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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 (0° TILT)
Order Number
13257190
Test Number
13257190.01

Test Date

2020-03-16

Prepared By

Jesse Litchfield, Technician

Approved By

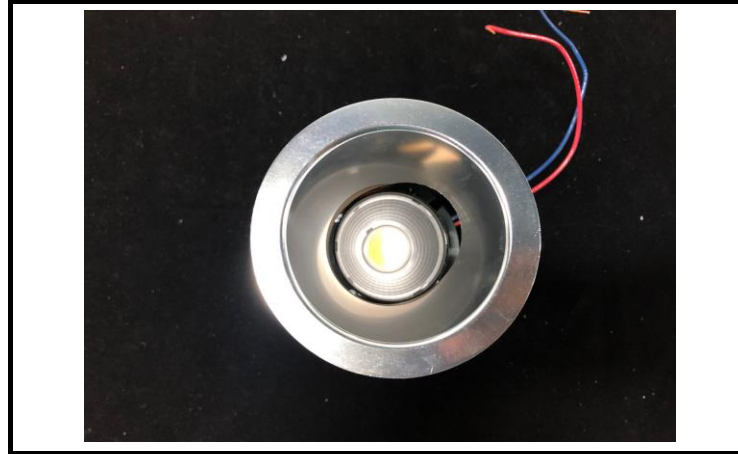
Alexa Lambert, Project Handler

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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:	1272 Lumens
Luminaire Efficacy:	60.8 lm/w
Maximum Candela:	4464 Candela

Test Conditions

Test Temperature:	25.8 °C
Voltage:	120.1 VAC
Current:	0.1752 A
Power:	20.92 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

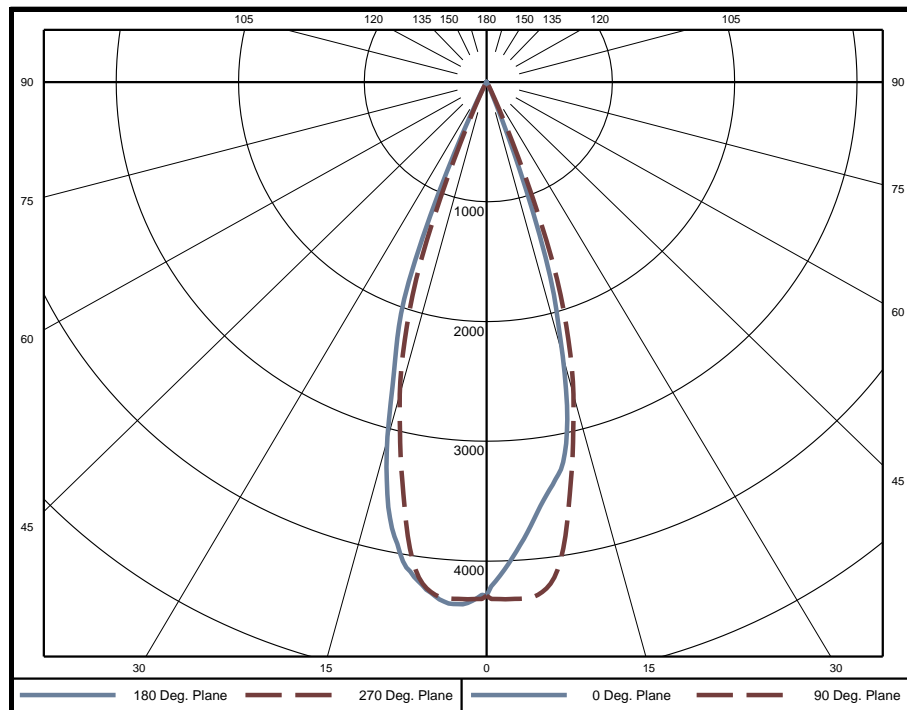
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.8 °C	120.1 VAC	0.1752 A	20.92 W	0.995	60 Hz	8.88 %

Summary of Results

Spacing Criteria
0-180: 0.54
90-270: 0.58

Total Lumen Output: 1272 Lumens
Luminaire Efficacy: 60.8 lm/w
Maximum Candela: 4464 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	101.4	8.0%	60-65	0.4	0.0%	120-125	0	0.0%
5-10	285.4	22.4%	65-70	0.2	0.0%	125-130	0	0.0%
10-15	381.6	30.0%	70-75	0.1	0.0%	130-135	0	0.0%
15-20	340.9	26.8%	75-80	0.1	0.0%	135-140	0	0.0%
20-25	133.4	10.5%	80-85	0.1	0.0%	140-145	0	0.0%
25-30	16.3	1.3%	85-90	0.1	0.0%	145-150	0	0.0%
30-35	4.5	0.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	2.9	0.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	1.9	0.1%	100-105	0	0.0%	160-165	0	0.0%
45-50	1.3	0.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	1.0	0.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.6	0.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1266	99.6%
0-60	1271	99.9%
0-90	1272	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	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289	4289
	5	3774	3829	3951	4128	4315	4441	4457	4378	4336	4378	4457	4441	4315	4128	3951
	10	3328	3376	3460	3577	3731	3888	4022	4067	3994	4067	4022	3888	3731	3577	3460
	15	2373	2389	2461	2561	2698	2849	2969	3102	3068	3102	2969	2849	2698	2561	2461
	20	783	792	931	1155	1404	1659	1836	1967	1929	1967	1836	1659	1404	1155	931
	25	65	66	79	101	145	205	260	314	278	314	260	205	145	101	79
	30	14	15	16	18	22	27	31	35	32	35	31	27	22	18	16
	35	7	8	9	10	12	14	13	14	14	13	14	12	10	9	8
	40	4	4	5	6	8	9	8	8	8	8	9	8	6	5	4
	45	2	2	3	3	5	6	5	5	5	5	6	5	3	3	2
	50	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2
	55	1	1	2	2	2	2	2	2	2	2	2	2	2	2	1
	60	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	65	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1
	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	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	1354000	1354000
	45	904	1161
	55	769	853
	65	527	498
	75	236	277
	85	255	589



