



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_14W_4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM 15248898.04
[TESTLAB] UL Verification Services Inc.
[ISSUE DATE] 2024-04-30
[TEST DATE] 4/16/2024
[MANUFACTURER] H.E. WILLIAMS, INC.
[MORE] CARTHAGE, MO. 64836
[LUMEN CATEGORY] 4FDR-LS-8CS-WH-DIM-UNV_14W_4000K
[LUMINAIRE] 4 INCH ROUND, RECESSED LED DOWNLIGHT
[MORE] W/WHITE PAINTED TRIM. WATTAGE & COLOR SELECTABLE
[LAMP] LED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1223
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	89
Total Luminaire Watts	13.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.00
Spacing Criterion (90-270)	1.00
Spacing Criterion (Diagonal)	1.00
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	36927	36927	36927
55	27158	27158	27158
65	21504	21504	21504
75	17009	17009	17009
85	12602	12602	12602

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CANDELA TABULATION

	<u>0</u>
0.0	845.723
0.5	844.982
1.0	844.982
1.5	844.241
2.0	844.241
2.5	843.499
3.0	842.758
3.5	841.276
4.0	840.535
4.5	839.052
5.0	837.570
5.5	836.087
6.0	833.864
6.5	831.640
7.0	829.416
7.5	827.193
8.0	824.969
8.5	822.745
9.0	820.522
9.5	817.557
10.0	815.333
10.5	812.368
11.0	809.404
11.5	806.439
12.0	803.474
12.5	799.768
13.0	796.062
13.5	792.356
14.0	787.908
14.5	783.461
15.0	779.014
15.5	774.567
16.0	769.378
16.5	764.190
17.0	758.260
17.5	752.330
18.0	745.659
18.5	738.988
19.0	731.576
19.5	723.720
20.0	715.492
20.5	706.894
21.0	698.296
21.5	689.327
22.0	679.988
22.5	670.426
23.0	660.716
23.5	650.636
24.0	640.407
24.5	629.882
25.0	618.986
25.5	607.720
26.0	596.157
26.5	584.298

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_14W_4000K_.IES****CANDELA TABULATION - (Cont.)**

27.0	572.438
27.5	560.875
28.0	549.461
28.5	537.898
29.0	526.186
29.5	514.549
30.0	502.912
30.5	491.127
31.0	479.268
31.5	467.482
32.0	455.771
32.5	444.134
33.0	432.794
33.5	421.527
34.0	410.409
34.5	399.513
35.0	388.692
35.5	378.166
36.0	367.715
36.5	357.412
37.0	347.110
37.5	336.881
38.0	326.875
38.5	317.091
39.0	307.455
39.5	298.116
40.0	289.073
40.5	280.104
41.0	271.506
41.5	263.204
42.0	255.051
42.5	247.194
43.0	239.486
43.5	232.148
44.0	224.958
44.5	218.065
45.0	211.468
45.5	205.168
46.0	199.238
46.5	193.530
47.0	188.046
47.5	182.783
48.0	177.817
48.5	173.073
49.0	168.626
49.5	164.327
50.0	160.176
50.5	156.248
51.0	152.467
51.5	148.835
52.0	145.352
52.5	141.942
53.0	138.607
53.5	135.345
54.0	132.232
54.5	129.119

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55.0	126.154
55.5	123.264
56.0	120.299
56.5	117.408
57.0	114.517
57.5	111.701
58.0	108.884
58.5	106.142
59.0	103.399
59.5	100.731
60.0	98.062
60.5	95.394
61.0	92.800
61.5	90.206
62.0	87.760
62.5	85.314
63.0	82.868
63.5	80.496
64.0	78.124
64.5	75.826
65.0	73.602
65.5	71.379
66.0	69.155
66.5	67.006
67.0	64.930
67.5	62.855
68.0	60.854
68.5	58.852
69.0	56.925
69.5	54.998
70.0	53.071
70.5	51.218
71.0	49.365
71.5	47.586
72.0	45.807
72.5	44.028
73.0	42.323
73.5	40.618
74.0	38.914
74.5	37.283
75.0	35.652
75.5	34.096
76.0	32.539
76.5	30.983
77.0	29.500
77.5	28.018
78.0	26.535
78.5	25.127
79.0	23.719
79.5	22.310
80.0	20.976
80.5	19.642
81.0	18.382
81.5	17.048
82.0	15.788
82.5	14.602

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CANDELA TABULATION - (Cont.)

