



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L10-840-DIM-UNV-RW-OF-CS\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST]GEN FROM 12316380.12

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 03-28-2024

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L10-840-DIM-UNV-RW-OF-CS

[LUMINAIRE] Black formed aluminum housing, white reflector, clear glas

[MORE] s patterned lens 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	667
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	74
Total Luminaire Watts	9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.98
Spacing Criterion (90-270)	0.98
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	15423	15423	15423
55	12453	12453	12453
65	8056	8056	8056
75	4492	4492	4492
85	2308	2308	2308

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CANDELA TABULATION

	<u>0</u>
0.0	535.598
0.5	535.598
1.0	535.094
1.5	534.086
2.0	533.078
2.5	532.071
3.0	530.559
3.5	529.048
4.0	527.536
4.5	525.521
5.0	524.009
5.5	521.994
6.0	519.978
6.5	517.963
7.0	515.947
7.5	513.932
8.0	511.917
8.5	509.397
9.0	507.382
9.5	505.366
10.0	503.452
10.5	501.386
11.0	499.270
11.5	497.204
12.0	495.239
12.5	493.274
13.0	491.309
13.5	489.293
14.0	487.278
14.5	485.263
15.0	483.197
15.5	481.081
16.0	478.864
16.5	476.647
17.0	474.379
17.5	471.961
18.0	469.391
18.5	466.620
19.0	463.950
19.5	461.078
20.0	457.954
20.5	454.376
21.0	450.245
21.5	445.760
22.0	440.621
22.5	434.928
23.0	428.478
23.5	421.223
24.0	413.262
24.5	404.243
25.0	394.166
25.5	383.030
26.0	370.988
26.5	358.190

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	344.738
<b>27.5</b>	331.083
<b>28.0</b>	316.774
<b>28.5</b>	302.615
<b>29.0</b>	288.507
<b>29.5</b>	274.399
<b>30.0</b>	260.543
<b>30.5</b>	246.939
<b>31.0</b>	234.091
<b>31.5</b>	221.646
<b>32.0</b>	209.906
<b>32.5</b>	198.972
<b>33.0</b>	188.845
<b>33.5</b>	179.725
<b>34.0</b>	171.512
<b>34.5</b>	164.357
<b>35.0</b>	158.059
<b>35.5</b>	152.718
<b>36.0</b>	148.033
<b>36.5</b>	144.102
<b>37.0</b>	140.626
<b>37.5</b>	137.653
<b>38.0</b>	134.932
<b>38.5</b>	132.514
<b>39.0</b>	130.347
<b>39.5</b>	128.382
<b>40.0</b>	126.619
<b>40.5</b>	124.956
<b>41.0</b>	123.344
<b>41.5</b>	121.882
<b>42.0</b>	120.421
<b>42.5</b>	119.061
<b>43.0</b>	117.701
<b>43.5</b>	116.290
<b>44.0</b>	114.879
<b>44.5</b>	113.468
<b>45.0</b>	112.007
<b>45.5</b>	110.495
<b>46.0</b>	108.933
<b>46.5</b>	107.321
<b>47.0</b>	105.658
<b>47.5</b>	103.945
<b>48.0</b>	102.232
<b>48.5</b>	100.418
<b>49.0</b>	98.554
<b>49.5</b>	96.589
<b>50.0</b>	94.624
<b>50.5</b>	92.609
<b>51.0</b>	90.492
<b>51.5</b>	88.427
<b>52.0</b>	86.310
<b>52.5</b>	84.194
<b>53.0</b>	82.179
<b>53.5</b>	79.962
<b>54.0</b>	77.745
<b>54.5</b>	75.528

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PHOTOMETRIC FILENAME : 4DR-TL-L10-840-DIM-UNV-RW-OF-CS\_.IES

CANDELA TABULATION - (Cont.)

