



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L22-8TW-DIM-UNV-OM-OF-CS\_4000K.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN from 12316380.04  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUE DATE] 5-24-2022  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.  
 [LUMCAT] 4DR-TL-L22-8TW-DIM-UNV-OM-OF-CS\_4000k  
 [LUMINAIRE] Black formed aluminum housing, specular reflector, no lens  
 [MORE] enclosure  
 [LAMP] One white LED

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2198
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	92
Total Luminaire Watts	24
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.76
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	5458	5458	5458
55	1584	1584	1584
65	556	556	556
75	248	248	248
85	123	123	123

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CANDELA TABULATION

	<u>0</u>
0.0	4447.601
0.5	4450.895
1.0	4464.070
1.5	4476.147
2.0	4503.594
2.5	4521.161
3.0	4524.454
3.5	4525.552
4.0	4500.301
4.5	4466.266
5.0	4401.489
5.5	4319.147
6.0	4226.923
6.5	4123.720
7.0	4011.734
7.5	3895.357
8.0	3775.685
8.5	3657.112
9.0	3540.734
9.5	3427.650
10.0	3320.056
10.5	3219.049
11.0	3124.629
11.5	3035.699
12.0	2951.161
12.5	2872.112
13.0	2797.454
13.5	2726.091
14.0	2658.021
14.5	2595.440
15.0	2538.350
15.5	2487.846
16.0	2446.126
16.5	2408.797
17.0	2373.664
17.5	2342.923
18.0	2315.475
18.5	2292.420
19.0	2275.951
19.5	2261.678
20.0	2249.601
20.5	2235.329
21.0	2221.056
21.5	2205.685
22.0	2189.217
22.5	2168.357
23.0	2143.105
23.5	2112.364
24.0	2073.937
24.5	2023.433
25.0	1965.245
25.5	1903.762
26.0	1843.378
26.5	1776.406

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-TL-L22-8TW-DIM-UNV-OM-OF-CS\_4000K.IES****CANDELA TABULATION - (Cont.)**

27.0	1706.140
27.5	1625.993
28.0	1534.867
28.5	1434.958
29.0	1330.657
29.5	1224.161
30.0	1111.077
30.5	993.931
31.0	871.295
31.5	749.099
32.0	631.623
32.5	521.723
33.0	426.096
33.5	344.522
34.0	275.793
34.5	218.702
35.0	172.371
35.5	137.457
36.0	115.060
36.5	103.313
37.0	96.286
37.5	90.138
38.0	84.758
38.5	79.817
39.0	75.316
39.5	71.254
40.0	67.411
40.5	63.788
41.0	60.385
41.5	57.310
42.0	54.346
42.5	51.601
43.0	48.857
43.5	46.441
44.0	44.026
44.5	41.720
45.0	39.634
45.5	37.548
46.0	35.462
46.5	33.486
47.0	31.400
47.5	29.424
48.0	27.557
48.5	25.801
49.0	24.044
49.5	22.287
50.0	20.531
50.5	18.884
51.0	17.457
51.5	16.139
52.0	14.822
52.5	13.724
53.0	12.626
53.5	11.748
54.0	10.869
54.5	9.991

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CANDELA TABULATION - (Cont.)

55.0	9.332
55.5	8.673
56.0	8.015
56.5	7.466
57.0	6.917
57.5	6.478
58.0	6.038
58.5	5.599
59.0	5.270
59.5	4.941
60.0	4.611
60.5	4.282
61.0	4.062
61.5	3.733
62.0	3.513
62.5	3.294
63.0	3.074
63.5	2.964
64.0	2.745
64.5	2.525
65.0	2.415
65.5	2.306
66.0	2.086
66.5	1.976
67.0	1.866
67.5	1.757
68.0	1.647
68.5	1.537
69.0	1.427
69.5	1.317
70.0	1.208
70.5	1.208
71.0	1.098
71.5	0.988
72.0	0.878
72.5	0.878
73.0	0.769
73.5	0.769
74.0	0.659
74.5	0.659
75.0	0.659
75.5	0.549
76.0	0.549
76.5	0.439
77.0	0.439
77.5	0.439
78.0	0.329
78.5	0.329
79.0	0.329
79.5	0.329
80.0	0.220
80.5	0.220
81.0	0.220
81.5	0.220
82.0	0.220
82.5	0.220

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CANDELA TABULATION - (Cont.)

83.0	0.220
83.5	0.110
84.0	0.110
84.5	0.110
85.0	0.110
85.5	0.110
86.0	0.110
86.5	0.110
87.0	0.110
87.5	0.110
88.0	0.000
88.5	0.000
89.0	0.000
89.5	0.000
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-L22-8TW-DIM-UNV-OM-OF-CS\_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-L22-8TW-DIM-UNV-OM-OF-CS\_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

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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



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-TL-L22-8TW-DIM-UNV-OM-OF-CS\_4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1108.71	N.A.	50.40
0-30	1958.24	N.A.	89.10
0-40	2154.35	N.A.	98.00
0-60	2194.72	N.A.	99.80
0-80	2197.94	N.A.	100.00
0-90	2198.07	N.A.	100.00
10-90	1817.23	N.A.	82.70
20-40	1045.64	N.A.	47.60
20-50	1076.84	N.A.	49.00
40-70	42.91	N.A.	2.00
60-80	3.22	N.A.	0.10
70-80	0.68	N.A.	0.00
80-90	0.13	N.A.	0.00
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	2198.07	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	380.84
10-20	727.87
20-30	849.53
30-40	196.10
40-50	31.21
50-60	9.17
60-70	2.53
70-80	0.68
80-90	0.13
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

