



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.09

[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-LM-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	1838
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)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.54
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	13947	13947	13947
55	10871	10871	10871
65	9085	9085	9085
75	7309	7309	7309
85	4366	4366	4366

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

CANDELA TABULATION

	<u>0</u>
0.0	4755.850
0.5	4753.801
1.0	4746.629
1.5	4735.359
2.0	4721.016
2.5	4701.550
3.0	4679.010
3.5	4652.373
4.0	4621.637
4.5	4588.852
5.0	4551.969
5.5	4510.988
6.0	4465.909
6.5	4415.707
7.0	4361.407
7.5	4301.985
8.0	4237.440
8.5	4167.772
9.0	4094.006
9.5	4014.093
10.0	3928.033
10.5	3835.825
11.0	3739.520
11.5	3638.092
12.0	3530.517
12.5	3418.843
13.0	3302.047
13.5	3181.153
14.0	3055.137
14.5	2925.022
15.0	2793.882
15.5	2660.694
16.0	2527.506
16.5	2393.293
17.0	2260.104
17.5	2131.014
18.0	2002.948
18.5	1880.005
19.0	1762.185
19.5	1648.462
20.0	1540.887
20.5	1437.410
21.0	1341.105
21.5	1249.922
22.0	1163.862
22.5	1083.949
23.0	1008.543
23.5	938.261
24.0	872.999
24.5	812.039
25.0	755.485
25.5	702.927
26.0	653.648
26.5	608.159

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-LM-OF-WH\_4000K.IES****CANDELA TABULATION - (Cont.)**

27.0	565.743
27.5	526.914
28.0	490.748
28.5	457.348
29.0	426.715
29.5	398.131
30.0	371.596
30.5	347.109
31.0	324.467
31.5	303.670
32.0	284.408
32.5	266.684
33.0	250.394
33.5	235.334
34.0	221.605
34.5	208.901
35.0	197.426
35.5	186.771
36.0	177.038
36.5	168.125
37.0	159.929
37.5	152.449
38.0	145.688
38.5	139.438
39.0	133.701
39.5	128.476
40.0	123.660
40.5	119.152
41.0	114.952
41.5	111.161
42.0	107.575
42.5	104.194
43.0	101.121
43.5	98.150
44.0	95.383
44.5	92.822
45.0	90.261
45.5	87.904
46.0	85.753
46.5	83.601
47.0	81.552
47.5	79.708
48.0	77.762
48.5	76.020
49.0	74.278
49.5	72.536
50.0	71.000
50.5	69.463
51.0	68.029
51.5	66.492
52.0	65.057
52.5	63.726
53.0	62.291
53.5	60.959
54.0	59.627
54.5	58.296

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

CANDELA TABULATION - (Cont.)

55.0	57.066
55.5	55.837
56.0	54.607
56.5	53.378
57.0	52.046
57.5	50.919
58.0	49.792
58.5	48.767
59.0	47.640
59.5	46.513
60.0	45.387
60.5	44.260
61.0	43.337
61.5	42.210
62.0	41.186
62.5	40.161
63.0	39.137
63.5	38.215
64.0	37.190
64.5	36.166
65.0	35.141
65.5	34.219
66.0	33.297
66.5	32.375
67.0	31.350
67.5	30.428
68.0	29.506
68.5	28.584
69.0	27.662
69.5	26.740
70.0	25.818
70.5	24.998
71.0	24.179
71.5	23.154
72.0	22.335
72.5	21.515
73.0	20.695
73.5	19.773
74.0	18.954
74.5	18.134
75.0	17.314
75.5	16.495
76.0	15.675
76.5	14.856
77.0	14.036
77.5	13.421
78.0	12.602
78.5	11.885
79.0	11.167
79.5	10.450
80.0	9.733
80.5	9.016
81.0	8.299
81.5	7.786
82.0	6.967
82.5	6.455

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

CANDELA TABULATION - (Cont.)

