



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.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\_4000K

[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	1000
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
Total Luminaire Watts	9.2
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	34397	34397	34397
55	11386	11386	11386
65	628	628	628
75	171	171	171
85	217	217	217

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES

CANDELA TABULATION

	<u>0</u>
0.0	708.440
0.5	708.440
1.0	708.440
1.5	708.951
2.0	708.951
2.5	709.463
3.0	709.463
3.5	709.974
4.0	709.974
4.5	710.486
5.0	710.486
5.5	710.997
6.0	711.509
6.5	712.020
7.0	712.532
7.5	713.555
8.0	714.578
8.5	715.089
9.0	716.112
9.5	717.135
10.0	717.647
10.5	718.158
11.0	718.158
11.5	718.670
12.0	718.670
12.5	718.158
13.0	718.158
13.5	717.647
14.0	717.135
14.5	716.112
15.0	715.089
15.5	714.066
16.0	712.532
16.5	710.486
17.0	708.440
17.5	705.371
18.0	702.302
18.5	698.210
19.0	693.606
19.5	689.002
20.0	683.376
20.5	677.238
21.0	670.588
21.5	663.939
22.0	656.266
22.5	648.593
23.0	640.409
23.5	632.225
24.0	623.529
24.5	614.322
25.0	605.627
25.5	595.908
26.0	586.701
26.5	576.982

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES

CANDELA TABULATION - (Cont.)

27.0	567.263
27.5	557.033
28.0	546.803
28.5	537.084
29.0	526.854
29.5	516.624
30.0	506.138
30.5	495.754
31.0	485.115
31.5	474.424
32.0	463.836
32.5	453.146
33.0	442.404
33.5	431.560
34.0	420.767
34.5	410.179
35.0	400.614
35.5	391.049
36.0	381.586
36.5	371.100
37.0	360.307
37.5	349.514
38.0	338.772
38.5	328.082
39.0	317.494
39.5	306.905
40.0	296.368
40.5	285.882
41.0	275.499
41.5	265.217
42.0	255.038
42.5	244.910
43.0	234.885
43.5	225.115
44.0	215.448
44.5	206.087
45.0	196.982
45.5	187.980
46.0	179.182
46.5	170.639
47.0	162.404
47.5	154.271
48.0	146.445
48.5	138.721
49.0	131.202
49.5	123.939
50.0	116.829
50.5	109.923
51.0	103.274
51.5	96.675
52.0	90.281
52.5	84.041
53.0	77.801
53.5	71.662
54.0	65.422
54.5	59.130

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES****CANDELA TABULATION - (Cont.)**

55.0	52.890
55.5	46.803
56.0	41.023
56.5	35.601
57.0	30.435
57.5	25.729
58.0	21.432
58.5	17.698
59.0	14.425
59.5	11.714
60.0	9.565
60.5	7.775
61.0	6.445
61.5	5.422
62.0	4.604
62.5	3.990
63.0	3.427
63.5	3.018
64.0	2.711
64.5	2.404
65.0	2.148
65.5	1.944
66.0	1.790
66.5	1.637
67.0	1.483
67.5	1.381
68.0	1.279
68.5	1.125
69.0	1.074
69.5	0.972
70.0	0.870
70.5	0.818
71.0	0.767
71.5	0.665
72.0	0.614
72.5	0.563
73.0	0.512
73.5	0.512
74.0	0.460
74.5	0.409
75.0	0.358
75.5	0.358
76.0	0.307
76.5	0.307
77.0	0.256
77.5	0.256
78.0	0.205
78.5	0.205
79.0	0.205
79.5	0.153
80.0	0.153
80.5	0.153
81.0	0.153
81.5	0.153
82.0	0.153
82.5	0.153

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES****CANDELA TABULATION - (Cont.)**

83.0	0.153
83.5	0.153
84.0	0.153
84.5	0.153
85.0	0.153
85.5	0.153
86.0	0.205
86.5	0.205
87.0	0.205
87.5	0.205
88.0	0.205
88.5	0.205
89.0	0.205
89.5	0.153
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\_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 : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_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 : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_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



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	269.02	N.A.	26.90
0-30	545.04	N.A.	54.50
0-40	794.35	N.A.	79.40
0-60	996.64	N.A.	99.60
0-80	1000.01	N.A.	100.00
0-90	1000.19	N.A.	100.00
10-90	932.12	N.A.	93.20
20-40	525.33	N.A.	52.50
20-50	678.44	N.A.	67.80
40-70	205.21	N.A.	20.50
60-80	3.37	N.A.	0.30
70-80	0.44	N.A.	0.00
80-90	0.18	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	1000.19	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	68.07
10-20	200.95
20-30	276.02
30-40	249.31
40-50	153.11
50-60	49.18
60-70	2.92
70-80	0.44
80-90	0.18
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

