

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-830-DIM-UNV-OW-OF-SG\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM TEST 12316380.19

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 08-18-20203

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L20-830-DIM-UNV-OW-OF-SG

[LUMINAIRE] Black formed aluminum housing, specular reflector, no lens

[MORE] enclosure

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1808
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	91
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.08
Spacing Criterion (90-270)	1.08
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	7000	7000	7000
55	2579	2579	2579
65	927	927	927
75	338	338	338
85	159	159	159

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CANDELA TABULATION

	<u>0</u>
0.0	2077.989
0.5	2077.515
1.0	2076.568
1.5	2072.782
2.0	2068.995
2.5	2062.368
3.0	2052.901
3.5	2039.648
4.0	2025.447
4.5	2007.460
5.0	1990.420
5.5	1969.119
6.0	1946.398
6.5	1920.838
7.0	1893.384
7.5	1864.510
8.0	1835.162
8.5	1807.708
9.0	1782.621
9.5	1758.953
10.0	1737.179
10.5	1716.352
11.0	1698.838
11.5	1684.165
12.0	1672.331
12.5	1664.284
13.0	1658.604
13.5	1657.184
14.0	1658.131
14.5	1662.391
15.0	1669.018
15.5	1678.485
16.0	1690.792
16.5	1705.465
17.0	1722.506
17.5	1740.493
18.0	1759.900
18.5	1779.781
19.0	1799.661
19.5	1820.015
20.0	1839.896
20.5	1857.883
21.0	1873.976
21.5	1886.283
22.0	1895.750
22.5	1901.904
23.0	1903.797
23.5	1900.484
24.0	1892.437
24.5	1878.237
25.0	1857.883
25.5	1829.009
26.0	1790.668
26.5	1744.753

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**CANDELA TABULATION - (Cont.)**

27.0	1690.318
27.5	1630.677
28.0	1564.408
28.5	1491.986
29.0	1412.938
29.5	1324.895
30.0	1230.699
30.5	1132.243
31.0	1030.947
31.5	928.705
32.0	826.462
32.5	730.373
33.0	639.490
33.5	555.235
34.0	480.919
34.5	412.900
35.0	350.939
35.5	296.457
36.0	251.015
36.5	214.994
37.0	187.350
37.5	166.002
38.0	147.637
38.5	132.253
39.0	119.141
39.5	108.254
40.0	98.787
40.5	90.551
41.0	83.404
41.5	77.392
42.0	72.327
42.5	67.830
43.0	63.760
43.5	60.068
44.0	56.707
44.5	53.630
45.0	50.837
45.5	48.139
46.0	45.678
46.5	43.311
47.0	41.086
47.5	38.909
48.0	36.779
48.5	34.744
49.0	32.756
49.5	30.909
50.0	29.158
50.5	27.454
51.0	25.797
51.5	24.188
52.0	22.579
52.5	21.111
53.0	19.739
53.5	18.508
54.0	17.324
54.5	16.236

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CANDELA TABULATION - (Cont.)

55.0	15.194
55.5	14.248
56.0	13.348
56.5	12.496
57.0	11.692
57.5	10.982
58.0	10.272
58.5	9.609
59.0	8.994
59.5	8.426
60.0	7.905
60.5	7.384
61.0	6.911
61.5	6.485
62.0	6.059
62.5	5.680
63.0	5.301
63.5	4.923
64.0	4.591
64.5	4.307
65.0	4.023
65.5	3.739
66.0	3.455
66.5	3.219
67.0	2.982
67.5	2.793
68.0	2.603
68.5	2.414
69.0	2.225
69.5	2.083
70.0	1.941
70.5	1.799
71.0	1.657
71.5	1.515
72.0	1.420
72.5	1.325
73.0	1.231
73.5	1.136
74.0	1.041
74.5	0.947
75.0	0.899
75.5	0.805
76.0	0.757
76.5	0.710
77.0	0.663
77.5	0.568
78.0	0.521
78.5	0.473
79.0	0.473
79.5	0.426
80.0	0.379
80.5	0.331
81.0	0.331
81.5	0.284
82.0	0.284
82.5	0.237

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CANDELA TABULATION - (Cont.)

