



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L50-835-DIM-UNV-ON-OFF-CS-WET-CC_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.05
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 26 JULY 2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L50-835-DIM-UNV-ON-OFF-CS-WET-CC
 [LUMINAIRE] 4.5 INCH ROUND RECESSED LED DOWNLIGHT
 [MORE] NARROW DIST SPECULAR REFL WET LOCATION
 [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	4095
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	91
Total Luminaire Watts	45.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.18
Spacing Criterion (90-270)	0.18
Spacing Criterion (Diagonal)	0.20
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	2814	2814	2814
55	694	694	694
65	471	471	471
75	0	0	0
85	0	0	0

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CANDELA TABULATION

	<u>0</u>
0.0	43545.129
0.5	43238.617
1.0	42094.306
1.5	40439.142
2.0	38109.651
2.5	35391.912
3.0	32715.041
3.5	30038.170
4.0	27422.601
4.5	24786.599
5.0	21844.084
5.5	18811.659
6.0	16220.612
6.5	14330.455
7.0	12816.286
7.5	11594.325
8.0	10566.488
8.5	9689.864
9.0	8944.018
9.5	8286.039
10.0	7722.057
10.5	7229.595
11.0	6808.652
11.5	6438.794
12.0	6115.935
12.5	5835.987
13.0	5594.865
13.5	5380.306
14.0	5190.269
14.5	5012.492
15.0	4846.975
15.5	4685.546
16.0	4520.029
16.5	4356.556
17.0	4191.040
17.5	4027.567
18.0	3864.094
18.5	3694.491
19.0	3522.844
19.5	3351.197
20.0	3177.507
20.5	3003.817
21.0	2830.127
21.5	2660.524
22.0	2511.354
22.5	2374.446
23.0	2249.798
23.5	2137.410
24.0	2035.239
24.5	1941.242
25.0	1863.593
25.5	1802.290
26.0	1759.379
26.5	1726.684

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CANDELA TABULATION - (Cont.)

27.0	1696.033
27.5	1657.208
28.0	1599.992
28.5	1530.516
29.0	1450.823
29.5	1362.956
30.0	1266.916
30.5	1164.745
31.0	1042.141
31.5	909.319
32.0	772.410
32.5	639.588
33.0	519.027
33.5	420.943
34.0	331.033
34.5	253.383
35.0	181.864
35.5	124.648
36.0	81.737
36.5	55.172
37.0	46.998
37.5	44.955
38.0	42.912
38.5	40.868
39.0	38.825
39.5	36.781
40.0	34.738
40.5	32.695
41.0	32.695
41.5	30.651
42.0	28.608
42.5	28.608
43.0	26.564
43.5	24.521
44.0	22.478
44.5	22.478
45.0	20.434
45.5	20.434
46.0	18.391
46.5	16.347
47.0	16.347
47.5	14.304
48.0	14.304
48.5	12.260
49.0	12.260
49.5	12.260
50.0	10.217
50.5	10.217
51.0	8.174
51.5	8.174
52.0	8.174
52.5	6.130
53.0	6.130
53.5	6.130
54.0	6.130
54.5	6.130

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L50-835-DIM-UNV-ON-OF-CS-WET-CC_.IES****CANDELA TABULATION - (Cont.)**

55.0	4.087
55.5	4.087
56.0	4.087
56.5	4.087
57.0	4.087
57.5	4.087
58.0	4.087
58.5	4.087
59.0	2.043
59.5	2.043
60.0	2.043
60.5	2.043
61.0	2.043
61.5	2.043
62.0	2.043
62.5	2.043
63.0	2.043
63.5	2.043
64.0	2.043
64.5	2.043
65.0	2.043
65.5	2.043
66.0	2.043
66.5	2.043
67.0	2.043
67.5	2.043
68.0	0.000
68.5	2.043
69.0	0.000
69.5	0.000
70.0	0.000
70.5	0.000
71.0	0.000
71.5	0.000
72.0	0.000
72.5	0.000
73.0	0.000
73.5	0.000
74.0	0.000
74.5	0.000
75.0	0.000
75.5	0.000
76.0	0.000
76.5	0.000
77.0	0.000
77.5	0.000
78.0	0.000
78.5	0.000
79.0	0.000
79.5	0.000
80.0	0.000
80.5	0.000
81.0	0.000
81.5	0.000
82.0	0.000
82.5	0.000

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4DR-TL-L50-835-DIM-UNV-ON-OF-CS-WET-CC_.IES****CANDELA TABULATION - (Cont.)**

