



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L13-8TW-DIM-UNV-RW-OF-WH_4000K.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM 12316380.12
[TESTLAB] UL Verification Services Inc.
[ISSUE DATE] 03-26-2019
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] 4DR-TL-L13-8TW-xxx-UNV-RW-OF-WH
[LUMINAIRE] Black formed aluminum housing, white reflector, clear glass
[MORE] s patterned lens enclosure
[LAMP] One white LED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1040
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	71
Total Luminaire Watts	14.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.98
Spacing Criterion (90-270)	0.98
Spacing Criterion (Diagonal)	0.88
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.38 ft (Diameter)
Luminous Width (90-270)	0.38 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	24062	24062	24062
55	19429	19429	19429
65	12569	12569	12569
75	7009	7009	7009
85	3601	3601	3601

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CANDELA TABULATION

	<u>0</u>
0.0	835.616
0.5	835.616
1.0	834.830
1.5	833.258
2.0	831.686
2.5	830.113
3.0	827.755
3.5	825.397
4.0	823.039
4.5	819.894
5.0	817.536
5.5	814.392
6.0	811.247
6.5	808.103
7.0	804.958
7.5	801.814
8.0	798.670
8.5	794.739
9.0	791.595
9.5	788.450
10.0	785.463
10.5	782.240
11.0	778.939
11.5	775.716
12.0	772.650
12.5	769.584
13.0	766.519
13.5	763.374
14.0	760.230
14.5	757.085
15.0	753.862
15.5	750.561
16.0	747.102
16.5	743.643
17.0	740.106
17.5	736.333
18.0	732.324
18.5	728.000
19.0	723.834
19.5	719.353
20.0	714.479
20.5	708.898
21.0	702.452
21.5	695.456
22.0	687.438
22.5	678.555
23.0	668.493
23.5	657.173
24.0	644.753
24.5	630.682
25.0	614.960
25.5	597.587
26.0	578.800
26.5	558.833

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L13-8TW-DIM-UNV-RW-OF-WH_4000K.IES****CANDELA TABULATION - (Cont.)**

27.0	537.844
27.5	516.541
28.0	494.216
28.5	472.127
29.0	450.116
29.5	428.106
30.0	406.488
30.5	385.264
31.0	365.218
31.5	345.802
32.0	327.486
32.5	310.428
33.0	294.627
33.5	280.399
34.0	267.586
34.5	256.423
35.0	246.597
35.5	238.265
36.0	230.954
36.5	224.822
37.0	219.398
37.5	214.760
38.0	210.515
38.5	206.742
39.0	203.362
39.5	200.296
40.0	197.545
40.5	194.951
41.0	192.435
41.5	190.156
42.0	187.876
42.5	185.754
43.0	183.631
43.5	181.430
44.0	179.229
44.5	177.028
45.0	174.748
45.5	172.390
46.0	169.953
46.5	167.438
47.0	164.844
47.5	162.171
48.0	159.498
48.5	156.668
49.0	153.760
49.5	150.694
50.0	147.628
50.5	144.484
51.0	141.182
51.5	137.959
52.0	134.658
52.5	131.356
53.0	128.212
53.5	124.753
54.0	121.294
54.5	117.835

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L13-8TW-DIM-UNV-RW-OF-WH_4000K.IES****CANDELA TABULATION - (Cont.)**

55.0	114.455
55.5	110.996
56.0	107.616
56.5	104.314
57.0	101.013
57.5	97.711
58.0	94.488
58.5	91.344
59.0	88.200
59.5	85.134
60.0	82.068
60.5	79.081
61.0	76.172
61.5	73.264
62.0	70.512
62.5	67.683
63.0	65.010
63.5	62.259
64.0	59.664
64.5	57.070
65.0	54.555
65.5	52.039
66.0	49.602
66.5	47.244
67.0	44.964
67.5	42.685
68.0	40.484
68.5	38.283
69.0	36.160
69.5	34.116
70.0	32.230
70.5	30.422
71.0	28.771
71.5	27.199
72.0	25.705
72.5	24.290
73.0	22.954
73.5	21.775
74.0	20.596
74.5	19.574
75.0	18.630
75.5	17.766
76.0	16.822
76.5	15.958
77.0	15.093
77.5	14.228
78.0	13.442
78.5	12.577
79.0	11.791
79.5	11.005
80.0	10.219
80.5	9.433
81.0	8.726
81.5	8.018
82.0	7.232
82.5	6.603

