



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



## Indoor Distribution Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-10-2014

Prepared For  
**H E Williams Inc**  
831 W Fairview Ave  
PO Box 837  
Carthage, MO 64836-0837  
United States

Catalog Number  
**2AR-L12/835-DIM-UNV-AN-OF-WH-x-xx (0° TILT)**  
Order Number  
13257190  
Test Number  
13257190.23

Test Date

2020-03-18

Prepared By

Jesse Litchfield, Technician

Approved By

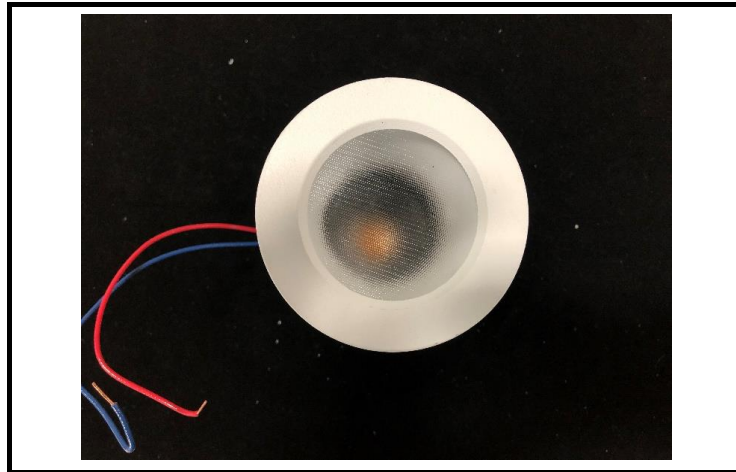
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Aluminum housing, optics, and trim enclosure  
**Lamp:** One white LED  
**Mounting:** Recessed  
**Ballast/Driver:** One Philips Advance XI025C070V054DSM1 Driver

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 2.50 in.

**Summary of Results**

Total Luminaire Output:	699.4 Lumens
Luminaire Efficacy:	33.4 lm/w
Maximum Candela:	4245 Candela

**Test Conditions**

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.1753 A
Power:	20.92 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.87 %

Laboratory results may not be representative of field performance  
Ballast factors have not been applied



## Distribution - Goniophotometer

### Distribution Test Conditions

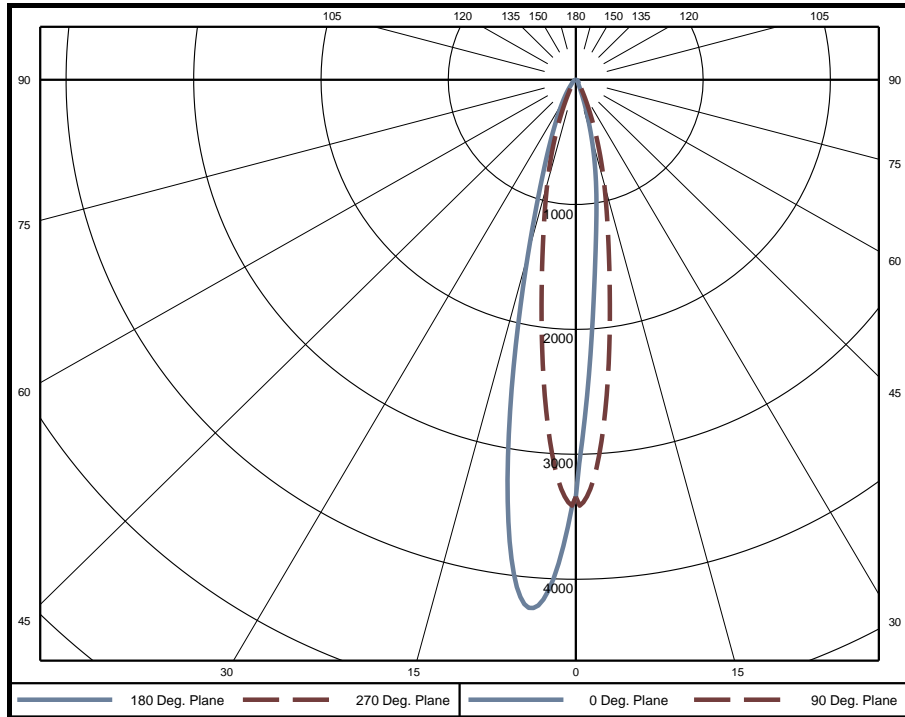
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.1753 A	20.92 W	0.995	60 Hz	8.87 %

