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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-4-L660/840-FA-DIM-UNV
Order Number
13326828
Test Number
13326828.05

Test Date

2020-04-22

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, frosted lens enclosure
Lamp: 1008 White LEDs
Mounting: Pendant
Ballast/Driver: Six Everline D21CC80UNVPW-C Drivers

Luminaire



Luminaire Characteristics

Luminous Length: 44.75 in.
Luminous Width: 23.50 in.
Luminous Height: 3.25 in.

Summary of Results

Total Luminaire Output: 66420 Lumens
Luminaire Efficacy: 133.9 lm/w
Maximum Candela: 22449 Candela

Test Conditions

Test Temperature: 24.5 °C
Voltage: 120.1 VAC
Current: 4.138 A
Power: 495.9 W
Power Factor: 0.998
Frequency: 60 Hz
Current THD: 5.47 %

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



Distribution - Goniophotometer

Distribution Test Conditions

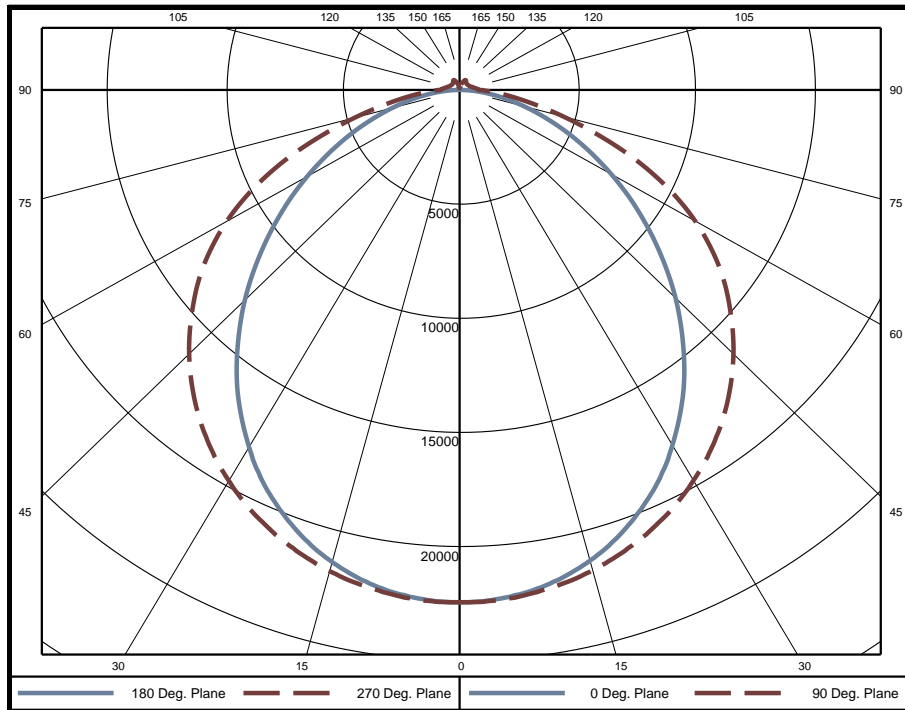
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	120.1 VAC	4.138 A	495.9 W	0.998	60 Hz	5.47 %

Summary of Results

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

Total Lumen Output: 66420 Lumens
Luminaire Efficacy: 133.9 lm/w
Maximum Candela: 22449 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	535	0.8%	60-65	4327	6.5%	120-125	147	0.2%
5-10	1588	2.4%	65-70	3572	5.4%	125-130	140	0.2%
10-15	2587	3.9%	70-75	2709	4.1%	130-135	133	0.2%
15-20	3496	5.3%	75-80	1861	2.8%	135-140	127	0.2%
20-25	4284	6.4%	80-85	1115	1.7%	140-145	117	0.2%
25-30	4923	7.4%	85-90	528	0.8%	145-150	102	0.2%
30-35	5388	8.1%	90-95	256	0.4%	150-155	81	0.1%
35-40	5671	8.5%	95-100	218	0.3%	155-160	56	0.1%
40-45	5760	8.7%	100-105	188	0.3%	160-165	36	0.1%
45-50	5659	8.5%	105-110	168	0.3%	165-170	20	0.0%
50-55	5380	8.1%	110-115	157	0.2%	170-175	9	0.0%
55-60	4934	7.4%	115-120	151	0.2%	175-180	2	0.0%

Zone	Lumens	% of Luminaire
0-40	28472	42.9%
0-60	50205	75.6%
0-90	64317	96.8%
90-180	2108	3.2%



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	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440	22440
	5	22310	22330	22350	22350	22370	22350	22350	22330	22310	22330	22350	22350	22370	22350	22330
	10	21960	21980	22050	22100	22130	22100	22050	21980	21960	21980	22050	22100	22130	22100	21980
	15	21320	21400	21570	21700	21760	21700	21570	21400	21320	21400	21570	21700	21760	21700	21570
	20	20450	20590	20890	21130	21240	21130	20890	20590	20450	20590	20890	21130	21240	21130	20890
	25	19340	19540	20030	20410	20570	20410	20030	19540	19340	19540	20030	20410	20570	20410	20030
	30	17950	18290	18970	19540	19730	19540	18970	18290	17950	18290	18970	19540	19730	19540	18970
	35	16400	16850	17780	18520	18760	18520	17780	16850	16400	16850	17780	18520	18760	18520	17780
	40	14670	15290	16450	17360	17620	17360	16450	15290	14670	15290	16450	17360	17620	17360	16450
	45	12870	13600	14980	16050	16320	16050	14980	13600	12870	13600	14980	16050	16320	16050	14980
	50	10990	11860	13430	14600	14870	14600	13430	11860	10990	11860	13430	14600	14870	14600	13430
	55	9157	10120	11810	13000	13310	13000	11810	10120	9157	10120	11810	13000	13310	13000	11810
	60	7389	8428	10130	11230	11460	11230	10130	8428	7389	8428	10130	11230	11460	11230	10130
	65	5725	6816	8429	9229	9289	9229	8429	6816	5725	6816	8429	9229	9289	9229	8429
	70	4207	5296	6636	6985	6855	6985	6636	5296	4207	5296	6636	6985	6855	6985	6636
	75	2868	3869	4815	4753	4587	4753	4815	3869	2868	3869	4815	4753	4587	4753	4815
	80	1735	2553	3053	2955	2869	2955	3053	2553	1735	2553	3053	2955	2869	2955	3053
	85	778	1287	1585	1669	1693	1669	1585	1287	778	1287	1585	1669	1693	1669	1585
	90	45	363	674	885	951	885	674	363	45	363	674	885	951	885	674
	95	56	206	480	668	719	668	480	206	56	206	480	668	719	668	480
	100	61	182	403	568	612	568	403	182	61	182	403	568	612	568	403
	105	61	188	355	496	538	496	355	188	61	188	355	496	538	496	355
	110	63	206	332	443	477	443	332	206	63	206	332	443	477	443	332
	115	65	245	321	413	444	413	321	245	65	245	321	413	444	413	321
	120	67	295	322	394	422	394	322	295	67	295	322	394	422	394	322
	125	71	324	333	385	408	385	333	324	71	324	333	385	408	385	333
	130	76	312	366	383	403	383	366	312	76	312	366	383	403	383	366
	135	79	287	413	396	406	396	413	287	79	287	413	396	406	396	413
	140	79	260	447	432	431	432	447	260	79	260	447	432	431	432	447
	145	82	232	425	474	474	474	425	232	82	232	425	474	474	474	425
	150	82	212	372	475	504	475	372	212	82	212	372	475	504	475	372
	155	84	185	318	407	449	407	318	185	84	185	318	407	449	407	318
	160	87	154	264	327	354	327	264	154	87	154	264	327	354	327	264
	165	89	129	213	250	261	250	213	129	89	129	213	250	261	250	213
	170	90	110	152	175	182	175	152	110	90	110	152	175	182	175	152
	175	92	99	110	112	110	112	110	99	92	99	110	112	110	112	110
	180	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

