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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
GH-2-L240/840-FA-UP-DIM-UNV
Order Number
13309242
Test Number
13309242.02

Test Date

2020-04-10

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: Formed white steel housing, reflectors, lens enclosure
Lamp: 336 White LEDs
Mounting: Pendant
Ballast/Driver: Two Everline ULT D21CC80UNVPW-C Drivers

Luminaire



Luminaire Characteristics

Luminous Length: 22.00 in.
Luminous Width: 17.00 in.
Luminous Height: 2.50 in.

Summary of Results

Total Luminaire Output: 22670 Lumens
Luminaire Efficacy: 128.2 lm/w
Maximum Candela: 7989 Candela

Test Conditions

Test Temperature: 24.8 °C
Voltage: 120.0 VAC
Current: 1.476 A
Power: 176.8 W
Power Factor: 0.998
Frequency: 60 Hz
Current THD: 5.23 %

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



Distribution - Goniophotometer

Distribution Test Conditions

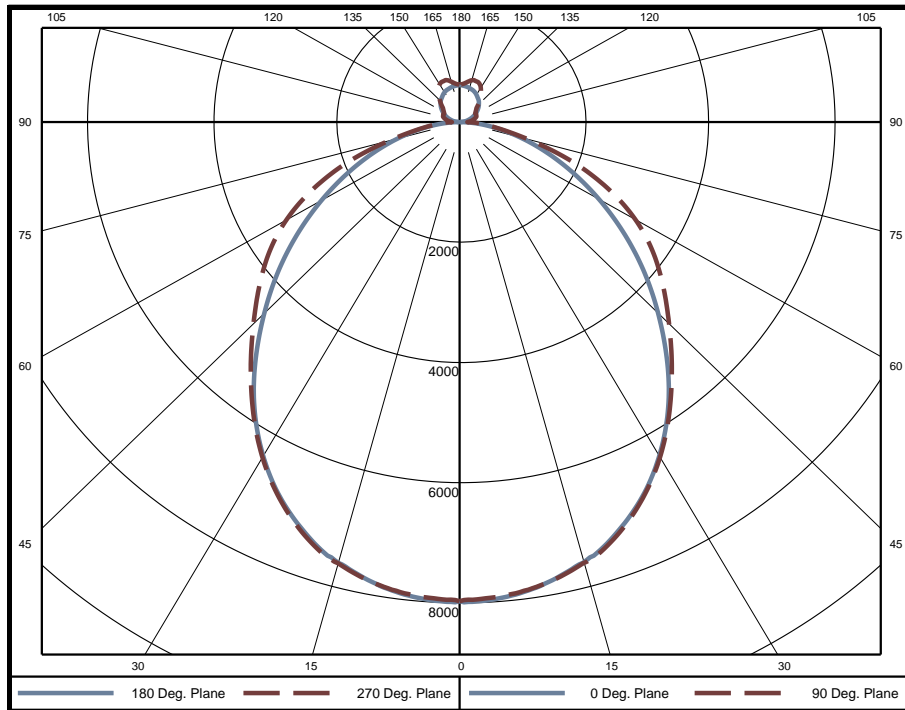
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.0 VAC	1.476 A	176.8 W	0.998	60 Hz	5.23 %

Summary of Results

Spacing Criteria
0-180: 1.19
90-270: 1.20

Total Lumen Output: 22670 Lumens
Luminaire Efficacy: 128.2 lm/w
Maximum Candela: 7989 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	190	0.8%	60-65	1279	5.6%	120-125	154	0.7%
5-10	563	2.5%	65-70	1046	4.6%	125-130	168	0.7%
10-15	913	4.0%	70-75	779	3.4%	130-135	180	0.8%
15-20	1231	5.4%	75-80	507	2.2%	135-140	189	0.8%
20-25	1493	6.6%	80-85	281	1.2%	140-145	190	0.8%
25-30	1688	7.4%	85-90	113	0.5%	145-150	183	0.8%
30-35	1807	8.0%	90-95	63	0.3%	150-155	166	0.7%
35-40	1847	8.1%	95-100	85	0.4%	155-160	140	0.6%
40-45	1819	8.0%	100-105	104	0.5%	160-165	110	0.5%
45-50	1745	7.7%	105-110	119	0.5%	165-170	77	0.3%
50-55	1631	7.2%	110-115	130	0.6%	170-175	45	0.2%
55-60	1476	6.5%	115-120	141	0.6%	175-180	15	0.1%

