

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L15-835-DIM-UNV-LM-OF-WH-WET-CC_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.09

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 10/02/2019

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.

[LUMCAT] 4DR-TL-L15-835-DIM-UNV-LM-OF-WH-WET-CC

[LUMINAIRE] Black formed aluminum housing, white reflector, clear plas

[MORE] tic optic, clear glass patterned enclosure

[LAMP] One white LED

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1121
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	81
Total Luminaire Watts	13.9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.54
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.35 ft (Diameter)
Luminous Width (90-270)	0.35 ft (Diameter)
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	8508	8508	8508
55	6631	6631	6631
65	5542	5542	5542
75	4459	4459	4459
85	2664	2664	2664

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CANDELA TABULATION

	<u>0</u>
0.0	2900.992
0.5	2899.742
1.0	2895.367
1.5	2888.493
2.0	2879.743
2.5	2867.870
3.0	2854.121
3.5	2837.872
4.0	2819.124
4.5	2799.126
5.0	2776.628
5.5	2751.630
6.0	2724.132
6.5	2693.510
7.0	2660.388
7.5	2624.141
8.0	2584.770
8.5	2542.274
9.0	2497.278
9.5	2448.532
10.0	2396.037
10.5	2339.792
11.0	2281.047
11.5	2219.177
12.0	2153.558
12.5	2085.439
13.0	2014.196
13.5	1940.452
14.0	1863.584
14.5	1784.216
15.0	1704.223
15.5	1622.980
16.0	1541.738
16.5	1459.870
17.0	1378.627
17.5	1299.884
18.0	1221.766
18.5	1146.773
19.0	1074.904
19.5	1005.535
20.0	939.916
20.5	876.797
21.0	818.052
21.5	762.432
22.0	709.937
22.5	661.191
23.0	615.195
23.5	572.324
24.0	532.515
24.5	495.331
25.0	460.834
25.5	428.774
26.0	398.714
26.5	370.967

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27.0	345.094
27.5	321.409
28.0	299.348
28.5	278.975
29.0	260.289
29.5	242.853
30.0	226.667
30.5	211.731
31.0	197.920
31.5	185.233
32.0	173.485
32.5	162.673
33.0	152.736
33.5	143.550
34.0	135.175
34.5	127.426
35.0	120.427
35.5	113.927
36.0	107.990
36.5	102.553
37.0	97.554
37.5	92.992
38.0	88.867
38.5	85.055
39.0	81.555
39.5	78.368
40.0	75.431
40.5	72.681
41.0	70.119
41.5	67.806
42.0	65.619
42.5	63.557
43.0	61.682
43.5	59.870
44.0	58.182
44.5	56.620
45.0	55.058
45.5	53.620
46.0	52.308
46.5	50.995
47.0	49.746
47.5	48.621
48.0	47.433
48.5	46.371
49.0	45.308
49.5	44.246
50.0	43.309
50.5	42.371
51.0	41.496
51.5	40.559
52.0	39.684
52.5	38.872
53.0	37.997
53.5	37.184
54.0	36.372
54.5	35.559

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55.0	34.809
55.5	34.059
56.0	33.310
56.5	32.560
57.0	31.747
57.5	31.060
58.0	30.372
58.5	29.747
59.0	29.060
59.5	28.372
60.0	27.685
60.5	26.998
61.0	26.435
61.5	25.748
62.0	25.123
62.5	24.498
63.0	23.873
63.5	23.310
64.0	22.685
64.5	22.061
65.0	21.436
65.5	20.873
66.0	20.311
66.5	19.748
67.0	19.123
67.5	18.561
68.0	17.998
68.5	17.436
69.0	16.873
69.5	16.311
70.0	15.749
70.5	15.249
71.0	14.749
71.5	14.124
72.0	13.624
72.5	13.124
73.0	12.624
73.5	12.061
74.0	11.561
74.5	11.062
75.0	10.562
75.5	10.062
76.0	9.562
76.5	9.062
77.0	8.562
77.5	8.187
78.0	7.687
78.5	7.249
79.0	6.812
79.5	6.374
80.0	5.937
80.5	5.500
81.0	5.062
81.5	4.750
82.0	4.250
82.5	3.937

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CANDELA TABULATION - (Cont.)

