



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-840-DIM-UNV-RW-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.12
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 17 JUNE 2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-840-DIM-UNV-RW-OF-WH
 [LUMINAIRE] Black formed aluminum housing, white reflector, clear glas
 [MORE] s patterned lens 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	1337
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.98
Spacing Criterion (90-270)	0.98
Spacing Criterion (Diagonal)	0.88
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	30916	30916	30916
55	24963	24963	24963
65	16149	16149	16149
75	9005	9005	9005
85	4626	4626	4626

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CANDELA TABULATION

	<u>0</u>
0.0	1073.630
0.5	1073.630
1.0	1072.620
1.5	1070.600
2.0	1068.580
2.5	1066.560
3.0	1063.530
3.5	1060.500
4.0	1057.470
4.5	1053.430
5.0	1050.400
5.5	1046.360
6.0	1042.320
6.5	1038.280
7.0	1034.240
7.5	1030.200
8.0	1026.160
8.5	1021.110
9.0	1017.070
9.5	1013.030
10.0	1009.192
10.5	1005.051
11.0	1000.809
11.5	996.668
12.0	992.729
12.5	988.790
13.0	984.851
13.5	980.811
14.0	976.771
14.5	972.731
15.0	968.590
15.5	964.348
16.0	959.904
16.5	955.460
17.0	950.915
17.5	946.067
18.0	940.916
18.5	935.361
19.0	930.008
19.5	924.251
20.0	917.989
20.5	910.818
21.0	902.536
21.5	893.547
22.0	883.245
22.5	871.832
23.0	858.904
23.5	844.360
24.0	828.402
24.5	810.323
25.0	790.123
25.5	767.802
26.0	743.663
26.5	718.009

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CANDELA TABULATION - (Cont.)

27.0	691.042
27.5	663.671
28.0	634.987
28.5	606.606
29.0	578.326
29.5	550.046
30.0	522.271
30.5	495.001
31.0	469.246
31.5	444.299
32.0	420.766
32.5	398.849
33.0	378.548
33.5	360.267
34.0	343.804
34.5	329.462
35.0	316.837
35.5	306.131
36.0	296.738
36.5	288.860
37.0	281.891
37.5	275.932
38.0	270.478
38.5	265.630
39.0	261.287
39.5	257.348
40.0	253.813
40.5	250.480
41.0	247.248
41.5	244.319
42.0	241.390
42.5	238.663
43.0	235.936
43.5	233.108
44.0	230.280
44.5	227.452
45.0	224.523
45.5	221.493
46.0	218.362
46.5	215.130
47.0	211.797
47.5	208.363
48.0	204.929
48.5	201.293
49.0	197.556
49.5	193.617
50.0	189.678
50.5	185.638
51.0	181.396
51.5	177.255
52.0	173.013
52.5	168.771
53.0	164.731
53.5	160.287
54.0	155.843
54.5	151.399

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CANDELA TABULATION - (Cont.)

55.0	147.056
55.5	142.612
56.0	138.269
56.5	134.027
57.0	129.785
57.5	125.543
58.0	121.402
58.5	117.362
59.0	113.322
59.5	109.383
60.0	105.444
60.5	101.606
61.0	97.869
61.5	94.132
62.0	90.597
62.5	86.961
63.0	83.527
63.5	79.992
64.0	76.659
64.5	73.326
65.0	70.094
65.5	66.862
66.0	63.731
66.5	60.701
67.0	57.772
67.5	54.843
68.0	52.015
68.5	49.187
69.0	46.460
69.5	43.834
70.0	41.410
70.5	39.087
71.0	36.966
71.5	34.946
72.0	33.027
72.5	31.209
73.0	29.492
73.5	27.977
74.0	26.462
74.5	25.149
75.0	23.937
75.5	22.826
76.0	21.614
76.5	20.503
77.0	19.392
77.5	18.281
78.0	17.271
78.5	16.160
79.0	15.150
79.5	14.140
80.0	13.130
80.5	12.120
81.0	11.211
81.5	10.302
82.0	9.292
82.5	8.484

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CANDELA TABULATION - (Cont.)

