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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**  
**2DR-L12/9TW-DIM-UNV-ON-OF-CS-x-xx (4000K)**  
Order Number  
13131414  
Test Number  
13131414.34

Test Date

2019-12-04

Prepared By

Derek Smarr, 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 and reflector, no lens enclosure  
**Lamp:** 84 white LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** eldoLED DUALdrive 561/S

#### Luminaire



#### Luminaire Characteristics

Luminous Diameter: 2.50 in.

#### Summary of Results

Total Luminaire Output:	1136 Lumens
Luminaire Efficacy:	41.9 lm/w
Maximum Candela:	9308 Candela

#### Test Conditions

Test Temperature:	25.2 °C
Voltage:	120.0 VAC
Current:	0.2303 A
Power:	27.08 W
Power Factor:	0.980
Frequency:	60 Hz
Current THD:	13.4 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

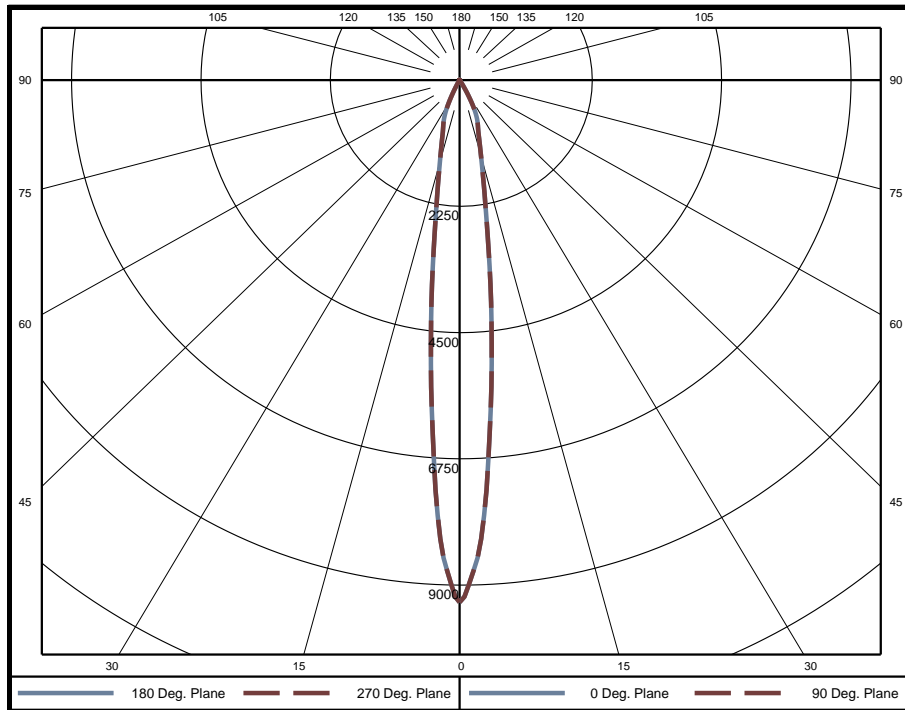
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.2 °C	120.0 VAC	0.2303 A	27.08 W	0.980	60 Hz	13.4 %

### Summary of Results

**Spacing Criteria**  
 0-180: 0.23  
 90-270: 0.23

**Total Lumen Output:** 1136 Lumens  
**Luminaire Efficacy:** 41.9 lm/w  
**Maximum Candela:** 9308 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	176.6	15.5%	60-65	1.3	0.1%	120-125	0	0.0%
5-10	278.7	24.5%	65-70	1.1	0.1%	125-130	0	0.0%
10-15	216.7	19.1%	70-75	0.9	0.1%	130-135	0	0.0%
15-20	176.9	15.6%	75-80	0.8	0.1%	135-140	0	0.0%
20-25	156.5	13.8%	80-85	0.8	0.1%	140-145	0	0.0%
25-30	87.0	7.7%	85-90	0.7	0.1%	145-150	0	0.0%
30-35	17.7	1.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	7.7	0.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	5.5	0.5%	100-105	0	0.0%	160-165	0	0.0%
45-50	3.4	0.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	2.3	0.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	1.7	0.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1118	98.4%
0-60	1131	99.5%
0-90	1136	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	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308	9308
	5	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906	5906
	10	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595	2595
	15	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353	1353
	20	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890
	25	583	583	583	583	583	583	583	583	583	583	583	583	583	583	583
	30	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
	35	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
	40	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	45	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
	50	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	55	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	60	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
	65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	70	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	75	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	80	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	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)

