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Allentown, PA 18106  
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## 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-ON-OF-CS-x-xx (45° TILT)**  
Order Number  
13257190  
Test Number  
13257190.18

Test Date

2020-03-18

Prepared By

Jesse Litchfield, Technician

Approved By

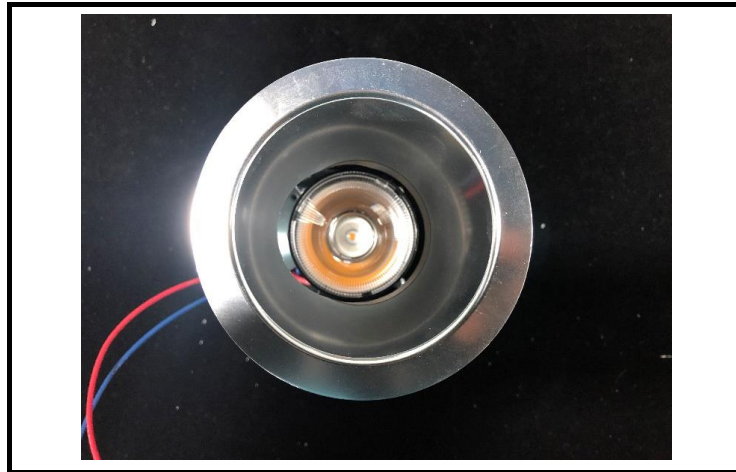
Alexa Lambert, Project Handler

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:	905.2 Lumens
Luminaire Efficacy:	43.3 lm/w
Maximum Candela:	9408 Candela

**Test Conditions**

Test Temperature:	24.4 °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

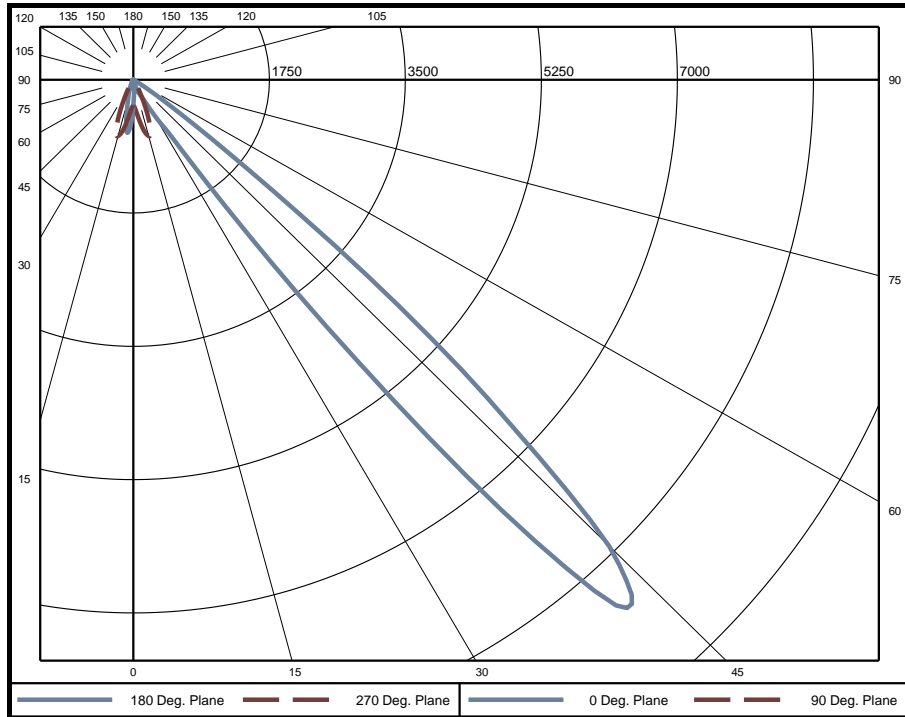
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.0 VAC	0.1753 A	20.92 W	0.995	60 Hz	8.87 %

### Summary of Results

**Spacing Criteria**  
 0-180: 2.71  
 90-270: 0.97

**Total Lumen Output:** 905.2 Lumens  
**Luminaire Efficacy:** 43.3 lm/w  
**Maximum Candela:** 9408 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	9.0	1.0%	60-65	2.5	0.3%	120-125	0	0.0%
5-10	30.9	3.4%	65-70	1.6	0.2%	125-130	0	0.0%
10-15	47.3	5.2%	70-75	1.3	0.1%	130-135	0	0.0%
15-20	55.1	6.1%	75-80	1.2	0.1%	135-140	0	0.0%
20-25	60.4	6.7%	80-85	1.1	0.1%	140-145	0	0.0%
25-30	61.1	6.7%	85-90	1.1	0.1%	145-150	0	0.0%
30-35	61.0	6.7%	90-95	0	0.0%	150-155	0	0.0%
35-40	122.7	13.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	230.1	25.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	166.0	18.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	44.8	4.9%	110-115	0	0.0%	170-175	0	0.0%
55-60	8.0	0.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	448	49.4%
0-60	896	99.0%
0-90	905	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	335	335	335	335	335	335	335	335	335	335	335	335	335	335	335
	5	120	132	183	280	419	555	621	654	672	654	621	555	419	280	183
	10	73	87	149	345	617	724	657	576	523	576	657	724	617	345	149
	15	59	76	180	527	765	574	360	284	257	284	360	574	765	527	180
	20	158	100	302	696	606	279	181	157	149	157	181	279	606	696	302
	25	241	250	492	620	281	138	103	89	83	89	103	138	281	620	492
	30	515	390	506	291	115	71	56	49	46	49	56	71	115	291	506
	35	1655	467	235	109	52	38	34	31	29	31	34	38	52	109	235
	40	7387	423	69	53	28	24	22	21	19	21	22	24	28	53	69
	45	8664	278	27	21	18	16	16	15	14	15	16	16	18	21	27
	50	3379	73	14	12	11	12	12	11	10	11	12	12	11	12	14
	55	429	26	9	6	8	8	8	7	6	7	8	8	8	6	9
	60	40	9	4	4	5	5	5	5	4	5	5	5	5	4	4
	65	4	4	3	4	4	4	4	4	3	4	4	4	4	3	4
	70	1	2	3	3	3	3	3	3	2	3	3	3	3	3	2
	75	1	3	2	2	3	3	3	3	1	3	3	3	3	2	2
	80	1	2	2	2	2	2	3	2	1	2	3	2	2	2	2
	85	0	2	2	2	3	2	2	2	1	2	2	2	3	2	2
	90	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
	100	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
	110	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
	120	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
	130	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
	140	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
	150	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
	160	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
	170	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
	180	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)	0	45	90
	0	105700	105700
	45	3869000	11880
	55	236300	4887
	65	2974	2044
	75	1041	2708
	85	1007	8134