83.0	7.575
83.5	6.666
84.0	5.858
84.5	4.949
85.0	4.141
85.5	3.434
86.0	2.727
86.5	2.222
87.0	1.717
87.5	1.313
88.0	0.909
88.5	0.606
89.0	0.303
89.5	0.101
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
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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
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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	371.62	N.A.	27.80
0-30	719.13	N.A.	53.80
0-40	930.90	N.A.	69.60
0-60	1234.52	N.A.	92.40
0-80	1331.12	N.A.	99.60
0-90	1336.58	N.A.	100.00
10-90	1237.7	N.A.	92.60
20-40	559.28	N.A.	41.80
20-50	731.58	N.A.	54.70
40-70	373.84	N.A.	28.00
60-80	96.60	N.A.	7.20
70-80	26.38	N.A.	2.00
80-90	5.46	N.A.	0.40
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	1336.58	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	98.88
10-20	272.74
20-30	347.51
30-40	211.77
40-50	172.30
50-60	131.31
60-70	70.22
70-80	26.38
80-90	5.46
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	112	108	105	102	109	106	103	101	102	100	97	98	96	94	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65
5	85	75	68	63	84	74	67	62	72	66	62	70	65	61	69	64	61	59
6	80	69	62	57	78	68	62	57	67	61	56	65	60	56	64	59	55	54
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46
9	67	56	49	44	66	56	49	44	54	48	44	53	48	44	53	48	44	42
10	64	53	46	41	63	52	46	41	51	45	41	50	45	41	50	45	41	39

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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	20.6	21.9	20.9	22.2	22.5	20.6	21.9	20.9	22.2	22.5
	3H	21.3	22.5	21.7	22.8	23.2	21.3	22.5	21.7	22.8	23.2
	4H	21.5	22.6	21.9	22.9	23.3	21.5	22.6	21.9	22.9	23.3
	6H	21.6	22.6	22.0	23.0	23.4	21.6	22.6	22.0	23.0	23.4
	8H	21.6	22.6	22.0	23.0	23.4	21.6	22.6	22.0	23.0	23.4
	12H	21.6	22.5	22.0	22.9	23.3	21.6	22.5	22.0	22.9	23.3

