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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
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United States

Catalog Number
2AR-L12/835-DIM-UNV-OW-OF-CS-x-xx (45° TILT)
Order Number
13257190
Test Number
13257190.02

Test Date

2020-03-16

Prepared By

Jesse Litchfield, Technician

Approved By

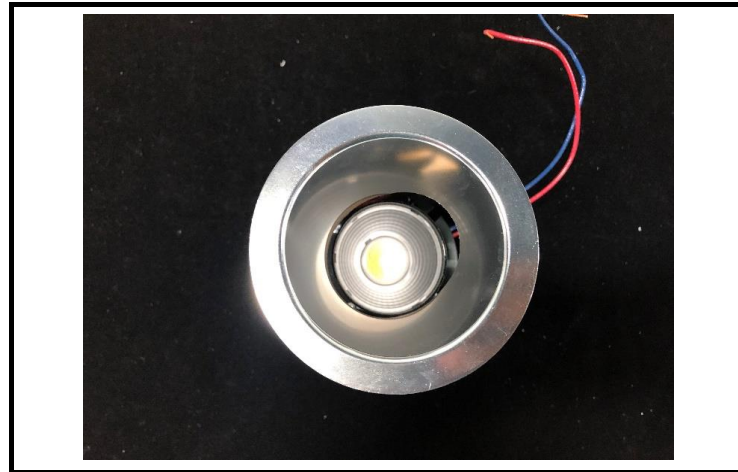
Alexa Lambert, Project Handler

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:	1012 Lumens
Luminaire Efficacy:	48.4 lm/w
Maximum Candela:	3648 Candela

Test Conditions

Test Temperature:	25.3 °C
Voltage:	120.0 VAC
Current:	0.1753 A
Power:	20.93 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

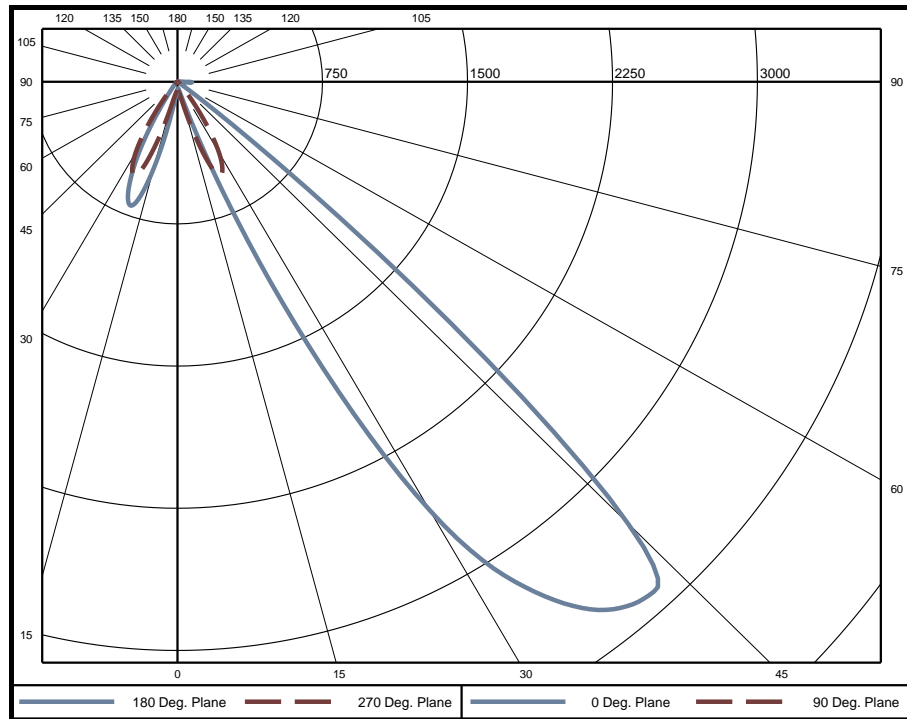
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	0.1753 A	20.93 W	0.995	60 Hz	8.87 %

Summary of Results

Spacing Criteria
 0-180: 2.66
 90-270: 1.75

Total Lumen Output: 1012 Lumens
Luminaire Efficacy: 48.4 lm/w
Maximum Candela: 3648 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	1.2	0.1%	60-65	1.6	0.2%	120-125	0	0.0%
5-10	4.7	0.5%	65-70	0.8	0.1%	125-130	0	0.0%
10-15	17.1	1.7%	70-75	0.4	0.0%	130-135	0	0.0%
15-20	53.8	5.3%	75-80	0.2	0.0%	135-140	0	0.0%
20-25	106.1	10.5%	80-85	0.1	0.0%	140-145	0	0.0%
25-30	156.6	15.5%	85-90	3.8	0.4%	145-150	0	0.0%
30-35	186.3	18.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	198.3	19.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	181.8	18.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	83.7	8.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	12.2	1.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	3.1	0.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	724	71.6%
0-60	1005	99.3%
0-90	1012	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	46	46	46	46	46	46	46	46	46	46	46	46	46	46	46
	5	35	37	40	46	52	59	65	68	69	68	65	59	52	46	40
	10	46	45	45	54	72	95	122	140	151	140	122	95	72	54	45
	15	86	72	63	88	165	272	377	439	470	439	377	272	165	88	63
	20	324	164	135	250	424	565	639	691	696	691	639	565	424	250	135
	25	1287	599	315	417	539	594	591	606	581	606	591	594	539	417	315
	30	2610	1393	380	393	429	401	355	337	307	337	355	401	429	393	380
	35	3314	2059	301	248	213	158	121	107	95	107	121	158	213	248	301
	40	3613	2305	150	95	68	51	44	41	39	41	44	51	68	95	150
	45	3296	1129	40	32	27	24	23	23	22	23	23	24	27	32	40
	50	878	88	13	14	14	15	15	15	15	15	15	14	14	13	88
	55	18	9	6	7	8	9	10	10	10	10	10	9	8	7	6
	60	8	4	2	3	4	5	6	6	6	6	5	4	3	2	4
	65	2	1	1	1	2	3	3	3	3	3	3	2	1	1	1
	70	0	0	0	1	1	2	2	2	2	2	2	1	1	0	0
	75	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0
	80	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0
	85	0	1	0	0	0	0	0	0	0	0	0	0	0	0	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	14400	14400
	45	1472000	17740
	55	10020	3387
	65	1518	665
	75	201	244
	85	1795	315



