



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-840-DIM-UNV-LW-OF-CS_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST]GEN FROM 12316380.07
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 03/06/2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-840-DIM-UNV-LW-OF-CS
 [LUMINAIRE] Black formed aluminum housing, specular reflector, clear patt
 [MORE] erved glass 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	1366
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	69
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.00
Spacing Criterion (90-270)	1.00
Spacing Criterion (Diagonal)	0.90
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.35 ft (Diameter)
Luminous Width (90-270)	0.35 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	37687	37687	37687
55	30967	30967	30967
65	22655	22655	22655
75	15683	15683	15683
85	8550	8550	8550

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CANDELA TABULATION

	<u>0</u>
0.0	959.332
0.5	959.029
1.0	958.423
1.5	957.614
2.0	956.806
2.5	955.897
3.0	954.684
3.5	953.977
4.0	953.472
4.5	953.169
5.0	952.765
5.5	952.361
6.0	952.058
6.5	951.653
7.0	951.350
7.5	951.148
8.0	951.047
8.5	950.744
9.0	950.441
9.5	949.835
10.0	949.431
10.5	948.723
11.0	948.016
11.5	947.107
12.0	946.096
12.5	944.884
13.0	943.469
13.5	941.853
14.0	939.832
14.5	937.407
15.0	934.477
15.5	930.941
16.0	927.001
16.5	922.353
17.0	917.301
17.5	911.643
18.0	904.975
18.5	898.105
19.0	890.628
19.5	882.242
20.0	873.048
20.5	863.045
21.0	852.234
21.5	840.615
22.0	827.784
22.5	814.144
23.0	799.494
23.5	783.732
24.0	766.758
24.5	748.673
25.0	729.072
25.5	708.562
26.0	686.637
26.5	663.399

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CANDELA TABULATION - (Cont.)

27.0	639.353
27.5	614.296
28.0	588.835
28.5	563.273
29.0	538.216
29.5	513.664
30.0	490.022
30.5	467.794
31.0	446.981
31.5	427.986
32.0	410.709
32.5	395.150
33.0	381.308
33.5	368.982
34.0	357.969
34.5	348.269
35.0	339.479
35.5	331.497
36.0	324.425
36.5	317.757
37.0	311.695
37.5	306.037
38.0	300.783
38.5	295.731
39.0	291.083
39.5	286.537
40.0	282.293
40.5	278.050
41.0	274.008
41.5	270.068
42.0	266.330
42.5	262.591
43.0	258.853
43.5	255.115
44.0	251.376
44.5	247.638
45.0	243.900
45.5	240.161
46.0	236.423
46.5	232.685
47.0	228.744
47.5	224.804
48.0	220.864
48.5	216.822
49.0	212.680
49.5	208.537
50.0	204.496
50.5	200.353
51.0	196.211
51.5	192.068
52.0	188.027
52.5	183.986
53.0	179.843
53.5	175.600
54.0	171.255
54.5	166.911

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CANDELA TABULATION - (Cont.)

55.0	162.566
55.5	158.222
56.0	153.978
56.5	149.836
57.0	145.693
57.5	141.551
58.0	137.509
58.5	133.569
59.0	129.629
59.5	125.789
60.0	122.051
60.5	118.313
61.0	114.675
61.5	111.139
62.0	107.603
62.5	104.067
63.0	100.692
63.5	97.338
64.0	94.044
64.5	90.801
65.0	87.628
65.5	84.536
66.0	81.485
66.5	78.515
67.0	75.615
67.5	72.766
68.0	70.007
68.5	67.310
69.0	64.612
69.5	62.005
70.0	59.469
70.5	56.974
71.0	54.539
71.5	52.165
72.0	49.871
72.5	47.608
73.0	45.405
73.5	43.263
74.0	41.162
74.5	39.131
75.0	37.151
75.5	35.231
76.0	33.352
76.5	31.523
77.0	29.775
77.5	28.037
78.0	26.360
78.5	24.733
79.0	23.137
79.5	21.601
80.0	20.096
80.5	18.631
81.0	17.186
81.5	15.782
82.0	14.408
82.5	13.074

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CANDELA TABULATION - (Cont.)