55.0	73.361
55.5	71.144
56.0	68.978
56.5	66.862
57.0	64.745
57.5	62.629
58.0	60.563
58.5	58.548
59.0	56.533
59.5	54.567
60.0	52.602
60.5	50.688
61.0	48.824
61.5	46.959
62.0	45.196
62.5	43.382
63.0	41.669
63.5	39.905
64.0	38.243
64.5	36.580
65.0	34.968
65.5	33.355
66.0	31.793
66.5	30.282
67.0	28.820
67.5	27.359
68.0	25.949
68.5	24.538
69.0	23.177
69.5	21.867
70.0	20.658
70.5	19.499
71.0	18.441
71.5	17.433
72.0	16.476
72.5	15.569
73.0	14.713
73.5	13.957
74.0	13.201
74.5	12.546
75.0	11.941
75.5	11.387
76.0	10.782
76.5	10.228
77.0	9.674
77.5	9.120
78.0	8.616
78.5	8.062
79.0	7.558
79.5	7.054
80.0	6.550
80.5	6.046
81.0	5.593
81.5	5.139
82.0	4.635
82.5	4.232

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CANDELA TABULATION - (Cont.)

83.0	3.779
83.5	3.325
84.0	2.922
84.5	2.469
85.0	2.066
85.5	1.713
86.0	1.360
86.5	1.108
87.0	0.857
87.5	0.655
88.0	0.453
88.5	0.302
89.0	0.151
89.5	0.050
90.0	0.000
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

IES INDOOR REPORT  
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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
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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
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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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PHOTOMETRIC FILENAME : 4DR-TL-L10-840-DIM-UNV-RW-OF-CS\_.IES

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
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148.5	0.000
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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
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156.0	0.000
156.5	0.000
157.0	0.000
157.5	0.000
158.0	0.000
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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	185.39	N.A.	27.80
0-30	358.75	N.A.	53.80
0-40	464.40	N.A.	69.60
0-60	615.86	N.A.	92.40
0-80	664.05	N.A.	99.60
0-90	666.78	N.A.	100.00
10-90	617.45	N.A.	92.60
20-40	279.01	N.A.	41.80
20-50	364.96	N.A.	54.70
40-70	186.49	N.A.	28.00
60-80	48.19	N.A.	7.20
70-80	13.16	N.A.	2.00
80-90	2.72	N.A.	0.40
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	666.78	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	49.33
10-20	136.06
20-30	173.36
30-40	105.65
40-50	85.96
50-60	65.51
60-70	35.03
70-80	13.16
80-90	2.72
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	112	108	105	102	109	106	103	101	102	100	97	98	96	94	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65
5	85	75	68	63	84	74	67	62	72	66	62	70	65	61	69	64	61	59
6	80	69	62	57	78	68	62	57	67	61	56	65	60	56	64	59	55	54
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46
9	67	56	49	44	66	56	49	44	54	48	44	53	48	44	53	48	44	42
10	64	53	46	41	63	52	46	41	51	45	41	50	45	41	50	45	41	39

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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	18.2	19.5	18.5	19.8	20.1	18.2	19.5	18.5	19.8	20.1
	3H	18.9	20.1	19.3	20.4	20.8	18.9	20.1	19.3	20.4	20.8
	4H	19.1	20.2	19.5	20.5	20.9	19.1	20.2	19.5	20.5	20.9
	6H	19.2	20.2	19.6	20.6	21.0	19.2	20.2	19.6	20.6	21.0
	8H	19.2	20.2	19.6	20.6	21.0	19.2	20.2	19.6	20.6	21.0
	12H	19.2	20.1	19.6	20.5	20.9	19.2	20.1	19.6	20.5	20.9

