



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM 13131414.06  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUEDATE] 01/25/2021  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO. 64836  
 [LUMCAT] 4CR-P15-9TW-xxx-POE PR-OM-OF-CS-xx  
 [LUMINAIRE] Aluminum housing and reflector, LED cylinder  
 [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	1475
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	62
Total Luminaire Watts	23.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.66
Spacing Criterion (90-270)	0.66
Spacing Criterion (Diagonal)	0.66
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	10171	10171	10171
55	3058	3058	3058
65	1015	1015	1015
75	452	452	452
85	225	225	225

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## CANDELA TABULATION

	<u>0</u>
0.0	3328.758
0.5	3328.758
1.0	3328.142
1.5	3327.526
2.0	3327.526
2.5	3322.599
3.0	3313.977
3.5	3305.355
4.0	3294.885
4.5	3284.416
5.0	3272.098
5.5	3254.854
6.0	3233.299
6.5	3201.274
7.0	3163.706
7.5	3124.906
8.0	3083.027
8.5	3036.221
9.0	2985.720
9.5	2932.756
10.0	2876.712
10.5	2818.205
11.0	2757.850
11.5	2696.879
12.0	2635.292
12.5	2572.474
13.0	2510.272
13.5	2448.685
14.0	2388.946
14.5	2330.439
15.0	2272.547
15.5	2215.272
16.0	2157.996
16.5	2100.720
17.0	2044.061
17.5	1988.017
18.0	1932.589
18.5	1877.777
19.0	1821.117
19.5	1763.841
20.0	1704.718
20.5	1644.979
21.0	1584.008
21.5	1521.806
22.0	1458.372
22.5	1391.858
23.0	1323.497
23.5	1253.288
24.0	1180.616
24.5	1106.712
25.0	1031.576
25.5	955.209
26.0	878.841
26.5	801.858

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.IES****CANDELA TABULATION - (Cont.)**

27.0	726.107
27.5	652.203
28.0	581.932
28.5	514.372
29.0	452.231
29.5	395.017
30.0	343.407
30.5	296.047
31.0	253.429
31.5	215.307
32.0	182.974
32.5	155.506
33.0	132.842
33.5	114.058
34.0	98.723
34.5	85.975
35.0	76.121
35.5	68.731
36.0	63.065
36.5	58.569
37.0	54.504
37.5	50.809
38.0	47.545
38.5	44.773
39.0	42.248
39.5	39.970
40.0	37.876
40.5	35.967
41.0	34.181
41.5	32.456
42.0	30.855
42.5	29.377
43.0	27.960
43.5	26.605
44.0	25.312
44.5	24.080
45.0	22.725
45.5	21.371
46.0	20.139
46.5	18.969
47.0	17.922
47.5	16.813
48.0	15.828
48.5	14.842
49.0	13.919
49.5	13.056
50.0	12.133
50.5	11.270
51.0	10.408
51.5	9.546
52.0	8.745
52.5	8.129
53.0	7.575
53.5	7.021
54.0	6.467
54.5	6.035

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.IES****CANDELA TABULATION - (Cont.)**

55.0	5.543
55.5	5.112
56.0	4.742
56.5	4.311
57.0	3.942
57.5	3.695
58.0	3.449
58.5	3.203
59.0	2.956
59.5	2.771
60.0	2.587
60.5	2.463
61.0	2.279
61.5	2.156
62.0	2.032
62.5	1.909
63.0	1.786
63.5	1.663
64.0	1.540
64.5	1.478
65.0	1.355
65.5	1.293
66.0	1.232
66.5	1.170
67.0	1.047
67.5	0.985
68.0	0.924
68.5	0.862
69.0	0.862
69.5	0.801
70.0	0.739
70.5	0.677
71.0	0.616
71.5	0.616
72.0	0.554
72.5	0.554
73.0	0.493
73.5	0.431
74.0	0.431
74.5	0.370
75.0	0.370
75.5	0.370
76.0	0.308
76.5	0.308
77.0	0.308
77.5	0.246
78.0	0.246
78.5	0.246
79.0	0.185
79.5	0.185
80.0	0.185
80.5	0.185
81.0	0.123
81.5	0.123
82.0	0.123
82.5	0.123

