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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
Auroralight Inc

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United States

Catalog Number
HSL16/HSL20-LM-12-N-30 (12W, 20° NARROW OPTIC, 3000K)

Order Number

13931356

Test Number

13931356.09A

Revision of Test Number 13931356.09 on:

2021-08-04

Test Date

2021-07-29

Prepared By

Josh Mitchell, Technician

Approved By

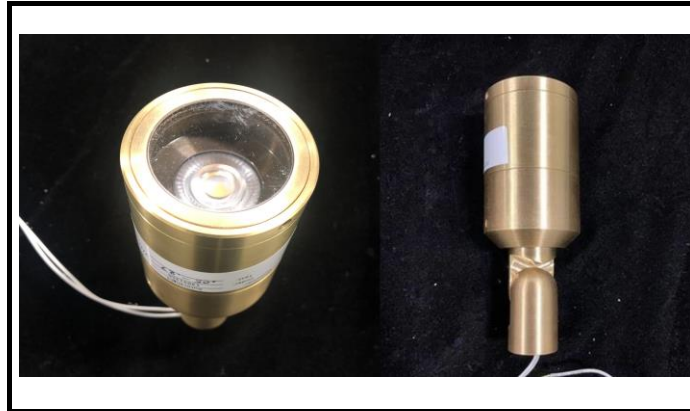
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Cylindrical brass body with adjustable knuckle
Lamp: One white LED
Mounting: Flood
Ballast/Driver: Integral

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: 25.5 °C
Voltage: 12.10 VAC
Current: 0.9046 A
Power: 10.93 W
Power Factor: 0.998
Frequency: 60 Hz
Current THD: 5.21 %

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
25.5 °C	12.10 VAC	0.9046 A	10.93 W	0.998	60 Hz	5.21 %

Summary of Results

Spacing Criteria

0-180: 0.34
90-270: 0.34

Total Lumen Output:

549.7 Lumens

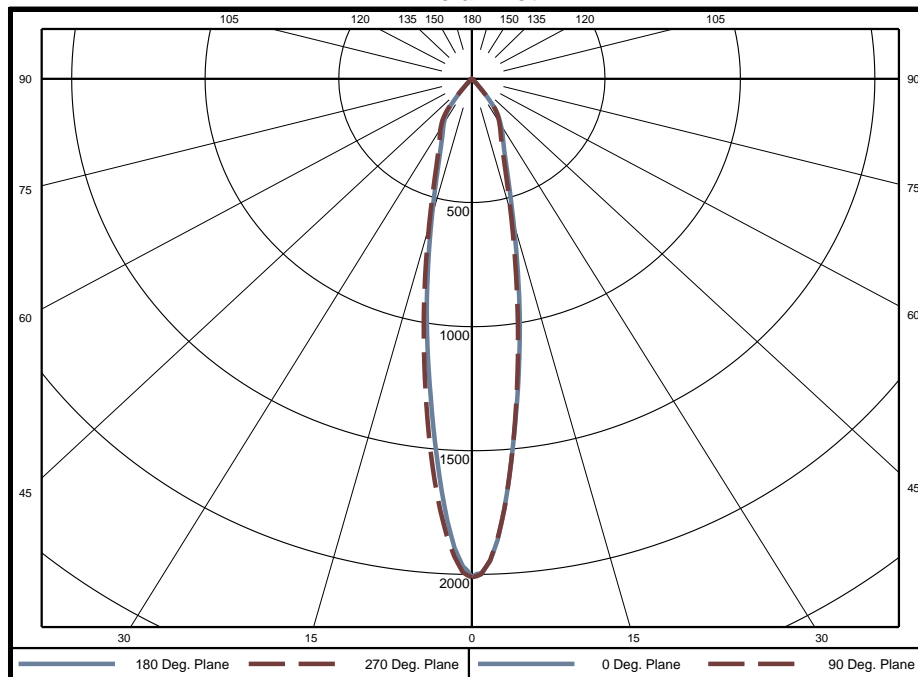
Luminaire Efficacy:

50.3 lm/w

Maximum Candela:

2010 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	42.70	7.8%	60-65	1.18	0.2%	120-125	0	0.0%
5-10	90.41	16.4%	65-70	1.02	0.2%	125-130	0	0.0%
10-15	92.16	16.8%	70-75	0.84	0.2%	130-135	0	0.0%
15-20	77.36	14.1%	75-80	0.57	0.1%	135-140	0	0.0%
20-25	66.75	12.1%	80-85	0.32	0.1%	140-145	0	0.0%
25-30	62.23	11.3%	85-90	0.12	0.0%	145-150	0	0.0%
30-35	57.38	10.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	38.33	7.0%	95-100	0	0.0%	155-160	0	0.0%
40-45	10.49	1.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.94	0.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	2.36	0.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	1.55	0.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	527	95.9%
0-60	546	99.3%
0-90	550	100.0%
90-180	0	0.0%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010	2010
5	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594	1594
10	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016	1016
15	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597	597
20	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377	377
25	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275	275
30	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221	221
35	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167	167
40	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
45	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
50	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
55	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
60	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
70	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
85	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
95	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
105	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
115	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
125	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
135	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
145	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
155	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
165	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
175	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

