



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OM-OF-CS-WET-CC_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.04
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 12/01/2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-835-DIM-UNV-OM-OF-CS-WET-CC
 [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	1702
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
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	4225	4225	4225
55	1226	1226	1226
65	431	431	431
75	192	192	192
85	95	95	95

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CANDELA TABULATION

	<u>0</u>
0.0	3443.350
0.5	3445.900
1.0	3456.100
1.5	3465.450
2.0	3486.700
2.5	3500.300
3.0	3502.850
3.5	3503.700
4.0	3484.150
4.5	3457.800
5.0	3407.650
5.5	3343.900
6.0	3272.500
6.5	3192.600
7.0	3105.900
7.5	3015.800
8.0	2923.150
8.5	2831.350
9.0	2741.250
9.5	2653.700
10.0	2570.400
10.5	2492.200
11.0	2419.100
11.5	2350.250
12.0	2284.800
12.5	2223.600
13.0	2165.800
13.5	2110.550
14.0	2057.850
14.5	2009.400
15.0	1965.200
15.5	1926.100
16.0	1893.800
16.5	1864.900
17.0	1837.700
17.5	1813.900
18.0	1792.650
18.5	1774.800
19.0	1762.050
19.5	1751.000
20.0	1741.650
20.5	1730.600
21.0	1719.550
21.5	1707.650
22.0	1694.900
22.5	1678.750
23.0	1659.200
23.5	1635.400
24.0	1605.650
24.5	1566.550
25.0	1521.500
25.5	1473.900
26.0	1427.150
26.5	1375.300

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OM-OF-CS-WET-CC_.IES****CANDELA TABULATION - (Cont.)**

27.0	1320.900
27.5	1258.850
28.0	1188.300
28.5	1110.950
29.0	1030.200
29.5	947.750
30.0	860.200
30.5	769.505
31.0	674.560
31.5	579.955
32.0	489.005
32.5	403.920
33.0	329.885
33.5	266.730
34.0	213.520
34.5	169.320
35.0	133.450
35.5	106.420
36.0	89.080
36.5	79.985
37.0	74.545
37.5	69.785
38.0	65.620
38.5	61.795
39.0	58.310
39.5	55.165
40.0	52.190
40.5	49.385
41.0	46.750
41.5	44.370
42.0	42.075
42.5	39.950
43.0	37.825
43.5	35.955
44.0	34.085
44.5	32.300
45.0	30.685
45.5	29.070
46.0	27.455
46.5	25.925
47.0	24.310
47.5	22.780
48.0	21.335
48.5	19.975
49.0	18.615
49.5	17.255
50.0	15.895
50.5	14.620
51.0	13.515
51.5	12.495
52.0	11.475
52.5	10.625
53.0	9.775
53.5	9.095
54.0	8.415
54.5	7.735

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55.0	7.225
55.5	6.715
56.0	6.205
56.5	5.780
57.0	5.355
57.5	5.015
58.0	4.675
58.5	4.335
59.0	4.080
59.5	3.825
60.0	3.570
60.5	3.315
61.0	3.145
61.5	2.890
62.0	2.720
62.5	2.550
63.0	2.380
63.5	2.295
64.0	2.125
64.5	1.955
65.0	1.870
65.5	1.785
66.0	1.615
66.5	1.530
67.0	1.445
67.5	1.360
68.0	1.275
68.5	1.190
69.0	1.105
69.5	1.020
70.0	0.935
70.5	0.935
71.0	0.850
71.5	0.765
72.0	0.680
72.5	0.680
73.0	0.595
73.5	0.595
74.0	0.510
74.5	0.510
75.0	0.510
75.5	0.425
76.0	0.425
76.5	0.340
77.0	0.340
77.5	0.340
78.0	0.255
78.5	0.255
79.0	0.255
79.5	0.255
80.0	0.170
80.5	0.170
81.0	0.170
81.5	0.170
82.0	0.170
82.5	0.170

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83.0	0.170
83.5	0.085
84.0	0.085
84.5	0.085
85.0	0.085
85.5	0.085
86.0	0.085
86.5	0.085
87.0	0.085
87.5	0.085
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**PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OM-OF-CS-WET-CC_.IES****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**PHOTOMETRIC FILENAME : 4DR-TL-L20-835-DIM-UNV-OM-OF-CS-WET-CC_.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
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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Zone	Lumens	%Lamp	%Fixt
0-20	858.37	N.A.	50.40
0-30	1516.08	N.A.	89.10
0-40	1667.9	N.A.	98.00
0-60	1699.16	N.A.	99.80
0-80	1701.65	N.A.	100.00
0-90	1701.75	N.A.	100.00
10-90	1406.91	N.A.	82.70
20-40	809.54	N.A.	47.60
20-50	833.70	N.A.	49.00
40-70	33.22	N.A.	2.00
60-80	2.49	N.A.	0.10
70-80	0.53	N.A.	0.00
80-90	0.10	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	1701.75	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	294.85
10-20	563.52
20-30	657.71
30-40	151.82
40-50	24.16
50-60	7.10
60-70	1.96
70-80	0.53
80-90	0.10
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	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	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

