



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] 13131414.01
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 01/25/2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO. 64836
 [LUMCAT] 4CR-L20-835-xxx-DIM-UNV-OW-OF-CS-xx
 [LUMINAIRE] Aluminum housing and reflector, no enclosure
 [LAMP] One white LED
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Downlight
 [_SEARCH_MOUNTING] Pendant, Surface, Suspended, Wall

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2063
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	23.9
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.04
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.21 ft (Diameter)
Luminous Width (90-270)	0.21 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	55981	55981	55981
55	15933	15933	15933
65	7229	7229	7229
75	2239	2239	2239
85	603	603	603

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

CANDELA TABULATION

	<u>0</u>
0.0	1673.535
0.5	1673.535
1.0	1673.535
1.5	1674.367
2.0	1675.199
2.5	1676.031
3.0	1676.864
3.5	1679.360
4.0	1682.689
4.5	1686.850
5.0	1691.843
5.5	1697.668
6.0	1702.662
6.5	1709.319
7.0	1715.977
7.5	1722.634
8.0	1730.124
8.5	1735.949
9.0	1740.942
9.5	1744.271
10.0	1747.600
10.5	1750.096
11.0	1751.761
11.5	1752.593
12.0	1751.761
12.5	1750.929
13.0	1748.432
13.5	1745.935
14.0	1742.607
14.5	1740.110
15.0	1736.781
15.5	1733.453
16.0	1729.292
16.5	1726.795
17.0	1723.466
17.5	1720.970
18.0	1719.305
18.5	1716.809
19.0	1712.648
19.5	1705.158
20.0	1697.668
20.5	1687.682
21.0	1676.031
21.5	1663.549
22.0	1651.066
22.5	1636.086
23.0	1620.275
23.5	1602.799
24.0	1585.323
24.5	1567.015
25.0	1547.042
25.5	1525.405
26.0	1502.104
26.5	1476.306

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_IES

CANDELA TABULATION - (Cont.)

27.0	1448.843
27.5	1417.220
28.0	1387.261
28.5	1355.638
29.0	1324.847
29.5	1294.056
30.0	1261.601
30.5	1228.313
31.0	1194.193
31.5	1159.241
32.0	1125.954
32.5	1091.002
33.0	1055.217
33.5	1019.433
34.0	981.985
34.5	944.536
35.0	906.255
35.5	866.310
36.0	824.950
36.5	781.593
37.0	735.240
37.5	686.058
38.0	635.211
38.5	583.365
39.0	531.770
39.5	481.755
40.0	434.154
40.5	389.382
41.0	347.606
41.5	308.576
42.0	272.126
42.5	238.672
43.0	208.464
43.5	181.834
44.0	159.364
44.5	140.640
45.0	125.078
45.5	112.179
46.0	101.444
46.5	92.290
47.0	84.551
47.5	77.893
48.0	72.068
48.5	66.908
49.0	62.331
49.5	58.253
50.0	54.425
50.5	51.013
51.0	47.851
51.5	44.938
52.0	42.275
52.5	39.695
53.0	37.282
53.5	34.952
54.0	32.788
54.5	30.708

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_IES

CANDELA TABULATION - (Cont.)

55.0	28.877
55.5	27.213
56.0	25.715
56.5	24.300
57.0	23.052
57.5	21.887
58.0	20.805
58.5	19.806
59.0	18.891
59.5	17.892
60.0	17.060
60.5	16.144
61.0	15.396
61.5	14.563
62.0	13.814
62.5	13.065
63.0	12.400
63.5	11.651
64.0	10.985
64.5	10.319
65.0	9.653
65.5	9.071
66.0	8.488
66.5	7.823
67.0	7.323
67.5	6.741
68.0	6.241
68.5	5.825
69.0	5.326
69.5	4.910
70.0	4.494
70.5	4.161
71.0	3.828
71.5	3.495
72.0	3.162
72.5	2.913
73.0	2.663
73.5	2.413
74.0	2.247
74.5	1.997
75.0	1.831
75.5	1.664
76.0	1.498
76.5	1.415
77.0	1.248
77.5	1.082
78.0	0.999
78.5	0.915
79.0	0.832
79.5	0.749
80.0	0.666
80.5	0.583
81.0	0.499
81.5	0.499
82.0	0.416
82.5	0.333

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

CANDELA TABULATION - (Cont.)

