



IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-LW-OF-WH_4000K.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.07

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 20 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] V4DR-L16-8TW-DIM-UNV-LW-OF-WH 4000k

[LUMINAIRE] Black formed aluminum housing, white 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	1621
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	68
Total Luminaire Watts	24
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	44722	44722	44722
55	36748	36748	36748
65	26884	26884	26884
75	18611	18611	18611
85	10146	10146	10146

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CANDELA TABULATION

	<u>0</u>
0.0	1138.416
0.5	1138.057
1.0	1137.337
1.5	1136.378
2.0	1135.419
2.5	1134.340
3.0	1132.901
3.5	1132.062
4.0	1131.462
4.5	1131.103
5.0	1130.623
5.5	1130.143
6.0	1129.784
6.5	1129.304
7.0	1128.945
7.5	1128.705
8.0	1128.585
8.5	1128.225
9.0	1127.865
9.5	1127.146
10.0	1126.666
10.5	1125.827
11.0	1124.988
11.5	1123.909
12.0	1122.710
12.5	1121.271
13.0	1119.593
13.5	1117.674
14.0	1115.276
14.5	1112.399
15.0	1108.922
15.5	1104.725
16.0	1100.049
16.5	1094.534
17.0	1088.539
17.5	1081.825
18.0	1073.912
18.5	1065.759
19.0	1056.887
19.5	1046.935
20.0	1036.025
20.5	1024.155
21.0	1011.326
21.5	997.538
22.0	982.311
22.5	966.125
23.0	948.740
23.5	930.036
24.0	909.894
24.5	888.432
25.0	865.172
25.5	840.833
26.0	814.816
26.5	787.240

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CANDELA TABULATION - (Cont.)

27.0	758.704
27.5	728.970
28.0	698.756
28.5	668.422
29.0	638.688
29.5	609.553
30.0	581.498
30.5	555.120
31.0	530.422
31.5	507.881
32.0	487.379
32.5	468.915
33.0	452.489
33.5	437.862
34.0	424.793
34.5	413.283
35.0	402.852
35.5	393.380
36.0	384.987
36.5	377.074
37.0	369.880
37.5	363.166
38.0	356.932
38.5	350.937
39.0	345.422
39.5	340.026
40.0	334.991
40.5	329.955
41.0	325.159
41.5	320.483
42.0	316.047
42.5	311.611
43.0	307.175
43.5	302.738
44.0	298.302
44.5	293.866
45.0	289.430
45.5	284.994
46.0	280.558
46.5	276.121
47.0	271.445
47.5	266.769
48.0	262.094
48.5	257.298
49.0	252.382
49.5	247.466
50.0	242.670
50.5	237.755
51.0	232.839
51.5	227.923
52.0	223.127
52.5	218.331
53.0	213.416
53.5	208.380
54.0	203.224
54.5	198.069

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CANDELA TABULATION - (Cont.)

55.0	192.913
55.5	187.758
56.0	182.722
56.5	177.806
57.0	172.891
57.5	167.975
58.0	163.179
58.5	158.503
59.0	153.827
59.5	149.271
60.0	144.835
60.5	140.399
61.0	136.082
61.5	131.886
62.0	127.690
62.5	123.493
63.0	119.489
63.5	115.508
64.0	111.600
64.5	107.751
65.0	103.986
65.5	100.317
66.0	96.696
66.5	93.171
67.0	89.730
67.5	86.349
68.0	83.076
68.5	79.875
69.0	76.674
69.5	73.580
70.0	70.571
70.5	67.610
71.0	64.720
71.5	61.903
72.0	59.181
72.5	56.495
73.0	53.881
73.5	51.340
74.0	48.846
74.5	46.436
75.0	44.086
75.5	41.808
76.0	39.578
76.5	37.408
77.0	35.333
77.5	33.271
78.0	31.281
78.5	29.351
79.0	27.456
79.5	25.634
80.0	23.847
80.5	22.109
81.0	20.394
81.5	18.728
82.0	17.097
82.5	15.515

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CANDELA TABULATION - (Cont.)