### UGR Viewed Endwise

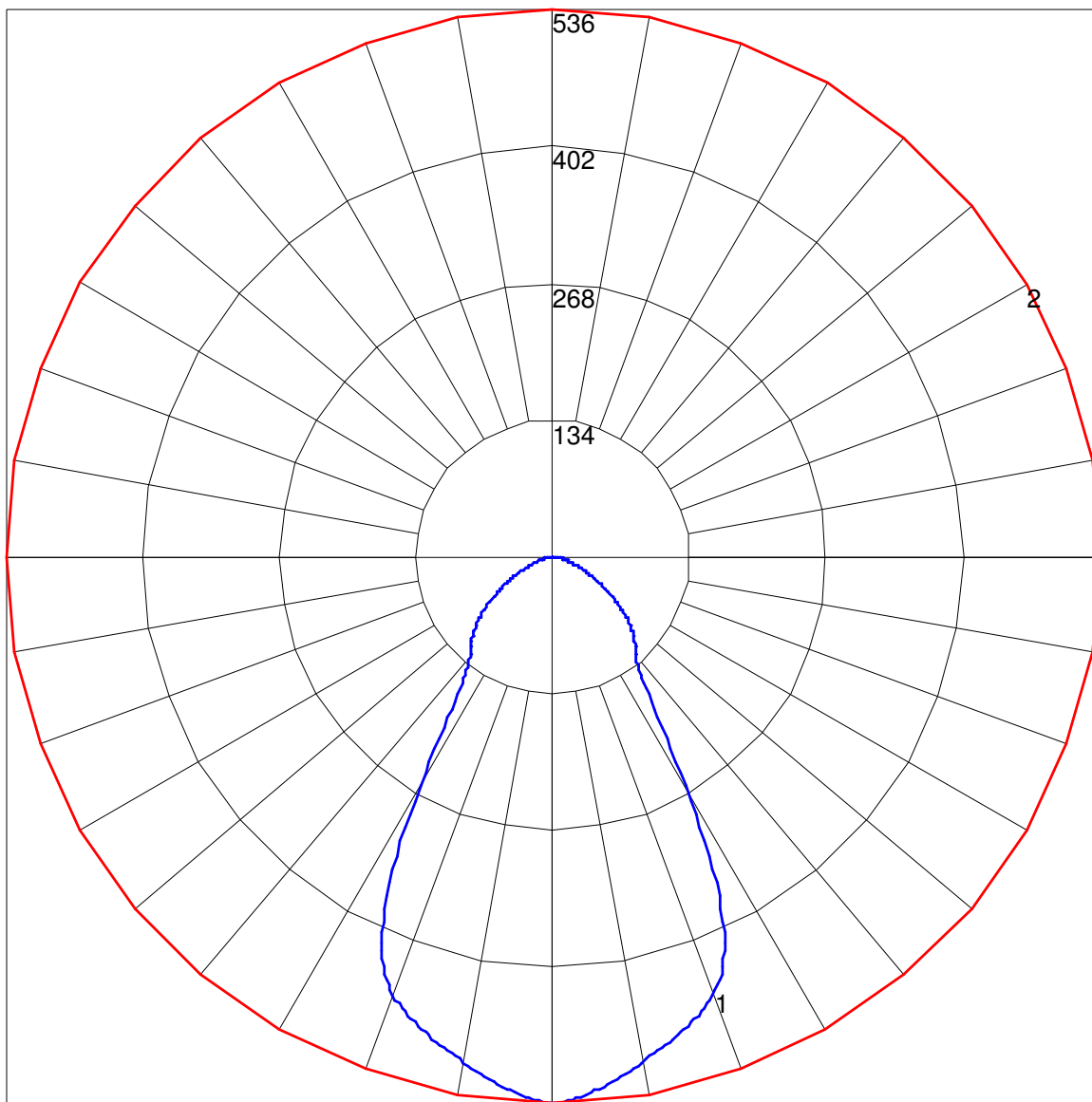
4H	2H	18.4	19.5	18.8	19.9	20.3	18.4	19.5	18.8	19.9	20.3
	3H	19.3	20.2	19.7	20.6	21.0	19.3	20.2	19.7	20.6	21.0
	4H	19.6	20.4	20.0	20.8	21.2	19.6	20.4	20.0	20.8	21.2
	6H	19.7	20.4	20.2	20.9	21.3	19.7	20.4	20.2	20.9	21.3
	8H	19.8	20.4	20.2	20.9	21.3	19.8	20.4	20.2	20.9	21.3
	12H	19.8	20.3	20.3	20.8	21.3	19.8	20.3	20.3	20.8	21.3

8H	4H	19.6	20.2	20.1	20.7	21.2	19.6	20.2	20.1	20.7	21.2
	6H	19.8	20.4	20.3	20.9	21.3	19.8	20.4	20.3	20.9	21.3
	8H	19.9	20.4	20.4	20.9	21.4	19.9	20.4	20.4	20.9	21.4
	12H	19.9	20.3	20.4	20.8	21.4	19.9	20.3	20.4	20.8	21.4

12H	4H	19.6	20.1	20.1	20.6	21.1	19.6	20.1	20.1	20.6	21.1
	6H	19.8	20.3	20.3	20.8	21.3	19.8	20.3	20.3	20.8	21.3
	8H	19.9	20.3	20.4	20.8	21.4	19.9	20.3	20.4	20.8	21.4

Maximum UGR = 21.4

POLAR GRAPH



Maximum Candela = 535.598 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.)