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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-RN-OF-WH-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.22

Test Date

2020-03-18

Prepared By

Jesse Litchfield, Technician

Approved By

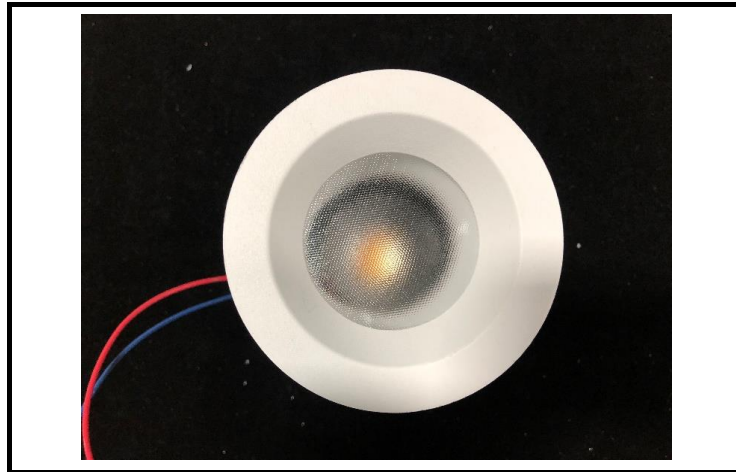
Alexa Lambert, Project Handler

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:	504.6 Lumens
Luminaire Efficacy:	24.1 lm/w
Maximum Candela:	3211 Candela

Test Conditions

Test Temperature:	24.6 °C
Voltage:	120.0 VAC
Current:	0.1752 A
Power:	20.90 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.88 %

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



Distribution - Goniophotometer

Distribution Test Conditions

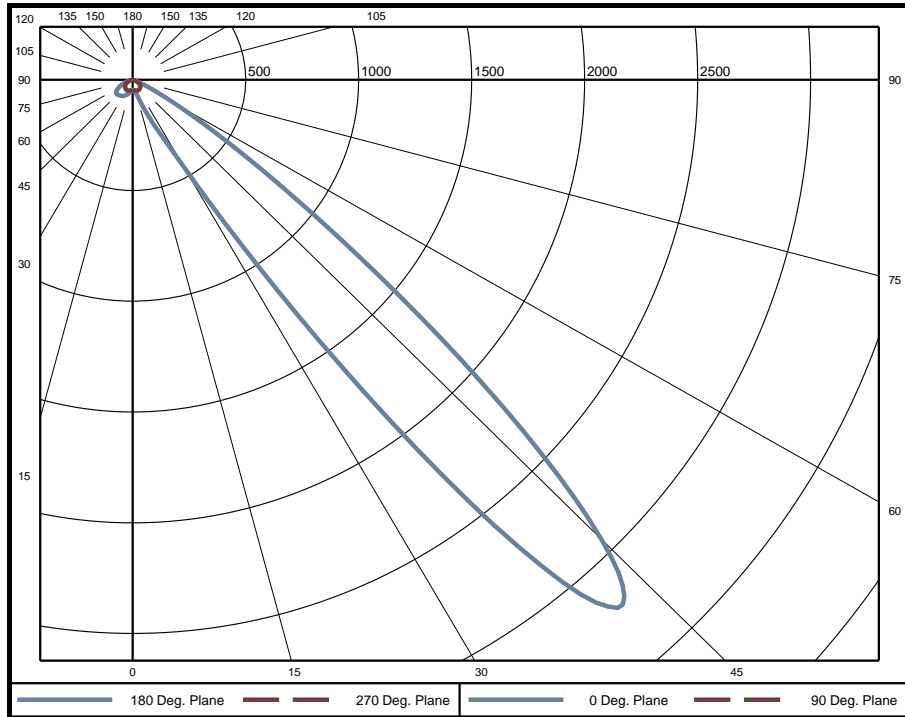
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.0 VAC	0.1752 A	20.90 W	0.995	60 Hz	8.88 %

Summary of Results

Spacing Criteria
 0-180: 3.54
 90-270: 1.64

Total Lumen Output: 504.6 Lumens
Luminaire Efficacy: 24.1 lm/w
Maximum Candela: 3211 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.1	0.2%	60-65	20.2	4.0%	120-125	0	0.0%
5-10	3.5	0.7%	65-70	13.1	2.6%	125-130	0	0.0%
10-15	6.5	1.3%	70-75	8.0	1.6%	130-135	0	0.0%
15-20	10.3	2.0%	75-80	4.1	0.8%	135-140	0	0.0%
20-25	15.8	3.1%	80-85	2.1	0.4%	140-145	0	0.0%
25-30	23.9	4.7%	85-90	0.5	0.1%	145-150	0	0.0%
30-35	41.0	8.1%	90-95	0	0.0%	150-155	0	0.0%
35-40	77.0	15.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	104.1	20.6%	100-105	0	0.0%	160-165	0	0.0%
45-50	87.3	17.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	54.2	10.7%	110-115	0	0.0%	170-175	0	0.0%
55-60	32.0	6.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	179	35.5%
0-60	457	90.5%
0-90	505	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	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
	5	46	46	46	46	47	49	49	50	50	50	49	49	47	46	46
	10	52	51	49	48	49	51	54	55	56	55	54	51	49	48	49
	15	69	64	55	50	50	55	60	62	64	62	60	55	50	50	55
	20	120	91	60	51	53	58	64	69	71	69	64	58	53	51	60
	25	227	144	63	50	54	60	68	75	77	75	68	60	54	50	63
	30	461	215	62	50	53	61	72	81	84	81	72	61	53	50	62
	35	1429	271	58	64	52	62	75	84	89	84	75	62	52	64	58
	40	2961	296	51	57	50	63	77	87	92	87	77	63	50	57	51
	45	2934	228	41	39	48	63	78	90	94	90	78	63	48	39	41
	50	1648	125	32	34	45	60	76	89	94	89	76	60	45	34	32
	55	650	63	26	29	39	53	69	81	86	81	69	53	39	29	26
	60	220	33	21	23	31	43	56	67	71	67	56	43	31	23	21
	65	67	20	16	17	23	32	42	50	53	50	42	32	23	17	16
	70	19	12	11	12	15	21	29	35	36	35	29	21	15	12	11
	75	7	6	6	6	8	11	16	19	19	19	16	11	8	6	6
	80	4	3	3	3	4	6	8	10	10	10	8	6	4	3	3
	85	1	1	1	1	1	2	3	5	5	5	3	2	1	1	1
	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	14750	14750
	45	1310000	18190
	55	357700	14330
	65	50310	11920
	75	8273	7395
	85	5119	4094



