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Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
H E Williams Inc

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United States

Catalog Number
LPT-24-L90/827-SAF19156

Order Number
12212385
Test Number
12212385.10

Test Date

2018-03-14

Prepared By

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Approved By

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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:	8099 Lumens
Luminaire Efficacy:	111.3 lm/w
Maximum Candela:	3672 Candela

Test Conditions

Test Temperature:	24.7 °C
Voltage:	347.1 VAC
Current:	0.2143 A
Power:	72.78 W
Power Factor:	0.978
Frequency:	60 Hz
Current THD:	9.70 %

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
24.7 °C	347.1 VAC	0.2143 A	72.78 W	0.978	60 Hz	9.70 %

Summary of Results

Spacing Criteria

0-180: 1.16
90-270: 1.13

Total Lumen Output:

8099 Lumens

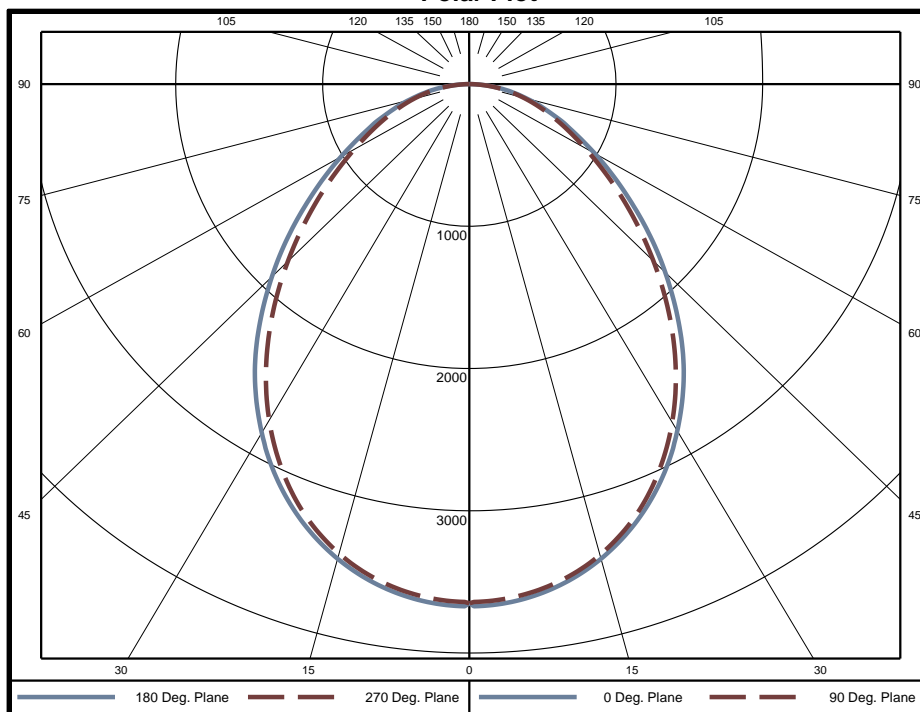
Luminaire Efficacy:

111.3 lm/w

Maximum Candela:

3672 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	87.0	1.1%	60-65	416.0	5.1%	120-125	0	0.0%
5-10	256.9	3.2%	65-70	336.6	4.2%	125-130	0	0.0%
10-15	414.6	5.1%	70-75	259.7	3.2%	130-135	0	0.0%
15-20	552.0	6.8%	75-80	184.5	2.3%	135-140	0	0.0%
20-25	661.6	8.2%	80-85	110.7	1.4%	140-145	0	0.0%
25-30	736.9	9.1%	85-90	35.6	0.4%	145-150	0	0.0%
30-35	774.5	9.6%	90-95	0	0.0%	150-155	0	0.0%
35-40	773.5	9.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	736.2	9.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	671.2	8.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	589.8	7.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	501.6	6.2%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	4257	52.6%
0-60	6756	83.4%
0-90	8099	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	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650	3650
	5	3648	3636	3622	3614	3617	3614	3622	3636	3648	3636	3622	3614	3617	3614	3622
	10	3576	3565	3551	3542	3544	3542	3551	3565	3576	3565	3551	3542	3544	3542	3551
	15	3458	3446	3429	3420	3421	3420	3429	3446	3458	3446	3429	3420	3421	3420	3429
	20	3294	3281	3261	3245	3244	3245	3261	3281	3294	3281	3261	3245	3244	3245	3261
	25	3085	3069	3040	3016	3012	3016	3040	3069	3085	3069	3040	3016	3012	3016	3040
	30	2832	2815	2778	2743	2734	2743	2778	2815	2832	2815	2778	2743	2734	2743	2778
	35	2549	2526	2479	2434	2421	2434	2479	2526	2549	2526	2479	2434	2421	2434	2479
	40	2231	2208	2156	2105	2086	2105	2156	2208	2231	2208	2156	2105	2086	2105	2156
	45	1900	1876	1826	1770	1749	1770	1826	1876	1900	1876	1826	1770	1749	1770	1826
	50	1575	1555	1510	1454	1431	1454	1510	1555	1575	1555	1510	1454	1431	1454	1510
	55	1269	1258	1226	1172	1145	1172	1226	1258	1269	1258	1226	1172	1145	1172	1226
	60	1001	997	977	931	899	931	977	997	1001	997	977	931	899	931	977
	65	774	780	775	732	701	732	775	780	774	780	775	732	701	732	775
	70	586	594	597	560	534	560	597	594	586	594	597	560	534	560	597
	75	419	429	436	407	386	407	436	429	419	429	436	407	386	407	436
	80	273	283	283	269	248	269	283	283	273	283	283	269	248	269	283
	85	130	143	137	135	115	135	137	143	130	143	137	135	115	135	137
	90	3	5	6	7	5	7	6	5	3	5	6	7	5	7	6
	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	5917	5917
	45	4355	4010
	55	3587	3235
	65	2968	2688
	75	2623	2417
	85	2426	2146



