



IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-L20-835-DIM-UNV-RN-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.15

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 15 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] V4DR-L20-835-DIM-UNV-RN-OF-WH

[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	2646
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	85
Total Luminaire Watts	31.1
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	13243	13243	13243
55	8811	8811	8811
65	6065	6065	6065
75	3939	3939	3939
85	3175	3175	3175

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CANDELA TABULATION

	<u>0</u>
0.0	9924.367
0.5	9912.401
1.0	9880.990
1.5	9825.647
2.0	9750.859
2.5	9656.626
3.0	9544.444
3.5	9415.809
4.0	9270.720
4.5	9110.674
5.0	8937.166
5.5	8750.196
6.0	8549.764
6.5	8334.375
7.0	8107.019
7.5	7870.689
8.0	7625.384
8.5	7369.609
9.0	7109.347
9.5	6841.606
10.0	6572.369
10.5	6298.645
11.0	6023.425
11.5	5748.206
12.0	5474.481
12.5	5205.245
13.0	4937.504
13.5	4675.746
14.0	4418.475
14.5	4168.683
15.0	3927.866
15.5	3696.023
16.0	3470.163
16.5	3256.269
17.0	3051.350
17.5	2855.406
18.0	2669.932
18.5	2493.432
19.0	2327.403
19.5	2171.843
20.0	2025.259
20.5	1886.153
21.0	1756.022
21.5	1636.361
22.0	1521.188
22.5	1413.194
23.0	1310.286
23.5	1215.006
24.0	1126.158
24.5	1042.993
25.0	965.363
25.5	893.268
26.0	826.856
26.5	765.380

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CANDELA TABULATION - (Cont.)

27.0	708.691
27.5	656.489
28.0	608.475
28.5	564.799
29.0	524.563
29.5	487.618
30.0	453.664
30.5	422.253
31.0	393.684
31.5	367.359
32.0	342.978
32.5	320.541
33.0	300.049
33.5	281.203
34.0	263.702
34.5	247.698
35.0	233.189
35.5	219.727
36.0	207.462
36.5	196.244
37.0	185.923
37.5	176.500
38.0	167.824
38.5	159.897
39.0	152.717
39.5	145.986
40.0	139.704
40.5	133.871
41.0	128.486
41.5	123.400
42.0	118.763
42.5	114.426
43.0	110.238
43.5	106.349
44.0	102.759
44.5	99.318
45.0	96.177
45.5	93.036
46.0	90.194
46.5	87.352
47.0	84.660
47.5	81.968
48.0	79.425
48.5	77.032
49.0	74.638
49.5	72.395
50.0	70.151
50.5	68.057
51.0	65.963
51.5	64.019
52.0	62.074
52.5	60.279
53.0	58.484
53.5	56.689
54.0	55.044
54.5	53.548

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CANDELA TABULATION - (Cont.)

55.0	51.903
55.5	50.407
56.0	48.911
56.5	47.416
57.0	46.069
57.5	44.723
58.0	43.227
58.5	41.881
59.0	40.685
59.5	39.338
60.0	37.992
60.5	36.796
61.0	35.599
61.5	34.402
62.0	33.206
62.5	32.009
63.0	30.813
63.5	29.616
64.0	28.569
64.5	27.522
65.0	26.325
65.5	25.278
66.0	24.231
66.5	23.184
67.0	22.287
67.5	21.240
68.0	20.342
68.5	19.295
69.0	18.398
69.5	17.500
70.0	16.603
70.5	15.855
71.0	15.107
71.5	14.359
72.0	13.761
72.5	13.013
73.0	12.415
73.5	11.966
74.0	11.368
74.5	10.919
75.0	10.470
75.5	10.022
76.0	9.573
76.5	9.124
77.0	8.675
77.5	8.227
78.0	7.928
78.5	7.479
79.0	7.030
79.5	6.731
80.0	6.282
80.5	5.833
81.0	5.534
81.5	5.086
82.0	4.786
82.5	4.487

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CANDELA TABULATION - (Cont.)