### Summary of Results

**Spacing Criteria**  
 0-180: 0.17  
 90-270: 0.31

**Total Lumen Output:** 699.4 Lumens  
**Luminaire Efficacy:** 33.4 lm/w  
**Maximum Candela:** 4245 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	73.8	10.6%	60-65	7.2	1.0%	120-125	0	0.0%
5-10	161.7	23.1%	65-70	5.3	0.8%	125-130	0	0.0%
10-15	150.3	21.5%	70-75	3.6	0.5%	130-135	0	0.0%
15-20	103.6	14.8%	75-80	2.1	0.3%	135-140	0	0.0%
20-25	63.6	9.1%	80-85	0.9	0.1%	140-145	0	0.0%
25-30	37.8	5.4%	85-90	0.3	0.0%	145-150	0	0.0%
30-35	24.1	3.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	17.1	2.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	14.1	2.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	12.8	1.8%	105-110	0	0.0%	165-170	0	0.0%
50-55	11.4	1.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	9.6	1.4%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	632	90.4%
0-60	680	97.2%
0-90	699	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	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340	3340
5	1665	1704	1901	2210	2662	3238	3810	4230	4245	4230	3810	3238	2662	2210	1901	1704
10	933	957	1074	1251	1521	1904	2438	2998	3067	2998	2438	1904	1521	1251	1074	957
15	476	494	590	722	866	973	1158	1403	1453	1403	1158	973	866	722	590	494
20	189	197	255	345	451	520	608	667	686	667	608	520	451	345	255	197
25	74	76	96	136	198	253	322	360	369	360	322	253	198	136	96	76
30	42	42	49	64	92	121	165	203	211	203	165	121	92	64	49	42
35	31	32	35	41	53	66	86	114	123	114	86	66	53	41	35	32
40	28	28	29	32	38	45	55	67	71	67	55	45	38	32	29	28
45	27	27	27	28	31	36	42	47	47	47	42	36	31	28	27	27
50	25	25	25	25	27	30	34	36	36	36	34	30	27	25	25	25
55	22	22	22	22	22	24	26	27	27	27	26	24	22	22	22	22
60	19	18	18	17	17	17	17	18	19	18	17	17	17	17	18	19
65	15	14	14	13	12	12	11	10	10	10	11	12	12	13	14	15
70	10	10	10	9	9	9	8	7	6	7	8	9	9	9	10	10
75	5	5	6	6	6	6	5	4	4	4	5	6	6	6	6	5
80	1	1	2	3	3	3	3	3	3	3	3	3	3	3	2	1
85	0	0	1	1	1	1	2	2	2	2	2	1	1	1	1	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/m<sup>2</sup>)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	1055000	1055000	1055000
45	11880	12080	13930
55	12320	12080	12100
65	10840	10330	9176
75	6567	6833	7647
85	949	1844	3650



### Coefficients of Utilization - 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 percent of total lumen output delivered to the task surface **																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	105	102	99	107	104	101	98	101	98	96	98	96	94	95	93	92	90
3	105	100	96	92	103	99	95	92	96	93	90	94	91	89	92	89	87	86
4	101	95	91	87	100	94	90	87	92	88	86	90	87	85	88	86	84	82
5	98	91	86	83	96	90	86	82	88	85	82	87	84	81	85	83	80	79
6	95	87	83	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76
7	91	84	79	76	90	84	79	76	82	78	75	81	78	75	80	77	75	74
8	89	81	76	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71
9	86	79	74	71	85	78	74	71	77	73	70	76	73	70	76	72	70	69
10	84	76	72	69	83	76	71	69	75	71	68	74	71	68	74	70	68	67

