



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L60-835-DIM-UNV-OM-OF-CS\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.04

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 01/17/2024

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L60-835-DIM-UNV-OM-OF-CS

[LUMINAIRE] ROUND 4.5 INCH RECESSED LED DOWNLIGHT

[MORE] WITH OPEN SPECULAR REFLECTOR MEDIUM DIST.

[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	6026
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
Total Luminaire Watts	57.6
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.76
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	14962	14962	14962
55	4343	4343	4343
65	1526	1526	1526
75	679	679	679
85	336	336	336

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CANDELA TABULATION

	<u>0</u>
0.0	12193.105
0.5	12202.135
1.0	12238.254
1.5	12271.363
2.0	12346.610
2.5	12394.769
3.0	12403.798
3.5	12406.808
4.0	12337.580
4.5	12244.274
5.0	12066.689
5.5	11840.947
6.0	11588.115
6.5	11305.185
7.0	10998.175
7.5	10679.126
8.0	10351.046
8.5	10025.977
9.0	9706.928
9.5	9396.908
10.0	9101.938
10.5	8825.027
11.0	8566.176
11.5	8322.374
12.0	8090.611
12.5	7873.899
13.0	7669.225
13.5	7473.582
14.0	7286.968
14.5	7115.404
15.0	6958.889
15.5	6820.434
16.0	6706.057
16.5	6603.721
17.0	6507.404
17.5	6423.127
18.0	6347.879
18.5	6284.671
19.0	6239.523
19.5	6200.394
20.0	6167.285
20.5	6128.157
21.0	6089.028
21.5	6046.889
22.0	6001.741
22.5	5944.553
23.0	5875.325
23.5	5791.048
24.0	5685.701
24.5	5547.246
25.0	5387.721
25.5	5219.167
26.0	5053.622
26.5	4870.018

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CANDELA TABULATION - (Cont.)

27.0	4677.385
27.5	4457.662
28.0	4207.840
28.5	3933.939
29.0	3647.999
29.5	3356.039
30.0	3046.019
30.5	2724.863
31.0	2388.657
31.5	2053.655
32.0	1731.596
32.5	1430.305
33.0	1168.142
33.5	944.507
34.0	756.087
34.5	599.572
35.0	472.554
35.5	376.839
36.0	315.438
36.5	283.232
37.0	263.968
37.5	247.113
38.0	232.364
38.5	218.820
39.0	206.479
39.5	195.343
40.0	184.808
40.5	174.875
41.0	165.545
41.5	157.117
42.0	148.990
42.5	141.465
43.0	133.941
43.5	127.319
44.0	120.697
44.5	114.376
45.0	108.657
45.5	102.939
46.0	97.220
46.5	91.802
47.0	86.083
47.5	80.665
48.0	75.548
48.5	70.733
49.0	65.917
49.5	61.101
50.0	56.285
50.5	51.770
51.0	47.857
51.5	44.246
52.0	40.634
52.5	37.624
53.0	34.614
53.5	32.206
54.0	29.798
54.5	27.390

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**CANDELA TABULATION - (Cont.)**

55.0	25.584
55.5	23.778
56.0	21.972
56.5	20.467
57.0	18.962
57.5	17.758
58.0	16.554
58.5	15.350
59.0	14.448
59.5	13.545
60.0	12.642
60.5	11.739
61.0	11.137
61.5	10.234
62.0	9.632
62.5	9.030
63.0	8.428
63.5	8.127
64.0	7.525
64.5	6.923
65.0	6.622
65.5	6.321
66.0	5.719
66.5	5.418
67.0	5.117
67.5	4.816
68.0	4.515
68.5	4.214
69.0	3.913
69.5	3.612
70.0	3.311
70.5	3.311
71.0	3.010
71.5	2.709
72.0	2.408
72.5	2.408
73.0	2.107
73.5	2.107
74.0	1.806
74.5	1.806
75.0	1.806
75.5	1.505
76.0	1.505
76.5	1.204
77.0	1.204
77.5	1.204
78.0	0.903
78.5	0.903
79.0	0.903
79.5	0.903
80.0	0.602
80.5	0.602
81.0	0.602
81.5	0.602
82.0	0.602
82.5	0.602

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CANDELA TABULATION - (Cont.)

83.0	0.602
83.5	0.301
84.0	0.301
84.5	0.301
85.0	0.301
85.5	0.301
86.0	0.301
86.5	0.301
87.0	0.301
87.5	0.301
88.0	0.000
88.5	0.000
89.0	0.000
89.5	0.000
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
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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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	3039.53	N.A.	50.40
0-30	5368.52	N.A.	89.10
0-40	5906.14	N.A.	98.00
0-60	6016.84	N.A.	99.80
0-80	6025.65	N.A.	100.00
0-90	6026.01	N.A.	100.00
10-90	4981.94	N.A.	82.70
20-40	2866.61	N.A.	47.60
20-50	2952.16	N.A.	49.00
40-70	117.63	N.A.	2.00
60-80	8.81	N.A.	0.10
70-80	1.88	N.A.	0.00
80-90	0.36	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	6026.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	1044.08
10-20	1995.45
20-30	2328.99
30-40	537.62
40-50	85.55
50-60	25.14
60-70	6.94
70-80	1.88
80-90	0.36
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	109	107	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	109	105	102	99	107	103	100	97	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	88	87	85
4	100	94	89	85	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	83	80	86	82	79	85	81	78	83	80	78	76
6	92	85	79	76	91	84	79	75	82	78	75	81	77	74	80	77	74	73
7	89	80	75	72	87	80	75	71	79	74	71	78	74	71	76	73	70	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	67	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	64	61	68	64	61	67	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