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.IES****CANDELA TABULATION - (Cont.)**

83.0	0.123
83.5	0.062
84.0	0.062
84.5	0.062
85.0	0.062
85.5	0.062
86.0	0.062
86.5	0.062
87.0	0.062
87.5	0.062
88.0	0.062
88.5	0.062
89.0	0.000
89.5	0.000
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-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.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-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.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-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.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-P15-9TW-XXX-POE PR-OM-OF-CS-XX\_4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	928.53	N.A.	62.90
0-30	1381.98	N.A.	93.70
0-40	1449.97	N.A.	98.30
0-60	1473.18	N.A.	99.90
0-80	1475.05	N.A.	100.00
0-90	1475.14	N.A.	100.00
10-90	1175.28	N.A.	79.70
20-40	521.44	N.A.	35.30
20-50	539.26	N.A.	36.60
40-70	24.66	N.A.	1.70
60-80	1.87	N.A.	0.10
70-80	0.42	N.A.	0.00
80-90	0.09	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	1475.14	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	299.86
10-20	628.67
20-30	453.45
30-40	67.99
40-50	17.81
50-60	5.40
60-70	1.45
70-80	0.42
80-90	0.09
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	105	103	102	101	100	99	98	97	96
2	110	106	103	100	108	104	101	99	101	99	97	98	96	95	96	94	93	91
3	106	101	97	93	104	99	96	93	97	94	91	94	92	90	92	90	88	87
4	102	96	91	88	100	95	91	87	93	89	86	91	88	85	89	86	84	83
5	98	91	87	83	97	90	86	83	89	85	82	87	84	81	86	83	81	79
6	94	87	82	79	93	87	82	79	85	81	78	84	80	78	83	80	77	76
7	91	84	79	75	90	83	78	75	82	78	75	81	77	74	80	76	74	73
8	88	80	75	72	87	80	75	72	79	75	72	78	74	71	77	74	71	70
9	85	77	72	69	84	77	72	69	76	72	69	75	71	68	74	71	68	67
10	82	74	69	66	81	74	69	66	73	69	66	72	68	66	72	68	66	65

