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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
2DR-L15/835-DIM-UNV-AW-OF-WH-x-xx
Order Number
13257153
Test Number
13257153.05

Test Date

2020-03-10

Prepared By

Jesse Litchfield, Technician

Approved By

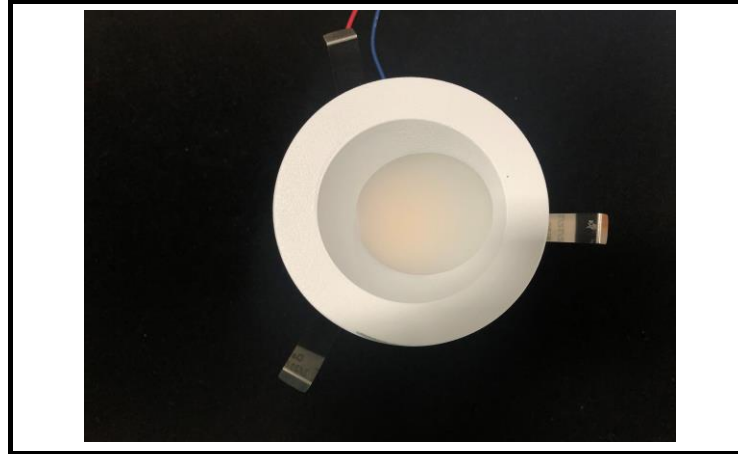
Alexa Lambert, Project Handler

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Luminaire Description: Aluminum housing, optics, and trim enclosure
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: One Philips Advance XI025C070V054DSM1 Driver

Luminaire



Luminaire Characteristics
Luminous Diameter: 2.50 in.

Summary of Results

Total Luminaire Output:	1114 Lumens
Luminaire Efficacy:	64.4 lm/w
Maximum Candela:	993 Candela

Test Conditions

Test Temperature:	24.9 °C
Voltage:	120.1 VAC
Current:	0.1451 A
Power:	17.29 W
Power Factor:	0.992
Frequency:	60 Hz
Current THD:	11.0 %

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



Distribution - Goniophotometer

Distribution Test Conditions

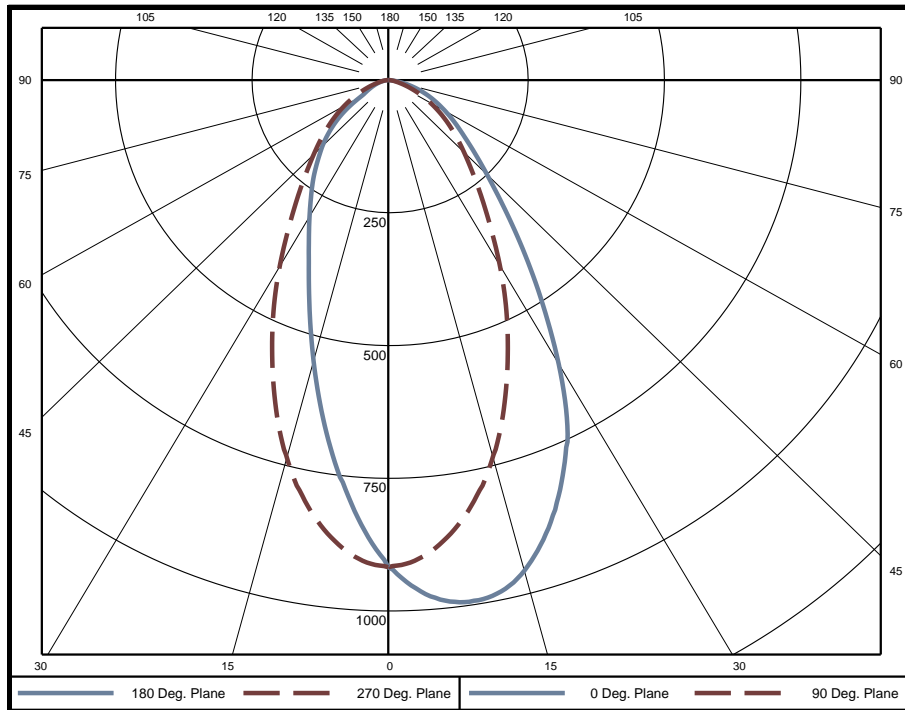
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.1 VAC	0.1451 A	17.29 W	0.992	60 Hz	11.0 %