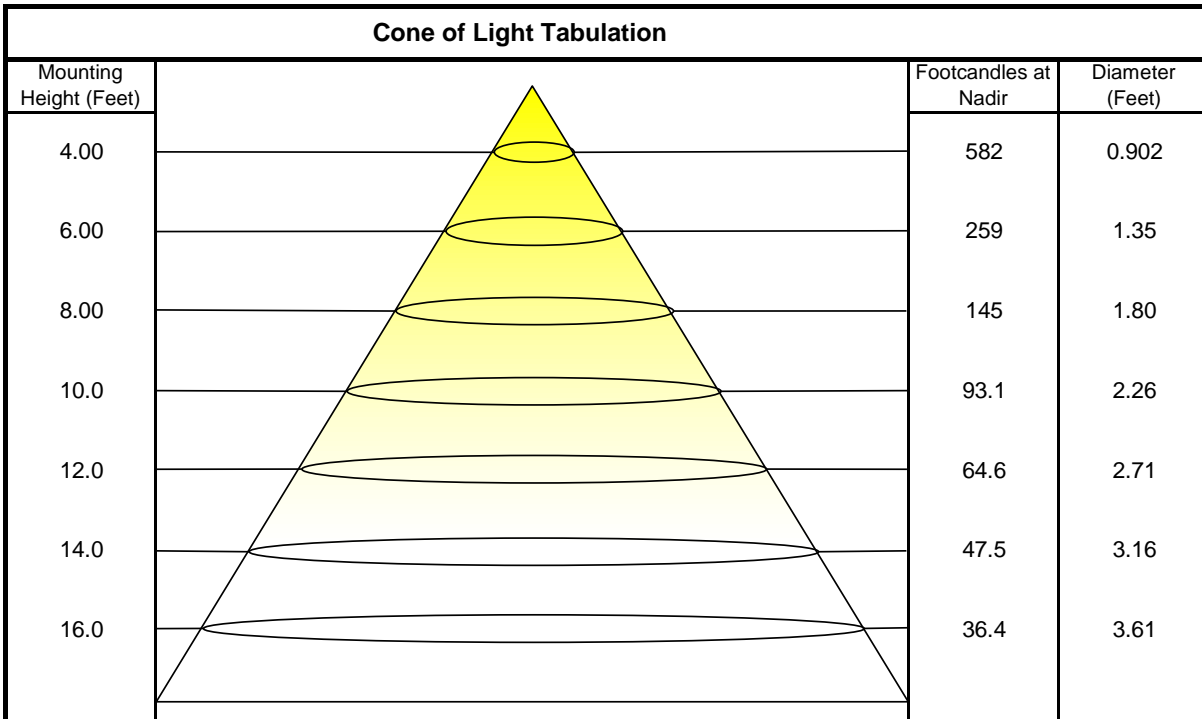
Vertical Angle (Degrees)	0	45	90
	0	2939000	2939000
	45	5183	5183
	55	2456	2456
	65	1838	1838
	75	1947	1947
	85	4797	4797



### 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	115	113	111	109	113	111	109	107	107	105	104	103	102	101	100	99	98	97
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93
3	108	103	99	97	106	102	98	96	99	97	94	97	95	93	95	93	92	90
4	104	99	95	92	103	98	94	92	96	93	91	94	92	90	93	90	89	87
5	101	96	91	88	100	95	91	88	93	90	87	92	89	87	90	88	86	85
6	98	92	88	85	97	92	88	85	90	87	84	89	86	84	88	85	83	82
7	96	89	85	82	95	89	85	82	88	84	82	87	84	81	86	83	81	80
8	93	87	83	80	92	86	82	80	85	82	79	84	81	79	84	81	79	78
9	91	84	80	78	90	84	80	77	83	80	77	82	79	77	82	79	77	76
10	89	82	78	75	88	82	78	75	81	78	75	80	77	75	80	77	75	74

