



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-L20-927-XXX-DIM-UNV-LW-WH-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM 13257153.01  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUEDATE] 02/07/2022  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.  
 [LUMCAT] 4CR-L20-927-xxx-DIM-UNV-LW-WH-xx  
 [LUMINAIRE] Extruded Aluminum Cylinder w/flush lens trim  
 [LAMP] One white LED  
 [\_SEARCH\_SOURCETYPE] LED  
 [\_SEARCH\_APPLICATION] Indoor, Downlight  
 [\_SEARCH\_MOUNTING] Pendant

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1972
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	23.9
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	81340	81340	81340
55	71039	71039	71039
65	60686	60686	60686
75	48959	48959	48959
85	27423	27423	27423

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CANDELA TABULATION

	<u>0</u>
0.0	2326.840
0.5	2325.641
1.0	2325.641
1.5	2324.442
2.0	2323.243
2.5	2319.647
3.0	2316.051
3.5	2312.454
4.0	2307.659
4.5	2301.665
5.0	2295.671
5.5	2289.677
6.0	2283.684
6.5	2276.491
7.0	2269.298
7.5	2262.105
8.0	2253.714
8.5	2245.322
9.0	2235.732
9.5	2226.142
10.0	2215.353
10.5	2203.365
11.0	2191.377
11.5	2178.191
12.0	2165.004
12.5	2149.420
13.0	2133.836
13.5	2117.053
14.0	2099.071
14.5	2079.890
15.0	2059.511
15.5	2036.734
16.0	2013.957
16.5	1988.783
17.0	1961.211
17.5	1933.639
18.0	1902.470
18.5	1870.103
19.0	1834.140
19.5	1795.778
20.0	1756.219
20.5	1713.062
21.0	1668.707
21.5	1620.756
22.0	1570.407
22.5	1518.859
23.0	1464.914
23.5	1409.770
24.0	1353.427
24.5	1295.885
25.0	1237.145
25.5	1179.004
26.0	1120.144
26.5	1061.883

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**CANDELA TABULATION - (Cont.)**

27.0	1004.461
27.5	948.238
28.0	893.214
28.5	839.508
29.0	787.481
29.5	736.773
30.0	689.181
30.5	644.227
31.0	601.790
31.5	562.230
32.0	525.187
32.5	490.782
33.0	459.254
33.5	430.363
34.0	404.110
34.5	380.134
35.0	358.317
35.5	338.537
36.0	320.675
36.5	304.731
37.0	290.345
37.5	277.518
38.0	266.010
38.5	255.581
39.0	246.230
39.5	237.839
40.0	230.167
40.5	223.333
41.0	217.100
41.5	211.346
42.0	206.071
42.5	201.156
43.0	196.720
43.5	192.645
44.0	188.808
44.5	185.212
45.0	181.736
45.5	178.499
46.0	175.382
46.5	172.385
47.0	169.508
47.5	166.631
48.0	163.874
48.5	161.117
49.0	158.359
49.5	155.722
50.0	153.205
50.5	150.687
51.0	148.050
51.5	145.652
52.0	143.135
52.5	140.737
53.0	138.340
53.5	135.942
54.0	133.545
54.5	131.147

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**CANDELA TABULATION - (Cont.)**

55.0	128.749
55.5	126.352
56.0	124.074
56.5	121.557
57.0	119.279
57.5	116.881
58.0	114.484
58.5	112.086
59.0	109.689
59.5	107.291
60.0	104.894
60.5	102.496
61.0	100.098
61.5	97.581
62.0	95.303
62.5	92.906
63.0	90.388
63.5	87.991
64.0	85.593
64.5	83.315
65.0	81.038
65.5	78.760
66.0	76.482
66.5	74.325
67.0	72.047
67.5	70.009
68.0	67.851
68.5	65.813
69.0	63.775
69.5	61.617
70.0	59.580
70.5	57.542
71.0	55.624
71.5	53.586
72.0	51.548
72.5	49.630
73.0	47.592
73.5	45.674
74.0	43.875
74.5	41.957
75.0	40.039
75.5	38.241
76.0	36.443
76.5	34.645
77.0	32.967
77.5	31.168
78.0	29.490
78.5	27.812
79.0	26.133
79.5	24.455
80.0	22.897
80.5	21.218
81.0	19.660
81.5	18.102
82.0	16.543
82.5	14.985

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CANDELA TABULATION - (Cont.)

