



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.07
 [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-DIM-UNV-LW-OF-WH_4000k
 [LUMINAIRE] Black formed aluminum housing, white reflector, clear patt
 [MORE] erved glass lens enclosure
 [LAMP] One white LED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1029
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	70
Total Luminaire Watts	14.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.00
Spacing Criterion (90-270)	1.00
Spacing Criterion (Diagonal)	0.90
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	28389	28389	28389
55	23328	23328	23328
65	17066	17066	17066
75	11814	11814	11814
85	6440	6440	6440

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CANDELA TABULATION

	<u>0</u>
0.0	722.659
0.5	722.431
1.0	721.974
1.5	721.366
2.0	720.757
2.5	720.072
3.0	719.158
3.5	718.626
4.0	718.245
4.5	718.017
5.0	717.712
5.5	717.408
6.0	717.180
6.5	716.875
7.0	716.647
7.5	716.495
8.0	716.418
8.5	716.190
9.0	715.962
9.5	715.505
10.0	715.201
10.5	714.668
11.0	714.135
11.5	713.450
12.0	712.689
12.5	711.776
13.0	710.710
13.5	709.492
14.0	707.970
14.5	706.144
15.0	703.936
15.5	701.273
16.0	698.304
16.5	694.803
17.0	690.998
17.5	686.736
18.0	681.713
18.5	676.537
19.0	670.905
19.5	664.588
20.0	657.662
20.5	650.127
21.0	641.983
21.5	633.231
22.0	623.565
22.5	613.290
23.0	602.254
23.5	590.381
24.0	577.595
24.5	563.971
25.0	549.206
25.5	533.756
26.0	517.240
26.5	499.735

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

27.0	481.621
27.5	462.746
28.0	443.566
28.5	424.310
29.0	405.435
29.5	386.941
30.0	369.131
30.5	352.387
31.0	336.708
31.5	322.400
32.0	309.385
32.5	297.664
33.0	287.237
33.5	277.952
34.0	269.656
34.5	262.349
35.0	255.728
35.5	249.715
36.0	244.388
36.5	239.364
37.0	234.798
37.5	230.536
38.0	226.578
38.5	222.772
39.0	219.271
39.5	215.846
40.0	212.650
40.5	209.453
41.0	206.409
41.5	203.441
42.0	200.625
42.5	197.809
43.0	194.992
43.5	192.176
44.0	189.360
44.5	186.544
45.0	183.728
45.5	180.912
46.0	178.096
46.5	175.280
47.0	172.312
47.5	169.344
48.0	166.375
48.5	163.331
49.0	160.210
49.5	157.090
50.0	154.046
50.5	150.925
51.0	147.805
51.5	144.684
52.0	141.640
52.5	138.595
53.0	135.475
53.5	132.278
54.0	129.006
54.5	125.733

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55.0	122.460
55.5	119.187
56.0	115.991
56.5	112.870
57.0	109.750
57.5	106.629
58.0	103.585
58.5	100.617
59.0	97.648
59.5	94.756
60.0	91.940
60.5	89.124
61.0	86.384
61.5	83.720
62.0	81.057
62.5	78.393
63.0	75.851
63.5	73.324
64.0	70.843
64.5	68.400
65.0	66.010
65.5	63.681
66.0	61.382
66.5	59.145
67.0	56.960
67.5	54.814
68.0	52.736
68.5	50.704
69.0	48.672
69.5	46.708
70.0	44.798
70.5	42.918
71.0	41.084
71.5	39.295
72.0	37.568
72.5	35.863
73.0	34.204
73.5	32.590
74.0	31.007
74.5	29.477
75.0	27.985
75.5	26.539
76.0	25.124
76.5	23.746
77.0	22.429
77.5	21.120
78.0	19.857
78.5	18.632
79.0	17.429
79.5	16.272
80.0	15.138
80.5	14.035
81.0	12.946
81.5	11.888
82.0	10.853
82.5	9.849

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83.0	8.852
83.5	7.885
84.0	6.941
84.5	6.020
85.0	5.137
85.5	4.285
86.0	3.471
86.5	2.702
87.0	2.025
87.5	1.461
88.0	1.020
88.5	0.647
89.0	0.403
89.5	0.274
90.0	0.190
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-LW-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-LW-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-LW-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	265.45	N.A.	25.80
0-30	509.16	N.A.	49.50
0-40	675.16	N.A.	65.60
0-60	926.10	N.A.	90.00
0-80	1022.3	N.A.	99.40
0-90	1028.73	N.A.	100.00
10-90	960.28	N.A.	93.30
20-40	409.72	N.A.	39.80
20-50	551.21	N.A.	53.60
40-70	316.94	N.A.	30.80
60-80	96.20	N.A.	9.40
70-80	30.19	N.A.	2.90
80-90	6.43	N.A.	0.60
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	1028.74	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	68.45
10-20	197.00
20-30	243.71
30-40	166.01
40-50	141.50
50-60	109.45
60-70	66.00
70-80	30.19
80-90	6.43
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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89
2	103	97	91	87	101	95	90	86	92	87	84	89	85	82	86	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56
6	79	67	60	54	77	66	59	54	65	58	54	63	58	53	62	57	53	51
7	74	62	55	50	72	62	54	49	60	54	49	59	53	49	58	52	49	47
8	69	58	51	46	68	57	50	45	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37

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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	20.7	22.1	21.1	22.4	22.7	20.7	22.1	21.1	22.4	22.7
	3H	21.8	23.0	22.2	23.4	23.7	21.8	23.0	22.2	23.4	23.7
	4H	22.2	23.3	22.6	23.7	24.0	22.2	23.3	22.6	23.7	24.0
	6H	22.4	23.4	22.8	23.8	24.2	22.4	23.4	22.8	23.8	24.2
	8H	22.4	23.4	22.9	23.8	24.2	22.4	23.4	22.9	23.8	24.2
	12H	22.4	23.4	22.9	23.8	24.2	22.4	23.4	22.9	23.8	24.2

