



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CR-XX-L5-935-XXX-DIM-UNV-OW-CS-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-L5-935-xxx-DIM-UNV-OW-CS-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	283
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	42
Total Luminaire Watts	6.7
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	7693	7693	7693
55	2189	2189	2189
65	994	994	994
75	308	308	308
85	84	84	84

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CANDELA TABULATION

	<u>0</u>
0.0	229.979
0.5	229.979
1.0	229.979
1.5	230.094
2.0	230.208
2.5	230.322
3.0	230.437
3.5	230.780
4.0	231.237
4.5	231.809
5.0	232.495
5.5	233.296
6.0	233.982
6.5	234.897
7.0	235.812
7.5	236.726
8.0	237.756
8.5	238.556
9.0	239.242
9.5	239.700
10.0	240.157
10.5	240.500
11.0	240.729
11.5	240.843
12.0	240.729
12.5	240.615
13.0	240.272
13.5	239.929
14.0	239.471
14.5	239.128
15.0	238.671
15.5	238.213
16.0	237.641
16.5	237.298
17.0	236.841
17.5	236.498
18.0	236.269
18.5	235.926
19.0	235.354
19.5	234.325
20.0	233.296
20.5	231.923
21.0	230.322
21.5	228.607
22.0	226.891
22.5	224.833
23.0	222.660
23.5	220.259
24.0	217.857
24.5	215.341
25.0	212.596
25.5	209.623
26.0	206.421
26.5	202.876

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-XX-L5-935-XXX-DIM-UNV-OW-CS-TD-XX_.IES****CANDELA TABULATION - (Cont.)**

27.0	199.102
27.5	194.756
28.0	190.639
28.5	186.293
29.0	182.062
29.5	177.831
30.0	173.371
30.5	168.796
31.0	164.107
31.5	159.304
32.0	154.730
32.5	149.927
33.0	145.009
33.5	140.092
34.0	134.946
34.5	129.799
35.0	124.539
35.5	119.049
36.0	113.366
36.5	107.407
37.0	101.038
37.5	94.279
38.0	87.291
38.5	80.167
39.0	73.076
39.5	66.203
40.0	59.662
40.5	53.509
41.0	47.768
41.5	42.405
42.0	37.396
42.5	32.799
43.0	28.647
43.5	24.988
44.0	21.900
44.5	19.327
45.0	17.188
45.5	15.416
46.0	13.941
46.5	12.683
47.0	11.619
47.5	10.704
48.0	9.904
48.5	9.195
49.0	8.566
49.5	8.005
50.0	7.479
50.5	7.010
51.0	6.576
51.5	6.175
52.0	5.810
52.5	5.455
53.0	5.123
53.5	4.803
54.0	4.506
54.5	4.220

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-XX-L5-935-XXX-DIM-UNV-OW-CS-TD-XX_.IES****CANDELA TABULATION - (Cont.)**

55.0	3.968
55.5	3.740
56.0	3.534
56.5	3.339
57.0	3.168
57.5	3.008
58.0	2.859
58.5	2.722
59.0	2.596
59.5	2.459
60.0	2.344
60.5	2.219
61.0	2.116
61.5	2.001
62.0	1.898
62.5	1.795
63.0	1.704
63.5	1.601
64.0	1.510
64.5	1.418
65.0	1.327
65.5	1.247
66.0	1.166
66.5	1.075
67.0	1.006
67.5	0.926
68.0	0.858
68.5	0.801
69.0	0.732
69.5	0.675
70.0	0.618
70.5	0.572
71.0	0.526
71.5	0.480
72.0	0.435
72.5	0.400
73.0	0.366
73.5	0.332
74.0	0.309
74.5	0.274
75.0	0.252
75.5	0.229
76.0	0.206
76.5	0.194
77.0	0.172
77.5	0.149
78.0	0.137
78.5	0.126
79.0	0.114
79.5	0.103
80.0	0.091
80.5	0.080
81.0	0.069
81.5	0.069
82.0	0.057
82.5	0.046

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-XX-L5-935-XXX-DIM-UNV-OW-CS-TD-XX_.IES****CANDELA TABULATION - (Cont.)**

