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Indoor Distribution Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002

Prepared For
H E Williams Inc

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United States

Catalog Number
4DR-L20/835-DIM-UNV-L-WW-OF-WH-AD

Order Number
12316380
Test Number
12316380.18

Test Date

2018-06-12

Prepared By

Josh Mitchell, Technician

Approved By

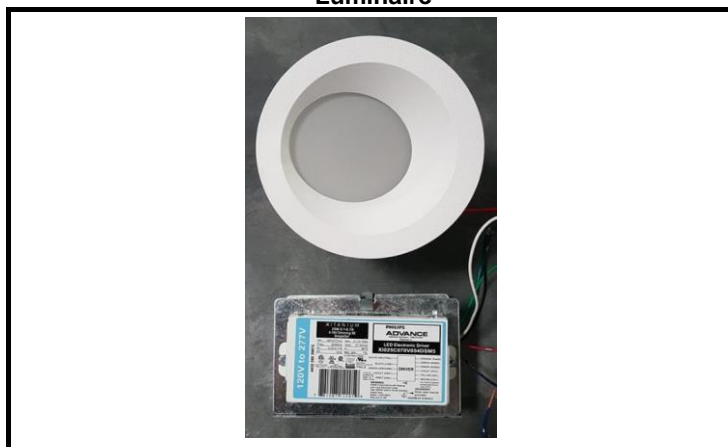
Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Black formed aluminum housing, white reflector, frosted plastic lens enclosure
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: Philips XI025C070V054DSM5

Luminaire



Luminaire Characteristics

Luminous Diameter: 4.25 in.

Summary of Results

Total Luminaire Output:	866.8 Lumens
Luminaire Efficacy:	43.9 lm/w
Maximum Candela:	406 Candela

Test Conditions

Test Temperature:	25.5 °C
Voltage:	120.1 VAC
Current:	0.1653 A
Power:	19.74 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	9.21 %

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



Distribution - Goniophotometer

Distribution Test Conditions

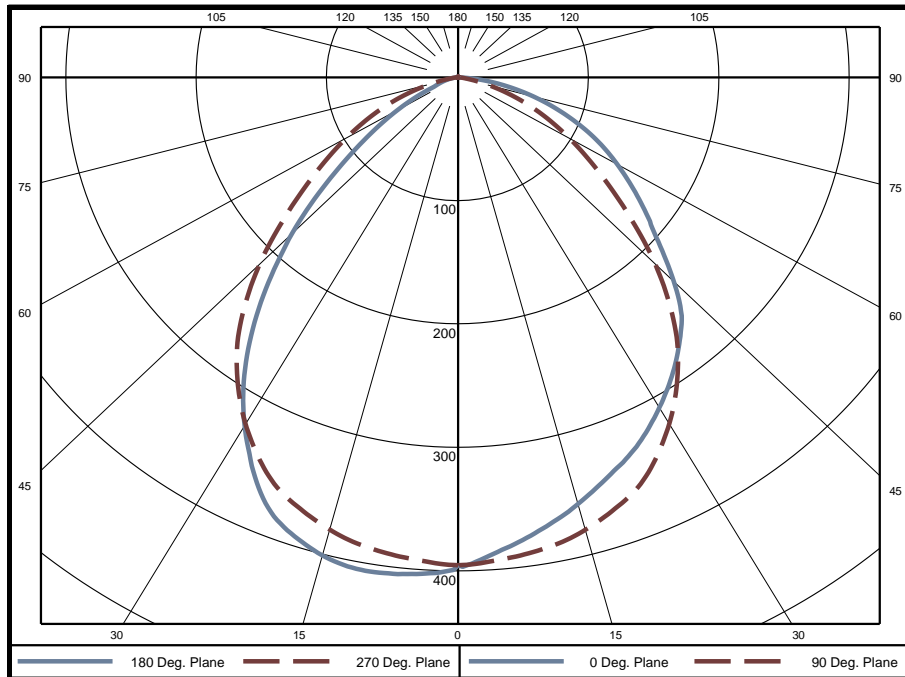
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.5 °C	120.1 VAC	0.1653 A	19.74 W	0.995	60 Hz	9.21 %