83.0	5.737
83.5	5.225
84.0	4.610
84.5	3.996
85.0	3.483
85.5	2.869
86.0	2.459
86.5	1.947
87.0	1.639
87.5	1.332
88.0	1.025
88.5	0.820
89.0	0.615
89.5	0.410
90.0	0.307
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

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

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

Zone	Lumens	%Lamp	%Fixt
0-20	1162.42	N.A.	63.20
0-30	1526.67	N.A.	83.10
0-40	1657.98	N.A.	90.20
0-60	1780.38	N.A.	96.90
0-80	1833.75	N.A.	99.80
0-90	1838.08	N.A.	100.00
10-90	1423.01	N.A.	77.40
20-40	495.56	N.A.	27.00
20-50	566.67	N.A.	30.80
40-70	157.35	N.A.	8.60
60-80	53.36	N.A.	2.90
70-80	18.42	N.A.	1.00
80-90	4.33	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	1838.09	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	415.07
10-20	747.35
20-30	364.25
30-40	131.31
40-50	71.11
50-60	51.30
60-70	34.95
70-80	18.42
80-90	4.33
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

# IES INDOOR REPORT

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

## 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	101	99	97	101	99	97	96	96	94	93	92	91	90	89	88	87	86
2	99	95	92	89	97	93	90	88	90	88	86	88	86	84	85	84	82	81
3	95	89	85	82	93	88	84	81	86	83	80	84	81	79	82	80	78	76
4	91	85	80	77	89	84	80	76	82	78	75	80	77	75	78	76	74	72
5	87	81	76	72	86	80	75	72	78	74	71	77	73	71	75	72	70	69
6	84	77	72	69	83	76	72	68	75	71	68	74	70	68	72	69	67	66
7	81	73	69	65	80	73	68	65	72	68	65	71	67	65	70	67	64	63
8	78	70	66	63	77	70	65	62	69	65	62	68	65	62	67	64	62	61
9	75	68	63	60	74	67	63	60	66	62	60	66	62	59	65	62	59	58
10	73	65	61	58	72	65	60	58	64	60	57	63	60	57	63	59	57	56

