



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L10-840-DIM-UNV-OM-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.22
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 11/20/2019
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L10-840-DIM-UNV-OM-OF-WH
 [LUMINAIRE] Black formed aluminum housing, white reflector, no lens
 [MORE] enclosure
 [LAMP] One white LED
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight
 [_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	898
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	100
Total Luminaire Watts	9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.74
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	2201	2201	2201
55	643	643	643
65	230	230	230
75	105	105	105
85	78	78	78

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CANDELA TABULATION

	<u>0</u>
0.0	1883.363
0.5	1886.615
1.0	1888.009
1.5	1887.080
2.0	1883.827
2.5	1879.180
3.0	1869.190
3.5	1857.573
4.0	1841.309
4.5	1819.933
5.0	1792.749
5.5	1759.757
6.0	1726.067
6.5	1686.337
7.0	1644.283
7.5	1599.906
8.0	1554.134
8.5	1508.363
9.0	1462.824
9.5	1417.982
10.0	1374.766
10.5	1333.874
11.0	1294.841
11.5	1258.596
12.0	1225.371
12.5	1194.004
13.0	1165.426
13.5	1139.172
14.0	1115.241
14.5	1092.471
15.0	1071.328
15.5	1051.347
16.0	1033.456
16.5	1017.657
17.0	1003.020
17.5	989.311
18.0	976.300
18.5	963.289
19.0	951.207
19.5	939.590
20.0	928.903
20.5	918.447
21.0	907.759
21.5	896.839
22.0	884.758
22.5	871.746
23.0	857.574
23.5	842.239
24.0	825.278
24.5	806.226
25.0	785.315
25.5	762.081
26.0	736.059
26.5	706.784

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CANDELA TABULATION - (Cont.)

27.0	674.721
27.5	639.869
28.0	602.695
28.5	562.732
29.0	519.516
29.5	474.907
30.0	429.135
30.5	383.132
31.0	337.825
31.5	294.377
32.0	252.556
32.5	214.010
33.0	178.810
33.5	146.770
34.0	119.377
34.5	96.399
35.0	77.974
35.5	63.778
36.0	52.997
36.5	45.167
37.0	40.079
37.5	36.849
38.0	34.549
38.5	32.505
39.0	30.669
39.5	28.996
40.0	27.416
40.5	25.953
41.0	24.582
41.5	23.281
42.0	22.096
42.5	20.934
43.0	19.842
43.5	18.796
44.0	17.797
44.5	16.868
45.0	15.985
45.5	15.125
46.0	14.289
46.5	13.453
47.0	12.639
47.5	11.826
48.0	11.036
48.5	10.316
49.0	9.619
49.5	8.922
50.0	8.248
50.5	7.574
51.0	7.017
51.5	6.482
52.0	5.994
52.5	5.553
53.0	5.135
53.5	4.763
54.0	4.391
54.5	4.089

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CANDELA TABULATION - (Cont.)

55.0	3.787
55.5	3.508
56.0	3.299
56.5	3.044
57.0	2.835
57.5	2.649
58.0	2.486
58.5	2.323
59.0	2.161
59.5	2.045
60.0	1.905
60.5	1.789
61.0	1.673
61.5	1.557
62.0	1.487
62.5	1.371
63.0	1.301
63.5	1.208
64.0	1.138
64.5	1.069
65.0	0.999
65.5	0.953
66.0	0.883
66.5	0.860
67.0	0.790
67.5	0.743
68.0	0.697
68.5	0.651
69.0	0.604
69.5	0.581
70.0	0.558
70.5	0.511
71.0	0.465
71.5	0.465
72.0	0.418
72.5	0.395
73.0	0.349
73.5	0.325
74.0	0.302
74.5	0.302
75.0	0.279
75.5	0.256
76.0	0.256
76.5	0.232
77.0	0.209
77.5	0.209
78.0	0.186
78.5	0.163
79.0	0.163
79.5	0.163
80.0	0.139
80.5	0.116
81.0	0.139
81.5	0.116
82.0	0.116
82.5	0.116

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CANDELA TABULATION - (Cont.)

83.0	0.093
83.5	0.093
84.0	0.070
84.5	0.070
85.0	0.070
85.5	0.070
86.0	0.070
86.5	0.046
87.0	0.046
87.5	0.046
88.0	0.046
88.5	0.046
89.0	0.046
89.5	0.046
90.0	0.023
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
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132.0	0.000
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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	461.43	N.A.	51.40
0-30	800.60	N.A.	89.10
0-40	880.28	N.A.	98.00
0-60	896.62	N.A.	99.80
0-80	898.00	N.A.	100.00
0-90	898.08	N.A.	100.00
10-90	741.43	N.A.	82.60
20-40	418.85	N.A.	46.60
20-50	431.47	N.A.	48.00
40-70	17.40	N.A.	1.90
60-80	1.38	N.A.	0.20
70-80	0.32	N.A.	0.00
80-90	0.08	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	898.08	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	156.65
10-20	304.78
20-30	339.17
30-40	79.68
40-50	12.61
50-60	3.72
60-70	1.06
70-80	0.32
80-90	0.08
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 RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	62	62	62	62	61	61	61	61	58	58	58	56	56	56	54	54	54	52
1	60	59	57	56	59	58	56	56	55	55	54	53	53	52	52	51	51	50
2	57	55	53	52	56	54	53	51	53	51	50	51	50	49	50	49	48	47
3	55	52	50	48	54	51	49	48	50	48	47	49	47	46	48	46	45	45
4	53	49	47	45	52	49	46	45	48	46	44	47	45	44	46	44	43	42
5	51	47	44	42	50	46	44	42	45	43	42	45	43	41	44	42	41	40
6	49	44	42	40	48	44	42	40	43	41	39	43	41	39	42	40	39	38
7	47	42	40	38	46	42	39	38	41	39	37	41	39	37	40	38	37	36
8	45	40	38	36	44	40	38	36	40	37	36	39	37	35	39	37	35	35
9	43	39	36	34	42	38	36	34	38	36	34	37	35	34	37	35	34	33
10	41	37	34	32	41	37	34	32	36	34	32	36	34	32	36	34	32	32

