



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : V4DR-L20-835-DIM-UNV-RW-OF-WH\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12316380.12

[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-RW-OF-WH

[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	1980
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	31.1
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	45788	45788	45788
55	36972	36972	36972
65	23917	23917	23917
75	13337	13337	13337
85	6852	6852	6852

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CANDELA TABULATION

	<u>0</u>
0.0	1590.081
0.5	1590.081
1.0	1588.585
1.5	1585.594
2.0	1582.602
2.5	1579.610
3.0	1575.123
3.5	1570.635
4.0	1566.148
4.5	1560.164
5.0	1555.677
5.5	1549.693
6.0	1543.710
6.5	1537.727
7.0	1531.743
7.5	1525.760
8.0	1519.777
8.5	1512.297
9.0	1506.314
9.5	1500.331
10.0	1494.646
10.5	1488.513
11.0	1482.231
11.5	1476.098
12.0	1470.264
12.5	1464.430
13.0	1458.597
13.5	1452.613
14.0	1446.630
14.5	1440.646
15.0	1434.513
15.5	1428.231
16.0	1421.649
16.5	1415.068
17.0	1408.336
17.5	1401.156
18.0	1393.527
18.5	1385.300
19.0	1377.372
19.5	1368.846
20.0	1359.572
20.5	1348.951
21.0	1336.685
21.5	1323.372
22.0	1308.115
22.5	1291.212
23.0	1272.065
23.5	1250.525
24.0	1226.890
24.5	1200.115
25.0	1170.198
25.5	1137.140
26.0	1101.389
26.5	1063.395

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	1023.456
<b>27.5</b>	982.918
<b>28.0</b>	940.437
<b>28.5</b>	898.403
<b>29.0</b>	856.520
<b>29.5</b>	814.636
<b>30.0</b>	773.500
<b>30.5</b>	733.113
<b>31.0</b>	694.969
<b>31.5</b>	658.021
<b>32.0</b>	623.168
<b>32.5</b>	590.708
<b>33.0</b>	560.642
<b>33.5</b>	533.567
<b>34.0</b>	509.185
<b>34.5</b>	487.944
<b>35.0</b>	469.246
<b>35.5</b>	453.390
<b>36.0</b>	439.479
<b>36.5</b>	427.811
<b>37.0</b>	417.490
<b>37.5</b>	408.664
<b>38.0</b>	400.587
<b>38.5</b>	393.407
<b>39.0</b>	386.975
<b>39.5</b>	381.141
<b>40.0</b>	375.905
<b>40.5</b>	370.969
<b>41.0</b>	366.182
<b>41.5</b>	361.844
<b>42.0</b>	357.506
<b>42.5</b>	353.468
<b>43.0</b>	349.429
<b>43.5</b>	345.241
<b>44.0</b>	341.052
<b>44.5</b>	336.864
<b>45.0</b>	332.526
<b>45.5</b>	328.038
<b>46.0</b>	323.401
<b>46.5</b>	318.615
<b>47.0</b>	313.678
<b>47.5</b>	308.592
<b>48.0</b>	303.507
<b>48.5</b>	298.122
<b>49.0</b>	292.587
<b>49.5</b>	286.753
<b>50.0</b>	280.919
<b>50.5</b>	274.936
<b>51.0</b>	268.653
<b>51.5</b>	262.520
<b>52.0</b>	256.238
<b>52.5</b>	249.955
<b>53.0</b>	243.972
<b>53.5</b>	237.390
<b>54.0</b>	230.809
<b>54.5</b>	224.227

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PHOTOMETRIC FILENAME : V4DR-L20-835-DIM-UNV-RW-OF-WH\_.IES

CANDELA TABULATION - (Cont.)

55.0	217.795
55.5	211.213
56.0	204.781
56.5	198.498
57.0	192.216
57.5	185.933
58.0	179.800
58.5	173.817
59.0	167.834
59.5	162.000
60.0	156.166
60.5	150.482
61.0	144.947
61.5	139.413
62.0	134.177
62.5	128.792
63.0	123.706
63.5	118.471
64.0	113.534
64.5	108.598
65.0	103.812
65.5	99.025
66.0	94.388
66.5	89.900
67.0	85.562
67.5	81.224
68.0	77.036
68.5	72.848
69.0	68.809
69.5	64.920
70.0	61.330
70.5	57.889
71.0	54.748
71.5	51.756
72.0	48.914
72.5	46.222
73.0	43.679
73.5	41.435
74.0	39.191
74.5	37.246
75.0	35.451
75.5	33.806
76.0	32.011
76.5	30.366
77.0	28.720
77.5	27.075
78.0	25.579
78.5	23.933
79.0	22.438
79.5	20.942
80.0	19.446
80.5	17.950
81.0	16.604
81.5	15.258
82.0	13.762
82.5	12.565

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PHOTOMETRIC FILENAME : V4DR-L20-835-DIM-UNV-RW-OF-WH\_.IES

CANDELA TABULATION - (Cont.)

