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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**  
**GH-2-L240/840-ND-DIM-UNV**

Order Number  
13309242  
Test Number  
13309242.01

Test Date

2020-04-14

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:** Formed white steel housing, reflectors, no 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: 25350 Lumens  
Luminaire Efficacy: 142.5 lm/w  
Maximum Candela: 23302 Candela

#### Test Conditions

Test Temperature: 25.4 °C  
Voltage: 120.0 VAC  
Current: 1.486 A  
Power: 177.9 W  
Power Factor: 0.998  
Frequency: 60 Hz  
Current THD: 5.49 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

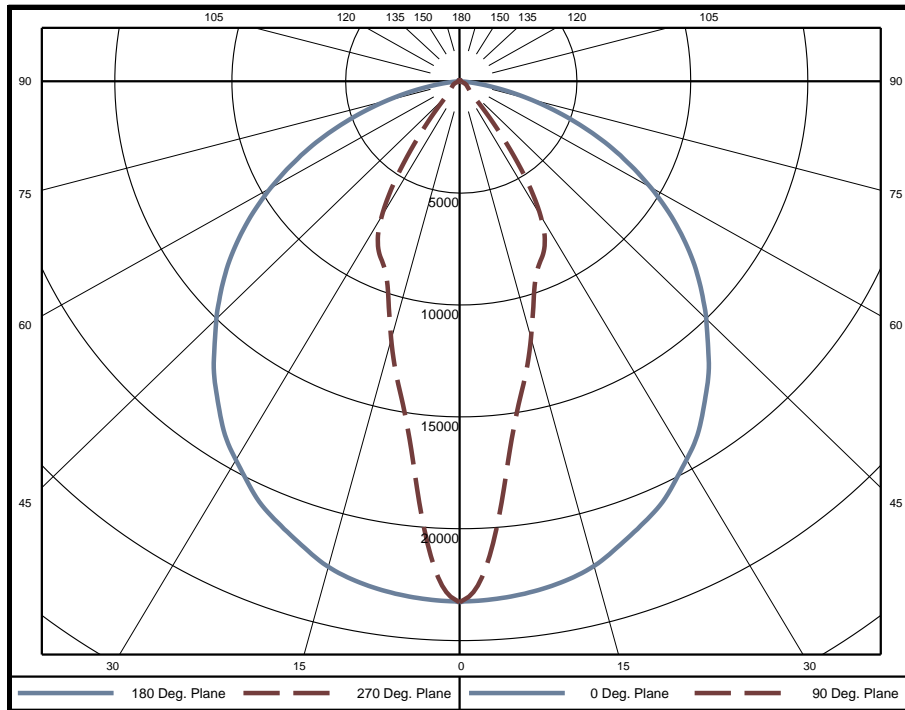
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.4 °C	120.0 VAC	1.486 A	177.9 W	0.998	60 Hz	5.49 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.25  
 90-270: 0.48

**Total Lumen Output:** 25350 Lumens  
**Luminaire Efficacy:** 142.5 lm/w  
**Maximum Candela:** 23302 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	533	2.1%	60-65	828	3.3%	120-125	19	0.1%
5-10	1384	5.5%	65-70	549	2.2%	125-130	19	0.1%
10-15	1960	7.7%	70-75	369	1.5%	130-135	19	0.1%
15-20	2342	9.2%	75-80	214	0.8%	135-140	19	0.1%
20-25	2581	10.2%	80-85	92	0.4%	140-145	17	0.1%
25-30	2762	10.9%	85-90	29	0.1%	145-150	16	0.1%
30-35	2763	10.9%	90-95	24	0.1%	150-155	13	0.1%
35-40	2462	9.7%	95-100	19	0.1%	155-160	10	0.0%
40-45	2013	7.9%	100-105	17	0.1%	160-165	8	0.0%
45-50	1656	6.5%	105-110	17	0.1%	165-170	6	0.0%
50-55	1400	5.5%	110-115	18	0.1%	170-175	4	0.0%
55-60	1154	4.6%	115-120	18	0.1%	175-180	1	0.0%

Zone	Lumens	% of Luminaire
0-40	16787	66.2%
0-60	23010	90.8%
0-90	25091	99.0%
90-180	264	1.0%