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	112	109	105	103	109	106	104	101	102	100	98	98	97	95	95	94	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72
4	90	81	74	68	88	79	73	68	77	71	67	75	70	66	73	69	65	63
5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	51	50
7	72	60	52	47	70	59	52	47	58	51	46	56	51	46	55	50	46	44
8	67	55	47	42	65	54	47	42	53	46	41	51	45	41	50	45	41	39
9	62	50	42	37	61	49	42	37	48	41	37	47	41	37	46	41	37	35
10	58	45	38	33	57	45	38	33	44	37	33	43	37	33	42	37	33	31

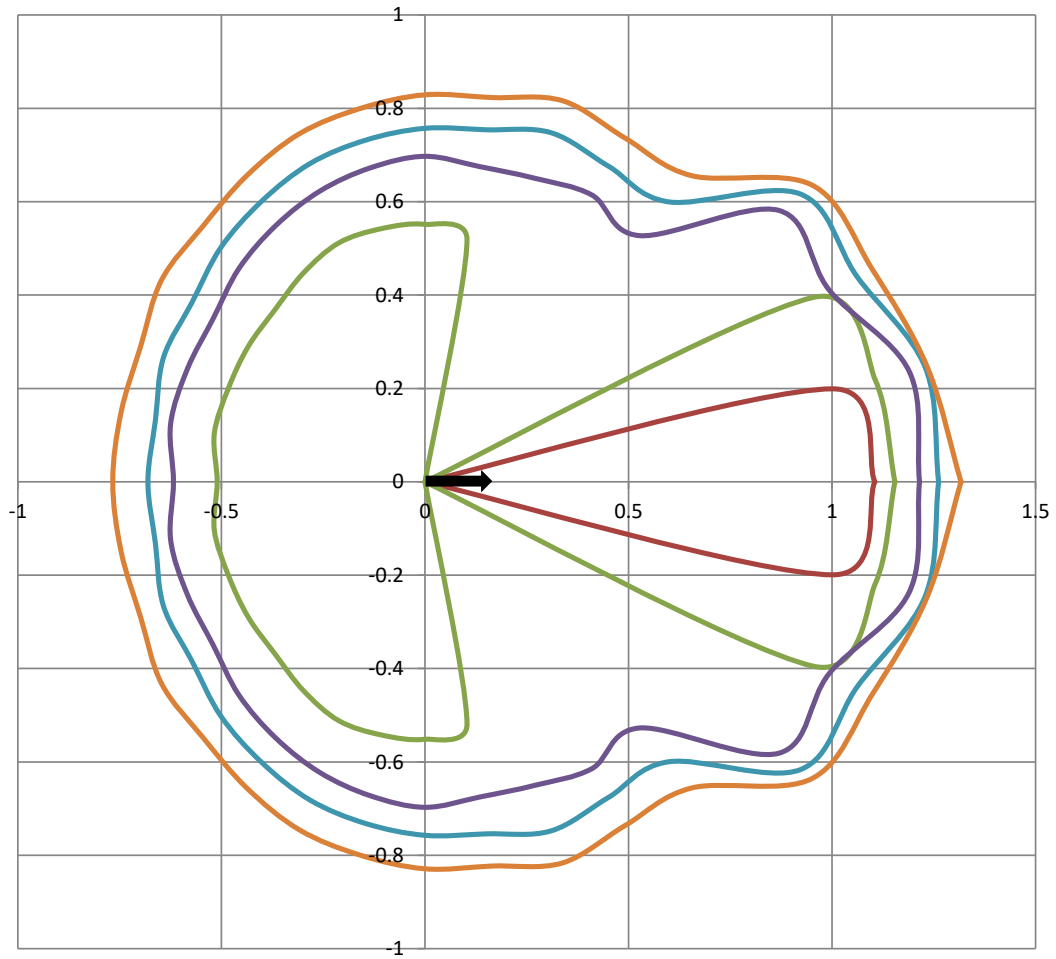
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	46 Candela
Central Cone Intensity:	48 Candela
Beam Flux:	995.6 Lumens
Beam Angle (0-180):	99.1 Degrees
Beam Angle (90-270):	92.2 Degrees
Field Angle (0-180):	125.0 Degrees
Field Angle (90-270):	118.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		2.85	9.47
6.00		1.27	14.2
8.00		0.713	18.9
10.0		0.456	23.7
12.0		0.317	28.4
14.0		0.233	33.1
16.0		0.178	37.9



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