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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-L80/840-FA-DIM-UNV
Order Number
13326828
Test Number
13326828.01

Test Date

2020-04-24

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: White steel housing, frosted lens enclosure
Lamp: 168 white LEDs
Mounting: Pendant
Ballast/Driver: ULT D15CC55UNVPW-C

Luminaire



Luminaire Characteristics

Luminous Length: 22.25 in.
Luminous Width: 10.50 in.
Luminous Height: 3.25 in.

Summary of Results

Total Luminaire Output: 8075 Lumens
Luminaire Efficacy: 144.4 lm/w
Maximum Candela: 2674 Candela

Test Conditions

Test Temperature: 25.0 °C
Voltage: 120.1 VAC
Current: 0.4664 A
Power: 55.90 W
Power Factor: 0.998
Frequency: 60 Hz
Current THD: 4.48 %

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



Distribution - Goniophotometer

Distribution Test Conditions

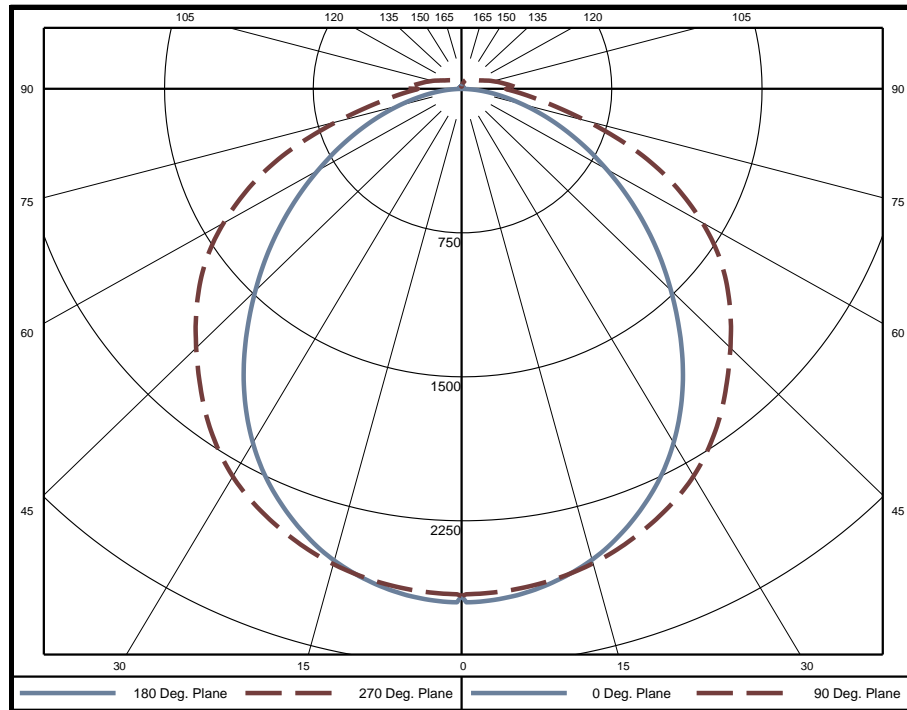
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.4664 A	55.90 W	0.998	60 Hz	4.48 %

Summary of Results

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

Total Lumen Output: 8075 Lumens
Luminaire Efficacy: 144.4 lm/w
Maximum Candela: 2674 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	63.0	0.8%	60-65	509.6	6.3%	120-125	24.4	0.3%
5-10	186.8	2.3%	65-70	431.7	5.3%	125-130	20.9	0.3%
10-15	304.3	3.8%	70-75	340.3	4.2%	130-135	18.1	0.2%
15-20	411.0	5.1%	75-80	243.8	3.0%	135-140	15.5	0.2%
20-25	503.3	6.2%	80-85	160.6	2.0%	140-145	13.2	0.2%
25-30	578.3	7.2%	85-90	97.0	1.2%	145-150	11.2	0.1%
30-35	631.0	7.8%	90-95	87.1	1.1%	150-155	9.3	0.1%
35-40	658.7	8.2%	95-100	68.6	0.8%	155-160	7.2	0.1%
40-45	663.3	8.2%	100-105	54.2	0.7%	160-165	5.0	0.1%
45-50	650.8	8.1%	105-110	42.9	0.5%	165-170	3.1	0.0%
50-55	621.4	7.7%	110-115	34.5	0.4%	170-175	1.4	0.0%
55-60	574.3	7.1%	115-120	28.7	0.4%	175-180	0.4	0.0%