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

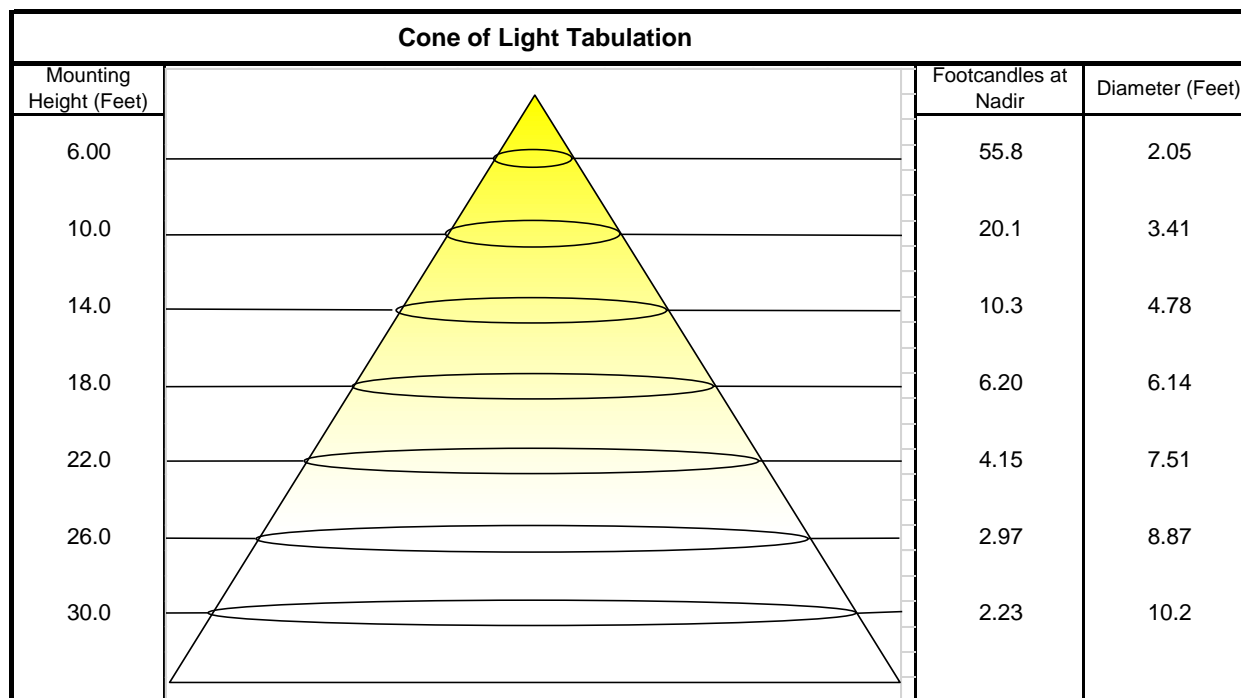
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	1123000	1123000	1123000
45	10540	10540	10540
55	3915	3915	3915
65	2893	2893	2893
75	2920	2920	2920
85	2413	2413	2413



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	654	654	654	654	639	639	639	639	611	611	611	585	585	585	561	561	561	550
1	627	614	601	590	614	602	591	581	580	571	563	559	553	546	541	535	530	521
2	601	577	557	540	589	568	550	534	550	535	523	534	522	512	519	510	501	493
3	575	544	520	501	565	537	515	497	523	504	489	510	494	481	498	485	474	466
4	551	515	488	468	542	509	484	465	497	476	460	487	469	455	477	462	449	442
5	529	489	461	440	520	484	458	438	474	452	434	466	446	431	457	441	427	420
6	507	465	436	416	500	461	434	414	453	429	412	446	425	409	439	421	406	399
7	487	443	415	395	481	440	413	394	433	409	392	427	406	390	421	402	388	381
8	469	424	395	376	463	421	394	375	415	391	373	410	388	372	405	385	370	364
9	451	406	378	359	446	403	376	358	398	374	357	394	372	356	390	370	355	348
10	435	389	362	344	430	387	361	343	383	359	342	379	357	341	375	355	340	334

Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2010 Candela
Central Cone Intensity:	1850 Candela
Beam Flux:	135.9 Lumens
Beam Angle (0-180):	20.2 Degrees
Beam Angle (90-270):	20.2 Degrees
Field Angle (0-180):	64.0 Degrees
Field Angle (90-270):	64.0 Degrees





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



Luminaire Classification System (LCS)

LCS	Zone	Lumens	Luminaire %
FL	(0-30)	216.1	39.3%
FM	(30-60)	57.0	10.4%
FH	(60-80)	1.8	0.3%
FVH	(80-90)	0.2	0.0%
BL	(0-30)	216.1	39.3%
BM	(30-60)	57.0	10.4%
BH	(60-80)	1.8	0.3%
BVH	(80-90)	0.2	0.0%
UL	(90-100)	0.0	0.0%
UH	(100-180)	0.0	0.0%
Total		550.2	100.0%
BUG Rating	B1 U0 G0		



Attachment A

Amended Report Documentation

[illegible]