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	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	100	92	86	80	98	90	85	80	87	82	78	84	80	76	81	77	74	72
3	91	81	73	66	89	79	72	66	76	70	65	73	68	64	71	66	62	60
4	83	71	62	55	80	69	61	55	67	60	54	64	58	53	62	57	53	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	43	38	36
7	63	49	40	33	61	48	39	33	46	38	33	45	38	33	43	37	32	30
8	58	43	35	28	56	43	34	28	41	34	28	40	33	28	39	32	28	26
9	53	39	30	24	52	38	30	24	37	30	24	36	29	24	35	29	24	22
10	49	35	27	21	48	35	27	21	34	26	21	33	26	21	32	25	21	19

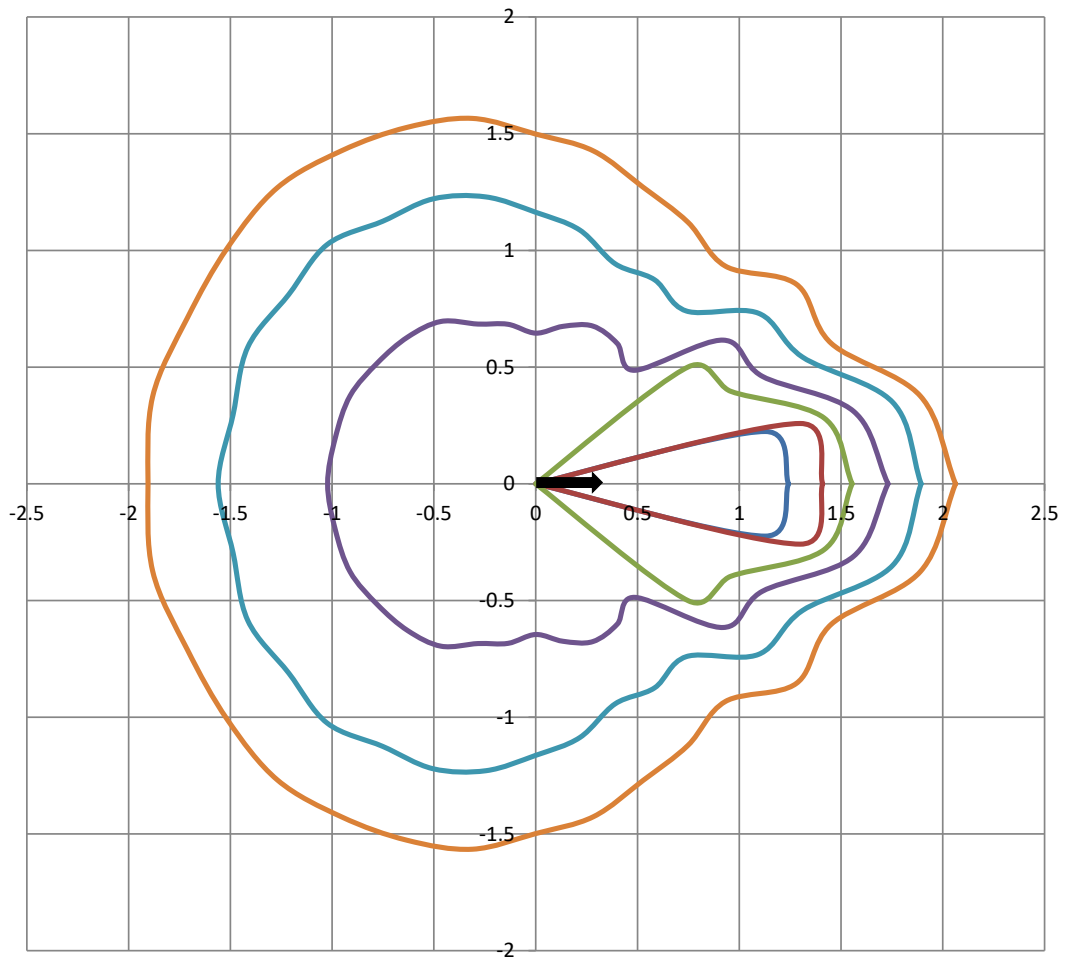
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	47 Candela
Central Cone Intensity:	47 Candela
Beam Flux:	484.9 Lumens
Beam Angle (0-180):	142.9 Degrees
Beam Angle (90-270):	129.2 Degrees
Field Angle (0-180):	162.6 Degrees
Field Angle (90-270):	157.8 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		2.92	10.8
6.00		1.30	16.2
8.00		0.730	21.5
10.0		0.467	26.9
12.0		0.324	32.3
14.0		0.238	37.7
16.0		0.182	43.1



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc