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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
2AR-L12/835-DIM-UNV-LN-OF-WH-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.20

Test Date

2020-03-18

Prepared By

Jesse Litchfield, Technician

Approved By

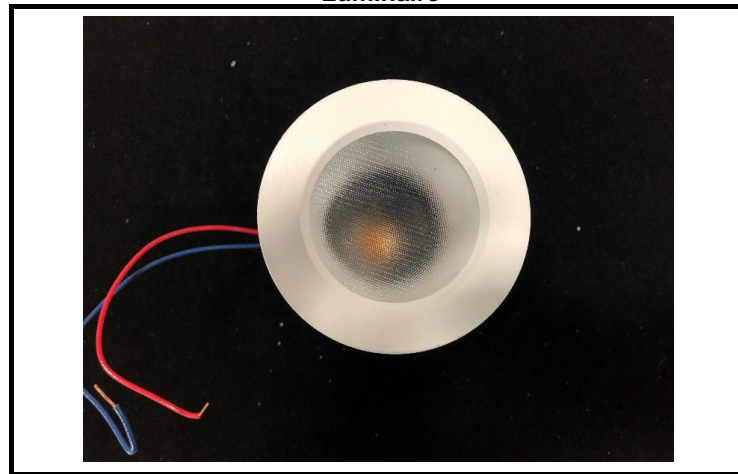
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: 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:	445.8 Lumens
Luminaire Efficacy:	21.3 lm/w
Maximum Candela:	2237 Candela

Test Conditions

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.1752 A
Power:	20.91 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.87 %

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



Distribution - Goniophotometer

Distribution Test Conditions

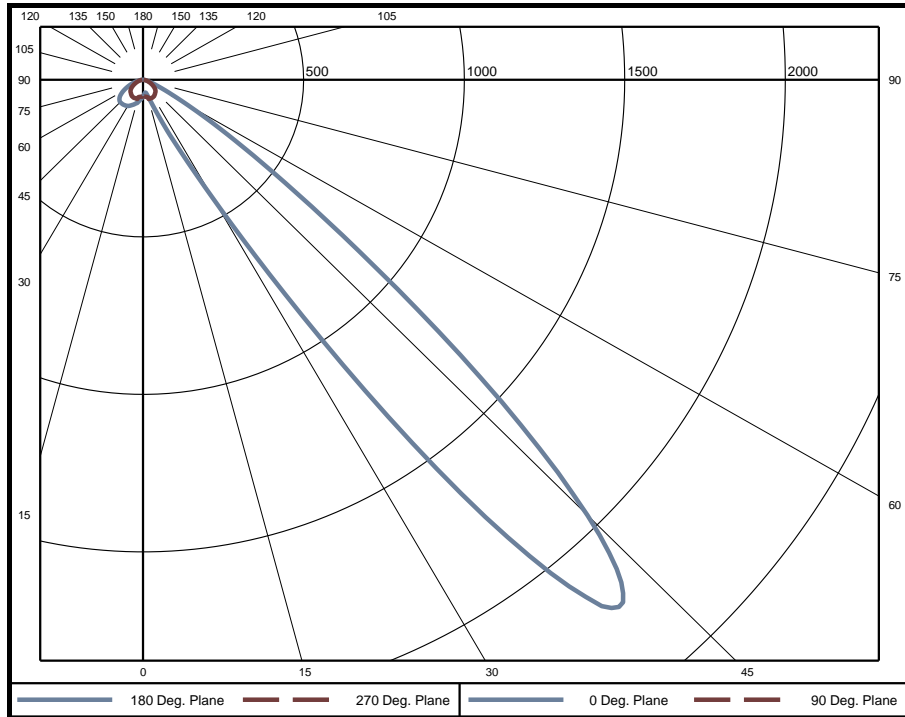
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.1752 A	20.91 W	0.995	60 Hz	8.87 %

Summary of Results

Spacing Criteria
0-180: 3.33
90-270: 1.66

Total Lumen Output: 445.8 Lumens
Luminaire Efficacy: 21.3 lm/w
Maximum Candela: 2237 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.28	0.3%	60-65	20.87	4.7%	120-125	0	0.0%
5-10	3.87	0.9%	65-70	14.96	3.4%	125-130	0	0.0%
10-15	6.76	1.5%	70-75	10.36	2.3%	130-135	0	0.0%
15-20	10.45	2.3%	75-80	6.46	1.4%	135-140	0	0.0%
20-25	15.40	3.5%	80-85	2.98	0.7%	140-145	0	0.0%
25-30	23.54	5.3%	85-90	0.42	0.1%	145-150	0	0.0%
30-35	39.74	8.9%	90-95	0	0.0%	150-155	0	0.0%
35-40	66.80	15.0%	95-100	0	0.0%	155-160	0	0.0%
40-45	81.62	18.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	66.83	15.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	43.93	9.9%	110-115	0	0.0%	170-175	0	0.0%
55-60	29.59	6.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	168	37.6%
0-60	390	87.4%
0-90	446	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	53	53	53	53	53	53	53	53	53	53	53	53	53	53	53
	5	46	46	49	51	54	57	58	59	60	59	58	57	54	51	49
	10	41	42	45	50	55	61	64	66	68	66	64	61	55	50	45
	15	49	47	46	51	58	65	71	75	77	75	71	65	58	51	46
	20	81	64	50	53	63	69	76	81	83	81	76	69	63	53	50
	25	179	101	55	54	64	72	80	87	90	87	80	72	64	54	55
	30	432	170	59	56	63	72	84	92	96	92	84	72	63	56	59
	35	1206	237	57	70	61	72	85	95	99	95	85	72	61	70	57
	40	2145	248	51	63	58	71	85	96	101	96	85	71	58	63	51
	45	1958	187	43	44	55	69	85	97	101	97	85	69	55	44	43
	50	1035	108	36	39	50	65	80	93	97	93	80	65	50	39	36
	55	420	61	30	33	43	56	71	83	87	83	71	56	43	33	30
	60	162	37	25	27	35	46	58	69	72	69	58	46	35	27	25
	65	64	25	20	21	26	35	44	53	54	53	44	35	26	21	20
	70	29	17	15	15	19	25	32	37	38	37	32	25	19	15	15
	75	14	11	10	10	13	16	21	24	24	24	21	16	13	10	10
	80	7	6	6	6	7	9	12	14	13	14	12	9	7	6	6
	85	2	2	2	1	1	2	4	5	4	5	4	2	1	1	2
	90	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
	100	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
	110	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
	120	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
	130	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
	140	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
	150	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
	160	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
	170	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
	180	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	16810	16810
	45	874300	19110
	55	231000	16780
	65	48020	14870
	75	17590	12580
	85	7418	5582



