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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-O-M-OF-CS

Order Number
12316380
Test Number
12316380.04

Test Date

2018-06-04

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 XI025C070V054DSM5

Luminaire



Luminaire Characteristics

Luminous Diameter: 4.50 in.

Summary of Results

Total Luminaire Output:	2002 Lumens
Luminaire Efficacy:	101 lm/w
Maximum Candela:	4122 Candela

Test Conditions

Test Temperature:	25.3 °C
Voltage:	120.0 VAC
Current:	0.1662 A
Power:	19.82 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

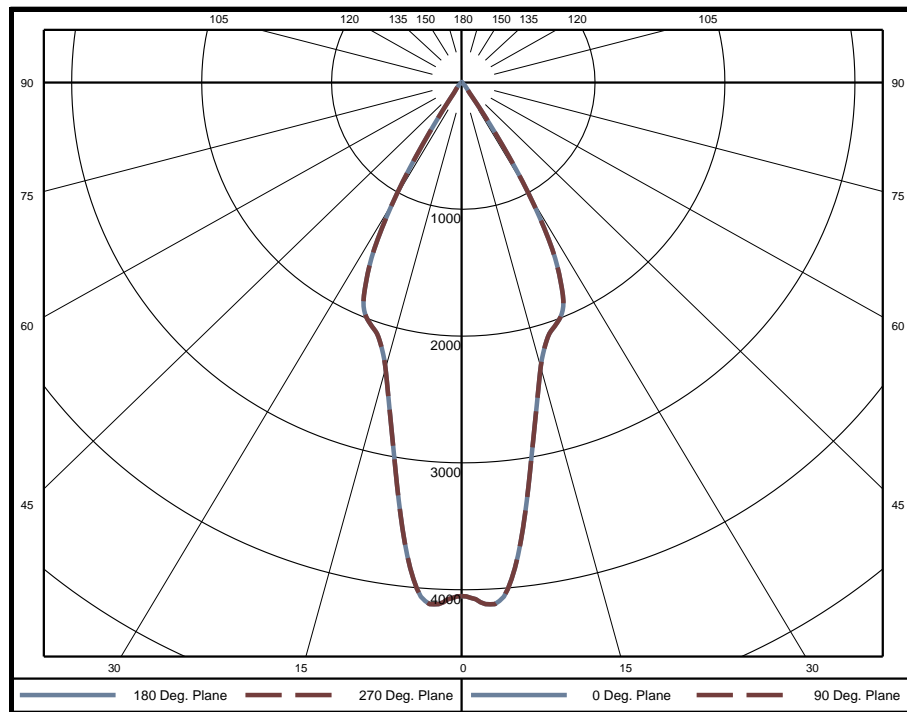
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.3 °C	120.0 VAC	0.1662 A	19.82 W	0.995	60 Hz	9.21 %

Summary of Results

Spacing Criteria
 0-180: 0.56
 90-270: 0.56

Total Lumen Output: 2002 Lumens
Luminaire Efficacy: 101.0 lm/w
Maximum Candela: 4122 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	97.9	4.9%	60-65	1.5	0.1%	120-125	0	0.0%
5-10	249.3	12.5%	65-70	0.8	0.0%	125-130	0	0.0%
10-15	309.6	15.5%	70-75	0.4	0.0%	130-135	0	0.0%
15-20	353.2	17.6%	75-80	0.2	0.0%	135-140	0	0.0%
20-25	409.8	20.5%	80-85	0.1	0.0%	140-145	0	0.0%
25-30	364.6	18.2%	85-90	0.0	0.0%	145-150	0	0.0%
30-35	148.8	7.4%	90-95	0	0.0%	150-155	0	0.0%
35-40	29.1	1.5%	95-100	0	0.0%	155-160	0	0.0%
40-45	17.5	0.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	10.9	0.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	5.6	0.3%	110-115	0	0.0%	170-175	0	0.0%
55-60	2.8	0.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1962	98.0%
0-60	1999	99.9%
0-90	2002	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	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051	4051
	5	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009	4009
	10	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024	3024
	15	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312	2312
	20	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049	2049
	25	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790	1790
	30	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012	1012
	35	157	157	157	157	157	157	157	157	157	157	157	157	157	157	157
	40	61	61	61	61	61	61	61	61	61	61	61	61	61	61	61
	45	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
	50	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
	55	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
	60	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
	65	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	70	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	75	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	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)

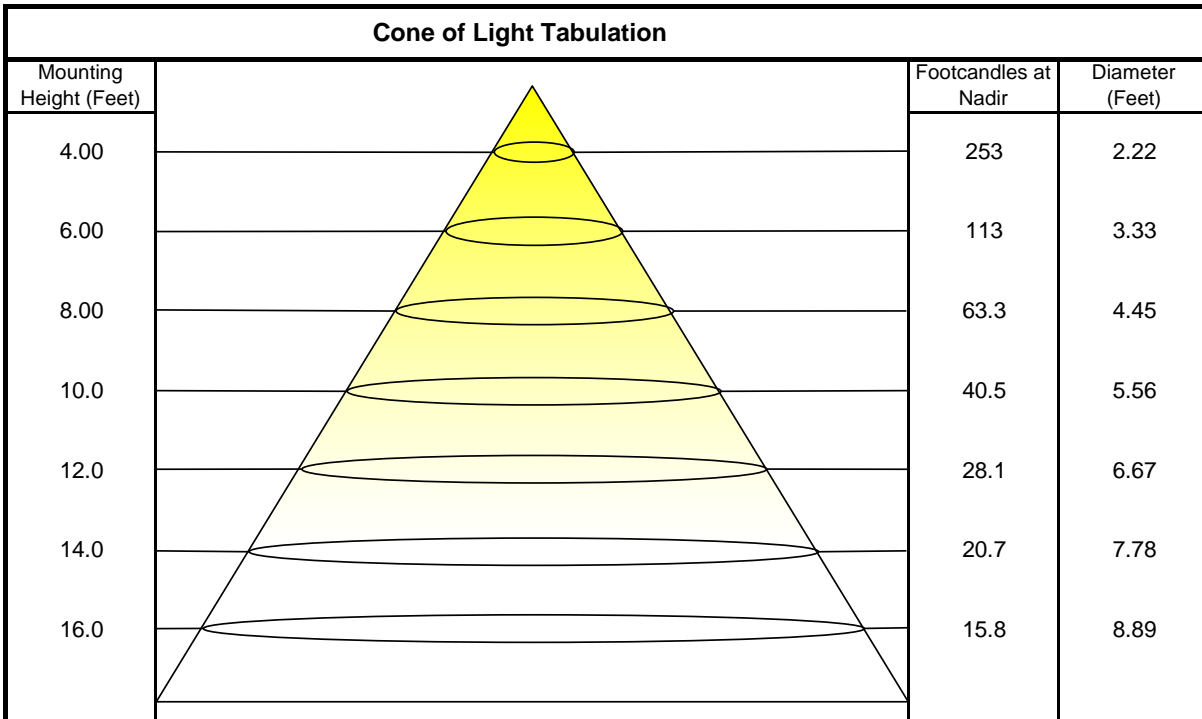
Vertical Angle (Degrees)	0	45	90
	0	394800	394800
	45	4970	4970
	55	1438	1438
	65	506	506
	75	207	207
	85	110	110



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

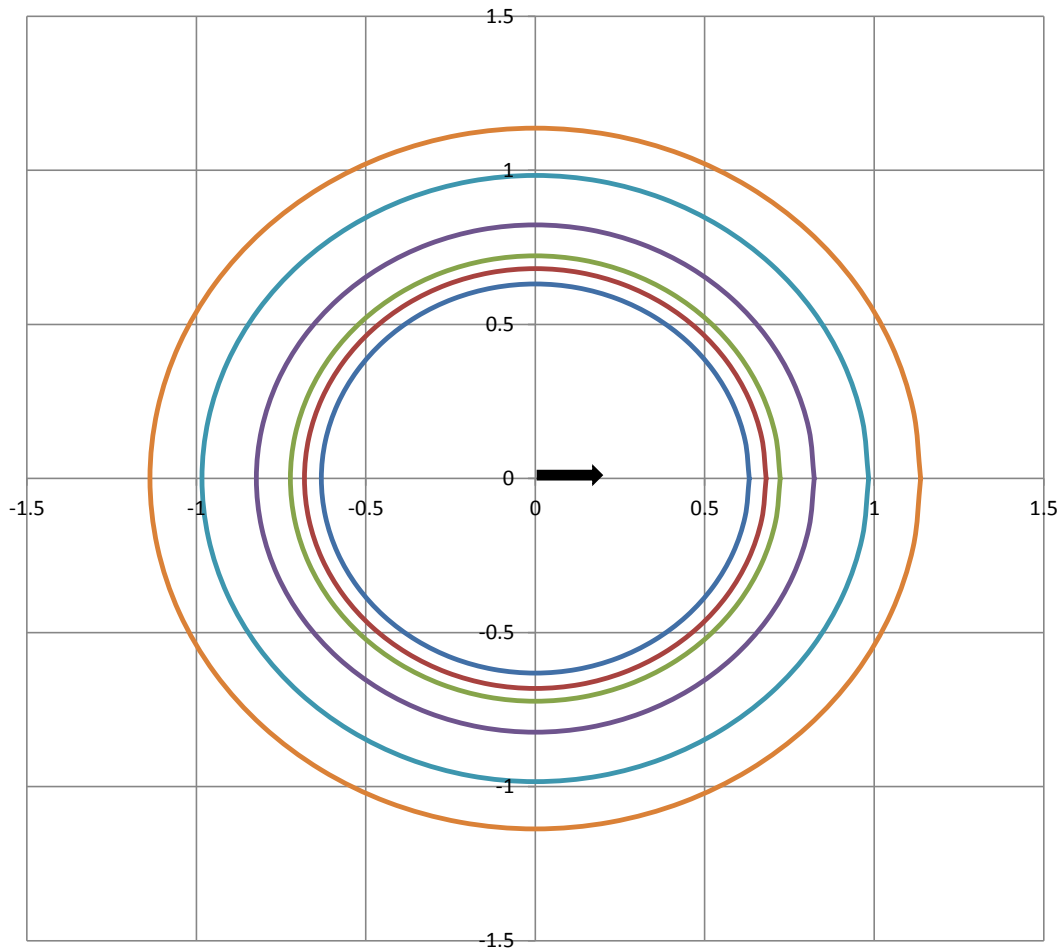
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	4051 Candela
Central Cone Intensity:	4080 Candela
Beam Flux:	1076.1 Lumens
Beam Angle (0-180):	41.8 Degrees
Beam Angle (90-270):	41.8 Degrees
Field Angle (0-180):	65.8 Degrees
Field Angle (90-270):	65.8 Degrees





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