83.0	4.039
83.5	3.739
84.0	3.440
84.5	3.141
85.0	2.842
85.5	2.543
86.0	2.094
86.5	1.944
87.0	1.645
87.5	1.346
88.0	1.047
88.5	0.748
89.0	0.598
89.5	0.449
90.0	0.299
90.5	0.299
91.0	0.150
91.5	0.000
92.0	0.150
92.5	0.150
93.0	0.150
93.5	0.150
94.0	0.000
94.5	0.150
95.0	0.150
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	0.150
103.0	0.000
103.5	0.150
104.0	0.150
104.5	0.150
105.0	0.150
105.5	0.150
106.0	0.150
106.5	0.150
107.0	0.150
107.5	0.000
108.0	0.150
108.5	0.150
109.0	0.150
109.5	0.150
110.0	0.150
110.5	0.150

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CANDELA TABULATION - (Cont.)

111.0	0.150
111.5	0.150
112.0	0.150
112.5	0.150
113.0	0.150
113.5	0.150
114.0	0.150
114.5	0.150
115.0	0.150
115.5	0.150
116.0	0.150
116.5	0.150
117.0	0.150
117.5	0.150
118.0	0.150
118.5	0.150
119.0	0.150
119.5	0.150
120.0	0.150
120.5	0.150
121.0	0.150
121.5	0.150
122.0	0.150
122.5	0.150
123.0	0.150
123.5	0.150
124.0	0.150
124.5	0.150
125.0	0.150
125.5	0.150
126.0	0.150
126.5	0.150
127.0	0.150
127.5	0.150
128.0	0.150
128.5	0.150
129.0	0.150
129.5	0.150
130.0	0.150
130.5	0.150
131.0	0.299
131.5	0.299
132.0	0.299
132.5	0.299
133.0	0.299
133.5	0.299
134.0	0.299
134.5	0.299
135.0	0.449
135.5	0.449
136.0	0.449
136.5	0.449
137.0	0.449
137.5	0.598
138.0	0.598
138.5	0.598

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CANDELA TABULATION - (Cont.)

139.0	0.598
139.5	0.748
140.0	0.748
140.5	0.748
141.0	0.897
141.5	0.897
142.0	0.897
142.5	1.047
143.0	1.047
143.5	1.047
144.0	1.197
144.5	1.197
145.0	1.346
145.5	1.346
146.0	1.496
146.5	1.496
147.0	1.645
147.5	1.645
148.0	1.795
148.5	1.795
149.0	1.944
149.5	1.944
150.0	2.094
150.5	2.094
151.0	2.244
151.5	2.244
152.0	2.393
152.5	2.393
153.0	2.543
153.5	2.543
154.0	2.692
154.5	2.692
155.0	2.842
155.5	2.842
156.0	2.992
156.5	2.992
157.0	2.992
157.5	3.141
158.0	3.141
158.5	3.291
159.0	3.291
159.5	3.291
160.0	3.440
160.5	3.440
161.0	3.440
161.5	3.440
162.0	3.590
162.5	3.590
163.0	3.590
163.5	3.590
164.0	3.590
164.5	3.590
165.0	3.590
165.5	3.590
166.0	3.739
166.5	3.590

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CANDELA TABULATION - (Cont.)

167.0	3.739
167.5	3.739
168.0	3.739
168.5	3.590
169.0	3.590
169.5	3.590
170.0	3.590
170.5	3.590
171.0	3.590
171.5	3.590
172.0	3.590
172.5	3.590
173.0	3.590
173.5	3.590
174.0	3.590
174.5	3.590
175.0	3.590
175.5	3.590
176.0	3.590
176.5	3.590
177.0	3.590
177.5	3.440
178.0	3.440
178.5	3.440
179.0	3.440
179.5	3.440
180.0	3.440

