



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.14

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 15 SEP 2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] V4DR-L20-835-DIM-UNV-RM-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	2686
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)	0.52
Spacing Criterion (90-270)	0.52
Spacing Criterion (Diagonal)	0.52
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	15407	15407	15407
55	10716	10716	10716
65	7651	7651	7651
75	5121	5121	5121
85	4178	4178	4178

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CANDELA TABULATION

	<u>0</u>
0.0	7742.374
0.5	7736.391
1.0	7718.441
1.5	7690.021
2.0	7651.129
2.5	7601.767
3.0	7543.430
3.5	7474.622
4.0	7395.344
4.5	7310.082
5.0	7215.845
5.5	7111.138
6.0	6998.951
6.5	6879.285
7.0	6750.644
7.5	6613.029
8.0	6469.430
8.5	6316.856
9.0	6159.795
9.5	5996.750
10.0	5827.722
10.5	5654.207
11.0	5476.204
11.5	5295.210
12.0	5111.224
12.5	4928.733
13.0	4746.243
13.5	4562.257
14.0	4376.775
14.5	4191.293
15.0	4008.803
15.5	3827.808
16.0	3646.814
16.5	3470.307
17.0	3295.296
17.5	3123.276
18.0	2954.248
18.5	2789.708
19.0	2632.647
19.5	2478.577
20.0	2328.995
20.5	2186.892
21.0	2049.276
21.5	1917.644
22.0	1793.491
22.5	1675.321
23.0	1564.630
23.5	1458.726
24.0	1358.505
24.5	1264.119
25.0	1175.866
25.5	1093.745
26.0	1017.159
26.5	945.359

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CANDELA TABULATION - (Cont.)

27.0	878.646
27.5	816.868
28.0	759.429
28.5	705.878
29.0	656.815
29.5	611.043
30.0	568.712
30.5	529.820
31.0	493.920
31.5	460.713
32.0	430.049
32.5	401.927
33.0	375.900
33.5	351.668
34.0	329.530
34.5	308.887
35.0	289.890
35.5	272.389
36.0	256.085
36.5	241.126
37.0	227.215
37.5	214.650
38.0	202.983
38.5	192.512
39.0	182.789
39.5	173.964
40.0	166.036
40.5	158.557
41.0	151.826
41.5	145.543
42.0	139.710
42.5	134.325
43.0	129.239
43.5	124.452
44.0	119.965
44.5	115.777
45.0	111.887
45.5	108.298
46.0	104.857
46.5	101.566
47.0	98.425
47.5	95.583
48.0	92.891
48.5	90.198
49.0	87.655
49.5	85.262
50.0	83.018
50.5	80.774
51.0	78.680
51.5	76.437
52.0	74.492
52.5	72.398
53.0	70.603
53.5	68.658
54.0	66.714
54.5	64.919

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CANDELA TABULATION - (Cont.)

55.0	63.124
55.5	61.329
56.0	59.683
56.5	58.038
57.0	56.392
57.5	54.747
58.0	53.102
58.5	51.606
59.0	50.110
59.5	48.614
60.0	47.118
60.5	45.623
61.0	44.127
61.5	42.781
62.0	41.285
62.5	39.938
63.0	38.443
63.5	37.096
64.0	35.750
64.5	34.404
65.0	33.207
65.5	31.861
66.0	30.664
66.5	29.318
67.0	28.121
67.5	26.925
68.0	25.728
68.5	24.681
69.0	23.484
69.5	22.437
70.0	21.390
70.5	20.493
71.0	19.595
71.5	18.698
72.0	17.800
72.5	17.052
73.0	16.304
73.5	15.557
74.0	14.958
74.5	14.210
75.0	13.612
75.5	13.014
76.0	12.415
76.5	11.967
77.0	11.368
77.5	10.770
78.0	10.321
78.5	9.723
79.0	9.274
79.5	8.825
80.0	8.227
80.5	7.778
81.0	7.330
81.5	6.881
82.0	6.282
82.5	5.834

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CANDELA TABULATION - (Cont.)