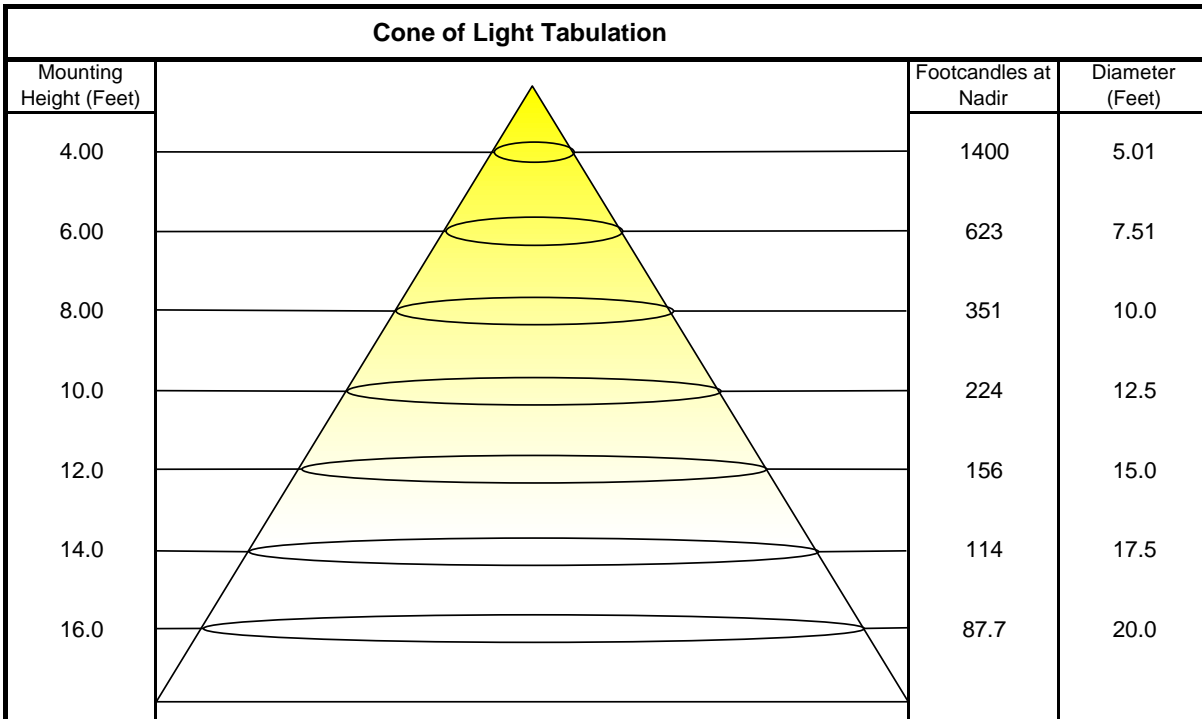
Vertical Angle (Degrees)	0	45	90
	0	33070	33070
	45	25010	29890
	55	21320	28560
	65	17280	24990
	75	12850	17230
	85	7189	11090



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	99	99	99	97
1	108	103	98	95	105	100	96	93	95	92	89	91	88	86	87	85	83	80
2	98	89	83	77	95	87	81	76	83	78	73	79	75	71	76	72	69	67
3	89	78	70	64	86	77	69	63	73	67	61	70	65	60	67	62	58	56
4	82	69	61	54	79	68	60	53	65	58	52	62	56	51	60	55	50	48
5	75	62	53	46	73	61	52	46	58	51	45	56	49	44	54	48	44	41
6	69	56	47	40	67	55	46	40	53	45	39	51	44	39	49	43	38	36
7	64	51	42	36	62	50	41	35	48	40	35	46	39	34	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	28	40	33	28	39	32	28	38	32	27	26
10	52	39	31	26	51	38	31	26	37	30	25	36	30	25	35	29	25	23

