



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 13257153.03
 [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-RW-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	1515
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	64
Total Luminaire Watts	23.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.88
Spacing Criterion (90-270)	0.88
Spacing Criterion (Diagonal)	0.80
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	54312	54312	54312
55	42977	42977	42977
65	32126	32126	32126
75	16728	16728	16728
85	10138	10138	10138

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CANDELA TABULATION

	<u>0</u>
0.0	1805.343
0.5	1805.343
1.0	1804.412
1.5	1803.482
2.0	1803.482
2.5	1801.620
3.0	1798.829
3.5	1795.106
4.0	1791.384
4.5	1787.662
5.0	1782.078
5.5	1777.425
6.0	1771.841
6.5	1765.327
7.0	1758.813
7.5	1752.299
8.0	1745.785
8.5	1738.340
9.0	1729.965
9.5	1722.520
10.0	1714.145
10.5	1704.839
11.0	1694.603
11.5	1684.366
12.0	1673.199
12.5	1662.032
13.0	1649.934
13.5	1636.906
14.0	1622.947
14.5	1608.988
15.0	1593.168
15.5	1577.348
16.0	1559.667
16.5	1541.986
17.0	1523.374
17.5	1503.832
18.0	1483.359
18.5	1461.025
19.0	1437.760
19.5	1412.634
20.0	1386.578
20.5	1359.591
21.0	1330.742
21.5	1300.963
22.0	1268.393
22.5	1235.822
23.0	1201.390
23.5	1166.028
24.0	1128.804
24.5	1091.581
25.0	1053.427
25.5	1013.411
26.0	972.466
26.5	931.520

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

27.0	890.853
27.5	850.000
28.0	808.775
28.5	767.736
29.0	725.766
29.5	683.518
30.0	641.641
30.5	600.416
31.0	559.749
31.5	520.478
32.0	482.697
32.5	446.962
33.0	413.833
33.5	383.123
34.0	354.554
34.5	328.405
35.0	304.675
35.5	282.899
36.0	263.171
36.5	245.489
37.0	229.762
37.5	215.711
38.0	202.961
38.5	191.608
39.0	181.651
39.5	172.903
40.0	165.086
40.5	158.293
41.0	152.244
41.5	146.847
42.0	142.008
42.5	137.727
43.0	133.819
43.5	130.376
44.0	127.118
44.5	124.141
45.0	121.349
45.5	118.650
46.0	116.138
46.5	113.625
47.0	111.298
47.5	108.972
48.0	106.646
48.5	104.412
49.0	102.179
49.5	99.945
50.0	97.805
50.5	95.758
51.0	93.617
51.5	91.570
52.0	89.616
52.5	87.568
53.0	85.614
53.5	83.660
54.0	81.706
54.5	79.751

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

55.0	77.890
55.5	76.029
56.0	74.168
56.5	72.307
57.0	70.446
57.5	68.677
58.0	66.816
58.5	65.048
59.0	63.280
59.5	61.605
60.0	59.837
60.5	58.069
61.0	56.301
61.5	54.626
62.0	52.857
62.5	51.182
63.0	49.507
63.5	47.832
64.0	46.157
64.5	44.482
65.0	42.900
65.5	41.318
66.0	39.736
66.5	38.061
67.0	36.572
67.5	35.083
68.0	33.501
68.5	32.012
69.0	30.523
69.5	29.034
70.0	27.638
70.5	26.150
71.0	24.754
71.5	23.265
72.0	21.869
72.5	20.473
73.0	19.077
73.5	17.681
74.0	16.378
74.5	14.982
75.0	13.680
75.5	12.470
76.0	11.260
76.5	10.330
77.0	9.492
77.5	8.748
78.0	8.189
78.5	7.724
79.0	7.352
79.5	6.979
80.0	6.514
80.5	6.142
81.0	5.770
81.5	5.397
82.0	4.932
82.5	4.560

