



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV_10W_3500K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 15248898.03

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 2024-04-30

[TESTDATE] 4/15/2024

[MANUFAC] H.E. WILLIAMS, INC.

[MORE] CARTHAGE, MO. 64836

[LUMCAT] 4FDR-LS-8CS-CS-DIM-UNV_10W_3500K

[LUMINAIRE] 4 INCH ROUND, RECESSED LED DOWNLIGHT

[MORE] W/SEMI-SPECULAR TRIM. WATTAGE & COLOR SELECTABLE

[LAMP] LED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1021
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	112
Total Luminaire Watts	9.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.12
Spacing Criterion (Diagonal)	1.08
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.33 ft (Diameter)
Luminous Width (90-270)	0.33 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	35120	35120	35120
55	11625	11625	11625
65	641	641	641
75	175	175	175
85	222	222	222

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CANDELA TABULATION

	0
0.0	723.317
0.5	723.317
1.0	723.317
1.5	723.839
2.0	723.839
2.5	724.362
3.0	724.362
3.5	724.884
4.0	724.884
4.5	725.406
5.0	725.406
5.5	725.928
6.0	726.451
6.5	726.973
7.0	727.495
7.5	728.540
8.0	729.584
8.5	730.106
9.0	731.151
9.5	732.195
10.0	732.718
10.5	733.240
11.0	733.240
11.5	733.762
12.0	733.762
12.5	733.240
13.0	733.240
13.5	732.718
14.0	732.195
14.5	731.151
15.0	730.106
15.5	729.062
16.0	727.495
16.5	725.406
17.0	723.317
17.5	720.184
18.0	717.050
18.5	712.872
19.0	708.172
19.5	703.472
20.0	697.727
20.5	691.460
21.0	684.671
21.5	677.881
22.0	670.048
22.5	662.214
23.0	653.858
23.5	645.502
24.0	636.624
24.5	627.223
25.0	618.345
25.5	608.422
26.0	599.022
26.5	589.099

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV_10W_3500K_.IES****CANDELA TABULATION - (Cont.)**

27.0	579.176
27.5	568.731
28.0	558.286
28.5	548.363
29.0	537.918
29.5	527.473
30.0	516.767
30.5	506.165
31.0	495.303
31.5	484.388
32.0	473.577
32.5	462.662
33.0	451.695
33.5	440.623
34.0	429.603
34.5	418.793
35.0	409.027
35.5	399.261
36.0	389.599
36.5	378.893
37.0	367.873
37.5	356.854
38.0	345.887
38.5	334.972
39.0	324.161
39.5	313.350
40.0	302.592
40.5	291.886
41.0	281.284
41.5	270.787
42.0	260.394
42.5	250.054
43.0	239.818
43.5	229.843
44.0	219.972
44.5	210.415
45.0	201.119
45.5	191.927
46.0	182.944
46.5	174.223
47.0	165.815
47.5	157.511
48.0	149.520
48.5	141.634
49.0	133.957
49.5	126.541
50.0	119.282
50.5	112.232
51.0	105.442
51.5	98.705
52.0	92.177
52.5	85.806
53.0	79.434
53.5	73.167
54.0	66.796
54.5	60.372

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55.0	54.001
55.5	47.786
56.0	41.885
56.5	36.349
57.0	31.074
57.5	26.269
58.0	21.882
58.5	18.070
59.0	14.727
59.5	11.960
60.0	9.766
60.5	7.938
61.0	6.580
61.5	5.536
62.0	4.700
62.5	4.074
63.0	3.499
63.5	3.081
64.0	2.768
64.5	2.455
65.0	2.193
65.5	1.985
66.0	1.828
66.5	1.671
67.0	1.515
67.5	1.410
68.0	1.306
68.5	1.149
69.0	1.097
69.5	0.992
70.0	0.888
70.5	0.836
71.0	0.783
71.5	0.679
72.0	0.627
72.5	0.574
73.0	0.522
73.5	0.522
74.0	0.470
74.5	0.418
75.0	0.366
75.5	0.366
76.0	0.313
76.5	0.313
77.0	0.261
77.5	0.261
78.0	0.209
78.5	0.209
79.0	0.209
79.5	0.157
80.0	0.157
80.5	0.157
81.0	0.157
81.5	0.157
82.0	0.157
82.5	0.157

