



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-L9-835-XXX-DIM-UNV-LW-OF-WH-XX_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM 13257153.01
[TESTLAB] UL Verification Services Inc.
[ISSUEDATE] 25 JAN 2021
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] 4CR-L9-835-xxx-DIM-UNV-LW-OF-WH-xx
[LUMINAIRE] Aluminum housing, optics, and trim 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	973
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	91
Total Luminaire Watts	10.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.86
Spacing Criterion (90-270)	0.86
Spacing Criterion (Diagonal)	0.78
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	40134	40134	40134
55	35052	35052	35052
65	29943	29943	29943
75	24157	24157	24157
85	13530	13530	13530

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CANDELA TABULATION

	<u>0</u>
0.0	1148.081
0.5	1147.489
1.0	1147.489
1.5	1146.898
2.0	1146.306
2.5	1144.532
3.0	1142.757
3.5	1140.983
4.0	1138.617
4.5	1135.660
5.0	1132.702
5.5	1129.745
6.0	1126.787
6.5	1123.238
7.0	1119.689
7.5	1116.140
8.0	1112.000
8.5	1107.860
9.0	1103.128
9.5	1098.396
10.0	1093.072
10.5	1087.157
11.0	1081.243
11.5	1074.736
12.0	1068.230
12.5	1060.540
13.0	1052.851
13.5	1044.570
14.0	1035.698
14.5	1026.234
15.0	1016.179
15.5	1004.940
16.0	993.702
16.5	981.281
17.0	967.677
17.5	954.072
18.0	938.694
18.5	922.723
19.0	904.979
19.5	886.051
20.0	866.532
20.5	845.238
21.0	823.353
21.5	799.694
22.0	774.851
22.5	749.417
23.0	722.800
23.5	695.592
24.0	667.792
24.5	639.400
25.0	610.417
25.5	581.730
26.0	552.688
26.5	523.941

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CANDELA TABULATION - (Cont.)

27.0	495.609
27.5	467.868
28.0	440.719
28.5	414.220
29.0	388.549
29.5	363.529
30.0	340.047
30.5	317.866
31.0	296.928
31.5	277.409
32.0	259.131
32.5	242.156
33.0	226.600
33.5	212.345
34.0	199.391
34.5	187.561
35.0	176.796
35.5	167.037
36.0	158.223
36.5	150.357
37.0	143.259
37.5	136.930
38.0	131.251
38.5	126.106
39.0	121.492
39.5	117.351
40.0	113.566
40.5	110.194
41.0	107.119
41.5	104.280
42.0	101.677
42.5	99.252
43.0	97.063
43.5	95.052
44.0	93.160
44.5	91.385
45.0	89.670
45.5	88.073
46.0	86.535
46.5	85.056
47.0	83.637
47.5	82.217
48.0	80.857
48.5	79.496
49.0	78.136
49.5	76.834
50.0	75.592
50.5	74.350
51.0	73.049
51.5	71.866
52.0	70.624
52.5	69.441
53.0	68.258
53.5	67.075
54.0	65.892
54.5	64.709

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CANDELA TABULATION - (Cont.)

55.0	63.526
55.5	62.343
56.0	61.219
56.5	59.977
57.0	58.853
57.5	57.670
58.0	56.487
58.5	55.304
59.0	54.121
59.5	52.938
60.0	51.755
60.5	50.572
61.0	49.389
61.5	48.147
62.0	47.023
62.5	45.840
63.0	44.598
63.5	43.415
64.0	42.232
64.5	41.109
65.0	39.985
65.5	38.861
66.0	37.737
66.5	36.672
67.0	35.549
67.5	34.543
68.0	33.478
68.5	32.473
69.0	31.467
69.5	30.403
70.0	29.397
70.5	28.391
71.0	27.445
71.5	26.440
72.0	25.434
72.5	24.488
73.0	23.482
73.5	22.536
74.0	21.649
74.5	20.702
75.0	19.756
75.5	18.869
76.0	17.981
76.5	17.094
77.0	16.266
77.5	15.379
78.0	14.551
78.5	13.723
79.0	12.894
79.5	12.066
80.0	11.297
80.5	10.469
81.0	9.700
81.5	8.931
82.0	8.163
82.5	7.394

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CANDELA TABULATION - (Cont.)

