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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-RM-OF-WH-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.14

Test Date

2020-03-17

Prepared By

Jesse Litchfield, Technician

Approved By

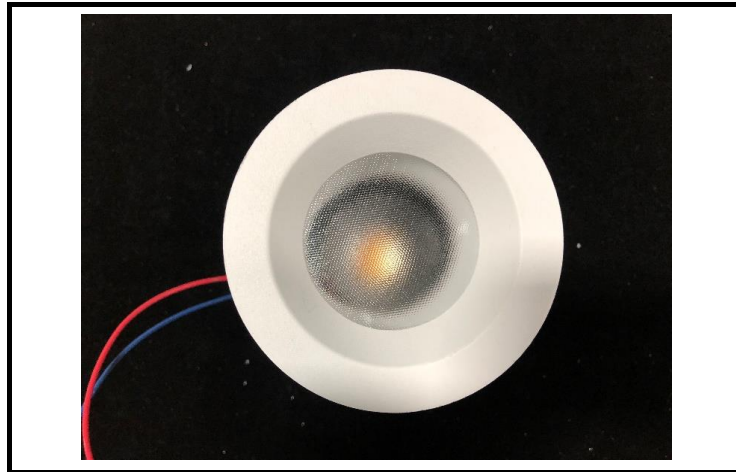
Alexa Lambert, Project Handler

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:	346.5 Lumens
Luminaire Efficacy:	16.6 lm/w
Maximum Candela:	1521 Candela

Test Conditions

Test Temperature:	24.4 °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

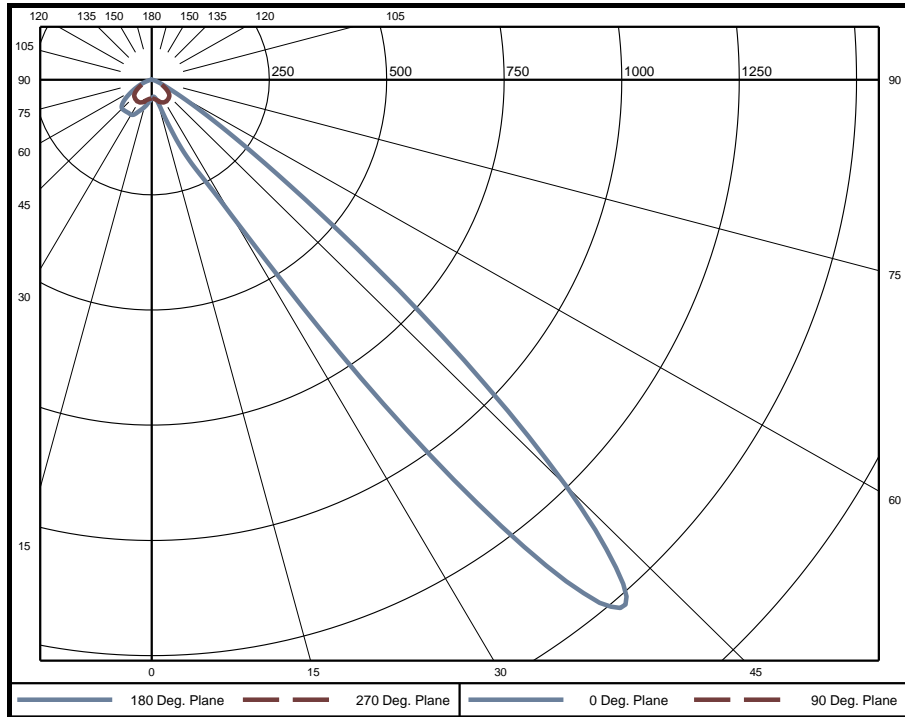
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.0 VAC	0.1752 A	20.91 W	0.995	60 Hz	8.87 %

Summary of Results

Spacing Criteria
 0-180: 3.09
 90-270: 1.88

Total Lumen Output: 346.5 Lumens
Luminaire Efficacy: 16.6 lm/w
Maximum Candela: 1521 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	0.98	0.3%	60-65	13.76	4.0%	120-125	0	0.0%
5-10	3.08	0.9%	65-70	9.30	2.7%	125-130	0	0.0%
10-15	5.65	1.6%	70-75	5.56	1.6%	130-135	0	0.0%
15-20	9.21	2.7%	75-80	2.79	0.8%	135-140	0	0.0%
20-25	14.84	4.3%	80-85	1.47	0.4%	140-145	0	0.0%
25-30	22.50	6.5%	85-90	0.43	0.1%	145-150	0	0.0%
30-35	34.93	10.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	55.73	16.1%	95-100	0	0.0%	155-160	0	0.0%
40-45	65.05	18.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	49.74	14.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	31.22	9.0%	110-115	0	0.0%	170-175	0	0.0%
55-60	20.25	5.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	147	42.4%
0-60	313	90.4%
0-90	346	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	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
	5	37	37	38	40	42	44	45	46	46	45	44	42	40	38	37
	10	39	40	39	41	44	47	50	52	53	52	50	47	44	41	39
	15	51	47	44	43	47	51	57	61	62	61	57	51	47	43	44
	20	102	74	49	46	52	57	63	68	70	68	63	57	52	46	49
	25	200	130	54	48	54	63	70	78	81	78	70	63	54	48	54
	30	340	187	58	55	56	64	75	84	87	84	75	64	56	55	58
	35	858	260	58	69	56	65	75	83	87	83	75	65	56	69	58
	40	1482	293	51	63	55	65	76	85	88	85	76	65	55	63	51
	45	1246	204	42	44	52	64	76	86	89	86	76	64	52	44	42
	50	571	95	34	37	47	59	71	79	82	79	71	59	47	37	34
	55	197	45	27	30	39	49	57	63	65	63	57	49	39	30	27
	60	68	26	21	23	29	36	41	45	46	45	41	36	29	23	21
	65	27	17	16	17	21	25	28	30	30	28	25	21	17	16	17
	70	14	12	11	11	13	16	18	18	17	18	16	13	11	11	12
	75	7	7	6	6	7	8	8	9	8	9	8	7	6	6	7
	80	4	3	3	3	3	4	5	5	5	5	4	3	3	3	3
	85	2	2	1	1	1	1	2	2	2	2	1	1	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	12880	12880
	45	556500	18860
	55	108400	14650
	65	20300	11680
	75	8647	7729
	85	6112	5154