83.0	11.219
83.5	9.873
84.0	8.676
84.5	7.330
85.0	6.133
85.5	5.086
86.0	4.039
86.5	3.291
87.0	2.543
87.5	1.945
88.0	1.346
88.5	0.898
89.0	0.449
89.5	0.150
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  
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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
118.0	0.000
118.5	0.000
119.0	0.000
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133.0	0.000
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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

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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
145.0	0.000
145.5	0.000
146.0	0.000
146.5	0.000
147.0	0.000
147.5	0.000
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148.5	0.000
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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

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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	550.38	N.A.	27.80
0-30	1065.06	N.A.	53.80
0-40	1378.7	N.A.	69.60
0-60	1828.36	N.A.	92.40
0-80	1971.43	N.A.	99.60
0-90	1979.52	N.A.	100.00
10-90	1833.07	N.A.	92.60
20-40	828.32	N.A.	41.80
20-50	1083.5	N.A.	54.70
40-70	553.66	N.A.	28.00
60-80	143.07	N.A.	7.20
70-80	39.07	N.A.	2.00
80-90	8.09	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	1979.52	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	146.45
10-20	403.93
20-30	514.68
30-40	313.64
40-50	255.18
50-60	194.48
60-70	104.00
70-80	39.07
80-90	8.09
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

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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	167	162	157	153	163	159	154	151	152	149	146	147	144	141	142	139	137	134
2	156	147	139	133	153	144	137	131	139	133	128	134	130	125	130	126	123	120
3	146	134	124	117	142	131	123	116	127	120	114	123	117	112	120	115	110	107
4	136	122	112	104	133	120	111	103	117	109	102	114	107	101	111	105	100	97
5	128	112	102	94	125	111	101	93	108	99	92	105	98	91	103	96	91	88
6	120	104	93	85	117	103	92	85	100	91	84	98	90	84	96	89	83	80
7	113	96	86	78	111	95	85	78	93	84	77	91	83	77	89	82	76	74
8	107	90	79	72	104	89	79	72	87	78	71	85	77	71	84	76	71	68
9	101	84	74	67	99	83	73	66	82	72	66	80	72	66	79	71	66	63
10	95	79	69	62	94	78	68	62	77	68	62	75	67	61	74	67	61	59

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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

X=2H	Y=2H	20.6	22.0	21.0	22.3	22.5	20.6	22.0	21.0	22.3	22.5
	3H	21.4	22.6	21.8	22.9	23.2	21.4	22.6	21.8	22.9	23.2
	4H	21.6	22.7	22.0	23.0	23.4	21.6	22.7	22.0	23.0	23.4
	6H	21.7	22.7	22.1	23.0	23.4	21.7	22.7	22.1	23.0	23.4
	8H	21.7	22.7	22.1	23.0	23.4	21.7	22.7	22.1	23.0	23.4
	12H	21.7	22.6	22.1	23.0	23.4	21.7	22.6	22.1	23.0	23.4