83.0	11.750
83.5	10.467
84.0	9.214
84.5	7.992
85.0	6.820
85.5	5.688
86.0	4.607
86.5	3.587
87.0	2.688
87.5	1.940
88.0	1.354
88.5	0.859
89.0	0.535
89.5	0.364
90.0	0.253
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
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120.5	0.000
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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
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147.0	0.000
147.5	0.000
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151.5	0.000
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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	352.38	N.A.	25.80
0-30	675.91	N.A.	49.50
0-40	896.28	N.A.	65.60
0-60	1229.41	N.A.	90.00
0-80	1357.11	N.A.	99.40
0-90	1365.65	N.A.	100.00
10-90	1274.78	N.A.	93.30
20-40	543.90	N.A.	39.80
20-50	731.73	N.A.	53.60
40-70	420.74	N.A.	30.80
60-80	127.70	N.A.	9.40
70-80	40.08	N.A.	2.90
80-90	8.54	N.A.	0.60
90-110	0.01	N.A.	0.00
90-120	0.01	N.A.	0.00
90-130	0.01	N.A.	0.00
90-150	0.01	N.A.	0.00
90-180	0.01	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1365.65	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	90.87
10-20	261.51
20-30	323.53
30-40	220.37
40-50	187.83
50-60	145.29
60-70	87.62
70-80	40.08
80-90	8.54
90-100	0.01
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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89
2	103	97	91	87	101	95	90	86	92	87	84	89	85	82	86	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56
6	79	67	60	54	77	66	59	54	65	58	54	63	58	53	62	57	53	51
7	74	62	55	50	72	62	54	49	60	54	49	59	53	49	58	52	49	47
8	69	58	51	46	68	57	50	45	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37

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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	21.7	23.1	22.1	23.4	23.7	21.7	23.1	22.1	23.4	23.7
	3H	22.8	24.0	23.2	24.4	24.7	22.8	24.0	23.2	24.4	24.7
	4H	23.2	24.3	23.6	24.6	25.0	23.2	24.3	23.6	24.6	25.0
	6H	23.4	24.4	23.8	24.8	25.2	23.4	24.4	23.8	24.8	25.2
	8H	23.4	24.4	23.9	24.8	25.2	23.4	24.4	23.9	24.8	25.2
	12H	23.4	24.4	23.9	24.8	25.2	23.4	24.4	23.9	24.8	25.2

