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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-AW-OF-WH-x-xx (0° TILT)
Order Number
13257190
Test Number
13257190.07

Test Date

2020-03-16

Prepared By

Jesse Litchfield, Technician

Approved By

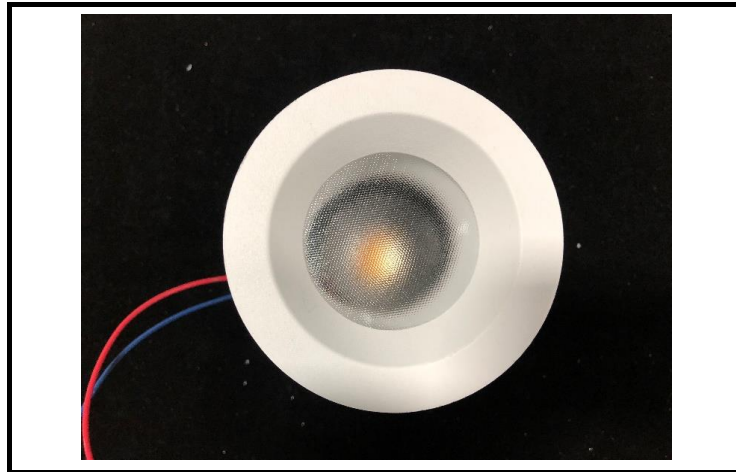
Alexa Lambert, Project Handler

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:	844.2 Lumens
Luminaire Efficacy:	40.3 lm/w
Maximum Candela:	2522 Candela

Test Conditions

Test Temperature:	24.7 °C
Voltage:	120.0 VAC
Current:	0.1756 A
Power:	20.96 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	8.84 %

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



Distribution - Goniophotometer

Distribution Test Conditions

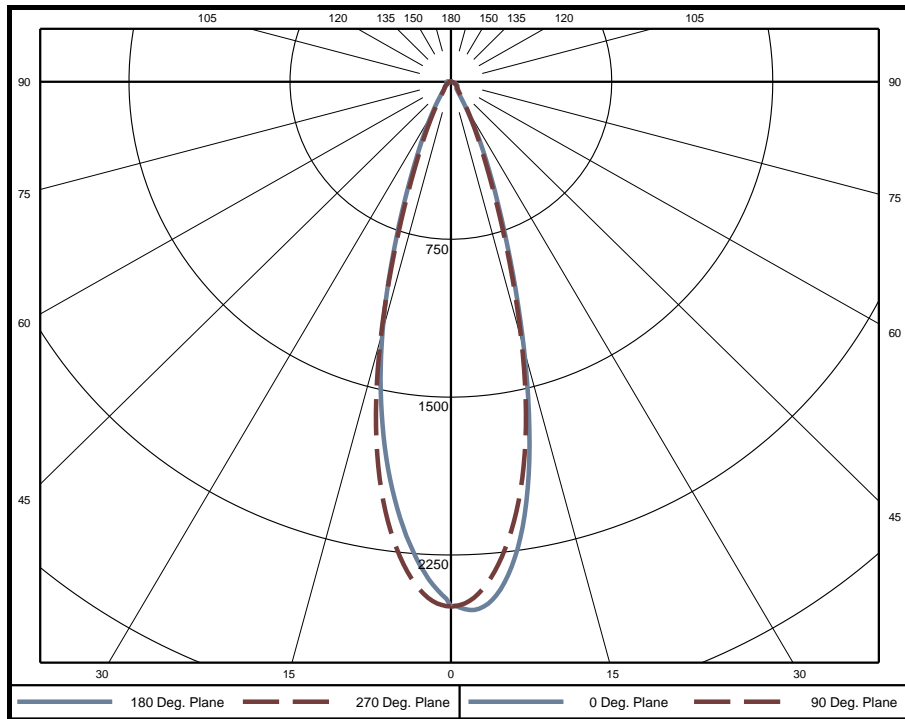
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.0 VAC	0.1756 A	20.96 W	0.995	60 Hz	8.84 %