83.0	13.546
83.5	11.988
84.0	10.549
84.5	8.991
85.0	7.552
85.5	5.994
86.0	4.436
86.5	3.357
87.0	2.398
87.5	1.439
88.0	0.959
88.5	0.719
89.0	0.480
89.5	0.360
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
119.5	0.000
120.0	0.000
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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
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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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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

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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	786.65	N.A.	39.90
0-30	1341.12	N.A.	68.00
0-40	1582.02	N.A.	80.20
0-60	1839.51	N.A.	93.30
0-80	1962.76	N.A.	99.50
0-90	1972.26	N.A.	100.00
10-90	1755.62	N.A.	89.00
20-40	795.37	N.A.	40.30
20-50	937.71	N.A.	47.50
40-70	338.07	N.A.	17.10
60-80	123.25	N.A.	6.20
70-80	42.68	N.A.	2.20
80-90	9.50	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	1972.26	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	216.64
10-20	570.01
20-30	554.47
30-40	240.90
40-50	142.35
50-60	115.15
60-70	80.57
70-80	42.68
80-90	9.50
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	23.1	24.2	23.4	24.6	24.9	23.1	24.2	23.4	24.6	24.9
	3H	24.6	25.6	25.0	25.9	26.3	24.6	25.6	25.0	25.9	26.3
	4H	25.1	26.1	25.5	26.4	26.8	25.1	26.1	25.5	26.4	26.8
	6H	25.4	26.3	25.8	26.7	27.1	25.4	26.3	25.8	26.7	27.1
	8H	25.5	26.4	25.9	26.8	27.2	25.5	26.4	25.9	26.8	27.2
	12H	25.5	26.4	26.0	26.7	27.2	25.5	26.4	26.0	26.7	27.2

