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Indoor Distribution Test Report

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

Prepared For
H E Williams Inc

831 W Fairview Ave
PO Box 837
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United States

Catalog Number
4DR-L20/835-DIM-UNV-R-W-OF-WH-AD

Order Number
12316380
Test Number
12316380.16

Test Date

2018-06-12

Prepared By

Josh Mitchell, Technician

Approved By

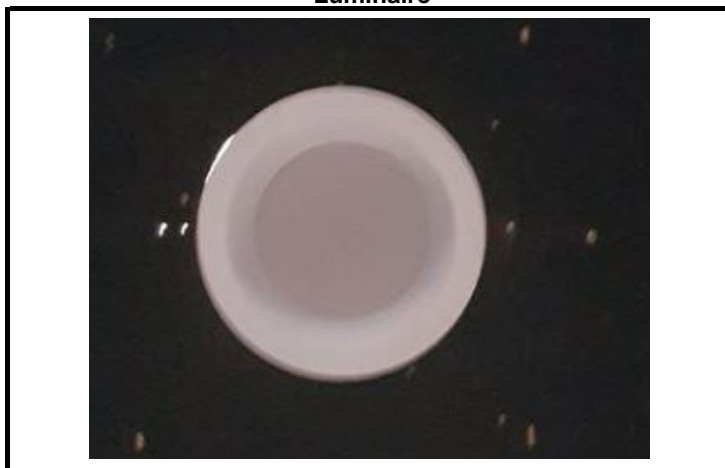
Alexa Lambert, Project Handler

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: 4.50 in.

Summary of Results

Total Luminaire Output:	1126 Lumens
Luminaire Efficacy:	57 lm/w
Maximum Candela:	564 Candela

Test Conditions

Test Temperature:	25.0 °C
Voltage:	120.1 VAC
Current:	0.1654 A
Power:	19.75 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	9.22 %

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



Distribution - Goniophotometer

Distribution Test Conditions

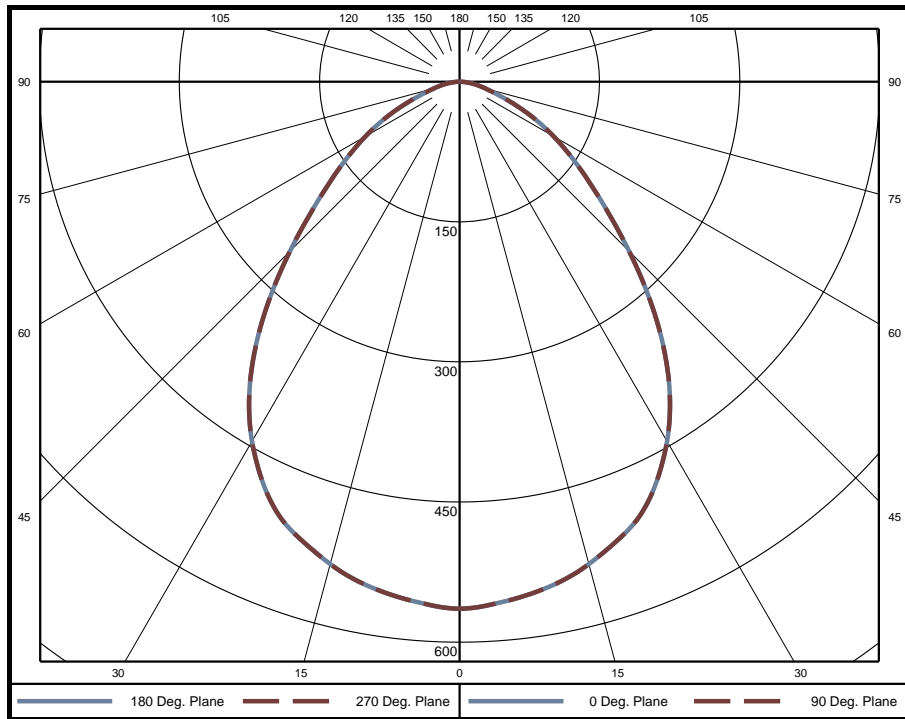
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.0 °C	120.1 VAC	0.1654 A	19.75 W	0.995	60 Hz	9.22 %

