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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**  
**LPT-24-L90/827-SA12125**  
Order Number  
12212385  
Test Number  
12212385.11

Test Date

2018-03-14

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:** White formed steel housing, frosted patterned plastic lens enclosure  
**Lamp:** 112 white LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** One Universal Lighting Technologies D21CC80347TW-D driver

#### Luminaire



#### Luminaire Characteristics

Luminous Length: 45.00 in.  
Luminous Width: 21.25 in.

#### Summary of Results

Total Luminaire Output:	8147 Lumens
Luminaire Efficacy:	112 lm/w
Maximum Candela:	3711 Candela

#### Test Conditions

Test Temperature:	24.8 °C
Voltage:	347.1 VAC
Current:	0.2143 A
Power:	72.75 W
Power Factor:	0.978
Frequency:	60 Hz
Current THD:	9.75 %

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
24.8 °C	347.1 VAC	0.2143 A	72.75 W	0.978	60 Hz	9.75 %

### Summary of Results

#### Spacing Criteria

0-180: 1.22  
90-270: 1.20

#### Total Lumen Output:

8147 Lumens

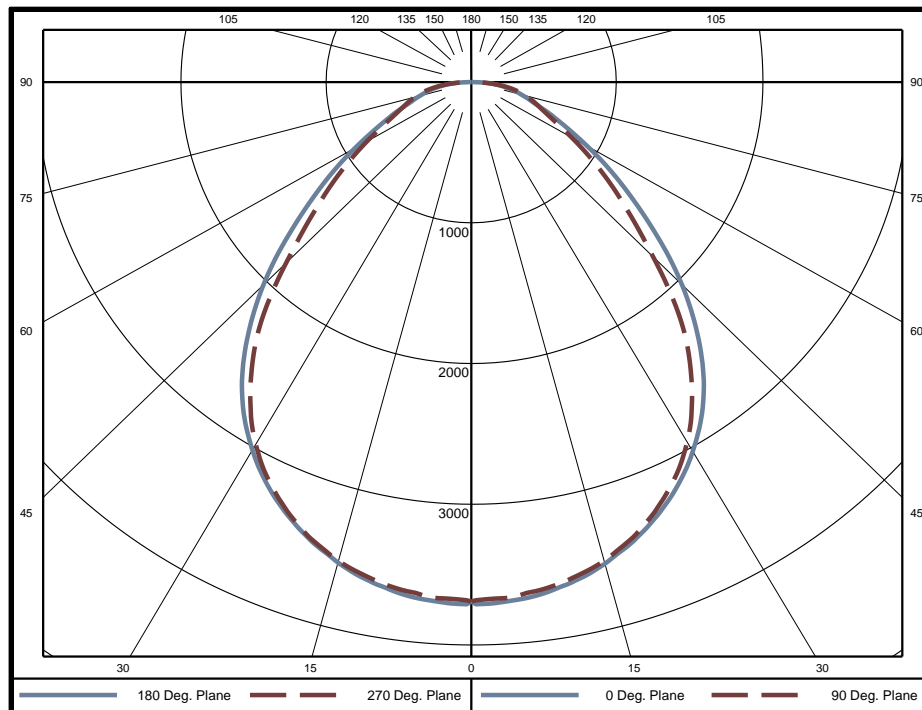
#### Luminaire Efficacy:

112.0 lm/w

#### Maximum Candela:

3711 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	88.0	1.1%	60-65	338.9	4.2%	120-125	0	0.0%
5-10	260.7	3.2%	65-70	252.6	3.1%	125-130	0	0.0%
10-15	423.8	5.2%	70-75	201.8	2.5%	130-135	0	0.0%
15-20	570.6	7.0%	75-80	166.1	2.0%	135-140	0	0.0%
20-25	694.3	8.5%	80-85	116.9	1.4%	140-145	0	0.0%
25-30	788.0	9.7%	85-90	46.0	0.6%	145-150	0	0.0%
30-35	841.9	10.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	844.3	10.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	791.7	9.7%	100-105	0	0.0%	160-165	0	0.0%
45-50	692.9	8.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	574.9	7.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	453.9	5.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	4512	55.4%
0-60	7025	86.2%
0-90	8147	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	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692	3692
	5	3692	3681	3667	3661	3665	3661	3667	3681	3692	3681	3667	3661	3665	3661	3667
	10	3636	3627	3614	3606	3611	3606	3614	3627	3636	3627	3614	3606	3611	3606	3614
	15	3545	3533	3522	3520	3523	3520	3522	3533	3545	3533	3522	3520	3523	3520	3522
	20	3414	3403	3393	3387	3389	3387	3393	3403	3414	3403	3393	3387	3389	3387	3393
	25	3251	3240	3217	3206	3206	3206	3217	3240	3251	3240	3217	3206	3206	3217	3240
	30	3041	3030	2994	2971	2968	2971	2994	3030	3041	3030	2994	2971	2968	2971	3030
	35	2780	2757	2714	2657	2650	2657	2714	2757	2780	2757	2714	2657	2650	2657	2714
	40	2446	2417	2340	2273	2264	2273	2340	2417	2446	2417	2340	2273	2264	2273	2340
	45	2057	2005	1948	1839	1787	1839	1948	2005	2057	2005	1948	1839	1787	1839	1948
	50	1635	1605	1513	1413	1390	1413	1513	1605	1635	1605	1513	1413	1390	1413	1513
	55	1260	1228	1110	1075	1080	1075	1110	1228	1260	1228	1110	1075	1080	1075	1110
	60	936	877	779	786	812	786	779	877	936	877	779	786	812	786	779
	65	676	601	524	564	611	564	524	601	676	601	524	564	611	564	601
	70	487	429	373	433	490	433	373	429	487	429	373	433	490	433	429
	75	366	334	327	349	398	349	327	334	366	334	327	349	398	349	327
	80	267	256	262	278	293	278	262	256	267	256	262	278	293	278	262
	85	151	148	147	172	161	172	147	148	151	148	147	172	161	172	147
	90	7	12	16	26	23	26	16	12	7	12	16	26	23	26	16
	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	5984	5984
	45	4716	4096
	55	3560	3052
	65	2591	2343
	75	2293	2494
	85	2808	2990



### Utilization of Lumens - 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 Lumens delivered to the task surface **																	
0	9699	9699	9699	9699	9473	9473	9473	9473	9052	9052	9052	8667	8667	8667	8313	8313	8313	8147
1	8948	8596	8280	7996	8731	8413	8126	7866	8070	7834	7619	7755	7563	7386	7464	7311	7168	7003
2	8233	7626	7124	6701	8026	7475	7014	6622	7192	6804	6470	6930	6608	6325	6688	6423	6186	6019
3	7583	6802	6198	5716	7389	6676	6117	5666	6440	5962	5568	6221	5815	5473	6018	5675	5382	5215
4	7001	6106	5450	4949	6823	6001	5389	4916	5802	5271	4850	5618	5159	4787	5447	5052	4725	4560
5	6483	5515	4838	4339	6319	5426	4791	4316	5259	4700	4271	5103	4612	4227	4958	4528	4184	4022
6	6020	5009	4331	3845	5871	4934	4294	3828	4792	4222	3796	4659	4152	3765	4535	4085	3734	3576
7	5606	4574	3906	3437	5471	4511	3876	3425	4389	3818	3402	4275	3762	3379	4168	3707	3356	3203
8	5237	4199	3546	3097	5115	4144	3521	3088	4039	3474	3071	3941	3428	3053	3849	3384	3036	2889
9	4907	3872	3238	2810	4796	3825	3218	2803	3734	3179	2790	3649	3141	2777	3569	3104	2763	2622
10	4611	3586	2974	2566	4510	3545	2957	2560	3467	2924	2550	3392	2892	2539	3322	2862	2529	2393