83.0	0.333
83.5	0.250
84.0	0.250
84.5	0.250
85.0	0.166
85.5	0.166
86.0	0.166
86.5	0.083
87.0	0.083
87.5	0.083
88.0	0.083
88.5	0.083
89.0	0.083
89.5	0.083
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
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

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
119.5	0.000
120.0	0.000
120.5	0.000
121.0	0.000
121.5	0.000
122.0	0.000
122.5	0.000
123.0	0.000
123.5	0.000
124.0	0.000
124.5	0.000
125.0	0.000
125.5	0.000
126.0	0.000
126.5	0.000
127.0	0.000
127.5	0.000
128.0	0.000
128.5	0.000
129.0	0.000
129.5	0.000
130.0	0.000
130.5	0.000
131.0	0.000
131.5	0.000
132.0	0.000
132.5	0.000
133.0	0.000
133.5	0.000
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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

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
148.0	0.000
148.5	0.000
149.0	0.000
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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	654.37	N.A.	31.70
0-30	1352.75	N.A.	65.60
0-40	1897.4	N.A.	92.00
0-60	2050.64	N.A.	99.40
0-80	2062.7	N.A.	100.00
0-90	2062.96	N.A.	100.00
10-90	1899.34	N.A.	92.10
20-40	1243.03	N.A.	60.30
20-50	1368.54	N.A.	66.30
40-70	163.11	N.A.	7.90
60-80	12.06	N.A.	0.60
70-80	2.19	N.A.	0.10
80-90	0.26	N.A.	0.00
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	2062.96	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	163.62
10-20	490.75
20-30	698.38
30-40	544.64
40-50	125.51
50-60	27.73
60-70	9.87
70-80	2.19
80-90	0.26
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

IES INDOOR REPORT
 PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_.IES

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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	110	108	106	111	108	106	104	104	102	101	100	99	98	97	96	95	93
2	107	102	98	95	105	101	97	94	97	94	92	94	92	90	92	90	88	86
3	102	95	90	86	100	94	89	85	91	87	84	88	85	82	86	83	81	79
4	96	88	83	78	94	87	82	78	85	80	77	83	79	76	81	78	75	73
5	91	82	76	72	89	81	76	71	79	74	71	78	73	70	76	72	69	68
6	86	77	71	66	85	76	70	66	74	69	65	73	68	65	72	68	64	63
7	81	72	65	61	80	71	65	61	70	64	61	69	64	60	67	63	60	58
8	77	67	61	57	76	67	61	57	66	60	56	64	60	56	63	59	56	54
9	73	63	57	53	72	63	57	53	62	56	52	61	56	52	60	55	52	51
10	70	59	53	49	68	59	53	49	58	53	49	57	52	49	57	52	49	47

