



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.12

[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-RW-OF-WH 4000k

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

[MORE] s 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	1637
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)	0.98
Spacing Criterion (90-270)	0.98
Spacing Criterion (Diagonal)	0.88
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	37875	37875	37875
55	30582	30582	30582
65	19784	19784	19784
75	11032	11032	11032
85	5667	5667	5667

IES INDOOR REPORT
PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-RW-OF-WH_4000K.IES

CANDELA TABULATION

	<u>0</u>
0.0	1315.291
0.5	1315.291
1.0	1314.054
1.5	1311.579
2.0	1309.105
2.5	1306.630
3.0	1302.918
3.5	1299.206
4.0	1295.494
4.5	1290.545
5.0	1286.833
5.5	1281.883
6.0	1276.934
6.5	1271.985
7.0	1267.035
7.5	1262.086
8.0	1257.136
8.5	1250.950
9.0	1246.000
9.5	1241.051
10.0	1236.349
10.5	1231.276
11.0	1226.079
11.5	1221.006
12.0	1216.181
12.5	1211.355
13.0	1206.529
13.5	1201.580
14.0	1196.631
14.5	1191.681
15.0	1186.608
15.5	1181.411
16.0	1175.967
16.5	1170.523
17.0	1164.955
17.5	1159.015
18.0	1152.705
18.5	1145.900
19.0	1139.342
19.5	1132.289
20.0	1124.617
20.5	1115.832
21.0	1105.686
21.5	1094.674
22.0	1082.053
22.5	1068.071
23.0	1052.233
23.5	1034.415
24.0	1014.865
24.5	992.717
25.0	967.970
25.5	940.625
26.0	911.053
26.5	879.624

IES INDOOR REPORT
PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-RW-OF-WH_4000K.IES

CANDELA TABULATION - (Cont.)

27.0	846.587
27.5	813.055
28.0	777.915
28.5	743.146
29.0	708.500
29.5	673.855
30.0	639.828
30.5	606.420
31.0	574.868
31.5	544.305
32.0	515.475
32.5	488.625
33.0	463.755
33.5	441.359
34.0	421.190
34.5	403.620
35.0	388.153
35.5	375.037
36.0	363.530
36.5	353.879
37.0	345.341
37.5	338.041
38.0	331.359
38.5	325.420
39.0	320.100
39.5	315.274
40.0	310.943
40.5	306.860
41.0	302.901
41.5	299.312
42.0	295.724
42.5	292.383
43.0	289.042
43.5	285.578
44.0	282.113
44.5	278.649
45.0	275.060
45.5	271.348
46.0	267.513
46.5	263.553
47.0	259.470
47.5	255.263
48.0	251.056
48.5	246.602
49.0	242.024
49.5	237.198
50.0	232.372
50.5	227.423
51.0	222.226
51.5	217.153
52.0	211.956
52.5	206.759
53.0	201.810
53.5	196.366
54.0	190.921
54.5	185.477

IES INDOOR REPORT**PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-RW-OF-WH_4000K.IES****CANDELA TABULATION - (Cont.)**

55.0	180.157
55.5	174.712
56.0	169.392
56.5	164.195
57.0	158.998
57.5	153.801
58.0	148.728
58.5	143.779
59.0	138.829
59.5	134.004
60.0	129.178
60.5	124.476
61.0	119.898
61.5	115.320
62.0	110.989
62.5	106.535
63.0	102.328
63.5	97.997
64.0	93.914
64.5	89.831
65.0	85.871
65.5	81.912
66.0	78.076
66.5	74.364
67.0	70.776
67.5	67.188
68.0	63.723
68.5	60.258
69.0	56.918
69.5	53.701
70.0	50.731
70.5	47.885
71.0	45.287
71.5	42.812
72.0	40.461
72.5	38.234
73.0	36.130
73.5	34.274
74.0	32.418
74.5	30.810
75.0	29.325
75.5	27.964
76.0	26.479
76.5	25.118
77.0	23.757
77.5	22.396
78.0	21.158
78.5	19.797
79.0	18.560
79.5	17.323
80.0	16.085
80.5	14.848
81.0	13.734
81.5	12.621
82.0	11.384
82.5	10.394

IES INDOOR REPORT
PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-RW-OF-WH_4000K.IES

CANDELA TABULATION - (Cont.)

