



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-L12-9DW-XXX-DIM-UNV-LW-OF-WH-XX_3000K.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 13257153.01
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 01/25/2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4CR-L12-9DW-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	1297
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	56
Total Luminaire Watts	23.3
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	53498	53498	53498
55	46724	46724	46724
65	39913	39913	39913
75	32201	32201	32201
85	18036	18036	18036

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CANDELA TABULATION

	<u>0</u>
0.0	1530.381
0.5	1529.593
1.0	1529.593
1.5	1528.804
2.0	1528.016
2.5	1525.650
3.0	1523.285
3.5	1520.920
4.0	1517.766
4.5	1513.824
5.0	1509.881
5.5	1505.939
6.0	1501.997
6.5	1497.266
7.0	1492.536
7.5	1487.805
8.0	1482.286
8.5	1476.767
9.0	1470.459
9.5	1464.151
10.0	1457.055
10.5	1449.171
11.0	1441.286
11.5	1432.613
12.0	1423.940
12.5	1413.691
13.0	1403.441
13.5	1392.402
14.0	1380.576
14.5	1367.960
15.0	1354.557
15.5	1339.576
16.0	1324.596
16.5	1308.038
17.0	1289.904
17.5	1271.770
18.0	1251.270
18.5	1229.982
19.0	1206.328
19.5	1181.098
20.0	1155.079
20.5	1126.695
21.0	1097.522
21.5	1065.984
22.0	1032.869
22.5	998.966
23.0	963.486
23.5	927.217
24.0	890.160
24.5	852.314
25.0	813.680
25.5	775.440
26.0	736.728
26.5	698.409

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-L12-9DW-XXX-DIM-UNV-LW-OF-WH-XX_3000K.IES****CANDELA TABULATION - (Cont.)**

27.0	660.642
27.5	623.664
28.0	587.474
28.5	552.151
29.0	517.933
29.5	484.581
30.0	453.280
30.5	423.713
31.0	395.802
31.5	369.783
32.0	345.420
32.5	322.791
33.0	302.055
33.5	283.053
34.0	265.786
34.5	250.017
35.0	235.668
35.5	222.658
36.0	210.910
36.5	200.424
37.0	190.963
37.5	182.526
38.0	174.957
38.5	168.098
39.0	161.948
39.5	156.428
40.0	151.382
40.5	146.888
41.0	142.788
41.5	139.004
42.0	135.535
42.5	132.302
43.0	129.385
43.5	126.704
44.0	124.181
44.5	121.815
45.0	119.529
45.5	117.400
46.0	115.350
46.5	113.379
47.0	111.487
47.5	109.595
48.0	107.781
48.5	105.968
49.0	104.154
49.5	102.420
50.0	100.764
50.5	99.108
51.0	97.374
51.5	95.797
52.0	94.141
52.5	92.564
53.0	90.987
53.5	89.410
54.0	87.833
54.5	86.256

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55.0	84.680
55.5	83.103
56.0	81.605
56.5	79.949
57.0	78.451
57.5	76.874
58.0	75.297
58.5	73.720
59.0	72.143
59.5	70.566
60.0	68.989
60.5	67.412
61.0	65.836
61.5	64.180
62.0	62.682
62.5	61.105
63.0	59.449
63.5	57.872
64.0	56.295
64.5	54.797
65.0	53.299
65.5	51.801
66.0	50.303
66.5	48.884
67.0	47.386
67.5	46.045
68.0	44.626
68.5	43.286
69.0	41.946
69.5	40.526
70.0	39.186
70.5	37.846
71.0	36.584
71.5	35.244
72.0	33.903
72.5	32.642
73.0	31.301
73.5	30.040
74.0	28.857
74.5	27.596
75.0	26.334
75.5	25.152
76.0	23.969
76.5	22.786
77.0	21.682
77.5	20.500
78.0	19.396
78.5	18.292
79.0	17.188
79.5	16.084
80.0	15.059
80.5	13.956
81.0	12.931
81.5	11.906
82.0	10.881
82.5	9.856

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83.0	8.909
83.5	7.884
84.0	6.938
84.5	5.913
85.0	4.967
85.5	3.942
86.0	2.917
86.5	2.208
87.0	1.577
87.5	0.946
88.0	0.631
88.5	0.473
89.0	0.315
89.5	0.237
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-L12-9DW-XXX-DIM-UNV-LW-OF-WH-XX_3000K.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

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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-L12-9DW-XXX-DIM-UNV-LW-OF-WH-XX_3000K.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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Zone	Lumens	%Lamp	%Fixt
0-20	517.39	N.A.	39.90
0-30	882.07	N.A.	68.00
0-40	1040.51	N.A.	80.20
0-60	1209.86	N.A.	93.30
0-80	1290.92	N.A.	99.50
0-90	1297.17	N.A.	100.00
10-90	1154.68	N.A.	89.00
20-40	523.12	N.A.	40.30
20-50	616.74	N.A.	47.50
40-70	222.35	N.A.	17.10
60-80	81.06	N.A.	6.20
70-80	28.07	N.A.	2.20
80-90	6.25	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	1297.17	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	142.49
10-20	374.90
20-30	364.68
30-40	158.44
40-50	93.62
50-60	75.73
60-70	52.99
70-80	28.07
80-90	6.25
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	21.6	22.7	21.9	23.1	23.4	21.6	22.7	21.9	23.1	23.4
	3H	23.1	24.1	23.5	24.4	24.8	23.1	24.1	23.5	24.4	24.8
	4H	23.6	24.6	24.0	24.9	25.3	23.6	24.6	24.0	24.9	25.3
	6H	23.9	24.8	24.3	25.2	25.6	23.9	24.8	24.3	25.2	25.6
	8H	24.0	24.9	24.4	25.3	25.7	24.0	24.9	24.4	25.3	25.7
	12H	24.0	24.9	24.5	25.2	25.7	24.0	24.9	24.5	25.2	25.7