83.0	3.500
83.5	3.187
84.0	2.812
84.5	2.437
85.0	2.125
85.5	1.750
86.0	1.500
86.5	1.187
87.0	1.000
87.5	0.812
88.0	0.625
88.5	0.500
89.0	0.375
89.5	0.250
90.0	0.187
90.5	0.000
91.0	0.000
91.5	0.000
92.0	0.000
92.5	0.000
93.0	0.000
93.5	0.000
94.0	0.000
94.5	0.000
95.0	0.000
95.5	0.000
96.0	0.000
96.5	0.000
97.0	0.000
97.5	0.000
98.0	0.000
98.5	0.000
99.0	0.000
99.5	0.000
100.0	0.000
100.5	0.000
101.0	0.000
101.5	0.000
102.0	0.000
102.5	0.000
103.0	0.000
103.5	0.000
104.0	0.000
104.5	0.000
105.0	0.000
105.5	0.000
106.0	0.000
106.5	0.000
107.0	0.000
107.5	0.000
108.0	0.000
108.5	0.000
109.0	0.000
109.5	0.000
110.0	0.000
110.5	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L15-835-DIM-UNV-LM-OF-WH-WET-CC_.IES****CANDELA TABULATION - (Cont.)**

111.0	0.000
111.5	0.000
112.0	0.000
112.5	0.000
113.0	0.000
113.5	0.000
114.0	0.000
114.5	0.000
115.0	0.000
115.5	0.000
116.0	0.000
116.5	0.000
117.0	0.000
117.5	0.000
118.0	0.000
118.5	0.000
119.0	0.000
119.5	0.000
120.0	0.000
120.5	0.000
121.0	0.000
121.5	0.000
122.0	0.000
122.5	0.000
123.0	0.000
123.5	0.000
124.0	0.000
124.5	0.000
125.0	0.000
125.5	0.000
126.0	0.000
126.5	0.000
127.0	0.000
127.5	0.000
128.0	0.000
128.5	0.000
129.0	0.000
129.5	0.000
130.0	0.000
130.5	0.000
131.0	0.000
131.5	0.000
132.0	0.000
132.5	0.000
133.0	0.000
133.5	0.000
134.0	0.000
134.5	0.000
135.0	0.000
135.5	0.000
136.0	0.000
136.5	0.000
137.0	0.000
137.5	0.000
138.0	0.000
138.5	0.000

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139.0	0.000
139.5	0.000
140.0	0.000
140.5	0.000
141.0	0.000
141.5	0.000
142.0	0.000
142.5	0.000
143.0	0.000
143.5	0.000
144.0	0.000
144.5	0.000
145.0	0.000
145.5	0.000
146.0	0.000
146.5	0.000
147.0	0.000
147.5	0.000
148.0	0.000
148.5	0.000
149.0	0.000
149.5	0.000
150.0	0.000
150.5	0.000
151.0	0.000
151.5	0.000
152.0	0.000
152.5	0.000
153.0	0.000
153.5	0.000
154.0	0.000
154.5	0.000
155.0	0.000
155.5	0.000
156.0	0.000
156.5	0.000
157.0	0.000
157.5	0.000
158.0	0.000
158.5	0.000
159.0	0.000
159.5	0.000
160.0	0.000
160.5	0.000
161.0	0.000
161.5	0.000
162.0	0.000
162.5	0.000
163.0	0.000
163.5	0.000
164.0	0.000
164.5	0.000
165.0	0.000
165.5	0.000
166.0	0.000
166.5	0.000

