



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-LN-OF-WH\_4000K.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.10

[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-LN-OF-WH 4000k

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

[MORE] tic optic, clear glass patterned 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	1850
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)	0.44
Spacing Criterion (90-270)	0.44
Spacing Criterion (Diagonal)	0.44
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	12149	12149	12149
55	9113	9113	9113
65	7541	7541	7541
75	6136	6136	6136
85	3416	3416	3416

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CANDELA TABULATION

	<u>0</u>
0.0	6948.852
0.5	6940.777
1.0	6917.564
1.5	6881.230
2.0	6829.757
2.5	6766.173
3.0	6689.468
3.5	6600.652
4.0	6499.725
4.5	6388.704
5.0	6268.601
5.5	6138.405
6.0	5999.125
6.5	5848.743
7.0	5690.287
7.5	5524.766
8.0	5349.152
8.5	5168.492
9.0	4981.776
9.5	4791.024
10.0	4597.243
10.5	4400.435
11.0	4199.589
11.5	3998.744
12.0	3799.917
12.5	3602.099
13.0	3407.309
13.5	3215.547
14.0	3028.831
14.5	2848.171
15.0	2674.576
15.5	2507.037
16.0	2346.562
16.5	2193.152
17.0	2048.826
17.5	1910.556
18.0	1780.359
18.5	1658.237
19.0	1544.189
19.5	1438.215
20.0	1338.297
20.5	1243.426
21.0	1154.609
21.5	1073.868
22.0	996.053
22.5	923.688
23.0	856.066
23.5	793.491
24.0	735.256
24.5	680.755
25.0	630.594
25.5	584.370
26.0	541.476
26.5	502.114

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27.0	465.780
27.5	432.474
28.0	401.994
28.5	374.037
29.0	348.401
29.5	324.784
30.0	303.287
30.5	283.505
31.0	265.338
31.5	248.786
32.0	233.748
32.5	219.719
33.0	206.901
33.5	195.093
34.0	184.394
34.5	174.503
35.0	165.521
35.5	157.346
36.0	149.675
36.5	142.711
37.0	136.353
37.5	130.398
38.0	125.049
38.5	120.104
39.0	115.461
39.5	111.121
40.0	107.084
40.5	103.350
41.0	99.918
41.5	96.688
42.0	93.661
42.5	90.835
43.0	88.110
43.5	85.586
44.0	83.164
44.5	80.843
45.0	78.622
45.5	76.604
46.0	74.585
46.5	72.668
47.0	70.851
47.5	69.034
48.0	67.319
48.5	65.603
49.0	63.988
49.5	62.373
50.0	60.859
50.5	59.446
51.0	57.932
51.5	56.620
52.0	55.207
52.5	53.895
53.0	52.684
53.5	51.372
54.0	50.161
54.5	49.051

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55.0	47.840
55.5	46.729
56.0	45.619
56.5	44.509
57.0	43.500
57.5	42.490
58.0	41.481
58.5	40.472
59.0	39.564
59.5	38.655
60.0	37.747
60.5	36.839
61.0	35.930
61.5	35.022
62.0	34.113
62.5	33.306
63.0	32.398
63.5	31.590
64.0	30.783
64.5	29.975
65.0	29.168
65.5	28.361
66.0	27.553
66.5	26.746
67.0	26.039
67.5	25.232
68.0	24.525
68.5	23.718
69.0	23.011
69.5	22.204
70.0	21.498
70.5	20.791
71.0	20.085
71.5	19.378
72.0	18.672
72.5	17.965
73.0	17.259
73.5	16.552
74.0	15.846
74.5	15.240
75.0	14.534
75.5	13.827
76.0	13.221
76.5	12.515
77.0	11.909
77.5	11.203
78.0	10.597
78.5	9.992
79.0	9.386
79.5	8.781
80.0	8.175
80.5	7.570
81.0	6.964
81.5	6.459
82.0	5.854
82.5	5.349

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CANDELA TABULATION - (Cont.)

