



UL Verification Services Inc.
7036 Snowdrift Road
Allentown, PA 18106
610-774-1300



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-SAF12125
Order Number
12212385
Test Number
12212385.12

Test Date

2018-03-14

Prepared By

Javier Caban, Technician

Approved By

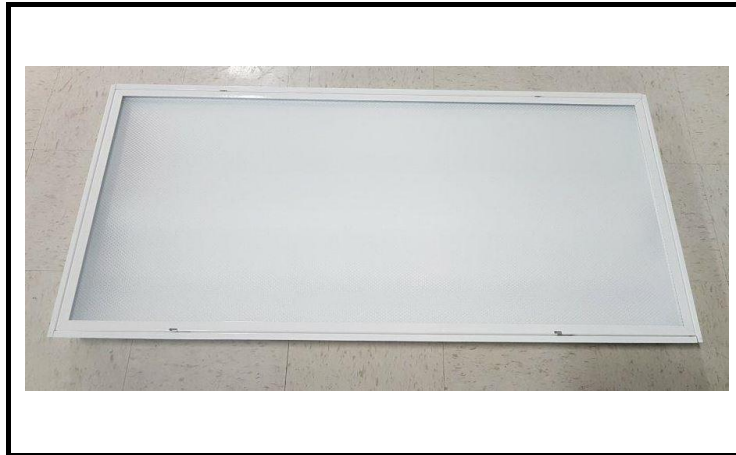
Alexa Lambert, Project Handler

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Luminaire Description: White formed steel housing, clear 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:	8217 Lumens
Luminaire Efficacy:	113 lm/w
Maximum Candela:	3638 Candela

Test Conditions

Test Temperature:	24.8 °C
Voltage:	347.1 VAC
Current:	0.2143 A
Power:	72.74 W
Power Factor:	0.978
Frequency:	60 Hz
Current THD:	9.74 %

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	72.74 W	0.978	60 Hz	9.74 %

Summary of Results

Spacing Criteria

0-180: 1.18
90-270: 1.15

Total Lumen Output:

8217 Lumens

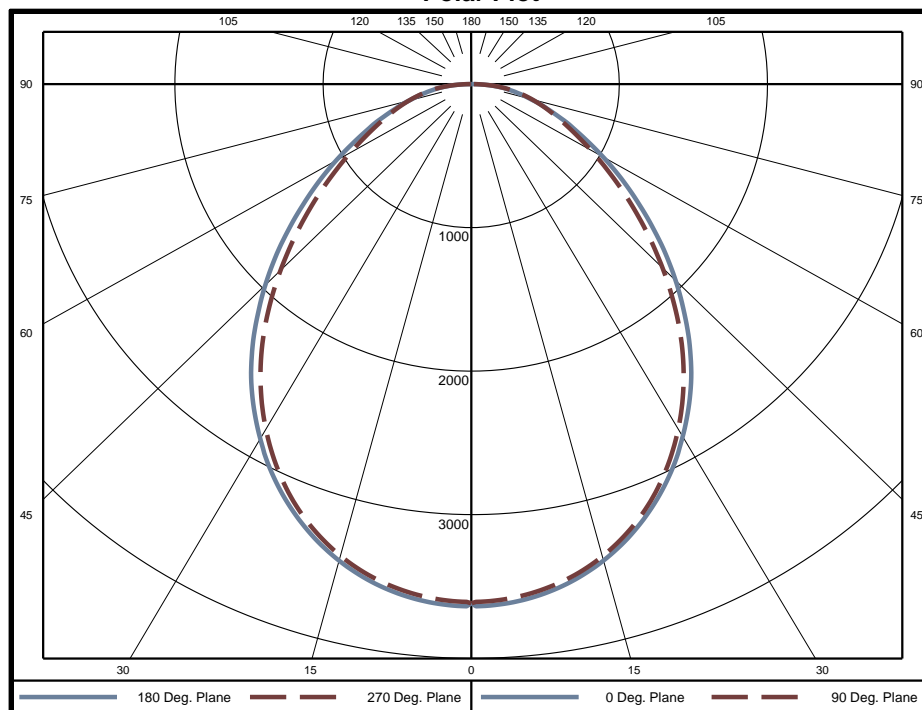
Luminaire Efficacy:

113.0 lm/w

Maximum Candela:

3638 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	86.2	1.0%	60-65	416.9	5.1%	120-125	0	0.0%
5-10	254.8	3.1%	65-70	331.0	4.0%	125-130	0	0.0%
10-15	412.1	5.0%	70-75	256.0	3.1%	130-135	0	0.0%
15-20	550.3	6.7%	75-80	187.8	2.3%	135-140	0	0.0%
20-25	662.6	8.1%	80-85	120.1	1.5%	140-145	0	0.0%
25-30	742.9	9.0%	85-90	44.3	0.5%	145-150	0	0.0%
30-35	787.0	9.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	792.5	9.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	759.0	9.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	693.9	8.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	607.8	7.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	512.2	6.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	4288	52.2%
0-60	6861	83.5%
0-90	8217	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	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617	3617
	5	3616	3605	3591	3582	3585	3582	3591	3605	3616	3605	3591	3582	3585	3582	3591
	10	3550	3539	3525	3516	3518	3516	3525	3539	3550	3539	3525	3516	3518	3516	3525
	15	3439	3428	3413	3405	3405	3405	3413	3428	3439	3428	3413	3405	3405	3405	3413
	20	3284	3273	3256	3245	3244	3245	3256	3273	3284	3273	3256	3245	3244	3245	3256
	25	3088	3077	3053	3037	3033	3037	3053	3077	3088	3077	3053	3037	3033	3037	3053
	30	2851	2839	2810	2787	2778	2787	2810	2839	2851	2839	2810	2787	2778	2787	2810
	35	2586	2567	2529	2495	2486	2495	2529	2567	2586	2567	2529	2495	2486	2495	2529
	40	2283	2262	2216	2173	2162	2173	2216	2262	2283	2262	2216	2173	2162	2173	2216
	45	1961	1936	1882	1832	1819	1832	1882	1936	1961	1936	1882	1832	1819	1832	1882
	50	1635	1607	1552	1501	1490	1501	1552	1607	1635	1607	1552	1501	1490	1501	1552
	55	1325	1295	1242	1200	1190	1200	1242	1295	1325	1295	1242	1200	1190	1200	1242
	60	1043	1013	968	936	934	936	968	1013	1043	1013	968	936	934	936	968
	65	795	772	737	724	727	724	737	772	795	772	737	724	727	724	737
	70	595	574	552	558	568	558	552	574	595	574	552	558	568	558	552
	75	427	415	407	420	432	420	407	415	427	415	407	420	432	420	407
	80	291	279	277	293	302	293	277	279	291	279	277	293	302	293	277
	85	160	144	146	165	166	165	146	144	160	144	146	165	166	165	146
	90	4	8	11	16	15	16	11	8	4	8	11	16	15	16	11
	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/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	5862	5862
	45	4495	4171
	55	3744	3363
	65	3050	2789
	75	2672	2702
	85	2979	3091



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	9783	9783	9783	9783	9555	9555	9555	9555	9131	9131	9131	8742	8742	8742	8385	8385	8385	8217
1	8994	8625	8295	7997	8773	8440	8139	7867	8092	7845	7619	7773	7572	7386	7479	7318	7167	6999
2	8243	7608	7082	6640	8032	7455	6972	6562	7166	6761	6410	6901	6562	6265	6655	6376	6127	5955
3	7568	6754	6123	5621	7370	6626	6042	5571	6385	5885	5473	6162	5737	5379	5955	5596	5289	5116
4	6971	6040	5359	4838	6788	5933	5297	4805	5731	5178	4740	5543	5064	4677	5368	4956	4615	4445
5	6443	5441	4740	4223	6276	5350	4692	4200	5180	4600	4155	5020	4511	4111	4872	4426	4068	3901
6	5975	4932	4232	3729	5823	4856	4194	3713	4710	4121	3681	4575	4050	3650	4448	3983	3619	3457
7	5560	4498	3809	3326	5422	4432	3779	3315	4308	3720	3291	4192	3663	3268	4083	3608	3245	3089
8	5191	4124	3453	2993	5066	4068	3429	2984	3962	3381	2966	3862	3334	2949	3768	3289	2932	2781
9	4862	3801	3151	2713	4749	3753	3131	2706	3661	3091	2692	3574	3053	2679	3492	3016	2666	2521
10	4568	3520	2893	2475	4465	3478	2876	2470	3398	2842	2459	3322	2810	2449	3251	2779	2438	2299