83.0	6.684
83.5	5.915
84.0	5.205
84.5	4.436
85.0	3.726
85.5	2.957
86.0	2.189
86.5	1.656
87.0	1.183
87.5	0.710
88.0	0.473
88.5	0.355
89.0	0.237
89.5	0.177
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

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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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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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154.0	0.000
154.5	0.000
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155.5	0.000
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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-L9-835-XXX-DIM-UNV-LW-OF-WH-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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	388.14	N.A.	39.90
0-30	661.72	N.A.	68.00
0-40	780.58	N.A.	80.20
0-60	907.63	N.A.	93.30
0-80	968.44	N.A.	99.50
0-90	973.13	N.A.	100.00
10-90	866.24	N.A.	89.00
20-40	392.44	N.A.	40.30
20-50	462.67	N.A.	47.50
40-70	166.81	N.A.	17.10
60-80	60.81	N.A.	6.20
70-80	21.06	N.A.	2.20
80-90	4.69	N.A.	0.50
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	973.13	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	106.89
10-20	281.25
20-30	273.58
30-40	118.86
40-50	70.23
50-60	56.82
60-70	39.76
70-80	21.06
80-90	4.69
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	104	110	107	104	102	103	101	99	99	98	96	96	94	93	91
2	106	100	96	92	104	99	94	91	95	92	89	92	89	87	89	87	85	83
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78	76
4	94	86	80	75	93	85	79	75	83	78	74	81	76	73	79	75	72	70
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65
6	85	75	69	64	83	74	68	64	73	67	63	71	67	63	70	66	63	61
7	81	71	64	60	79	70	64	60	69	63	59	67	63	59	66	62	59	57
8	77	67	60	56	75	66	60	56	65	59	56	64	59	55	63	58	55	54
9	73	63	57	53	72	63	57	53	62	56	52	61	56	52	60	55	52	51
10	70	60	54	50	69	59	54	50	58	53	49	58	53	49	57	52	49	48

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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	21.7	20.9	22.1	22.4	20.6	21.7	20.9	22.1	22.4
	3H	22.1	23.1	22.5	23.4	23.8	22.1	23.1	22.5	23.4	23.8
	4H	22.6	23.6	23.0	23.9	24.3	22.6	23.6	23.0	23.9	24.3
	6H	22.9	23.8	23.3	24.2	24.6	22.9	23.8	23.3	24.2	24.6
	8H	23.0	23.9	23.4	24.3	24.7	23.0	23.9	23.4	24.3	24.7
	12H	23.0	23.9	23.5	24.2	24.7	23.0	23.9	23.5	24.2	24.7