Summary of Results

Spacing Criteria
 0-180: 0.52
 90-270: 0.51

Total Lumen Output: 844.2 Lumens
 Luminaire Efficacy: 40.3 lm/w
 Maximum Candela: 2522 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	57.9	6.9%	60-65	9.9	1.2%	120-125	0	0.0%
5-10	151.9	18.0%	65-70	7.8	0.9%	125-130	0	0.0%
10-15	187.9	22.3%	70-75	5.6	0.7%	130-135	0	0.0%
15-20	153.9	18.2%	75-80	3.3	0.4%	135-140	0	0.0%
20-25	97.1	11.5%	80-85	1.4	0.2%	140-145	0	0.0%
25-30	56.4	6.7%	85-90	1.1	0.1%	145-150	0	0.0%
30-35	31.6	3.7%	90-95	0	0.0%	150-155	0	0.0%
35-40	20.3	2.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	16.6	2.0%	100-105	0	0.0%	160-165	0	0.0%
45-50	15.3	1.8%	105-110	0	0.0%	165-170	0	0.0%
50-55	14.0	1.7%	110-115	0	0.0%	170-175	0	0.0%
55-60	12.2	1.4%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	757	89.7%
0-60	815	96.6%
0-90	844	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	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495	2495
	5	2449	2437	2410	2376	2338	2303	2276	2254	2204	2254	2276	2303	2338	2376	2410
	10	2029	2000	1982	1953	1915	1875	1846	1822	1767	1822	1846	1875	1915	1953	1982
	15	1320	1288	1280	1275	1265	1263	1264	1263	1227	1263	1264	1263	1265	1275	1280
	20	688	662	649	638	633	647	680	706	676	706	680	647	633	638	649
	25	340	317	309	302	301	311	332	346	342	346	332	311	301	302	309
	30	130	125	129	137	149	159	173	181	178	181	173	159	149	137	129
	35	54	53	57	66	79	90	96	98	95	98	96	90	79	66	57
	40	40	40	42	46	52	57	58	58	56	58	58	57	52	46	42
	45	38	38	39	41	43	42	41	41	40	41	41	42	43	41	39
	50	38	38	38	38	37	34	32	31	30	31	32	34	37	38	38
	55	36	36	35	33	30	27	24	22	21	22	24	27	30	33	35
	60	33	33	31	27	23	19	16	14	13	14	16	19	23	27	31
	65	28	27	25	22	17	13	10	9	9	10	13	17	22	25	27
	70	22	21	19	16	12	8	7	7	7	7	8	12	16	19	21
	75	16	15	13	10	6	5	5	5	5	5	5	6	10	13	15
	80	7	7	5	4	3	3	3	3	3	3	3	3	4	5	7
	85	1	1	2	2	2	2	1	1	1	1	1	2	2	2	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	787900	787900
	45	17040	17610
	55	20070	19300
	65	21260	18820
	75	19220	15510
	85	5018	5788



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	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	101	98	107	103	99	96	100	97	94	97	94	92	94	92	90	89
3	104	99	94	90	102	97	93	90	95	91	88	92	89	87	90	88	86	84
4	100	93	88	85	98	92	88	84	90	86	83	88	85	82	86	84	81	80
5	96	89	84	80	95	88	83	80	86	82	79	85	81	78	83	80	78	76
6	93	85	80	76	91	84	79	76	83	78	75	81	78	75	80	77	74	73
7	89	81	76	73	88	81	76	72	80	75	72	78	75	72	77	74	71	70
8	86	78	73	70	85	78	73	69	77	72	69	76	72	69	75	71	69	67
9	83	75	70	67	82	75	70	67	74	70	67	73	69	66	72	69	66	65
10	81	72	68	64	80	72	67	64	71	67	64	71	67	64	70	66	64	63