83.0	4.744
83.5	4.239
84.0	3.734
84.5	3.230
85.0	2.725
85.5	2.321
86.0	2.019
86.5	1.615
87.0	1.312
87.5	1.110
88.0	0.807
88.5	0.606
89.0	0.404
89.5	0.303
90.0	0.202
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

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-LN-OF-WH\_4000K.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



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-LN-OF-WH\_4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1280.67	N.A.	69.20
0-30	1587.45	N.A.	85.80
0-40	1697.18	N.A.	91.70
0-60	1802.08	N.A.	97.40
0-80	1846.48	N.A.	99.80
0-90	1850.04	N.A.	100.00
10-90	1305.91	N.A.	70.60
20-40	416.51	N.A.	22.50
20-50	478.26	N.A.	25.90
40-70	133.88	N.A.	7.20
60-80	44.40	N.A.	2.40
70-80	15.42	N.A.	0.80
80-90	3.56	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	1850.05	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	544.14
10-20	736.53
20-30	306.79
30-40	109.72
40-50	61.75
50-60	43.15
60-70	28.98
70-80	15.42
80-90	3.56
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	92	91	90	89	88	86
2	100	96	93	90	98	94	91	89	91	89	87	89	87	85	86	85	83	82
3	96	91	87	84	94	90	86	83	87	84	82	85	83	81	83	81	79	78
4	92	86	82	79	91	85	82	79	84	80	78	82	79	77	80	78	76	75
5	89	83	78	75	88	82	78	75	80	77	74	79	76	73	78	75	73	72
6	86	79	75	72	85	79	74	71	77	74	71	76	73	70	75	72	70	69
7	83	76	72	69	82	76	71	68	74	71	68	73	70	68	73	70	67	66
8	80	73	69	66	79	73	69	66	72	68	66	71	68	65	70	67	65	64
9	78	71	67	64	77	70	66	64	70	66	63	69	66	63	68	65	63	62
10	75	68	64	62	75	68	64	61	67	64	61	67	64	61	66	63	61	60

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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	13.1	14.1	13.5	14.4	14.8	UGR Viewed Endwise	13.1	14.1	13.5	14.4	14.8
	3H	14.6	15.5	15.0	15.8	16.2		14.6	15.5	15.0	15.8	16.2
	4H	15.1	15.9	15.5	16.3	16.7		15.1	15.9	15.5	16.3	16.7
	6H	15.4	16.2	15.8	16.5	16.9		15.4	16.2	15.8	16.5	16.9
	8H	15.5	16.2	15.9	16.6	17.0		15.5	16.2	15.9	16.6	17.0
	12H	15.5	16.2	16.0	16.6	17.0		15.5	16.2	16.0	16.6	17.0