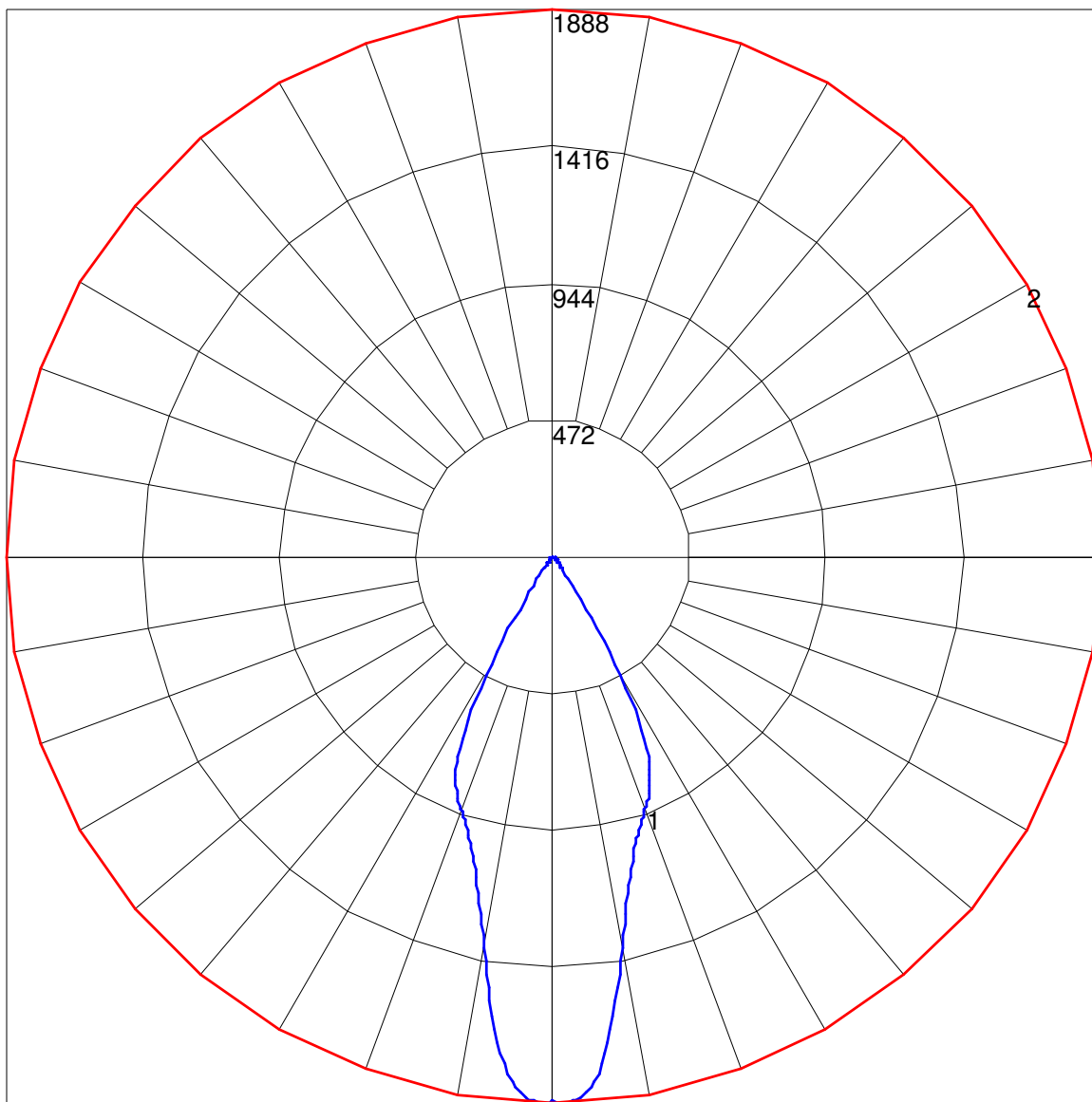
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UGR TABLE - CORRECTED

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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	3H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
4H	2H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	3H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
8H	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
12H	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Maximum UGR = 1.9

POLAR GRAPH



Maximum Candela = 1888.009 Located At Horizontal Angle = 0, Vertical Angle = 1
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)