83.0	0.237
83.5	0.189
84.0	0.189
84.5	0.142
85.0	0.142
85.5	0.142
86.0	0.142
86.5	0.095
87.0	0.095
87.5	0.095
88.0	0.047
88.5	0.047
89.0	0.047
89.5	0.047
90.0	0.047
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

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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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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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**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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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	668.14	N.A.	37.00
0-30	1466.79	N.A.	81.10
0-40	1746.43	N.A.	96.60
0-60	1802.5	N.A.	99.70
0-80	1807.76	N.A.	100.00
0-90	1807.94	N.A.	100.00
10-90	1626.88	N.A.	90.00
20-40	1078.29	N.A.	59.60
20-50	1119.89	N.A.	61.90
40-70	60.30	N.A.	3.30
60-80	5.26	N.A.	0.30
70-80	1.03	N.A.	0.10
80-90	0.18	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	1807.94	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	181.06
10-20	487.08
20-30	798.65
30-40	279.64
40-50	41.60
50-60	14.47
60-70	4.23
70-80	1.03
80-90	0.18
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	111	109	106	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	108	104	100	97	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	92	88	101	96	91	88	93	89	86	91	88	85	88	86	84	82
4	98	91	86	82	96	90	85	81	88	83	80	86	82	79	84	81	78	77
5	93	85	80	76	92	84	79	75	83	78	75	81	77	74	80	76	73	72
6	89	80	75	70	88	80	74	70	78	73	70	77	73	69	75	72	69	67
7	85	76	70	66	83	75	70	66	74	69	65	73	68	65	72	68	65	63
8	81	72	66	62	80	71	65	62	70	65	61	69	64	61	68	64	61	60
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	64	60	57	56
10	73	64	58	55	72	64	58	55	63	58	54	62	57	54	61	57	54	53

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## UGR TABLE - CORRECTED

### Reflectances

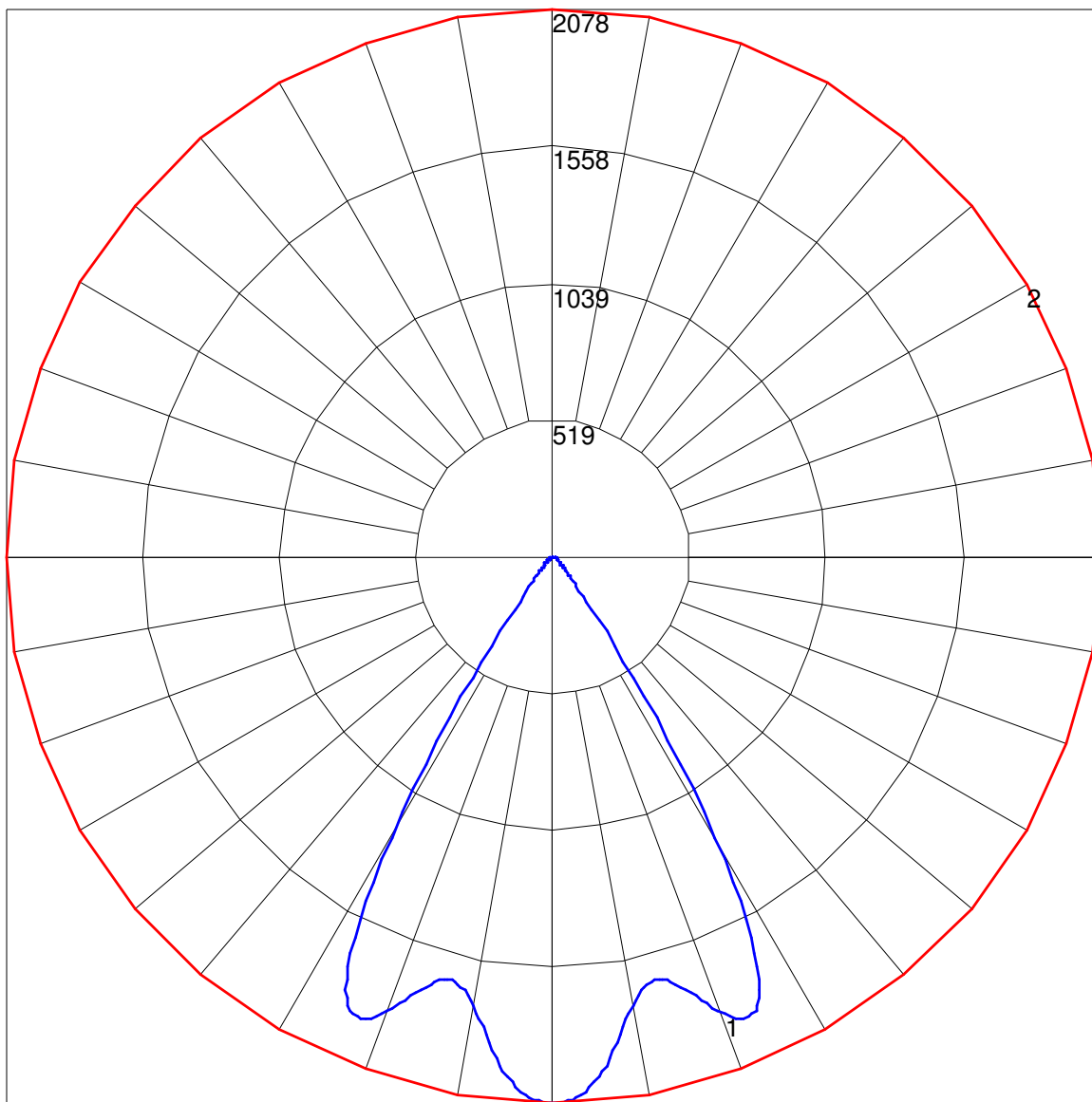
Ceiling Cavity	70	70	50	50	30	70	70	50	50	30
Walls	50	30	50	30	30	50	30	50	30	30
Floor Cavity	20	20	20	20	20	20	20	20	20	20