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83.0	5.896
83.5	5.188
84.0	4.559
84.5	3.852
85.0	3.223
85.5	2.673
86.0	2.122
86.5	1.729
87.0	1.336
87.5	1.022
88.0	0.707
88.5	0.472
89.0	0.236
89.5	0.079
90.0	0.000
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-L13-8TW-DIM-UNV-RW-OF-WH_4000K.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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L13-8TW-DIM-UNV-RW-OF-WH_4000K.IES****CANDELA TABULATION - (Cont.)**

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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L13-8TW-DIM-UNV-RW-OF-WH_4000K.IES****CANDELA TABULATION - (Cont.)**

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	289.24	N.A.	27.80
0-30	559.71	N.A.	53.80
0-40	724.53	N.A.	69.60
0-60	960.84	N.A.	92.40
0-80	1036.02	N.A.	99.60
0-90	1040.27	N.A.	100.00
10-90	963.31	N.A.	92.60
20-40	435.29	N.A.	41.80
20-50	569.40	N.A.	54.70
40-70	290.96	N.A.	28.00
60-80	75.19	N.A.	7.20
70-80	20.53	N.A.	2.00
80-90	4.25	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1040.27	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	76.96
10-20	212.27
20-30	270.47
30-40	164.82
40-50	134.10
50-60	102.20
60-70	54.65
70-80	20.53
80-90	4.25
90-100	0.00
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

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	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	83	78	75	80	77	74	72
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65
5	85	75	68	63	84	74	67	62	72	66	62	70	65	61	69	64	61	59
6	80	69	62	57	79	69	62	57	67	61	56	65	60	56	64	59	55	54
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46
9	67	56	49	45	66	56	49	44	55	48	44	54	48	44	53	48	44	42
10	64	53	46	41	63	52	46	41	51	45	41	50	45	41	50	45	41	39

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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

