



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-827-DIM-UNV-OW-OF-SG-MWT_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM TEST 12316380.19
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 09-20-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-827-DIM-UNV-OW-OF-SG-MWT
 [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	1697
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
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	6572	6572	6572
55	2421	2421	2421
65	870	870	870
75	318	318	318
85	149	149	149

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CANDELA TABULATION

	<u>0</u>
0.0	1950.765
0.5	1950.320
1.0	1949.431
1.5	1945.877
2.0	1942.322
2.5	1936.100
3.0	1927.213
3.5	1914.771
4.0	1901.440
4.5	1884.554
5.0	1868.557
5.5	1848.560
6.0	1827.231
6.5	1803.235
7.0	1777.462
7.5	1750.356
8.0	1722.805
8.5	1697.032
9.0	1673.480
9.5	1651.262
10.0	1630.821
10.5	1611.269
11.0	1594.828
11.5	1581.052
12.0	1569.943
12.5	1562.389
13.0	1557.057
13.5	1555.724
14.0	1556.612
14.5	1560.612
15.0	1566.833
15.5	1575.720
16.0	1587.274
16.5	1601.049
17.0	1617.046
17.5	1633.932
18.0	1652.151
18.5	1670.814
19.0	1689.478
19.5	1708.585
20.0	1727.249
20.5	1744.135
21.0	1759.243
21.5	1770.797
22.0	1779.684
22.5	1785.461
23.0	1787.238
23.5	1784.127
24.0	1776.573
24.5	1763.242
25.0	1744.135
25.5	1717.028
26.0	1681.035
26.5	1637.931

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CANDELA TABULATION - (Cont.)

27.0	1586.829
27.5	1530.839
28.0	1468.628
28.5	1400.640
29.0	1326.431
29.5	1243.779
30.0	1155.350
30.5	1062.922
31.0	967.828
31.5	871.845
32.0	775.862
32.5	685.656
33.0	600.338
33.5	521.241
34.0	451.475
34.5	387.620
35.0	329.453
35.5	278.306
36.0	235.647
36.5	201.831
37.0	175.880
37.5	155.839
38.0	138.598
38.5	124.156
39.0	111.847
39.5	101.626
40.0	92.739
40.5	85.007
41.0	78.297
41.5	72.654
42.0	67.899
42.5	63.678
43.0	59.856
43.5	56.390
44.0	53.235
44.5	50.347
45.0	47.725
45.5	45.192
46.0	42.881
46.5	40.659
47.0	38.571
47.5	36.527
48.0	34.527
48.5	32.616
49.0	30.750
49.5	29.017
50.0	27.373
50.5	25.773
51.0	24.218
51.5	22.707
52.0	21.196
52.5	19.819
53.0	18.530
53.5	17.375
54.0	16.264
54.5	15.242

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CANDELA TABULATION - (Cont.)

55.0	14.264
55.5	13.375
56.0	12.531
56.5	11.731
57.0	10.976
57.5	10.309
58.0	9.643
58.5	9.021
59.0	8.443
59.5	7.910
60.0	7.421
60.5	6.932
61.0	6.488
61.5	6.088
62.0	5.688
62.5	5.332
63.0	4.977
63.5	4.621
64.0	4.310
64.5	4.044
65.0	3.777
65.5	3.510
66.0	3.244
66.5	3.022
67.0	2.800
67.5	2.622
68.0	2.444
68.5	2.266
69.0	2.089
69.5	1.955
70.0	1.822
70.5	1.689
71.0	1.555
71.5	1.422
72.0	1.333
72.5	1.244
73.0	1.155
73.5	1.066
74.0	0.978
74.5	0.889
75.0	0.844
75.5	0.755
76.0	0.711
76.5	0.667
77.0	0.622
77.5	0.533
78.0	0.489
78.5	0.444
79.0	0.444
79.5	0.400
80.0	0.355
80.5	0.311
81.0	0.311
81.5	0.267
82.0	0.267
82.5	0.222

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CANDELA TABULATION - (Cont.)

83.0	0.222
83.5	0.178
84.0	0.178
84.5	0.133
85.0	0.133
85.5	0.133
86.0	0.133
86.5	0.089
87.0	0.089
87.5	0.089
88.0	0.044
88.5	0.044
89.0	0.044
89.5	0.044
90.0	0.044
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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Zone	Lumens	%Lamp	%Fixt
0-20	627.23	N.A.	37.00
0-30	1376.98	N.A.	81.10
0-40	1639.5	N.A.	96.60
0-60	1692.14	N.A.	99.70
0-80	1697.08	N.A.	100.00
0-90	1697.25	N.A.	100.00
10-90	1527.27	N.A.	90.00
20-40	1012.27	N.A.	59.60
20-50	1051.33	N.A.	61.90
40-70	56.61	N.A.	3.30
60-80	4.94	N.A.	0.30
70-80	0.96	N.A.	0.10
80-90	0.17	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	1697.25	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	169.97
10-20	457.26
20-30	749.75
30-40	262.52
40-50	39.06
50-60	13.58
60-70	3.97
70-80	0.96
80-90	0.17
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	85	79	75	83	78	75	81	77	74	80	76	73	72
6	89	80	75	71	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	65	60	57	56
10	73	64	58	55	72	64	58	55	63	58	54	62	57	54	61	57	54	53