83.0	13.416
83.5	12.230
84.0	11.118
84.5	10.006
85.0	8.895
85.5	7.857
86.0	6.819
86.5	5.781
87.0	4.818
87.5	3.854
88.0	3.039
88.5	2.150
89.0	1.408
89.5	0.889
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

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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
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156.5	0.000
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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-WH-DIM-UNV_14W_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	297.32	N.A.	24.30
0-30	578.97	N.A.	47.30
0-40	821.92	N.A.	67.20
0-60	1101.22	N.A.	90.00
0-80	1212.71	N.A.	99.20
0-90	1222.95	N.A.	100.00
10-90	1143.74	N.A.	93.50
20-40	524.60	N.A.	42.90
20-50	690.44	N.A.	56.50
40-70	352.70	N.A.	28.80
60-80	111.49	N.A.	9.10
70-80	38.09	N.A.	3.10
80-90	10.24	N.A.	0.80
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	1222.95	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	79.20
10-20	218.11
20-30	281.66
30-40	242.94
40-50	165.85
50-60	113.46
60-70	73.40
70-80	38.09
80-90	10.24
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	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89
2	103	97	91	87	101	95	90	86	92	87	84	88	85	82	86	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	71	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	66	62	58	56
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	62	57	53	51
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	54	48	44	43
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	39
10	62	50	43	39	61	50	43	39	49	43	38	48	42	38	47	42	38	37

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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	20.9	22.2	21.2	22.5	22.8	20.9	22.2	21.2	22.5	22.8
	3H	22.2	23.4	22.6	23.8	24.1	22.2	23.4	22.6	23.8	24.1
	4H	22.7	23.8	23.1	24.2	24.6	22.7	23.8	23.1	24.2	24.6
	6H	23.0	24.1	23.5	24.4	24.8	23.0	24.1	23.5	24.4	24.8
	8H	23.1	24.1	23.6	24.5	24.9	23.1	24.1	23.6	24.5	24.9
	12H	23.2	24.1	23.6	24.5	25.0	23.2	24.1	23.6	24.5	25.0