83.0	0.046
83.5	0.034
84.0	0.034
84.5	0.034
85.0	0.023
85.5	0.023
86.0	0.023
86.5	0.011
87.0	0.011
87.5	0.011
88.0	0.011
88.5	0.011
89.0	0.011
89.5	0.011
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-L5-935-XXX-DIM-UNV-OW-CS-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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4CR-XX-L5-935-XXX-DIM-UNV-OW-CS-TD-XX_.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-XX-L5-935-XXX-DIM-UNV-OW-CS-TD-XX_.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	89.92	N.A.	31.70
0-30	185.90	N.A.	65.60
0-40	260.74	N.A.	92.00
0-60	281.80	N.A.	99.40
0-80	283.46	N.A.	100.00
0-90	283.49	N.A.	100.00
10-90	261.01	N.A.	92.10
20-40	170.82	N.A.	60.30
20-50	188.07	N.A.	66.30
40-70	22.41	N.A.	7.90
60-80	1.66	N.A.	0.60
70-80	0.30	N.A.	0.10
80-90	0.04	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	283.49	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	22.48
10-20	67.44
20-30	95.97
30-40	74.85
40-50	17.25
50-60	3.81
60-70	1.36
70-80	0.30
80-90	0.04
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	107	107	107	102	102	102	100
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93
2	108	103	98	95	105	101	97	94	98	94	92	95	92	90	92	90	88	86
3	102	95	90	86	100	94	89	85	91	87	84	89	85	82	86	84	81	80
4	96	88	83	78	94	87	82	78	85	81	77	83	79	76	81	78	75	74
5	91	82	76	72	89	81	76	71	80	75	71	78	74	70	76	73	70	68
6	86	77	71	66	85	76	70	66	75	69	65	73	69	65	72	68	65	63
7	82	72	66	61	80	71	65	61	70	65	61	69	64	60	68	63	60	59
8	77	67	61	57	76	67	61	57	66	60	56	65	60	56	64	59	56	54
9	73	63	57	53	72	63	57	53	62	56	53	61	56	52	60	55	52	51
10	70	59	53	49	69	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