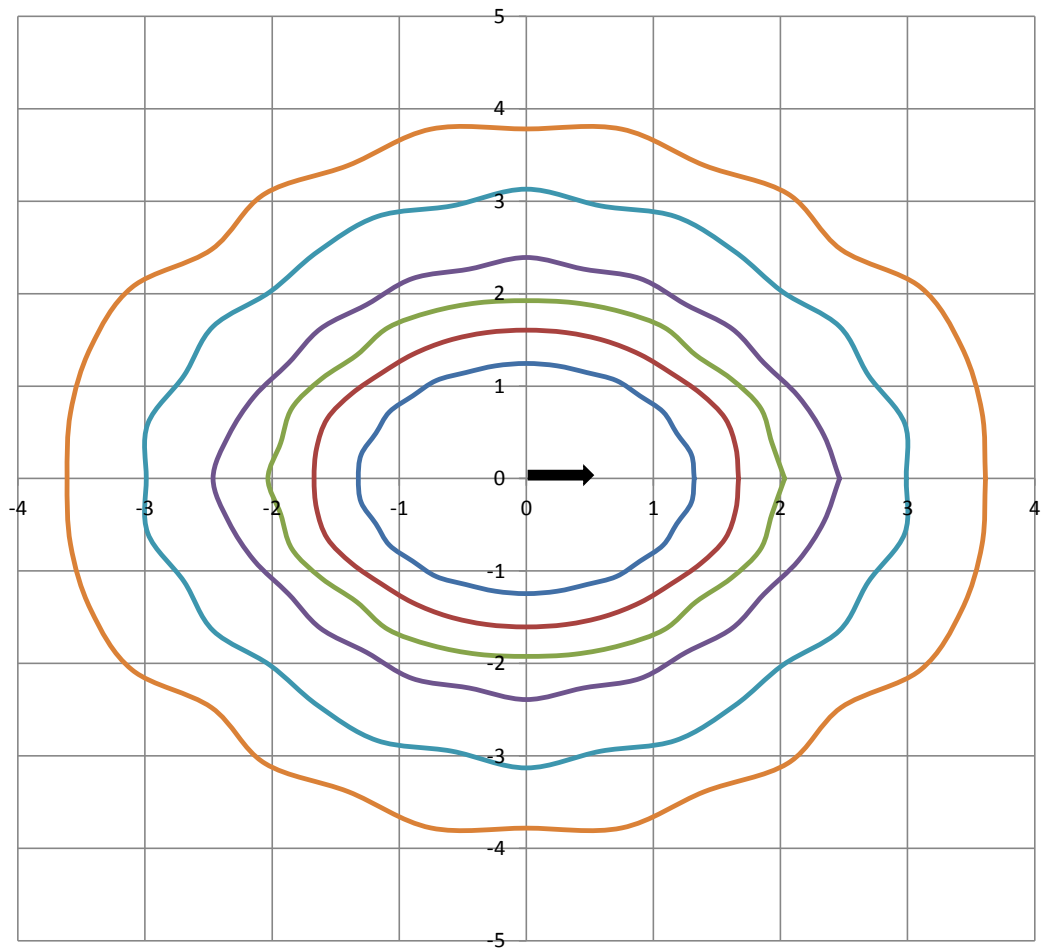
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3692 Candela
Central Cone Intensity:	3684 Candela
Beam Flux:	5459.5 Lumens
Beam Angle (0-180):	95.1 Degrees
Beam Angle (90-270):	88.8 Degrees
Field Angle (0-180):	149.7 Degrees
Field Angle (90-270):	153.0 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		231	4.83
6.00		103	7.24
8.00		57.7	9.66
10.0		36.9	12.1
12.0		25.6	14.5
14.0		18.8	16.9
16.0		14.4	19.3



## 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