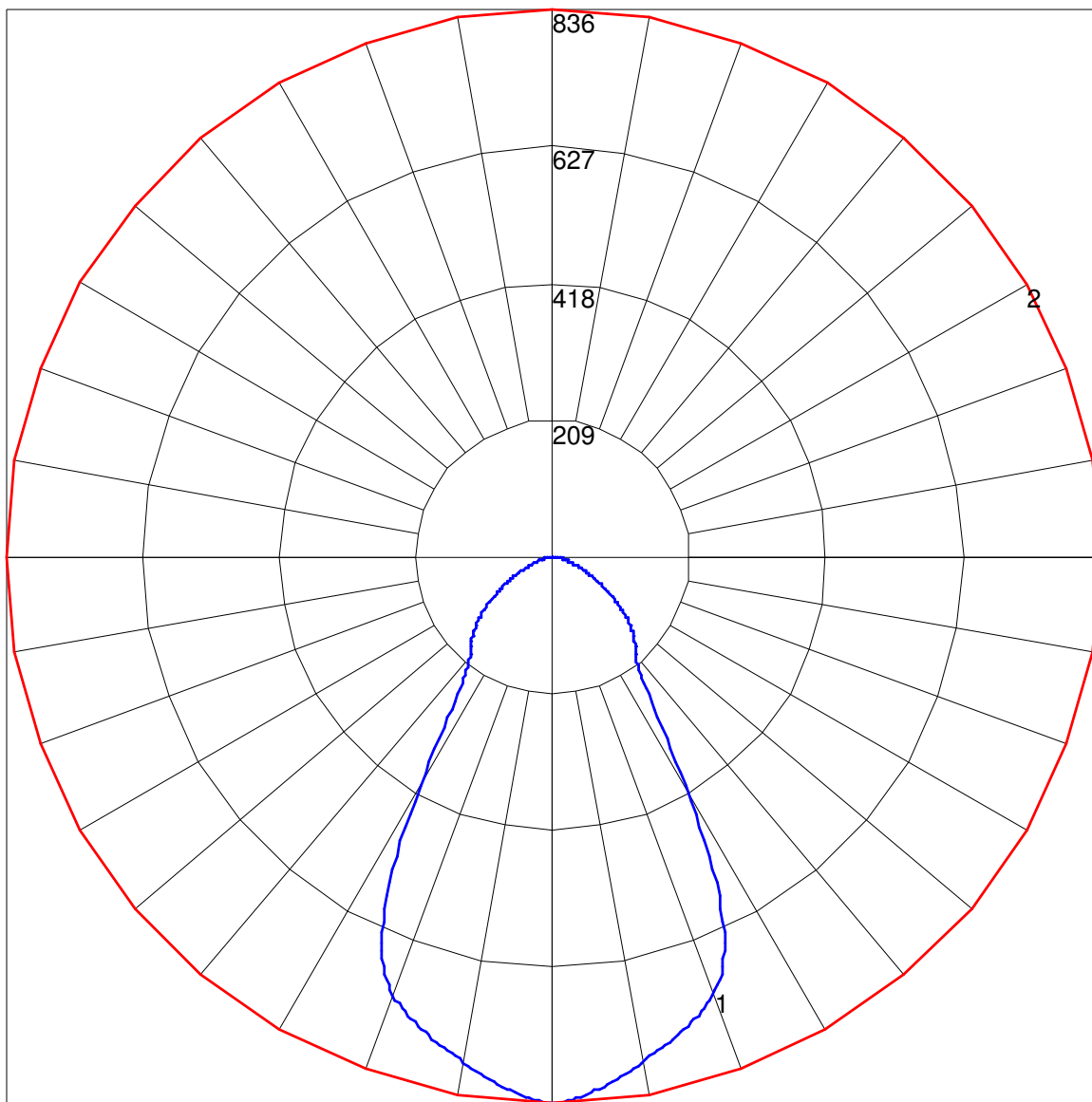
X=2H	Y=2H	19.8	21.1	20.2	21.4	21.7	19.8	21.1	20.2	21.4	21.7
	3H	20.6	21.7	20.9	22.1	22.4	20.6	21.7	20.9	22.1	22.4
	4H	20.7	21.8	21.1	22.2	22.5	20.7	21.8	21.1	22.2	22.5
	6H	20.8	21.8	21.3	22.2	22.6	20.8	21.8	21.3	22.2	22.6
	8H	20.9	21.8	21.3	22.2	22.6	20.9	21.8	21.3	22.2	22.6
	12H	20.8	21.7	21.3	22.1	22.6	20.8	21.7	21.3	22.1	22.6

UGR Viewed Endwise

4H	2H	20.1	21.1	20.5	21.5	21.9	20.1	21.1	20.5	21.5	21.9
	3H	21.0	21.9	21.4	22.3	22.7	21.0	21.9	21.4	22.3	22.7
	4H	21.2	22.0	21.6	22.4	22.9	21.2	22.0	21.6	22.4	22.9
	6H	21.4	22.1	21.8	22.5	23.0	21.4	22.1	21.8	22.5	23.0
	8H	21.4	22.0	21.9	22.5	23.0	21.4	22.0	21.9	22.5	23.0
	12H	21.4	22.0	21.9	22.5	22.9	21.4	22.0	21.9	22.5	22.9
8H	4H	21.3	21.9	21.7	22.3	22.8	21.3	21.9	21.7	22.3	22.8
	6H	21.5	22.0	22.0	22.5	23.0	21.5	22.0	22.0	22.5	23.0
	8H	21.5	22.0	22.1	22.5	23.0	21.5	22.0	22.1	22.5	23.0
	12H	21.6	22.0	22.1	22.5	23.0	21.6	22.0	22.1	22.5	23.0
12H	4H	21.2	21.8	21.7	22.3	22.7	21.2	21.8	21.7	22.3	22.7
	6H	21.5	21.9	22.0	22.4	22.9	21.5	21.9	22.0	22.4	22.9
	8H	21.5	21.9	22.1	22.4	23.0	21.5	21.9	22.1	22.4	23.0

Maximum UGR = 23.0

POLAR GRAPH



Maximum Candela = 835.616 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.)