83.0	0.000
83.5	0.000
84.0	0.000
84.5	0.000
85.0	0.000
85.5	0.000
86.0	0.000
86.5	0.000
87.0	0.000
87.5	0.000
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-L50-835-DIM-UNV-ON-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-L50-835-DIM-UNV-ON-OFF-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	2944.87	N.A.	71.90
0-30	3855.91	N.A.	94.20
0-40	4072.09	N.A.	99.40
0-60	4093.22	N.A.	100.00
0-80	4094.88	N.A.	100.00
0-90	4094.88	N.A.	100.00
10-90	2506.65	N.A.	61.20
20-40	1127.22	N.A.	27.50
20-50	1143.55	N.A.	27.90
40-70	22.79	N.A.	0.60
60-80	1.66	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	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	4094.88	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	1588.23
10-20	1356.64
20-30	911.03
30-40	216.18
40-50	16.34
50-60	4.79
60-70	1.66
70-80	0.00
80-90	0.00
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	115	113	111	109	113	111	109	108	107	105	104	103	102	101	100	99	98	97
2	111	108	105	102	109	106	103	101	103	101	99	100	98	97	97	96	95	93
3	108	103	99	96	106	102	98	96	99	96	94	97	95	93	95	93	91	90
4	104	99	95	92	103	98	94	91	96	93	90	94	91	89	92	90	88	87
5	101	95	91	88	100	94	90	88	93	89	87	91	88	86	90	87	85	84
6	98	92	88	85	97	91	87	84	90	86	84	89	86	83	87	85	83	82
7	95	89	85	82	94	88	84	81	87	84	81	86	83	81	85	82	80	79
8	93	86	82	79	92	85	82	79	85	81	78	84	80	78	83	80	78	77
9	90	83	79	77	89	83	79	76	82	79	76	81	78	76	81	78	76	75
10	88	81	77	74	87	81	77	74	80	76	74	79	76	74	79	76	74	73

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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

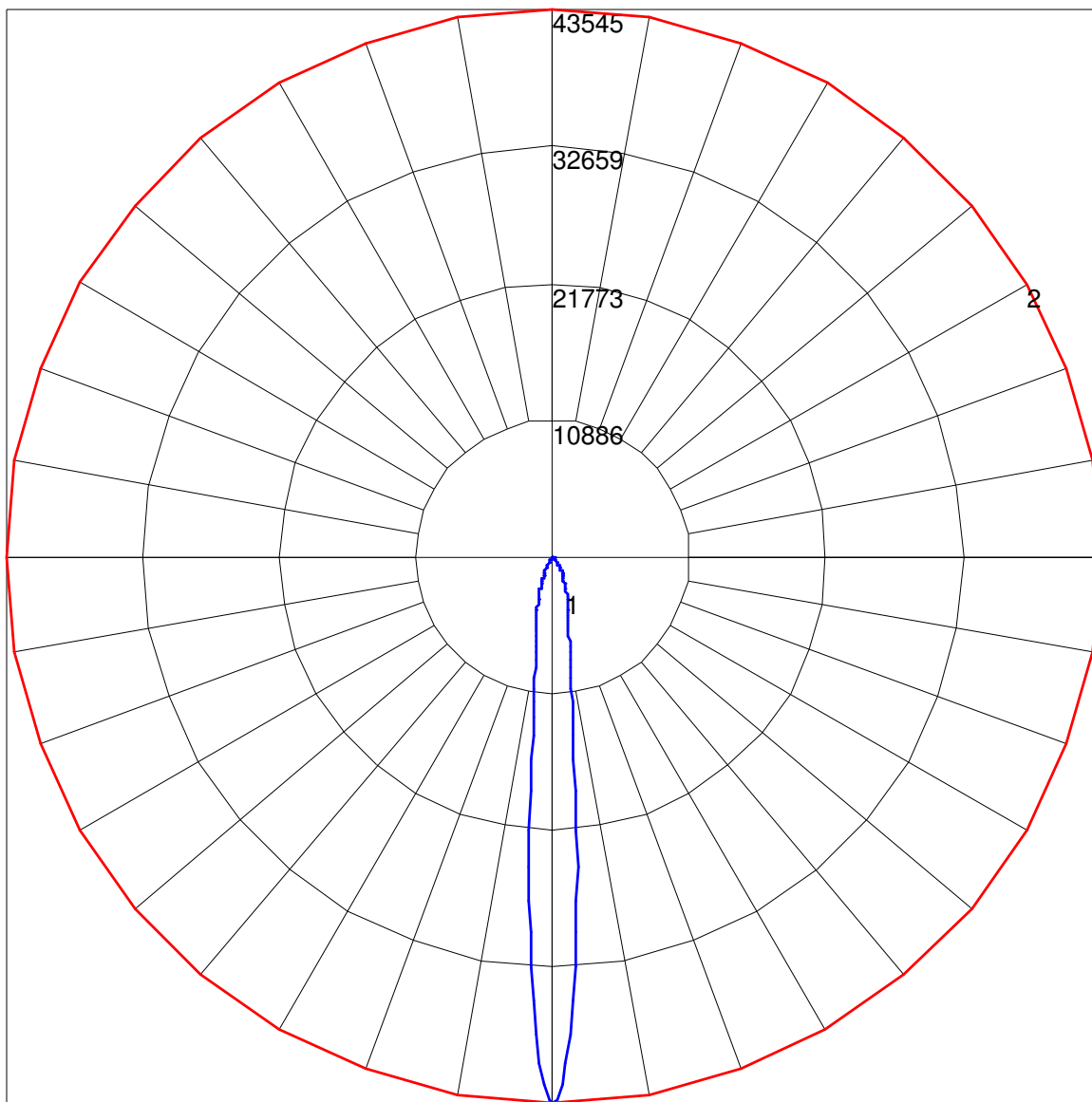
X=2H	Y=2H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2

UGR Viewed Endwise

4H	2H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	3H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
8H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	12H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
12H	4H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	6H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2
	8H	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2	5.2

Maximum UGR = 5.2

POLAR GRAPH



Maximum Candela = 43545.129 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.)