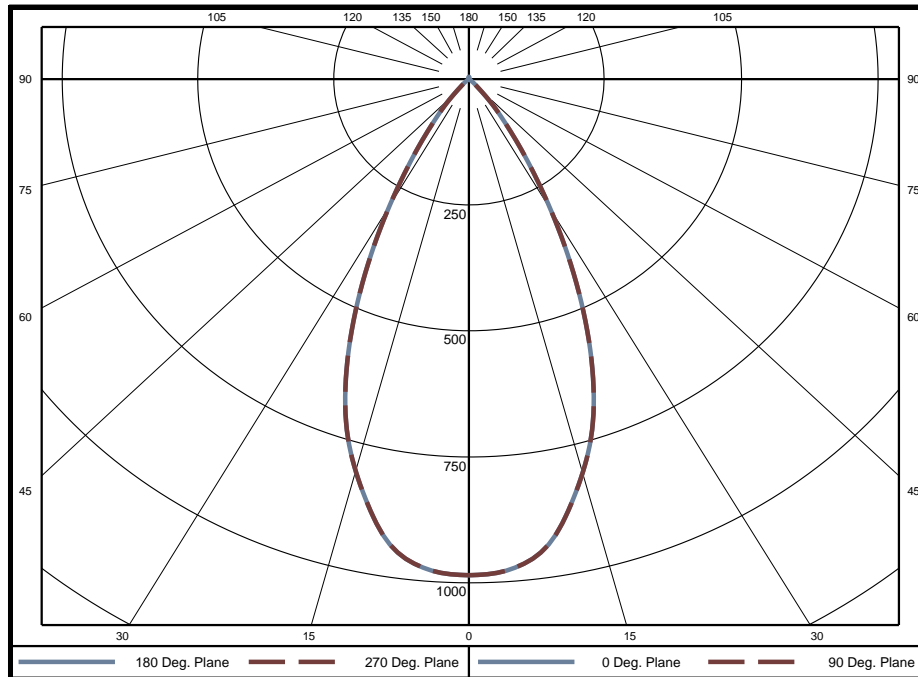
Luminaire Efficacy:

92.7 lm/w

Maximum Candela:

506 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	12.03	3.5%	60-65	0.31	0.1%	120-125	0	0.0%
5-10	34.85	10.1%	65-70	0.26	0.1%	125-130	0	0.0%
10-15	52.47	15.3%	70-75	0.21	0.1%	130-135	0	0.0%
15-20	62.68	18.2%	75-80	0.14	0.0%	135-140	0	0.0%
20-25	62.29	18.1%	80-85	0.07	0.0%	140-145	0	0.0%
25-30	50.87	14.8%	85-90	0.03	0.0%	145-150	0	0.0%
30-35	33.95	9.9%	90-95	0	0.0%	150-155	0	0.0%
35-40	19.17	5.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	8.84	2.6%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.39	1.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	1.41	0.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.54	0.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	328	95.6%
0-60	342	99.7%
0-90	344	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	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8	505.8
	5	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9	499.9
	10	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7	471.7
	15	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0	415.0
	20	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3	344.3
	25	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7	250.7
	30	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3	155.3
	35	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0	82.0
	40	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6	38.6
	45	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
	50	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4
	55	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	60	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	65	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
	70	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
	75	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
	80	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
	85	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
	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/m²)

