



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L15-935-DIM-UNV-LM-OF-CS-IP_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.09
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 31 MARCH 2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L15-935-DIM-UNV-LM-OF-CS-IP
 [LUMINAIRE] Black formed aluminum housing, white reflector, clear plas
 [MORE] tic optic, clear glass patterned 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	1081
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	77
Total Luminaire Watts	14
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.54
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	8203	8203	8203
55	6393	6393	6393
65	5343	5343	5343
75	4299	4299	4299
85	2569	2569	2569

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CANDELA TABULATION

	<u>0</u>
0.0	2797.103
0.5	2795.897
1.0	2791.679
1.5	2785.051
2.0	2776.615
2.5	2765.167
3.0	2751.910
3.5	2736.244
4.0	2718.167
4.5	2698.885
5.0	2677.192
5.5	2653.090
6.0	2626.577
6.5	2597.051
7.0	2565.115
7.5	2530.167
8.0	2492.205
8.5	2451.231
9.0	2407.846
9.5	2360.846
10.0	2310.231
10.5	2256.000
11.0	2199.359
11.5	2139.705
12.0	2076.436
12.5	2010.756
13.0	1942.064
13.5	1870.962
14.0	1796.846
14.5	1720.320
15.0	1643.192
15.5	1564.859
16.0	1486.526
16.5	1407.590
17.0	1329.256
17.5	1253.333
18.0	1178.013
18.5	1105.705
19.0	1036.410
19.5	969.526
20.0	906.256
20.5	845.397
21.0	788.756
21.5	735.128
22.0	684.513
22.5	637.513
23.0	593.164
23.5	551.828
24.0	513.445
24.5	477.592
25.0	444.331
25.5	413.419
26.0	384.436
26.5	357.682

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CANDELA TABULATION - (Cont.)

27.0	332.736
27.5	309.899
28.0	288.628
28.5	268.985
29.0	250.968
29.5	234.156
30.0	218.550
30.5	204.149
31.0	190.832
31.5	178.600
32.0	167.272
32.5	156.847
33.0	147.267
33.5	138.409
34.0	130.335
34.5	122.863
35.0	116.114
35.5	109.847
36.0	104.123
36.5	98.881
37.0	94.060
37.5	89.662
38.0	85.685
38.5	82.009
39.0	78.635
39.5	75.562
40.0	72.729
40.5	70.078
41.0	67.608
41.5	65.378
42.0	63.269
42.5	61.281
43.0	59.473
43.5	57.726
44.0	56.099
44.5	54.592
45.0	53.086
45.5	51.700
46.0	50.435
46.5	49.169
47.0	47.964
47.5	46.879
48.0	45.735
48.5	44.710
49.0	43.686
49.5	42.662
50.0	41.758
50.5	40.854
51.0	40.010
51.5	39.106
52.0	38.263
52.5	37.479
53.0	36.636
53.5	35.853
54.0	35.069
54.5	34.286

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CANDELA TABULATION - (Cont.)

55.0	33.563
55.5	32.840
56.0	32.117
56.5	31.394
57.0	30.610
57.5	29.947
58.0	29.285
58.5	28.682
59.0	28.019
59.5	27.356
60.0	26.694
60.5	26.031
61.0	25.488
61.5	24.826
62.0	24.223
62.5	23.621
63.0	23.018
63.5	22.476
64.0	21.873
64.5	21.271
65.0	20.668
65.5	20.126
66.0	19.583
66.5	19.041
67.0	18.438
67.5	17.896
68.0	17.354
68.5	16.812
69.0	16.269
69.5	15.727
70.0	15.185
70.5	14.703
71.0	14.221
71.5	13.618
72.0	13.136
72.5	12.654
73.0	12.172
73.5	11.629
74.0	11.147
74.5	10.665
75.0	10.183
75.5	9.701
76.0	9.219
76.5	8.737
77.0	8.255
77.5	7.894
78.0	7.412
78.5	6.990
79.0	6.568
79.5	6.146
80.0	5.724
80.5	5.303
81.0	4.881
81.5	4.579
82.0	4.097
82.5	3.796

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CANDELA TABULATION - (Cont.)

83.0	3.374
83.5	3.073
84.0	2.712
84.5	2.350
85.0	2.049
85.5	1.687
86.0	1.446
86.5	1.145
87.0	0.964
87.5	0.783
88.0	0.603
88.5	0.482
89.0	0.362
89.5	0.241
90.0	0.181
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
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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
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152.0	0.000
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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	683.66	N.A.	63.20
0-30	897.90	N.A.	83.10
0-40	975.12	N.A.	90.20
0-60	1047.11	N.A.	96.90
0-80	1078.5	N.A.	99.80
0-90	1081.05	N.A.	100.00
10-90	836.93	N.A.	77.40
20-40	291.46	N.A.	27.00
20-50	333.28	N.A.	30.80
40-70	92.55	N.A.	8.60
60-80	31.38	N.A.	2.90
70-80	10.83	N.A.	1.00
80-90	2.55	N.A.	0.20
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	1081.05	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	244.12
10-20	439.55
20-30	214.23
30-40	77.23
40-50	41.82
50-60	30.17
60-70	20.55
70-80	10.83
80-90	2.55
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	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	101	97	107	103	99	96	99	97	94	96	94	92	94	92	90	89
3	104	98	94	90	102	97	93	89	94	91	88	92	89	87	90	87	85	84
4	100	93	88	84	98	92	87	84	90	86	83	88	85	82	86	83	81	80
5	96	88	83	80	94	88	83	79	86	82	79	84	81	78	83	80	77	76
6	92	84	79	75	91	84	79	75	82	78	75	81	77	74	80	76	74	72
7	89	81	76	72	88	80	75	72	79	74	71	78	74	71	77	73	71	69
8	86	77	72	69	84	77	72	69	76	71	68	75	71	68	74	70	68	67
9	83	74	69	66	82	74	69	66	73	69	66	72	68	65	71	68	65	64
10	80	72	67	63	79	71	66	63	70	66	63	70	66	63	69	65	63	62