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES

## 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

# IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV\_10W\_4000K\_.IES

## UGR TABLE - CORRECTED

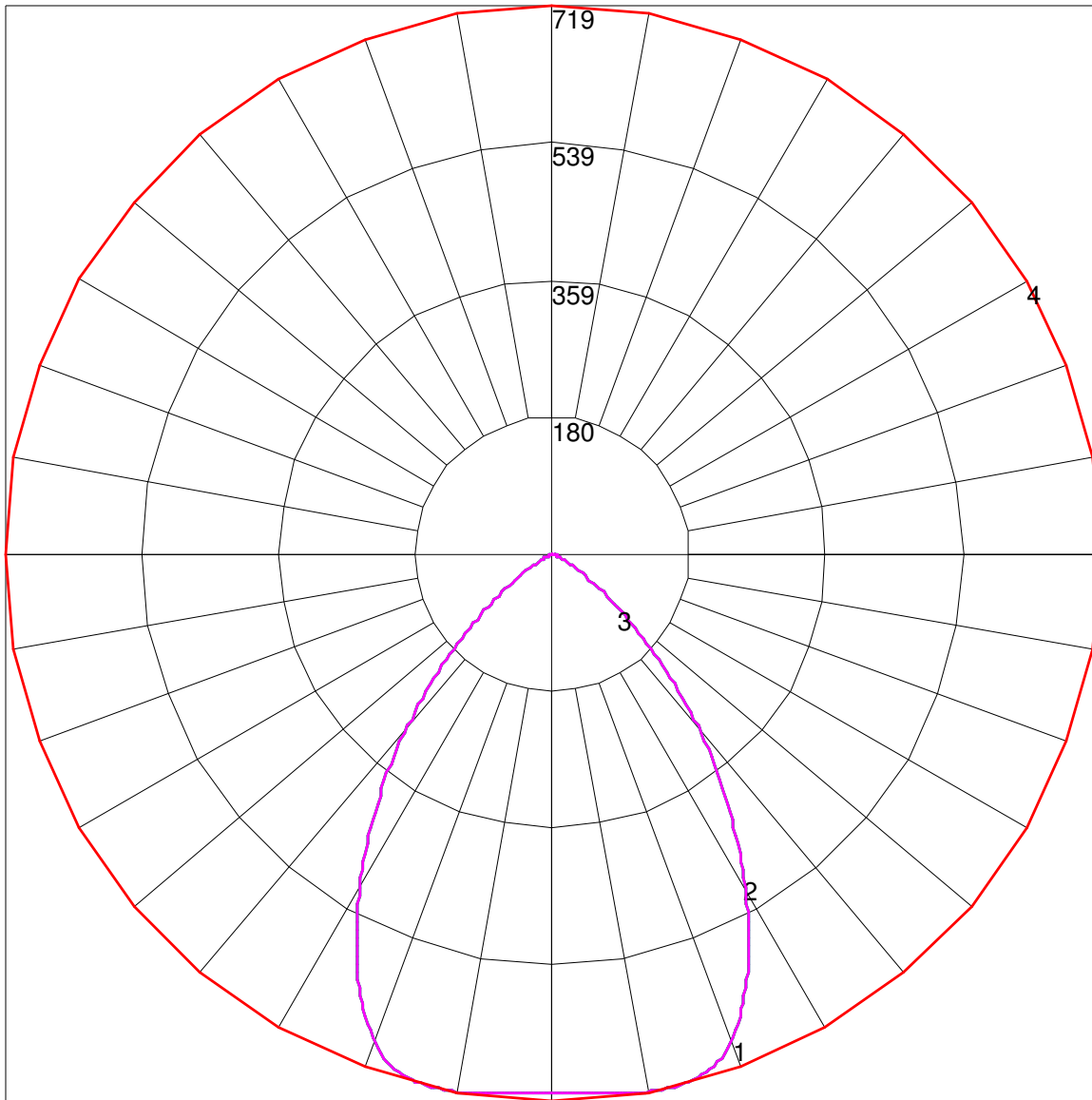
### Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	11.2	12.4	11.6	12.7	13.0	11.2	12.4	11.6	12.7	13.0
	3H	11.1	12.1	11.5	12.4	12.8	11.1	12.1	11.5	12.4	12.8
	4H	11.0	11.9	11.4	12.3	12.7	11.0	11.9	11.4	12.3	12.7
	6H	10.9	11.7	11.3	12.1	12.5	10.9	11.7	11.3	12.1	12.5
	8H	10.8	11.7	11.3	12.0	12.5	10.8	11.7	11.3	12.0	12.5
	12H	10.8	11.6	11.2	11.9	12.4	10.8	11.6	11.2	11.9	12.4
4H	2H	11.0	11.9	11.4	12.3	12.7	11.0	11.9	11.4	12.3	12.7
	3H	10.8	11.6	11.2	12.0	12.4	10.8	11.6	11.2	12.0	12.4
	4H	10.7	11.4	11.2	11.8	12.3	10.7	11.4	11.2	11.8	12.3
	6H	10.6	11.2	11.1	11.7	12.1	10.6	11.2	11.1	11.7	12.1
	8H	10.6	11.1	11.0	11.5	12.0	10.6	11.1	11.0	11.5	12.0
	12H	10.5	11.0	11.0	11.5	11.9	10.5	11.0	11.0	11.5	11.9
8H	4H	10.5	11.1	11.0	11.5	12.0	10.5	11.1	11.0	11.5	12.0
	6H	10.5	10.9	11.0	11.4	11.9	10.5	10.9	11.0	11.4	11.9
	8H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8
	12H	10.3	10.7	10.8	11.2	11.7	10.3	10.7	10.8	11.2	11.7
12H	4H	10.5	11.0	11.0	11.5	11.9	10.5	11.0	11.0	11.5	11.9
	6H	10.4	10.8	10.9	11.2	11.8	10.4	10.8	10.9	11.2	11.8
	8H	10.3	10.7	10.8	11.2	11.7	10.3	10.7	10.8	11.2	11.7

Maximum UGR = 13.0

POLAR GRAPH



Maximum Candela = 718.67 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.)