Summary of Results

Spacing Criteria
 0-180: 1.08
 90-270: 0.80

Total Lumen Output: 1114 Lumens
Luminaire Efficacy: 64.4 lm/w
Maximum Candela: 993 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	21.7	1.9%	60-65	37.0	3.3%	120-125	0	0.0%
5-10	61.6	5.5%	65-70	26.9	2.4%	125-130	0	0.0%
10-15	93.3	8.4%	70-75	18.2	1.6%	130-135	0	0.0%
15-20	113.4	10.2%	75-80	10.7	1.0%	135-140	0	0.0%
20-25	122.4	11.0%	80-85	4.9	0.4%	140-145	0	0.0%
25-30	121.8	10.9%	85-90	1.3	0.1%	145-150	0	0.0%
30-35	111.9	10.0%	90-95	0	0.0%	150-155	0	0.0%
35-40	98.5	8.8%	95-100	0	0.0%	155-160	0	0.0%
40-45	85.3	7.7%	100-105	0	0.0%	160-165	0	0.0%
45-50	73.7	6.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	62.1	5.6%	110-115	0	0.0%	170-175	0	0.0%
55-60	49.5	4.4%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	745	66.8%
0-60	1015	91.1%
0-90	1114	100.0%
90-180	0	0.0%



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	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5	917.5
	5	978.6	975.0	952.9	923.1	890.7	859.5	834.4	820.6	801.2	820.6	834.4	859.5	890.7	923.1	952.9
	10	992.5	979.5	939.9	885.0	824.8	769.9	725.4	697.6	675.0	697.6	725.4	769.9	824.8	885.0	939.9
	15	955.7	935.2	882.1	809.6	730.5	658.6	601.0	569.3	547.8	569.3	601.0	658.6	730.5	809.6	882.1
	20	872.5	846.6	787.7	708.6	618.7	541.3	486.0	456.4	438.8	456.4	486.0	541.3	618.7	708.6	787.7
	25	763.3	736.9	675.8	593.3	505.6	437.5	393.3	371.3	357.0	371.3	393.3	437.5	505.6	593.3	675.8
	30	618.2	594.1	541.1	469.7	399.8	350.8	321.9	307.8	299.1	307.8	321.9	350.8	399.8	469.7	541.1
	35	465.6	446.1	406.3	355.4	309.1	280.3	264.5	257.9	253.5	257.9	264.5	280.3	309.1	355.4	406.3
	40	342.4	326.9	300.5	269.0	242.2	226.9	220.2	217.7	213.4	217.7	220.2	226.9	242.2	269.0	300.5
	45	254.8	243.4	227.0	208.1	192.6	185.3	182.9	182.1	177.4	182.1	182.9	185.3	192.6	208.1	227.0
	50	195.8	188.2	176.7	164.2	154.0	149.5	147.9	145.6	140.3	145.6	147.9	149.5	154.0	164.2	176.7
	55	154.5	148.9	139.7	129.1	120.5	115.9	111.3	105.8	99.3	105.8	111.3	115.9	120.5	129.1	139.7
	60	121.7	116.7	108.2	98.7	89.9	82.7	72.9	62.3	55.0	62.3	72.9	82.7	89.9	98.7	108.2
	65	93.5	89.2	81.6	72.0	62.5	52.7	43.7	41.2	39.6	41.2	43.7	52.7	62.5	72.0	81.6
	70	67.6	63.5	57.1	48.7	39.4	32.1	29.7	29.3	27.9	29.3	29.7	32.1	39.4	48.7	57.1
	75	43.2	39.9	34.8	28.1	22.0	20.1	19.7	19.5	18.5	19.5	19.7	20.1	22.0	28.1	34.8
	80	21.8	19.2	15.8	12.5	11.9	11.8	11.6	11.5	10.7	11.5	11.6	11.8	11.9	12.5	15.8
	85	5.5	5.1	5.2	5.2	5.2	5.1	5.0	4.9	4.3	4.9	5.0	5.1	5.2	5.2	5.1
	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	95	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	105	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	110	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	115	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	120	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	125	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	130	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	135	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	140	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	145	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	150	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	155	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	160	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	165	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	170	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	175	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	180	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