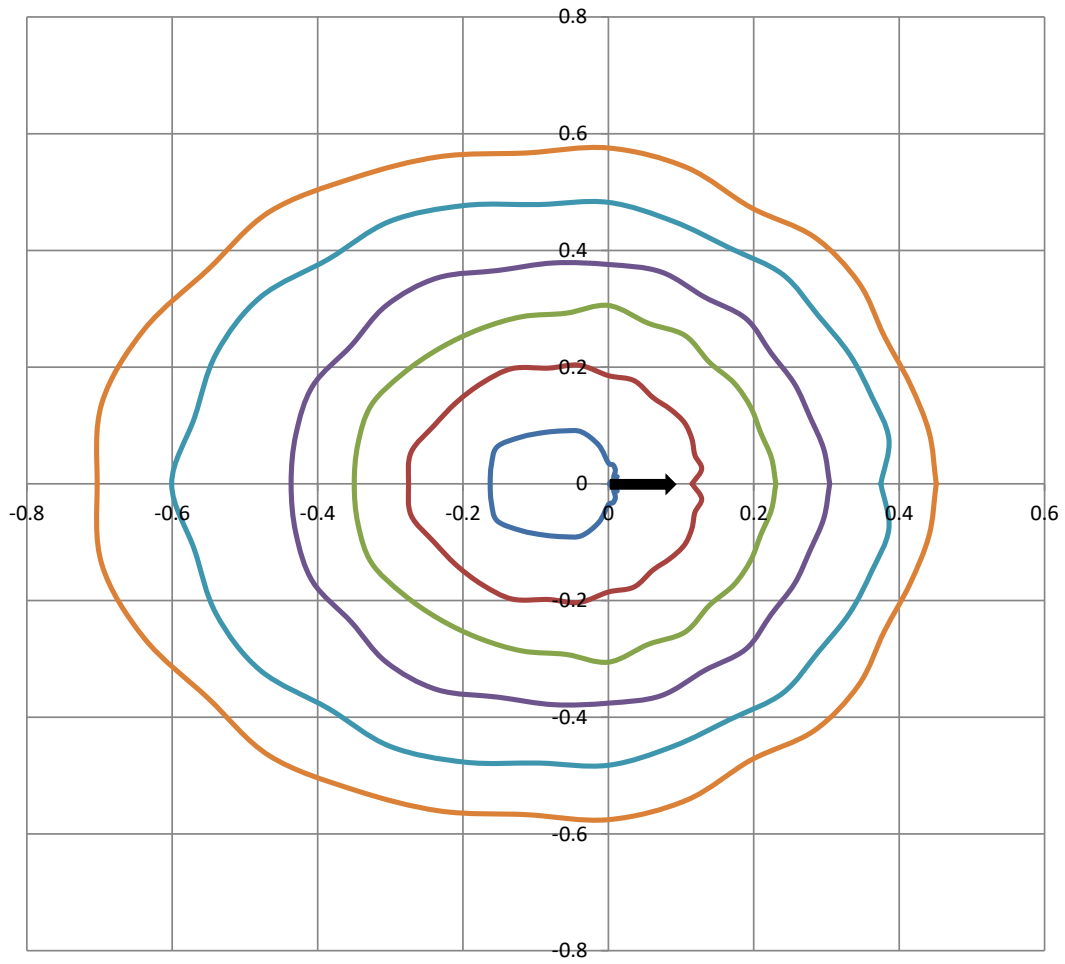
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3340 Candela
Central Cone Intensity:	3160 Candela
Beam Flux:	255.8 Lumens
Beam Angle (0-180):	19.1 Degrees
Beam Angle (90-270):	18.4 Degrees
Field Angle (0-180):	42.9 Degrees
Field Angle (90-270):	43.8 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		209	1.42
6.00		92.8	2.13
8.00		52.2	2.85
10.0		33.4	3.56
12.0		23.2	4.27
14.0		17.0	4.98
16.0		13.0	5.69



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

50 fc    20 fc    10 fc    5 fc    2 fc    1 fc