UGR Viewed Endwise

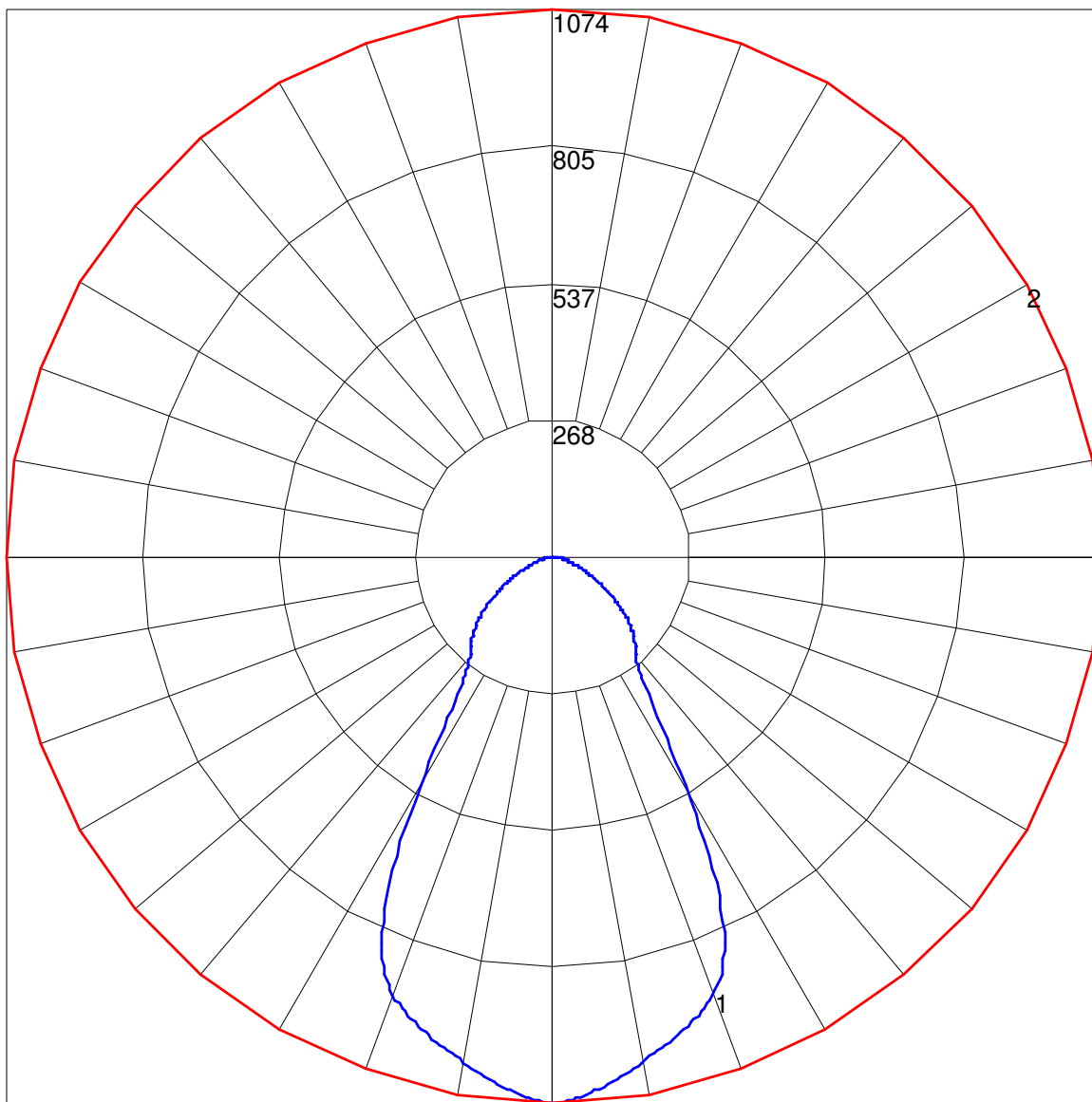
4H	2H	20.8	21.9	21.2	22.3	22.7	20.8	21.9	21.2	22.3	22.7
	3H	21.7	22.6	22.1	23.0	23.4	21.7	22.6	22.1	23.0	23.4
	4H	22.0	22.8	22.4	23.2	23.6	22.0	22.8	22.4	23.2	23.6
	6H	22.1	22.8	22.6	23.3	23.7	22.1	22.8	22.6	23.3	23.7
	8H	22.2	22.8	22.6	23.3	23.7	22.2	22.8	22.6	23.3	23.7
	12H	22.2	22.7	22.7	23.2	23.7	22.2	22.7	22.7	23.2	23.7

8H	4H	22.0	22.6	22.5	23.1	23.6	22.0	22.6	22.5	23.1	23.6
	6H	22.2	22.8	22.7	23.3	23.7	22.2	22.8	22.7	23.3	23.7
	8H	22.3	22.8	22.8	23.3	23.8	22.3	22.8	22.8	23.3	23.8
	12H	22.3	22.7	22.8	23.2	23.8	22.3	22.7	22.8	23.2	23.8

12H	4H	22.0	22.5	22.5	23.0	23.5	22.0	22.5	22.5	23.0	23.5
	6H	22.2	22.7	22.7	23.2	23.7	22.2	22.7	22.7	23.2	23.7
	8H	22.3	22.7	22.8	23.2	23.8	22.3	22.7	22.8	23.2	23.8

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 1073.63 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.)