



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-LW-OF-WH-XX_4000K.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-P15-9TW-xxx-POE PR-LW-OF-WH-xx
 [LUMINAIRE] Aluminum housing, optics, and trim enclosure
 [LAMP] One white LED
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Downlight
 [_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1531
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	65
Total Luminaire Watts	23.7
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	63150	63150	63150
55	55153	55153	55153
65	47114	47114	47114
75	38010	38010	38010
85	21290	21290	21290

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CANDELA TABULATION

	<u>0</u>
0.0	1806.487
0.5	1805.556
1.0	1805.556
1.5	1804.625
2.0	1803.695
2.5	1800.903
3.0	1798.110
3.5	1795.318
4.0	1791.596
4.5	1786.942
5.0	1782.289
5.5	1777.635
6.0	1772.982
6.5	1767.397
7.0	1761.813
7.5	1756.229
8.0	1749.714
8.5	1743.199
9.0	1735.754
9.5	1728.308
10.0	1719.932
10.5	1710.625
11.0	1701.318
11.5	1691.080
12.0	1680.842
12.5	1668.743
13.0	1656.644
13.5	1643.614
14.0	1629.654
14.5	1614.763
15.0	1598.941
15.5	1581.258
16.0	1563.574
16.5	1544.030
17.0	1522.624
17.5	1501.217
18.0	1477.019
18.5	1451.890
19.0	1423.969
19.5	1394.187
20.0	1363.474
20.5	1329.969
21.0	1295.533
21.5	1258.305
22.0	1219.216
22.5	1179.196
23.0	1137.314
23.5	1094.502
24.0	1050.759
24.5	1006.086
25.0	960.481
25.5	915.342
26.0	869.645
26.5	824.413

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

27.0	779.833
27.5	736.183
28.0	693.464
28.5	651.769
29.0	611.376
29.5	572.008
30.0	535.059
30.5	500.158
31.0	467.211
31.5	436.498
32.0	407.739
32.5	381.028
33.0	356.551
33.5	334.121
34.0	313.739
34.5	295.125
35.0	278.186
35.5	262.829
36.0	248.962
36.5	236.584
37.0	225.415
37.5	215.457
38.0	206.522
38.5	198.425
39.0	191.166
39.5	184.651
40.0	178.694
40.5	173.389
41.0	168.550
41.5	164.082
42.0	159.987
42.5	156.171
43.0	152.728
43.5	149.563
44.0	146.585
44.5	143.793
45.0	141.094
45.5	138.581
46.0	136.161
46.5	133.835
47.0	131.601
47.5	129.367
48.0	127.227
48.5	125.086
49.0	122.945
49.5	120.898
50.0	118.943
50.5	116.989
51.0	114.941
51.5	113.080
52.0	111.125
52.5	109.264
53.0	107.403
53.5	105.541
54.0	103.680
54.5	101.818

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

55.0	99.957
55.5	98.096
56.0	96.327
56.5	94.373
57.0	92.605
57.5	90.743
58.0	88.882
58.5	87.020
59.0	85.159
59.5	83.298
60.0	81.436
60.5	79.575
61.0	77.713
61.5	75.759
62.0	73.991
62.5	72.129
63.0	70.175
63.5	68.313
64.0	66.452
64.5	64.684
65.0	62.915
65.5	61.147
66.0	59.379
66.5	57.703
67.0	55.935
67.5	54.353
68.0	52.678
68.5	51.095
69.0	49.513
69.5	47.838
70.0	46.256
70.5	44.674
71.0	43.184
71.5	41.602
72.0	40.020
72.5	38.531
73.0	36.949
73.5	35.460
74.0	34.064
74.5	32.574
75.0	31.085
75.5	29.689
76.0	28.293
76.5	26.897
77.0	25.594
77.5	24.198
78.0	22.895
78.5	21.592
79.0	20.289
79.5	18.986
80.0	17.776
80.5	16.473
81.0	15.263
81.5	14.054
82.0	12.844
82.5	11.634

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83.0	10.517
83.5	9.307
84.0	8.190
84.5	6.980
85.0	5.863
85.5	4.653
86.0	3.444
86.5	2.606
87.0	1.861
87.5	1.117
88.0	0.745
88.5	0.558
89.0	0.372
89.5	0.279
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-LW-OF-WH-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-LW-OF-WH-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	610.73	N.A.	39.90
0-30	1041.21	N.A.	68.00
0-40	1228.23	N.A.	80.20
0-60	1428.14	N.A.	93.30
0-80	1523.83	N.A.	99.50
0-90	1531.2	N.A.	100.00
10-90	1363.01	N.A.	89.00
20-40	617.50	N.A.	40.30
20-50	728.01	N.A.	47.50
40-70	262.47	N.A.	17.10
60-80	95.69	N.A.	6.20
70-80	33.13	N.A.	2.20
80-90	7.37	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	1531.2	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	168.19
10-20	442.54
20-30	430.47
30-40	187.02
40-50	110.51
50-60	89.40
60-70	62.55
70-80	33.13
80-90	7.37
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

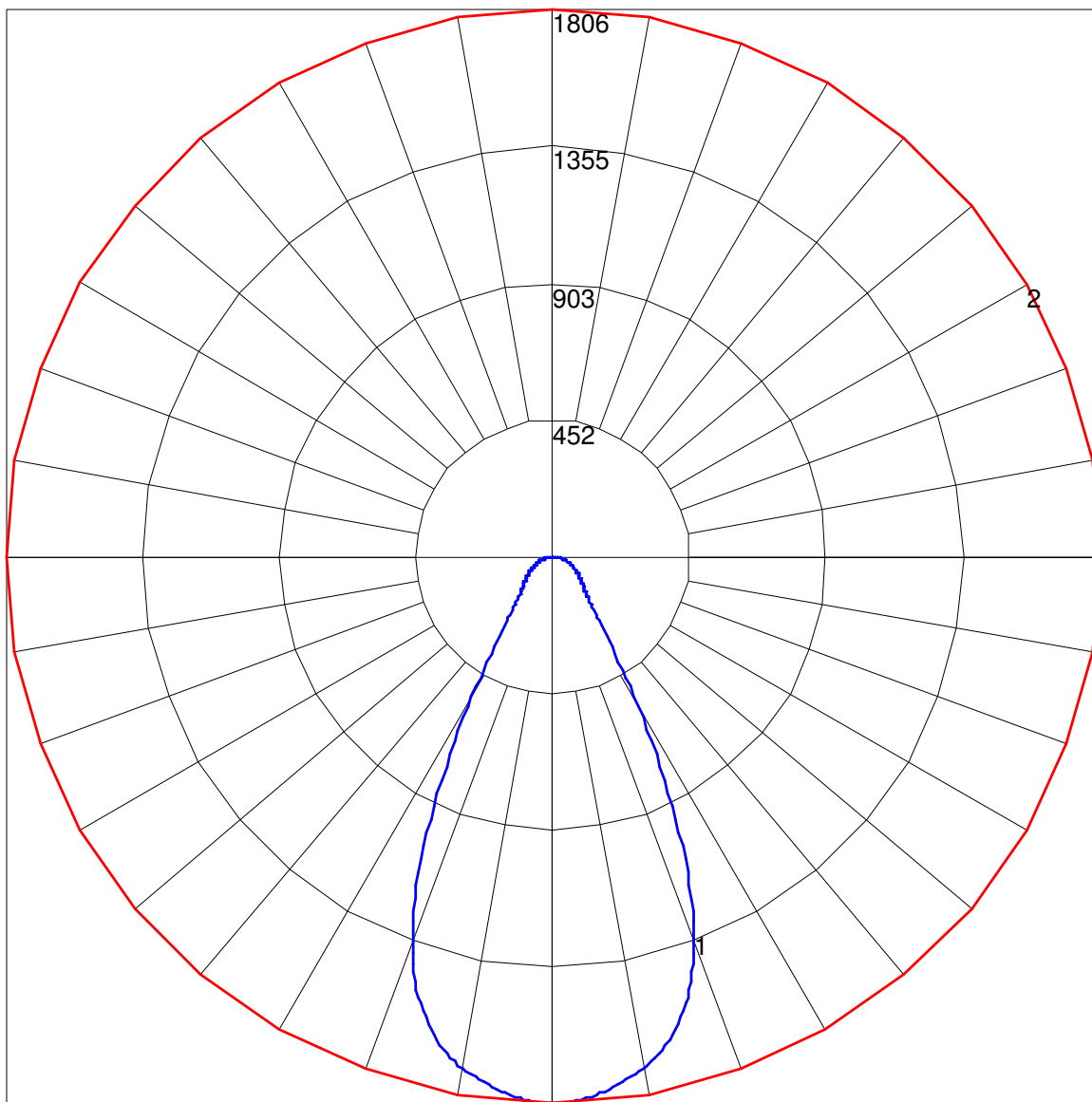
X=2H	Y=2H	22.2	23.3	22.5	23.7	24.0	22.2	23.3	22.5	23.7	24.0
	3H	23.7	24.7	24.1	25.0	25.4	23.7	24.7	24.1	25.0	25.4
	4H	24.2	25.2	24.6	25.5	25.9	24.2	25.2	24.6	25.5	25.9
	6H	24.5	25.4	24.9	25.8	26.2	24.5	25.4	24.9	25.8	26.2
	8H	24.6	25.5	25.0	25.9	26.3	24.6	25.5	25.0	25.9	26.3
	12H	24.6	25.5	25.1	25.8	26.3	24.6	25.5	25.1	25.8	26.3

UGR Viewed Endwise

4H	2H	22.7	23.6	23.1	24.0	24.4	22.7	23.6	23.1	24.0	24.4
	3H	24.3	25.1	24.7	25.5	25.9	24.3	25.1	24.7	25.5	25.9
	4H	25.0	25.7	25.4	26.1	26.5	25.0	25.7	25.4	26.1	26.5
	6H	25.4	26.0	25.9	26.5	27.0	25.4	26.0	25.9	26.5	27.0
	8H	25.5	26.1	26.0	26.6	27.0	25.5	26.1	26.0	26.6	27.0
	12H	25.6	26.1	26.1	26.6	27.1	25.6	26.1	26.1	26.6	27.1
8H	4H	25.2	25.7	25.6	26.2	26.7	25.2	25.7	25.6	26.2	26.7
	6H	25.7	26.2	26.2	26.7	27.2	25.7	26.2	26.2	26.7	27.2
	8H	25.9	26.3	26.4	26.8	27.3	25.9	26.3	26.4	26.8	27.3
	12H	26.0	26.4	26.5	26.9	27.4	26.0	26.4	26.5	26.9	27.4
12H	4H	25.1	25.7	25.6	26.1	26.6	25.1	25.7	25.6	26.1	26.6
	6H	25.7	26.2	26.3	26.6	27.2	25.7	26.2	26.3	26.6	27.2
	8H	26.0	26.3	26.5	26.8	27.4	26.0	26.3	26.5	26.8	27.4

Maximum UGR = 27.4

POLAR GRAPH



Maximum Candela = 1806.487 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.)