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1855.4	N.A.	70.10
0-30	2322.63	N.A.	87.80
0-40	2478.32	N.A.	93.70
0-60	2601.15	N.A.	98.30
0-80	2638.86	N.A.	99.70
0-90	2642.05	N.A.	99.80
10-90	1865.99	N.A.	70.50
20-40	622.92	N.A.	23.50
20-50	698.81	N.A.	26.40
40-70	149.18	N.A.	5.60
60-80	37.71	N.A.	1.40
70-80	11.36	N.A.	0.40
80-90	3.19	N.A.	0.10
90-110	0.19	N.A.	0.00
90-120	0.34	N.A.	0.00
90-130	0.47	N.A.	0.00
90-150	1.62	N.A.	0.10
90-180	4.24	N.A.	0.20
110-180	4.05	N.A.	0.20
0-180	2646.28	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	776.05
10-20	1079.35
20-30	467.23
30-40	155.69
40-50	75.89
50-60	46.94
60-70	26.35
70-80	11.36
80-90	3.19
90-100	0.08
100-110	0.11
110-120	0.15
120-130	0.13
130-140	0.32
140-150	0.83
150-160	1.26
160-170	1.02
170-180	0.34

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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	178	178	178	178	174	174	174	174	166	166	166	159	159	159	152	152	152	149
1	171	168	164	161	167	164	161	159	158	156	154	153	151	149	148	146	145	142
2	164	158	153	149	161	156	151	147	151	147	144	147	144	141	143	140	138	136
3	158	150	144	139	155	148	143	138	144	140	136	141	137	134	138	135	132	130
4	152	143	137	131	150	142	135	131	139	133	129	136	131	128	133	129	126	124
5	147	137	130	125	145	136	129	124	133	128	123	131	126	122	129	125	121	119
6	142	131	124	119	140	130	124	119	128	122	118	126	121	117	125	120	117	115
7	137	126	119	114	136	126	119	114	124	118	114	122	117	113	121	116	112	111
8	133	122	115	110	131	121	114	110	120	114	109	118	113	109	117	112	109	107
9	129	118	111	106	127	117	110	106	116	110	106	115	109	105	113	109	105	103
10	125	114	107	103	124	113	107	102	112	106	102	111	106	102	110	105	102	100

