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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
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United States

Catalog Number
2AR-L12/835-DIM-UNV-AM-OF-WH-x-xx (0° TILT)
Order Number
13257190
Test Number
13257190.15

Test Date

2020-03-17

Prepared By

Jesse Litchfield, Technician

Approved By

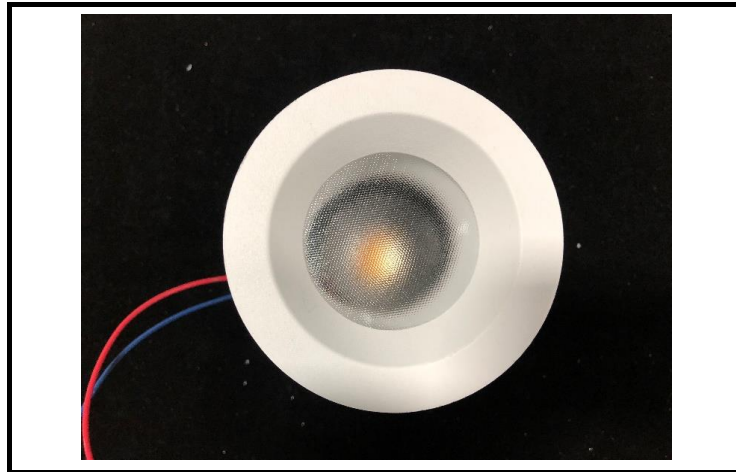
Alexa Lambert, Project Handler

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:	456.1 Lumens
Luminaire Efficacy:	21.8 lm/w
Maximum Candela:	2279 Candela

Test Conditions

Test Temperature:	24.5 °C
Voltage:	120.0 VAC
Current:	0.1753 A
Power:	20.92 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.86 %

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



Distribution - Goniophotometer

Distribution Test Conditions

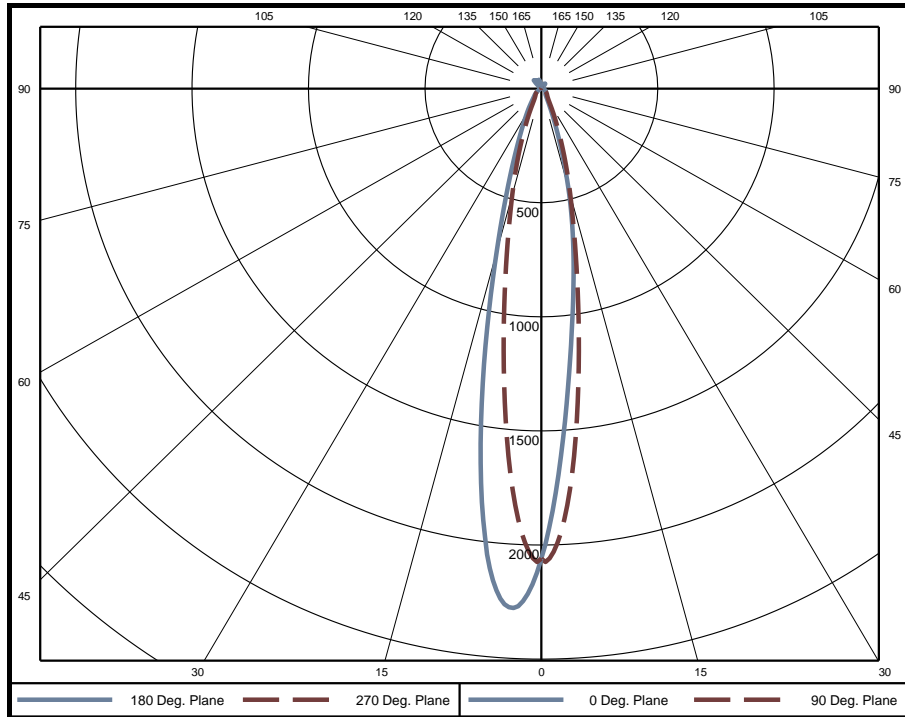
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.5 °C	120.0 VAC	0.1753 A	20.92 W	0.995	60 Hz	8.86 %

Summary of Results

Spacing Criteria
 0-180: 0.25
 90-270: 0.31

Total Lumen Output: 456.1 Lumens
Luminaire Efficacy: 21.8 lm/w
Maximum Candela: 2279 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	44.66	9.8%	60-65	7.13	1.6%	120-125	0	0.0%
5-10	94.67	20.8%	65-70	5.29	1.2%	125-130	0	0.0%
10-15	88.51	19.4%	70-75	3.68	0.8%	130-135	0	0.0%
15-20	62.21	13.6%	75-80	2.12	0.5%	135-140	0	0.0%
20-25	39.81	8.7%	80-85	0.91	0.2%	140-145	0	0.0%
25-30	26.14	5.7%	85-90	0.34	0.1%	145-150	0	0.0%
30-35	18.93	4.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	15.08	3.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	13.48	3.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	12.56	2.8%	105-110	0	0.0%	165-170	0	0.0%
50-55	11.24	2.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	9.35	2.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	390	85.5%
0-60	437	95.7%
0-90	456	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	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060	2060
	5	1317	1291	1352	1457	1617	1813	2033	2187	2207	2187	2033	1813	1617	1457	1352
	10	802	775	788	822	902	1054	1276	1489	1489	1489	1276	1054	902	822	788
	15	448	429	439	456	482	527	617	734	739	734	617	527	482	456	439
	20	194	186	199	224	254	286	319	364	366	364	319	286	254	224	199
	25	83	80	88	105	130	159	185	208	201	208	185	159	130	105	88
	30	45	44	48	56	71	91	112	126	122	126	112	91	71	56	48
	35	32	32	35	40	49	59	70	79	76	79	70	59	49	40	35
	40	28	28	30	34	40	44	49	53	52	53	49	44	40	34	30
	45	27	27	29	31	34	36	38	40	40	40	38	36	34	31	29
	50	26	26	27	28	29	29	30	31	30	31	30	29	29	28	27
	55	25	25	24	24	23	23	22	22	21	22	22	23	23	24	24
	60	22	22	21	19	18	16	14	13	12	13	14	16	18	19	21
	65	18	18	17	15	13	10	8	7	6	7	8	10	13	15	17
	70	14	13	12	10	8	6	5	5	5	5	6	8	10	12	13
	75	9	8	7	6	5	4	4	4	4	4	4	5	6	7	8
	80	4	3	3	2	2	2	2	3	2	3	2	2	2	3	3
	85	1	1	1	1	1	1	1	2	1	2	1	1	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	650400	650400
	45	11960	12750
	55	13650	13390
	65	13530	12380
	75	11050	9050
	85	2495	2796