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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	112	110	108	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	109	105	102	99	107	103	100	97	100	98	95	97	95	93	95	93	91	90
3	105	99	95	91	103	98	94	91	95	92	89	93	90	88	91	88	87	85
4	100	94	89	85	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	83	80	86	82	79	85	81	78	83	80	78	76
6	92	85	79	76	91	84	79	75	82	78	75	81	77	74	80	77	74	73
7	89	80	75	72	87	80	75	71	79	74	71	78	74	71	76	73	70	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	73	70	67	66
9	82	73	68	65	81	73	68	65	72	67	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	64	61	68	64	61	67	64	61	60

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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

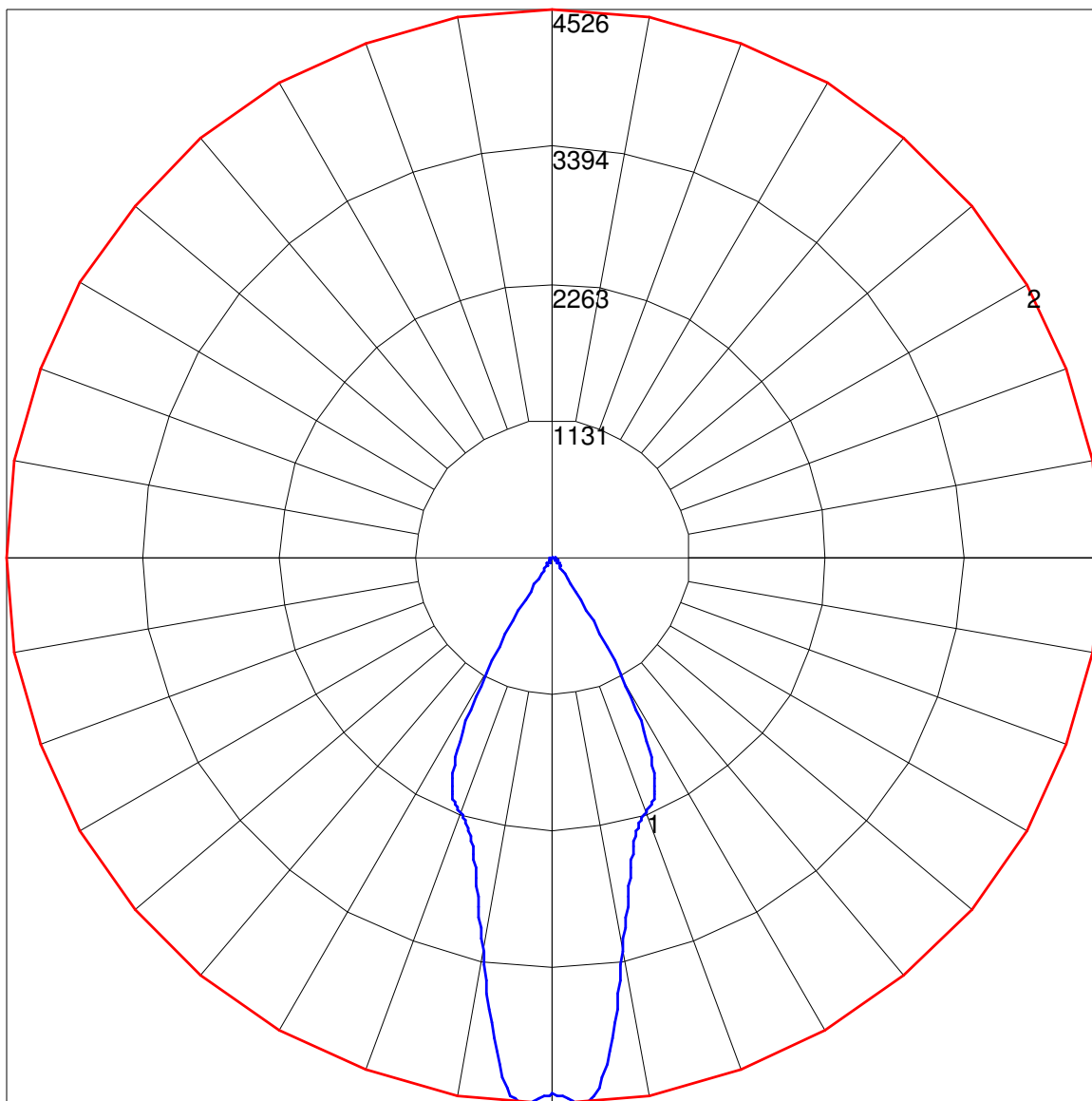
X=2H	Y=2H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	3H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

### UGR Viewed Endwise

4H	2H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	3H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
8H	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	12H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
12H	4H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	6H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
	8H	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8

Maximum UGR = 2.8

POLAR GRAPH



Maximum Candela = 4525.552 Located At Horizontal Angle = 0, Vertical Angle = 3.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)