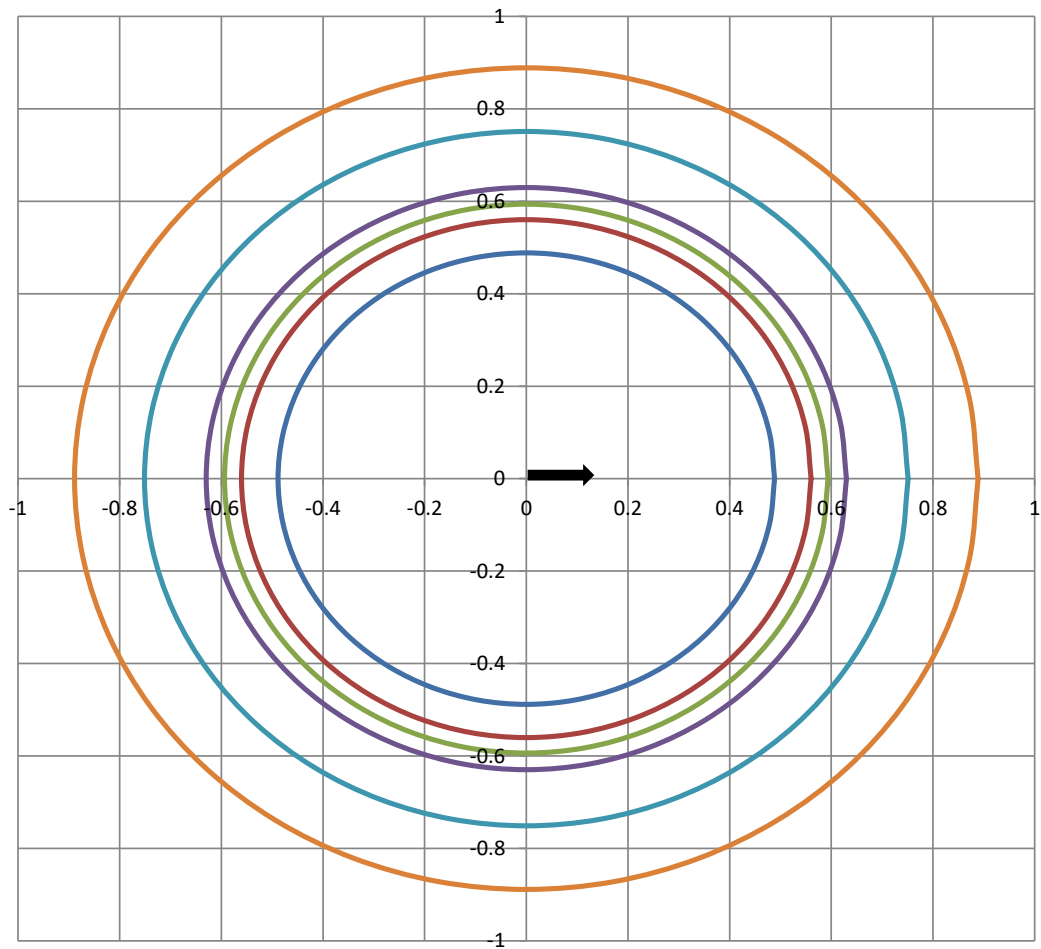
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	9308 Candela
Central Cone Intensity:	7917 Candela
Beam Flux:	265.6 Lumens
Beam Angle (0-180):	13.1 Degrees
Beam Angle (90-270):	13.1 Degrees
Field Angle (0-180):	38.5 Degrees
Field Angle (90-270):	38.5 Degrees





## 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