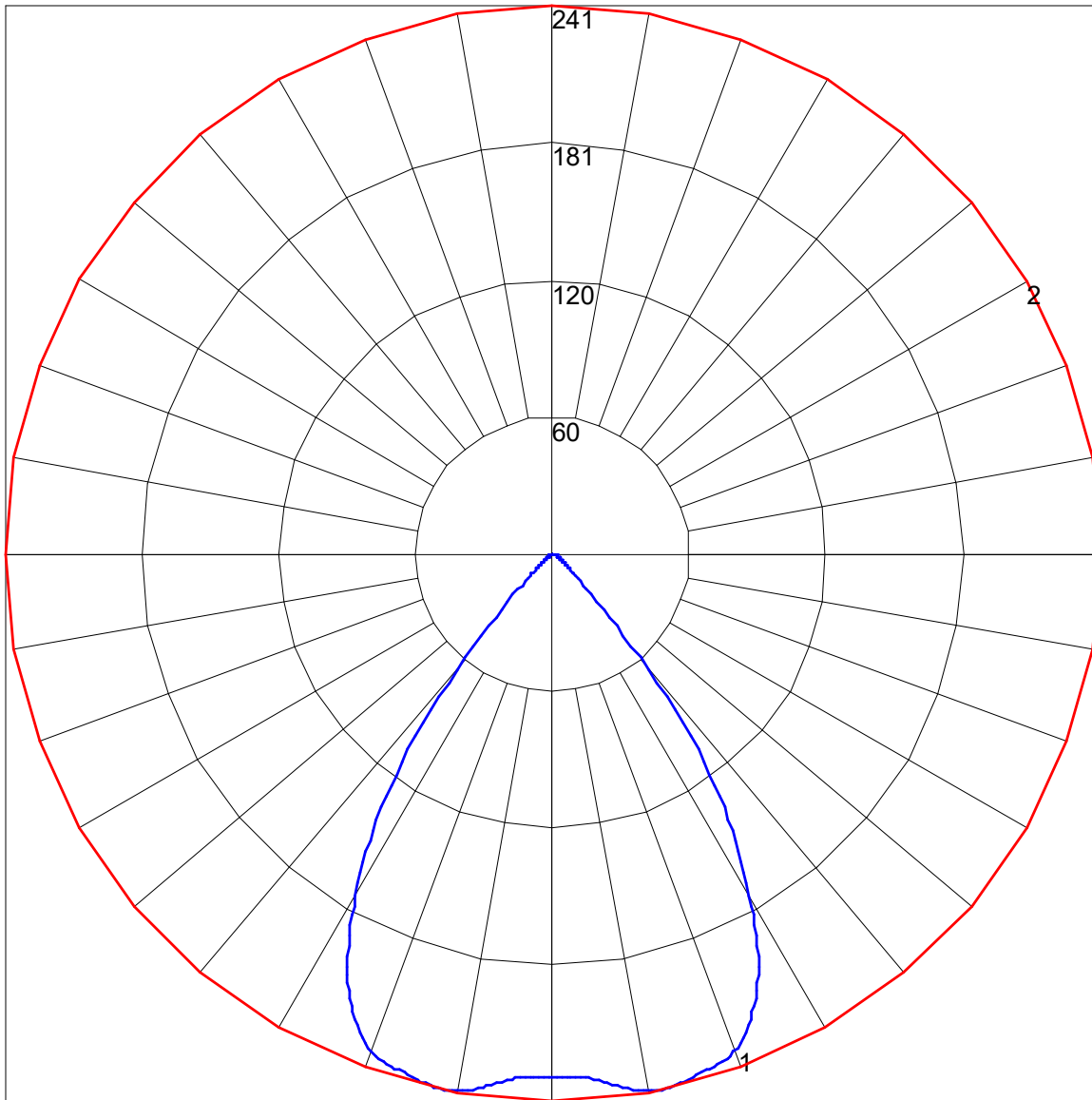
X=2H	Y=2H	4.5	5.5	4.9	5.8	6.1	4.5	5.5	4.9	5.8	6.1
	3H	4.8	5.6	5.2	6.0	6.3	4.8	5.6	5.2	6.0	6.3
	4H	4.7	5.5	5.1	5.9	6.3	4.7	5.5	5.1	5.9	6.3
	6H	4.7	5.4	5.1	5.7	6.1	4.7	5.4	5.1	5.7	6.1
	8H	4.6	5.3	5.0	5.7	6.1	4.6	5.3	5.0	5.7	6.1
	12H	4.5	5.2	5.0	5.6	6.0	4.5	5.2	5.0	5.6	6.0

UGR Viewed Endwise

4H	2H	4.5	5.3	4.9	5.7	6.1	4.5	5.3	4.9	5.7	6.1
	3H	4.9	5.5	5.3	5.9	6.3	4.9	5.5	5.3	5.9	6.3
	4H	4.8	5.4	5.3	5.8	6.3	4.8	5.4	5.3	5.8	6.3
	6H	4.7	5.2	5.2	5.7	6.2	4.7	5.2	5.2	5.7	6.2
	8H	4.7	5.1	5.2	5.6	6.1	4.7	5.1	5.2	5.6	6.1
	12H	4.6	5.0	5.1	5.5	6.0	4.6	5.0	5.1	5.5	6.0
8H	4H	4.7	5.1	5.2	5.6	6.1	4.7	5.1	5.2	5.6	6.1
	6H	4.6	5.0	5.1	5.5	6.0	4.6	5.0	5.1	5.5	6.0
	8H	4.5	4.9	5.1	5.4	5.9	4.5	4.9	5.1	5.4	5.9
	12H	4.5	4.8	5.0	5.3	5.8	4.5	4.8	5.0	5.3	5.8
12H	4H	4.6	5.0	5.1	5.5	6.0	4.6	5.0	5.1	5.5	6.0
	6H	4.5	4.9	5.1	5.3	5.9	4.5	4.9	5.1	5.3	5.9
	8H	4.5	4.8	5.0	5.3	5.8	4.5	4.8	5.0	5.3	5.8

Maximum UGR = 6.3

POLAR GRAPH



Maximum Candela = 240.843 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.)