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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-RW-OF-WH-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.06

Test Date

2020-03-16

Prepared By

Jesse Litchfield, Technician

Approved By

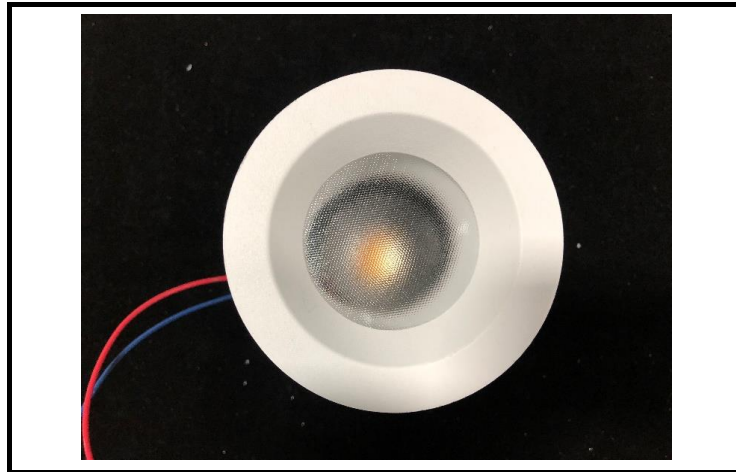
Alexa Lambert, Project Handler

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:	793.3 Lumens
Luminaire Efficacy:	37.9 lm/w
Maximum Candela:	3010 Candela

Test Conditions

Test Temperature:	24.7 °C
Voltage:	120.0 VAC
Current:	0.1755 A
Power:	20.95 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.85 %

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



Distribution - Goniophotometer

Distribution Test Conditions

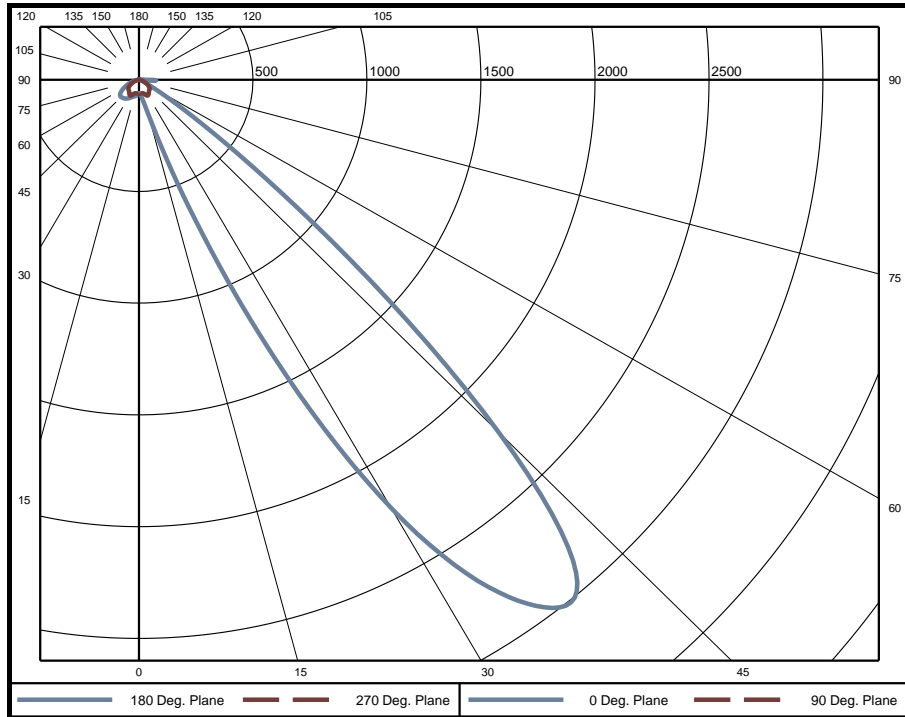
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.1755 A	20.95 W	0.995	60 Hz	8.85 %

Summary of Results

Spacing Criteria
 0-180: 3.05
 90-270: 1.67

Total Lumen Output: 793.3 Lumens
Luminaire Efficacy: 37.9 lm/w
Maximum Candela: 3010 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.5	0.2%	60-65	21.2	2.7%	120-125	0	0.0%
5-10	4.7	0.6%	65-70	15.5	2.0%	125-130	0	0.0%
10-15	9.1	1.1%	70-75	10.2	1.3%	130-135	0	0.0%
15-20	16.9	2.1%	75-80	5.6	0.7%	135-140	0	0.0%
20-25	36.2	4.6%	80-85	3.0	0.4%	140-145	0	0.0%
25-30	73.6	9.3%	85-90	4.6	0.6%	145-150	0	0.0%
30-35	118.7	15.0%	90-95	0	0.0%	150-155	0	0.0%
35-40	151.5	19.1%	95-100	0	0.0%	155-160	0	0.0%
40-45	144.3	18.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	95.3	12.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	51.0	6.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	30.2	3.8%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	412	52.0%
0-60	733	92.4%
0-90	793	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	62	62	62	62	62	62	62	62	62	62	62	62	62	62	62
	5	65	65	63	62	62	63	63	63	63	63	63	62	62	63	65
	10	89	83	70	62	62	64	69	72	73	72	69	64	62	70	83
	15	165	129	80	62	62	72	76	76	77	76	76	72	62	80	129
	20	489	272	92	61	67	79	77	80	82	80	77	79	67	92	272
	25	1276	628	107	61	76	80	81	87	89	87	81	80	76	107	628
	30	2213	1138	120	62	80	80	86	94	96	94	86	80	80	120	1138
	35	2824	1548	118	63	74	78	90	99	103	99	90	78	74	118	1548
	40	2987	1520	92	58	68	79	94	104	107	104	94	79	68	92	1520
	45	2231	911	61	53	64	80	96	107	110	107	96	80	64	53	911
	50	1003	332	44	47	60	77	93	105	108	105	93	77	60	44	332
	55	296	100	34	40	52	68	83	95	97	95	83	68	52	40	100
	60	77	38	27	32	42	55	68	78	80	78	68	55	42	32	38
	65	28	22	20	24	31	41	51	59	60	59	51	41	31	24	28
	70	15	14	14	16	21	28	36	42	42	42	36	28	21	16	14
	75	8	8	8	9	12	16	21	25	25	25	21	16	12	9	8
	80	4	4	4	5	6	9	11	14	14	14	11	9	6	5	4
	85	2	3	2	2	2	3	5	6	6	6	5	3	2	2	3
	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	19430	19430	19430
	45	996400	27300	28530
	55	163200	18970	28770
	65	20580	15260	23160
	75	9410	9356	14230
	85	8630	6466	8982