Zone	Lumens	% of Luminaire
0-40	3336	41.3%
0-60	5846	72.4%
0-90	7629	94.5%
90-180	446	5.5%



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	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641	2641
	5	2658	2622	2628	2626	2624	2626	2628	2622	2658	2622	2628	2626	2624	2626	2622
	10	2610	2579	2593	2598	2599	2598	2593	2579	2610	2579	2593	2598	2599	2598	2579
	15	2534	2510	2535	2552	2557	2552	2535	2510	2534	2510	2535	2552	2557	2552	2535
	20	2423	2409	2453	2485	2496	2485	2453	2409	2423	2409	2453	2485	2496	2485	2409
	25	2284	2284	2351	2402	2421	2402	2351	2284	2284	2284	2351	2402	2421	2402	2351
	30	2115	2133	2226	2301	2327	2301	2226	2133	2115	2133	2226	2301	2327	2301	2226
	35	1916	1951	2073	2171	2203	2171	2073	1951	1916	1951	2073	2171	2203	2171	2073
	40	1695	1748	1898	2018	2057	2018	1898	1748	1695	1748	1898	2018	2057	2018	1898
	45	1469	1541	1719	1859	1906	1859	1719	1541	1469	1541	1719	1859	1906	1859	1719
	50	1250	1338	1544	1702	1754	1702	1544	1338	1250	1338	1544	1702	1754	1702	1544
	55	1035	1138	1366	1535	1591	1535	1366	1138	1035	1138	1366	1535	1591	1535	1366
	60	828	947	1182	1346	1393	1346	1182	947	828	947	1182	1346	1393	1346	1182
	65	642	769	995	1133	1171	1133	995	769	642	769	995	1133	1171	1133	995
	70	471	611	800	906	919	906	800	611	471	611	800	906	919	906	800
	75	318	449	610	658	651	658	610	449	318	449	610	658	651	658	610
	80	189	297	416	445	444	445	416	297	189	297	416	445	444	445	416
	85	82	165	257	301	310	301	257	165	82	165	257	301	310	301	257
	90	0	68	159	211	222	211	159	68	0	68	159	211	222	211	159
	95	4	62	159	223	239	223	159	62	4	62	159	223	239	223	159
	100	8	45	125	181	195	181	125	45	8	45	125	181	195	181	125
	105	9	37	97	146	158	146	97	37	9	37	97	146	158	146	97
	110	10	33	79	116	127	116	79	33	10	33	79	116	127	116	79
	115	10	32	67	95	105	95	67	32	10	32	67	95	105	95	67
	120	10	31	59	82	89	82	59	31	10	31	59	82	89	82	59
	125	11	30	53	73	79	73	53	30	11	30	53	73	79	73	53
	130	12	30	49	65	70	65	49	30	12	30	49	65	70	65	49
	135	13	30	46	59	63	59	46	30	13	30	46	59	63	59	46
	140	12	30	43	54	58	54	43	30	12	30	43	54	58	54	43
	145	11	30	40	51	55	51	40	30	11	30	40	51	55	51	40
	150	12	30	40	47	53	47	40	30	12	30	40	47	53	47	40
	155	13	29	38	45	50	45	38	29	13	29	38	45	50	45	38
	160	13	26	36	39	44	39	36	26	13	26	36	39	44	39	36
	165	13	23	33	34	34	34	33	23	13	23	33	34	34	34	33
	170	14	19	26	27	25	27	26	19	14	19	26	27	25	27	26
	175	14	16	19	18	14	18	19	16	14	16	19	18	14	18	19
	180	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