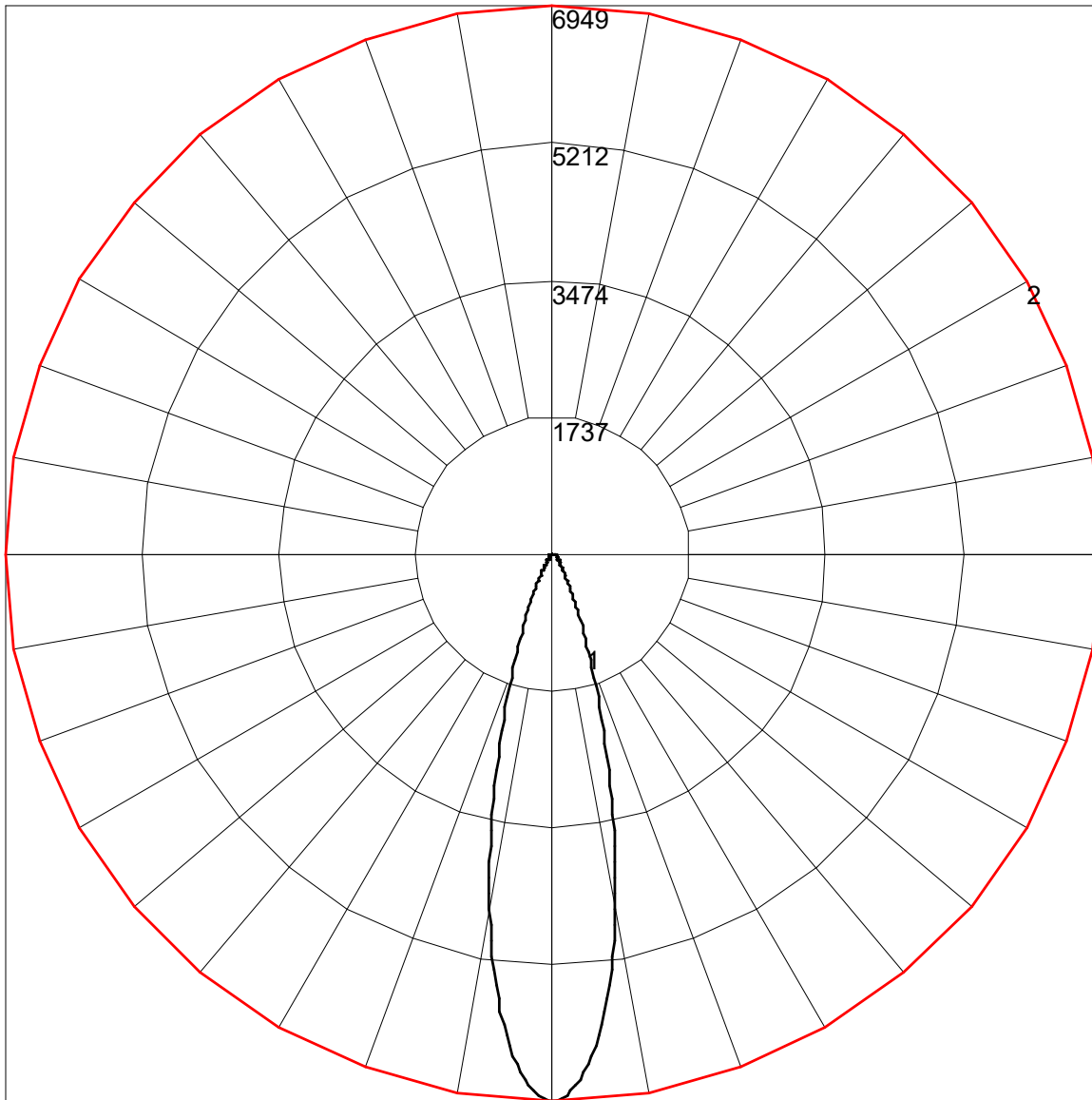
4H	2H	13.6	14.4	14.0	14.7	15.1	13.6	14.4	14.0	14.7	15.1
	3H	15.2	15.9	15.6	16.3	16.7	15.2	15.9	15.6	16.3	16.7
	4H	15.8	16.4	16.3	16.8	17.3	15.8	16.4	16.3	16.8	17.3
	6H	16.3	16.8	16.7	17.2	17.7	16.3	16.8	16.7	17.2	17.7
	8H	16.4	16.8	16.9	17.3	17.8	16.4	16.8	16.9	17.3	17.8
	12H	16.4	16.8	16.9	17.3	17.8	16.4	16.8	16.9	17.3	17.8

8H	4H	16.0	16.5	16.5	16.9	17.4	16.0	16.5	16.5	16.9	17.4
	6H	16.5	16.9	17.1	17.4	17.9	16.5	16.9	17.1	17.4	17.9
	8H	16.7	17.0	17.2	17.5	18.0	16.7	17.0	17.2	17.5	18.0
	12H	16.8	17.1	17.3	17.6	18.1	16.8	17.1	17.3	17.6	18.1

12H	4H	16.0	16.4	16.5	16.9	17.3	16.0	16.4	16.5	16.9	17.3
	6H	16.6	16.9	17.1	17.3	17.9	16.6	16.9	17.1	17.3	17.9
	8H	16.7	17.0	17.3	17.5	18.1	16.7	17.0	17.3	17.5	18.1

Maximum UGR = 18.1

POLAR GRAPH



Maximum Candela = 6948.852 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.)