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7036 Snowdrift Road  
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  
**MX2D-4'00-L8/830-F-AC/Dxx-XX-DIM-UNV**  
Order Number  
13012869  
Test Number  
13012869.01

Test Date

2019-09-04

Prepared By

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Approved By

Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Formed White aluminum housing,frosted plastic lens  
**Lamp:** 144 White LEDs  
**Mounting:** Pendant  
**Ballast/Driver:** One Philips Advance XI040C110V054BST1 Driver

#### Luminaire



#### Luminaire Characteristics

Luminous Length: 47.50 in.  
Luminous Width: 2.000 in.

#### Summary of Results

Total Luminaire Output: 2976 Lumens  
Luminaire Efficacy: 110.5 lm/w  
Maximum Candela: 1324 Candela

#### Test Conditions

Test Temperature: 24.6 °C  
Voltage: 120.0 VAC  
Current: 0.2258 A  
Power: 26.92 W  
Power Factor: 0.994  
Frequency: 60 Hz  
Current THD: 9.43 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

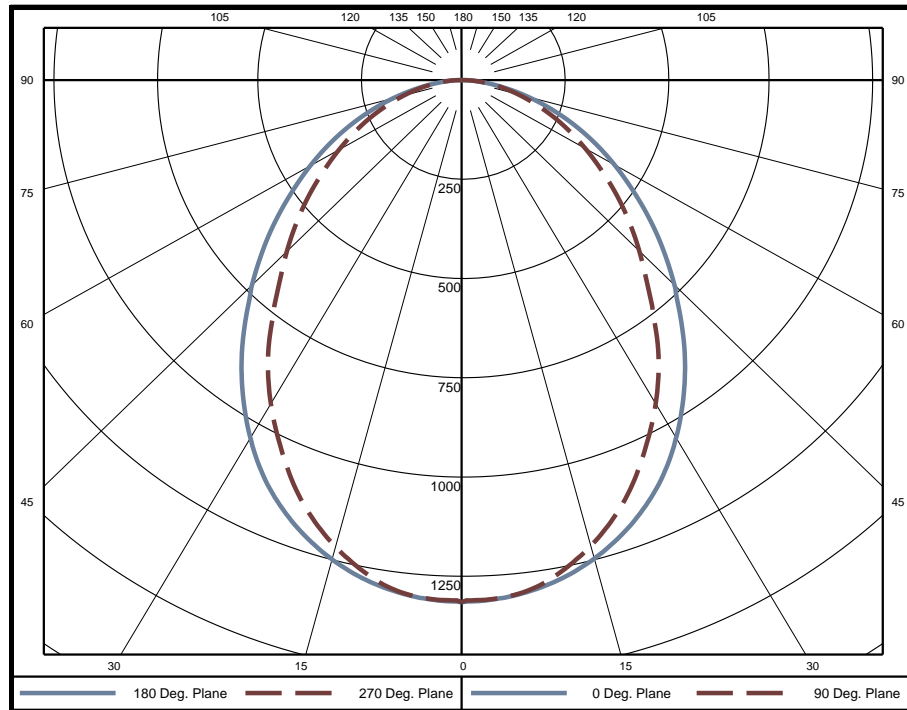
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.2258 A	26.92 W	0.994	60 Hz	9.43 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.18  
 90-270: 1.09

**Total Lumen Output:** 2976 Lumens  
**Luminaire Efficacy:** 110.5 lm/w  
**Maximum Candela:** 1324 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	31.4	1.1%	60-65	167.1	5.6%	120-125	0	0.0%
5-10	92.8	3.1%	65-70	134.2	4.5%	125-130	0	0.0%
10-15	149.4	5.0%	70-75	99.7	3.4%	130-135	0	0.0%
15-20	198.1	6.7%	75-80	66.6	2.2%	135-140	0	0.0%
20-25	236.5	7.9%	80-85	37.1	1.2%	140-145	0	0.0%
25-30	262.8	8.8%	85-90	12.6	0.4%	145-150	0	0.0%
30-35	275.9	9.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	275.3	9.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	264.9	8.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	248.7	8.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	225.6	7.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	197.7	6.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1522	51.1%
0-60	2459	82.6%
0-90	2976	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	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316	1316
	5	1306	1317	1306	1309	1305	1309	1306	1317	1306	1317	1306	1309	1305	1309	1306
	10	1284	1295	1282	1276	1272	1276	1282	1295	1284	1295	1282	1276	1272	1276	1282
	15	1245	1256	1234	1221	1213	1221	1234	1256	1245	1256	1234	1221	1213	1221	1234
	20	1192	1199	1166	1147	1137	1147	1166	1199	1192	1199	1166	1147	1137	1147	1166
	25	1123	1126	1084	1054	1040	1054	1084	1126	1123	1126	1084	1054	1040	1054	1084
	30	1035	1036	989	953	939	953	989	1036	1035	1036	989	953	939	953	989
	35	936	930	880	842	828	842	880	930	936	930	880	842	828	842	880
	40	828	819	764	725	707	725	764	819	828	819	764	725	707	725	764
	45	723	714	662	621	606	621	662	714	723	714	662	621	606	621	662
	50	619	610	563	528	514	528	563	610	619	610	563	528	514	528	563
	55	517	510	470	438	426	438	470	510	517	510	470	438	426	438	470
	60	424	417	382	356	346	356	382	417	424	417	382	356	346	356	382
	65	335	330	301	281	273	281	301	330	335	330	301	281	273	281	301
	70	249	245	225	210	205	210	225	245	249	245	225	210	205	210	225
	75	169	167	155	147	144	147	155	167	169	167	155	147	144	147	155
	80	98	98	94	92	91	92	94	98	98	98	94	92	91	92	94
	85	41	43	44	45	45	45	44	43	41	43	44	45	45	45	44
	90	1	2	3	5	5	5	3	2	1	2	3	5	5	5	3
	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	21460	21460
	45	16680	15260
	55	14720	13380
	65	12940	11640
	75	10670	9769
	85	7702	8266