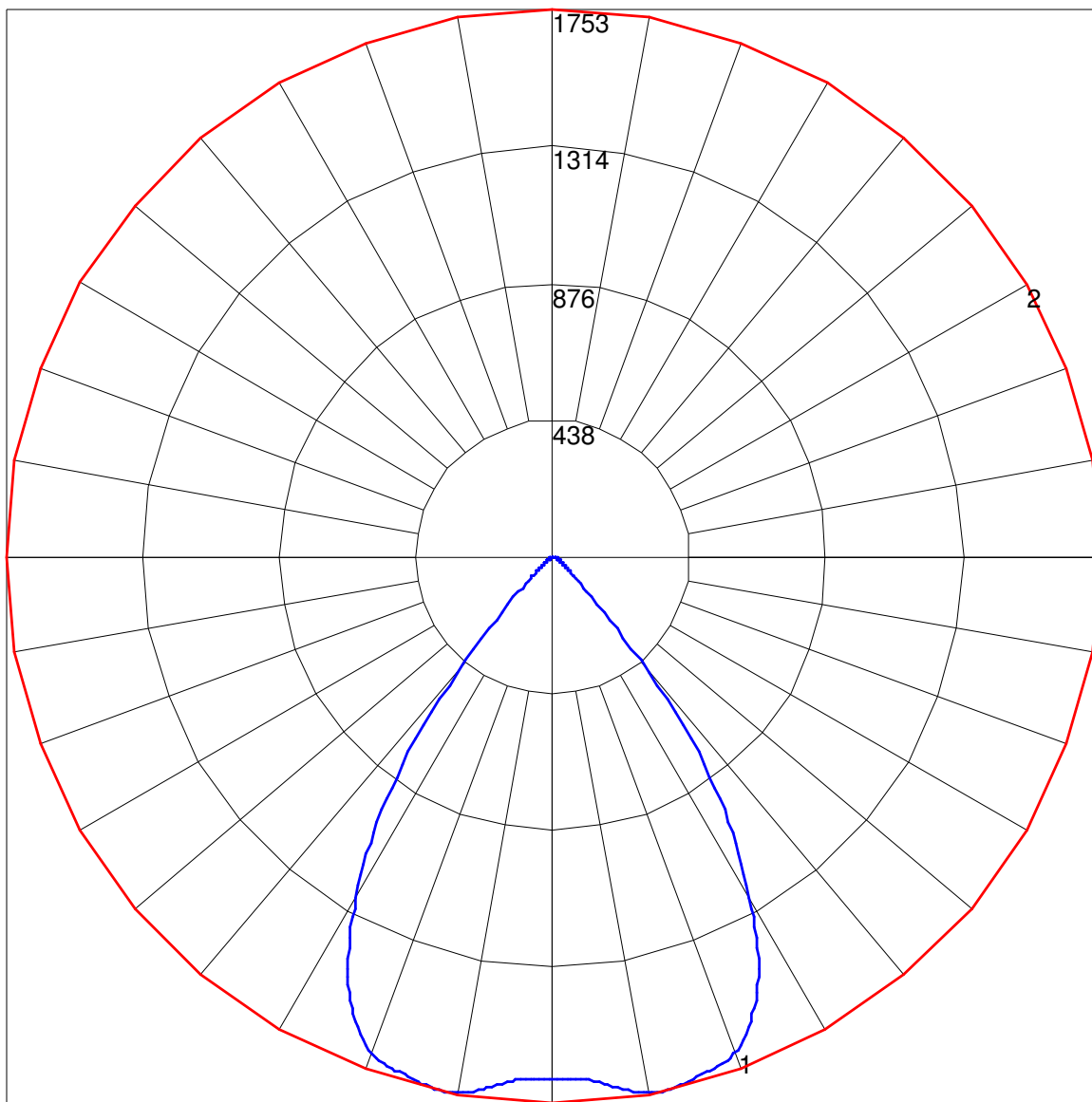
IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4CR-L20-835-XXX-DIM-UNV-OW-OF-CS-XX_IES

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	11.3	12.3	11.7	12.7	13.0	11.3	12.3	11.7	12.7	13.0
	3H	11.6	12.5	12.0	12.8	13.2	11.6	12.5	12.0	12.8	13.2
	4H	11.6	12.4	12.0	12.7	13.1	11.6	12.4	12.0	12.7	13.1
	6H	11.5	12.2	11.9	12.6	13.0	11.5	12.2	11.9	12.6	13.0
	8H	11.4	12.1	11.9	12.5	12.9	11.4	12.1	11.9	12.5	12.9
	12H	11.4	12.0	11.8	12.4	12.9	11.4	12.0	11.8	12.4	12.9
4H	2H	11.4	12.2	11.8	12.6	12.9	11.4	12.2	11.8	12.6	12.9
	3H	11.7	12.4	12.1	12.8	13.2	11.7	12.4	12.1	12.8	13.2
	4H	11.7	12.3	12.1	12.7	13.1	11.7	12.3	12.1	12.7	13.1
	6H	11.6	12.1	12.0	12.5	13.0	11.6	12.1	12.0	12.5	13.0
	8H	11.5	12.0	12.0	12.4	12.9	11.5	12.0	12.0	12.4	12.9
	12H	11.5	11.9	12.0	12.4	12.8	11.5	11.9	12.0	12.4	12.8
8H	4H	11.5	12.0	12.0	12.4	12.9	11.5	12.0	12.0	12.4	12.9
	6H	11.4	11.8	12.0	12.3	12.8	11.4	11.8	12.0	12.3	12.8
	8H	11.4	11.7	11.9	12.2	12.7	11.4	11.7	11.9	12.2	12.7
	12H	11.3	11.6	11.8	12.1	12.7	11.3	11.6	11.8	12.1	12.7
12H	4H	11.5	11.9	12.0	12.4	12.8	11.5	11.9	12.0	12.4	12.8
	6H	11.4	11.7	11.9	12.2	12.7	11.4	11.7	11.9	12.2	12.7
	8H	11.3	11.6	11.8	12.1	12.7	11.3	11.6	11.8	12.1	12.7

Maximum UGR = 13.2

POLAR GRAPH



Maximum Candela = 1752.593 Located At Horizontal Angle = 0, Vertical Angle = 11.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (11.5) (Through Max. Cd.)