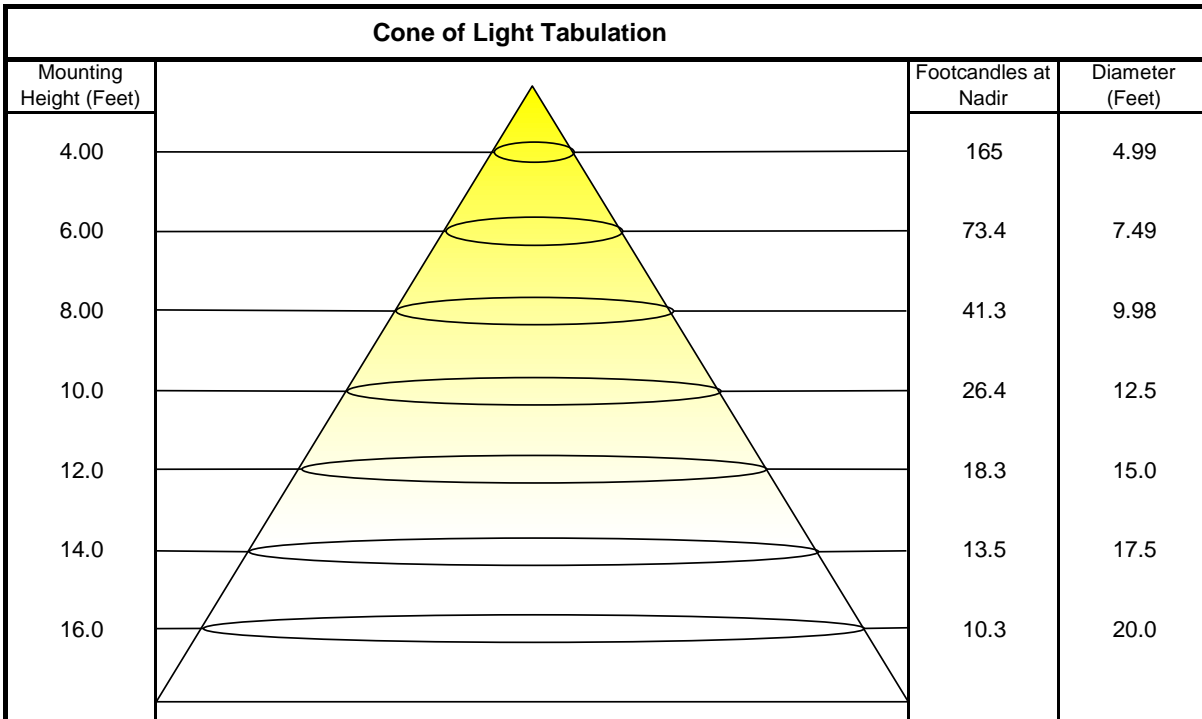
Vertical Angle (Degrees)	0	45	90
	0	17520	17520
	45	12030	13650
	55	9902	12760
	65	7670	11050
	75	5276	7748
	85	2341	5196



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	114	114	114	114	108	108	108	102	102	102	97	97	97	94
1	107	102	97	93	104	99	95	91	94	90	87	89	86	84	84	82	80	78
2	97	88	81	76	94	86	80	74	82	76	72	77	73	69	74	70	67	64
3	88	78	69	63	85	76	68	62	72	65	60	68	63	58	65	60	56	54
4	81	69	60	53	78	67	59	52	64	57	51	61	55	50	58	53	48	46
5	74	61	52	45	72	60	51	45	57	50	44	54	48	43	52	46	42	40
6	69	55	46	40	66	54	45	39	51	44	38	49	43	38	47	41	37	35
7	64	50	41	35	61	49	41	35	47	39	34	45	38	33	43	37	33	31
8	59	46	37	31	57	45	37	31	43	36	30	41	35	30	40	34	29	27
9	55	42	34	28	54	41	33	28	39	32	27	38	32	27	37	31	26	25
10	52	39	31	25	50	38	30	25	36	30	25	35	29	24	34	28	24	22