Summary of Results

Spacing Criteria
 0-180: 1.18
 90-270: 1.18

Total Lumen Output: 1126 Lumens
Luminaire Efficacy: 57.0 lm/w
Maximum Candela: 564 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	13.4	1.2%	60-65	47.6	4.2%	120-125	0	0.0%
5-10	39.6	3.5%	65-70	32.6	2.9%	125-130	0	0.0%
10-15	64.3	5.7%	70-75	20.0	1.8%	130-135	0	0.0%
15-20	86.5	7.7%	75-80	12.4	1.1%	135-140	0	0.0%
20-25	105.3	9.4%	80-85	6.7	0.6%	140-145	0	0.0%
25-30	117.9	10.5%	85-90	2.1	0.2%	145-150	0	0.0%
30-35	123.1	10.9%	90-95	0	0.0%	150-155	0	0.0%
35-40	119.4	10.6%	95-100	0	0.0%	155-160	0	0.0%
40-45	107.5	9.5%	100-105	0	0.0%	160-165	0	0.0%
45-50	91.1	8.1%	105-110	0	0.0%	165-170	0	0.0%
50-55	75.5	6.7%	110-115	0	0.0%	170-175	0	0.0%
55-60	61.6	5.5%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	670	59.5%
0-60	1005	89.3%
0-90	1127	100.1%
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	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2	564.2
	5	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4	558.4
	10	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2	549.2
	15	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6	534.6
	20	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3
	25	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9	486.9
	30	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3	444.3
	35	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6	390.6
	40	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2	325.2
	45	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7	256.7
	50	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4	197.4
	55	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4	152.4
	60	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4	115.4
	65	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7	80.7
	70	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4	49.4
	75	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5	29.5
	80	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3	17.3
	85	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6
	90	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	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)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	54980	54980
	45	35380	35380
	55	25890	25890
	65	18620	18620
	75	11090	11090
	85	8489	8489



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	111	107	103	100	108	105	101	98	100	98	95	97	94	92	93	91	90	88
2	102	95	90	85	100	94	88	84	90	86	82	87	83	80	84	81	78	76
3	95	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67
4	87	77	69	63	85	76	69	63	73	67	62	71	66	61	69	64	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42
8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	31

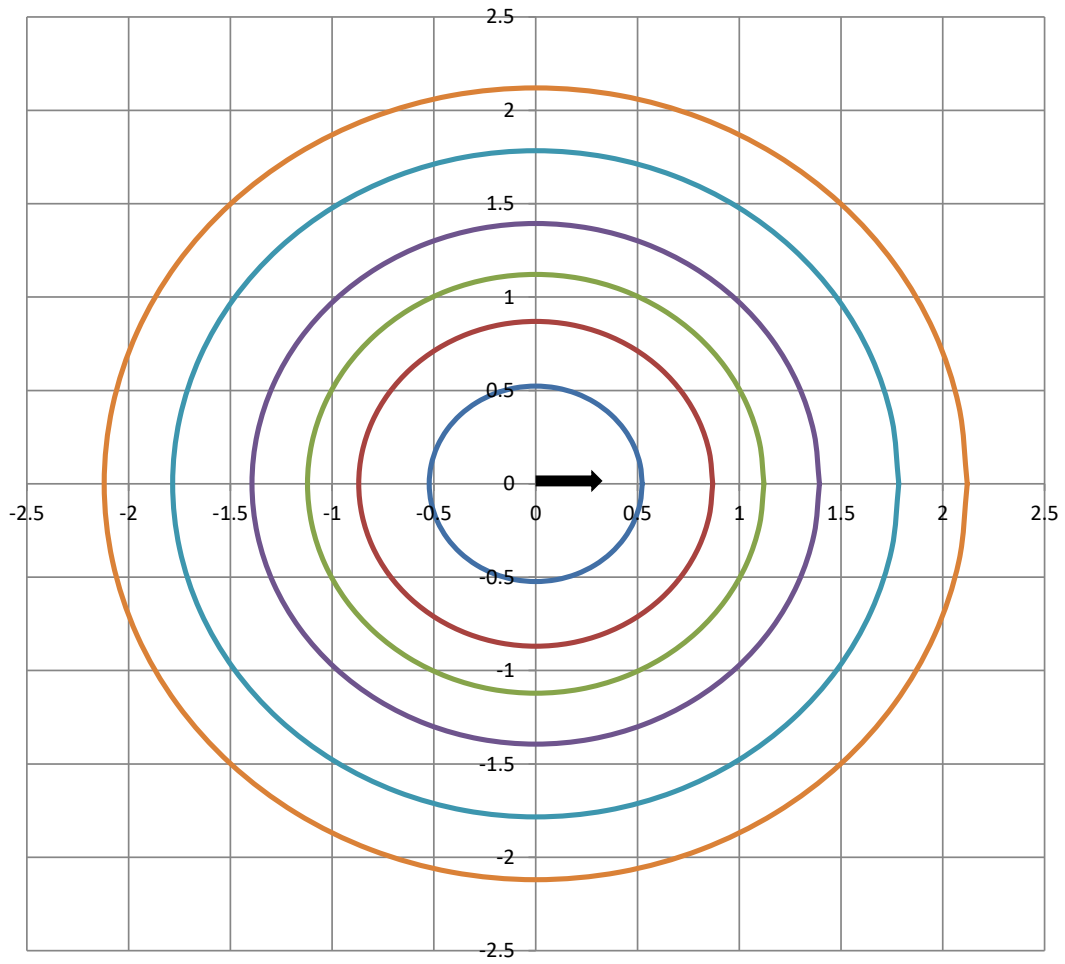
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	564.2 Candela
Central Cone Intensity:	562 Candela
Beam Flux:	739.0 Lumens
Beam Angle (0-180):	86.2 Degrees
Beam Angle (90-270):	86.2 Degrees
Field Angle (0-180):	137.5 Degrees
Field Angle (90-270):	137.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		35.3	4.70
6.00		15.7	7.05
8.00		8.82	9.40
10.0		5.64	11.8
12.0		3.92	14.1
14.0		2.88	16.5
16.0		2.20	18.8



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc