



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-935-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] 09-28-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-935-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	1461
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	19.8
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	3581	3581	3581
55	1046	1046	1046
65	374	374	374
75	171	171	171
85	126	126	126

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CANDELA TABULATION

	<u>0</u>
0.0	3064.131
0.5	3069.423
1.0	3071.691
1.5	3070.179
2.0	3064.887
2.5	3057.327
3.0	3041.073
3.5	3022.172
4.0	2995.712
4.5	2960.935
5.0	2916.708
5.5	2863.031
6.0	2808.220
6.5	2743.581
7.0	2675.161
7.5	2602.962
8.0	2528.494
8.5	2454.027
9.0	2379.937
9.5	2306.982
10.0	2236.672
10.5	2170.143
11.0	2106.637
11.5	2047.668
12.0	1993.613
12.5	1942.582
13.0	1896.087
13.5	1853.372
14.0	1814.437
14.5	1777.393
15.0	1742.994
15.5	1710.485
16.0	1681.379
16.5	1655.674
17.0	1631.860
17.5	1609.557
18.0	1588.389
18.5	1567.220
19.0	1547.564
19.5	1528.664
20.0	1511.275
20.5	1494.265
21.0	1476.876
21.5	1459.110
22.0	1439.454
22.5	1418.285
23.0	1395.227
23.5	1370.278
24.0	1342.684
24.5	1311.687
25.0	1277.666
25.5	1239.866
26.0	1197.529
26.5	1149.900

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CANDELA TABULATION - (Cont.)

27.0	1097.735
27.5	1041.033
28.0	980.552
28.5	915.535
29.0	845.225
29.5	772.648
30.0	698.180
30.5	623.335
31.0	549.623
31.5	478.936
32.0	410.894
32.5	348.183
33.0	290.915
33.5	238.788
34.0	194.220
34.5	156.835
35.0	126.859
35.5	103.763
36.0	86.224
36.5	73.485
37.0	65.206
37.5	59.952
38.0	56.210
38.5	52.883
39.0	49.897
39.5	47.175
40.0	44.605
40.5	42.223
41.0	39.993
41.5	37.876
42.0	35.949
42.5	34.059
43.0	32.282
43.5	30.581
44.0	28.955
44.5	27.443
45.0	26.007
45.5	24.608
46.0	23.247
46.5	21.887
47.0	20.564
47.5	19.241
48.0	17.955
48.5	16.784
49.0	15.650
49.5	14.515
50.0	13.419
50.5	12.323
51.0	11.416
51.5	10.546
52.0	9.753
52.5	9.034
53.0	8.354
53.5	7.749
54.0	7.144
54.5	6.653

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CANDELA TABULATION - (Cont.)

55.0	6.162
55.5	5.708
56.0	5.368
56.5	4.952
57.0	4.612
57.5	4.309
58.0	4.045
58.5	3.780
59.0	3.515
59.5	3.326
60.0	3.100
60.5	2.911
61.0	2.722
61.5	2.533
62.0	2.419
62.5	2.230
63.0	2.117
63.5	1.966
64.0	1.852
64.5	1.739
65.0	1.625
65.5	1.550
66.0	1.436
66.5	1.399
67.0	1.285
67.5	1.210
68.0	1.134
68.5	1.058
69.0	0.983
69.5	0.945
70.0	0.907
70.5	0.832
71.0	0.756
71.5	0.756
72.0	0.680
72.5	0.643
73.0	0.567
73.5	0.529
74.0	0.491
74.5	0.491
75.0	0.454
75.5	0.416
76.0	0.416
76.5	0.378
77.0	0.340
77.5	0.340
78.0	0.302
78.5	0.265
79.0	0.265
79.5	0.265
80.0	0.227
80.5	0.189
81.0	0.227
81.5	0.189
82.0	0.189
82.5	0.189

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CANDELA TABULATION - (Cont.)

83.0	0.151
83.5	0.151
84.0	0.113
84.5	0.113
85.0	0.113
85.5	0.113
86.0	0.113
86.5	0.076
87.0	0.076
87.5	0.076
88.0	0.076
88.5	0.076
89.0	0.076
89.5	0.076
90.0	0.038
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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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	750.72	N.A.	51.40
0-30	1302.54	N.A.	89.10
0-40	1432.18	N.A.	98.00
0-60	1458.76	N.A.	99.80
0-80	1461.00	N.A.	100.00
0-90	1461.13	N.A.	100.00
10-90	1206.27	N.A.	82.60
20-40	681.45	N.A.	46.60
20-50	701.98	N.A.	48.00
40-70	28.31	N.A.	1.90
60-80	2.24	N.A.	0.20
70-80	0.51	N.A.	0.00
80-90	0.14	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	1461.13	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	254.87
10-20	495.85
20-30	551.81
30-40	129.64
40-50	20.52
50-60	6.06
60-70	1.73
70-80	0.51
80-90	0.14
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	98	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	89	87	85
4	101	94	89	86	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	84	80	87	82	79	85	81	79	83	80	78	77
6	92	85	80	76	91	84	79	76	83	78	75	81	77	75	80	77	74	73
7	89	81	75	72	87	80	75	72	79	74	71	78	74	71	77	73	71	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	68	65	71	67	64	71	67	64	63
10	79	70	65	62	78	70	65	62	69	65	62	68	64	61	68	64	61	60

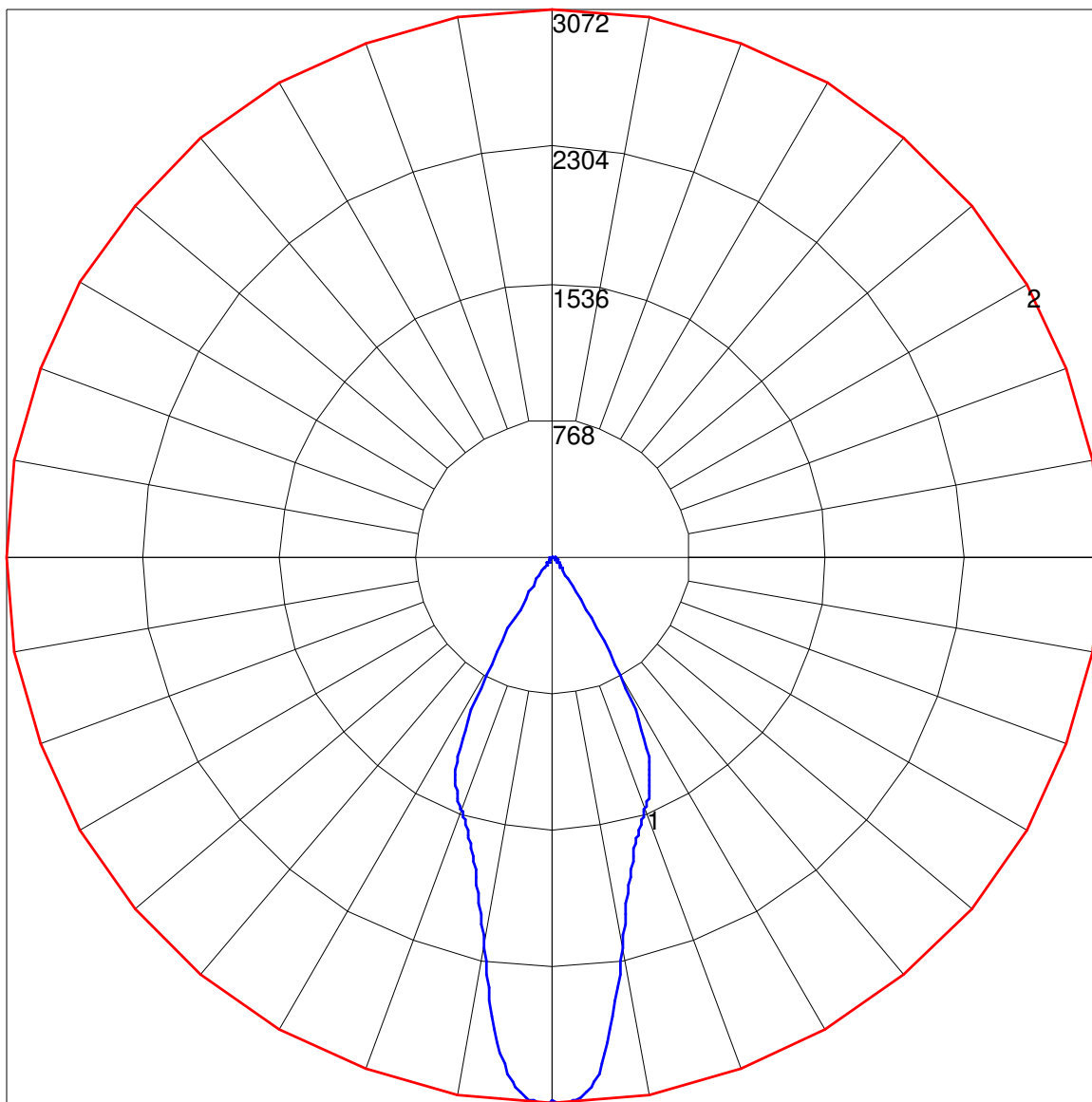
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UGR TABLE - CORRECTED

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					UGR Viewed Endwise				
X=2H	Y=2H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	3H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	4H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	6H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	8H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	12H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
4H	2H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	3H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	4H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	6H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	8H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	12H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
8H	4H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	6H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	8H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	12H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
12H	4H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	6H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
	8H	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4

Maximum UGR = 1.4

POLAR GRAPH



Maximum Candela = 3071.691 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.)