



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300



## 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-N-OF-WH**

Order Number  
12316380  
Test Number  
12316380.15

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, 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:	1769 Lumens
Luminaire Efficacy:	89.5 lm/w
Maximum Candela:	6635 Candela

**Test Conditions**

Test Temperature:	24.7 °C
Voltage:	120.1 VAC
Current:	0.1655 A
Power:	19.77 W
Power Factor:	0.995
Frequency:	60 Hz
Current THD:	9.20 %

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



## Distribution - Goniophotometer

### Distribution Test Conditions

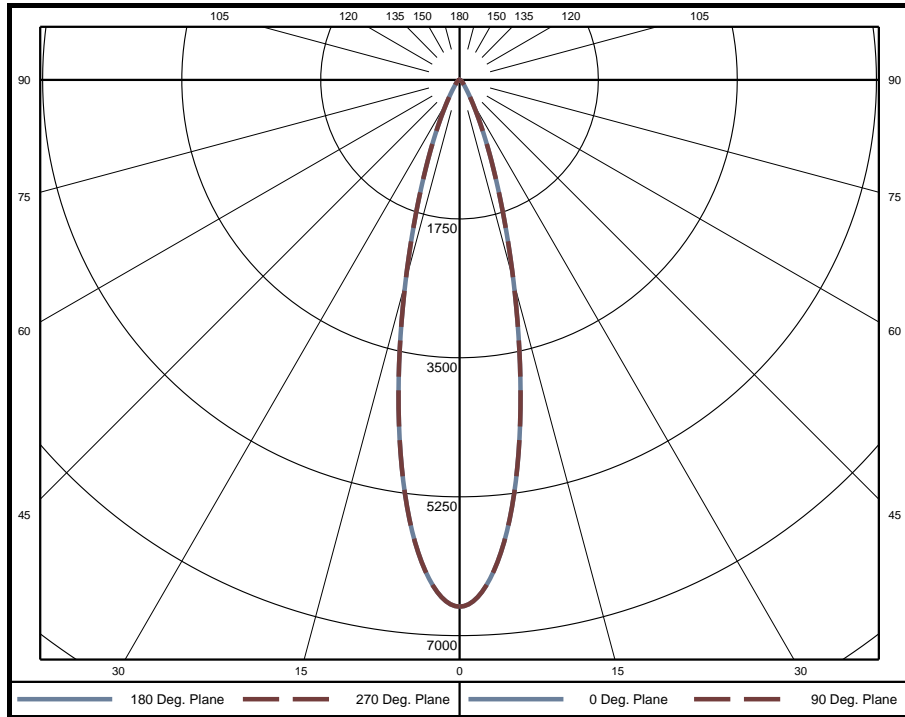
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.7 °C	120.1 VAC	0.1655 A	19.77 W	0.995	60 Hz	9.20 %

### Summary of Results

**Spacing Criteria**  
 0-180: 0.44  
 90-270: 0.44

**Total Lumen Output:** 1769 Lumens  
**Luminaire Efficacy:** 89.5 lm/w  
**Maximum Candela:** 6635 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	150.6	8.5%	60-65	10.4	0.6%	120-125	0.0	0.0%
5-10	368.6	20.8%	65-70	7.2	0.4%	125-130	0.0	0.0%
10-15	407.3	23.0%	70-75	4.6	0.3%	130-135	0.1	0.0%
15-20	314.3	17.8%	75-80	3.0	0.2%	135-140	0.1	0.0%
20-25	199.3	11.3%	80-85	1.6	0.1%	140-145	0.2	0.0%
25-30	112.8	6.4%	85-90	0.5	0.0%	145-150	0.3	0.0%
30-35	64.1	3.6%	90-95	0.0	0.0%	150-155	0.4	0.0%
35-40	39.9	2.3%	95-100	0.0	0.0%	155-160	0.4	0.0%
40-45	28.5	1.6%	100-105	0.0	0.0%	160-165	0.4	0.0%
45-50	22.2	1.3%	105-110	0.0	0.0%	165-170	0.3	0.0%
50-55	17.6	1.0%	110-115	0.0	0.0%	170-175	0.2	0.0%
55-60	13.8	0.8%	115-120	0.0	0.0%	175-180	0.1	0.0%

Zone	Lumens	% of Luminaire
0-40	1657	93.7%
0-60	1739	98.3%
0-90	1766	99.8%
90-180	3	0.1%



### 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	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635
5	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975	5975
10	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394	4394
15	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626	2626
20	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354	1354
25	645	645	645	645	645	645	645	645	645	645	645	645	645	645	645	645
30	303	303	303	303	303	303	303	303	303	303	303	303	303	303	303	303
35	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156
40	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93	93
45	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
50	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
55	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
60	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
65	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
70	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
75	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
80	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
85	2	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	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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
150	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
155	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
160	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
165	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
170	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
175	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
180	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)