83.0	9.280
83.5	8.166
84.0	7.177
84.5	6.063
85.0	5.073
85.5	4.207
86.0	3.341
86.5	2.722
87.0	2.103
87.5	1.609
88.0	1.114
88.5	0.742
89.0	0.371
89.5	0.124
90.0	0.000
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-RW-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-RW-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-RW-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-RW-OF-WH_4000K.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	455.27	N.A.	27.80
0-30	881.00	N.A.	53.80
0-40	1140.44	N.A.	69.60
0-60	1512.39	N.A.	92.40
0-80	1630.74	N.A.	99.60
0-90	1637.43	N.A.	100.00
10-90	1516.29	N.A.	92.60
20-40	685.17	N.A.	41.80
20-50	896.25	N.A.	54.70
40-70	457.98	N.A.	28.00
60-80	118.35	N.A.	7.20
70-80	32.32	N.A.	2.00
80-90	6.69	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	1637.43	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	121.14
10-20	334.13
20-30	425.73
30-40	259.44
40-50	211.08
50-60	160.87
60-70	86.03
70-80	32.32
80-90	6.69
90-100	0.00
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-RW-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	102	98	96	93	99	96	94	92	93	91	89	89	88	86	86	85	84	82
2	95	89	85	81	93	88	83	80	85	81	78	82	79	76	79	77	75	73
3	89	81	76	71	87	80	75	70	77	73	69	75	71	68	73	70	67	65
4	83	74	68	63	81	73	67	63	71	66	62	69	65	61	67	64	61	59
5	78	68	62	57	76	67	61	57	66	60	56	64	59	56	62	58	55	54
6	73	63	57	52	71	62	56	52	61	55	51	59	55	51	58	54	50	49
7	69	59	52	47	67	58	52	47	57	51	47	55	50	47	54	50	46	45
8	65	55	48	44	64	54	48	44	53	47	43	52	47	43	51	46	43	42
9	61	51	45	40	60	51	45	40	50	44	40	49	44	40	48	43	40	39
10	58	48	42	38	57	47	42	38	47	41	38	46	41	37	45	41	37	36

IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-L16-8TW-DIM-UNV-RW-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

