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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  
Carthage, MO 64836-0837  
United States

Catalog Number  
**GH-2-L300/840-FA-DIM-UNV**  
Order Number  
13326828  
Test Number  
13326828.02

Test Date

2020-04-24

Prepared By

Jesse Litchfield, Technician

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 steel housing, frosted lens enclosure  
**Lamp:** 504 white LEDs  
**Mounting:** Pendant  
**Ballast/Driver:** ULT D21CC80UNVPW-C

### Luminaire



### Luminaire Characteristics

Luminous Length: 22.50 in.  
Luminous Width: 22.50 in.  
Luminous Height: 3.25 in.

### Summary of Results

Total Luminaire Output: 31000 Lumens  
Luminaire Efficacy: 136.1 lm/w  
Maximum Candela: 10544 Candela

### Test Conditions

Test Temperature: 25.1 °C  
Voltage: 120.2 VAC  
Current: 1.899 A  
Power: 227.7 W  
Power Factor: 0.998  
Frequency: 60 Hz  
Current THD: 5.62 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

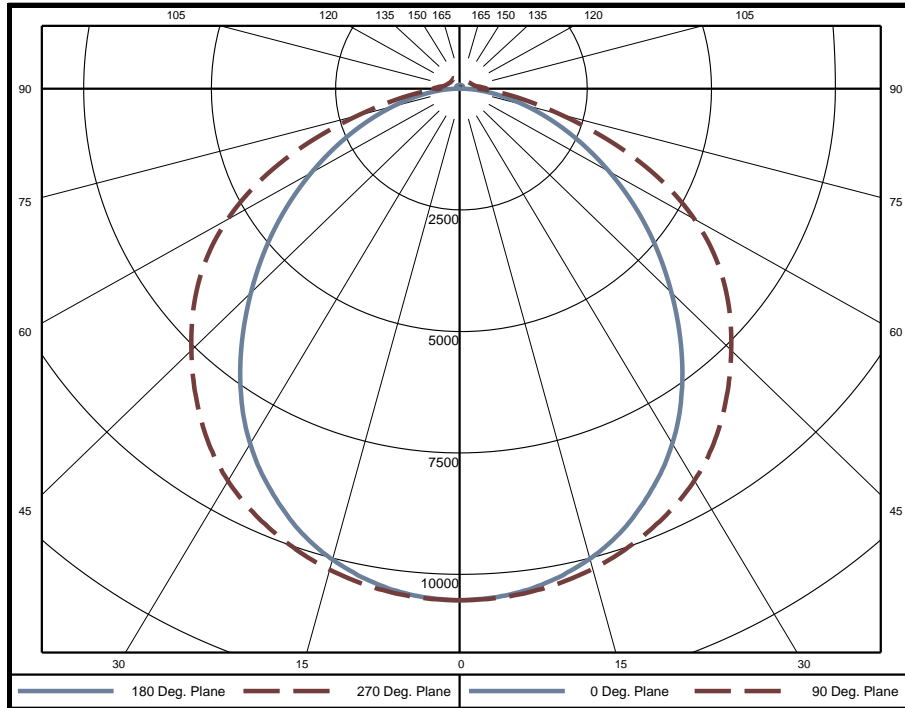
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.2 VAC	1.899 A	227.7 W	0.998	60 Hz	5.62 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.19  
 90-270: 1.31

**Total Lumen Output:** 31000 Lumens  
**Luminaire Efficacy:** 136.1 lm/w  
**Maximum Candela:** 10544 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	251	0.8%	60-65	1996	6.4%	120-125	83	0.3%
5-10	746	2.4%	65-70	1646	5.3%	125-130	80	0.3%
10-15	1215	3.9%	70-75	1241	4.0%	130-135	76	0.2%
15-20	1642	5.3%	75-80	838	2.7%	135-140	71	0.2%
20-25	2012	6.5%	80-85	489	1.6%	140-145	65	0.2%
25-30	2311	7.5%	85-90	215	0.7%	145-150	56	0.2%
30-35	2526	8.1%	90-95	155	0.5%	150-155	45	0.1%
35-40	2641	8.5%	95-100	121	0.4%	155-160	33	0.1%
40-45	2663	8.6%	100-105	104	0.3%	160-165	22	0.1%
45-50	2609	8.4%	105-110	95	0.3%	165-170	13	0.0%
50-55	2484	8.0%	110-115	89	0.3%	170-175	6	0.0%
55-60	2279	7.4%	115-120	85	0.3%	175-180	2	0.0%