### 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	109	105	101	97	107	103	99	96	98	95	93	95	92	90	91	89	87	85
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	85	73	65	58	82	72	64	58	69	63	57	67	61	56	65	60	56	54
5	78	66	57	51	76	65	57	51	63	55	50	61	54	49	59	53	49	47
6	72	60	51	45	71	59	51	45	57	50	44	55	49	44	54	48	44	42
7	67	54	46	40	66	54	46	40	52	45	40	51	44	39	49	43	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	35	45	40	35	33
9	59	46	38	33	57	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

### Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	1316 Candela
Central Cone Intensity:	1314 Candela
Beam Flux:	1808.1 Lumens
Beam Angle (0-180):	96.2 Degrees
Beam Angle (90-270):	84.6 Degrees
Field Angle (0-180):	155.1 Degrees
Field Angle (90-270):	152.2 Degrees

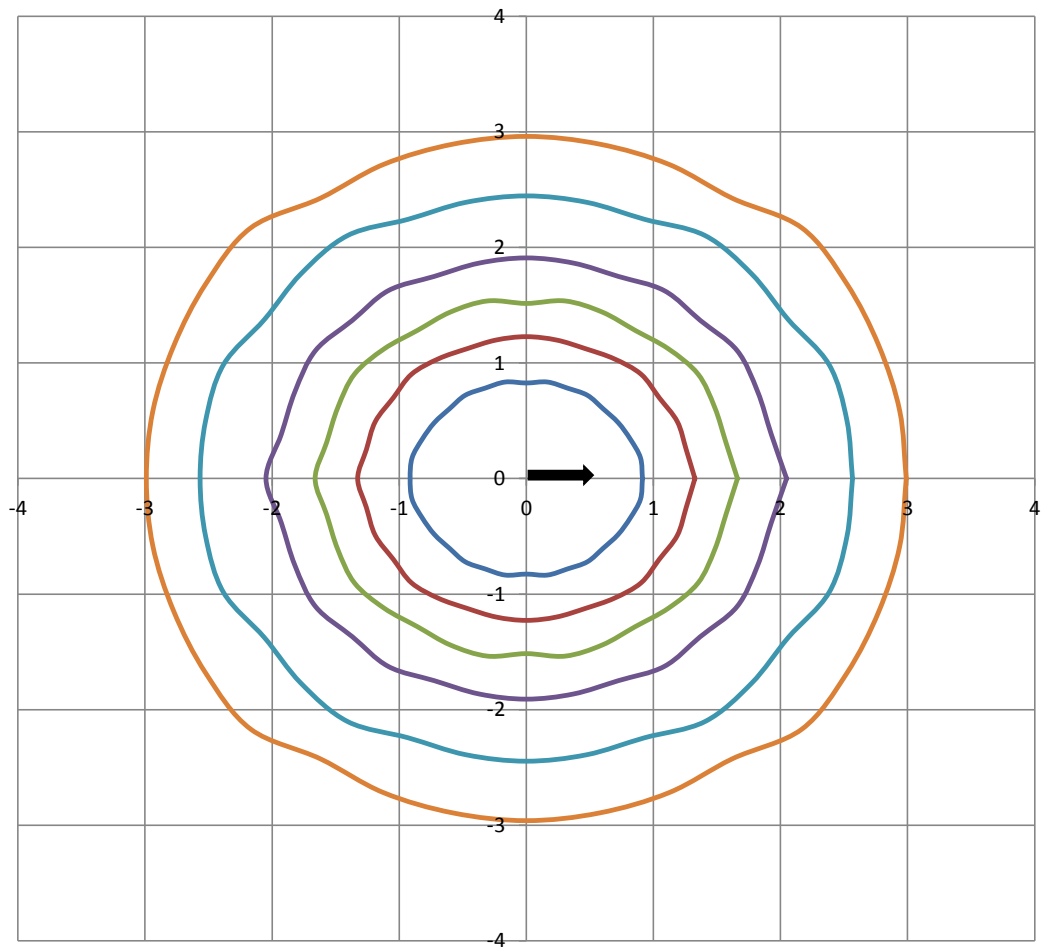
### Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		82.2	4.54
6.00		36.5	6.81
8.00		20.6	9.08
10.0		13.2	11.3
12.0		9.14	13.6
14.0		6.71	15.9
16.0		5.14	18.2



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc    2 fc    1 fc    0.5 fc    0.2 fc    0.1 fc