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	114	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	91	90	88
3	104	98	93	90	102	96	92	89	94	90	87	92	89	86	89	87	85	83
4	99	93	88	84	98	92	87	83	89	85	82	87	84	81	86	83	80	79
5	96	88	83	79	94	87	82	79	85	81	78	84	80	77	82	79	77	75
6	92	84	79	75	91	83	78	75	82	78	74	81	77	74	79	76	73	72
7	89	81	75	72	87	80	75	72	79	74	71	78	74	71	77	73	71	69
8	86	78	72	69	85	77	72	69	76	72	68	75	71	68	74	71	68	67
9	83	75	70	66	82	74	70	66	73	69	66	73	69	66	72	68	66	64
10	80	72	67	64	79	72	67	64	71	67	64	70	66	64	70	66	64	62

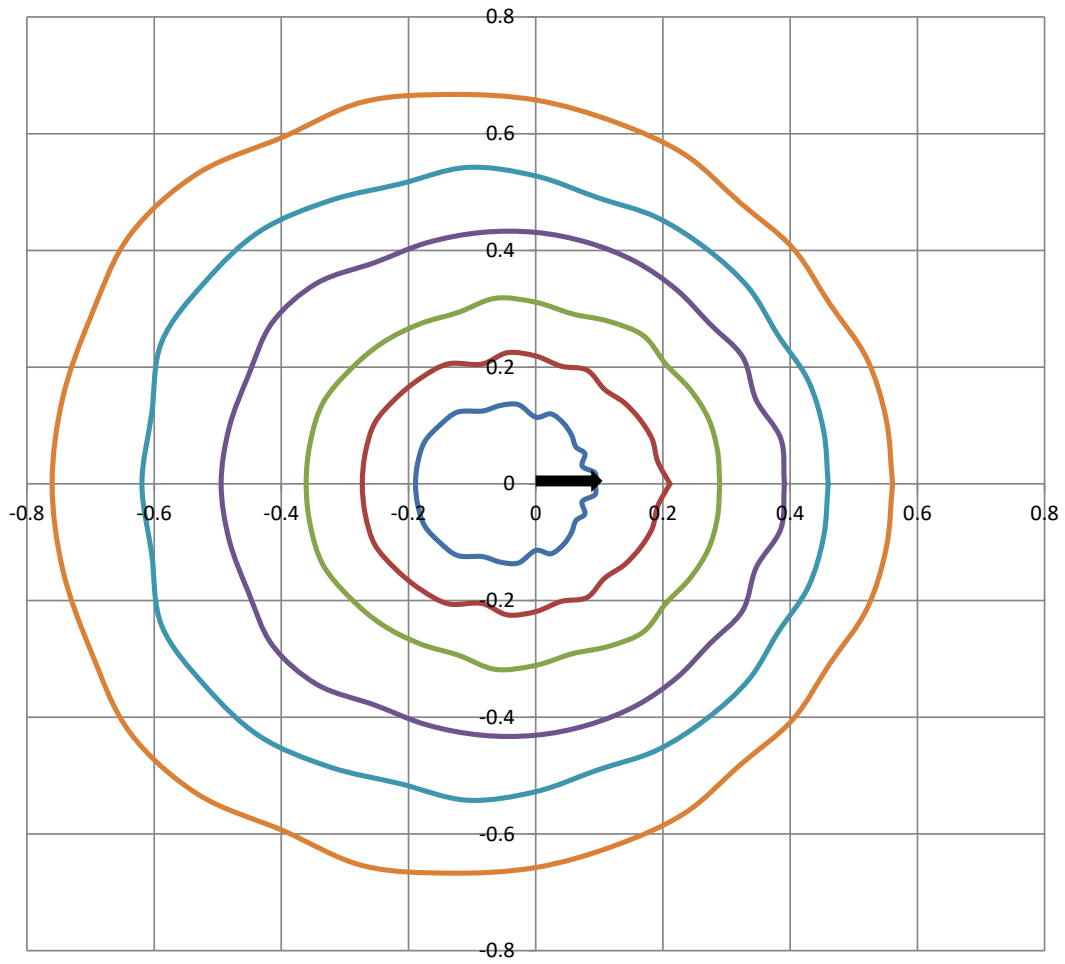
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2060 Candela
Central Cone Intensity:	1923 Candela
Beam Flux:	139.8 Lumens
Beam Angle (0-180):	20.2 Degrees
Beam Angle (90-270):	17.9 Degrees
Field Angle (0-180):	44.4 Degrees
Field Angle (90-270):	43.1 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		129	1.36
6.00		57.2	2.04
8.00		32.2	2.72
10.0		20.6	3.40
12.0		14.3	4.08
14.0		10.5	4.76
16.0		8.05	5.44



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