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	115	113	111	109	113	111	109	108	107	106	104	103	102	101	100	99	98	97
2	111	108	105	103	109	106	104	101	103	101	99	100	99	97	98	96	95	94
3	108	103	100	97	106	102	99	96	100	97	95	97	95	93	95	94	92	91
4	105	100	96	93	103	99	95	92	97	94	91	95	92	90	93	91	89	88
5	102	96	92	89	100	95	92	89	94	90	88	92	89	87	91	88	87	85
6	99	93	89	86	98	92	88	86	91	88	85	90	87	85	89	86	84	83
7	96	90	86	83	95	89	86	83	88	85	82	87	84	82	86	84	82	81
8	94	87	83	80	93	87	83	80	86	82	80	85	82	80	84	81	79	78
9	91	85	81	78	90	84	81	78	84	80	78	83	80	77	82	79	77	76
10	89	82	78	76	88	82	78	76	81	78	76	81	78	75	80	77	75	74

Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	4289 Candela
Central Cone Intensity:	4255 Candela
Beam Flux:	962.1 Lumens
Beam Angle (0-180):	34.9 Degrees
Beam Angle (90-270):	34.9 Degrees
Field Angle (0-180):	45.4 Degrees
Field Angle (90-270):	46.0 Degrees

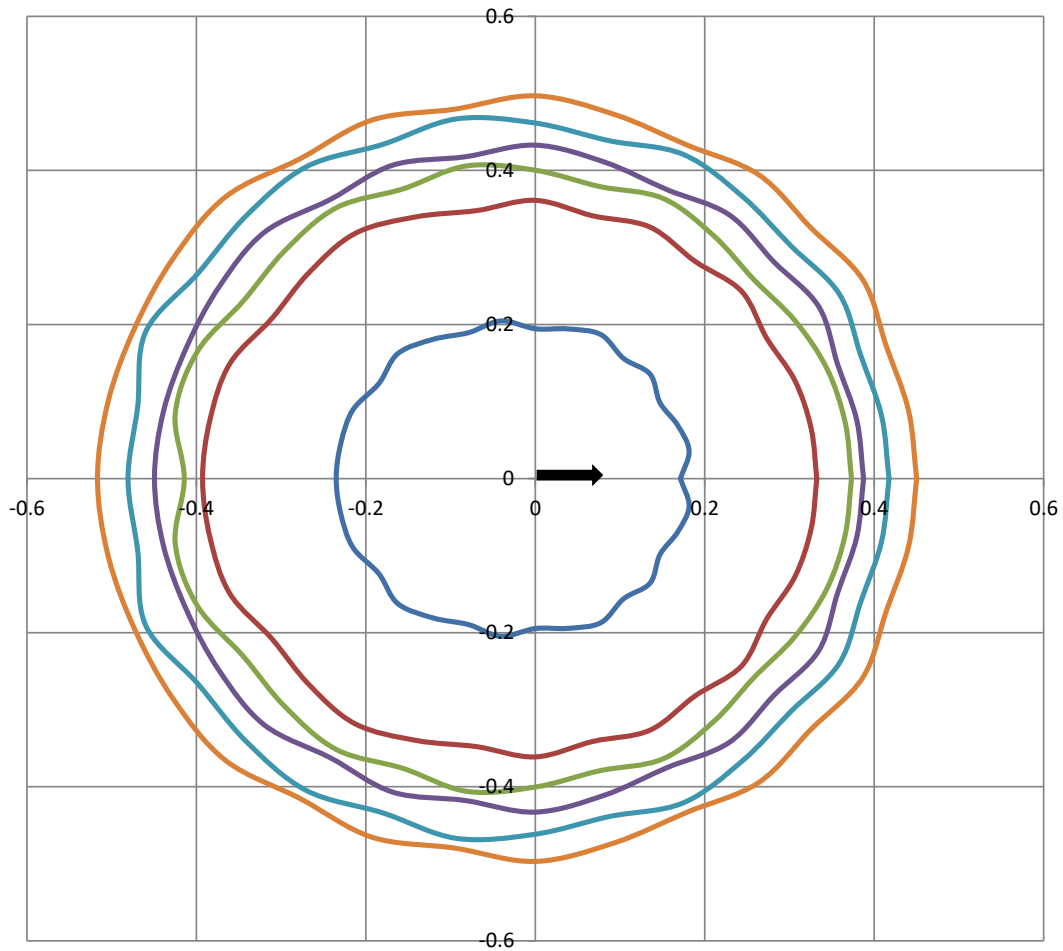
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		268	2.33
6.00		119	3.50
8.00		67.0	4.66
10.0		42.9	5.83
12.0		29.8	7.00
14.0		21.9	8.16
16.0		16.8	9.33



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

50 fc 20 fc 10 fc 5 fc 2 fc 1 fc