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83.0	0.157
83.5	0.157
84.0	0.157
84.5	0.157
85.0	0.157
85.5	0.157
86.0	0.209
86.5	0.209
87.0	0.209
87.5	0.209
88.0	0.209
88.5	0.209
89.0	0.209
89.5	0.157
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 : 4FDR-LS-8CS-CS-DIM-UNV_10W_3500K_.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	274.67	N.A.	26.90
0-30	556.48	N.A.	54.50
0-40	811.03	N.A.	79.40
0-60	1017.57	N.A.	99.60
0-80	1021.01	N.A.	100.00
0-90	1021.19	N.A.	100.00
10-90	951.70	N.A.	93.20
20-40	536.37	N.A.	52.50
20-50	692.69	N.A.	67.80
40-70	209.52	N.A.	20.50
60-80	3.44	N.A.	0.30
70-80	0.45	N.A.	0.00
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	1021.19	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	69.50
10-20	205.17
20-30	281.82
30-40	254.55
40-50	156.32
50-60	50.21
60-70	2.99
70-80	0.45
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	107	105	110	108	105	103	103	102	100	100	98	97	96	95	94	92
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86	84
3	100	93	87	83	98	91	86	82	89	84	80	86	82	79	84	81	78	76
4	94	85	79	74	92	84	78	74	82	77	73	80	75	72	78	74	71	69
5	88	79	72	67	86	78	71	67	76	70	66	74	69	66	72	68	65	63
6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60	58
7	78	67	61	56	77	67	60	56	65	60	55	64	59	55	63	58	55	53
8	74	63	56	51	72	62	56	51	61	55	51	60	55	51	59	54	51	49
9	69	59	52	47	68	58	52	47	57	51	47	56	51	47	55	50	47	45
10	66	55	48	44	65	54	48	44	53	48	44	53	47	44	52	47	43	42

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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