83.0	13.944
83.5	12.421
84.0	10.935
84.5	9.484
85.0	8.093
85.5	6.750
86.0	5.467
86.5	4.256
87.0	3.189
87.5	2.302
88.0	1.607
88.5	1.019
89.0	0.635
89.5	0.432
90.0	0.300
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	418.16	N.A.	25.80
0-30	802.08	N.A.	49.50
0-40	1063.6	N.A.	65.60
0-60	1458.91	N.A.	90.00
0-80	1610.44	N.A.	99.40
0-90	1620.58	N.A.	100.00
10-90	1512.75	N.A.	93.30
20-40	645.43	N.A.	39.80
20-50	868.33	N.A.	53.60
40-70	499.29	N.A.	30.80
60-80	151.54	N.A.	9.40
70-80	47.56	N.A.	2.90
80-90	10.14	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	1620.59	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	107.83
10-20	310.33
20-30	383.92
30-40	261.51
40-50	222.90
50-60	172.41
60-70	103.98
70-80	47.56
80-90	10.14
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	108	108	108	108	106	106	106	106	101	101	101	97	97	97	93	93	93	91
1	101	98	95	92	99	96	93	91	92	90	88	89	87	85	85	84	83	81
2	94	88	83	79	92	86	82	78	83	80	76	81	77	75	78	75	73	71
3	88	80	74	69	86	78	73	68	76	71	67	74	70	66	71	68	65	63
4	82	73	66	61	80	72	65	61	69	64	60	67	63	59	66	62	58	57
5	76	67	60	55	75	66	59	54	64	58	54	62	57	53	61	56	53	51
6	71	61	54	49	70	60	54	49	59	53	49	58	52	49	56	52	48	47
7	67	57	50	45	66	56	50	45	55	49	45	53	48	44	52	48	44	43
8	63	53	46	41	62	52	46	41	51	45	41	50	45	41	49	44	41	39
9	60	49	43	38	59	49	42	38	48	42	38	47	42	38	46	41	38	36
10	56	46	40	36	55	46	40	35	45	39	35	44	39	35	43	38	35	34

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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