Zone	Lumens	% of Luminaire
0-40	13344	43.0%
0-60	23379	75.4%
0-90	29804	96.1%
90-180	1201	3.9%



### Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530	10530
5	10470	10470	10490	10510	10500	10510	10490	10470	10470	10470	10490	10510	10500	10510	10490	10470
10	10290	10310	10360	10400	10400	10400	10360	10310	10290	10310	10360	10400	10400	10400	10360	10310
15	10000	10030	10130	10210	10230	10210	10130	10030	10000	10030	10130	10210	10230	10210	10130	10030
20	9584	9654	9812	9951	9986	9951	9812	9654	9584	9654	9812	9951	9986	9951	9812	9654
25	9032	9145	9414	9614	9684	9614	9414	9145	9032	9145	9414	9614	9684	9614	9414	9145
30	8393	8550	8903	9211	9305	9211	8903	8550	8393	8550	8903	9211	9305	9211	8903	8550
35	7618	7841	8312	8702	8818	8702	8312	7841	7618	7841	8312	8702	8818	8702	8312	7841
40	6760	7038	7621	8097	8233	8097	7621	7038	6760	7038	7621	8097	8233	8097	7621	7038
45	5879	6220	6902	7446	7604	7446	6902	6220	5879	6220	6902	7446	7604	7446	6902	6220
50	5027	5420	6184	6777	6956	6777	6184	5420	5027	5420	6184	6777	6956	6777	6184	5420
55	4192	4633	5439	6048	6230	6048	5439	4633	4192	4633	5439	6048	6230	6048	5439	4633
60	3382	3855	4658	5216	5366	5216	4658	3855	3382	3855	4658	5216	5366	5216	4658	3855
65	2631	3116	3861	4285	4349	4285	3861	3116	2631	3116	3861	4285	4349	4285	3861	3116
70	1944	2418	3041	3224	3187	3224	3041	2418	1944	2418	3041	3224	3187	3224	3041	2418
75	1334	1755	2181	2160	2089	2160	2181	1755	1334	1755	2181	2160	2089	2160	2181	1755
80	803	1132	1346	1313	1285	1313	1346	1132	803	1132	1346	1313	1285	1313	1346	1132
85	356	542	667	721	739	721	667	542	356	542	667	721	739	721	667	542
90	11	105	252	354	385	354	252	105	11	105	252	354	385	354	252	105
95	48	116	262	381	421	381	262	116	48	116	262	381	421	381	262	116
100	65	105	218	298	319	298	218	105	65	105	218	298	319	298	218	105
105	66	107	195	267	288	267	195	107	66	107	195	267	288	267	195	107
110	65	116	186	245	262	245	186	116	65	116	186	245	262	245	186	116
115	65	131	178	234	250	234	178	131	65	131	178	234	250	234	178	131
120	64	157	178	223	236	223	178	157	64	157	178	223	236	223	178	157
125	71	178	185	216	228	216	185	178	71	178	185	216	228	216	185	178
130	78	180	198	213	221	213	198	180	78	180	198	213	221	213	198	180
135	83	173	219	219	226	219	219	173	83	173	219	219	226	219	219	173
140	78	160	236	223	228	223	236	160	78	160	236	223	228	223	236	160
145	76	147	231	241	235	241	231	147	76	147	231	241	235	241	231	147
150	75	133	208	248	248	248	208	133	75	133	208	248	248	248	208	133
155	76	120	180	219	230	219	180	120	76	120	180	219	230	219	180	120
160	75	105	152	182	193	182	152	105	75	105	152	182	193	182	152	105
165	76	92	123	144	151	144	123	92	76	92	123	144	151	144	123	92
170	75	85	96	107	110	107	96	85	75	85	96	107	110	107	96	85
175	75	77	80	78	75	78	80	77	75	77	80	78	75	78	80	77
180	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71	71

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

Horizontal Angle (Degrees)

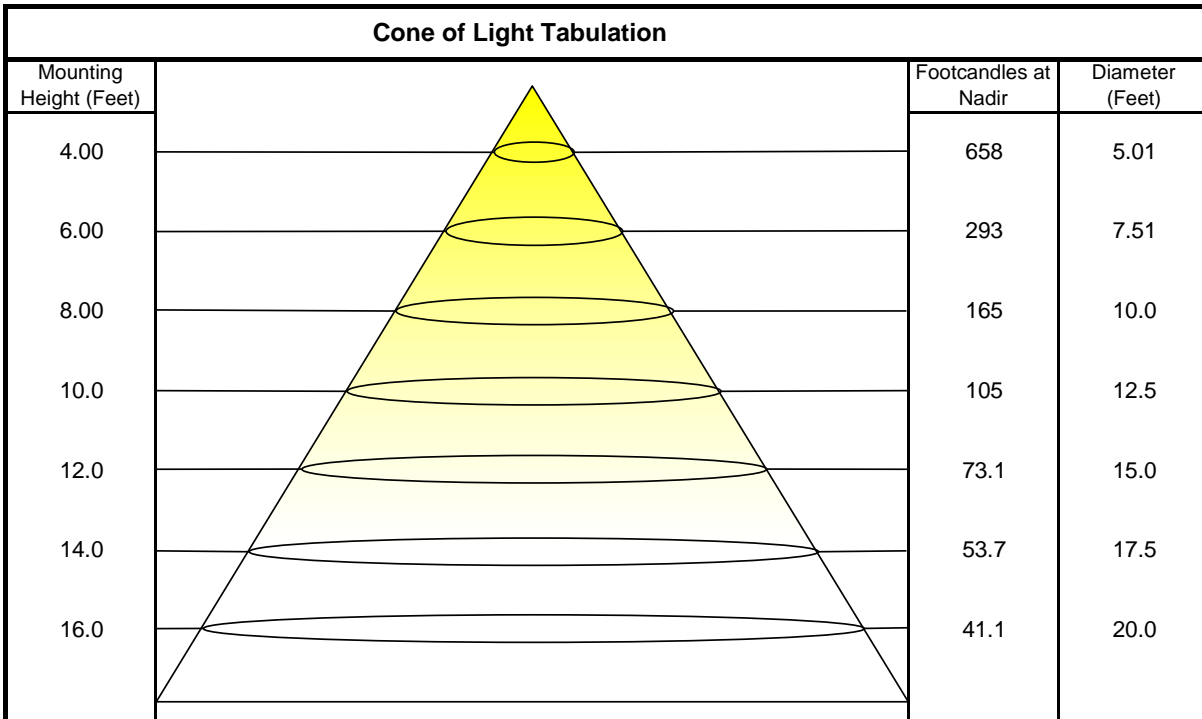
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	32240	32240	32240
45	22240	24820	28770
55	18550	22470	27570
65	14550	19450	24060
75	10250	14640	16050
85	4719	7023	9792



### 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	118	118	118	118	115	115	115	115	109	109	109	104	104	104	98	98	98	96
1	108	103	99	95	105	100	96	93	95	92	89	91	88	86	86	84	82	80
2	98	90	83	77	95	87	81	76	83	78	73	79	75	71	76	72	69	67
3	89	79	70	64	86	77	69	63	73	67	61	70	64	60	67	62	58	56
4	82	70	61	54	79	68	60	54	65	58	52	62	56	51	60	54	50	48
5	75	62	53	47	73	61	52	46	58	51	45	56	49	44	54	48	44	41
6	69	56	47	41	67	55	46	40	53	45	40	51	44	39	49	43	38	36
7	64	51	42	36	62	50	41	36	48	40	35	46	39	35	44	38	34	32
8	60	46	38	32	58	45	37	32	44	36	31	42	36	31	41	35	30	28
9	56	42	34	29	54	42	34	29	40	33	28	39	32	28	38	32	27	26
10	52	39	31	26	51	38	31	26	37	30	26	36	30	25	35	29	25	23