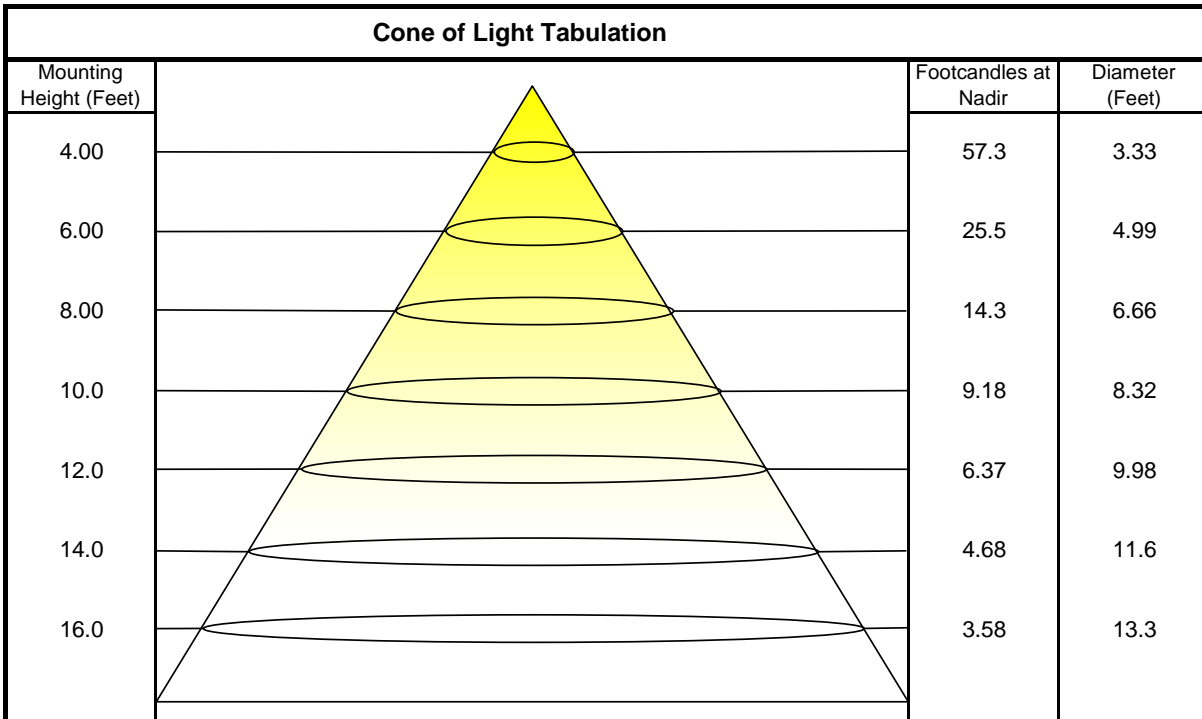
Vertical Angle (Degrees)	0	45	90
	0	289700	289700
	45	113800	101300
	55	85050	76890
	65	69820	60960
	75	52710	42480
	85	19930	18740



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	102	102	102	100
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89
2	104	97	92	87	101	95	91	86	92	88	84	89	86	83	86	83	81	79
3	97	88	82	76	94	87	81	76	84	79	75	81	77	73	79	75	72	70
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63
5	84	74	66	61	82	73	66	60	71	65	60	69	63	59	67	62	59	57
6	79	68	60	55	77	67	60	55	65	59	54	64	58	54	62	57	53	52
7	74	63	55	50	73	62	55	50	61	54	50	59	54	49	58	53	49	47
8	70	58	51	46	68	58	51	46	56	50	46	55	50	45	54	49	45	44
9	66	54	47	42	65	54	47	42	53	47	42	52	46	42	51	46	42	40
10	62	51	44	39	61	50	44	39	49	43	39	49	43	39	48	43	39	37

