



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_14W_3500K_.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
[MANUFACT] H.E. WILLIAMS, INC.
[MORE] CARTHAGE, MO. 64836
[LUMCAT] 4FDR-LS-8CS-WH-DIM-UNV_14W_3500K
[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	1263
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	13.4
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	38135	38135	38135
55	28046	28046	28046
65	22208	22208	22208
75	17565	17565	17565
85	13013	13013	13013

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CANDELA TABULATION

	<u>0</u>
0.0	873.384
0.5	872.618
1.0	872.618
1.5	871.853
2.0	871.853
2.5	871.087
3.0	870.322
3.5	868.791
4.0	868.025
4.5	866.494
5.0	864.964
5.5	863.433
6.0	861.136
6.5	858.840
7.0	856.544
7.5	854.247
8.0	851.951
8.5	849.654
9.0	847.358
9.5	844.296
10.0	842.000
10.5	838.938
11.0	835.876
11.5	832.814
12.0	829.753
12.5	825.925
13.0	822.098
13.5	818.271
14.0	813.678
14.5	809.085
15.0	804.493
15.5	799.900
16.0	794.542
16.5	789.184
17.0	783.060
17.5	776.936
18.0	770.047
18.5	763.158
19.0	755.504
19.5	747.390
20.0	738.893
20.5	730.014
21.0	721.135
21.5	711.873
22.0	702.228
22.5	692.354
23.0	682.326
23.5	671.916
24.0	661.353
24.5	650.483
25.0	639.231
25.5	627.596
26.0	615.655
26.5	603.408

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_14W_3500K_.IES****CANDELA TABULATION - (Cont.)**

27.0	591.160
27.5	579.219
28.0	567.431
28.5	555.490
29.0	543.396
29.5	531.378
30.0	519.361
30.5	507.190
31.0	494.943
31.5	482.772
32.0	470.678
32.5	458.660
33.0	446.949
33.5	435.314
34.0	423.832
34.5	412.580
35.0	401.404
35.5	390.535
36.0	379.742
36.5	369.102
37.0	358.462
37.5	347.899
38.0	337.565
38.5	327.461
39.0	317.511
39.5	307.866
40.0	298.527
40.5	289.265
41.0	280.386
41.5	271.813
42.0	263.393
42.5	255.279
43.0	247.318
43.5	239.740
44.0	232.315
44.5	225.197
45.0	218.384
45.5	211.878
46.0	205.754
46.5	199.860
47.0	194.196
47.5	188.761
48.0	183.633
48.5	178.734
49.0	174.141
49.5	169.701
50.0	165.415
50.5	161.358
51.0	157.454
51.5	153.703
52.0	150.106
52.5	146.585
53.0	143.140
53.5	139.772
54.0	136.557
54.5	133.342

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55.0	130.280
55.5	127.295
56.0	124.233
56.5	121.248
57.0	118.263
57.5	115.354
58.0	112.445
58.5	109.613
59.0	106.781
59.5	104.025
60.0	101.270
60.5	98.514
61.0	95.835
61.5	93.156
62.0	90.630
62.5	88.104
63.0	85.578
63.5	83.128
64.0	80.679
64.5	78.306
65.0	76.010
65.5	73.713
66.0	71.417
66.5	69.197
67.0	67.054
67.5	64.911
68.0	62.844
68.5	60.777
69.0	58.787
69.5	56.797
70.0	54.807
70.5	52.893
71.0	50.979
71.5	49.142
72.0	47.305
72.5	45.468
73.0	43.707
73.5	41.947
74.0	40.186
74.5	38.502
75.0	36.818
75.5	35.211
76.0	33.603
76.5	31.996
77.0	30.465
77.5	28.934
78.0	27.403
78.5	25.949
79.0	24.495
79.5	23.040
80.0	21.662
80.5	20.285
81.0	18.983
81.5	17.605
82.0	16.304
82.5	15.079

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CANDELA TABULATION - (Cont.)

83.0	13.855
83.5	12.630
84.0	11.482
84.5	10.334
85.0	9.185
85.5	8.114
86.0	7.042
86.5	5.971
87.0	4.975
87.5	3.980
88.0	3.138
88.5	2.220
89.0	1.454
89.5	0.919
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
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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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	307.04	N.A.	24.30
0-30	597.91	N.A.	47.30
0-40	848.80	N.A.	67.20
0-60	1137.24	N.A.	90.00
0-80	1252.37	N.A.	99.20
0-90	1262.94	N.A.	100.00
10-90	1181.15	N.A.	93.50
20-40	541.76	N.A.	42.90
20-50	713.03	N.A.	56.50
40-70	364.24	N.A.	28.80
60-80	115.13	N.A.	9.10
70-80	39.34	N.A.	3.10
80-90	10.57	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	1262.94	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	81.79
10-20	225.25
20-30	290.87
30-40	250.89
40-50	171.27
50-60	117.17
60-70	75.80
70-80	39.34
80-90	10.57
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