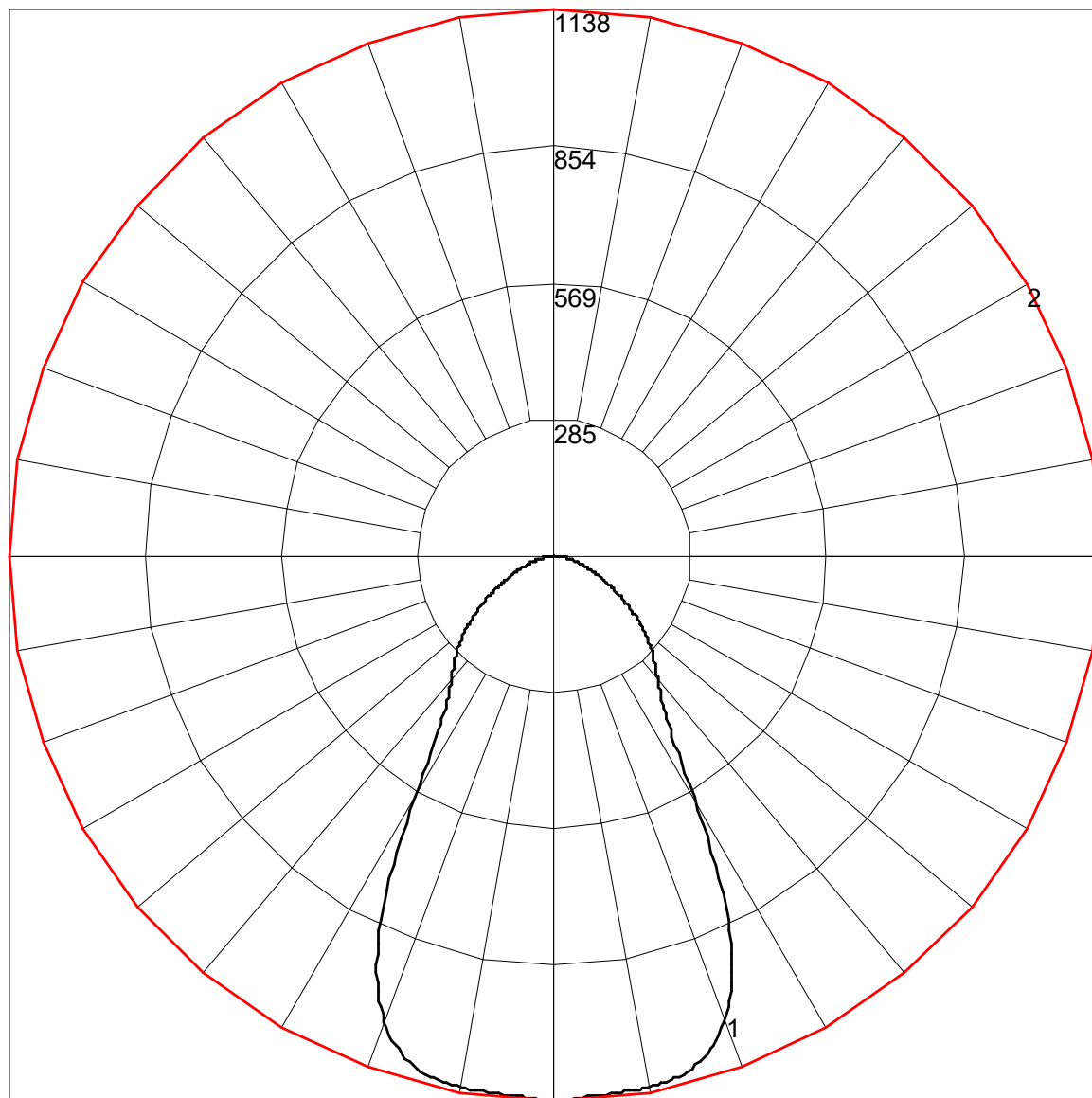
X=2H	Y=2H	22.6	24.0	23.0	24.3	24.6	22.6	24.0	23.0	24.3	24.6
	3H	23.7	24.9	24.1	25.3	25.6	23.7	24.9	24.1	25.3	25.6
	4H	24.1	25.2	24.5	25.6	25.9	24.1	25.2	24.5	25.6	25.9
	6H	24.3	25.3	24.7	25.7	26.1	24.3	25.3	24.7	25.7	26.1
	8H	24.3	25.3	24.8	25.7	26.1	24.3	25.3	24.8	25.7	26.1
	12H	24.3	25.3	24.8	25.7	26.1	24.3	25.3	24.8	25.7	26.1

UGR Viewed Endwise

4H	2H	23.0	24.1	23.4	24.5	24.8	23.0	24.1	23.4	24.5	24.8
	3H	24.3	25.2	24.7	25.6	26.0	24.3	25.2	24.7	25.6	26.0
	4H	24.7	25.6	25.1	26.0	26.4	24.7	25.6	25.1	26.0	26.4
	6H	25.0	25.8	25.5	26.2	26.7	25.0	25.8	25.5	26.2	26.7
	8H	25.1	25.8	25.6	26.2	26.7	25.1	25.8	25.6	26.2	26.7
	12H	25.1	25.7	25.6	26.2	26.7	25.1	25.7	25.6	26.2	26.7
8H	4H	24.8	25.5	25.3	26.0	26.4	24.8	25.5	25.3	26.0	26.4
	6H	25.2	25.8	25.7	26.3	26.8	25.2	25.8	25.7	26.3	26.8
	8H	25.3	25.8	25.9	26.4	26.8	25.3	25.8	25.9	26.4	26.8
	12H	25.4	25.9	25.9	26.3	26.9	25.4	25.9	25.9	26.3	26.9
12H	4H	24.8	25.4	25.3	25.9	26.4	24.8	25.4	25.3	25.9	26.4
	6H	25.2	25.7	25.8	26.2	26.7	25.2	25.7	25.8	26.2	26.7
	8H	25.4	25.8	25.9	26.3	26.9	25.4	25.8	25.9	26.3	26.9

Maximum UGR = 26.9

POLAR GRAPH



Maximum Candela = 1138.416 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (90 - 270)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)