



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-XX-L9-930-XXX-DIM-UNV-OW-WH-TD-XX_.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-xx-L9-930-xxx-DIM-UNV-OW-WH-TD-xx
 [LUMINAIRE] Aluminum housing and reflector, no 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	438
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	41
Total Luminaire Watts	10.7
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	11875	11875	11875
55	3380	3380	3380
65	1534	1534	1534
75	474	474	474
85	127	127	127

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CANDELA TABULATION

	<u>0</u>
0.0	355.012
0.5	355.012
1.0	355.012
1.5	355.189
2.0	355.365
2.5	355.542
3.0	355.718
3.5	356.248
4.0	356.954
4.5	357.837
5.0	358.896
5.5	360.132
6.0	361.191
6.5	362.603
7.0	364.015
7.5	365.428
8.0	367.016
8.5	368.252
9.0	369.311
9.5	370.018
10.0	370.724
10.5	371.253
11.0	371.606
11.5	371.783
12.0	371.606
12.5	371.430
13.0	370.900
13.5	370.371
14.0	369.664
14.5	369.135
15.0	368.429
15.5	367.723
16.0	366.840
16.5	366.310
17.0	365.604
17.5	365.075
18.0	364.722
18.5	364.192
19.0	363.309
19.5	361.720
20.0	360.132
20.5	358.013
21.0	355.542
21.5	352.894
22.0	350.246
22.5	347.068
23.0	343.714
23.5	340.007
24.0	336.299
24.5	332.416
25.0	328.179
25.5	323.589
26.0	318.646
26.5	313.173

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CANDELA TABULATION - (Cont.)

27.0	307.348
27.5	300.639
28.0	294.284
28.5	287.576
29.0	281.044
29.5	274.512
30.0	267.627
30.5	260.566
31.0	253.328
31.5	245.913
32.0	238.852
32.5	231.438
33.0	223.847
33.5	216.255
34.0	208.311
34.5	200.367
35.0	192.247
35.5	183.773
36.0	174.999
36.5	165.802
37.0	155.969
37.5	145.536
38.0	134.749
38.5	123.751
39.0	112.806
39.5	102.196
40.0	92.098
40.5	82.601
41.0	73.739
41.5	65.459
42.0	57.727
42.5	50.630
43.0	44.222
43.5	38.573
44.0	33.806
44.5	29.834
45.0	26.533
45.5	23.797
46.0	21.520
46.5	19.578
47.0	17.936
47.5	16.524
48.0	15.288
48.5	14.193
49.0	13.222
49.5	12.357
50.0	11.545
50.5	10.822
51.0	10.151
51.5	9.533
52.0	8.968
52.5	8.421
53.0	7.909
53.5	7.414
54.0	6.955
54.5	6.514

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-XX-L9-930-XXX-DIM-UNV-OW-WH-TD-XX_.IES****CANDELA TABULATION - (Cont.)**

55.0	6.126
55.5	5.773
56.0	5.455
56.5	5.155
57.0	4.890
57.5	4.643
58.0	4.413
58.5	4.202
59.0	4.007
59.5	3.796
60.0	3.619
60.5	3.425
61.0	3.266
61.5	3.089
62.0	2.930
62.5	2.772
63.0	2.630
63.5	2.471
64.0	2.330
64.5	2.189
65.0	2.048
65.5	1.924
66.0	1.801
66.5	1.659
67.0	1.554
67.5	1.430
68.0	1.324
68.5	1.236
69.0	1.130
69.5	1.042
70.0	0.953
70.5	0.883
71.0	0.812
71.5	0.741
72.0	0.671
72.5	0.618
73.0	0.565
73.5	0.512
74.0	0.477
74.5	0.424
75.0	0.388
75.5	0.353
76.0	0.318
76.5	0.300
77.0	0.265
77.5	0.229
78.0	0.212
78.5	0.194
79.0	0.177
79.5	0.159
80.0	0.141
80.5	0.124
81.0	0.106
81.5	0.106
82.0	0.088
82.5	0.071

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CANDELA TABULATION - (Cont.)

