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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-L40/835-DIM-UNV-O-M-OF-CS

Order Number
12316380
Test Number
12316380.22

Test Date

2018-06-13

Prepared By

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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, specular reflector, no lens enclosure
Lamp: One white LED
Mounting: Recessed
Ballast/Driver: Philips XI036C100V054DSM5

Luminaire



Luminaire Characteristics

Luminous Diameter: 4.50 in.

Summary of Results

Total Luminaire Output:	3865 Lumens
Luminaire Efficacy:	102.7 lm/w
Maximum Candela:	8126 Candela

Test Conditions

Test Temperature:	25.4 °C
Voltage:	120.1 VAC
Current:	0.3140 A
Power:	37.62 W
Power Factor:	0.998
Frequency:	60 Hz
Current THD:	5.29 %

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



Distribution - Goniophotometer

Distribution Test Conditions

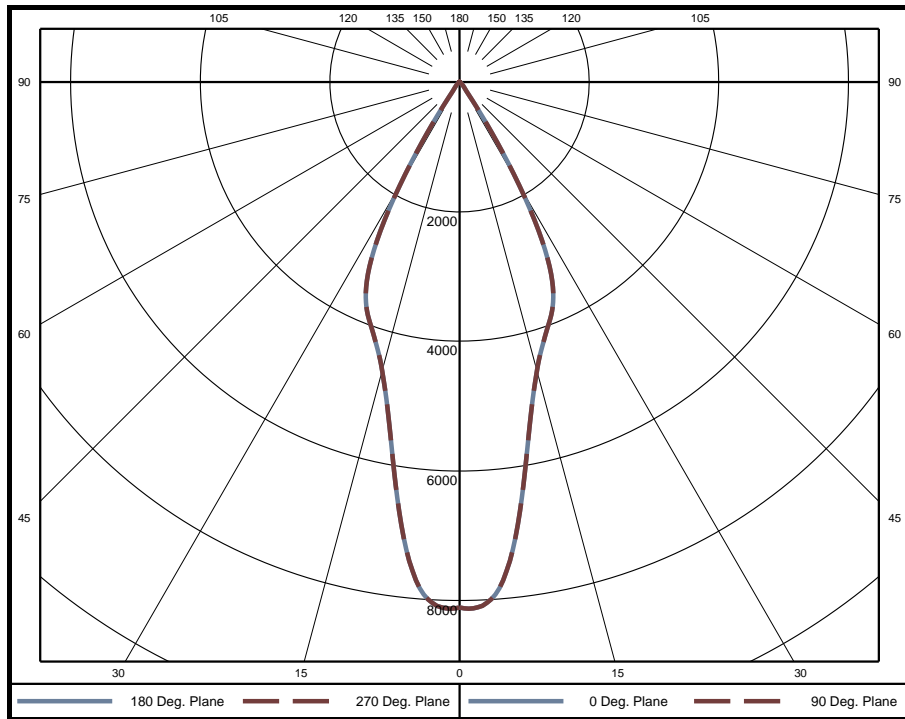
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.4 °C	120.1 VAC	0.3140 A	37.62 W	0.998	60 Hz	5.29 %

Summary of Results

Spacing Criteria
0-180: 0.55
90-270: 0.55

Total Lumen Output: 3865 Lumens
Luminaire Efficacy: 102.7 lm/w
Maximum Candela: 8126 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	190.7	4.9%	60-65	2.9	0.1%	120-125	0	0.0%
5-10	484.0	12.5%	65-70	1.6	0.0%	125-130	0	0.0%
10-15	609.8	15.8%	70-75	0.9	0.0%	130-135	0	0.0%
15-20	701.8	18.2%	75-80	0.5	0.0%	135-140	0	0.0%
20-25	780.7	20.2%	80-85	0.2	0.0%	140-145	0	0.0%
25-30	680.3	17.6%	85-90	0.1	0.0%	145-150	0	0.0%
30-35	282.7	7.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	59.0	1.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	33.6	0.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	20.7	0.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	10.6	0.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	5.4	0.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	3789	98.0%
0-60	3859	99.9%
0-90	3866	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	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106	8106
5	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716	7716
10	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917	5917
15	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611	4611
20	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998	3998
25	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380	3380
30	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847	1847
35	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336	336
40	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118
45	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
50	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
55	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
60	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
65	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
70	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
85	0	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	0
95	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
105	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
115	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
125	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
135	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
145	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
155	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
165	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
175	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

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)

	0	45	90
0	790000	790000	790000
45	9480	9480	9480
55	2770	2770	2770
65	993	993	993
75	463	463	463
85	390	390	390