# IES INDOOR REPORT

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

## 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

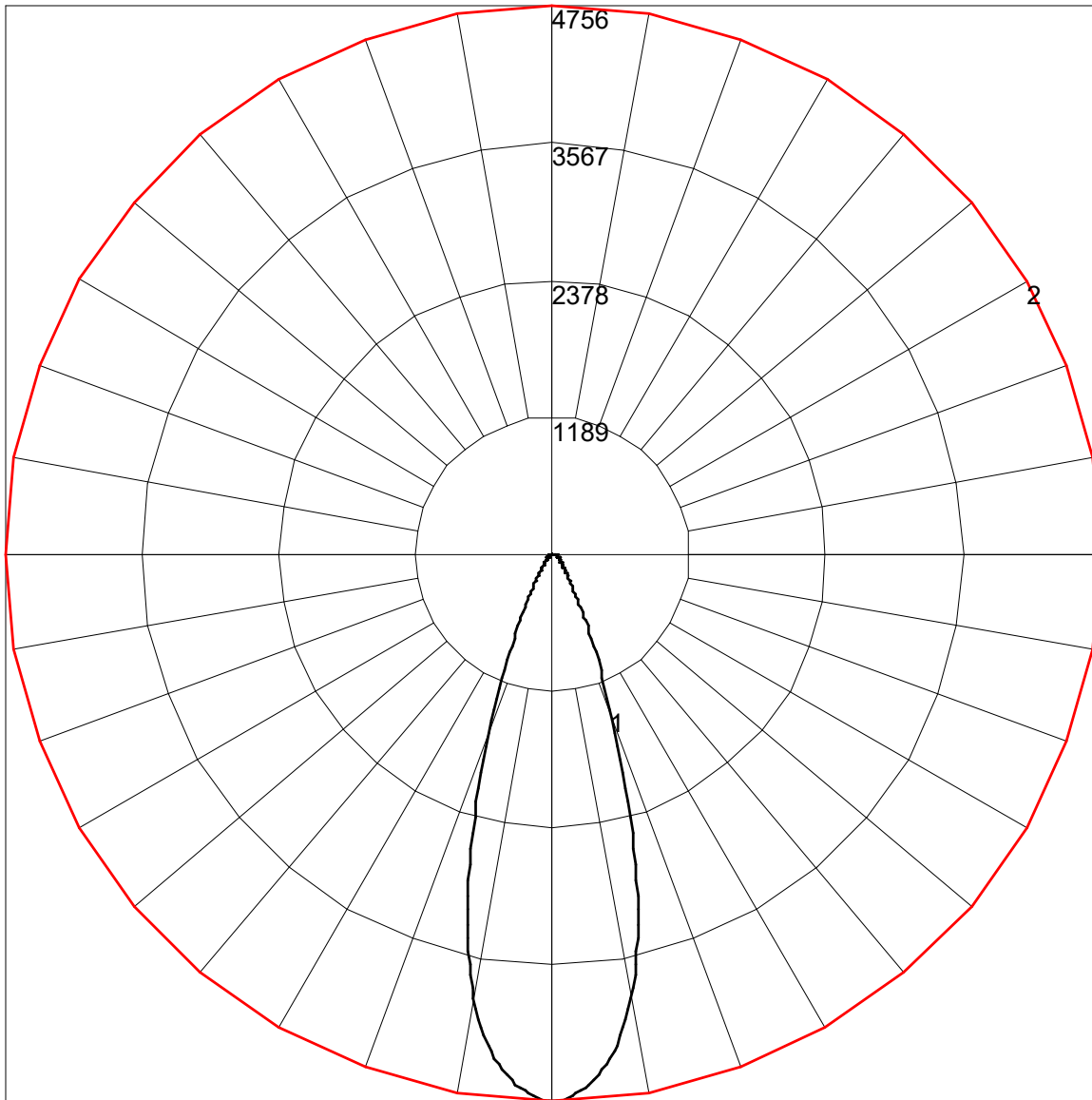
X=2H	Y=2H	14.3	15.4	14.7	15.7	16.0	14.3	15.4	14.7	15.7	16.0
	3H	15.8	16.7	16.2	17.0	17.4	15.8	16.7	16.2	17.0	17.4
	4H	16.3	17.1	16.7	17.5	17.9	16.3	17.1	16.7	17.5	17.9
	6H	16.6	17.4	17.0	17.8	18.2	16.6	17.4	17.0	17.8	18.2
	8H	16.7	17.4	17.1	17.8	18.2	16.7	17.4	17.1	17.8	18.2
	12H	16.7	17.4	17.2	17.8	18.2	16.7	17.4	17.2	17.8	18.2

### UGR Viewed Endwise

4H	2H	14.8	15.6	15.2	16.0	16.4	14.8	15.6	15.2	16.0	16.4
	3H	16.4	17.1	16.8	17.5	17.9	16.4	17.1	16.8	17.5	17.9
	4H	17.0	17.7	17.5	18.1	18.5	17.0	17.7	17.5	18.1	18.5
	6H	17.5	18.0	18.0	18.5	18.9	17.5	18.0	18.0	18.5	18.9
	8H	17.6	18.1	18.1	18.5	19.0	17.6	18.1	18.1	18.5	19.0
	12H	17.6	18.1	18.1	18.5	19.0	17.6	18.1	18.1	18.5	19.0
8H	4H	17.2	17.7	17.7	18.1	18.6	17.2	17.7	17.7	18.1	18.6
	6H	17.7	18.1	18.3	18.6	19.1	17.7	18.1	18.3	18.6	19.1
	8H	17.9	18.2	18.4	18.8	19.3	17.9	18.2	18.4	18.8	19.3
	12H	18.0	18.3	18.5	18.8	19.4	18.0	18.3	18.5	18.8	19.4
12H	4H	17.2	17.6	17.7	18.1	18.6	17.2	17.6	17.7	18.1	18.6
	6H	17.8	18.1	18.3	18.6	19.1	17.8	18.1	18.3	18.6	19.1
	8H	17.9	18.2	18.5	18.7	19.3	17.9	18.2	18.5	18.7	19.3

Maximum UGR = 19.4

POLAR GRAPH



Maximum Candela = 4755.85 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.)