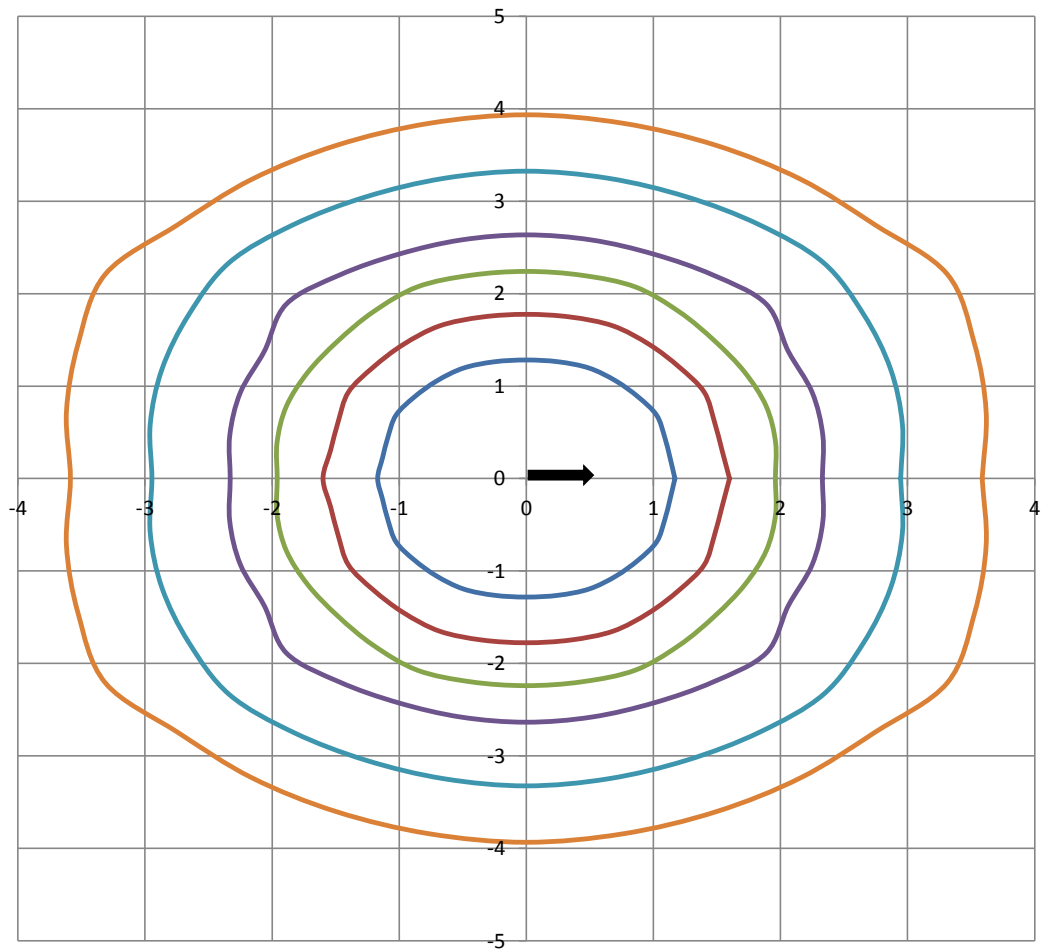
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	22440 Candela
Central Cone Intensity:	22406 Candela
Beam Flux:	46582.5 Lumens
Beam Angle (0-180):	98.8 Degrees
Beam Angle (90-270):	121.2 Degrees
Field Angle (0-180):	155.3 Degrees
Field Angle (90-270):	164.9 Degrees





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