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UGR TABLE - CORRECTED

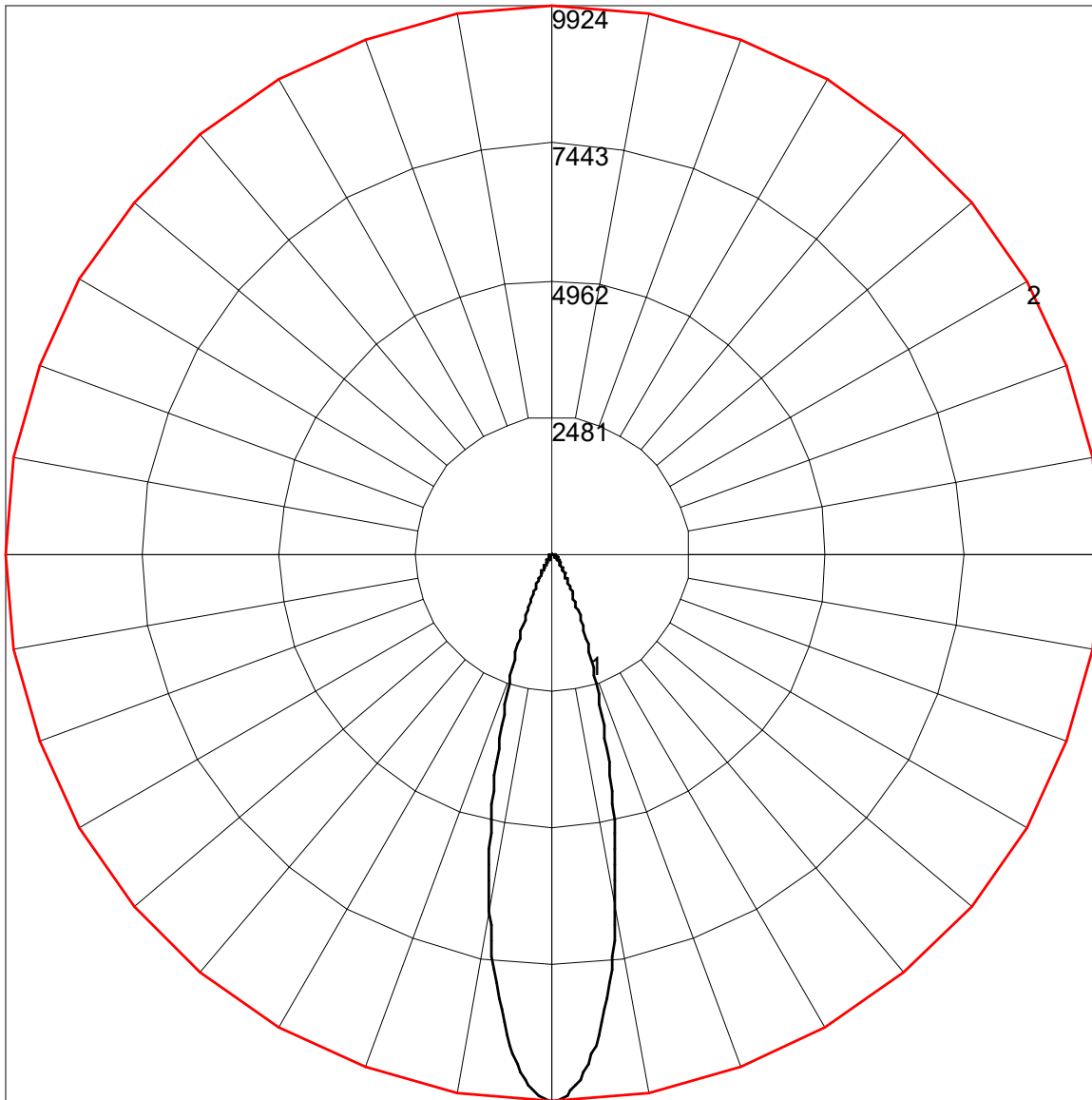
Reflectances

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	10.1	11.1	10.5	11.4	11.7	10.1	11.1	10.5	11.4	11.7
	3H	11.0	11.9	11.4	12.2	12.6	11.0	11.9	11.4	12.2	12.6
	4H	11.2	12.0	11.7	12.4	12.8	11.2	12.0	11.7	12.4	12.8
	6H	11.4	12.1	11.8	12.5	12.9	11.4	12.1	11.8	12.5	12.9
	8H	11.5	12.1	11.9	12.5	12.9	11.5	12.1	11.9	12.5	12.9
	12H	11.5	12.1	11.9	12.5	12.9	11.5	12.1	11.9	12.5	12.9
4H	2H	10.4	11.2	10.8	11.5	11.9	10.4	11.2	10.8	11.5	11.9
	3H	11.4	12.0	11.8	12.4	12.8	11.4	12.0	11.8	12.4	12.8
	4H	11.7	12.3	12.2	12.7	13.2	11.7	12.3	12.2	12.7	13.2
	6H	12.0	12.5	12.5	12.9	13.4	12.0	12.5	12.5	12.9	13.4
	8H	12.1	12.5	12.5	13.0	13.5	12.1	12.5	12.5	13.0	13.5
	12H	12.1	12.5	12.6	13.0	13.5	12.1	12.5	12.6	13.0	13.5
8H	4H	11.8	12.2	12.2	12.7	13.1	11.8	12.2	12.2	12.7	13.1
	6H	12.1	12.5	12.6	13.0	13.5	12.1	12.5	12.6	13.0	13.5
	8H	12.3	12.6	12.8	13.1	13.6	12.3	12.6	12.8	13.1	13.6
	12H	12.4	12.7	12.9	13.2	13.7	12.4	12.7	12.9	13.2	13.7
12H	4H	11.7	12.1	12.2	12.6	13.1	11.7	12.1	12.2	12.6	13.1
	6H	12.1	12.4	12.7	12.9	13.5	12.1	12.4	12.7	12.9	13.5
	8H	12.3	12.6	12.8	13.1	13.7	12.3	12.6	12.8	13.1	13.7

Maximum UGR = 13.7

POLAR GRAPH



Maximum Candela = 9924.367 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.)