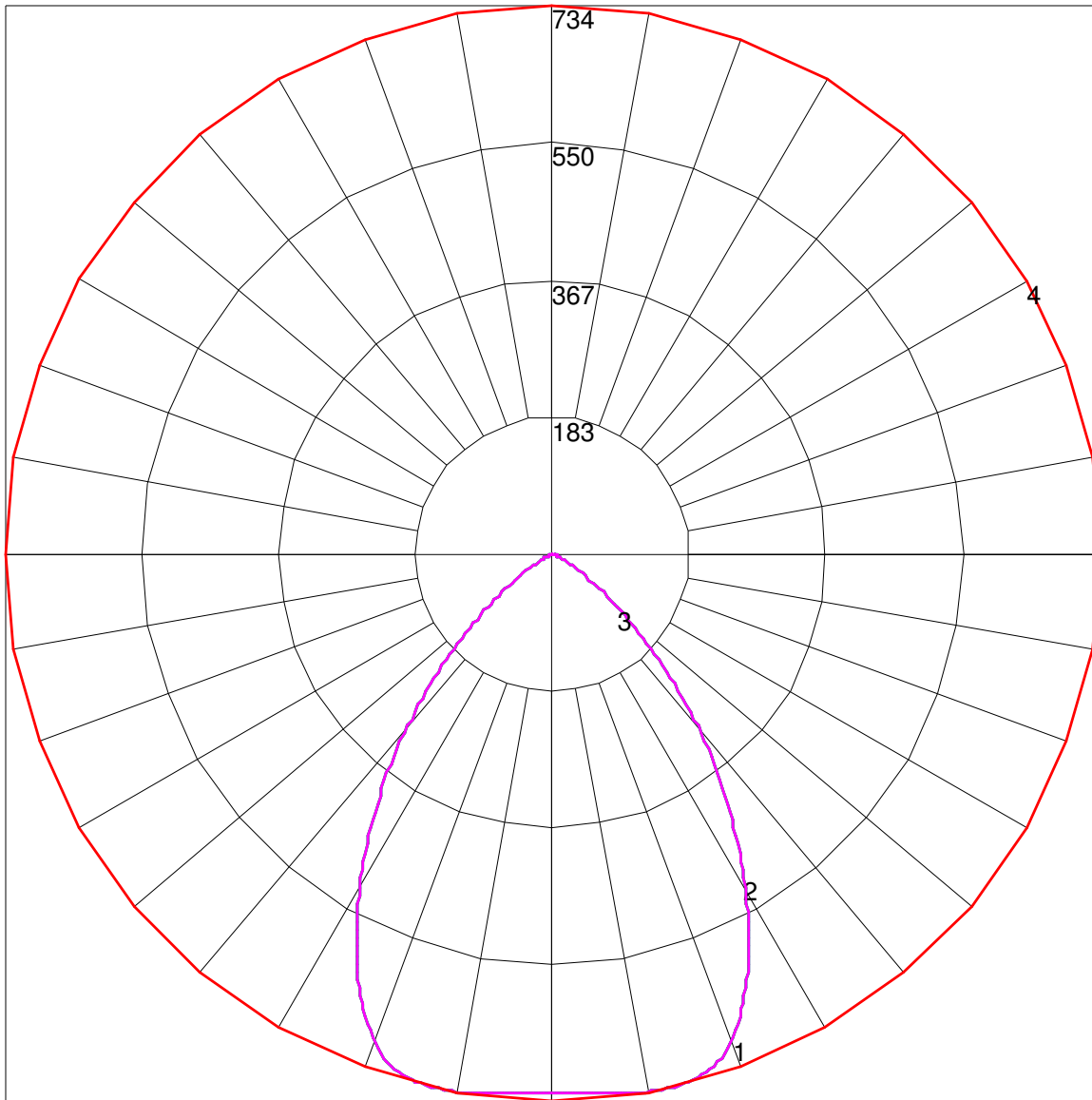
X=2H	Y=2H	11.3	12.5	11.7	12.8	13.1	11.3	12.5	11.7	12.8	13.1
	3H	11.2	12.2	11.6	12.5	12.9	11.2	12.2	11.6	12.5	12.9
	4H	11.1	12.0	11.5	12.4	12.8	11.1	12.0	11.5	12.4	12.8
	6H	11.0	11.9	11.4	12.2	12.6	11.0	11.9	11.4	12.2	12.6
	8H	11.0	11.8	11.4	12.1	12.6	11.0	11.8	11.4	12.1	12.6
	12H	10.9	11.7	11.3	12.0	12.5	10.9	11.7	11.3	12.0	12.5

UGR Viewed Endwise

4H	2H	11.1	12.0	11.5	12.4	12.8	11.1	12.0	11.5	12.4	12.8
	3H	10.9	11.7	11.3	12.1	12.5	10.9	11.7	11.3	12.1	12.5
	4H	10.8	11.5	11.3	11.9	12.4	10.8	11.5	11.3	11.9	12.4
	6H	10.7	11.3	11.2	11.8	12.2	10.7	11.3	11.2	11.8	12.2
	8H	10.7	11.2	11.1	11.6	12.1	10.7	11.2	11.1	11.6	12.1
	12H	10.6	11.1	11.1	11.6	12.0	10.6	11.1	11.1	11.6	12.0
8H	4H	10.6	11.2	11.1	11.6	12.1	10.6	11.2	11.1	11.6	12.1
	6H	10.6	11.0	11.1	11.5	12.0	10.6	11.0	11.1	11.5	12.0
	8H	10.5	10.9	11.0	11.4	11.9	10.5	10.9	11.0	11.4	11.9
	12H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8
12H	4H	10.6	11.1	11.1	11.6	12.0	10.6	11.1	11.1	11.6	12.0
	6H	10.5	10.9	11.0	11.3	11.9	10.5	10.9	11.0	11.3	11.9
	8H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8

Maximum UGR = 13.1

POLAR GRAPH



Maximum Candela = 733.762 Located At Horizontal Angle = 0, Vertical Angle = 11.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (5 - 185)
3 - Vertical Plane Through Horizontal Angles (10 - 190)
4 - Horizontal Cone Through Vertical Angle (11.5) (Through Max. Cd.)