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	109	105	101	97	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	85	80	97	90	84	79	86	81	77	83	79	75	80	76	73	71
3	91	80	72	66	88	78	71	65	76	69	64	73	67	63	70	66	62	59
4	82	70	61	55	80	69	61	54	66	59	53	64	58	53	62	56	52	50
5	75	62	53	46	73	61	52	46	59	51	45	57	50	45	55	49	44	42
6	69	55	46	39	67	54	45	39	52	44	38	50	43	38	49	42	38	35
7	63	49	40	33	61	48	39	33	46	39	33	45	38	33	43	37	32	30
8	58	44	35	29	56	43	34	29	42	34	28	40	33	28	39	33	28	26
9	53	39	31	25	52	39	30	25	37	30	25	36	29	24	35	29	24	22
10	49	36	27	22	48	35	27	22	34	27	21	33	26	21	32	26	21	19

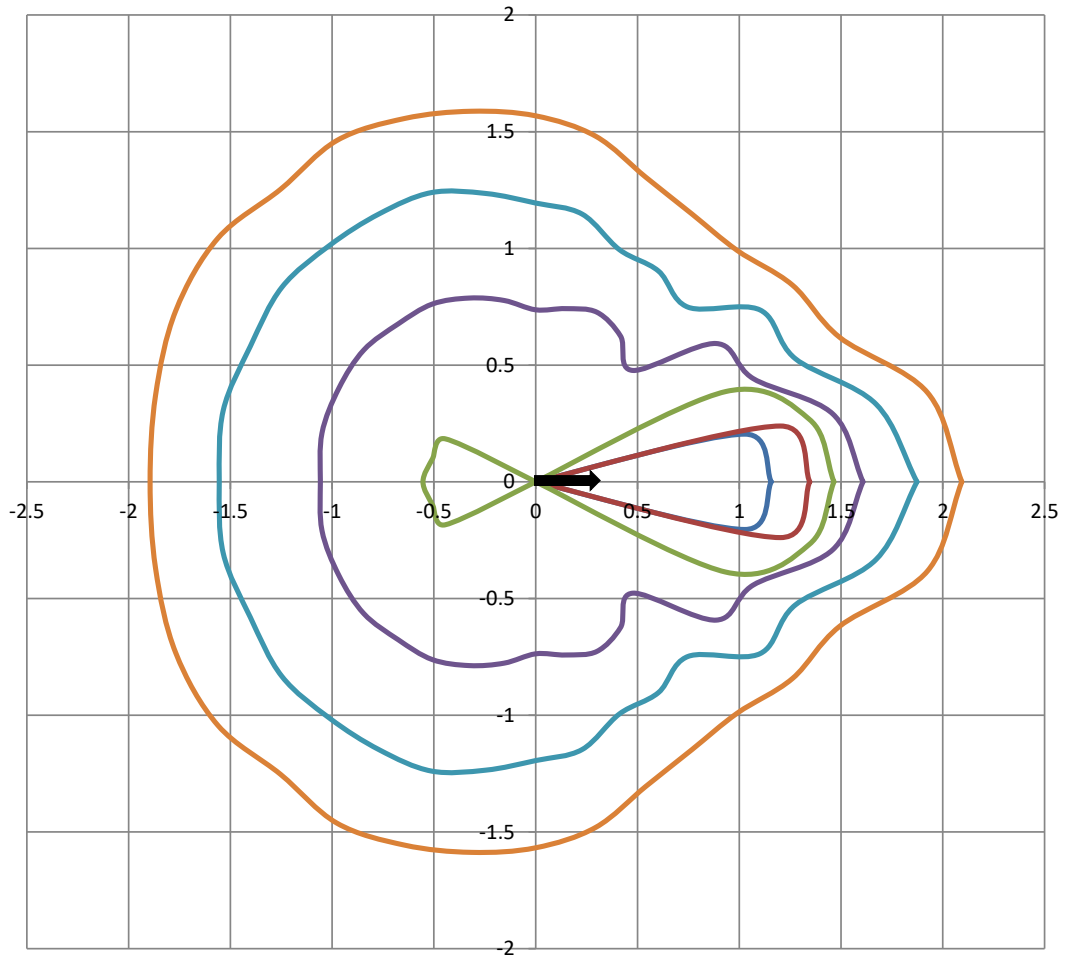
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	53 Candela
Central Cone Intensity:	53 Candela
Beam Flux:	420.4 Lumens
Beam Angle (0-180):	144.8 Degrees
Beam Angle (90-270):	129.6 Degrees
Field Angle (0-180):	166.0 Degrees
Field Angle (90-270):	162.7 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		3.33	10.1
6.00		1.48	15.1
8.00		0.832	20.1
10.0		0.532	25.2
12.0		0.370	30.2
14.0		0.272	35.2
16.0		0.208	40.3



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