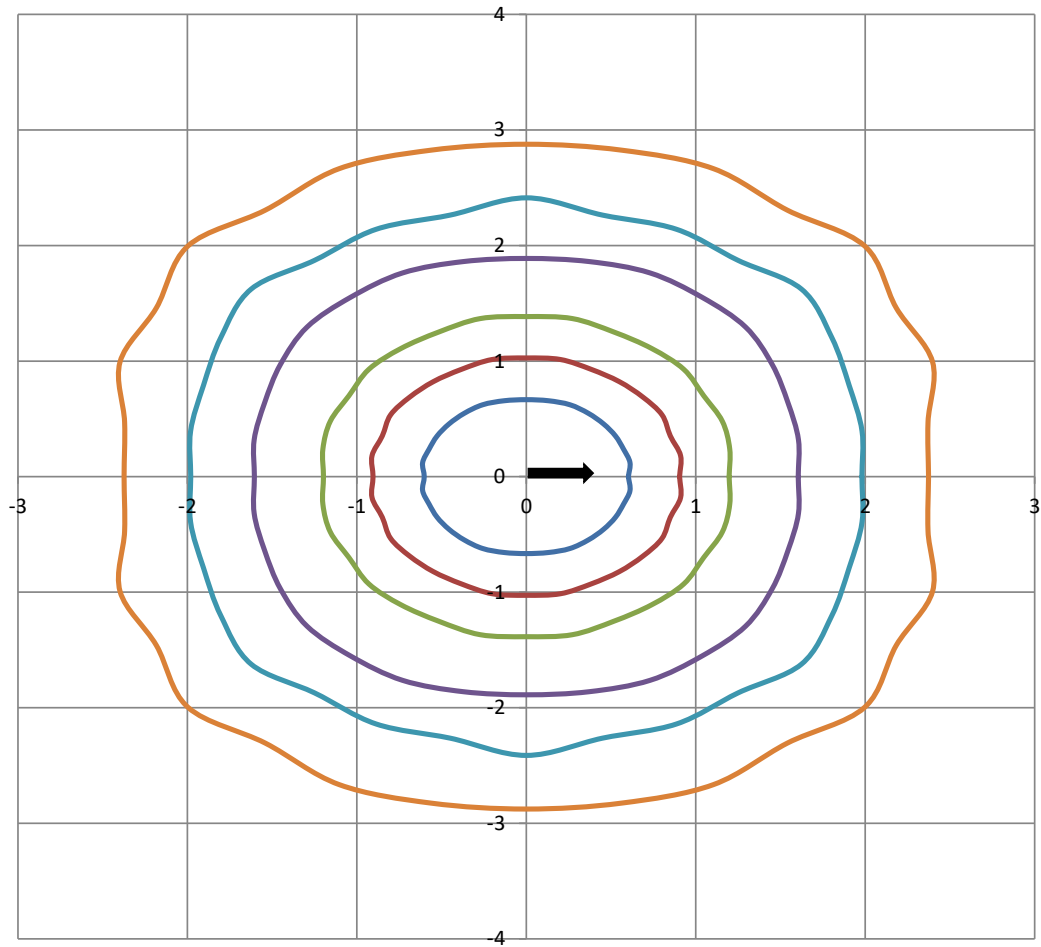
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2641 Candela
Central Cone Intensity:	2637 Candela
Beam Flux:	5404.4 Lumens
Beam Angle (0-180):	96.8 Degrees
Beam Angle (90-270):	123.4 Degrees
Field Angle (0-180):	153.9 Degrees
Field Angle (90-270):	174.5 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

— 20 fc — 10 fc — 5 fc — 2 fc — 1 fc — 0.5 fc