	0	45	90
0	646600	646600	646600
45	8857	8857	8857
55	5897	5897	5897
65	4064	4064	4064
75	2630	2630	2630
85	2086	2086	2086



### 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	99	98	97	95
2	110	106	102	100	108	104	101	98	101	98	96	98	96	94	95	94	92	91
3	106	100	96	93	104	99	95	92	97	93	91	94	92	90	92	90	88	87
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83
5	98	92	87	84	97	91	86	83	89	85	82	87	84	82	86	83	81	80
6	95	88	83	80	94	87	83	79	86	82	79	84	81	78	83	80	78	77
7	92	85	80	76	91	84	79	76	83	79	76	82	78	76	81	78	75	74
8	89	81	77	74	88	81	77	73	80	76	73	79	75	73	78	75	73	71
9	86	79	74	71	85	78	74	71	77	73	71	77	73	70	76	73	70	69
10	84	76	72	69	83	76	71	69	75	71	68	74	71	68	74	70	68	67

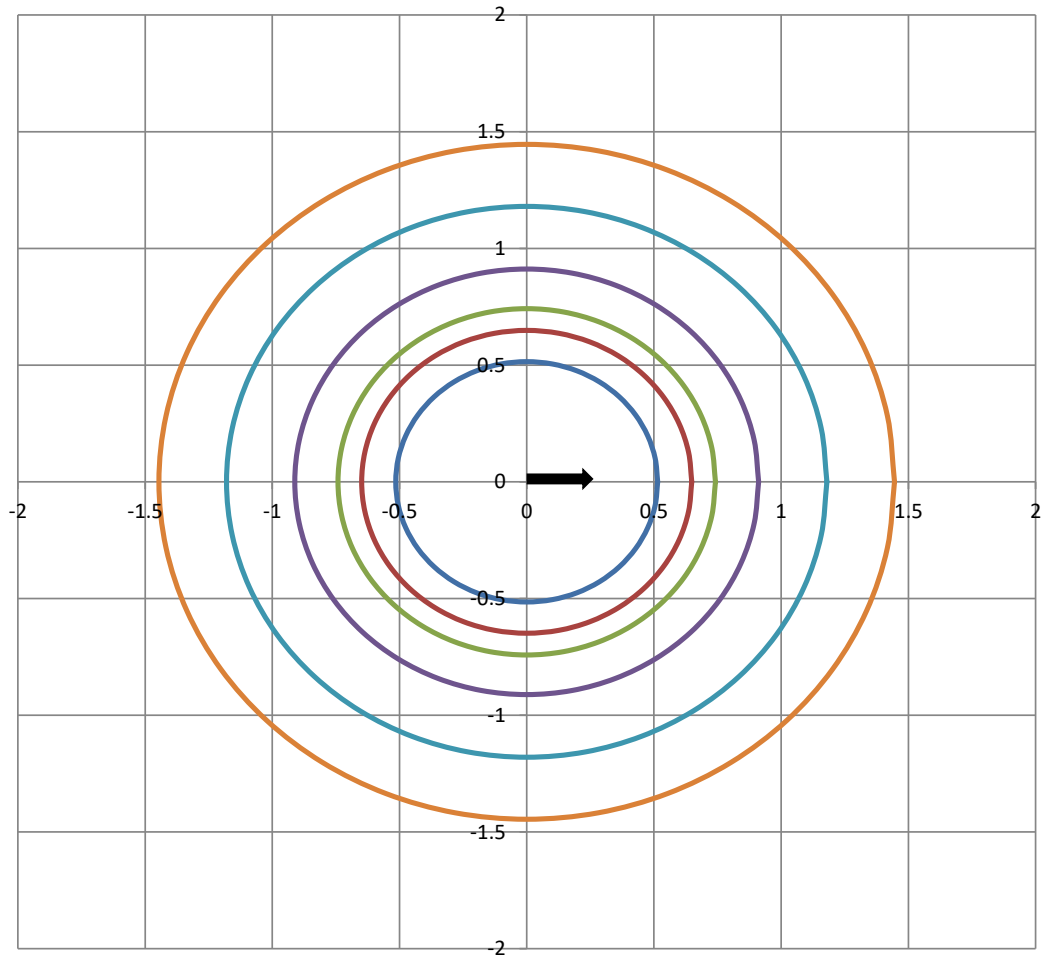
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	6635 Candela
Central Cone Intensity:	6396 Candela
Beam Flux:	765.3 Lumens
Beam Angle (0-180):	25.9 Degrees
Beam Angle (90-270):	25.9 Degrees
Field Angle (0-180):	49.7 Degrees
Field Angle (90-270):	49.7 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		415	1.74
6.00		184	2.61
8.00		104	3.49
10.0		66.4	4.36
12.0		46.1	5.23
14.0		33.9	6.10
16.0		25.9	6.97



## 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