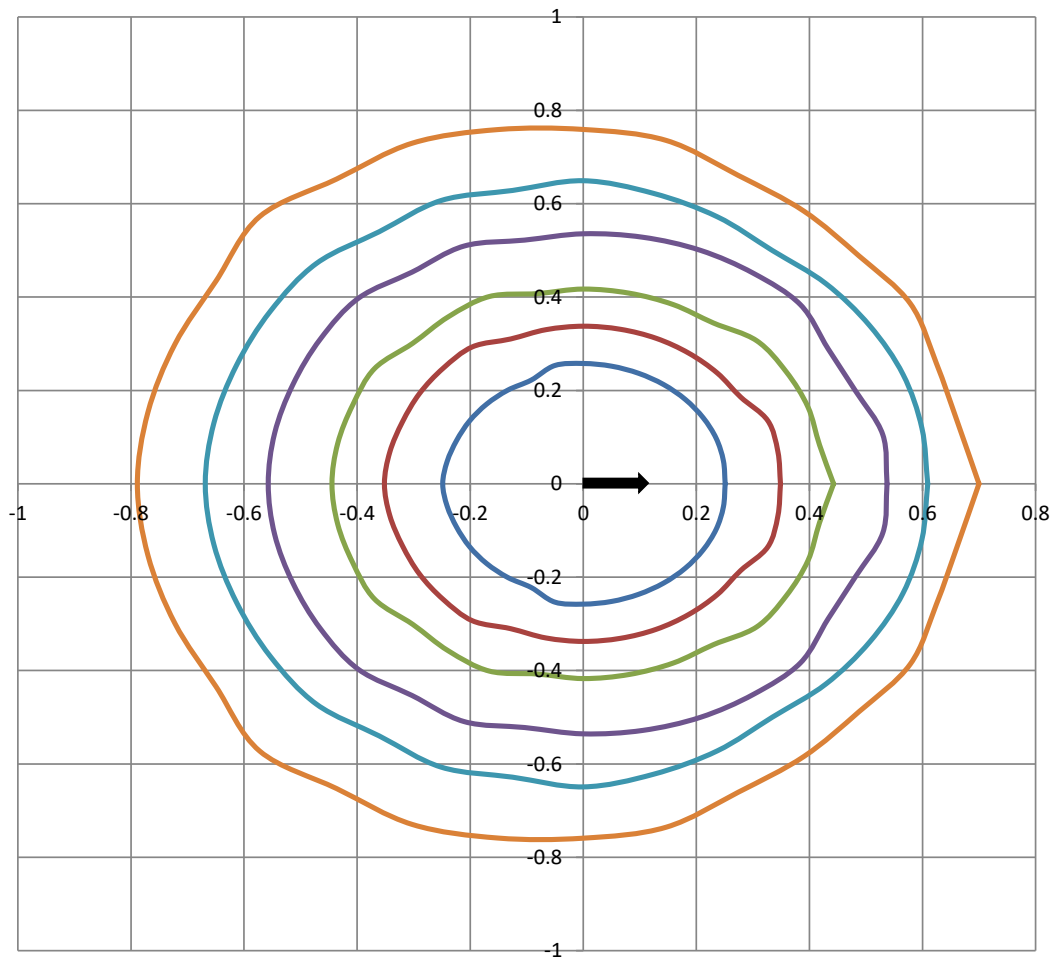
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2495 Candela
Central Cone Intensity:	2441 Candela
Beam Flux:	403.7 Lumens
Beam Angle (0-180):	30.3 Degrees
Beam Angle (90-270):	30.2 Degrees
Field Angle (0-180):	54.2 Degrees
Field Angle (90-270):	52.7 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		156	2.04
6.00		69.3	3.05
8.00		39.0	4.07
10.0		25.0	5.09
12.0		17.3	6.11
14.0		12.7	7.13
16.0		9.75	8.15



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