### Room Size UGR Viewed Crosswise

X=2H	Y=2H	3.0	4.0	3.4	4.3	4.6	3.0	4.0	3.4	4.3	4.6
	3H	3.2	4.0	3.5	4.3	4.7	3.2	4.0	3.5	4.3	4.7
	4H	3.1	3.9	3.5	4.2	4.6	3.1	3.9	3.5	4.2	4.6
	6H	3.0	3.7	3.5	4.1	4.5	3.0	3.7	3.5	4.1	4.5
	8H	3.0	3.6	3.4	4.0	4.4	3.0	3.6	3.4	4.0	4.4
	12H	2.9	3.5	3.3	3.9	4.3	2.9	3.5	3.3	3.9	4.3
4H	2H	2.9	3.7	3.4	4.1	4.5	2.9	3.7	3.4	4.1	4.5
	3H	3.1	3.7	3.6	4.1	4.5	3.1	3.7	3.6	4.1	4.5
	4H	3.1	3.6	3.5	4.0	4.5	3.1	3.6	3.5	4.0	4.5
	6H	3.0	3.5	3.5	3.9	4.4	3.0	3.5	3.5	3.9	4.4
	8H	2.9	3.4	3.4	3.8	4.3	2.9	3.4	3.4	3.8	4.3
	12H	2.9	3.3	3.4	3.7	4.2	2.9	3.3	3.4	3.7	4.2
8H	4H	2.9	3.4	3.4	3.8	4.3	2.9	3.4	3.4	3.8	4.3
	6H	2.9	3.2	3.4	3.7	4.2	2.9	3.2	3.4	3.7	4.2
	8H	2.8	3.1	3.4	3.6	4.1	2.8	3.1	3.4	3.6	4.1
	12H	2.8	3.0	3.3	3.5	4.1	2.8	3.0	3.3	3.5	4.1
12H	4H	2.9	3.2	3.4	3.7	4.2	2.9	3.2	3.4	3.7	4.2
	6H	2.8	3.1	3.3	3.6	4.1	2.8	3.1	3.3	3.6	4.1
	8H	2.8	3.0	3.3	3.5	4.1	2.8	3.0	3.3	3.5	4.1

Maximum UGR = 4.7

POLAR GRAPH



Maximum Candela = 2077.989 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.)