



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OW-OF-CS-XX_4000K.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 13131414.01
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 01/25/2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO. 64836
 [LUMCAT] 4CR-P15-8TW-xxx-POE PR-OW-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	1462
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)	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	39673	39673	39673
55	11291	11291	11291
65	5123	5123	5123
75	1586	1586	1586
85	428	428	428

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CANDELA TABULATION

	<u>0</u>
0.0	1185.995
0.5	1185.995
1.0	1185.995
1.5	1186.585
2.0	1187.175
2.5	1187.764
3.0	1188.354
3.5	1190.123
4.0	1192.482
4.5	1195.431
5.0	1198.970
5.5	1203.098
6.0	1206.637
6.5	1211.355
7.0	1216.073
7.5	1220.791
8.0	1226.098
8.5	1230.227
9.0	1233.765
9.5	1236.124
10.0	1238.483
10.5	1240.253
11.0	1241.432
11.5	1242.022
12.0	1241.432
12.5	1240.842
13.0	1239.073
13.5	1237.304
14.0	1234.945
14.5	1233.175
15.0	1230.816
15.5	1228.457
16.0	1225.509
16.5	1223.739
17.0	1221.380
17.5	1219.611
18.0	1218.432
18.5	1216.662
19.0	1213.714
19.5	1208.406
20.0	1203.098
20.5	1196.021
21.0	1187.764
21.5	1178.918
22.0	1170.072
22.5	1159.456
23.0	1148.251
23.5	1135.866
24.0	1123.481
24.5	1110.507
25.0	1096.353
25.5	1081.019
26.0	1064.506
26.5	1046.223

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OW-OF-CS-XX_4000K.IES****CANDELA TABULATION - (Cont.)**

27.0	1026.762
27.5	1004.351
28.0	983.120
28.5	960.709
29.0	938.888
29.5	917.067
30.0	894.067
30.5	870.477
31.0	846.297
31.5	821.527
32.0	797.937
32.5	773.167
33.0	747.808
33.5	722.449
34.0	695.910
34.5	669.371
35.0	642.242
35.5	613.934
36.0	584.623
36.5	553.897
37.0	521.048
37.5	486.193
38.0	450.159
38.5	413.418
39.0	376.853
39.5	341.409
40.0	307.675
40.5	275.946
41.0	246.340
41.5	218.681
42.0	192.850
42.5	169.141
43.0	147.733
43.5	128.861
44.0	112.938
44.5	99.668
45.0	88.640
45.5	79.499
46.0	71.891
46.5	65.404
47.0	59.919
47.5	55.201
48.0	51.073
48.5	47.416
49.0	44.173
49.5	41.283
50.0	38.570
50.5	36.152
51.0	33.911
51.5	31.847
52.0	29.959
52.5	28.131
53.0	26.421
53.5	24.770
54.0	23.236
54.5	21.762

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OW-OF-CS-XX_4000K.IES****CANDELA TABULATION - (Cont.)**

55.0	20.464
55.5	19.285
56.0	18.223
56.5	17.221
57.0	16.336
57.5	15.511
58.0	14.744
58.5	14.036
59.0	13.387
59.5	12.680
60.0	12.090
60.5	11.441
61.0	10.910
61.5	10.321
62.0	9.790
62.5	9.259
63.0	8.787
63.5	8.257
64.0	7.785
64.5	7.313
65.0	6.841
65.5	6.428
66.0	6.015
66.5	5.544
67.0	5.190
67.5	4.777
68.0	4.423
68.5	4.128
69.0	3.774
69.5	3.480
70.0	3.185
70.5	2.949
71.0	2.713
71.5	2.477
72.0	2.241
72.5	2.064
73.0	1.887
73.5	1.710
74.0	1.592
74.5	1.415
75.0	1.297
75.5	1.180
76.0	1.062
76.5	1.003
77.0	0.885
77.5	0.767
78.0	0.708
78.5	0.649
79.0	0.590
79.5	0.531
80.0	0.472
80.5	0.413
81.0	0.354
81.5	0.354
82.0	0.295
82.5	0.236

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-OW-OF-CS-XX_4000K.IES****CANDELA TABULATION - (Cont.)**

83.0	0.236
83.5	0.177
84.0	0.177
84.5	0.177
85.0	0.118
85.5	0.118
86.0	0.118
86.5	0.059
87.0	0.059
87.5	0.059
88.0	0.059
88.5	0.059
89.0	0.059
89.5	0.059
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-OW-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
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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-OW-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

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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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Zone	Lumens	%Lamp	%Fixt
0-20	463.74	N.A.	31.70
0-30	958.66	N.A.	65.60
0-40	1344.64	N.A.	92.00
0-60	1453.24	N.A.	99.40
0-80	1461.78	N.A.	100.00
0-90	1461.97	N.A.	100.00
10-90	1346.02	N.A.	92.10
20-40	880.90	N.A.	60.30
20-50	969.85	N.A.	66.30
40-70	115.59	N.A.	7.90
60-80	8.54	N.A.	0.60
70-80	1.55	N.A.	0.10
80-90	0.19	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	1461.97	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	115.95
10-20	347.78
20-30	494.93
30-40	385.98
40-50	88.94
50-60	19.65
60-70	6.99
70-80	1.55
80-90	0.19
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	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