Zone	Lumens	% of Luminaire
0-40	9732	42.9%
0-60	16403	72.4%
0-90	20408	90.0%
90-180	2259	10.0%



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	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970	7970
	5	7940	7927	7936	7930	7913	7930	7936	7927	7940	7927	7936	7930	7913	7930	7936
	10	7799	7794	7810	7808	7799	7808	7810	7794	7799	7794	7810	7808	7799	7808	7810
	15	7590	7580	7599	7608	7597	7608	7599	7580	7590	7580	7599	7608	7597	7608	7599
	20	7282	7299	7340	7334	7319	7334	7340	7299	7282	7299	7340	7334	7319	7334	7340
	25	6878	6901	6949	6924	6901	6924	6949	6901	6878	6901	6949	6924	6901	6924	6949
	30	6375	6419	6461	6427	6398	6427	6461	6419	6375	6419	6461	6427	6398	6427	6461
	35	5790	5849	5890	5856	5830	5856	5890	5849	5790	5849	5890	5856	5830	5856	5890
	40	5132	5205	5256	5258	5254	5258	5256	5205	5132	5205	5256	5258	5254	5258	5256
	45	4460	4546	4628	4692	4710	4692	4628	4546	4460	4546	4628	4692	4710	4692	4546
	50	3813	3904	4043	4172	4224	4172	4043	3904	3813	3904	4043	4172	4224	4172	4043
	55	3172	3279	3478	3678	3752	3678	3478	3279	3172	3279	3478	3678	3752	3678	3478
	60	2557	2680	2933	3157	3221	3157	2933	2680	2557	2680	2933	3157	3221	3157	2933
	65	1988	2132	2405	2580	2594	2580	2405	2132	1988	2132	2405	2580	2594	2580	2405
	70	1471	1628	1879	1939	1889	1939	1879	1628	1471	1628	1879	1939	1889	1939	1879
	75	1011	1154	1339	1246	1161	1246	1339	1154	1011	1154	1339	1246	1161	1246	1339
	80	612	731	792	692	654	692	731	612	731	792	692	654	692	731	612
	85	279	341	357	353	356	353	357	341	279	341	357	353	356	353	357
	90	11	61	103	123	123	123	103	61	11	61	103	123	123	123	103
	95	53	106	149	173	177	173	149	106	53	106	149	173	177	173	149
	100	107	134	193	216	219	216	193	134	107	134	193	216	219	216	193
	105	153	161	225	256	258	256	225	161	153	161	225	256	258	256	225
	110	204	212	235	276	284	276	235	212	204	212	235	276	284	276	235
	115	254	285	252	284	292	284	252	285	254	285	252	284	292	284	252
	120	303	362	286	290	288	290	286	362	303	362	286	290	288	290	286
	125	350	437	349	319	314	319	349	437	350	437	349	319	314	319	349
	130	394	497	425	365	349	365	425	497	394	497	425	365	349	365	425
	135	435	540	502	445	423	445	502	540	435	540	502	445	423	445	502
	140	472	570	580	526	505	526	580	570	472	570	580	526	505	526	580
	145	499	592	640	608	590	608	640	592	499	592	640	608	590	608	640
	150	531	609	674	679	672	679	674	609	531	609	674	679	672	679	674
	155	557	614	688	715	721	715	688	614	557	614	688	715	721	715	688
	160	575	617	685	722	730	722	685	617	575	617	685	722	730	722	685
	165	589	618	667	705	718	705	667	618	589	618	667	705	718	705	667
	170	600	620	645	668	674	668	645	620	600	620	645	668	674	668	645
	175	609	622	632	638	638	638	632	622	609	622	632	638	638	638	632
	180	628	628	628	628	628	628	628	628	628	628	628	628	628	628	628

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	33030	33030
	45	23470	24070
	55	19720	22410
	65	15670	19340
	75	11370	12010
	85	5769	6308



