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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  
Carthage, MO 64836-0837  
United States

**Catalog Number**  
**4DR-L20/835-DIM-UNV-R-M-OF-WH**

Order Number  
12316380  
Test Number  
12316380.14

Test Date

2018-06-12

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, white reflector, clear plastic optic, clear glass patterned 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:	1795 Lumens
Luminaire Efficacy:	90.8 lm/w
Maximum Candela:	5176 Candela

**Test Conditions**

Test Temperature:	25.1 °C
Voltage:	120.1 VAC
Current:	0.1656 A
Power:	19.77 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

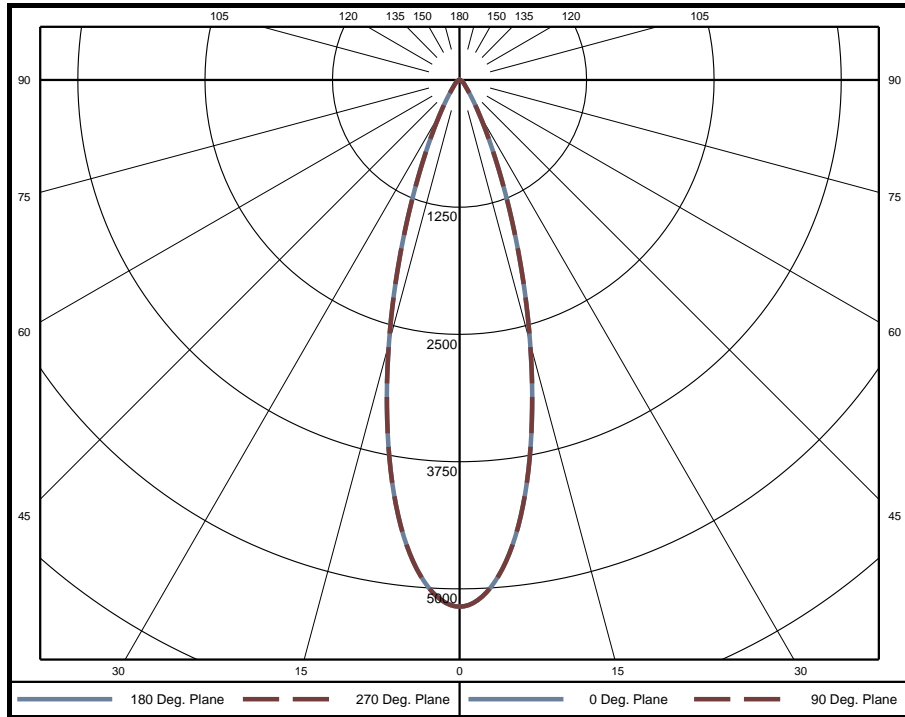
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.1 VAC	0.1656 A	19.77 W	0.995	60 Hz	9.21 %

### Summary of Results

Spacing Criteria  
0-180: 0.51  
90-270: 0.51

Total Lumen Output: 1795 Lumens  
Luminaire Efficacy: 90.8 lm/w  
Maximum Candela: 5176 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	119.5	6.7%	60-65	13.0	0.7%	120-125	0	0.0%
5-10	311.4	17.3%	65-70	9.2	0.5%	125-130	0	0.0%
10-15	386.1	21.5%	70-75	6.0	0.3%	130-135	0	0.0%
15-20	341.7	19.0%	75-80	3.9	0.2%	135-140	0	0.0%
20-25	235.8	13.1%	80-85	2.1	0.1%	140-145	0	0.0%
25-30	139.9	7.8%	85-90	0.7	0.0%	145-150	0	0.0%
30-35	80.3	4.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	48.6	2.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	33.5	1.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	25.9	1.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	21.1	1.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	16.9	0.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1663	92.7%
0-60	1761	98.1%
0-90	1796	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	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176	5176
	5	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824	4824
	10	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896	3896
	15	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680	2680
	20	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557	1557
	25	786	786	786	786	786	786	786	786	786	786	786	786	786	786	786
	30	380	380	380	380	380	380	380	380	380	380	380	380	380	380	380
	35	194	194	194	194	194	194	194	194	194	194	194	194	194	194	194
	40	111	111	111	111	111	111	111	111	111	111	111	111	111	111	111
	45	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
	50	55	55	55	55	55	55	55	55	55	55	55	55	55	55	55
	55	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
	60	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
	65	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	70	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
	75	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
	80	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
	85	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
	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/m<sup>2</sup>)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	504400	504400
	45	10310	10310
	55	7173	7173
	65	5112	5112
	75	3426	3426
	85	2753	2753