UGR Viewed Endwise

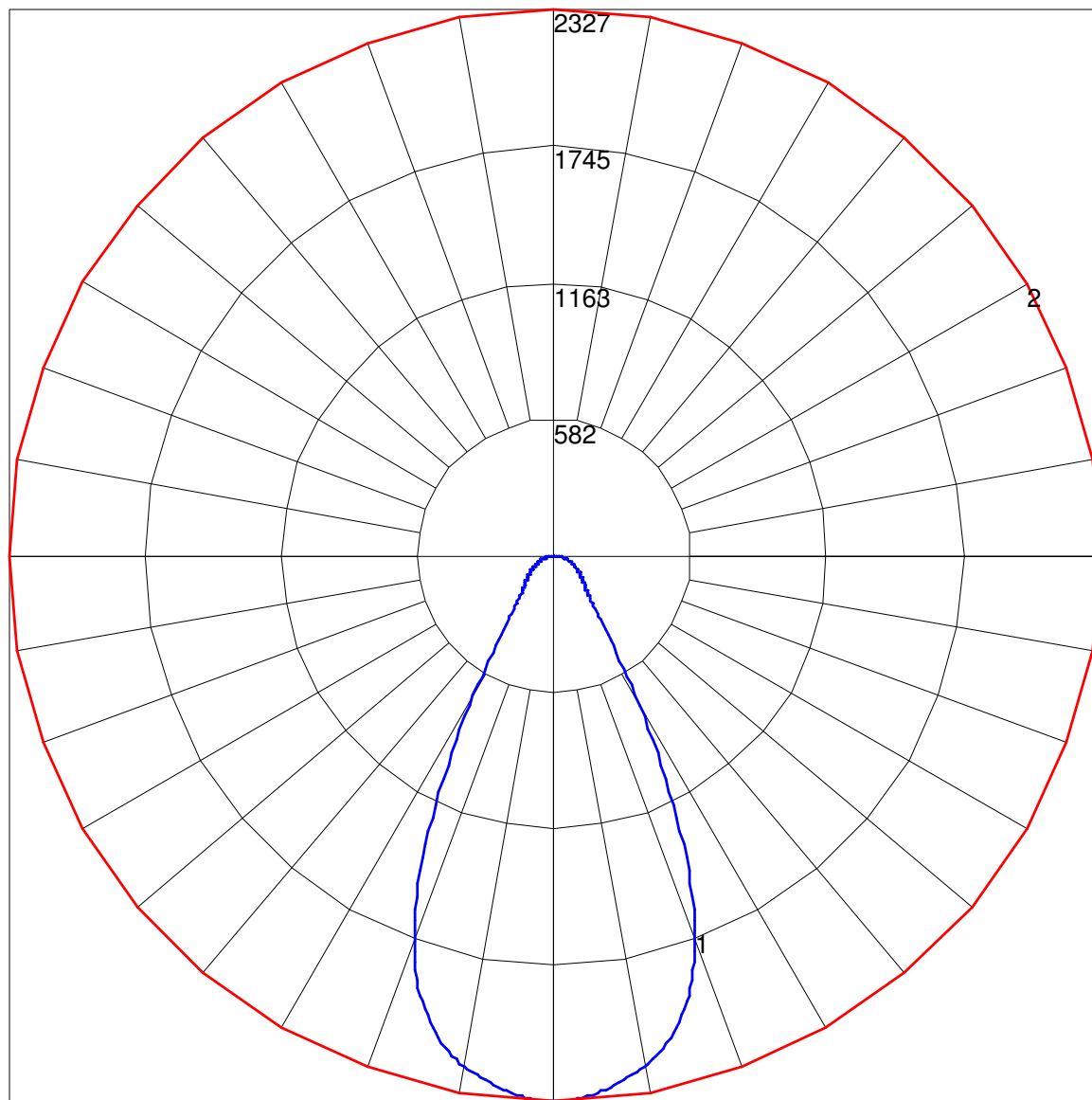
4H	2H	23.6	24.5	24.0	24.9	25.3	23.6	24.5	24.0	24.9	25.3
	3H	25.2	26.0	25.6	26.4	26.9	25.2	26.0	25.6	26.4	26.9
	4H	25.9	26.6	26.3	27.0	27.5	25.9	26.6	26.3	27.0	27.5
	6H	26.3	26.9	26.8	27.4	27.9	26.3	26.9	26.8	27.4	27.9
	8H	26.4	27.0	26.9	27.5	27.9	26.4	27.0	26.9	27.5	27.9
	12H	26.5	27.0	27.0	27.5	28.0	26.5	27.0	27.0	27.5	28.0

8H	4H	26.1	26.6	26.5	27.1	27.6	26.1	26.6	26.5	27.1	27.6
	6H	26.6	27.1	27.1	27.6	28.1	26.6	27.1	27.1	27.6	28.1
	8H	26.8	27.2	27.3	27.7	28.2	26.8	27.2	27.3	27.7	28.2
	12H	26.9	27.3	27.4	27.8	28.3	26.9	27.3	27.4	27.8	28.3

12H	4H	26.0	26.6	26.5	27.0	27.5	26.0	26.6	26.5	27.0	27.5
	6H	26.6	27.1	27.2	27.5	28.1	26.6	27.1	27.2	27.5	28.1
	8H	26.9	27.2	27.4	27.7	28.3	26.9	27.2	27.4	27.7	28.3

Maximum UGR = 28.3

POLAR GRAPH



Maximum Candela = 2326.84 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.)