



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.15

[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-RN-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	1859
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)	0.46
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	9304	9304	9304
55	6190	6190	6190
65	4261	4261	4261
75	2767	2767	2767
85	2231	2231	2231

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CANDELA TABULATION

	<u>0</u>
0.0	6972.562
0.5	6964.155
1.0	6942.087
1.5	6903.205
2.0	6850.661
2.5	6784.456
3.0	6705.640
3.5	6615.265
4.0	6513.330
4.5	6400.886
5.0	6278.984
5.5	6147.625
6.0	6006.807
6.5	5855.481
7.0	5695.748
7.5	5529.710
8.0	5357.366
8.5	5177.666
9.0	4994.814
9.5	4806.707
10.0	4617.549
10.5	4425.239
11.0	4231.878
11.5	4038.517
12.0	3846.206
12.5	3657.049
13.0	3468.942
13.5	3285.038
14.0	3104.288
14.5	2928.791
15.0	2759.600
15.5	2596.715
16.0	2438.032
16.5	2287.757
17.0	2143.787
17.5	2006.122
18.0	1875.814
18.5	1751.810
19.0	1635.163
19.5	1525.872
20.0	1422.886
20.5	1325.155
21.0	1233.728
21.5	1149.658
22.0	1068.741
22.5	992.868
23.0	920.567
23.5	853.627
24.0	791.205
24.5	732.776
25.0	678.235
25.5	627.583
26.0	580.924
26.5	537.733

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

27.0	497.905
27.5	461.229
28.0	427.496
28.5	396.811
29.0	368.542
29.5	342.586
30.0	318.731
30.5	296.662
31.0	276.591
31.5	258.095
32.0	240.966
32.5	225.203
33.0	210.806
33.5	197.565
34.0	185.269
34.5	174.025
35.0	163.832
35.5	154.374
36.0	145.757
36.5	137.875
37.0	130.624
37.5	124.003
38.0	117.908
38.5	112.339
39.0	107.294
39.5	102.565
40.0	98.152
40.5	94.053
41.0	90.270
41.5	86.697
42.0	83.440
42.5	80.392
43.0	77.450
43.5	74.717
44.0	72.195
44.5	69.778
45.0	67.571
45.5	65.364
46.0	63.368
46.5	61.371
47.0	59.480
47.5	57.588
48.0	55.802
48.5	54.120
49.0	52.439
49.5	50.862
50.0	49.286
50.5	47.815
51.0	46.344
51.5	44.977
52.0	43.611
52.5	42.350
53.0	41.089
53.5	39.828
54.0	38.672
54.5	37.621

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55.0	36.465
55.5	35.415
56.0	34.364
56.5	33.313
57.0	32.367
57.5	31.421
58.0	30.370
58.5	29.425
59.0	28.584
59.5	27.638
60.0	26.692
60.5	25.852
61.0	25.011
61.5	24.170
62.0	23.329
62.5	22.489
63.0	21.648
63.5	20.807
64.0	20.072
64.5	19.336
65.0	18.495
65.5	17.760
66.0	17.024
66.5	16.289
67.0	15.658
67.5	14.922
68.0	14.292
68.5	13.556
69.0	12.926
69.5	12.295
70.0	11.665
70.5	11.139
71.0	10.614
71.5	10.088
72.0	9.668
72.5	9.143
73.0	8.722
73.5	8.407
74.0	7.987
74.5	7.671
75.0	7.356
75.5	7.041
76.0	6.726
76.5	6.410
77.0	6.095
77.5	5.780
78.0	5.570
78.5	5.254
79.0	4.939
79.5	4.729
80.0	4.414
80.5	4.098
81.0	3.888
81.5	3.573
82.0	3.363
82.5	3.153

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CANDELA TABULATION - (Cont.)

