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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 C82.77-2002

**Prepared For**  
**H E Williams Inc**

831 W Fairview Ave  
PO Box 837  
Carthage, MO 64836-0837  
United States

**Catalog Number**  
**4DR-L20/835-DIM-UNV-L-W-OF-WH-AD**

Order Number  
12316380  
Test Number  
12316380.11

Test Date

2018-06-12

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:** Black formed aluminum housing, white reflector, frosted plastic lens enclosure  
**Lamp:** One white LED  
**Mounting:** Recessed  
**Ballast/Driver:** Philips XI025C070V054DSM5

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 4.25 in.

**Summary of Results**

Total Luminaire Output:	1333 Lumens
Luminaire Efficacy:	67.5 lm/w
Maximum Candela:	561 Candela

**Test Conditions**

Test Temperature:	25.6 °C
Voltage:	120.1 VAC
Current:	0.1654 A
Power:	19.75 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	9.21 %

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
25.6 °C	120.1 VAC	0.1654 A	19.75 W	0.995	60 Hz	9.21 %

### Summary of Results

#### Spacing Criteria

0-180: 1.18

90-270: 1.18

Total Lumen Output:

1333 Lumens

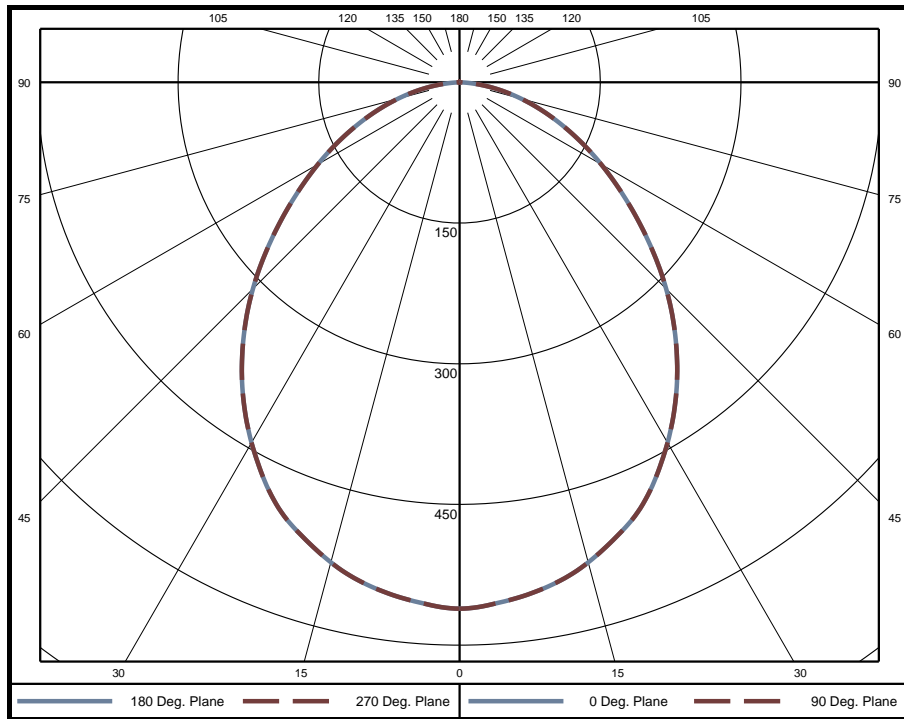
Luminaire Efficacy:

67.5 lm/w

Maximum Candela:

561 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	13.3	1.0%	60-65	75.0	5.6%	120-125	0	0.0%
5-10	39.4	3.0%	65-70	59.5	4.5%	125-130	0	0.0%
10-15	63.8	4.8%	70-75	44.0	3.3%	130-135	0	0.0%
15-20	85.5	6.4%	75-80	28.8	2.2%	135-140	0	0.0%
20-25	103.8	7.8%	80-85	14.5	1.1%	140-145	0	0.0%
25-30	116.8	8.8%	85-90	3.2	0.2%	145-150	0	0.0%
30-35	124.6	9.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	127.0	9.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	124.0	9.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	115.8	8.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	103.7	7.8%	110-115	0	0.0%	170-175	0	0.0%
55-60	89.7	6.7%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	674	50.6%
0-60	1107	83.1%
0-90	1332	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	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0	561.0
	5	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2	555.2
	10	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5	545.5
	15	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7	529.7
	20	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2	508.2
	25	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3	480.3
	30	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5	443.5
	35	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9	402.9
	40	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4	358.4
	45	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4	311.4
	50	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3	262.3
	55	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6	215.6
	60	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8	173.8
	65	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5	135.5
	70	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4	100.4
	75	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6	68.6
	80	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
	85	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3	14.3
	90	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
	95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	61300	61300
	45	48120	48120
	55	41070	41070
	65	35020	35020
	75	28970	28970
	85	17930	17930



### 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	105	101	98	107	103	99	96	99	96	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	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53
5	78	66	57	51	76	65	56	50	62	55	50	61	54	49	59	53	49	47
6	72	59	51	45	70	58	50	44	57	49	44	55	49	44	53	48	43	41
7	67	54	46	40	65	53	45	40	52	45	39	50	44	39	49	43	39	37
8	63	50	41	36	61	49	41	35	48	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

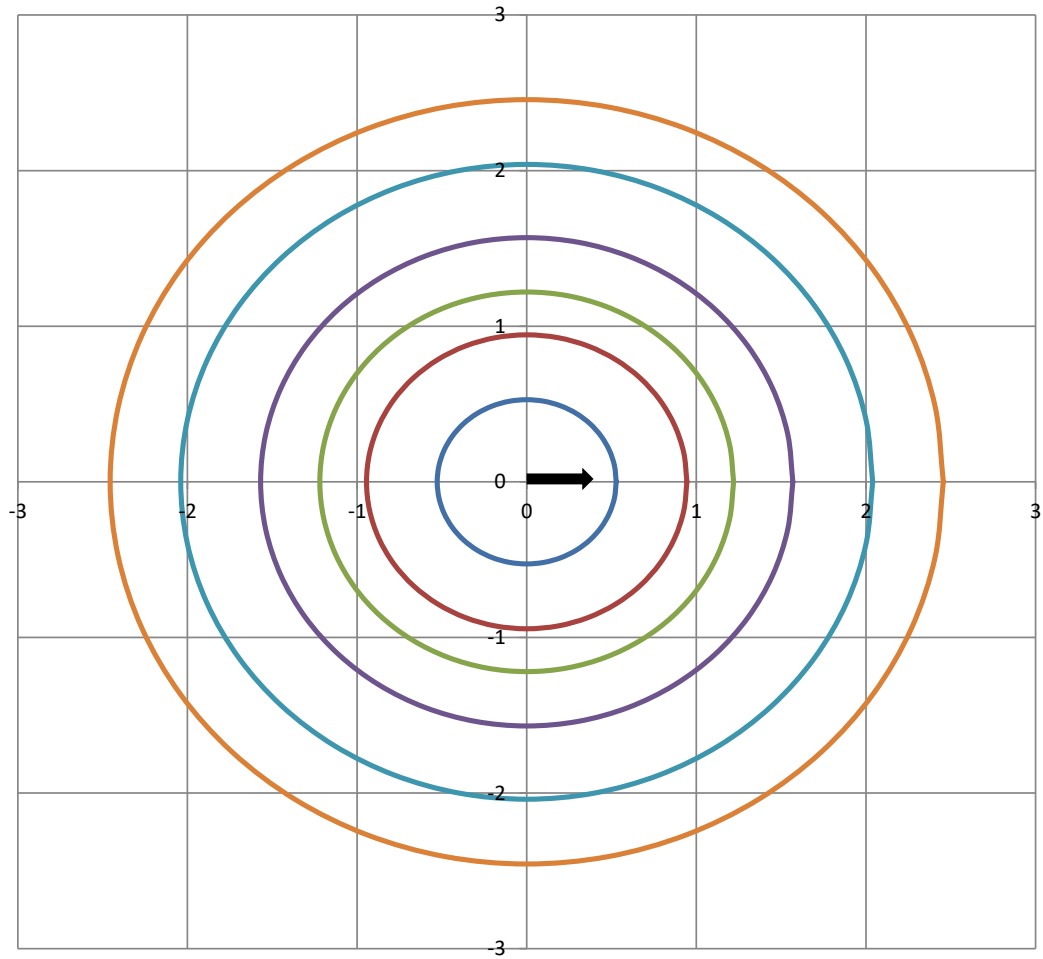
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	561.0 Candela
Central Cone Intensity:	559 Candela
Beam Flux:	872.4 Lumens
Beam Angle (0-180):	96.3 Degrees
Beam Angle (90-270):	96.3 Degrees
Field Angle (0-180):	154.2 Degrees
Field Angle (90-270):	154.2 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		35.1	4.72
6.00		15.6	7.08
8.00		8.77	9.44
10.0		5.61	11.8
12.0		3.90	14.2
14.0		2.86	16.5
16.0		2.19	18.9



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