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UGR TABLE - CORRECTED

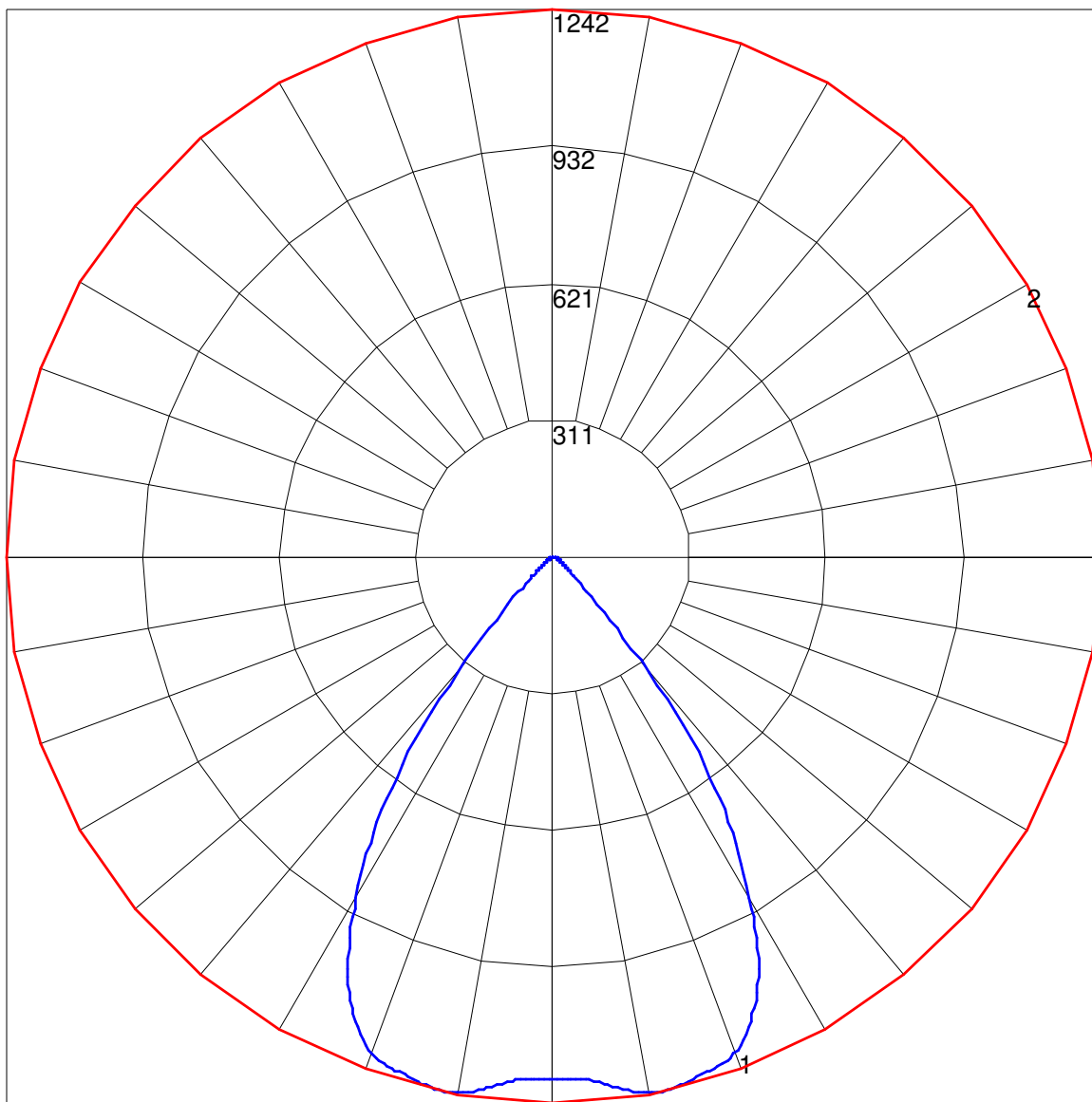
Reflectances

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	10.1	11.1	10.5	11.5	11.8	10.1	11.1	10.5	11.5	11.8
	3H	10.4	11.3	10.8	11.6	12.0	10.4	11.3	10.8	11.6	12.0
	4H	10.4	11.2	10.8	11.5	11.9	10.4	11.2	10.8	11.5	11.9
	6H	10.3	11.0	10.7	11.4	11.8	10.3	11.0	10.7	11.4	11.8
	8H	10.3	10.9	10.7	11.3	11.7	10.3	10.9	10.7	11.3	11.7
	12H	10.2	10.8	10.6	11.2	11.7	10.2	10.8	10.6	11.2	11.7
4H	2H	10.2	11.0	10.6	11.4	11.7	10.2	11.0	10.6	11.4	11.7
	3H	10.5	11.2	10.9	11.6	12.0	10.5	11.2	10.9	11.6	12.0
	4H	10.5	11.1	10.9	11.5	11.9	10.5	11.1	10.9	11.5	11.9
	6H	10.4	10.9	10.9	11.3	11.8	10.4	10.9	10.9	11.3	11.8
	8H	10.3	10.8	10.8	11.2	11.7	10.3	10.8	10.8	11.2	11.7
	12H	10.3	10.7	10.8	11.2	11.6	10.3	10.7	10.8	11.2	11.6
8H	4H	10.3	10.8	10.8	11.3	11.7	10.3	10.8	10.8	11.3	11.7
	6H	10.2	10.6	10.8	11.1	11.6	10.2	10.6	10.8	11.1	11.6
	8H	10.2	10.5	10.7	11.0	11.5	10.2	10.5	10.7	11.0	11.5
	12H	10.1	10.4	10.6	10.9	11.5	10.1	10.4	10.6	10.9	11.5
12H	4H	10.3	10.7	10.8	11.2	11.6	10.3	10.7	10.8	11.2	11.6
	6H	10.2	10.5	10.7	11.0	11.5	10.2	10.5	10.7	11.0	11.5
	8H	10.1	10.4	10.6	10.9	11.5	10.1	10.4	10.6	10.9	11.5

Maximum UGR = 12.0

POLAR GRAPH



Maximum Candela = 1242.022 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.)