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## UGR TABLE - CORRECTED

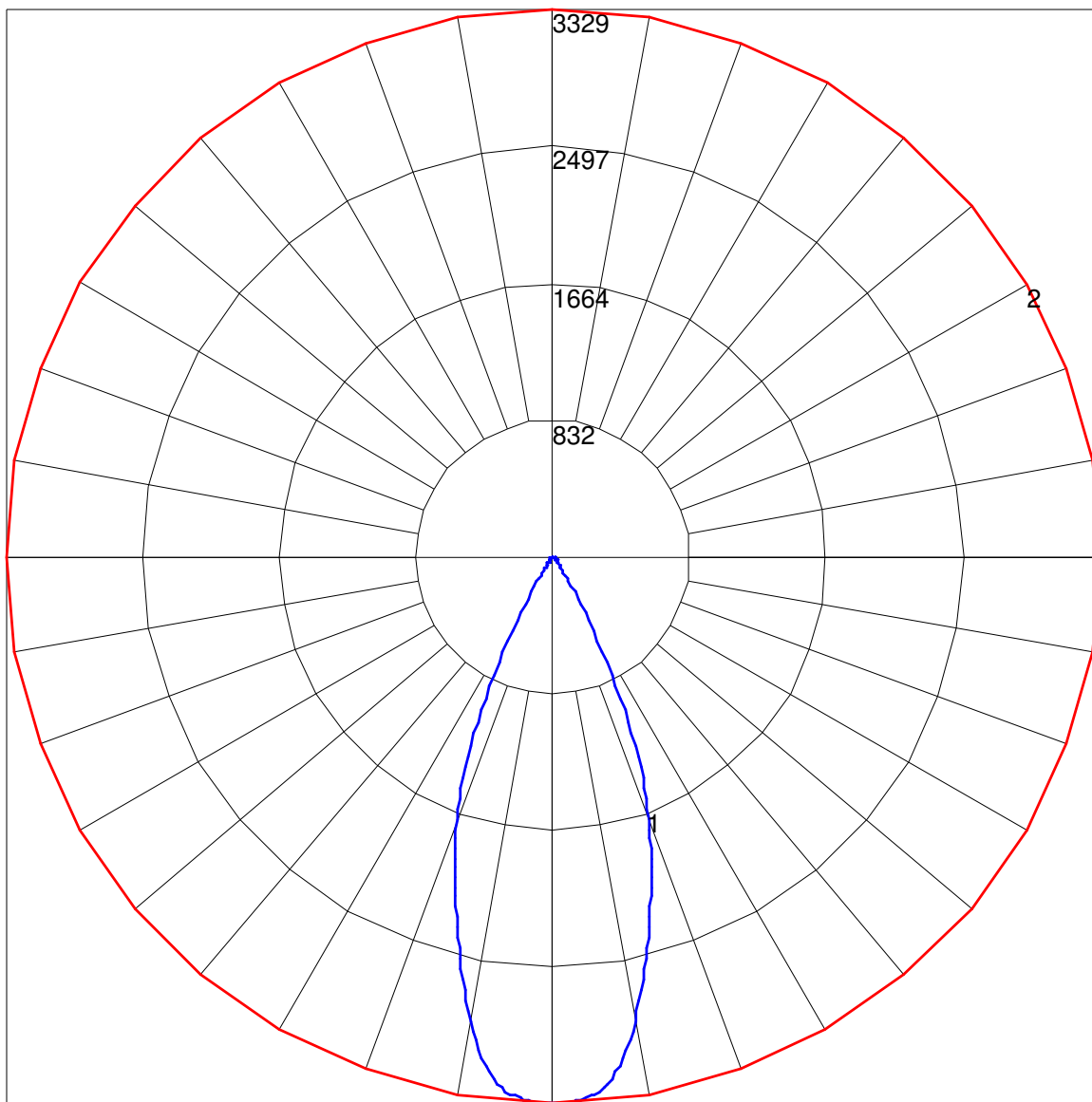
### Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	1.4	1.4	1.4	1.5	1.8	1.4	1.4	1.4	1.5	1.8
	3H	1.4	1.4	1.4	1.6	1.9	1.4	1.4	1.4	1.6	1.9
	4H	1.4	1.4	1.4	1.5	1.9	1.4	1.4	1.4	1.5	1.9
	6H	1.4	1.4	1.4	1.4	1.8	1.4	1.4	1.4	1.4	1.8
	8H	1.4	1.4	1.4	1.4	1.7	1.4	1.4	1.4	1.4	1.7
	12H	1.4	1.4	1.4	1.4	1.7	1.4	1.4	1.4	1.4	1.7
4H	2H	1.4	1.4	1.4	1.4	1.7	1.4	1.4	1.4	1.4	1.7
	3H	1.4	1.4	1.4	1.4	1.8	1.4	1.4	1.4	1.4	1.8
	4H	1.4	1.4	1.4	1.4	1.8	1.4	1.4	1.4	1.4	1.8
	6H	1.4	1.4	1.4	1.4	1.8	1.4	1.4	1.4	1.4	1.8
	8H	1.4	1.4	1.4	1.4	1.7	1.4	1.4	1.4	1.4	1.7
	12H	1.4	1.4	1.4	1.4	1.6	1.4	1.4	1.4	1.4	1.6
8H	4H	1.4	1.4	1.4	1.4	1.6	1.4	1.4	1.4	1.4	1.6
	6H	1.4	1.4	1.4	1.4	1.6	1.4	1.4	1.4	1.4	1.6
	8H	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.5
	12H	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.5
12H	4H	1.4	1.4	1.4	1.4	1.6	1.4	1.4	1.4	1.4	1.6
	6H	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.5
	8H	1.4	1.4	1.4	1.4	1.5	1.4	1.4	1.4	1.4	1.5

Maximum UGR = 1.9

POLAR GRAPH



Maximum Candela = 3328.758 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.)