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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
2AS-L12/835-DIM-UNV-LW-OF-WH-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.30

Test Date

2020-03-20

Prepared By

Jesse Litchfield, Technician

Approved By

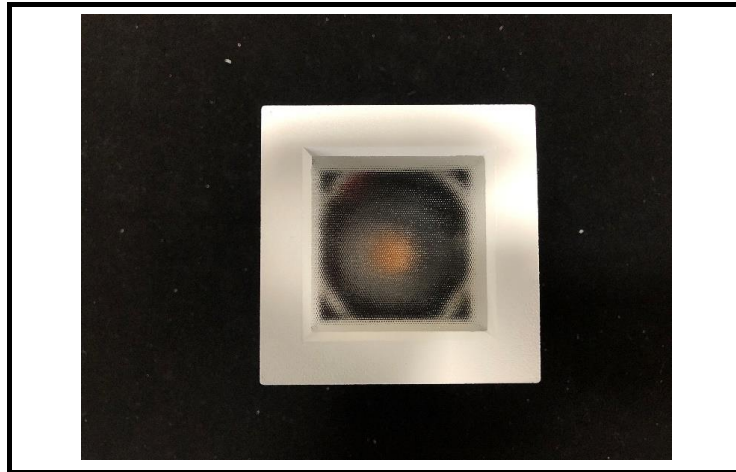
Alexa Lambert, Project Handler

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 Length: 2.50 in.
Luminous Width: 2.500 in.

Summary of Results

Total Luminaire Output:	927.1 Lumens
Luminaire Efficacy:	43.6 lm/w
Maximum Candela:	3214 Candela

Test Conditions

Test Temperature:	24.3 °C
Voltage:	120.1 VAC
Current:	0.1780 A
Power:	21.26 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.70 %

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



Distribution - Goniophotometer

Distribution Test Conditions

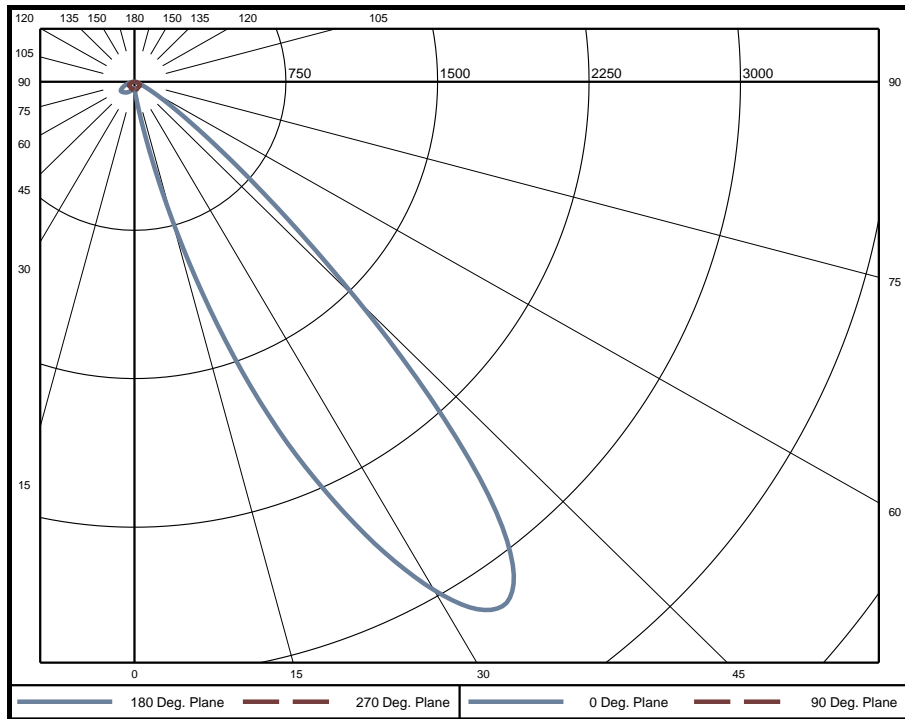
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.3 °C	120.1 VAC	0.1780 A	21.26 W	0.995	60 Hz	8.70 %

Summary of Results

Spacing Criteria
0-180: 3.27
90-270: 1.29

Total Lumen Output: 927.1 Lumens
Luminaire Efficacy: 43.6 lm/w
Maximum Candela: 3214 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.0	0.1%	60-65	21.6	2.3%	120-125	0	0.0%
5-10	4.1	0.4%	65-70	16.3	1.8%	125-130	0	0.0%
10-15	13.8	1.5%	70-75	11.7	1.3%	130-135	0	0.0%
15-20	39.8	4.3%	75-80	7.5	0.8%	135-140	0	0.0%
20-25	81.4	8.8%	80-85	3.7	0.4%	140-145	0	0.0%
25-30	125.8	13.6%	85-90	0.7	0.1%	145-150	0	0.0%
30-35	158.5	17.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	163.1	17.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	128.1	13.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	77.0	8.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	43.8	4.7%	110-115	0	0.0%	170-175	0	0.0%
55-60	29.2	3.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	588	63.4%
0-60	866	93.4%
0-90	927	100.0%
90-180	0	0.0%