83.0	0.071
83.5	0.053
84.0	0.053
84.5	0.053
85.0	0.035
85.5	0.035
86.0	0.035
86.5	0.018
87.0	0.018
87.5	0.018
88.0	0.018
88.5	0.018
89.0	0.018
89.5	0.018
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-XX-L9-930-XXX-DIM-UNV-OW-WH-TD-XX_.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

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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	138.81	N.A.	31.70
0-30	286.96	N.A.	65.60
0-40	402.50	N.A.	92.00
0-60	435.01	N.A.	99.40
0-80	437.57	N.A.	100.00
0-90	437.62	N.A.	100.00
10-90	402.91	N.A.	92.10
20-40	263.69	N.A.	60.30
20-50	290.31	N.A.	66.30
40-70	34.60	N.A.	7.90
60-80	2.56	N.A.	0.60
70-80	0.46	N.A.	0.10
80-90	0.06	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	437.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	34.71
10-20	104.10
20-30	148.15
30-40	115.54
40-50	26.62
50-60	5.88
60-70	2.09
70-80	0.46
80-90	0.06
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

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	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93
2	107	102	98	95	105	101	97	93	97	94	91	94	92	89	92	89	88	86
3	102	95	90	86	100	93	89	85	91	87	84	88	85	82	86	83	81	79
4	96	88	82	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	70	66	84	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	68	64	60	67	63	60	58
8	77	67	61	57	76	67	61	57	65	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	69	59	53	49	68	59	53	49	58	53	49	57	52	49	56	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

