



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.14

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 20 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

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

[LUMINAIRE] Black formed aluminum housing, white reflector, clear plas

[MORE] tic optic, clear glass 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	1844
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	77
Total Luminaire Watts	24
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.52
Spacing Criterion (90-270)	0.52
Spacing Criterion (Diagonal)	0.52
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	10581	10581	10581
55	7359	7359	7359
65	5254	5254	5254
75	3517	3517	3517
85	2869	2869	2869

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CANDELA TABULATION

	<u>0</u>
0.0	5317.294
0.5	5313.185
1.0	5300.858
1.5	5281.339
2.0	5254.629
2.5	5220.728
3.0	5180.664
3.5	5133.408
4.0	5078.961
4.5	5020.405
5.0	4955.685
5.5	4883.775
6.0	4806.727
6.5	4724.543
7.0	4636.196
7.5	4541.684
8.0	4443.064
8.5	4338.279
9.0	4230.413
9.5	4118.438
10.0	4002.353
10.5	3883.186
11.0	3760.938
11.5	3636.635
12.0	3510.277
12.5	3384.947
13.0	3259.616
13.5	3133.259
14.0	3005.874
14.5	2878.489
15.0	2753.159
15.5	2628.856
16.0	2504.552
16.5	2383.331
17.0	2263.137
17.5	2144.998
18.0	2028.913
18.5	1915.911
19.0	1808.044
19.5	1702.233
20.0	1599.503
20.5	1501.910
21.0	1407.398
21.5	1316.996
22.0	1231.730
22.5	1150.574
23.0	1074.554
23.5	1001.821
24.0	932.992
24.5	868.170
25.0	807.559
25.5	751.160
26.0	698.563
26.5	649.252

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CANDELA TABULATION - (Cont.)

27.0	603.435
27.5	561.007
28.0	521.559
28.5	484.782
29.0	451.087
29.5	419.651
30.0	390.579
30.5	363.869
31.0	339.214
31.5	316.408
32.0	295.348
32.5	276.035
33.0	258.160
33.5	241.518
34.0	226.314
34.5	212.137
35.0	199.090
35.5	187.071
36.0	175.873
36.5	165.600
37.0	156.047
37.5	147.417
38.0	139.404
38.5	132.213
39.0	125.536
39.5	119.475
40.0	114.030
40.5	108.894
41.0	104.271
41.5	99.956
42.0	95.950
42.5	92.251
43.0	88.759
43.5	85.471
44.0	82.389
44.5	79.513
45.0	76.842
45.5	74.376
46.0	72.014
46.5	69.754
47.0	67.596
47.5	65.644
48.0	63.795
48.5	61.946
49.0	60.200
49.5	58.556
50.0	57.015
50.5	55.474
51.0	54.036
51.5	52.495
52.0	51.159
52.5	49.721
53.0	48.488
53.5	47.153
54.0	45.817
54.5	44.585

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CANDELA TABULATION - (Cont.)

55.0	43.352
55.5	42.119
56.0	40.989
56.5	39.859
57.0	38.729
57.5	37.599
58.0	36.469
58.5	35.442
59.0	34.414
59.5	33.387
60.0	32.360
60.5	31.333
61.0	30.305
61.5	29.381
62.0	28.353
62.5	27.429
63.0	26.402
63.5	25.477
64.0	24.552
64.5	23.628
65.0	22.806
65.5	21.881
66.0	21.060
66.5	20.135
67.0	19.313
67.5	18.491
68.0	17.670
68.5	16.950
69.0	16.129
69.5	15.409
70.0	14.690
70.5	14.074
71.0	13.458
71.5	12.841
72.0	12.225
72.5	11.711
73.0	11.198
73.5	10.684
74.0	10.273
74.5	9.759
75.0	9.348
75.5	8.937
76.0	8.527
76.5	8.218
77.0	7.807
77.5	7.397
78.0	7.088
78.5	6.677
79.0	6.369
79.5	6.061
80.0	5.650
80.5	5.342
81.0	5.034
81.5	4.726
82.0	4.315
82.5	4.006

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CANDELA TABULATION - (Cont.)