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	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86
2	101	93	87	81	98	91	85	80	88	83	79	84	80	77	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	72	63	57	81	71	63	57	68	61	56	66	60	55	64	59	54	52
5	76	64	55	48	74	63	54	48	60	53	47	59	52	47	57	51	46	44
6	70	57	48	41	68	56	47	41	54	46	41	52	45	40	51	45	40	38
7	64	51	42	35	62	50	41	35	48	41	35	47	40	35	45	39	34	32
8	59	45	37	31	58	45	36	31	43	36	30	42	35	30	41	35	30	28
9	55	41	32	27	53	40	32	27	39	32	26	38	31	26	37	31	26	24
10	51	37	29	23	49	36	29	23	35	28	23	35	28	23	34	27	23	21

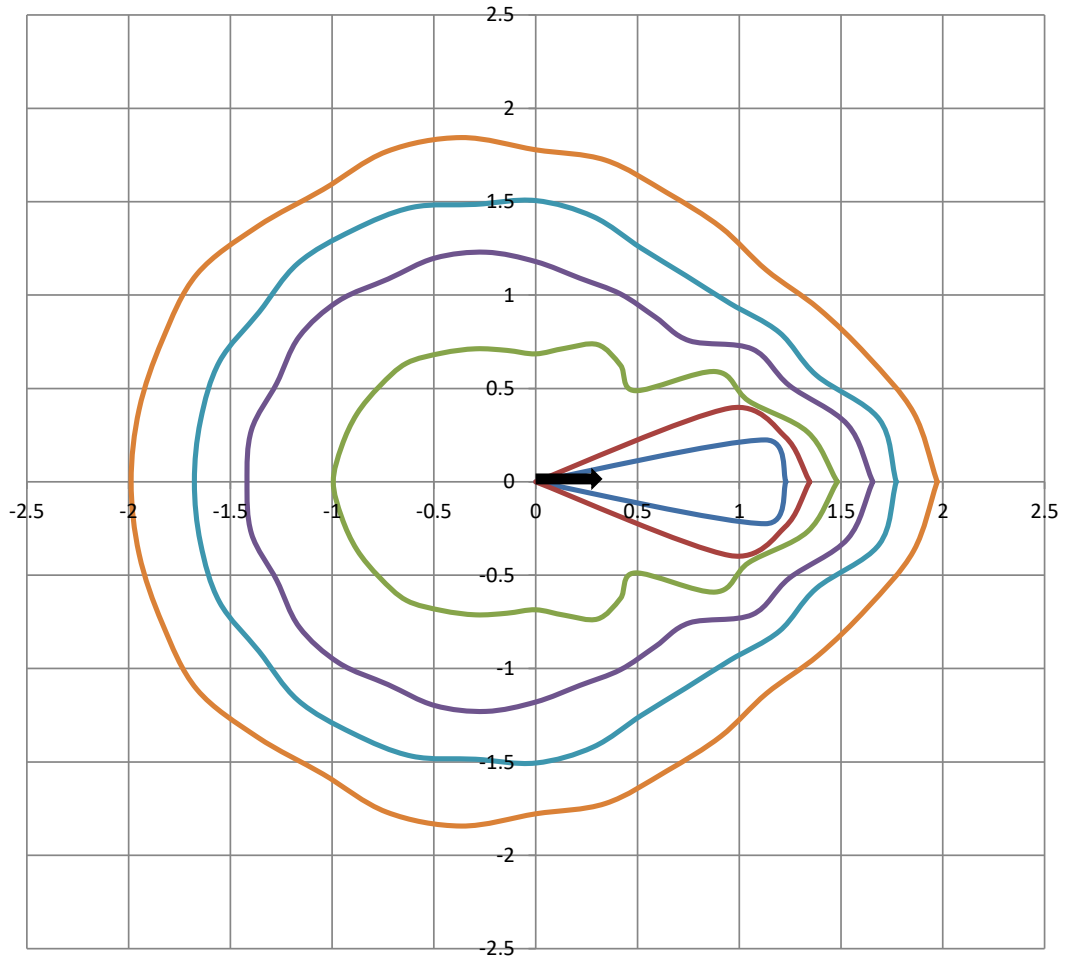
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	41 Candela
Central Cone Intensity:	41 Candela
Beam Flux:	328.8 Lumens
Beam Angle (0-180):	135.7 Degrees
Beam Angle (90-270):	130.3 Degrees
Field Angle (0-180):	159.9 Degrees
Field Angle (90-270):	156.6 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		2.55	9.92
6.00		1.13	14.9
8.00		0.637	19.8
10.0		0.408	24.8
12.0		0.283	29.8
14.0		0.208	34.7
16.0		0.159	39.7



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