83.0	5.385
83.5	4.936
84.0	4.487
84.5	4.039
85.0	3.740
85.5	3.291
86.0	2.842
86.5	2.393
87.0	2.094
87.5	1.795
88.0	1.496
88.5	1.197
89.0	1.047
89.5	0.748
90.0	0.598
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
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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
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117.5	0.000
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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

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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
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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	1732.48	N.A.	64.50
0-30	2294.73	N.A.	85.40
0-40	2487.65	N.A.	92.60
0-60	2633.5	N.A.	98.10
0-80	2681.38	N.A.	99.80
0-90	2685.62	N.A.	100.00
10-90	2041.53	N.A.	76.00
20-40	755.17	N.A.	28.10
20-50	844.13	N.A.	31.40
40-70	178.93	N.A.	6.70
60-80	47.88	N.A.	1.80
70-80	14.80	N.A.	0.60
80-90	4.24	N.A.	0.20
90-110	0.02	N.A.	0.00
90-120	0.02	N.A.	0.00
90-130	0.02	N.A.	0.00
90-150	0.02	N.A.	0.00
90-180	0.02	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2685.64	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	644.10
10-20	1088.38
20-30	562.25
30-40	192.92
40-50	88.95
50-60	56.89
60-70	33.09
70-80	14.80
80-90	4.24
90-100	0.02
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	171	167	164	161	167	164	161	158	158	155	153	152	150	149	147	146	144	142
2	164	157	152	147	160	155	150	146	150	146	143	145	142	140	141	139	137	134
3	157	149	142	137	154	147	141	136	143	138	134	139	135	132	136	133	130	128
4	151	141	134	128	148	139	133	128	136	131	126	133	129	125	131	127	123	121
5	145	134	127	121	143	133	126	121	130	124	120	128	123	119	126	121	118	116
6	139	128	121	115	137	127	120	115	125	119	114	123	118	113	121	116	113	111
7	134	123	115	110	133	122	115	110	120	114	109	118	113	109	117	112	108	106
8	130	118	110	105	128	117	110	105	116	109	105	114	108	104	113	108	104	102
9	125	113	106	101	124	113	106	101	111	105	101	110	104	100	109	104	100	98
10	121	109	102	97	120	109	102	97	108	101	97	106	101	97	106	100	96	95

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UGR TABLE - CORRECTED

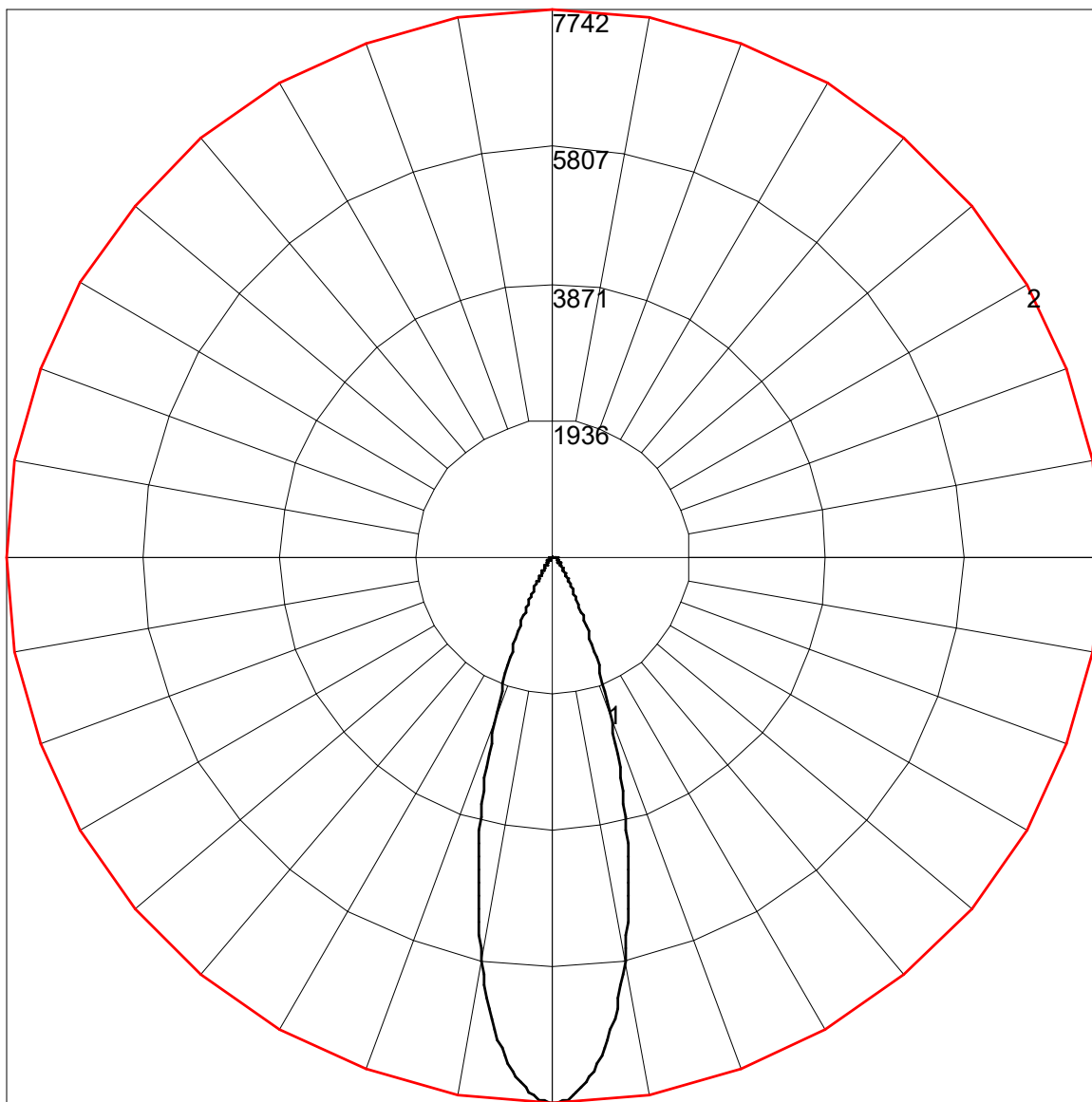
Reflectances

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	11.4	12.4	11.8	12.7	13.0	11.4	12.4	11.8	12.7	13.0
	3H	12.4	13.2	12.7	13.6	13.9	12.4	13.2	12.7	13.6	13.9
	4H	12.7	13.5	13.1	13.8	14.2	12.7	13.5	13.1	13.8	14.2
	6H	12.9	13.6	13.3	14.0	14.4	12.9	13.6	13.3	14.0	14.4
	8H	12.9	13.6	13.4	14.0	14.4	12.9	13.6	13.4	14.0	14.4
	12H	13.0	13.6	13.4	14.0	14.4	13.0	13.6	13.4	14.0	14.4
4H	2H	11.7	12.5	12.1	12.9	13.2	11.7	12.5	12.1	12.9	13.2
	3H	12.8	13.5	13.2	13.9	14.3	12.8	13.5	13.2	13.9	14.3
	4H	13.2	13.8	13.6	14.2	14.6	13.2	13.8	13.6	14.2	14.6
	6H	13.5	14.0	14.0	14.4	14.9	13.5	14.0	14.0	14.4	14.9
	8H	13.6	14.1	14.1	14.5	15.0	13.6	14.1	14.1	14.5	15.0
	12H	13.6	14.0	14.1	14.5	15.0	13.6	14.0	14.1	14.5	15.0
8H	4H	13.3	13.7	13.7	14.2	14.6	13.3	13.7	13.7	14.2	14.6
	6H	13.7	14.0	14.2	14.5	15.0	13.7	14.0	14.2	14.5	15.0
	8H	13.8	14.1	14.4	14.7	15.2	13.8	14.1	14.4	14.7	15.2
	12H	14.0	14.2	14.5	14.7	15.3	14.0	14.2	14.5	14.7	15.3
12H	4H	13.2	13.6	13.7	14.1	14.6	13.2	13.6	13.7	14.1	14.6
	6H	13.7	14.0	14.2	14.5	15.0	13.7	14.0	14.2	14.5	15.0
	8H	13.9	14.1	14.4	14.6	15.2	13.9	14.1	14.4	14.6	15.2

Maximum UGR = 15.3

POLAR GRAPH



Maximum Candela = 7742.374 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.)