UGR Viewed Endwise

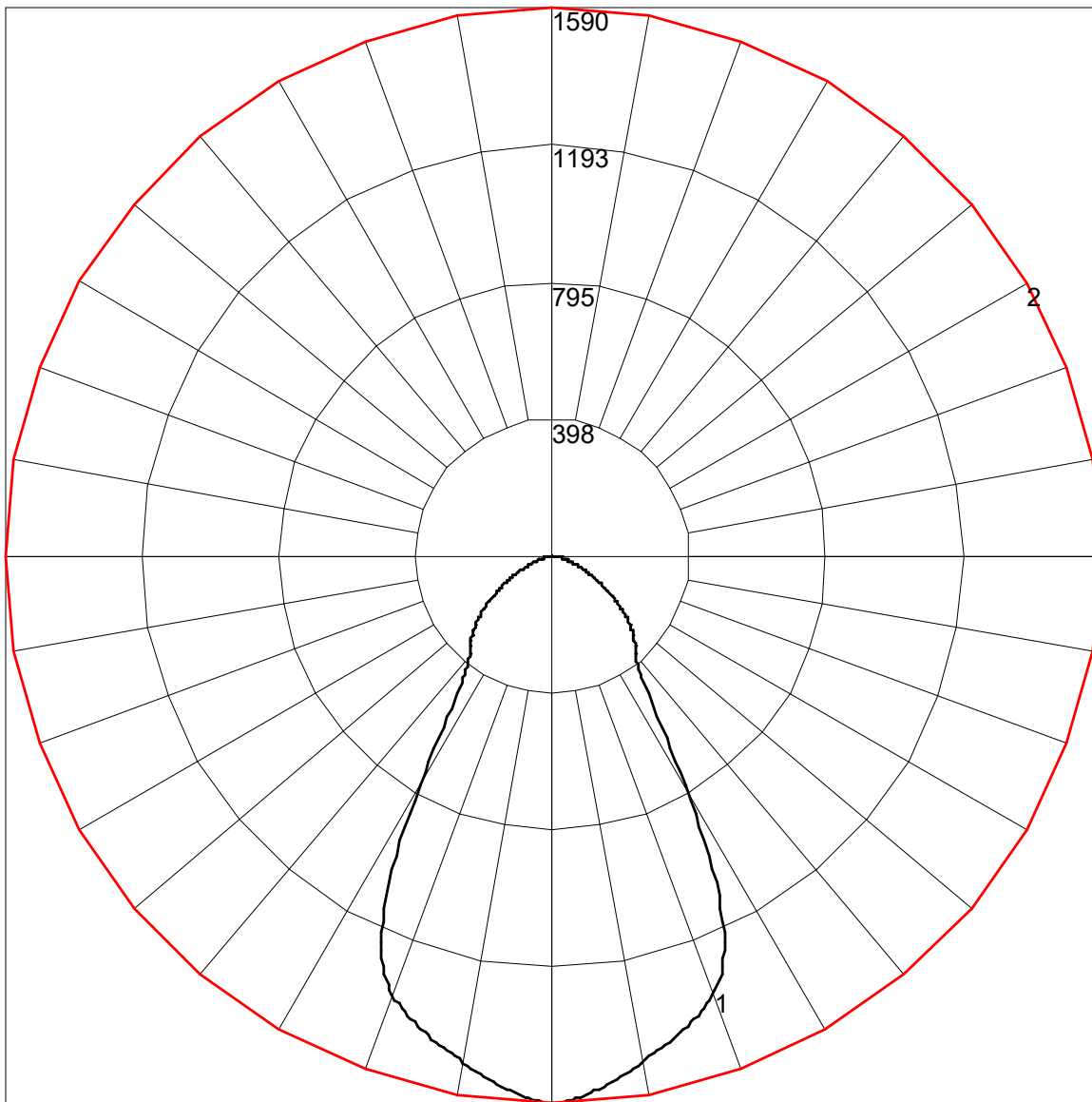
4H	2H	20.9	22.0	21.3	22.3	22.7	20.9	22.0	21.3	22.3	22.7
	3H	21.8	22.7	22.2	23.1	23.5	21.8	22.7	22.2	23.1	23.5
	4H	22.0	22.9	22.4	23.3	23.7	22.0	22.9	22.4	23.3	23.7
	6H	22.2	22.9	22.7	23.3	23.8	22.2	22.9	22.7	23.3	23.8
	8H	22.3	22.9	22.7	23.3	23.8	22.3	22.9	22.7	23.3	23.8
	12H	22.2	22.8	22.7	23.3	23.7	22.2	22.8	22.7	23.3	23.7

8H	4H	22.1	22.7	22.5	23.2	23.6	22.1	22.7	22.5	23.2	23.6
	6H	22.3	22.8	22.8	23.3	23.8	22.3	22.8	22.8	23.3	23.8
	8H	22.4	22.8	22.9	23.3	23.8	22.4	22.8	22.9	23.3	23.8
	12H	22.4	22.8	22.9	23.3	23.8	22.4	22.8	22.9	23.3	23.8

12H	4H	22.1	22.6	22.5	23.1	23.5	22.1	22.6	22.5	23.1	23.5
	6H	22.3	22.8	22.8	23.2	23.7	22.3	22.8	22.8	23.2	23.7
	8H	22.4	22.8	22.9	23.3	23.8	22.4	22.8	22.9	23.3	23.8

Maximum UGR = 23.8

POLAR GRAPH



Maximum Candela = 1590.081 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.)