UGR Viewed Endwise

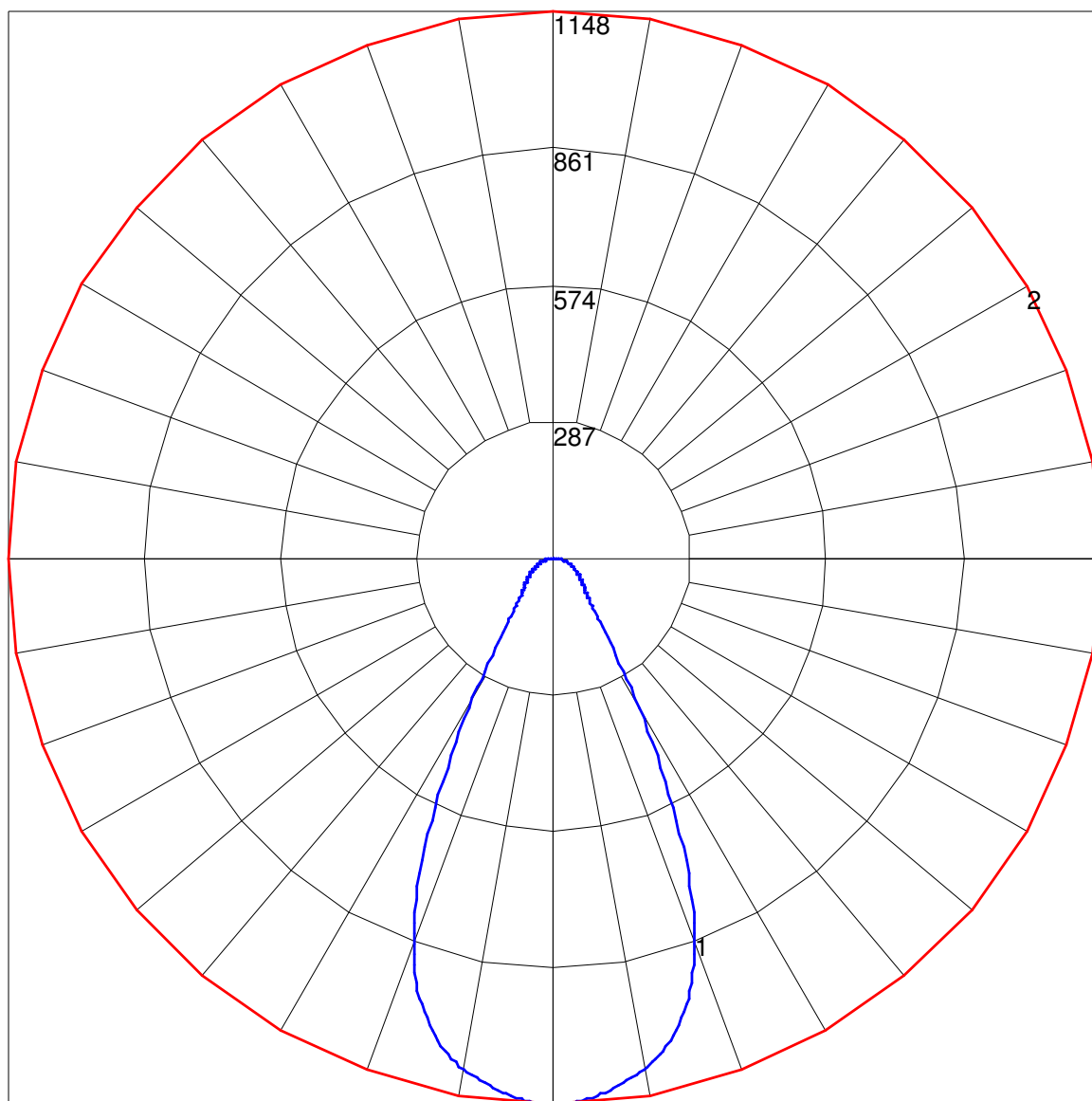
4H	2H	21.1	22.0	21.5	22.4	22.8	21.1	22.0	21.5	22.4	22.8
	3H	22.7	23.5	23.1	23.9	24.3	22.7	23.5	23.1	23.9	24.3
	4H	23.4	24.1	23.8	24.5	25.0	23.4	24.1	23.8	24.5	25.0
	6H	23.8	24.4	24.3	24.9	25.4	23.8	24.4	24.3	24.9	25.4
	8H	23.9	24.5	24.4	25.0	25.4	23.9	24.5	24.4	25.0	25.4
	12H	24.0	24.5	24.5	25.0	25.5	24.0	24.5	24.5	25.0	25.5

8H	4H	23.6	24.1	24.0	24.6	25.1	23.6	24.1	24.0	24.6	25.1
	6H	24.1	24.6	24.6	25.1	25.6	24.1	24.6	24.6	25.1	25.6
	8H	24.3	24.7	24.8	25.2	25.7	24.3	24.7	24.8	25.2	25.7
	12H	24.4	24.8	24.9	25.3	25.8	24.4	24.8	24.9	25.3	25.8

12H	4H	23.5	24.1	24.0	24.5	25.0	23.5	24.1	24.0	24.5	25.0
	6H	24.1	24.6	24.7	25.0	25.6	24.1	24.6	24.7	25.0	25.6
	8H	24.4	24.7	24.9	25.2	25.8	24.4	24.7	24.9	25.2	25.8

Maximum UGR = 25.8

POLAR GRAPH



Maximum Candela = 1148.081 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)