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	103	99	108	104	101	98	100	97	95	96	94	92	92	91	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	80	77	75
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	70	66	64
4	85	74	66	60	83	73	65	59	70	64	58	68	62	58	66	61	57	55
5	78	66	57	51	76	65	57	51	63	56	50	61	54	50	59	53	49	47
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	42	40
7	66	53	44	38	64	52	44	38	50	43	37	49	42	37	47	41	37	35
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	43	37	32	30
9	56	43	34	29	55	42	34	29	41	34	29	40	33	28	39	33	28	26
10	52	39	31	25	51	38	30	25	37	30	25	36	30	25	35	29	25	23

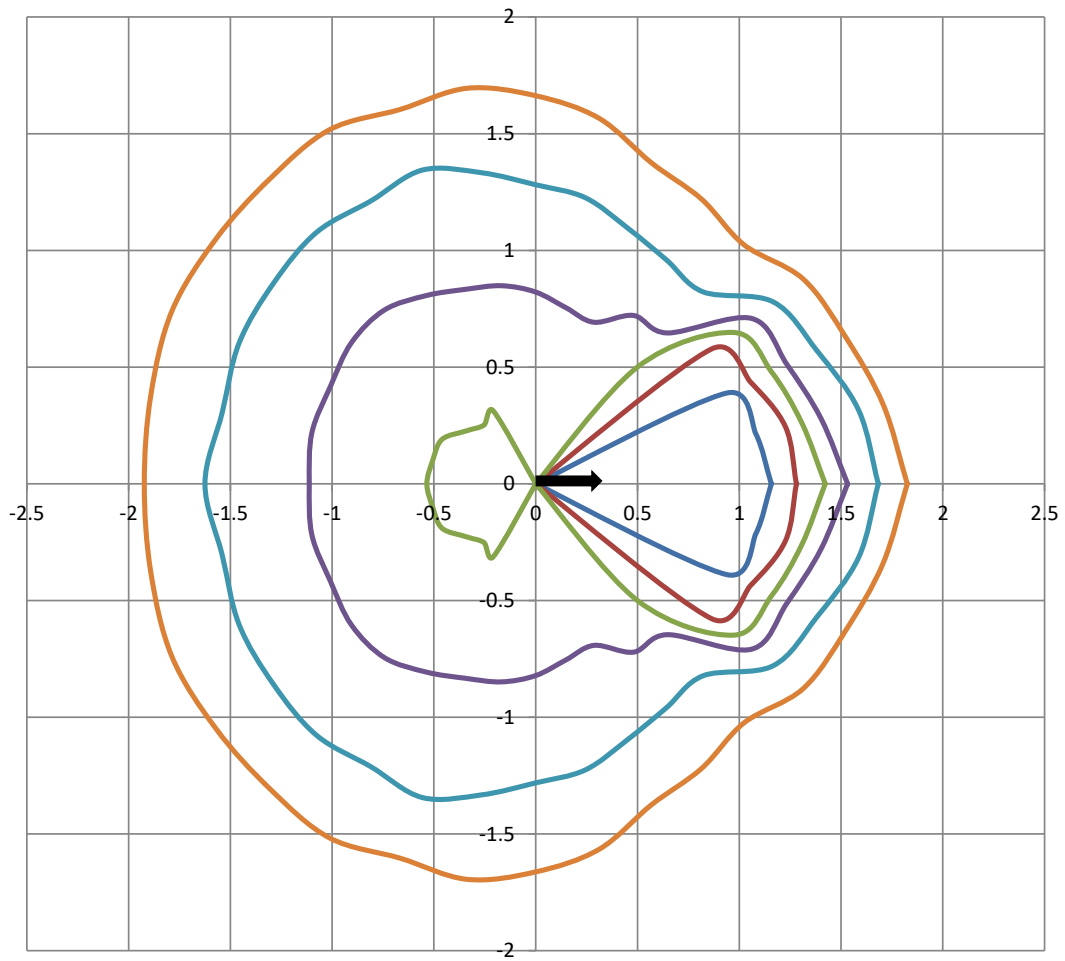
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	62 Candela
Central Cone Intensity:	62 Candela
Beam Flux:	764.7 Lumens
Beam Angle (0-180):	137.6 Degrees
Beam Angle (90-270):	130.2 Degrees
Field Angle (0-180):	161.1 Degrees
Field Angle (90-270):	159.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		3.85	10.1
6.00		1.71	15.2
8.00		0.961	20.2
10.0		0.615	25.3
12.0		0.427	30.4
14.0		0.314	35.4
16.0		0.240	40.5



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