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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-AN-OF-WH-x-xx (45° TILT)**  
Order Number  
13257190  
Test Number  
13257190.24

Test Date

2020-03-18

Prepared By

Jesse Litchfield, Technician

Approved By

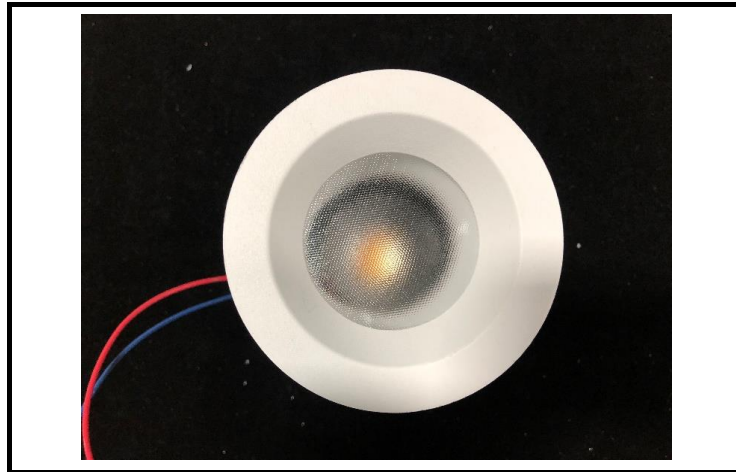
Alexa Lambert, Project Handler

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:	347.6 Lumens
Luminaire Efficacy:	16.6 lm/w
Maximum Candela:	1379 Candela

**Test Conditions**

Test Temperature:	24.5 °C
Voltage:	120.0 VAC
Current:	0.1753 A
Power:	20.93 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

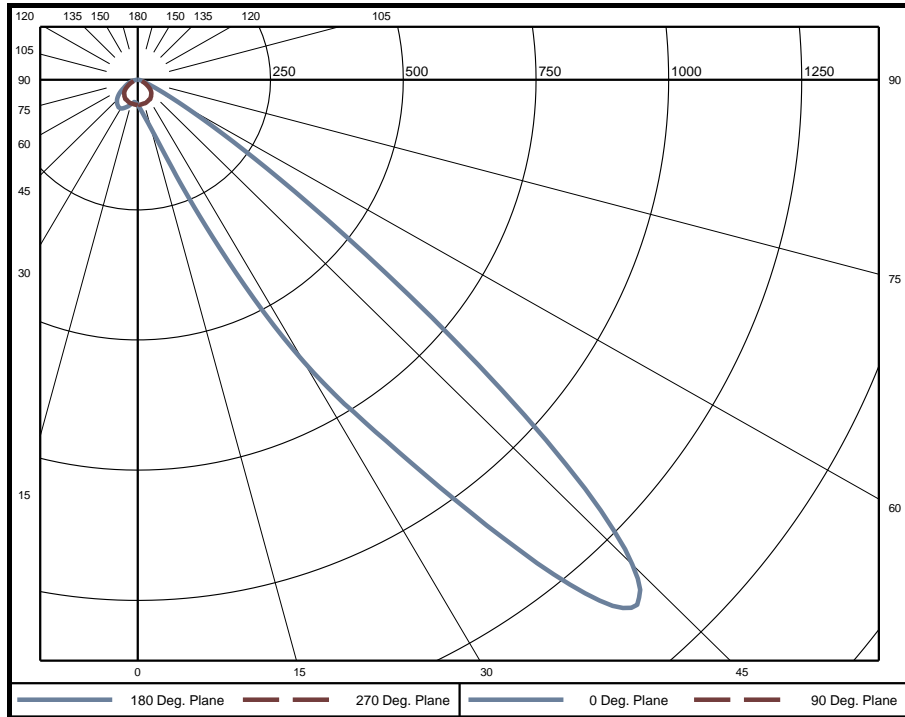
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	120.0 VAC	0.1753 A	20.93 W	0.995	60 Hz	8.87 %

### Summary of Results

**Spacing Criteria**  
 0-180: 3.18  
 90-270: 1.36

**Total Lumen Output:** 347.6 Lumens  
**Luminaire Efficacy:** 16.6 lm/w  
**Maximum Candela:** 1379 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.17	0.3%	60-65	11.46	3.3%	120-125	0	0.0%
5-10	3.62	1.0%	65-70	7.62	2.2%	125-130	0	0.0%
10-15	6.56	1.9%	70-75	5.24	1.5%	130-135	0	0.0%
15-20	10.44	3.0%	75-80	3.37	1.0%	135-140	0	0.0%
20-25	16.49	4.7%	80-85	1.62	0.5%	140-145	0	0.0%
25-30	26.72	7.7%	85-90	0.32	0.1%	145-150	0	0.0%
30-35	40.02	11.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	52.02	15.0%	95-100	0	0.0%	155-160	0	0.0%
40-45	59.53	17.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	50.79	14.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	31.98	9.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	18.59	5.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	157	45.2%
0-60	318	91.5%
0-90	348	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	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
	5	57	56	53	50	48	46	45	44	44	44	45	46	48	50	53
	10	71	68	60	53	47	45	44	44	45	44	44	45	47	53	60
	15	97	87	68	54	47	45	47	47	48	47	47	45	47	54	68
	20	160	121	76	53	46	47	49	53	55	53	49	47	46	53	76
	25	333	188	80	50	45	49	53	58	60	58	53	49	45	50	80
	30	626	291	77	49	44	48	56	61	64	61	56	48	44	49	77
	35	900	357	68	62	42	48	56	61	63	61	56	48	42	62	68
	40	1265	340	56	50	39	47	54	58	60	58	54	47	39	50	56
	45	1317	255	43	33	36	44	50	54	55	54	50	44	36	33	43
	50	777	153	32	27	32	38	44	47	48	47	44	38	32	27	32
	55	297	82	24	22	26	31	36	39	39	39	36	31	26	22	24
	60	99	41	18	17	20	24	27	29	29	29	27	24	20	17	18
	65	34	21	13	13	14	17	20	22	23	22	20	17	14	13	13
	70	13	11	9	9	10	12	15	17	17	17	15	12	10	9	9
	75	8	7	6	6	6	8	10	12	12	12	10	8	6	6	6
	80	4	4	3	3	3	4	6	7	7	7	6	4	3	3	3
	85	1	1	1	1	1	1	2	3	3	3	2	1	1	1	1
	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	15280	15280
	45	588100	19270
	55	163300	13100
	65	25410	9608
	75	9182	7612
	85	4711	3863