UGR Viewed Endwise

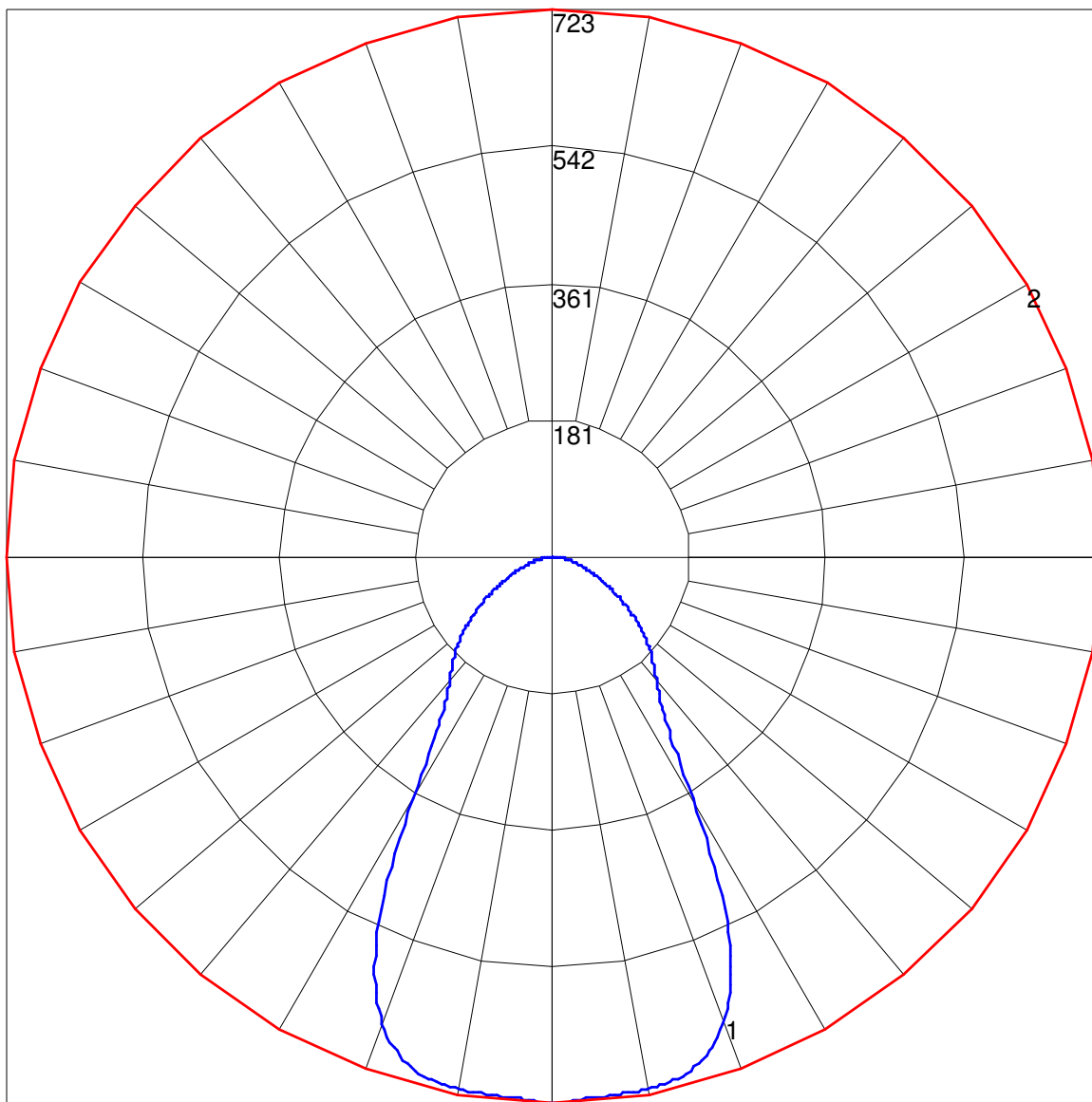
4H	2H	21.1	22.2	21.5	22.6	22.9	21.1	22.2	21.5	22.6	22.9
	3H	22.4	23.3	22.8	23.7	24.1	22.4	23.3	22.8	23.7	24.1
	4H	22.8	23.7	23.2	24.1	24.5	22.8	23.7	23.2	24.1	24.5
	6H	23.1	23.9	23.6	24.3	24.8	23.1	23.9	23.6	24.3	24.8
	8H	23.2	23.9	23.7	24.3	24.8	23.2	23.9	23.7	24.3	24.8
	12H	23.2	23.8	23.7	24.3	24.8	23.2	23.8	23.7	24.3	24.8

8H	4H	22.9	23.6	23.4	24.1	24.5	22.9	23.6	23.4	24.1	24.5
	6H	23.3	23.9	23.8	24.4	24.9	23.3	23.9	23.8	24.4	24.9
	8H	23.4	23.9	24.0	24.5	24.9	23.4	23.9	24.0	24.5	24.9
	12H	23.5	24.0	24.0	24.4	25.0	23.5	24.0	24.0	24.4	25.0

12H	4H	22.9	23.5	23.4	24.0	24.5	22.9	23.5	23.4	24.0	24.5
	6H	23.3	23.8	23.9	24.3	24.8	23.3	23.8	23.9	24.3	24.8
	8H	23.5	23.9	24.0	24.4	25.0	23.5	23.9	24.0	24.4	25.0

Maximum UGR = 25.0

POLAR GRAPH



Maximum Candela = 722.659 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.)