Summary of Results

Spacing Criteria
 0-180: 1.17
 90-270: 1.21

Total Lumen Output: 866.8 Lumens
Luminaire Efficacy: 43.9 lm/w
Maximum Candela: 406 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	9.41	1.1%	60-65	40.88	4.7%	120-125	0	0.0%
5-10	27.88	3.2%	65-70	29.72	3.4%	125-130	0	0.0%
10-15	45.47	5.2%	70-75	19.50	2.2%	130-135	0	0.0%
15-20	61.35	7.1%	75-80	11.09	1.3%	135-140	0	0.0%
20-25	74.93	8.6%	80-85	4.68	0.5%	140-145	0	0.0%
25-30	84.52	9.8%	85-90	1.01	0.1%	145-150	0	0.0%
30-35	89.84	10.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	90.52	10.4%	95-100	0	0.0%	155-160	0	0.0%
40-45	85.54	9.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	75.36	8.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	63.29	7.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	51.84	6.0%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	484	55.8%
0-60	760	87.7%
0-90	867	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	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6	395.6
	5	384.7	381.4	384.1	387.9	392.1	396.4	399.4	401.5	404.1	401.5	399.4	396.4	392.1	387.9	384.1
	10	371.8	368.4	373.0	379.8	387.4	395.2	401.2	404.8	406.2	404.8	401.2	395.2	387.4	379.8	373.0
	15	357.5	354.6	360.4	369.4	379.3	389.0	396.6	401.2	401.0	401.2	396.6	389.0	379.3	369.4	360.4
	20	342.2	340.1	346.7	356.3	367.3	377.2	384.9	389.6	388.0	389.6	384.9	377.2	367.3	356.3	346.7
	25	327.4	324.0	330.0	339.5	349.5	358.0	364.2	367.7	362.6	367.7	364.2	358.0	349.5	339.5	330.0
	30	308.5	303.5	308.4	316.2	323.8	329.3	332.6	334.5	325.3	334.5	332.6	329.3	323.8	316.2	308.4
	35	288.2	281.7	284.4	289.3	293.2	294.4	294.0	292.9	281.6	292.9	294.0	294.4	293.2	289.3	284.4
	40	265.6	256.0	255.7	256.7	256.7	253.6	248.6	245.4	230.7	245.4	248.6	253.6	256.7	256.7	255.7
	45	233.1	221.3	219.0	217.2	213.4	206.0	198.6	193.1	178.7	193.1	198.6	206.0	213.4	217.2	219.0
	50	195.9	186.3	181.7	175.5	167.8	157.8	147.6	141.8	126.8	141.8	147.6	157.8	167.8	175.5	181.7
	55	167.1	157.0	150.3	140.9	129.4	116.5	105.0	97.5	85.0	97.5	105.0	116.5	129.4	140.9	150.3
	60	140.3	130.7	122.9	111.5	98.2	84.3	72.1	64.4	53.8	64.4	72.1	84.3	98.2	111.5	122.9
	65	114.2	104.1	96.1	84.5	70.9	57.4	45.8	37.9	29.4	37.9	45.8	57.4	70.9	84.5	96.1
	70	86.5	76.8	69.3	58.3	45.9	33.9	23.6	18.4	16.4	18.4	23.6	33.9	45.9	58.3	69.3
	75	59.4	50.4	43.7	34.4	24.1	15.1	11.9	12.0	10.8	12.0	11.9	15.1	24.1	34.4	43.7
	80	33.7	26.3	21.3	14.6	8.4	6.9	7.0	7.1	6.0	7.1	7.0	6.9	8.4	14.6	21.3
	85	11.5	6.6	5.1	3.2	2.9	3.0	3.2	3.2	2.4	3.2	3.2	3.0	2.9	3.2	5.1
	90	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Average Luminance (cd/m²)

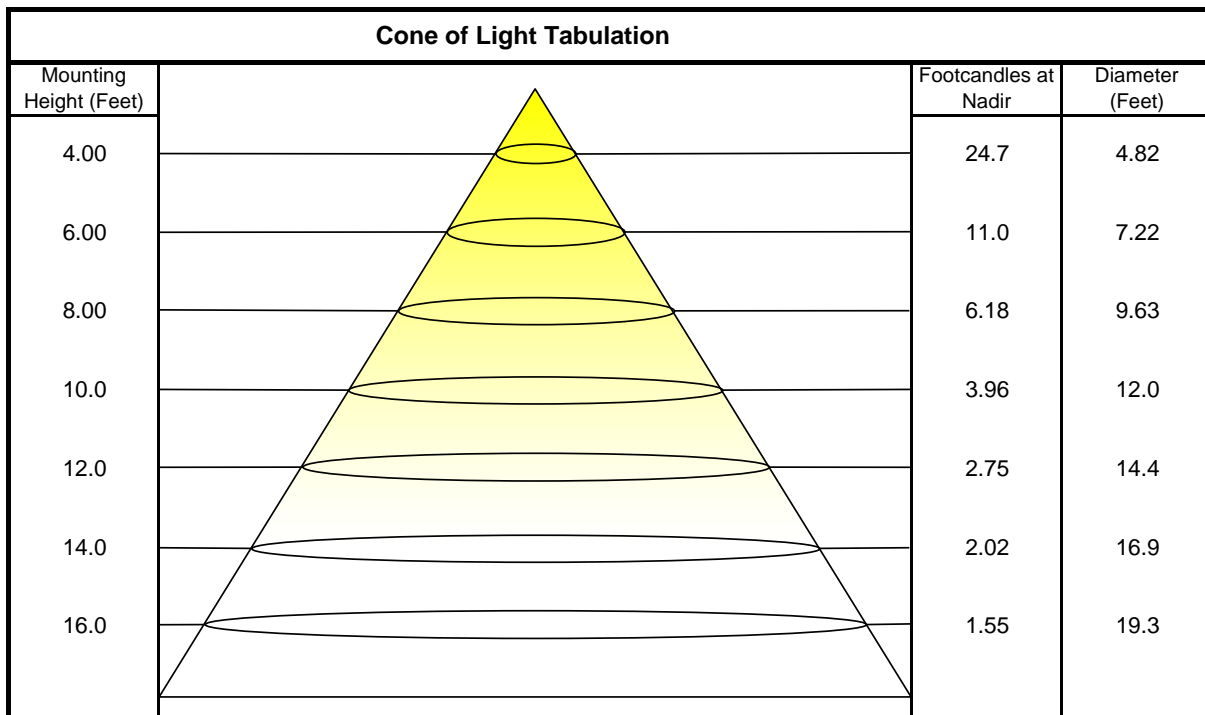
Vertical Angle (Degrees)	Horizontal Angle (Degrees)			
	0	45	90	
	0	43220	43220	43220
	45	36020	33850	32970
	55	31840	28630	24650
	65	29540	24840	18330
	75	25070	18440	10190
	85	14470	6350	3658