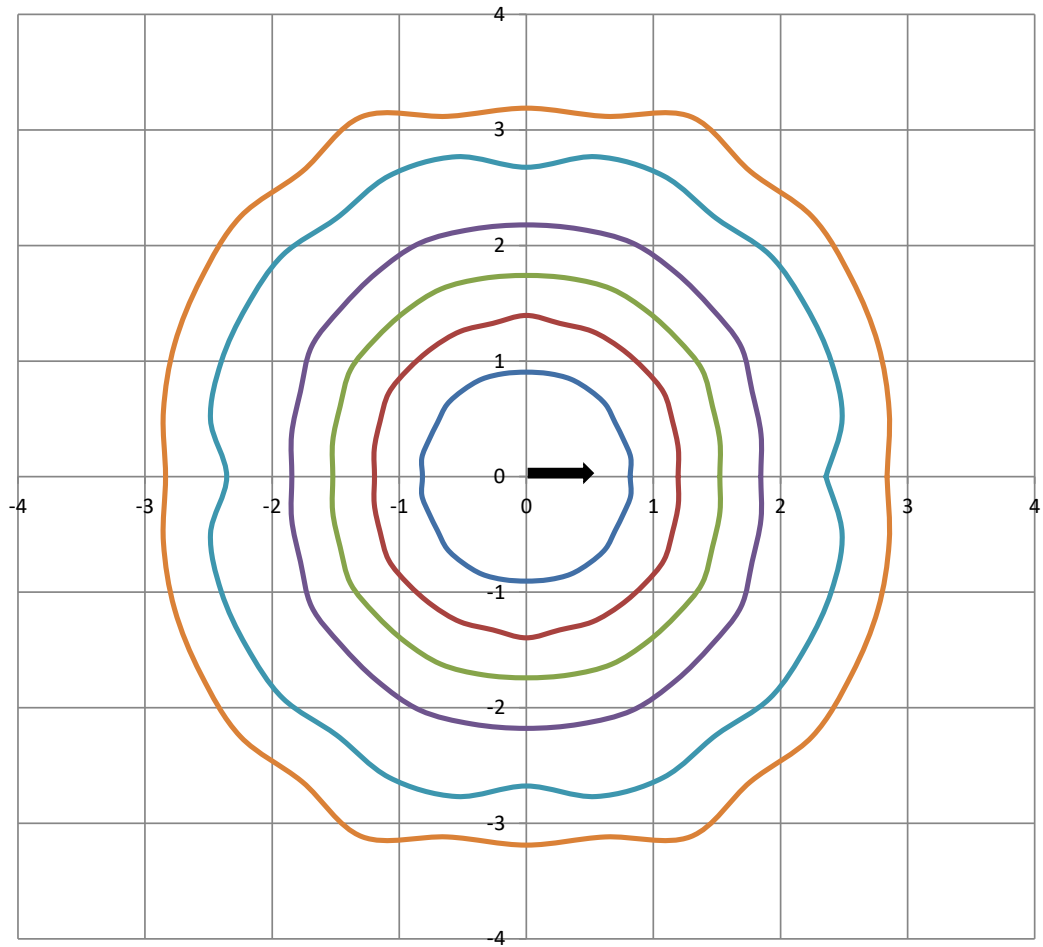
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	10530 Candela
Central Cone Intensity:	10517 Candela
Beam Flux:	21463.1 Lumens
Beam Angle (0-180):	97.2 Degrees
Beam Angle (90-270):	121.1 Degrees
Field Angle (0-180):	155.1 Degrees
Field Angle (90-270):	163.8 Degrees





## 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