



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.09

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 10 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

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

[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	2683
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	31.1
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	20359	20359	20359
55	15868	15868	15868
65	13262	13262	13262
75	10670	10670	10670
85	6375	6375	6375

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CANDELA TABULATION

	<u>0</u>
0.0	6942.301
0.5	6939.310
1.0	6928.841
1.5	6912.390
2.0	6891.453
2.5	6863.038
3.0	6830.136
3.5	6791.252
4.0	6746.385
4.5	6698.528
5.0	6644.689
5.5	6584.867
6.0	6519.063
6.5	6445.782
7.0	6366.518
7.5	6279.777
8.0	6185.557
8.5	6083.861
9.0	5976.182
9.5	5859.530
10.0	5733.904
10.5	5599.305
11.0	5458.725
11.5	5310.666
12.0	5153.634
12.5	4990.620
13.0	4820.129
13.5	4643.655
14.0	4459.703
14.5	4269.769
15.0	4078.340
15.5	3883.920
16.0	3689.500
16.5	3493.584
17.0	3299.163
17.5	3110.725
18.0	2923.783
18.5	2744.318
19.0	2572.330
19.5	2406.325
20.0	2249.294
20.5	2098.244
21.0	1957.663
21.5	1824.560
22.0	1698.935
22.5	1582.282
23.0	1472.211
23.5	1369.616
24.0	1274.350
24.5	1185.366
25.0	1102.812
25.5	1026.091
26.0	954.155
26.5	887.753

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CANDELA TABULATION - (Cont.)

27.0	825.838
27.5	769.157
28.0	716.364
28.5	667.609
29.0	622.893
29.5	581.167
30.0	542.433
30.5	506.689
31.0	473.638
31.5	443.278
32.0	415.162
32.5	389.289
33.0	365.510
33.5	343.526
34.0	323.486
34.5	304.941
35.0	288.191
35.5	272.637
36.0	258.429
36.5	245.418
37.0	233.454
37.5	222.536
38.0	212.666
38.5	203.543
39.0	195.168
39.5	187.541
40.0	180.512
40.5	173.931
41.0	167.800
41.5	162.266
42.0	157.032
42.5	152.097
43.0	147.610
43.5	143.273
44.0	139.235
44.5	135.496
45.0	131.757
45.5	128.317
46.0	125.177
46.5	122.036
47.0	119.045
47.5	116.353
48.0	113.512
48.5	110.969
49.0	108.427
49.5	105.884
50.0	103.641
50.5	101.398
51.0	99.304
51.5	97.061
52.0	94.967
52.5	93.023
53.0	90.929
53.5	88.985
54.0	87.040
54.5	85.096

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CANDELA TABULATION - (Cont.)

55.0	83.302
55.5	81.507
56.0	79.712
56.5	77.918
57.0	75.973
57.5	74.328
58.0	72.683
58.5	71.188
59.0	69.543
59.5	67.898
60.0	66.252
60.5	64.607
61.0	63.261
61.5	61.616
62.0	60.121
62.5	58.625
63.0	57.130
63.5	55.784
64.0	54.288
64.5	52.793
65.0	51.297
65.5	49.951
66.0	48.605
66.5	47.259
67.0	45.764
67.5	44.418
68.0	43.072
68.5	41.726
69.0	40.380
69.5	39.034
70.0	37.688
70.5	36.491
71.0	35.295
71.5	33.799
72.0	32.603
72.5	31.406
73.0	30.210
73.5	28.864
74.0	27.668
74.5	26.471
75.0	25.275
75.5	24.078
76.0	22.882
76.5	21.685
77.0	20.489
77.5	19.592
78.0	18.395
78.5	17.348
79.0	16.301
79.5	15.255
80.0	14.208
80.5	13.161
81.0	12.114
81.5	11.366
82.0	10.170
82.5	9.422

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CANDELA TABULATION - (Cont.)