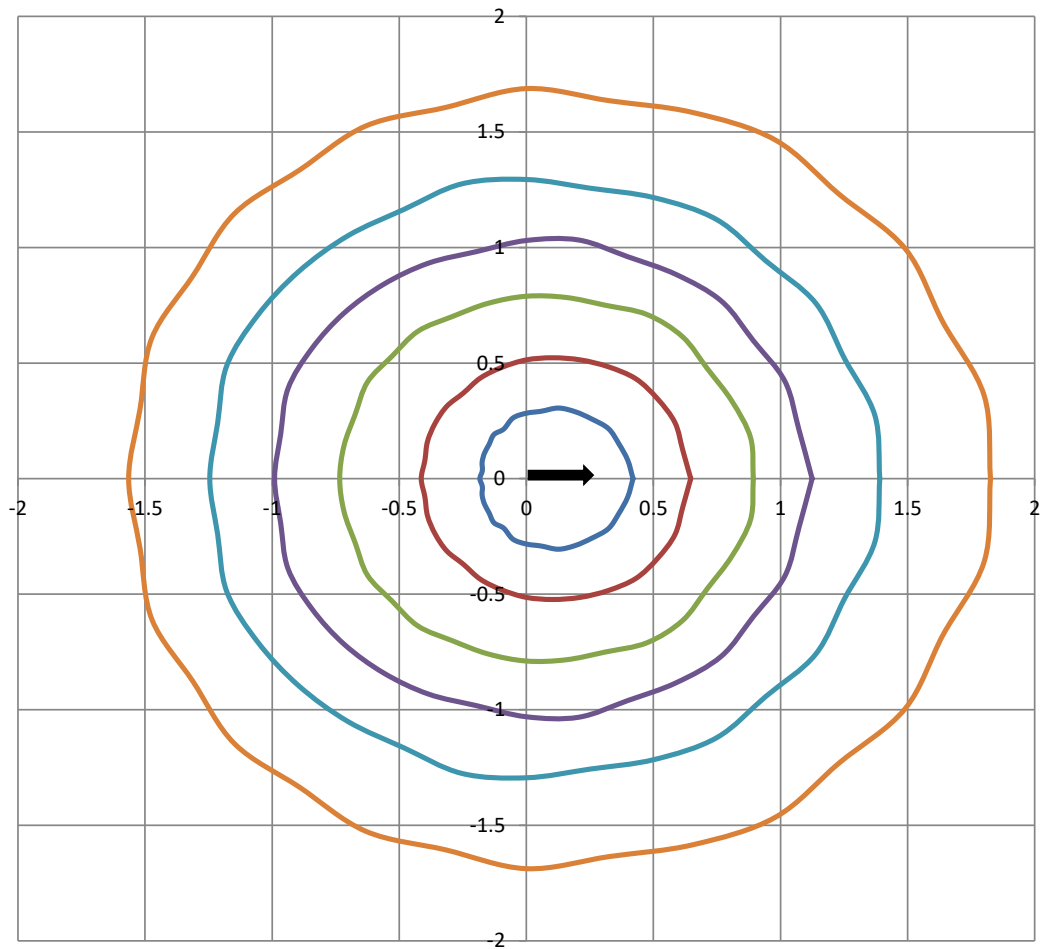
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	917.5 Candela
Central Cone Intensity:	909 Candela
Beam Flux:	497.8 Lumens
Beam Angle (0-180):	54.2 Degrees
Beam Angle (90-270):	54.4 Degrees
Field Angle (0-180):	121.1 Degrees
Field Angle (90-270):	119.4 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

10 fc 5 fc 2 fc 1 fc 0.5 fc 0.2 fc