### 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	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	92	90
2	104	97	92	88	101	96	91	87	92	88	85	89	86	83	86	83	81	79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	72	78	74	71	69
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61
5	82	71	63	57	80	70	63	57	68	61	57	66	60	56	64	59	55	54
6	76	64	56	50	74	63	56	50	62	55	50	60	54	49	58	53	49	47
7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42
8	65	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	48	41	36	60	48	41	35	47	40	35	46	40	35	45	39	35	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

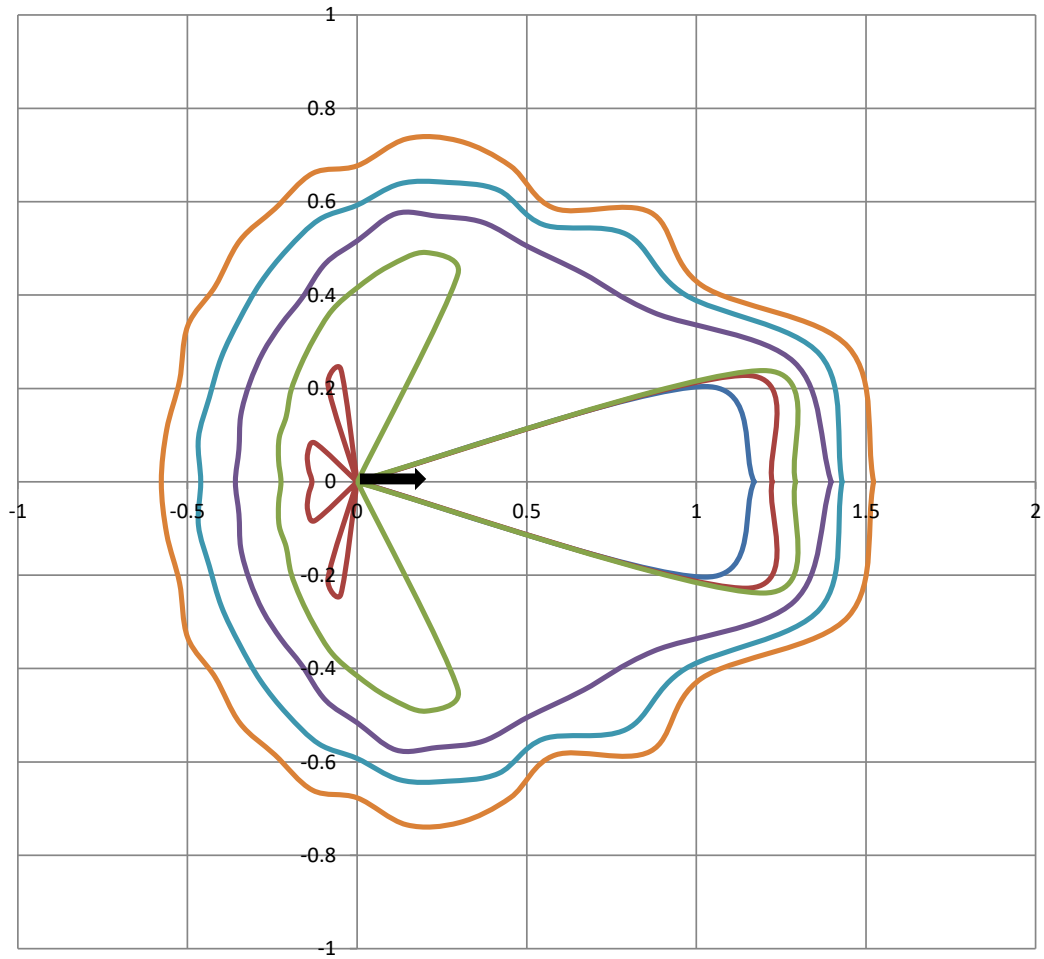
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	335 Candela
Central Cone Intensity:	366 Candela
Beam Flux:	816.1 Lumens
Beam Angle (0-180):	76.2 Degrees
Beam Angle (90-270):	55.3 Degrees
Field Angle (0-180):	94.0 Degrees
Field Angle (90-270):	77.1 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		20.9	8.35
6.00		9.30	12.5
8.00		5.23	16.7
10.0		3.35	20.9
12.0		2.33	25.1
14.0		1.71	29.2
16.0		1.31	33.4



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

20 fc    10 fc    5 fc    2 fc    1 fc    0.5 fc