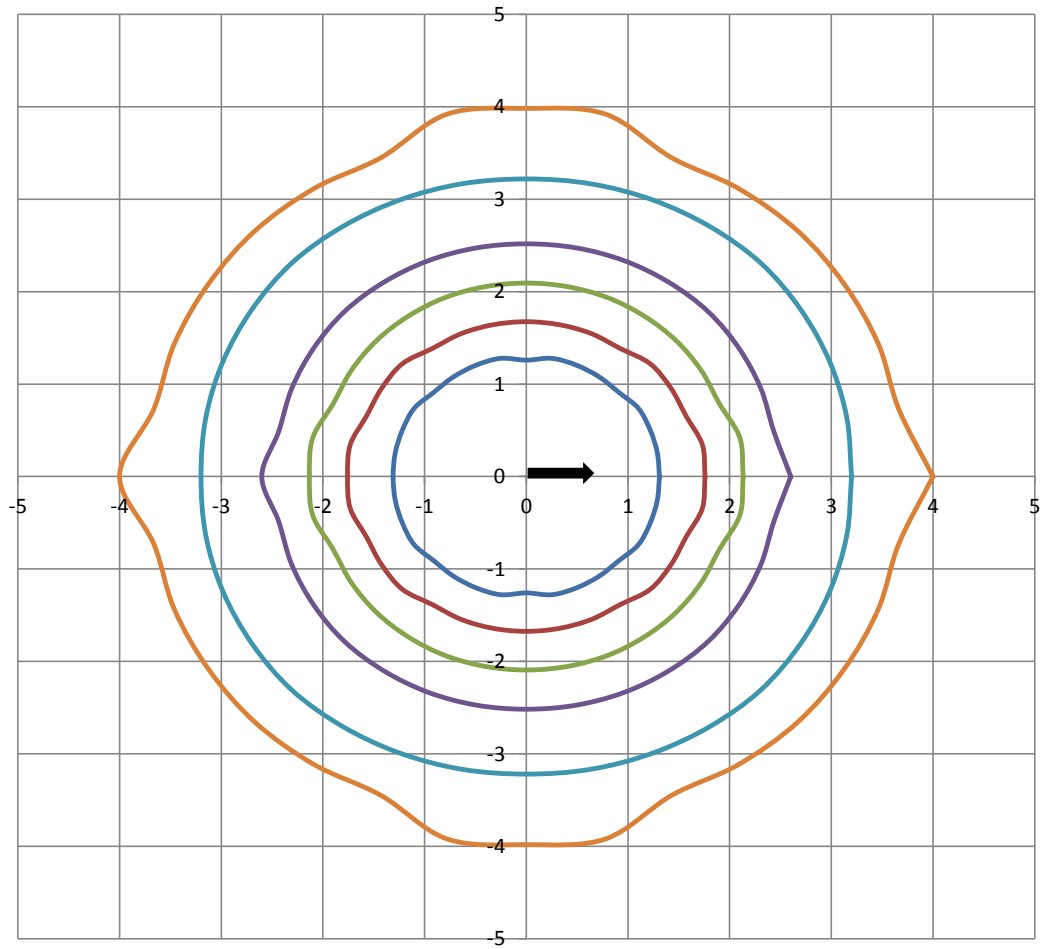
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3617 Candela
Central Cone Intensity:	3609 Candela
Beam Flux:	5219.2 Lumens
Beam Angle (0-180):	94.7 Degrees
Beam Angle (90-270):	90.3 Degrees
Field Angle (0-180):	154.7 Degrees
Field Angle (90-270):	155.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		226	4.66
6.00		100	6.99
8.00		56.5	9.31
10.0		36.2	11.6
12.0		25.1	14.0
14.0		18.5	16.3
16.0		14.1	18.6



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