Candela Tabulation

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	5	69	65	56	46	39	37	35	34	33	34	35	37	39	46	56
	10	211	169	97	56	40	36	36	36	37	36	36	36	40	56	97
	15	723	517	201	69	40	37	39	41	42	41	39	37	40	69	201
	20	1556	1102	368	79	39	38	43	47	48	47	43	38	39	79	368
	25	2337	1660	489	74	36	40	47	52	54	52	47	40	36	74	489
	30	2964	2048	441	55	34	42	52	59	61	59	52	42	34	55	441
	35	3212	2110	262	40	33	44	56	64	67	64	56	44	33	40	262
	40	2726	1683	122	34	33	46	59	69	71	69	59	46	33	34	122
	45	1566	967	59	32	33	47	62	73	76	73	62	47	33	32	59
	50	664	408	39	31	34	49	64	76	80	76	64	49	34	31	39
	55	263	159	31	29	33	48	64	77	82	77	64	48	33	29	31
	60	107	70	26	27	31	44	58	71	75	71	58	44	31	27	26
	65	47	36	21	22	26	36	47	59	62	59	47	36	26	22	21
	70	25	21	16	17	20	27	35	44	47	44	35	27	20	17	16
	75	15	13	11	12	14	18	23	29	31	29	23	18	14	12	11
	80	8	7	6	7	8	10	13	16	18	16	13	10	8	7	6
	85	3	2	2	2	3	4	5	6	7	6	5	4	3	2	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)	Horizontal Angle (Degrees)			
	0	45	90	
	0	9760	9760	9760
	45	549300	20820	11660
	55	113500	13600	14360
	65	27700	12440	15250
	75	14580	10650	13440
	85	7732	5792	8455



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	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	103	96	90	85	100	94	89	84	91	86	82	87	84	81	84	81	79	77
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58
5	81	69	61	55	79	68	60	55	66	59	54	64	58	53	62	57	53	51
6	74	62	54	48	73	61	53	48	60	53	47	58	52	47	56	51	47	45
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	59	46	38	33	58	46	38	33	45	38	33	44	37	33	43	37	33	31
10	55	42	35	29	54	42	34	29	41	34	29	40	34	29	39	33	29	27

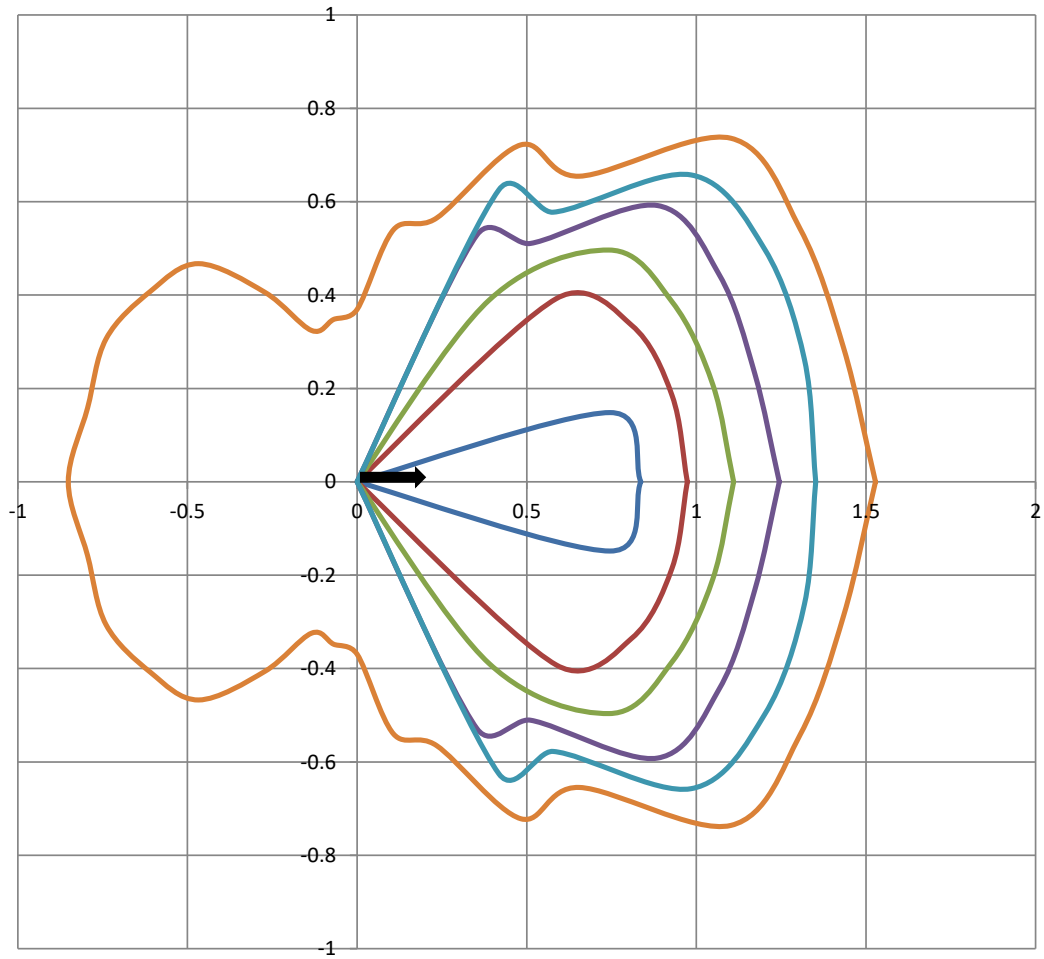
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	39 Candela
Central Cone Intensity:	41 Candela
Beam Flux:	912.0 Lumens
Beam Angle (0-180):	151.5 Degrees
Beam Angle (90-270):	140.9 Degrees
Field Angle (0-180):	169.8 Degrees
Field Angle (90-270):	168.0 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		2.46	10.7
6.00		1.09	16.0
8.00		0.615	21.4
10.0		0.394	26.7
12.0		0.273	32.1
14.0		0.201	37.4
16.0		0.154	42.8



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