83.0	8.375
83.5	7.627
84.0	6.730
84.5	5.833
85.0	5.085
85.5	4.188
86.0	3.589
86.5	2.842
87.0	2.393
87.5	1.944
88.0	1.496
88.5	1.196
89.0	0.897
89.5	0.598
90.0	0.449
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
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136.0	0.000
136.5	0.000
137.0	0.000
137.5	0.000
138.0	0.000
138.5	0.000

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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
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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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1696.83	N.A.	63.20
0-30	2228.54	N.A.	83.10
0-40	2420.21	N.A.	90.20
0-60	2598.9	N.A.	96.90
0-80	2676.79	N.A.	99.80
0-90	2683.12	N.A.	100.00
10-90	2077.23	N.A.	77.40
20-40	723.39	N.A.	27.00
20-50	827.19	N.A.	30.80
40-70	229.69	N.A.	8.60
60-80	77.89	N.A.	2.90
70-80	26.88	N.A.	1.00
80-90	6.33	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	2683.13	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	605.89
10-20	1090.94
20-30	531.72
30-40	191.67
40-50	103.80
50-60	74.88
60-70	51.01
70-80	26.88
80-90	6.33
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

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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	153	153	153	150
1	170	166	163	160	167	163	160	157	157	155	152	152	150	148	146	145	143	141
2	163	156	150	146	160	153	148	144	149	145	141	144	141	138	140	137	135	133
3	156	147	140	135	153	145	139	134	141	136	132	138	133	130	134	131	128	125
4	149	139	132	126	147	138	131	125	134	129	124	132	127	123	129	125	121	119
5	143	132	125	119	141	131	124	118	128	122	117	126	121	116	124	119	115	113
6	138	126	118	113	136	125	118	112	123	117	112	121	115	111	119	114	110	108
7	133	121	113	107	131	120	112	107	118	111	107	116	110	106	115	110	106	104
8	128	116	108	103	126	115	108	103	113	107	102	112	106	102	111	105	101	100
9	123	111	104	99	122	110	103	98	109	103	98	108	102	98	107	101	97	96
10	119	107	100	95	118	106	99	95	105	99	94	104	98	94	103	98	94	92

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UGR TABLE - CORRECTED

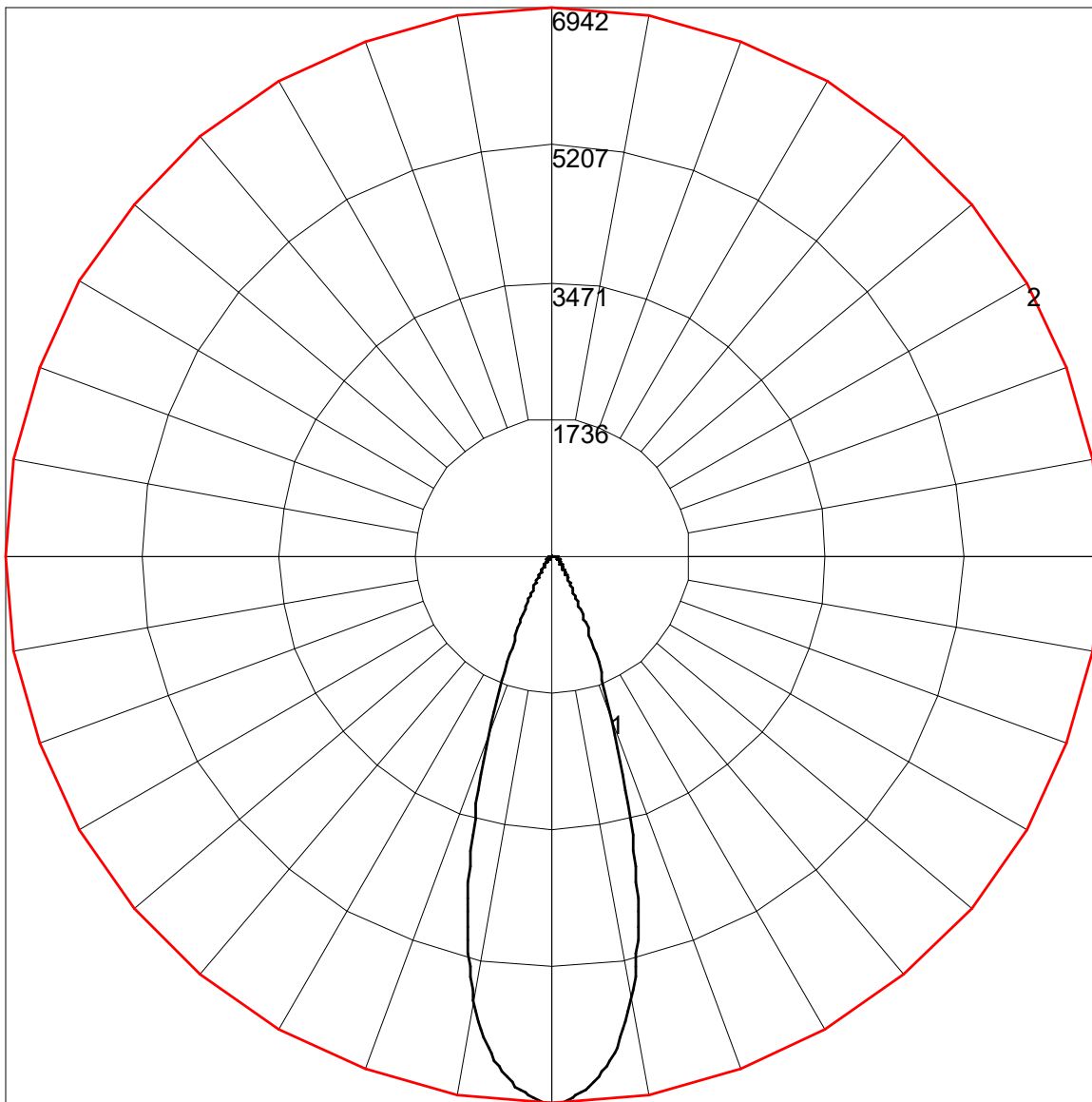
Reflectances

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	13.9	15.0	14.3	15.3	15.6	13.9	15.0	14.3	15.3	15.6
	3H	15.4	16.3	15.8	16.6	17.0	15.4	16.3	15.8	16.6	17.0
	4H	15.9	16.7	16.3	17.1	17.5	15.9	16.7	16.3	17.1	17.5
	6H	16.2	17.0	16.6	17.4	17.8	16.2	17.0	16.6	17.4	17.8
	8H	16.3	17.0	16.7	17.4	17.8	16.3	17.0	16.7	17.4	17.8
	12H	16.3	17.0	16.8	17.4	17.8	16.3	17.0	16.8	17.4	17.8
4H	2H	14.4	15.2	14.8	15.6	16.0	14.4	15.2	14.8	15.6	16.0
	3H	16.0	16.7	16.4	17.1	17.5	16.0	16.7	16.4	17.1	17.5
	4H	16.6	17.3	17.1	17.7	18.1	16.6	17.3	17.1	17.7	18.1
	6H	17.1	17.6	17.6	18.1	18.5	17.1	17.6	17.6	18.1	18.5
	8H	17.2	17.7	17.7	18.1	18.6	17.2	17.7	17.7	18.1	18.6
	12H	17.2	17.6	17.7	18.1	18.6	17.2	17.6	17.7	18.1	18.6
8H	4H	16.8	17.3	17.3	17.7	18.2	16.8	17.3	17.3	17.7	18.2
	6H	17.3	17.7	17.9	18.2	18.7	17.3	17.7	17.9	18.2	18.7
	8H	17.5	17.8	18.0	18.4	18.9	17.5	17.8	18.0	18.4	18.9
	12H	17.6	17.9	18.1	18.4	19.0	17.6	17.9	18.1	18.4	19.0
12H	4H	16.8	17.2	17.3	17.7	18.2	16.8	17.2	17.3	17.7	18.2
	6H	17.4	17.7	17.9	18.2	18.7	17.4	17.7	17.9	18.2	18.7
	8H	17.5	17.8	18.1	18.3	18.9	17.5	17.8	18.1	18.3	18.9

Maximum UGR = 19.0

POLAR GRAPH



Maximum Candela = 6942.301 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.)