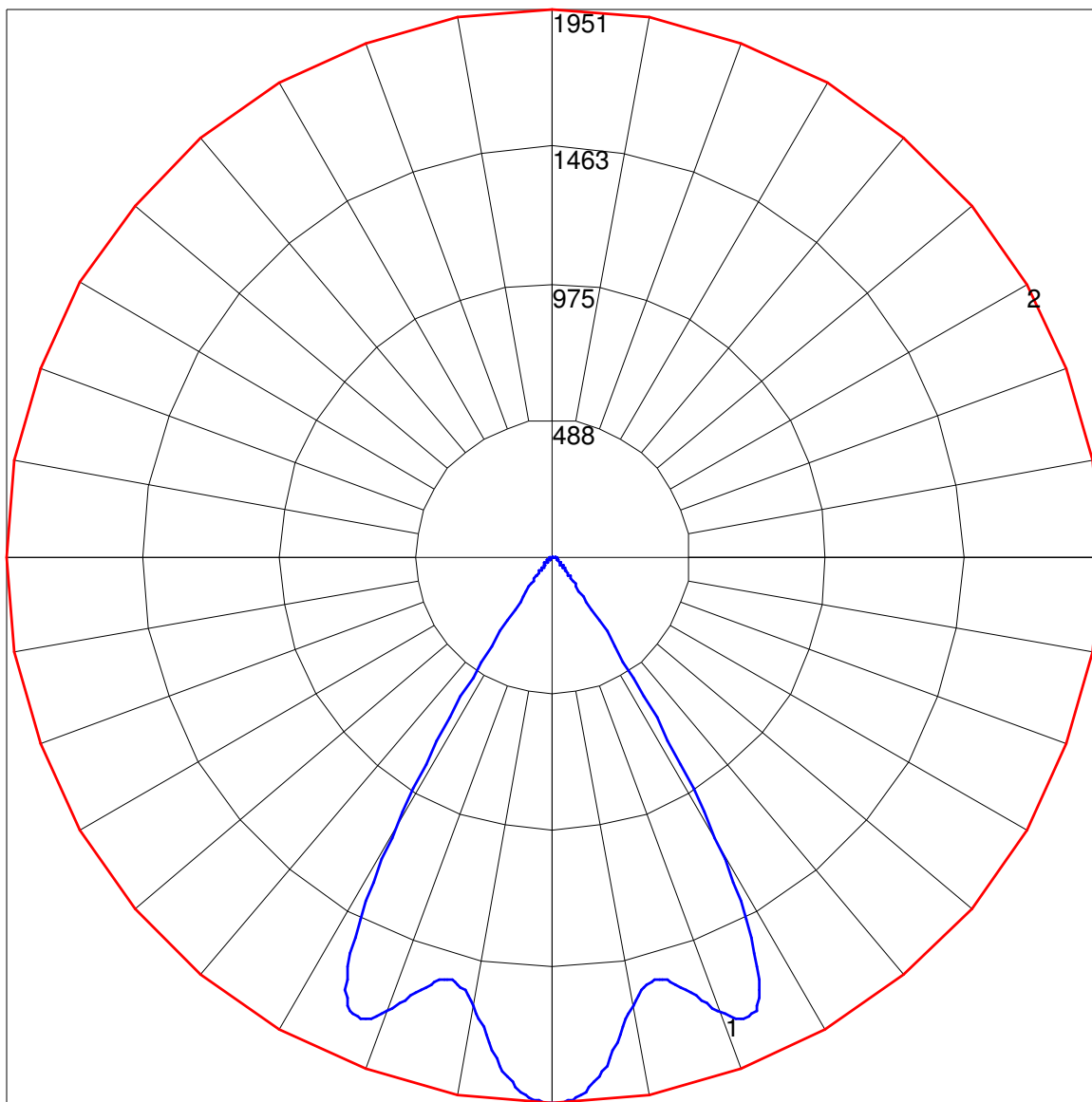
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UGR TABLE - CORRECTED

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					UGR Viewed Endwise				
X=2H	Y=2H	2.8	3.8	3.2	4.1	4.4	2.8	3.8	3.2	4.1	4.4
	3H	2.9	3.8	3.3	4.1	4.5	2.9	3.8	3.3	4.1	4.5
	4H	2.9	3.6	3.3	4.0	4.4	2.9	3.6	3.3	4.0	4.4
	6H	2.8	3.5	3.2	3.9	4.3	2.8	3.5	3.2	3.9	4.3
	8H	2.8	3.4	3.2	3.8	4.2	2.8	3.4	3.2	3.8	4.2
	12H	2.7	3.3	3.1	3.7	4.1	2.7	3.3	3.1	3.7	4.1
4H	2H	2.7	3.5	3.2	3.9	4.2	2.7	3.5	3.2	3.9	4.2
	3H	2.9	3.5	3.3	3.9	4.3	2.9	3.5	3.3	3.9	4.3
	4H	2.9	3.4	3.3	3.8	4.3	2.9	3.4	3.3	3.8	4.3
	6H	2.8	3.3	3.3	3.7	4.2	2.8	3.3	3.3	3.7	4.2
	8H	2.7	3.2	3.2	3.6	4.1	2.7	3.2	3.2	3.6	4.1
	12H	2.7	3.1	3.2	3.5	4.0	2.7	3.1	3.2	3.5	4.0
8H	4H	2.7	3.2	3.2	3.6	4.1	2.7	3.2	3.2	3.6	4.1
	6H	2.7	3.0	3.2	3.5	4.0	2.7	3.0	3.2	3.5	4.0
	8H	2.6	2.9	3.2	3.4	3.9	2.6	2.9	3.2	3.4	3.9
	12H	2.6	2.8	3.1	3.3	3.9	2.6	2.8	3.1	3.3	3.9
12H	4H	2.7	3.0	3.2	3.5	4.0	2.7	3.0	3.2	3.5	4.0
	6H	2.6	2.9	3.1	3.4	3.9	2.6	2.9	3.1	3.4	3.9
	8H	2.6	2.8	3.1	3.3	3.9	2.6	2.8	3.1	3.3	3.9

Maximum UGR = 4.5

POLAR GRAPH



Maximum Candela = 1950.765 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.)