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83.0	4.281
83.5	3.908
84.0	3.536
84.5	3.164
85.0	2.792
85.5	2.513
86.0	2.140
86.5	1.861
87.0	1.489
87.5	1.210
88.0	0.931
88.5	0.651
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-RW-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-RW-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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-P15-9TW-XXX-POE PR-RW-OF-WH-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

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Zone	Lumens	%Lamp	%Fixt
0-20	610.62	N.A.	40.30
0-30	1080.96	N.A.	71.40
0-40	1287.91	N.A.	85.00
0-60	1453.33	N.A.	95.90
0-80	1511.64	N.A.	99.80
0-90	1514.85	N.A.	100.00
10-90	1346.93	N.A.	88.90
20-40	677.29	N.A.	44.70
20-50	772.90	N.A.	51.00
40-70	208.06	N.A.	13.70
60-80	58.31	N.A.	3.80
70-80	15.67	N.A.	1.00
80-90	3.22	N.A.	0.20
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	1514.85	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	167.93
10-20	442.70
20-30	470.34
30-40	206.95
40-50	95.61
50-60	69.81
60-70	42.64
70-80	15.67
80-90	3.22
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	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92
2	107	102	97	94	105	100	96	93	97	93	91	94	91	89	91	89	87	85
3	101	94	89	85	99	93	88	84	90	86	83	88	84	81	85	83	80	79
4	96	88	82	78	94	87	81	77	84	80	76	82	78	75	81	77	74	73
5	91	82	76	72	89	81	75	71	79	74	71	78	73	70	76	72	69	68
6	86	77	71	66	85	76	70	66	75	70	66	73	69	65	72	68	65	63
7	82	72	66	62	81	72	66	62	71	65	61	69	65	61	68	64	61	59
8	78	68	62	58	77	68	62	58	67	61	58	66	61	57	65	60	57	56
9	75	65	59	55	73	64	58	55	63	58	54	62	58	54	61	57	54	53
10	71	61	55	52	70	61	55	51	60	55	51	59	55	51	59	54	51	50

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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