### 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	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290	23290
	5	23160	22600	21230	20030	19520	20030	21230	22600	23160	22600	21230	20030	19520	20030	21230
	10	22910	20610	16940	15180	14660	15180	16940	20610	22910	20610	16940	15180	14660	15180	16940
	15	22430	17920	14040	12480	11900	12480	14040	17920	22430	17920	14040	12480	11900	12480	14040
	20	21600	15280	11870	10010	9527	10010	11870	15280	21600	15280	11870	10010	9527	10010	11870
	25	20750	13310	9761	8696	8524	8696	9761	13310	20750	13310	9761	8696	8524	8696	9761
	30	19570	11580	8386	7661	7025	7661	8386	11580	19570	11580	8386	7661	7025	7661	8386
	35	18260	9843	7524	5325	4111	5325	7524	9843	18260	9843	7524	5325	4111	5325	7524
	40	16740	8071	5834	2391	1434	2391	5834	8071	16740	8071	5834	2391	1434	2391	5834
	45	15060	6740	3348	760	621	760	3348	6740	15060	6740	3348	760	621	760	3348
	50	13380	5770	1207	536	500	536	1207	5770	13380	5770	1207	536	500	536	1207
	55	11550	4533	525	429	406	429	525	4533	11550	4533	525	429	406	429	525
	60	9560	2695	414	357	342	357	414	2695	9560	2695	414	357	342	357	414
	65	7463	907	313	293	271	293	313	907	7463	907	313	293	271	293	313
	70	5302	312	256	204	169	204	256	312	5302	312	256	204	169	204	256
	75	3238	235	178	105	70	105	178	235	3238	235	178	105	70	105	178
	80	1438	162	110	63	33	63	110	162	1438	162	110	63	33	63	110
	85	288	101	68	41	20	41	68	101	288	101	68	41	20	41	68
	90	5	40	37	26	12	26	37	40	5	40	37	26	12	26	37
	95	19	35	46	47	38	47	46	35	19	35	46	47	38	47	46
	100	29	33	34	34	29	34	34	33	29	33	34	34	29	34	34
	105	36	36	32	29	22	29	32	36	36	32	29	22	29	32	36
	110	43	40	35	28	20	28	35	40	43	40	35	28	20	28	35
	115	47	44	38	29	20	29	38	44	47	44	38	29	20	29	38
	120	48	49	40	31	23	31	40	49	48	49	40	31	23	31	40
	125	52	52	43	33	26	33	43	52	52	43	33	26	33	43	52
	130	58	51	46	37	31	37	46	51	58	51	46	37	31	37	46
	135	68	52	49	41	38	41	49	52	68	52	49	41	38	41	49
	140	68	54	51	46	46	46	51	54	68	54	51	46	46	46	51
	145	47	57	50	52	55	52	50	57	47	57	50	52	55	52	50
	150	46	59	46	52	60	52	46	59	46	59	46	52	60	52	46
	155	45	61	48	47	53	47	48	61	45	61	48	47	53	47	48
	160	43	60	54	43	40	43	54	60	43	60	54	43	40	43	54
	165	43	60	59	42	36	42	59	60	43	60	59	42	36	42	59
	170	43	61	58	43	35	43	58	61	43	61	58	43	35	43	58
	175	45	56	60	45	31	45	60	56	45	56	60	45	31	45	60
	180	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

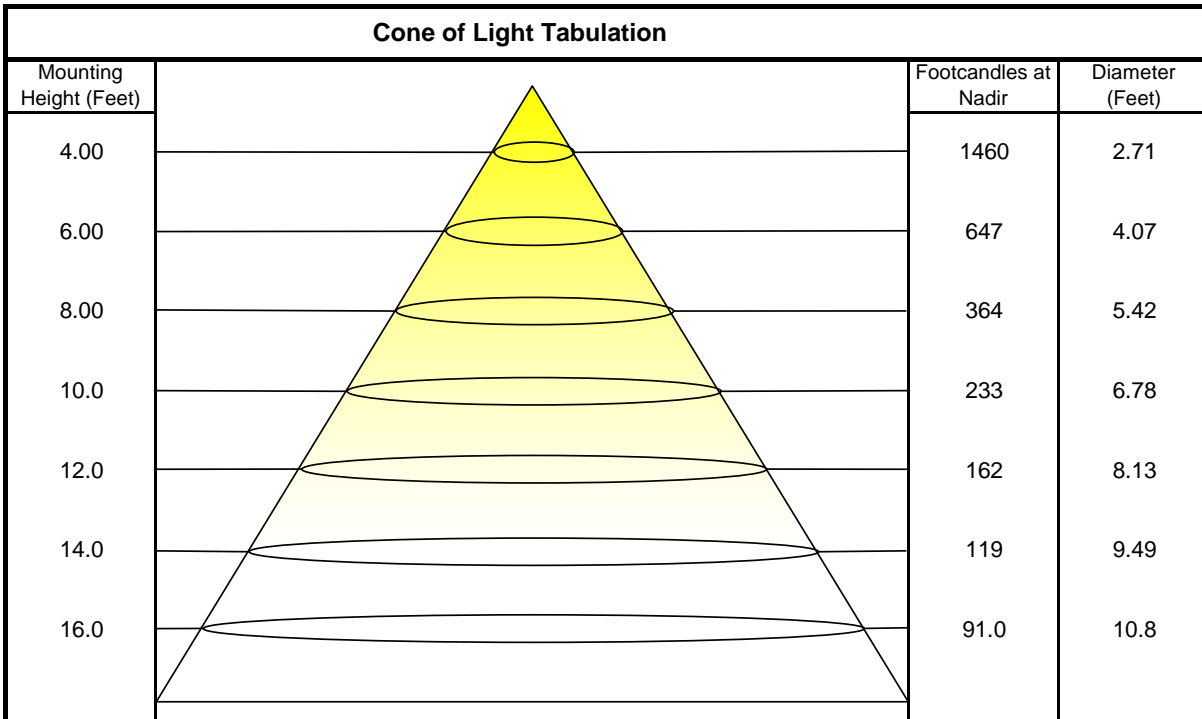
Vertical Angle (Degrees)	0	45	90
	0	96530	96530
	45	79260	3174
	55	71820	2427
	65	58840	2017
	75	36410	721
	85	5962	348