83.0	3.698
83.5	3.390
84.0	3.082
84.5	2.774
85.0	2.568
85.5	2.260
86.0	1.952
86.5	1.644
87.0	1.438
87.5	1.233
88.0	1.027
88.5	0.822
89.0	0.719
89.5	0.514
90.0	0.411
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
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125.5	0.000
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126.5	0.000
127.0	0.000
127.5	0.000
128.0	0.000
128.5	0.000
129.0	0.000
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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	1189.83	N.A.	64.50
0-30	1575.97	N.A.	85.40
0-40	1708.47	N.A.	92.60
0-60	1808.63	N.A.	98.10
0-80	1841.51	N.A.	99.80
0-90	1844.43	N.A.	100.00
10-90	1402.07	N.A.	76.00
20-40	518.64	N.A.	28.10
20-50	579.73	N.A.	31.40
40-70	122.89	N.A.	6.70
60-80	32.89	N.A.	1.80
70-80	10.16	N.A.	0.60
80-90	2.91	N.A.	0.20
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	1844.44	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	442.35
10-20	747.48
20-30	386.14
30-40	132.50
40-50	61.09
50-60	39.07
60-70	22.72
70-80	10.16
80-90	2.91
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	104	102	100	98	102	100	98	96	96	95	93	93	91	90	90	89	88	86
2	100	96	92	90	98	94	91	89	91	89	87	89	87	85	86	85	83	82
3	96	90	86	83	94	89	86	83	87	84	81	85	82	80	83	81	79	78
4	92	86	81	78	90	85	81	78	83	80	77	81	78	76	80	77	75	74
5	88	82	77	74	87	81	77	74	79	76	73	78	75	72	77	74	72	71
6	85	78	73	70	84	77	73	70	76	72	70	75	72	69	74	71	69	67
7	82	75	70	67	81	74	70	67	73	69	66	72	69	66	71	68	66	65
8	79	72	67	64	78	71	67	64	70	66	64	69	66	63	69	66	63	62
9	76	69	65	62	75	69	64	61	68	64	61	67	64	61	66	63	61	60
10	74	66	62	59	73	66	62	59	65	62	59	65	61	59	64	61	59	58

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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