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	117	117	117	117	113	113	113	113	106	106	106	99	99	99	93	93	93	90
1	107	102	98	94	103	99	95	92	93	90	87	87	85	83	82	80	79	76
2	97	89	83	77	94	87	81	76	82	77	72	77	73	69	72	69	66	64
3	89	79	71	65	86	76	69	63	72	66	61	68	63	59	64	60	57	54
4	82	70	61	55	78	68	60	54	64	58	52	61	55	51	58	53	49	46
5	75	63	54	47	72	61	53	47	58	51	45	55	49	44	52	47	43	40
6	69	56	48	42	67	55	47	41	52	45	40	50	43	39	47	42	38	35
7	64	51	43	37	62	50	42	36	48	41	35	45	39	34	43	38	34	31
8	60	47	39	33	58	46	38	32	44	37	32	42	35	31	40	34	30	28
9	56	43	35	30	54	42	34	29	40	33	29	38	32	28	37	31	27	25
10	53	40	32	27	51	39	32	27	37	31	26	36	30	25	34	29	25	23

Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	7970 Candela
Central Cone Intensity:	7955 Candela
Beam Flux:	13507.4 Lumens
Beam Angle (0-180):	97.3 Degrees
Beam Angle (90-270):	105.1 Degrees
Field Angle (0-180):	155.1 Degrees
Field Angle (90-270):	156.6 Degrees

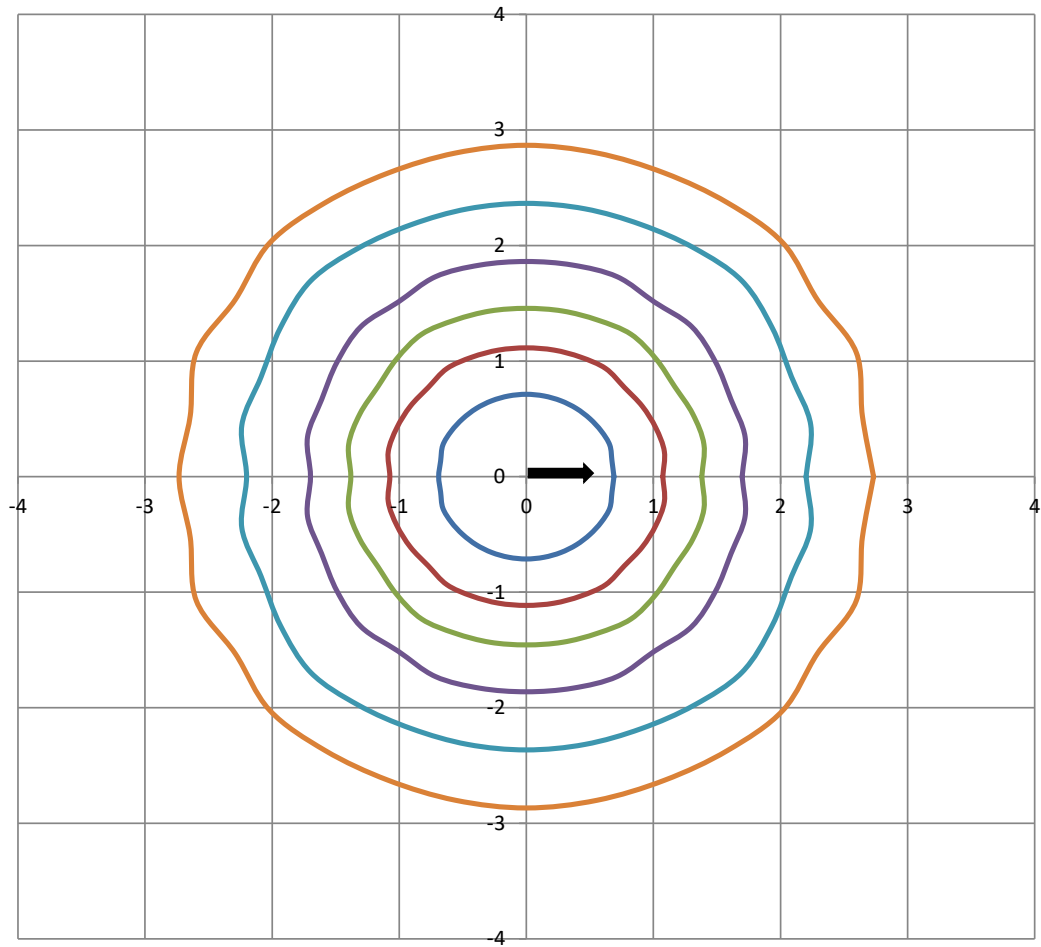
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		498	4.80
6.00		221	7.20
8.00		125	9.60
10.0		79.7	12.0
12.0		55.3	14.4
14.0		40.7	16.8
16.0		31.1	19.2



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

50 fc 20 fc 10 fc 5 fc 2 fc 1 fc