



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L15-830-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] 07-08-2020  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.64836  
 [LUMCAT] 4DR-TL-L15-830-DIM-UNV-OM-OF-CS  
 [LUMINAIRE] Black formed aluminum housing, specular 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	1442
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	104
Total Luminaire Watts	13.9
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	3579	3579	3579
55	1039	1039	1039
65	365	365	365
75	163	163	163
85	80	80	80

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CANDELA TABULATION

	<u>0</u>
0.0	2917.003
0.5	2919.163
1.0	2927.804
1.5	2935.725
2.0	2953.727
2.5	2965.248
3.0	2967.408
3.5	2968.128
4.0	2951.566
4.5	2929.244
5.0	2886.760
5.5	2832.755
6.0	2772.269
6.5	2704.582
7.0	2631.135
7.5	2554.808
8.0	2476.320
8.5	2398.553
9.0	2322.225
9.5	2248.058
10.0	2177.491
10.5	2111.245
11.0	2049.319
11.5	1990.993
12.0	1935.548
12.5	1883.703
13.0	1834.738
13.5	1787.934
14.0	1743.289
14.5	1702.245
15.0	1664.802
15.5	1631.678
16.0	1604.316
16.5	1579.833
17.0	1556.791
17.5	1536.629
18.0	1518.627
18.5	1503.506
19.0	1492.705
19.5	1483.344
20.0	1475.423
20.5	1466.062
21.0	1456.701
21.5	1446.620
22.0	1435.819
22.5	1422.138
23.0	1405.576
23.5	1385.414
24.0	1360.212
24.5	1327.089
25.0	1288.925
25.5	1248.601
26.0	1208.997
26.5	1165.073

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**CANDELA TABULATION - (Cont.)**

27.0	1118.989
27.5	1066.424
28.0	1006.658
28.5	941.131
29.0	872.725
29.5	802.878
30.0	728.711
30.5	651.879
31.0	571.447
31.5	491.304
32.0	414.256
32.5	342.177
33.0	279.459
33.5	225.958
34.0	180.882
34.5	143.438
35.0	113.051
35.5	90.153
36.0	75.463
36.5	67.759
37.0	63.150
37.5	59.118
38.0	55.589
38.5	52.349
39.0	49.397
39.5	46.733
40.0	44.212
40.5	41.836
41.0	39.604
41.5	37.588
42.0	35.643
42.5	33.843
43.0	32.043
43.5	30.459
44.0	28.875
44.5	27.363
45.0	25.995
45.5	24.626
46.0	23.258
46.5	21.962
47.0	20.594
47.5	19.298
48.0	18.074
48.5	16.922
49.0	15.770
49.5	14.617
50.0	13.465
50.5	12.385
51.0	11.449
51.5	10.585
52.0	9.721
52.5	9.001
53.0	8.281
53.5	7.705
54.0	7.129
54.5	6.553

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**CANDELA TABULATION - (Cont.)**

55.0	6.121
55.5	5.689
56.0	5.257
56.5	4.896
57.0	4.536
57.5	4.248
58.0	3.960
58.5	3.672
59.0	3.456
59.5	3.240
60.0	3.024
60.5	2.808
61.0	2.664
61.5	2.448
62.0	2.304
62.5	2.160
63.0	2.016
63.5	1.944
64.0	1.800
64.5	1.656
65.0	1.584
65.5	1.512
66.0	1.368
66.5	1.296
67.0	1.224
67.5	1.152
68.0	1.080
68.5	1.008
69.0	0.936
69.5	0.864
70.0	0.792
70.5	0.792
71.0	0.720
71.5	0.648
72.0	0.576
72.5	0.576
73.0	0.504
73.5	0.504
74.0	0.432
74.5	0.432
75.0	0.432
75.5	0.360
76.0	0.360
76.5	0.288
77.0	0.288
77.5	0.288
78.0	0.216
78.5	0.216
79.0	0.216
79.5	0.216
80.0	0.144
80.5	0.144
81.0	0.144
81.5	0.144
82.0	0.144
82.5	0.144

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CANDELA TABULATION - (Cont.)