### 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	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	87	82	98	92	86	81	88	83	79	85	81	78	82	79	76	74
3	92	82	75	69	90	81	74	68	78	72	67	75	70	66	73	68	65	63
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	55	53
5	77	65	56	49	75	64	55	49	61	54	49	60	53	48	58	52	48	46
6	71	58	49	42	69	57	48	42	55	47	42	53	47	42	52	46	41	39
7	65	52	43	37	63	51	42	37	49	42	36	48	41	36	46	40	36	34
8	60	46	38	32	58	46	38	32	44	37	32	43	36	31	42	36	31	29
9	56	42	34	28	54	41	33	28	40	33	28	39	32	28	38	32	27	26
10	52	38	30	25	50	38	30	25	37	29	24	36	29	24	35	29	24	22

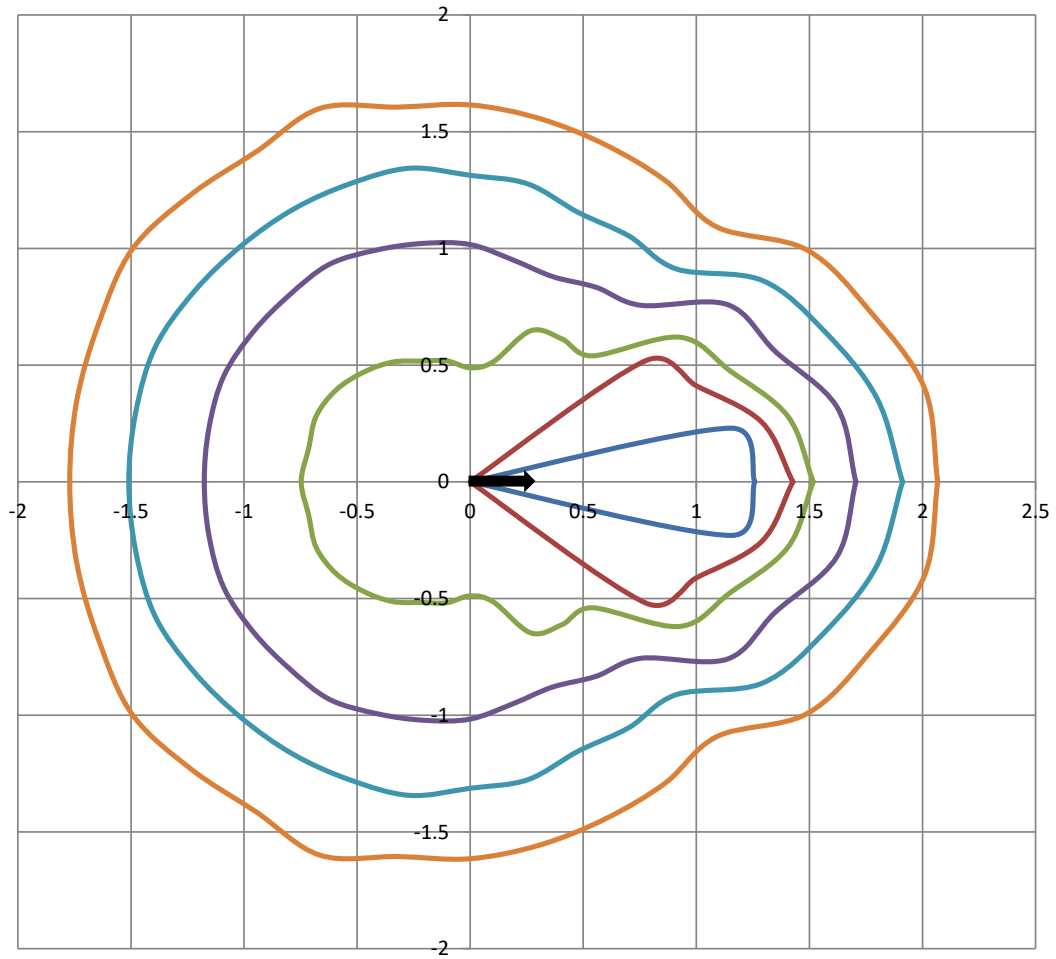
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	48 Candela
Central Cone Intensity:	49 Candela
Beam Flux:	319.9 Lumens
Beam Angle (0-180):	130.6 Degrees
Beam Angle (90-270):	113.1 Degrees
Field Angle (0-180):	161.9 Degrees
Field Angle (90-270):	154.3 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		3.02	9.68
6.00		1.34	14.5
8.00		0.756	19.4
10.0		0.484	24.2
12.0		0.336	29.0
14.0		0.247	33.9
16.0		0.189	38.7



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

— 2 fc    — 1 fc    — 0.5 fc    — 0.2 fc    — 0.1 fc    — 0.05 fc