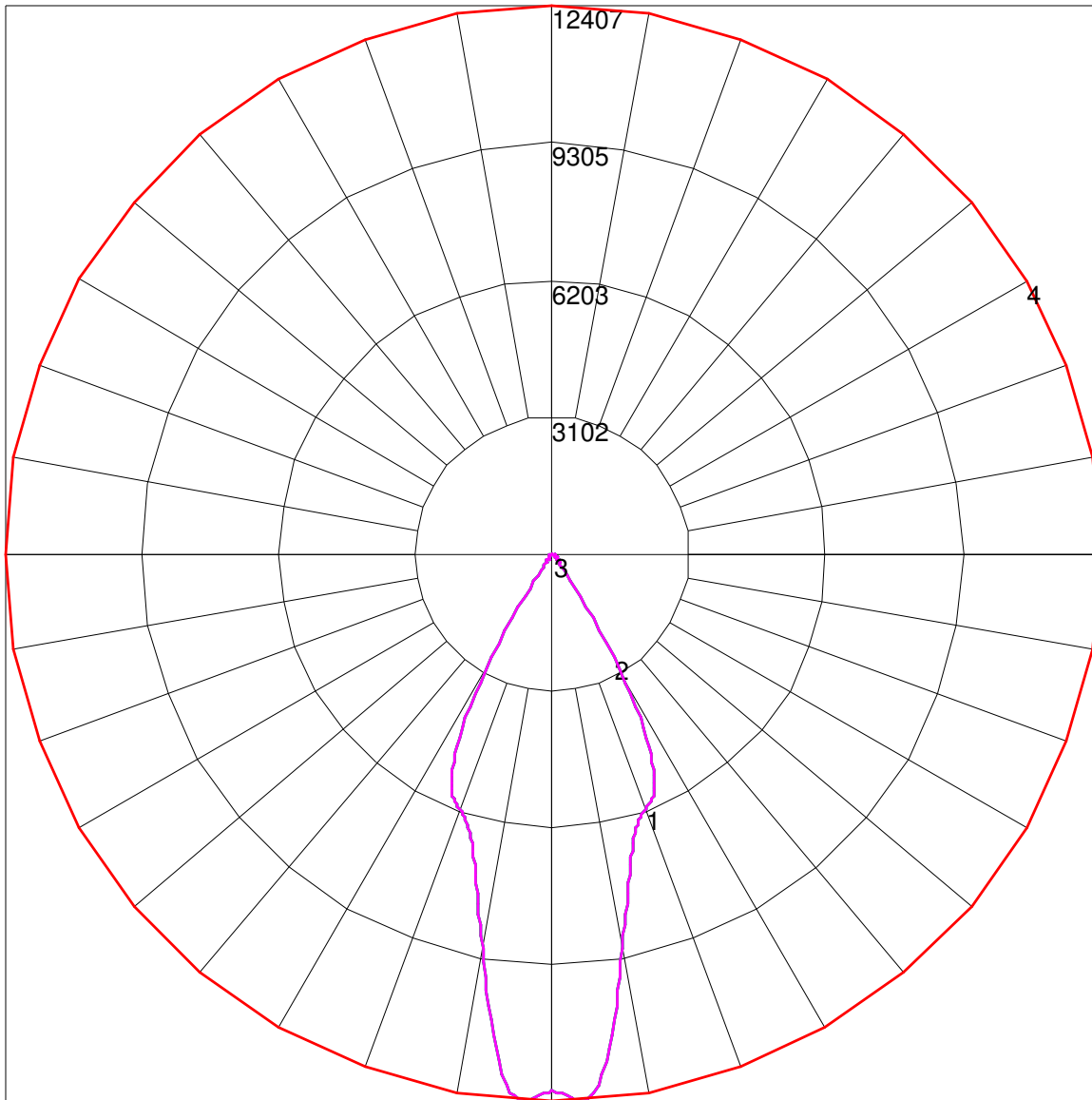
X=2H	Y=2H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	3H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	4H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	6H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	8H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	12H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3

### UGR Viewed Endwise

4H	2H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	3H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	4H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	6H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	8H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	12H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
8H	4H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	6H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	8H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	12H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
12H	4H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	6H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
	8H	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3

Maximum UGR = 6.3

POLAR GRAPH



Maximum Candela = 12406.808 Located At Horizontal Angle = 0, Vertical Angle = 3.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (5 - 185)  
# 3 - Vertical Plane Through Horizontal Angles (10 - 190)  
# 4 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)