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UGR TABLE - CORRECTED

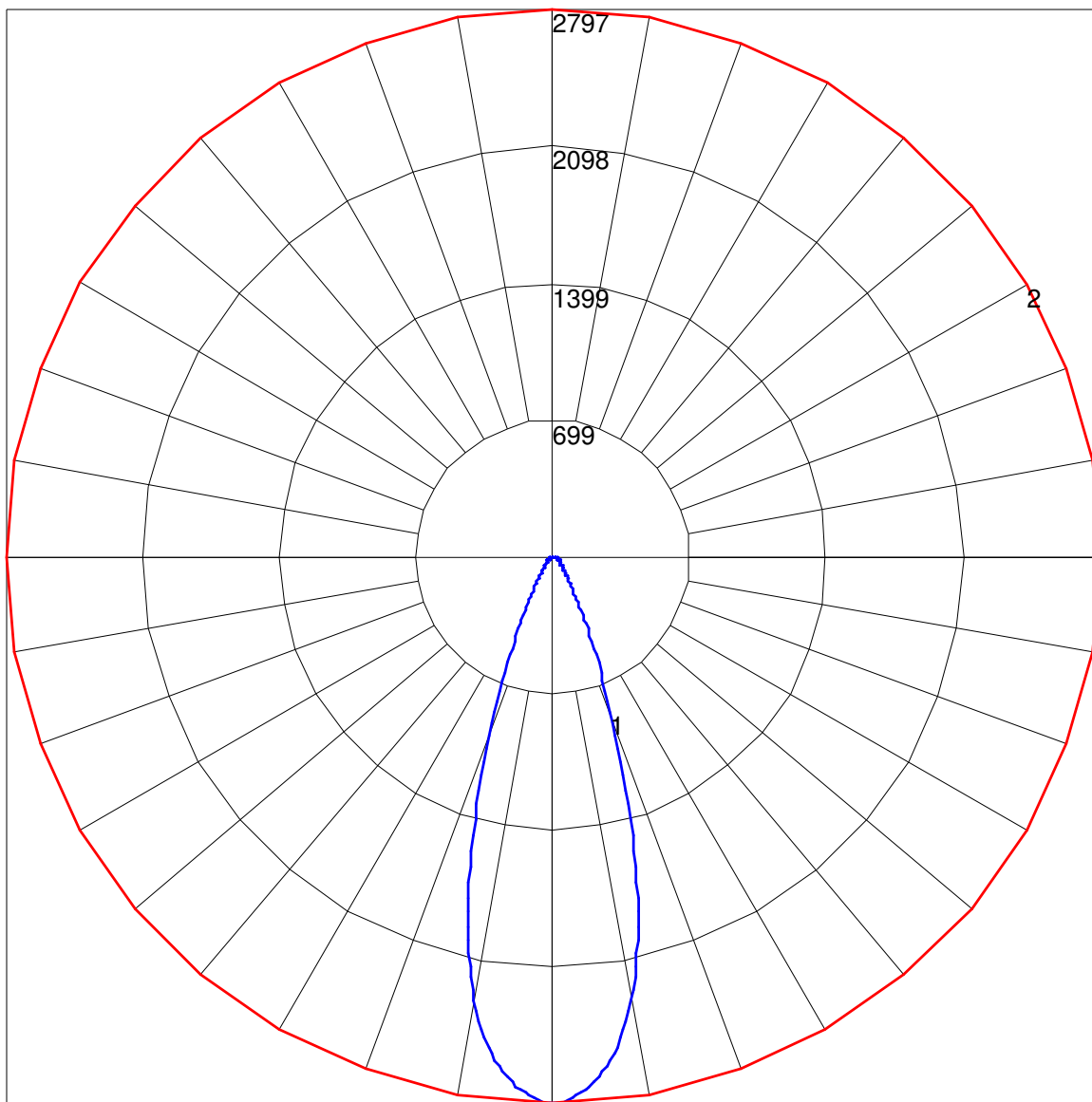
Reflectances

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	12.1	13.2	12.5	13.5	13.8	12.1	13.2	12.5	13.5	13.8
	3H	13.6	14.5	14.0	14.8	15.2	13.6	14.5	14.0	14.8	15.2
	4H	14.1	14.9	14.5	15.3	15.7	14.1	14.9	14.5	15.3	15.7
	6H	14.4	15.2	14.8	15.6	16.0	14.4	15.2	14.8	15.6	16.0
	8H	14.5	15.2	14.9	15.6	16.0	14.5	15.2	14.9	15.6	16.0
	12H	14.5	15.2	15.0	15.6	16.0	14.5	15.2	15.0	15.6	16.0
4H	2H	12.6	13.4	13.0	13.8	14.2	12.6	13.4	13.0	13.8	14.2
	3H	14.2	14.9	14.6	15.3	15.7	14.2	14.9	14.6	15.3	15.7
	4H	14.8	15.5	15.3	15.9	16.3	14.8	15.5	15.3	15.9	16.3
	6H	15.3	15.8	15.8	16.3	16.7	15.3	15.8	15.8	16.3	16.7
	8H	15.4	15.9	15.9	16.3	16.8	15.4	15.9	15.9	16.3	16.8
	12H	15.4	15.9	15.9	16.3	16.8	15.4	15.9	15.9	16.3	16.8
8H	4H	15.0	15.5	15.5	15.9	16.4	15.0	15.5	15.5	15.9	16.4
	6H	15.5	15.9	16.1	16.4	16.9	15.5	15.9	16.1	16.4	16.9
	8H	15.7	16.0	16.2	16.6	17.1	15.7	16.0	16.2	16.6	17.1
	12H	15.8	16.1	16.3	16.6	17.2	15.8	16.1	16.3	16.6	17.2
12H	4H	15.0	15.4	15.5	15.9	16.4	15.0	15.4	15.5	15.9	16.4
	6H	15.6	15.9	16.1	16.4	16.9	15.6	15.9	16.1	16.4	16.9
	8H	15.7	16.0	16.3	16.5	17.1	15.7	16.0	16.3	16.5	17.1

Maximum UGR = 17.2

POLAR GRAPH



Maximum Candela = 2797.103 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.)