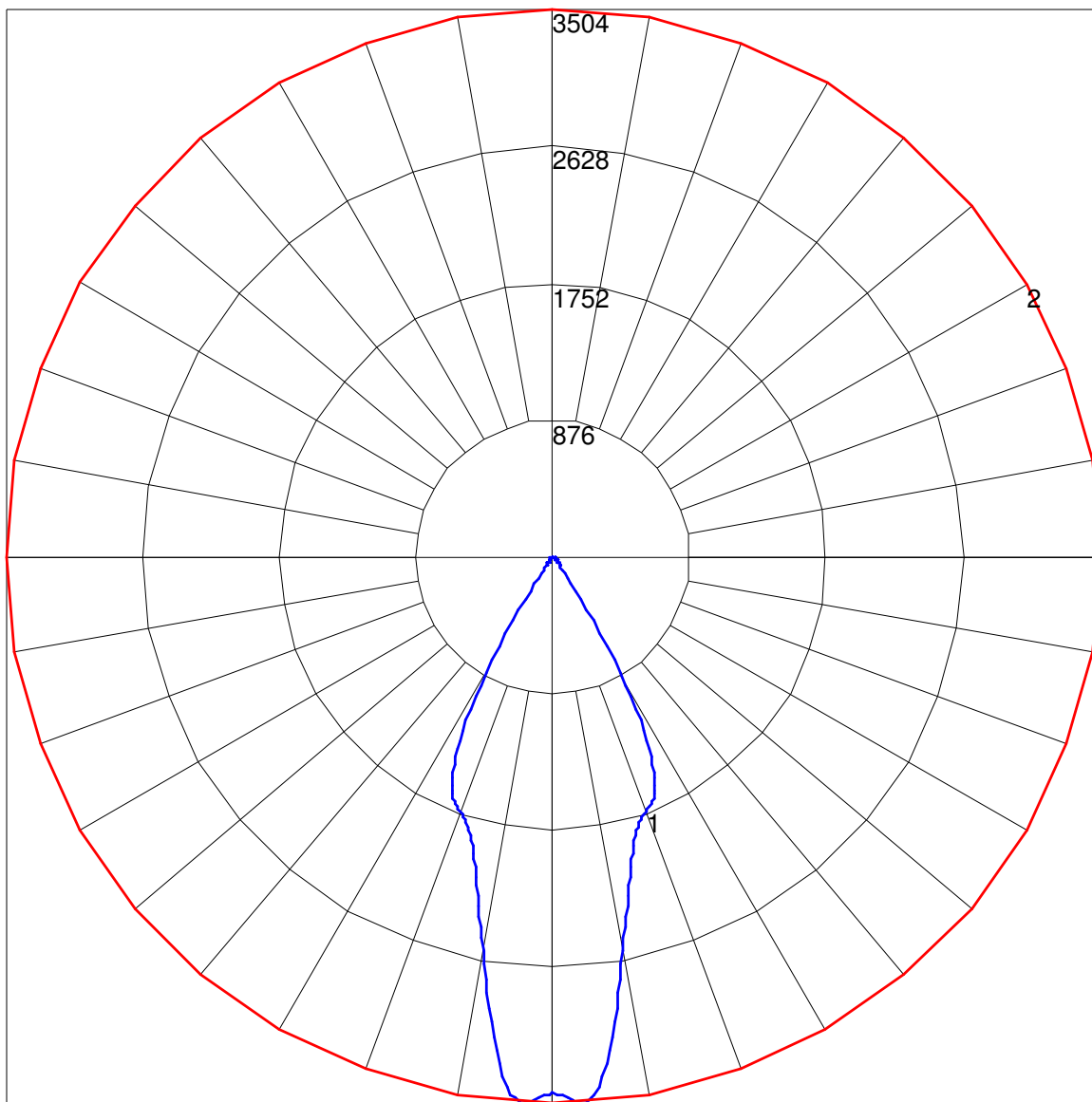
Reflectances

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	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	3H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
4H	2H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	3H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
8H	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	12H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
12H	4H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	6H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
	8H	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

Maximum UGR = 1.9

POLAR GRAPH



Maximum Candela = 3503.7 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.)