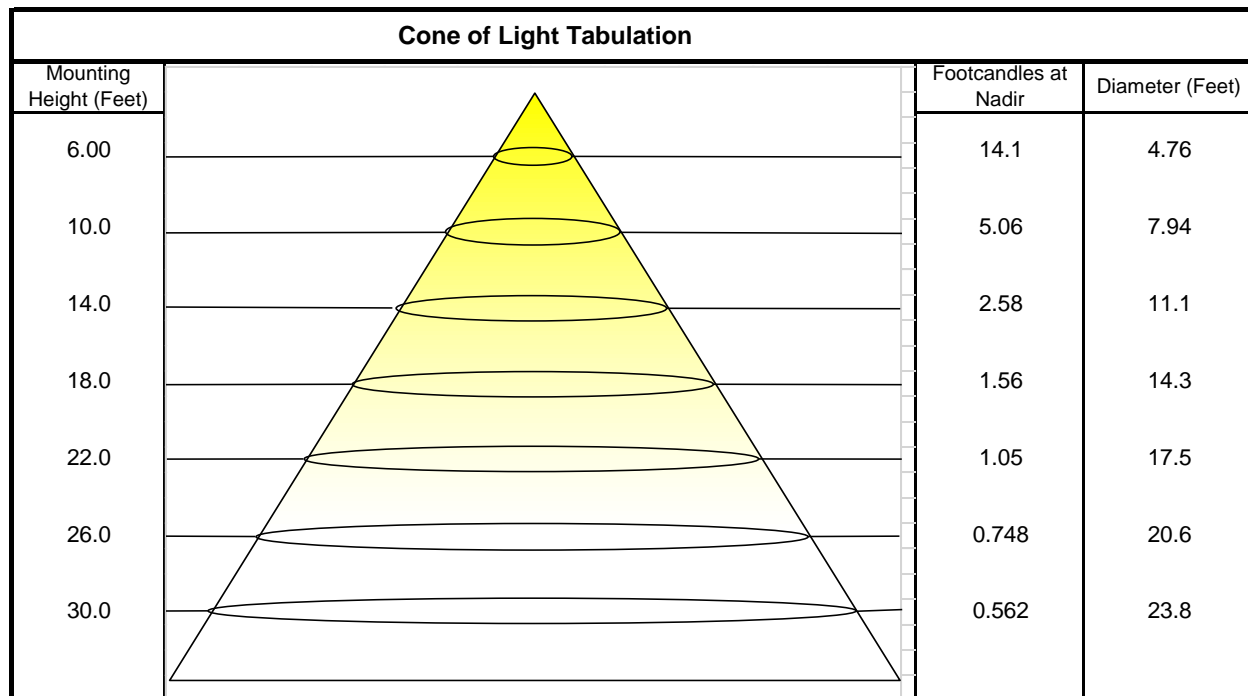
Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
	0	45	90	
	0	282400	282400	282400
	45	9945	9945	9945
	55	1735	1735	1735
	65	742	742	742
	75	716	716	716
	85	540	540	540



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	409	409	409	409	399	399	399	399	382	382	382	365	365	365	351	351	351	343
1	391	382	374	367	383	375	368	361	361	355	350	348	344	340	337	333	330	324
2	374	358	345	334	366	352	340	330	341	332	323	331	323	316	322	315	310	304
3	357	336	320	308	350	331	317	305	323	310	300	314	304	296	307	298	291	286
4	340	316	299	285	334	312	296	284	305	291	280	298	287	277	292	282	274	269
5	325	298	280	266	319	295	278	265	289	274	263	284	271	260	278	267	258	253
6	310	282	263	249	305	279	261	248	274	259	247	270	256	245	265	253	244	239
7	296	267	248	234	292	265	247	234	260	244	233	257	242	231	253	240	230	226
8	283	253	234	221	280	251	233	221	248	231	220	244	230	219	241	228	218	214
9	271	241	222	209	268	239	221	209	236	220	208	233	218	207	230	217	207	202
10	260	229	211	198	257	228	210	198	225	209	197	222	208	197	220	206	196	192

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	505.8 Candela
Central Cone Intensity:	504 Candela
Beam Flux:	222.5 Lumens
Beam Angle (0-180):	49.8 Degrees
Beam Angle (90-270):	49.8 Degrees
Field Angle (0-180):	76.5 Degrees
Field Angle (90-270):	76.5 Degrees





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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	267.8	40.0%
FM	(30-60)	65.9	9.8%
FH	(60-80)	0.9	0.1%
FVH	(80-90)	0.1	0.0%
BL	(0-30)	267.8	40.0%
BM	(30-60)	65.9	9.8%
BH	(60-80)	0.9	0.1%
BVH	(80-90)	0.1	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		669.2	100.0%
BUG Rating	B1 U0 G0		