83.0	0.144
83.5	0.072
84.0	0.072
84.5	0.072
85.0	0.072
85.5	0.072
86.0	0.072
86.5	0.072
87.0	0.072
87.5	0.072
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

IES INDOOR REPORT  
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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

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-TL-L15-830-DIM-UNV-OM-OF-CS\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	727.16	N.A.	50.40
0-30	1284.33	N.A.	89.10
0-40	1412.95	N.A.	98.00
0-60	1439.43	N.A.	99.80
0-80	1441.54	N.A.	100.00
0-90	1441.63	N.A.	100.00
10-90	1191.85	N.A.	82.70
20-40	685.79	N.A.	47.60
20-50	706.26	N.A.	49.00
40-70	28.14	N.A.	2.00
60-80	2.11	N.A.	0.10
70-80	0.45	N.A.	0.00
80-90	0.09	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	1441.63	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	249.78
10-20	477.38
20-30	557.17
30-40	128.62
40-50	20.47
50-60	6.02
60-70	1.66
70-80	0.45
80-90	0.09
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	99	98	97	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	76	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

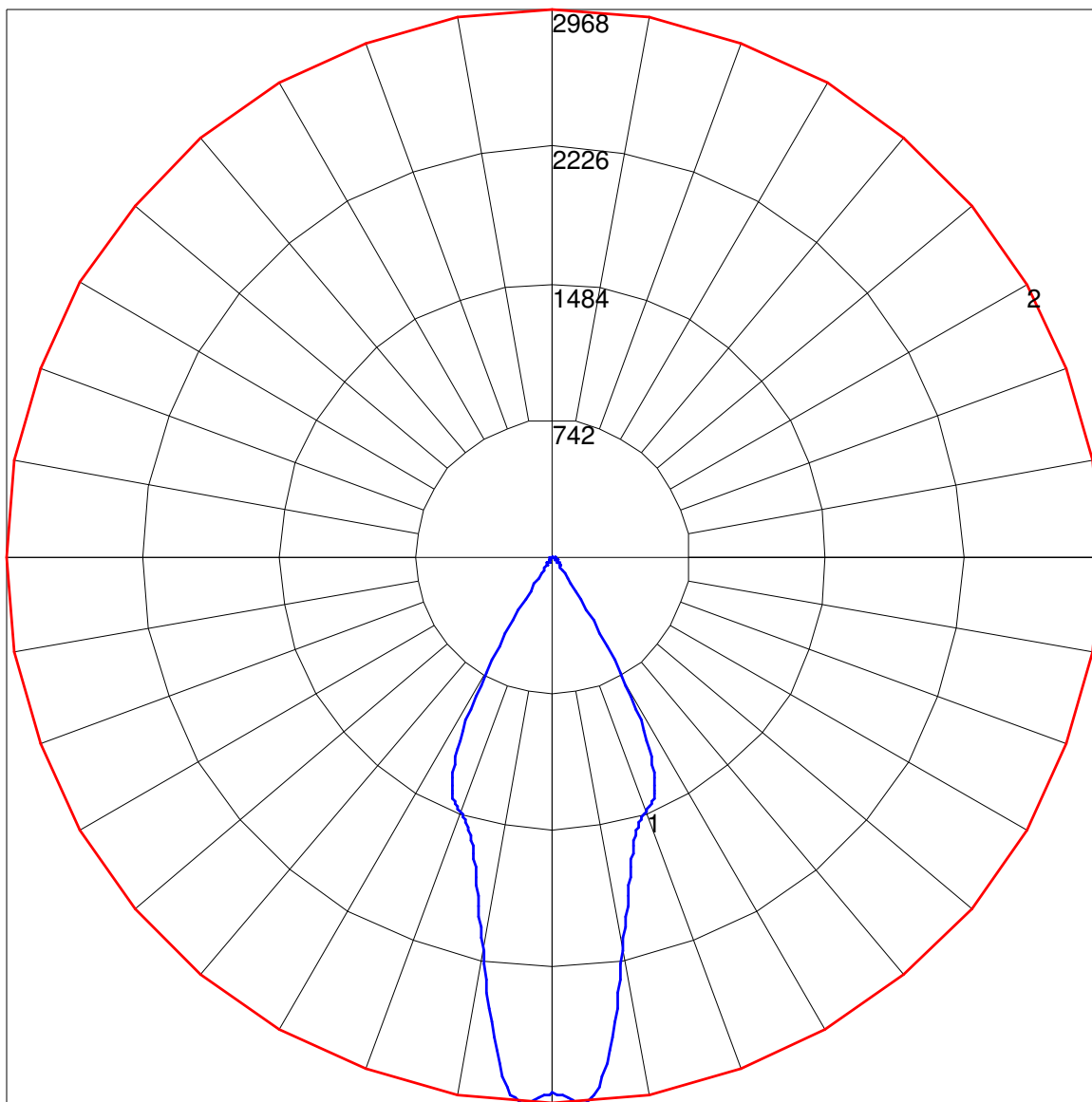
### Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	3H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	4H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	6H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	8H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	12H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
4H	2H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	3H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	4H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	6H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	8H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	12H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
8H	4H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	6H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	8H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	12H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
12H	4H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	6H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
	8H	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3

Maximum UGR = 1.3

POLAR GRAPH



Maximum Candela = 2968.128 Located At Horizontal Angle = 0, Vertical Angle = 3.5  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)