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	112	110	108	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	109	105	102	99	107	103	100	98	100	98	95	97	95	93	95	93	91	90
3	105	99	95	91	103	98	94	91	95	92	89	93	90	88	91	89	87	85
4	101	94	89	86	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	84	80	87	82	79	85	81	79	83	80	78	77
6	92	85	80	76	91	84	79	76	83	78	75	81	77	75	80	77	74	73
7	89	81	75	72	87	80	75	72	79	74	71	78	74	71	77	73	71	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	74	70	67	66
9	82	73	68	65	81	73	68	65	72	68	65	71	67	64	71	67	64	63
10	79	70	65	62	78	70	65	62	69	65	62	68	64	61	68	64	61	60

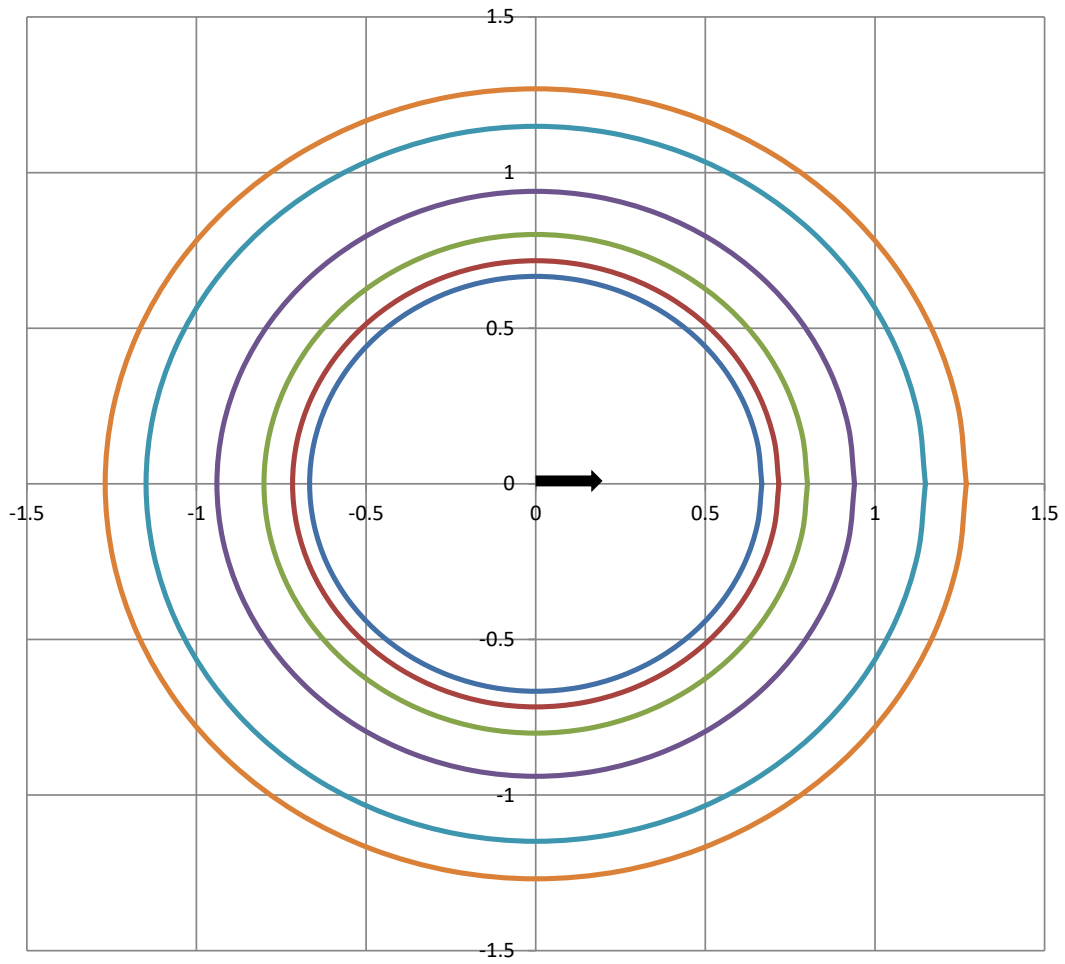
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	8106 Candela
Central Cone Intensity:	8017 Candela
Beam Flux:	1903.9 Lumens
Beam Angle (0-180):	38.8 Degrees
Beam Angle (90-270):	38.8 Degrees
Field Angle (0-180):	65.7 Degrees
Field Angle (90-270):	65.7 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		507	2.22
6.00		225	3.32
8.00		127	4.43
10.0		81.1	5.54
12.0		56.3	6.65
14.0		41.4	7.75
16.0		31.7	8.86



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