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

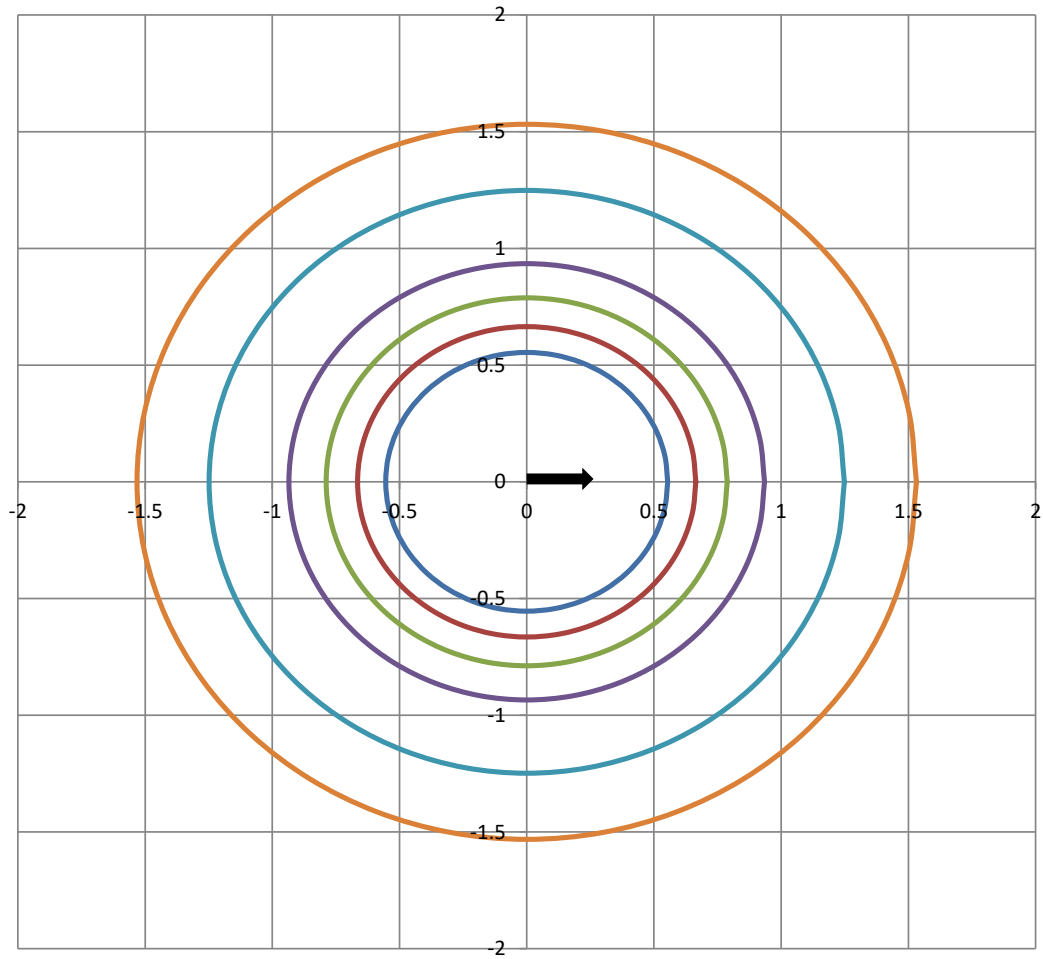
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	5176 Candela
Central Cone Intensity:	5049 Candela
Beam Flux:	843.0 Lumens
Beam Angle (0-180):	30.8 Degrees
Beam Angle (90-270):	30.8 Degrees
Field Angle (0-180):	55.7 Degrees
Field Angle (90-270):	55.7 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		323	2.04
6.00		144	3.06
8.00		80.9	4.09
10.0		51.8	5.11
12.0		35.9	6.13
14.0		26.4	7.15
16.0		20.2	8.17



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