UGR Viewed Endwise

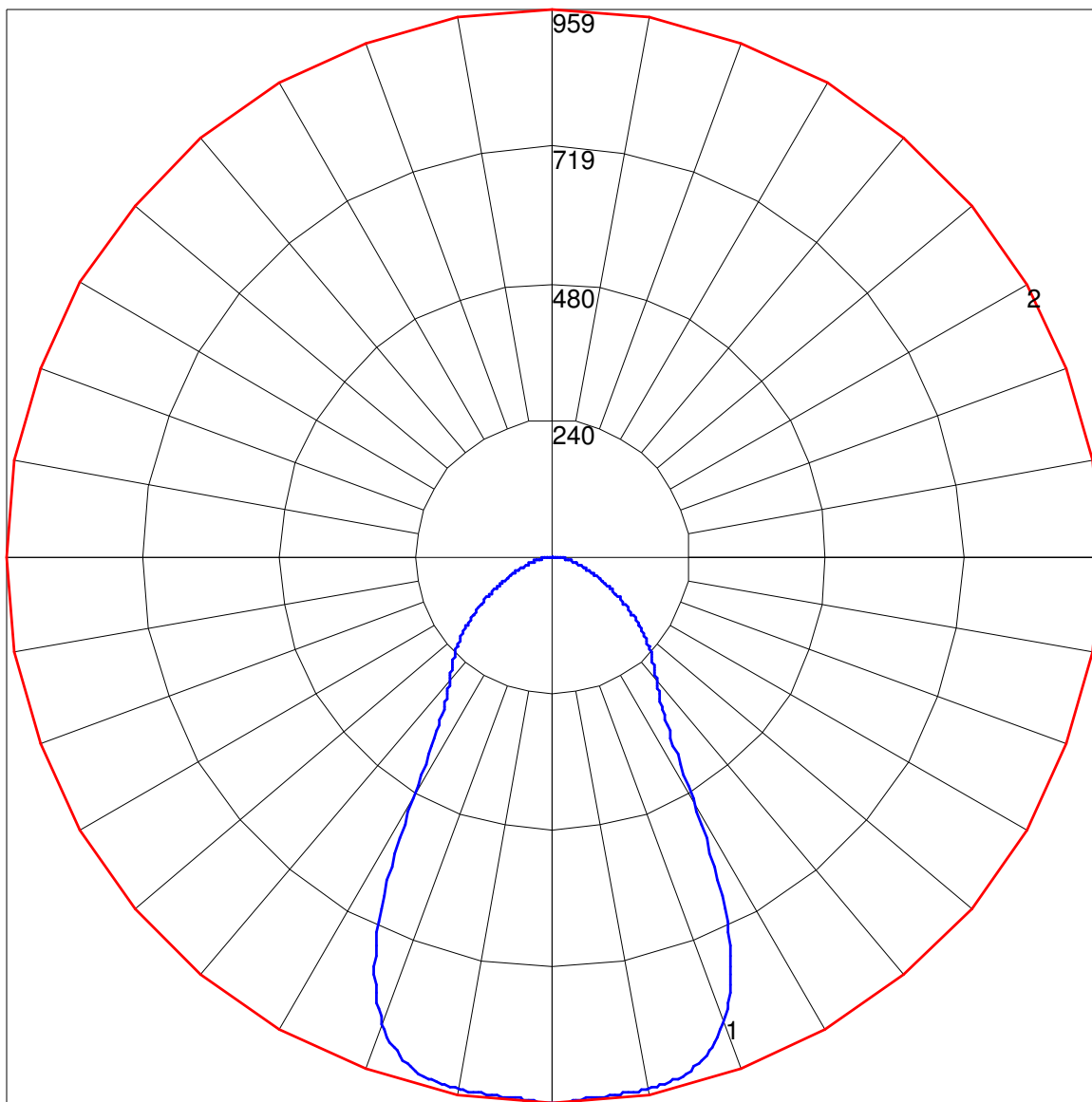
4H	2H	22.1	23.2	22.5	23.6	23.9	22.1	23.2	22.5	23.6	23.9
	3H	23.4	24.3	23.8	24.7	25.1	23.4	24.3	23.8	24.7	25.1
	4H	23.8	24.7	24.2	25.1	25.5	23.8	24.7	24.2	25.1	25.5
	6H	24.1	24.9	24.6	25.3	25.8	24.1	24.9	24.6	25.3	25.8
	8H	24.2	24.9	24.7	25.3	25.8	24.2	24.9	24.7	25.3	25.8
	12H	24.2	24.8	24.7	25.3	25.8	24.2	24.8	24.7	25.3	25.8

8H	4H	23.9	24.6	24.4	25.1	25.5	23.9	24.6	24.4	25.1	25.5
	6H	24.3	24.9	24.8	25.4	25.9	24.3	24.9	24.8	25.4	25.9
	8H	24.4	24.9	24.9	25.5	25.9	24.4	24.9	24.9	25.5	25.9
	12H	24.5	24.9	25.0	25.4	26.0	24.5	24.9	25.0	25.4	26.0

12H	4H	23.9	24.5	24.4	25.0	25.5	23.9	24.5	24.4	25.0	25.5
	6H	24.3	24.8	24.9	25.3	25.8	24.3	24.8	24.9	25.3	25.8
	8H	24.5	24.9	25.0	25.4	26.0	24.5	24.9	25.0	25.4	26.0

Maximum UGR = 26.0

POLAR GRAPH



Maximum Candela = 959.332 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.)