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167.0	0.000
167.5	0.000
168.0	0.000
168.5	0.000
169.0	0.000
169.5	0.000
170.0	0.000
170.5	0.000
171.0	0.000
171.5	0.000
172.0	0.000
172.5	0.000
173.0	0.000
173.5	0.000
174.0	0.000
174.5	0.000
175.0	0.000
175.5	0.000
176.0	0.000
176.5	0.000
177.0	0.000
177.5	0.000
178.0	0.000
178.5	0.000
179.0	0.000
179.5	0.000
180.0	0.000

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Zone	Lumens	%Lamp	%Fixt
0-20	709.06	N.A.	63.20
0-30	931.24	N.A.	83.10
0-40	1011.34	N.A.	90.20
0-60	1086.01	N.A.	96.90
0-80	1118.56	N.A.	99.80
0-90	1121.2	N.A.	100.00
10-90	868.02	N.A.	77.40
20-40	302.28	N.A.	27.00
20-50	345.66	N.A.	30.80
40-70	95.98	N.A.	8.60
60-80	32.55	N.A.	2.90
70-80	11.23	N.A.	1.00
80-90	2.64	N.A.	0.20
90-110	0.01	N.A.	0.00
90-120	0.01	N.A.	0.00
90-130	0.01	N.A.	0.00
90-150	0.01	N.A.	0.00
90-180	0.01	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1121.2	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	253.18
10-20	455.87
20-30	222.19
30-40	80.09
40-50	43.38
50-60	31.29
60-70	21.32
70-80	11.23
80-90	2.64
90-100	0.01
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	101	97	107	103	99	96	99	97	94	96	94	92	94	92	90	89
3	104	98	94	90	102	97	93	89	94	91	88	92	89	87	90	87	85	84
4	100	93	88	84	98	92	87	84	90	86	83	88	85	82	86	83	81	80
5	96	89	83	80	94	88	83	79	86	82	79	84	81	78	83	80	77	76
6	92	84	79	75	91	84	79	75	82	78	75	81	77	74	80	76	74	72
7	89	81	76	72	88	80	75	72	79	75	71	78	74	71	77	73	71	69
8	86	77	72	69	84	77	72	69	76	71	68	75	71	68	74	70	68	67
9	83	74	69	66	82	74	69	66	73	69	66	72	68	65	71	68	65	64
10	80	72	67	63	79	71	66	63	70	66	63	70	66	63	69	65	63	62

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UGR TABLE - CORRECTED

Reflectances

Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

Room Size UGR Viewed Crosswise

X=2H	Y=2H	12.3	13.4	12.7	13.7	14.0
	3H	13.8	14.7	14.2	15.0	15.4
	4H	14.3	15.1	14.7	15.5	15.9
	6H	14.6	15.4	15.0	15.8	16.2
	8H	14.7	15.4	15.1	15.8	16.2
	12H	14.7	15.4	15.2	15.8	16.2

UGR Viewed Endwise

12.3	13.4	12.7	13.7	14.0
13.8	14.7	14.2	15.0	15.4
14.3	15.1	14.7	15.5	15.9
14.6	15.4	15.0	15.8	16.2
14.7	15.4	15.1	15.8	16.2
14.7	15.4	15.2	15.8	16.2