83.0	2.837
83.5	2.627
84.0	2.417
84.5	2.207
85.0	1.997
85.5	1.786
86.0	1.471
86.5	1.366
87.0	1.156
87.5	0.946
88.0	0.736
88.5	0.525
89.0	0.420
89.5	0.315
90.0	0.210
90.5	0.210
91.0	0.105
91.5	0.000
92.0	0.105
92.5	0.105
93.0	0.105
93.5	0.105
94.0	0.000
94.5	0.105
95.0	0.105
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	0.105
103.0	0.000
103.5	0.105
104.0	0.105
104.5	0.105
105.0	0.105
105.5	0.105
106.0	0.105
106.5	0.105
107.0	0.105
107.5	0.000
108.0	0.105
108.5	0.105
109.0	0.105
109.5	0.105
110.0	0.105
110.5	0.105

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CANDELA TABULATION - (Cont.)

111.0	0.105
111.5	0.105
112.0	0.105
112.5	0.105
113.0	0.105
113.5	0.105
114.0	0.105
114.5	0.105
115.0	0.105
115.5	0.105
116.0	0.105
116.5	0.105
117.0	0.105
117.5	0.105
118.0	0.105
118.5	0.105
119.0	0.105
119.5	0.105
120.0	0.105
120.5	0.105
121.0	0.105
121.5	0.105
122.0	0.105
122.5	0.105
123.0	0.105
123.5	0.105
124.0	0.105
124.5	0.105
125.0	0.105
125.5	0.105
126.0	0.105
126.5	0.105
127.0	0.105
127.5	0.105
128.0	0.105
128.5	0.105
129.0	0.105
129.5	0.105
130.0	0.105
130.5	0.105
131.0	0.210
131.5	0.210
132.0	0.210
132.5	0.210
133.0	0.210
133.5	0.210
134.0	0.210
134.5	0.210
135.0	0.315
135.5	0.315
136.0	0.315
136.5	0.315
137.0	0.315
137.5	0.420
138.0	0.420
138.5	0.420

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CANDELA TABULATION - (Cont.)

139.0	0.420
139.5	0.525
140.0	0.525
140.5	0.525
141.0	0.631
141.5	0.631
142.0	0.631
142.5	0.736
143.0	0.736
143.5	0.736
144.0	0.841
144.5	0.841
145.0	0.946
145.5	0.946
146.0	1.051
146.5	1.051
147.0	1.156
147.5	1.156
148.0	1.261
148.5	1.261
149.0	1.366
149.5	1.366
150.0	1.471
150.5	1.471
151.0	1.576
151.5	1.576
152.0	1.681
152.5	1.681
153.0	1.786
153.5	1.786
154.0	1.892
154.5	1.892
155.0	1.997
155.5	1.997
156.0	2.102
156.5	2.102
157.0	2.102
157.5	2.207
158.0	2.207
158.5	2.312
159.0	2.312
159.5	2.312
160.0	2.417
160.5	2.417
161.0	2.417
161.5	2.417
162.0	2.522
162.5	2.522
163.0	2.522
163.5	2.522
164.0	2.522
164.5	2.522
165.0	2.522
165.5	2.522
166.0	2.627
166.5	2.522

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167.0	2.627
167.5	2.627
168.0	2.627
168.5	2.522
169.0	2.522
169.5	2.522
170.0	2.522
170.5	2.522
171.0	2.522
171.5	2.522
172.0	2.522
172.5	2.522
173.0	2.522
173.5	2.522
174.0	2.522
174.5	2.522
175.0	2.522
175.5	2.522
176.0	2.522
176.5	2.522
177.0	2.522
177.5	2.417
178.0	2.417
178.5	2.417
179.0	2.417
179.5	2.417
180.0	2.417



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

Zone	Lumens	%Lamp	%Fixt
0-20	1303.55	N.A.	70.10
0-30	1631.81	N.A.	87.80
0-40	1741.19	N.A.	93.70
0-60	1827.49	N.A.	98.30
0-80	1853.98	N.A.	99.70
0-90	1856.22	N.A.	99.80
10-90	1310.99	N.A.	70.50
20-40	437.64	N.A.	23.50
20-50	490.96	N.A.	26.40
40-70	104.81	N.A.	5.60
60-80	26.49	N.A.	1.40
70-80	7.98	N.A.	0.40
80-90	2.24	N.A.	0.10
90-110	0.13	N.A.	0.00
90-120	0.24	N.A.	0.00
90-130	0.33	N.A.	0.00
90-150	1.13	N.A.	0.10
90-180	2.98	N.A.	0.20
110-180	2.84	N.A.	0.20
0-180	1859.2	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	545.23
10-20	758.32
20-30	328.26
30-40	109.38
40-50	53.32
50-60	32.98
60-70	18.52
70-80	7.98
80-90	2.24
90-100	0.06
100-110	0.07
110-120	0.10
120-130	0.09
130-140	0.22
140-150	0.58
150-160	0.89
160-170	0.71
170-180	0.24

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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	97	96	95	94	93	92	91	90	89	88	87
2	100	96	93	91	98	95	92	90	92	90	88	89	87	86	87	85	84	83
3	96	91	88	85	95	90	87	84	88	85	83	86	83	81	84	82	80	79
4	93	87	83	80	91	86	82	79	84	81	79	83	80	78	81	79	77	76
5	89	83	79	76	88	83	79	76	81	78	75	80	77	74	78	76	74	73
6	86	80	76	73	85	79	75	72	78	75	72	77	74	71	76	73	71	70
7	84	77	73	70	82	76	72	69	75	72	69	74	71	69	73	71	68	67
8	81	74	70	67	80	74	70	67	73	69	67	72	69	66	71	68	66	65
9	78	72	67	65	78	71	67	64	70	67	64	70	66	64	69	66	64	63
10	76	69	65	62	75	69	65	62	68	65	62	68	64	62	67	64	62	61

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## UGR TABLE - CORRECTED

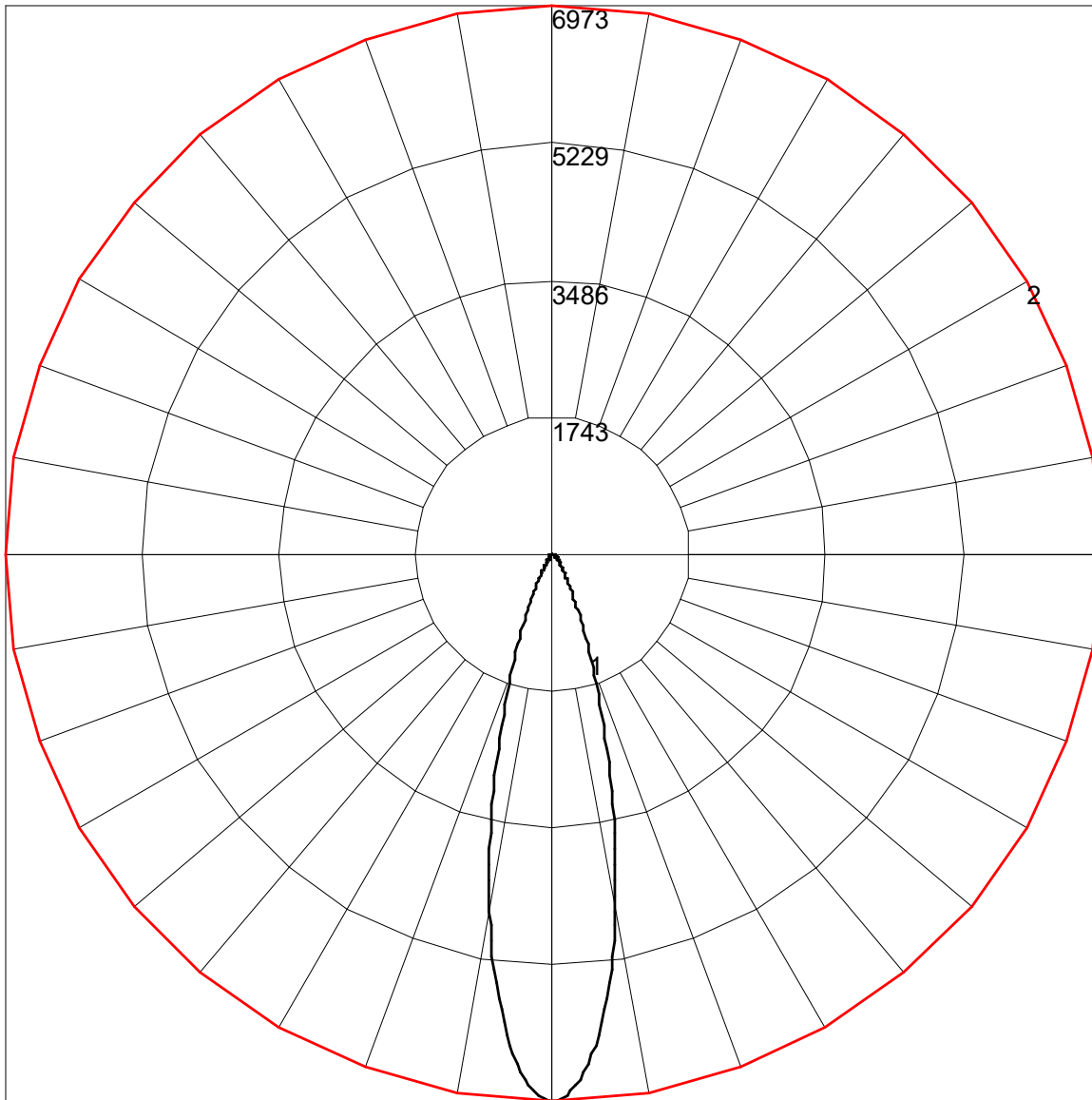
### Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	10.6	11.6	11.0	11.9	12.2	10.6	11.6	11.0	11.9	12.2
	3H	11.5	12.4	11.9	12.7	13.1	11.5	12.4	11.9	12.7	13.1
	4H	11.7	12.5	12.2	12.9	13.3	11.7	12.5	12.2	12.9	13.3
	6H	11.9	12.6	12.3	13.0	13.4	11.9	12.6	12.3	13.0	13.4
	8H	12.0	12.6	12.4	13.0	13.4	12.0	12.6	12.4	13.0	13.4
	12H	12.0	12.6	12.4	13.0	13.4	12.0	12.6	12.4	13.0	13.4
4H	2H	10.9	11.7	11.3	12.0	12.4	10.9	11.7	11.3	12.0	12.4
	3H	11.9	12.5	12.3	12.9	13.3	11.9	12.5	12.3	12.9	13.3
	4H	12.2	12.8	12.7	13.2	13.7	12.2	12.8	12.7	13.2	13.7
	6H	12.5	13.0	13.0	13.4	13.9	12.5	13.0	13.0	13.4	13.9
	8H	12.6	13.0	13.0	13.5	14.0	12.6	13.0	13.0	13.5	14.0
	12H	12.6	13.0	13.1	13.5	14.0	12.6	13.0	13.1	13.5	14.0
8H	4H	12.3	12.7	12.7	13.2	13.6	12.3	12.7	12.7	13.2	13.6
	6H	12.6	13.0	13.1	13.5	14.0	12.6	13.0	13.1	13.5	14.0
	8H	12.8	13.1	13.3	13.6	14.1	12.8	13.1	13.3	13.6	14.1
	12H	12.9	13.2	13.4	13.7	14.2	12.9	13.2	13.4	13.7	14.2
12H	4H	12.2	12.6	12.7	13.1	13.6	12.2	12.6	12.7	13.1	13.6
	6H	12.6	12.9	13.2	13.4	14.0	12.6	12.9	13.2	13.4	14.0
	8H	12.8	13.1	13.3	13.6	14.2	12.8	13.1	13.3	13.6	14.2

Maximum UGR = 14.2

POLAR GRAPH



Maximum Candela = 6972.562 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.)