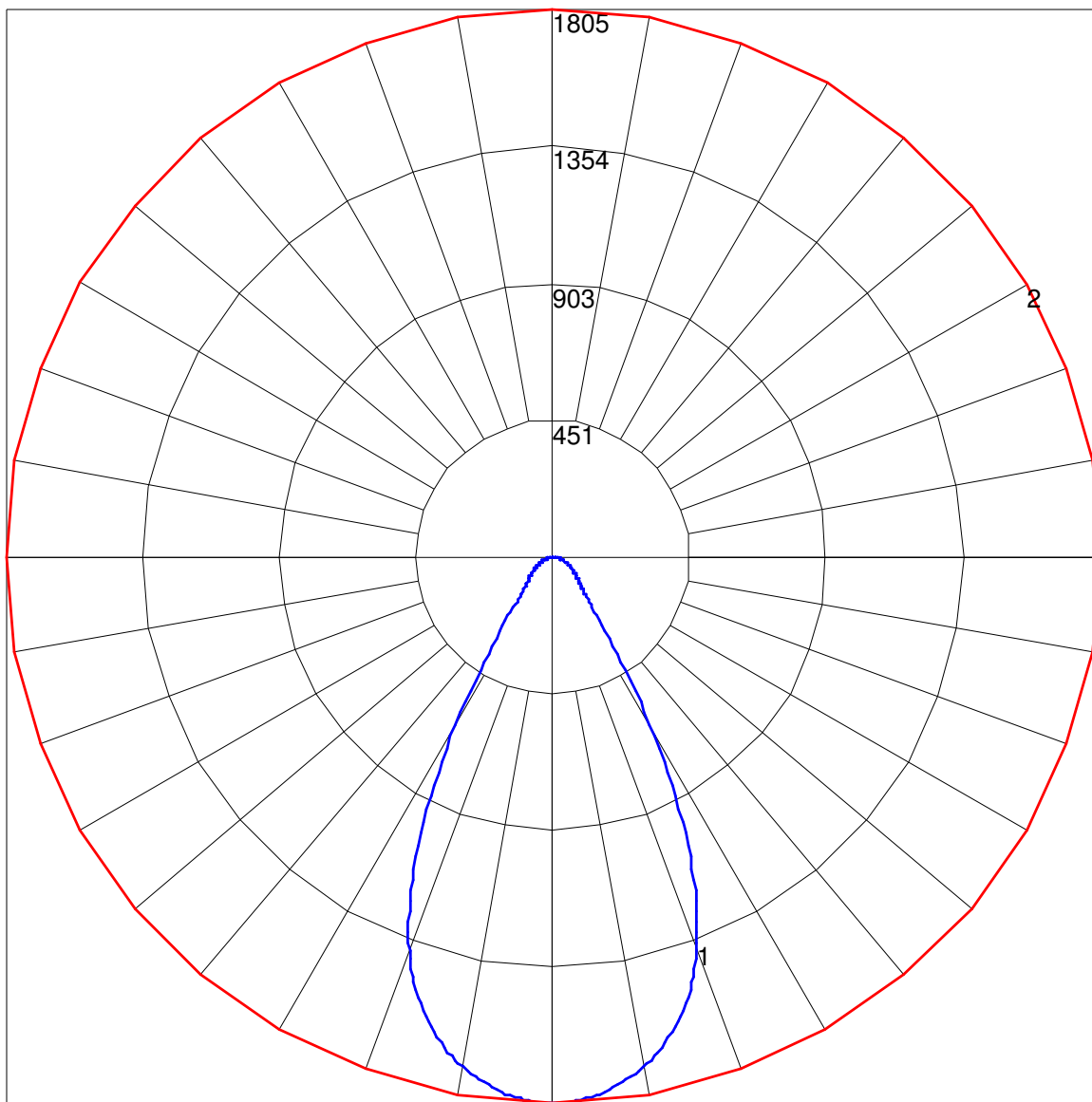
X=2H	Y=2H	20.4	21.5	20.8	21.8	22.1	20.4	21.5	20.8	21.8	22.1
	3H	21.4	22.4	21.8	22.7	23.1	21.4	22.4	21.8	22.7	23.1
	4H	21.6	22.5	22.0	22.9	23.3	21.6	22.5	22.0	22.9	23.3
	6H	21.6	22.5	22.1	22.9	23.2	21.6	22.5	22.1	22.9	23.2
	8H	21.6	22.4	22.1	22.8	23.2	21.6	22.4	22.1	22.8	23.2
	12H	21.6	22.4	22.1	22.8	23.2	21.6	22.4	22.1	22.8	23.2

UGR Viewed Endwise

4H	2H	20.7	21.6	21.1	22.0	22.4	20.7	21.6	21.1	22.0	22.4
	3H	21.9	22.6	22.3	23.1	23.5	21.9	22.6	22.3	23.1	23.5
	4H	22.1	22.8	22.6	23.2	23.7	22.1	22.8	22.6	23.2	23.7
	6H	22.2	22.8	22.7	23.2	23.7	22.2	22.8	22.7	23.2	23.7
	8H	22.2	22.7	22.7	23.2	23.7	22.2	22.7	22.7	23.2	23.7
	12H	22.2	22.7	22.7	23.2	23.6	22.2	22.7	22.7	23.2	23.6
8H	4H	22.1	22.7	22.6	23.1	23.6	22.1	22.7	22.6	23.1	23.6
	6H	22.3	22.7	22.8	23.2	23.7	22.3	22.7	22.8	23.2	23.7
	8H	22.3	22.7	22.8	23.2	23.7	22.3	22.7	22.8	23.2	23.7
	12H	22.3	22.6	22.8	23.1	23.7	22.3	22.6	22.8	23.1	23.7
12H	4H	22.1	22.5	22.6	23.0	23.5	22.1	22.5	22.6	23.0	23.5
	6H	22.2	22.6	22.8	23.1	23.6	22.2	22.6	22.8	23.1	23.6
	8H	22.3	22.6	22.8	23.1	23.7	22.3	22.6	22.8	23.1	23.7

Maximum UGR = 23.7

POLAR GRAPH



Maximum Candela = 1805.343 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.)