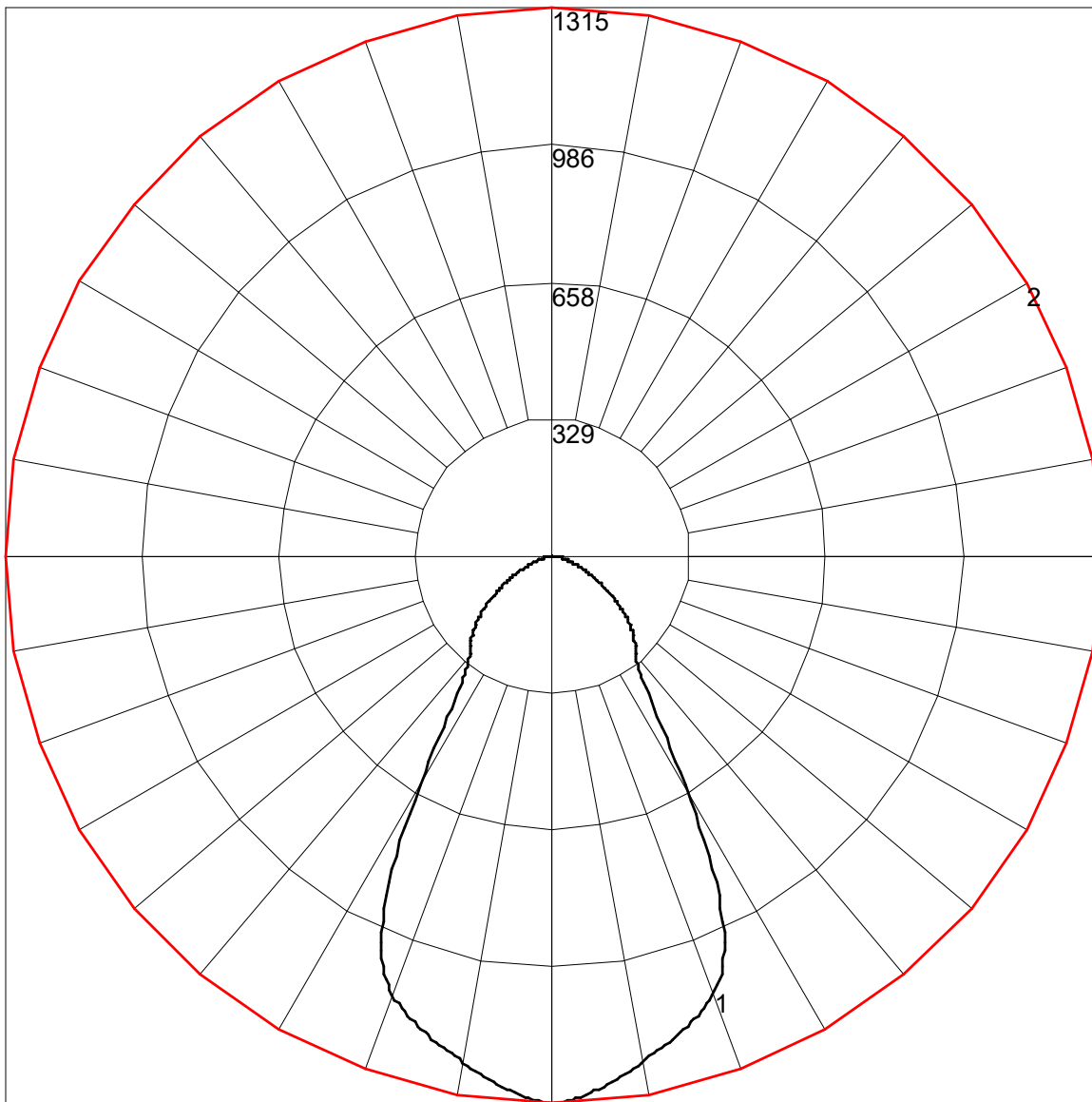
X=2H	Y=2H	21.7	23.0	22.1	23.3	23.6	21.7	23.0	22.1	23.3	23.6
	3H	22.5	23.6	22.8	24.0	24.3	22.5	23.6	22.8	24.0	24.3
	4H	22.6	23.7	23.0	24.1	24.4	22.6	23.7	23.0	24.1	24.4
	6H	22.7	23.7	23.2	24.1	24.5	22.7	23.7	23.2	24.1	24.5
	8H	22.8	23.7	23.2	24.1	24.5	22.8	23.7	23.2	24.1	24.5
	12H	22.7	23.6	23.2	24.0	24.5	22.7	23.6	23.2	24.0	24.5

UGR Viewed Endwise

4H	2H	22.0	23.1	22.4	23.4	23.8	22.0	23.1	22.4	23.4	23.8
	3H	22.9	23.8	23.3	24.2	24.6	22.9	23.8	23.3	24.2	24.6
	4H	23.1	23.9	23.5	24.3	24.8	23.1	23.9	23.5	24.3	24.8
	6H	23.3	24.0	23.7	24.4	24.9	23.3	24.0	23.7	24.4	24.9
	8H	23.3	23.9	23.8	24.4	24.9	23.3	23.9	23.8	24.4	24.9
	12H	23.3	23.9	23.8	24.4	24.8	23.3	23.9	23.8	24.4	24.8
8H	4H	23.2	23.8	23.6	24.2	24.7	23.2	23.8	23.6	24.2	24.7
	6H	23.4	23.9	23.9	24.4	24.9	23.4	23.9	23.9	24.4	24.9
	8H	23.4	23.9	24.0	24.4	24.9	23.4	23.9	24.0	24.4	24.9
	12H	23.5	23.9	24.0	24.4	24.9	23.5	23.9	24.0	24.4	24.9
12H	4H	23.1	23.7	23.6	24.2	24.6	23.1	23.7	23.6	24.2	24.6
	6H	23.4	23.8	23.9	24.3	24.8	23.4	23.8	23.9	24.3	24.8
	8H	23.4	23.9	24.0	24.3	24.9	23.4	23.9	24.0	24.3	24.9

Maximum UGR = 24.9

POLAR GRAPH



Maximum Candela = 1315.291 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.)