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	9641	9641	9641	9641	9417	9417	9417	9417	8999	8999	8999	8616	8616	8616	8264	8264	8264	8099
1	8870	8508	8185	7893	8652	8326	8031	7764	7983	7742	7520	7669	7472	7290	7379	7222	7075	6909
2	8130	7506	6990	6556	7922	7355	6881	6478	7071	6673	6329	6810	6478	6186	6568	6294	6049	5880
3	7466	6665	6046	5552	7271	6539	5965	5503	6302	5811	5407	6083	5665	5314	5879	5526	5224	5055
4	6878	5964	5294	4782	6698	5858	5233	4749	5659	5115	4685	5474	5004	4623	5302	4897	4562	4394
5	6360	5374	4685	4177	6195	5285	4638	4155	5117	4547	4110	4961	4460	4067	4814	4376	4025	3860
6	5900	4874	4186	3692	5750	4799	4149	3676	4656	4077	3645	4523	4007	3614	4398	3941	3583	3424
7	5492	4447	3771	3296	5356	4383	3741	3284	4261	3683	3261	4147	3627	3239	4040	3573	3216	3062
8	5129	4081	3421	2968	5006	4026	3397	2959	3921	3349	2942	3822	3304	2925	3729	3259	2908	2760
9	4806	3763	3124	2693	4694	3715	3104	2686	3625	3065	2673	3539	3027	2660	3459	2990	2646	2504
10	4517	3486	2869	2459	4416	3445	2853	2454	3366	2820	2443	3292	2788	2433	3221	2758	2423	2286

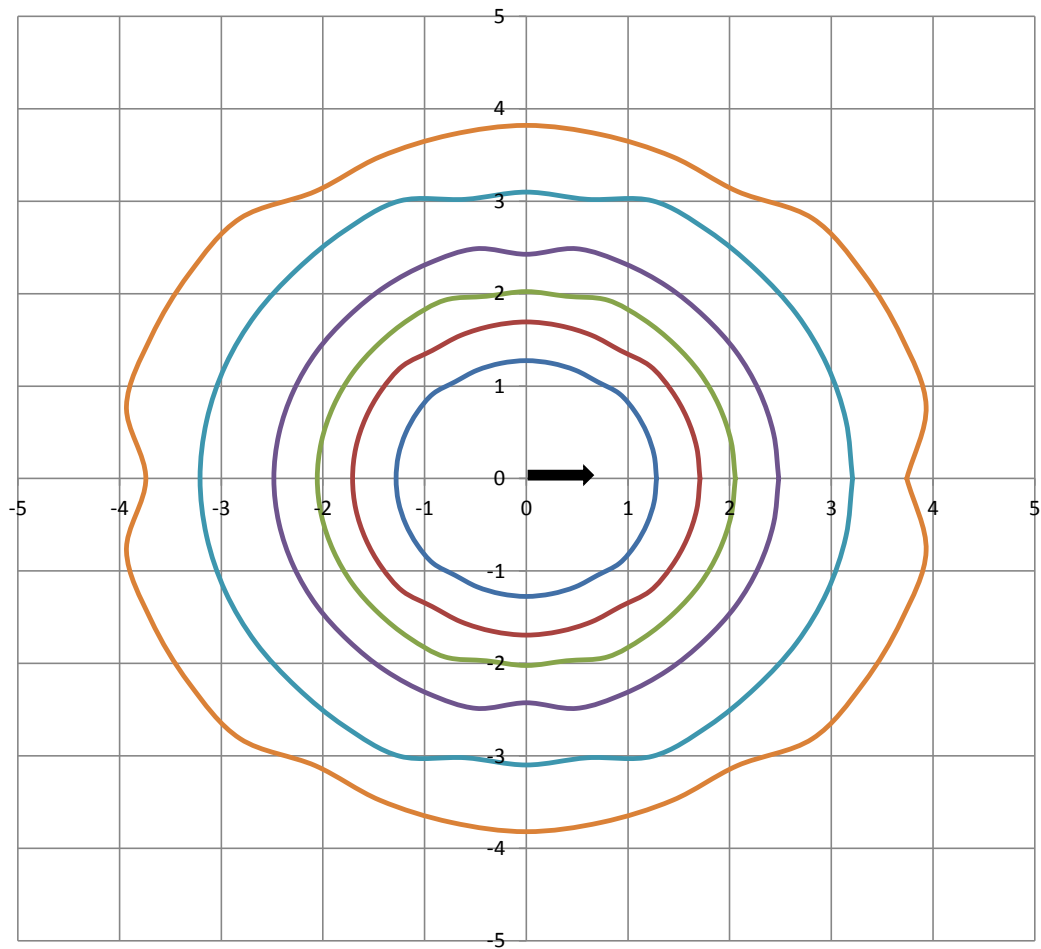
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	3650 Candela
Central Cone Intensity:	3642 Candela
Beam Flux:	4993.5 Lumens
Beam Angle (0-180):	92.3 Degrees
Beam Angle (90-270):	87.7 Degrees
Field Angle (0-180):	153.5 Degrees
Field Angle (90-270):	151.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		228	4.58
6.00		101	6.87
8.00		57.0	9.16
10.0		36.5	11.4
12.0		25.3	13.7
14.0		18.6	16.0
16.0		14.3	18.3



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