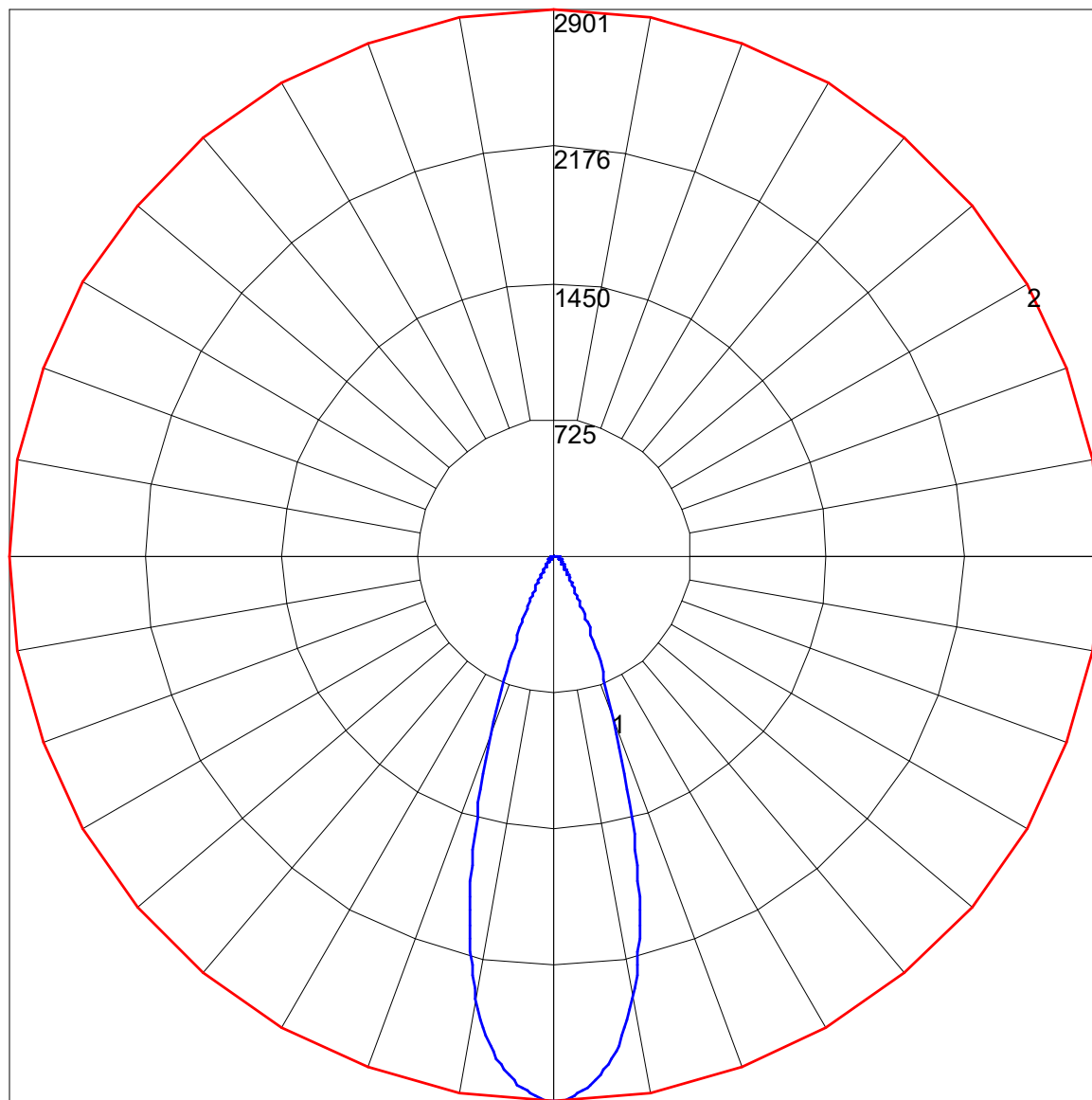
4H	2H	12.8	13.6	13.2	14.0	14.4
	3H	14.4	15.1	14.8	15.5	15.9
	4H	15.0	15.7	15.5	16.1	16.5
	6H	15.5	16.0	16.0	16.5	16.9
	8H	15.6	16.1	16.1	16.5	17.0
	12H	15.6	16.0	16.1	16.5	17.0

8H	4H	15.2	15.7	15.7	16.1	16.6
	6H	15.7	16.1	16.3	16.6	17.1
	8H	15.9	16.2	16.4	16.8	17.3
	12H	16.0	16.3	16.5	16.8	17.4

12H	4H	15.2	15.6	15.7	16.1	16.6
	6H	15.8	16.1	16.3	16.6	17.1
	8H	15.9	16.2	16.5	16.7	17.3

Maximum UGR = 17.4

POLAR GRAPH



Maximum Candela = 2900.992 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)