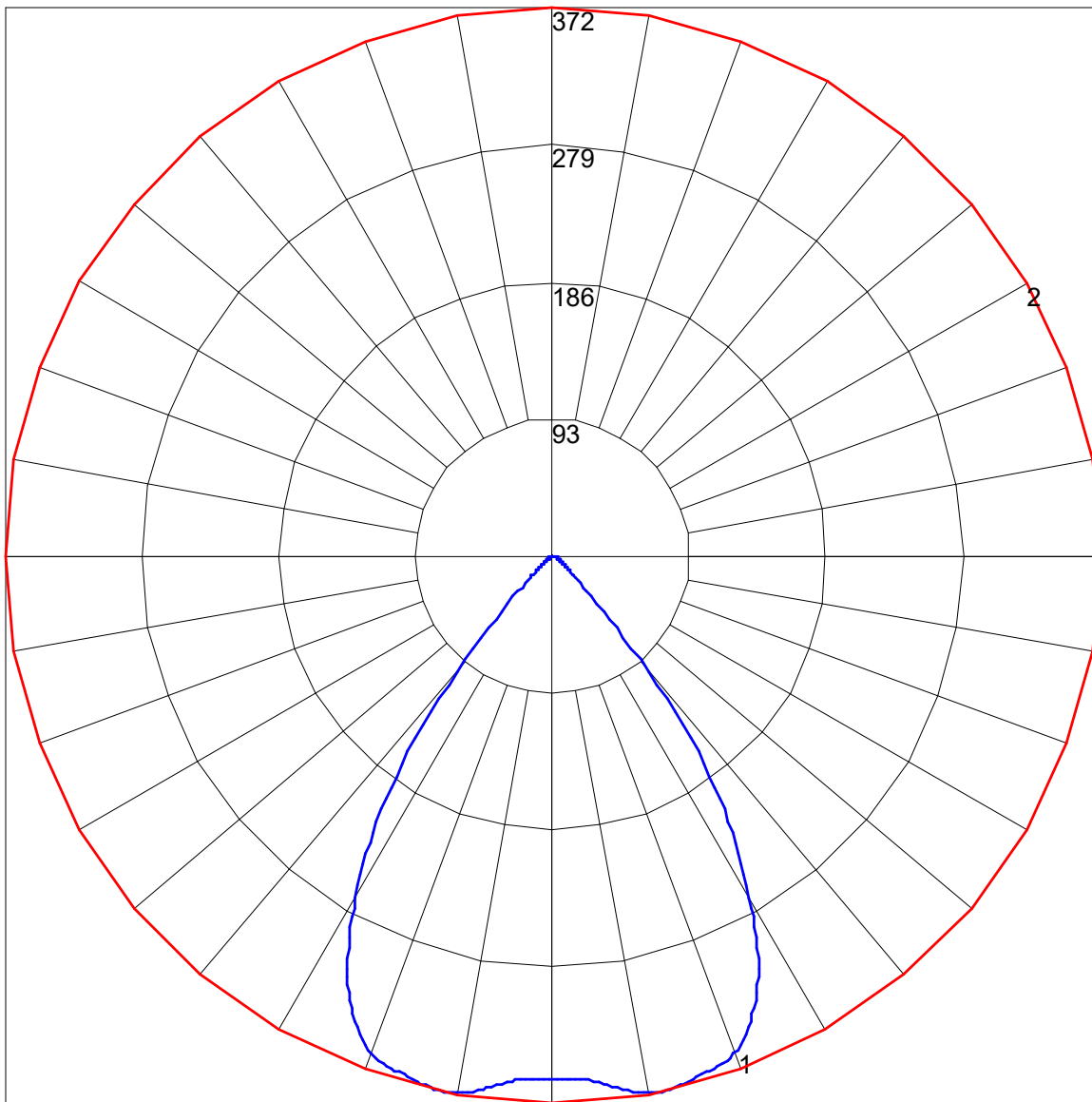
X=2H	Y=2H	6.0	7.0	6.4	7.3	7.6	6.0	7.0	6.4	7.3	7.6
	3H	6.3	7.1	6.7	7.5	7.8	6.3	7.1	6.7	7.5	7.8
	4H	6.2	7.0	6.6	7.4	7.8	6.2	7.0	6.6	7.4	7.8
	6H	6.1	6.9	6.6	7.2	7.6	6.1	6.9	6.6	7.2	7.6
	8H	6.1	6.8	6.5	7.2	7.6	6.1	6.8	6.5	7.2	7.6
	12H	6.0	6.7	6.5	7.1	7.5	6.0	6.7	6.5	7.1	7.5

UGR Viewed Endwise

4H	2H	6.0	6.8	6.4	7.2	7.6	6.0	6.8	6.4	7.2	7.6
	3H	6.3	7.0	6.8	7.4	7.8	6.3	7.0	6.8	7.4	7.8
	4H	6.3	6.9	6.8	7.3	7.8	6.3	6.9	6.8	7.3	7.8
	6H	6.2	6.7	6.7	7.2	7.7	6.2	6.7	6.7	7.2	7.7
	8H	6.2	6.6	6.7	7.1	7.6	6.2	6.6	6.7	7.1	7.6
	12H	6.1	6.5	6.6	7.0	7.5	6.1	6.5	6.6	7.0	7.5
8H	4H	6.2	6.6	6.7	7.1	7.6	6.2	6.6	6.7	7.1	7.6
	6H	6.1	6.5	6.6	7.0	7.5	6.1	6.5	6.6	7.0	7.5
	8H	6.0	6.4	6.6	6.9	7.4	6.0	6.4	6.6	6.9	7.4
	12H	6.0	6.3	6.5	6.8	7.3	6.0	6.3	6.5	6.8	7.3
12H	4H	6.1	6.5	6.6	7.0	7.5	6.1	6.5	6.6	7.0	7.5
	6H	6.0	6.4	6.6	6.8	7.4	6.0	6.4	6.6	6.8	7.4
	8H	6.0	6.3	6.5	6.8	7.3	6.0	6.3	6.5	6.8	7.3

Maximum UGR = 7.8

POLAR GRAPH



Maximum Candela = 371.783 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.)