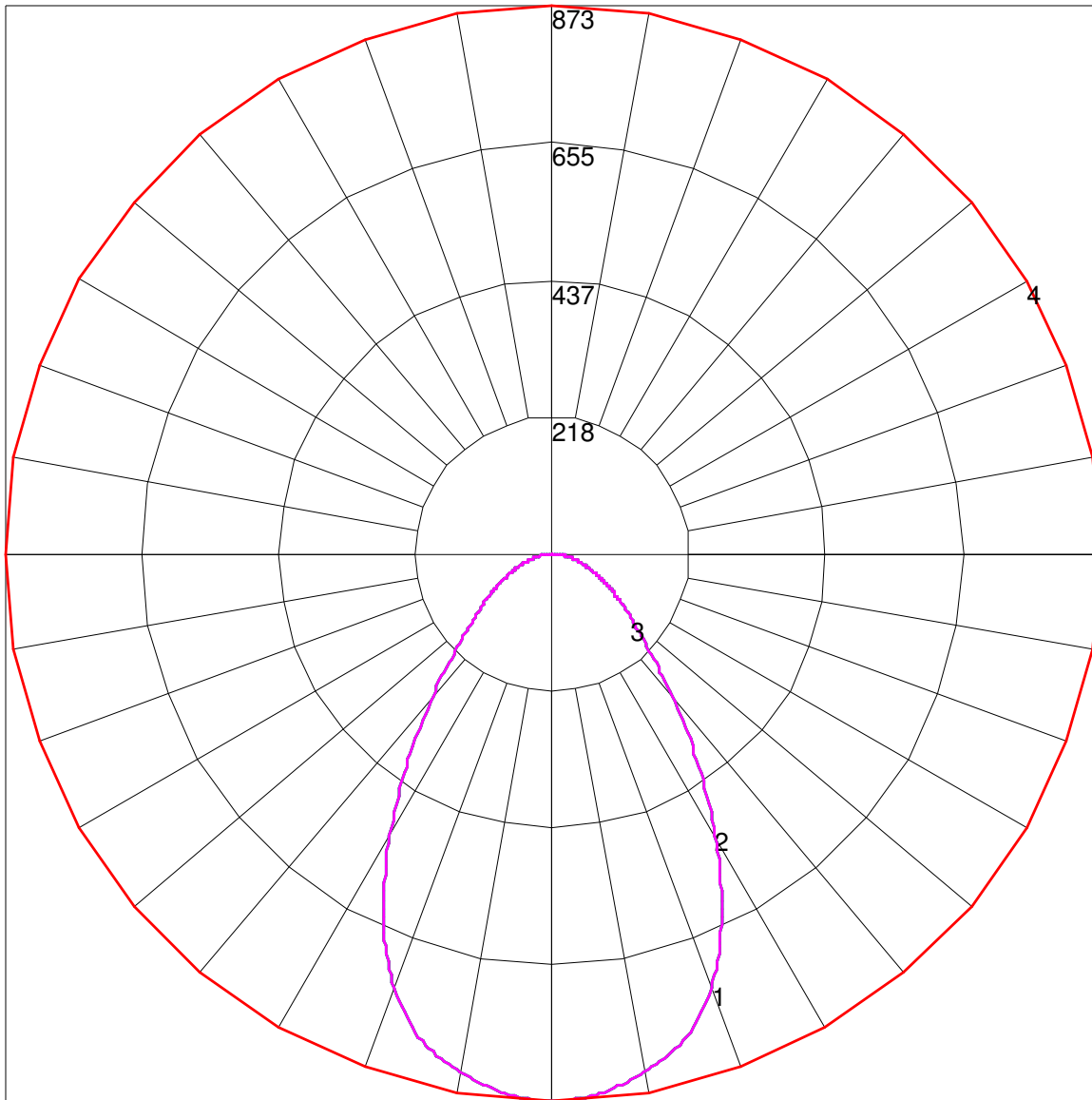
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	21.0	22.3	21.3	22.6	22.9	21.0	22.3	21.3	22.6	22.9
	3H	22.3	23.5	22.7	23.9	24.2	22.3	23.5	22.7	23.9	24.2
	4H	22.8	23.9	23.2	24.3	24.7	22.8	23.9	23.2	24.3	24.7
	6H	23.1	24.2	23.6	24.6	24.9	23.1	24.2	23.6	24.6	24.9
	8H	23.2	24.2	23.7	24.6	25.0	23.2	24.2	23.7	24.6	25.0
	12H	23.3	24.2	23.7	24.6	25.1	23.3	24.2	23.7	24.6	25.1
4H	2H	21.4	22.5	21.8	22.9	23.3	21.4	22.5	21.8	22.9	23.3
	3H	23.0	23.9	23.4	24.3	24.7	23.0	23.9	23.4	24.3	24.7
	4H	23.6	24.4	24.0	24.8	25.3	23.6	24.4	24.0	24.8	25.3
	6H	24.0	24.8	24.5	25.2	25.7	24.0	24.8	24.5	25.2	25.7
	8H	24.2	24.8	24.6	25.3	25.8	24.2	24.8	24.6	25.3	25.8
	12H	24.3	24.9	24.8	25.3	25.8	24.3	24.9	24.8	25.3	25.8
8H	4H	23.8	24.4	24.2	24.9	25.4	23.8	24.4	24.2	24.9	25.4
	6H	24.3	24.9	24.8	25.4	25.9	24.3	24.9	24.8	25.4	25.9
	8H	24.5	25.0	25.0	25.5	26.0	24.5	25.0	25.0	25.5	26.0
	12H	24.7	25.1	25.2	25.6	26.2	24.7	25.1	25.2	25.6	26.2
12H	4H	23.8	24.4	24.3	24.9	25.3	23.8	24.4	24.3	24.9	25.3
	6H	24.4	24.9	24.9	25.3	25.9	24.4	24.9	24.9	25.3	25.9
	8H	24.6	25.0	25.1	25.5	26.1	24.6	25.0	25.1	25.5	26.1

Maximum UGR = 26.2

POLAR GRAPH



Maximum Candela = 873.384 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.)