



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OM-OF-SG_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.04

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 11/22/2022

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L20-835-DIM-UNV-OM-OF-SG

[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	1841
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
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)	0.76
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	4571	4571	4571
55	1327	1327	1327
65	466	466	466
75	208	208	208
85	103	103	103

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CANDELA TABULATION

	<u>0</u>
0.0	3725.220
0.5	3727.979
1.0	3739.014
1.5	3749.129
2.0	3772.119
2.5	3786.832
3.0	3789.591
3.5	3790.510
4.0	3769.360
4.5	3740.853
5.0	3686.598
5.5	3617.629
6.0	3540.385
6.5	3453.944
7.0	3360.147
7.5	3262.671
8.0	3162.437
8.5	3063.122
9.0	2965.647
9.5	2870.930
10.0	2780.811
10.5	2696.210
11.0	2617.126
11.5	2542.640
12.0	2471.832
12.5	2405.622
13.0	2343.091
13.5	2283.318
14.0	2226.304
14.5	2173.888
15.0	2126.070
15.5	2083.769
16.0	2048.825
16.5	2017.559
17.0	1988.133
17.5	1962.385
18.0	1939.395
18.5	1920.084
19.0	1906.290
19.5	1894.336
20.0	1884.220
20.5	1872.266
21.0	1860.311
21.5	1847.437
22.0	1833.643
22.5	1816.171
23.0	1795.021
23.5	1769.273
24.0	1737.087
24.5	1694.787
25.0	1646.049
25.5	1594.552
26.0	1543.975
26.5	1487.881

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CANDELA TABULATION - (Cont.)

27.0	1429.028
27.5	1361.899
28.0	1285.573
28.5	1201.892
29.0	1114.531
29.5	1025.332
30.0	930.615
30.5	832.496
31.0	729.779
31.5	627.430
32.0	529.035
32.5	436.985
33.0	356.889
33.5	288.564
34.0	230.999
34.5	183.180
35.0	144.374
35.5	115.131
36.0	96.372
36.5	86.533
37.0	80.647
37.5	75.498
38.0	70.992
38.5	66.853
39.0	63.083
39.5	59.681
40.0	56.462
40.5	53.428
41.0	50.577
41.5	48.002
42.0	45.519
42.5	43.220
43.0	40.921
43.5	38.898
44.0	36.875
44.5	34.944
45.0	33.197
45.5	31.450
46.0	29.702
46.5	28.047
47.0	26.300
47.5	24.645
48.0	23.081
48.5	21.610
49.0	20.139
49.5	18.667
50.0	17.196
50.5	15.817
51.0	14.621
51.5	13.518
52.0	12.414
52.5	11.495
53.0	10.575
53.5	9.840
54.0	9.104
54.5	8.368

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CANDELA TABULATION - (Cont.)

55.0	7.816
55.5	7.265
56.0	6.713
56.5	6.253
57.0	5.793
57.5	5.426
58.0	5.058
58.5	4.690
59.0	4.414
59.5	4.138
60.0	3.862
60.5	3.586
61.0	3.402
61.5	3.127
62.0	2.943
62.5	2.759
63.0	2.575
63.5	2.483
64.0	2.299
64.5	2.115
65.0	2.023
65.5	1.931
66.0	1.747
66.5	1.655
67.0	1.563
67.5	1.471
68.0	1.379
68.5	1.287
69.0	1.195
69.5	1.103
70.0	1.012
70.5	1.012
71.0	0.920
71.5	0.828
72.0	0.736
72.5	0.736
73.0	0.644
73.5	0.644
74.0	0.552
74.5	0.552
75.0	0.552
75.5	0.460
76.0	0.460
76.5	0.368
77.0	0.368
77.5	0.368
78.0	0.276
78.5	0.276
79.0	0.276
79.5	0.276
80.0	0.184
80.5	0.184
81.0	0.184
81.5	0.184
82.0	0.184
82.5	0.184

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CANDELA TABULATION - (Cont.)

83.0	0.184
83.5	0.092
84.0	0.092
84.5	0.092
85.0	0.092
85.5	0.092
86.0	0.092
86.5	0.092
87.0	0.092
87.5	0.092
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

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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	928.63	N.A.	50.40
0-30	1640.18	N.A.	89.10
0-40	1804.44	N.A.	98.00
0-60	1838.26	N.A.	99.80
0-80	1840.95	N.A.	100.00
0-90	1841.06	N.A.	100.00
10-90	1522.07	N.A.	82.70
20-40	875.80	N.A.	47.60
20-50	901.94	N.A.	49.00
40-70	35.94	N.A.	2.00
60-80	2.69	N.A.	0.10
70-80	0.57	N.A.	0.00
80-90	0.11	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	1841.06	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	318.98
10-20	609.65
20-30	711.55
30-40	164.25
40-50	26.14
50-60	7.68
60-70	2.12
70-80	0.57
80-90	0.11
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	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

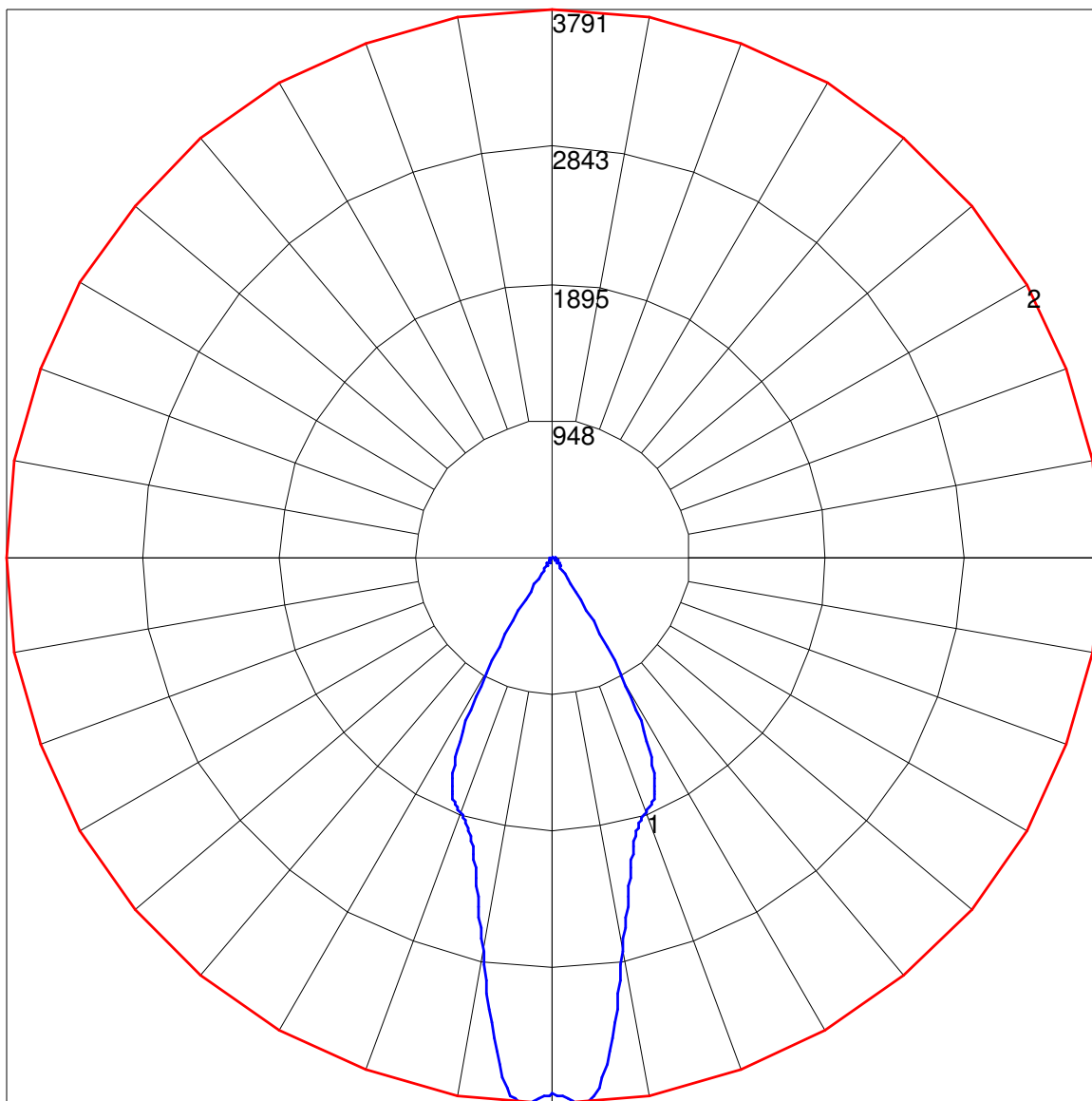
X=2H	Y=2H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

UGR Viewed Endwise

4H	2H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
8H	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
12H	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

Maximum UGR = 2.2

POLAR GRAPH



Maximum Candela = 3790.51 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.)