UGR Viewed Endwise

4H	2H	22.1	23.0	22.5	23.4	23.8	22.1	23.0	22.5	23.4	23.8
	3H	23.7	24.5	24.1	24.9	25.3	23.7	24.5	24.1	24.9	25.3
	4H	24.4	25.1	24.8	25.5	25.9	24.4	25.1	24.8	25.5	25.9
	6H	24.8	25.4	25.3	25.9	26.4	24.8	25.4	25.3	25.9	26.4
	8H	24.9	25.5	25.4	26.0	26.4	24.9	25.5	25.4	26.0	26.4
	12H	25.0	25.5	25.5	26.0	26.5	25.0	25.5	25.5	26.0	26.5

8H	4H	24.6	25.1	25.0	25.6	26.1	24.6	25.1	25.0	25.6	26.1
	6H	25.1	25.6	25.6	26.1	26.6	25.1	25.6	25.6	26.1	26.6
	8H	25.3	25.7	25.8	26.2	26.7	25.3	25.7	25.8	26.2	26.7
	12H	25.4	25.8	25.9	26.3	26.8	25.4	25.8	25.9	26.3	26.8

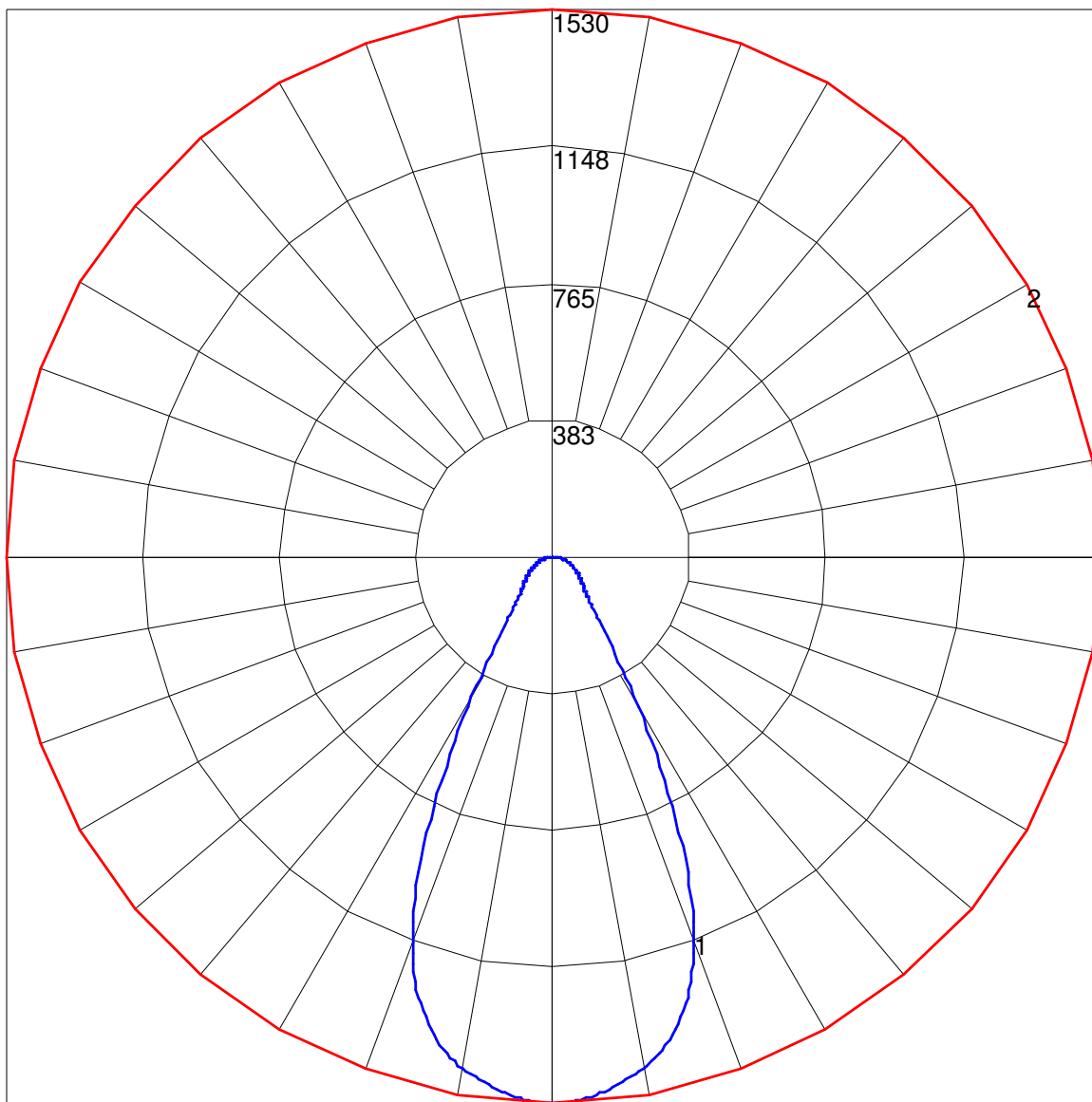
12H	4H	24.5	25.1	25.0	25.5	26.0	24.5	25.1	25.0	25.5	26.0
	6H	25.1	25.6	25.7	26.0	26.6	25.1	25.6	25.7	26.0	26.6
	8H	25.4	25.7	25.9	26.2	26.8	25.4	25.7	25.9	26.2	26.8

Maximum UGR = 26.8

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POLAR GRAPH



Maximum Candela = 1530.381 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.)