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	93	91	89	87
2	102	94	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75
3	94	84	77	71	91	83	76	71	80	74	69	77	72	68	75	71	67	65
4	86	76	68	62	84	74	67	61	72	65	60	70	64	60	68	63	59	57
5	80	68	60	54	78	67	59	54	65	58	53	63	57	53	61	56	52	50
6	74	62	54	48	72	61	53	48	59	52	47	58	51	47	56	51	46	44
7	69	57	48	43	67	56	48	43	54	47	42	53	47	42	52	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	31	41	35	31	30

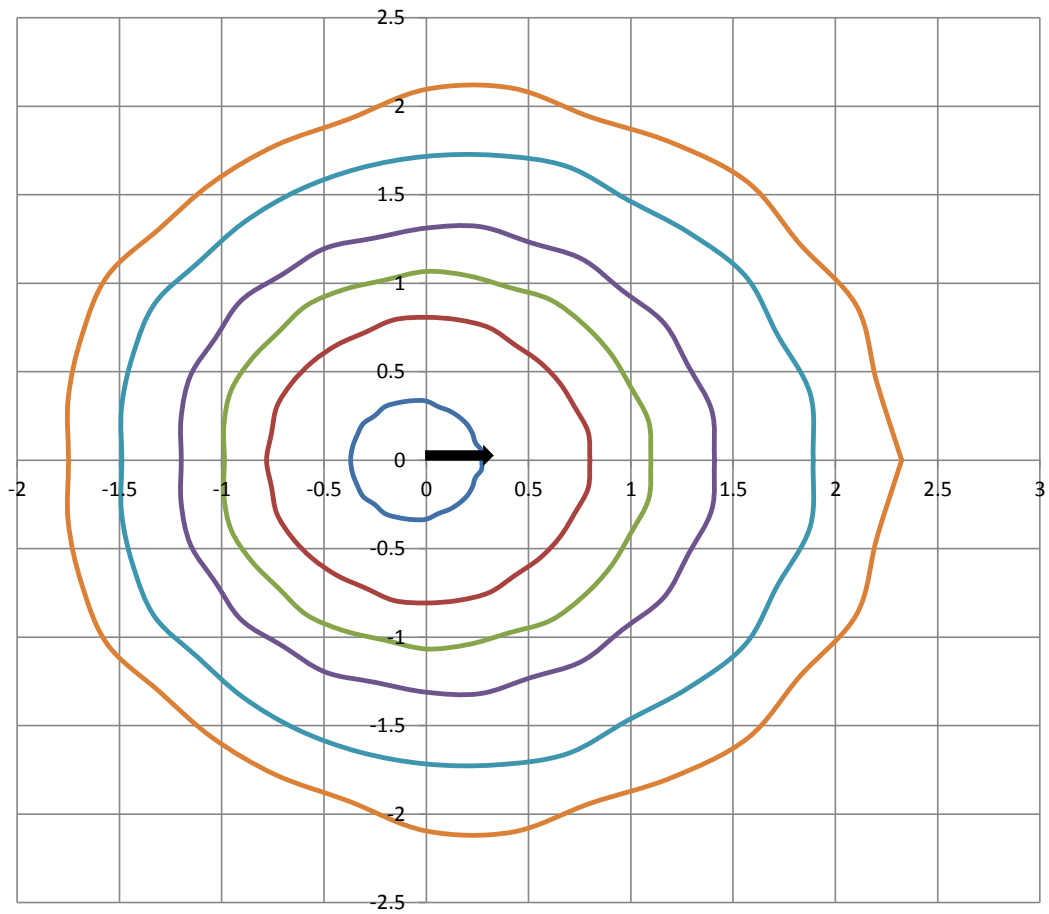
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	395.6 Candela
Central Cone Intensity:	394 Candela
Beam Flux:	594.5 Lumens
Beam Angle (0-180):	92.8 Degrees
Beam Angle (90-270):	93.3 Degrees
Field Angle (0-180):	141.6 Degrees
Field Angle (90-270):	142.7 Degrees





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