UGR Viewed Endwise

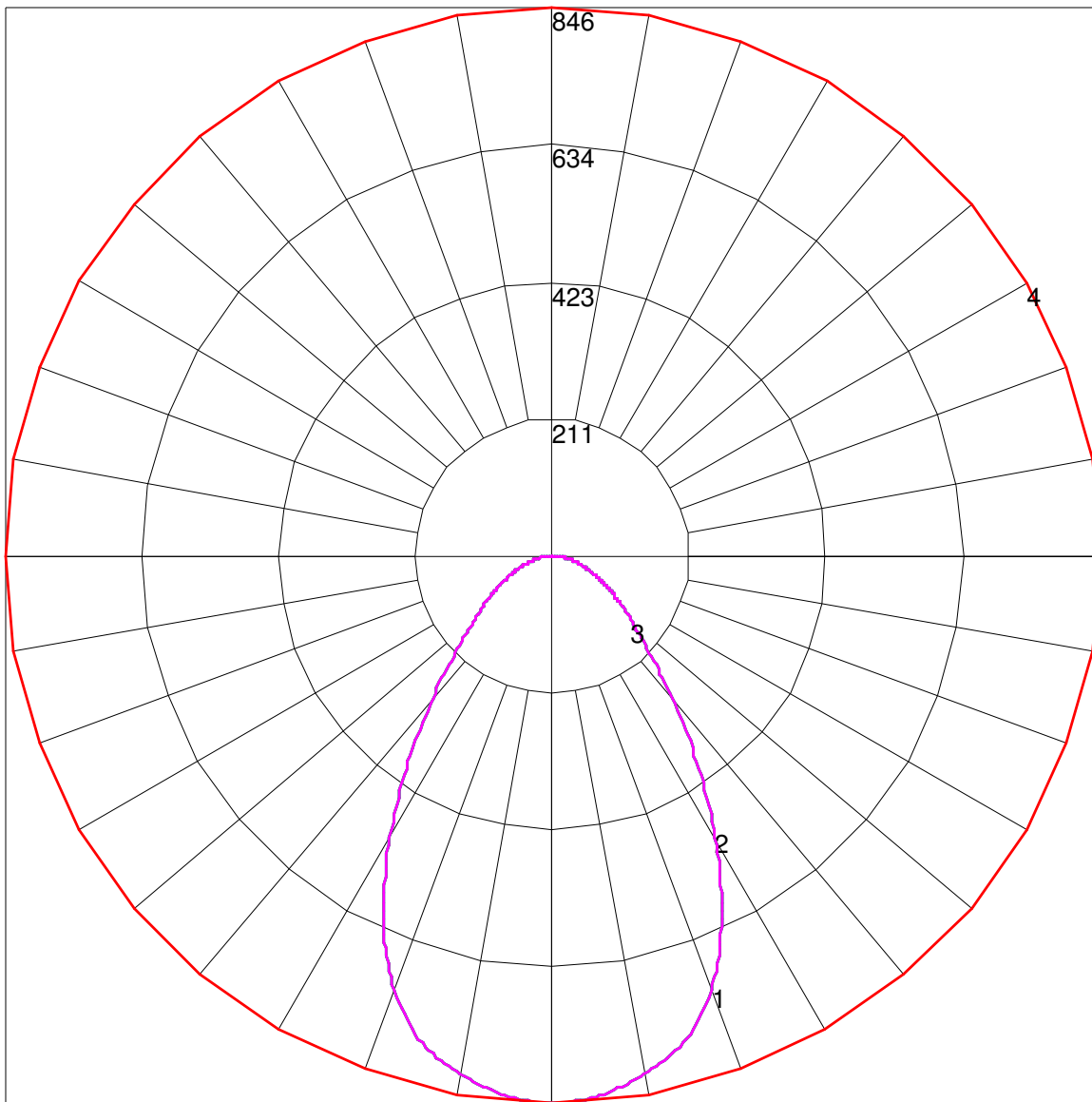
4H	2H	21.3	22.4	21.7	22.8	23.2	21.3	22.4	21.7	22.8	23.2
	3H	22.9	23.8	23.3	24.2	24.6	22.9	23.8	23.3	24.2	24.6
	4H	23.5	24.3	23.9	24.7	25.2	23.5	24.3	23.9	24.7	25.2
	6H	23.9	24.7	24.4	25.1	25.6	23.9	24.7	24.4	25.1	25.6
	8H	24.1	24.7	24.5	25.2	25.7	24.1	24.7	24.5	25.2	25.7
	12H	24.2	24.8	24.7	25.2	25.7	24.2	24.8	24.7	25.2	25.7

8H	4H	23.7	24.3	24.1	24.8	25.3	23.7	24.3	24.1	24.8	25.3
	6H	24.2	24.8	24.7	25.3	25.8	24.2	24.8	24.7	25.3	25.8
	8H	24.4	24.9	24.9	25.4	25.9	24.4	24.9	24.9	25.4	25.9
	12H	24.6	25.0	25.1	25.5	26.1	24.6	25.0	25.1	25.5	26.1

12H	4H	23.7	24.3	24.2	24.7	25.2	23.7	24.3	24.2	24.7	25.2
	6H	24.3	24.8	24.8	25.2	25.8	24.3	24.8	24.8	25.2	25.8
	8H	24.5	24.9	25.0	25.4	26.0	24.5	24.9	25.0	25.4	26.0

Maximum UGR = 26.1

POLAR GRAPH



Maximum Candela = 845.723 Located At Horizontal Angle = 0, Vertical Angle = 0
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 (0) (Through Max. Cd.)