### 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	101	101	101	99
1	111	108	104	101	109	105	102	100	101	99	96	97	95	93	93	92	90	88
2	103	97	92	87	101	95	90	86	92	88	84	88	85	82	85	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	71	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	66	62	58	56
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	61	57	53	51
7	74	62	55	50	72	61	54	49	60	54	49	58	53	49	57	52	48	46
8	69	58	50	45	68	57	50	45	56	49	45	54	49	45	53	48	44	43
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	39
10	62	50	43	39	61	50	43	39	49	43	38	48	42	38	47	42	38	37

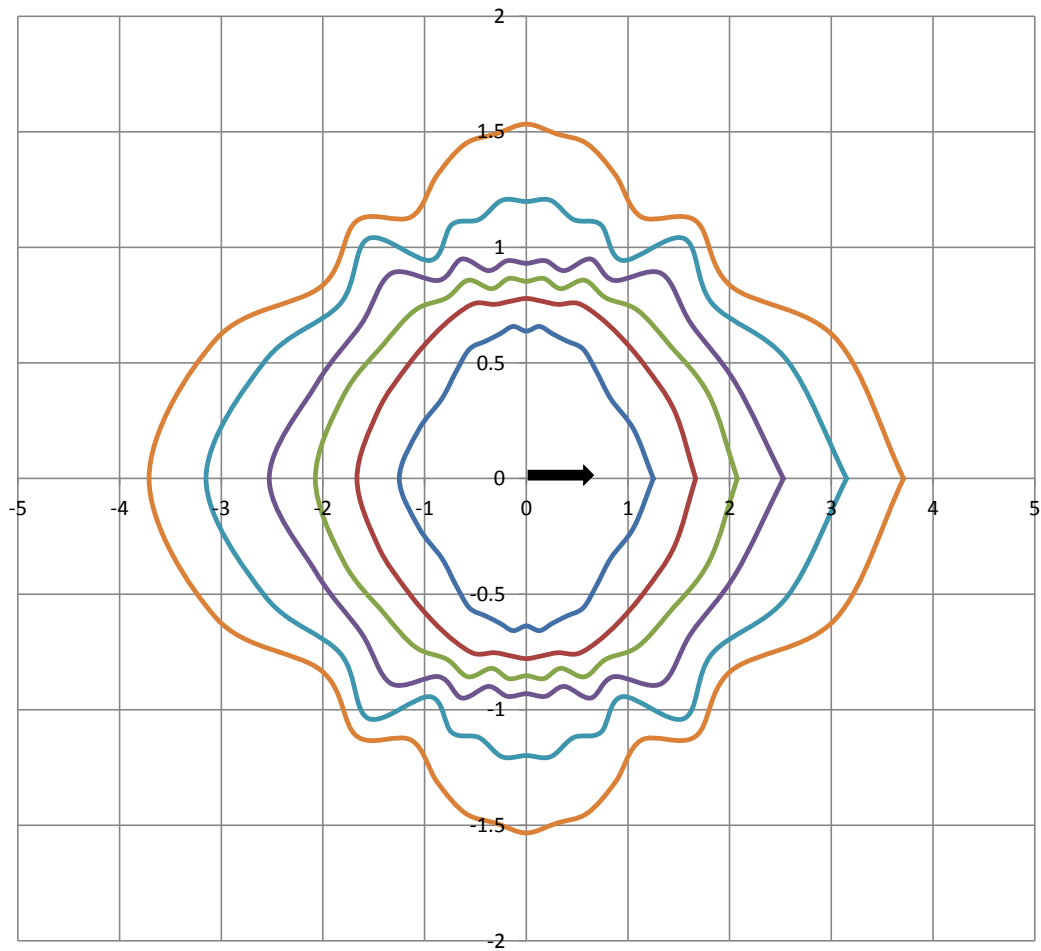
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	23290 Candela
Central Cone Intensity:	22567 Candela
Beam Flux:	11985.7 Lumens
Beam Angle (0-180):	109.5 Degrees
Beam Angle (90-270):	30.9 Degrees
Field Angle (0-180):	154.8 Degrees
Field Angle (90-270):	76.1 Degrees





## 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