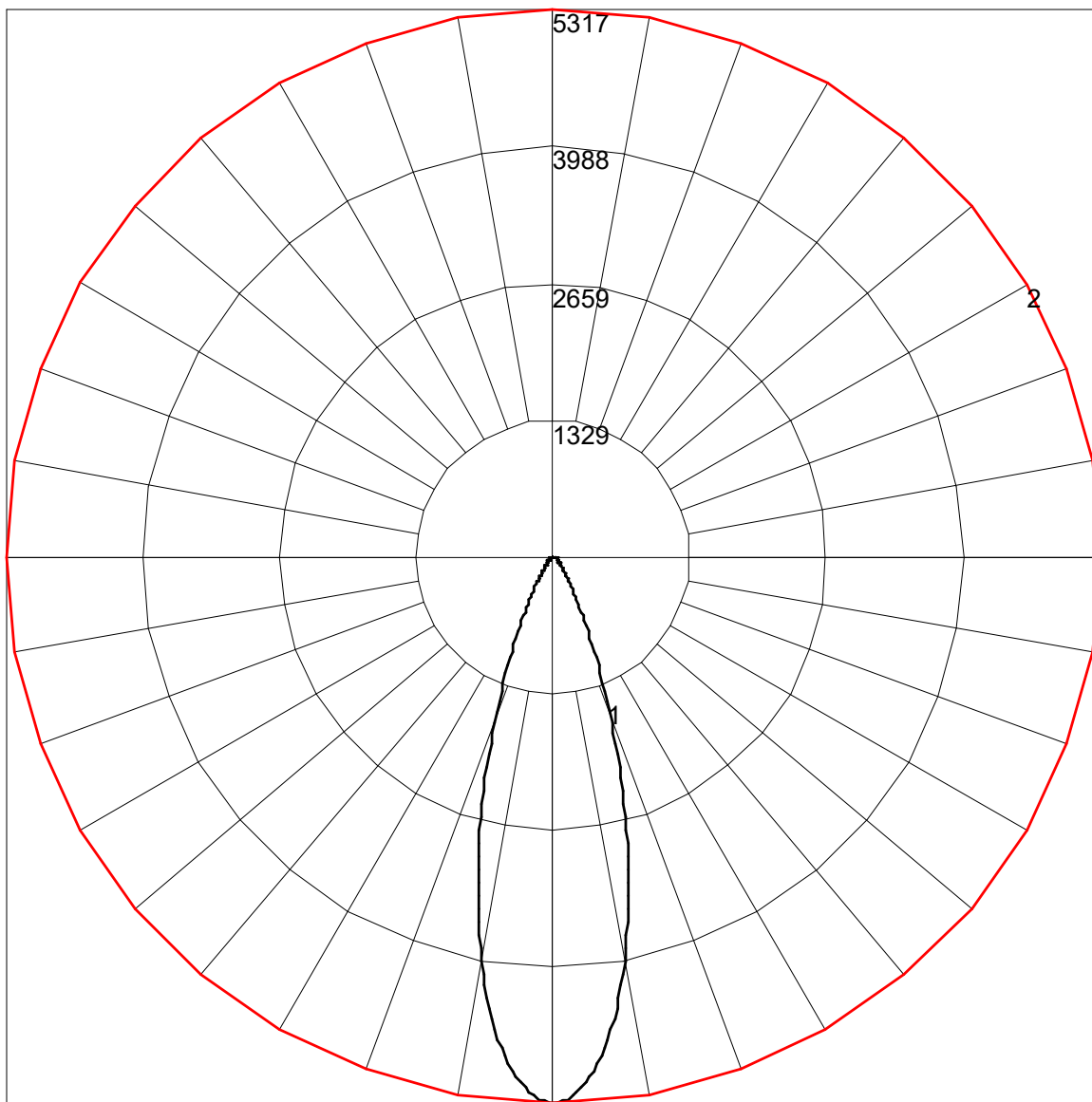
X=2H	Y=2H	11.8	12.8	12.2	13.1	13.4	11.8	12.8	12.2	13.1	13.4
	3H	12.8	13.6	13.1	14.0	14.3	12.8	13.6	13.1	14.0	14.3
	4H	13.1	13.9	13.5	14.2	14.6	13.1	13.9	13.5	14.2	14.6
	6H	13.3	14.0	13.7	14.4	14.8	13.3	14.0	13.7	14.4	14.8
	8H	13.3	14.0	13.8	14.4	14.8	13.3	14.0	13.8	14.4	14.8
	12H	13.4	14.0	13.8	14.4	14.8	13.4	14.0	13.8	14.4	14.8

UGR Viewed Endwise

4H	2H	12.1	12.9	12.5	13.3	13.6	12.1	12.9	12.5	13.3	13.6
	3H	13.2	13.9	13.6	14.3	14.7	13.2	13.9	13.6	14.3	14.7
	4H	13.6	14.2	14.0	14.6	15.0	13.6	14.2	14.0	14.6	15.0
	6H	13.9	14.4	14.4	14.8	15.3	13.9	14.4	14.4	14.8	15.3
	8H	14.0	14.5	14.5	14.9	15.4	14.0	14.5	14.5	14.9	15.4
	12H	14.0	14.4	14.5	14.9	15.4	14.0	14.4	14.5	14.9	15.4
8H	4H	13.7	14.1	14.1	14.6	15.0	13.7	14.1	14.1	14.6	15.0
	6H	14.1	14.4	14.6	14.9	15.4	14.1	14.4	14.6	14.9	15.4
	8H	14.2	14.5	14.8	15.1	15.6	14.2	14.5	14.8	15.1	15.6
	12H	14.4	14.6	14.9	15.1	15.7	14.4	14.6	14.9	15.1	15.7
12H	4H	13.6	14.0	14.1	14.5	15.0	13.6	14.0	14.1	14.5	15.0
	6H	14.1	14.4	14.6	14.9	15.4	14.1	14.4	14.6	14.9	15.4
	8H	14.3	14.5	14.8	15.0	15.6	14.3	14.5	14.8	15.0	15.6

Maximum UGR = 15.7

POLAR GRAPH



Maximum Candela = 5317.294 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.)