



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_10W_3000K_.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_10W_3000K
[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	826
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	88
Total Luminaire Watts	9.4
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	24940	24940	24940
55	18342	18342	18342
65	14524	14524	14524
75	11488	11488	11488
85	8510	8510	8510

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CANDELA TABULATION

	<u>0</u>
0.0	571.192
0.5	570.691
1.0	570.691
1.5	570.190
2.0	570.190
2.5	569.690
3.0	569.189
3.5	568.188
4.0	567.687
4.5	566.686
5.0	565.685
5.5	564.684
6.0	563.182
6.5	561.680
7.0	560.178
7.5	558.676
8.0	557.175
8.5	555.673
9.0	554.171
9.5	552.169
10.0	550.667
10.5	548.664
11.0	546.662
11.5	544.659
12.0	542.657
12.5	540.154
13.0	537.651
13.5	535.148
14.0	532.144
14.5	529.141
15.0	526.137
15.5	523.133
16.0	519.629
16.5	516.125
17.0	512.120
17.5	508.115
18.0	503.610
18.5	499.104
19.0	494.098
19.5	488.792
20.0	483.235
20.5	477.428
21.0	471.621
21.5	465.564
22.0	459.256
22.5	452.798
23.0	446.240
23.5	439.432
24.0	432.524
24.5	425.415
25.0	418.056
25.5	410.447
26.0	402.638
26.5	394.628

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_10W_3000K_.IES****CANDELA TABULATION - (Cont.)**

27.0	386.618
27.5	378.809
28.0	371.099
28.5	363.290
29.0	355.380
29.5	347.521
30.0	339.661
30.5	331.702
31.0	323.692
31.5	315.732
32.0	307.823
32.5	299.963
33.0	292.304
33.5	284.695
34.0	277.186
34.5	269.827
35.0	262.518
35.5	255.409
36.0	248.351
36.5	241.392
37.0	234.434
37.5	227.525
38.0	220.767
38.5	214.159
39.0	207.651
39.5	201.344
40.0	195.236
40.5	189.179
41.0	183.372
41.5	177.765
42.0	172.259
42.5	166.952
43.0	161.746
43.5	156.790
44.0	151.934
44.5	147.278
45.0	142.823
45.5	138.568
46.0	134.563
46.5	130.708
47.0	127.004
47.5	123.449
48.0	120.095
48.5	116.892
49.0	113.888
49.5	110.984
50.0	108.181
50.5	105.528
51.0	102.975
51.5	100.522
52.0	98.169
52.5	95.866
53.0	93.613
53.5	91.411
54.0	89.308
54.5	87.206

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55.0	85.203
55.5	83.251
56.0	81.248
56.5	79.296
57.0	77.344
57.5	75.441
58.0	73.539
58.5	71.687
59.0	69.835
59.5	68.032
60.0	66.230
60.5	64.428
61.0	62.676
61.5	60.924
62.0	59.272
62.5	57.620
63.0	55.968
63.5	54.366
64.0	52.764
64.5	51.212
65.0	49.710
65.5	48.208
66.0	46.707
66.5	45.255
67.0	43.853
67.5	42.451
68.0	41.100
68.5	39.748
69.0	38.447
69.5	37.145
70.0	35.843
70.5	34.592
71.0	33.340
71.5	32.139
72.0	30.937
72.5	29.736
73.0	28.585
73.5	27.433
74.0	26.282
74.5	25.180
75.0	24.079
75.5	23.028
76.0	21.977
76.5	20.925
77.0	19.924
77.5	18.923
78.0	17.922
78.5	16.971
79.0	16.019
79.5	15.068
80.0	14.167
80.5	13.266
81.0	12.415
81.5	11.514
82.0	10.663
82.5	9.862

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CANDELA TABULATION - (Cont.)

83.0	9.061
83.5	8.260
84.0	7.509
84.5	6.758
85.0	6.007
85.5	5.306
86.0	4.606
86.5	3.905
87.0	3.254
87.5	2.603
88.0	2.052
88.5	1.452
89.0	0.951
89.5	0.601
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-WH-DIM-UNV_10W_3000K_.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	200.80	N.A.	24.30
0-30	391.03	N.A.	47.30
0-40	555.11	N.A.	67.20
0-60	743.75	N.A.	90.00
0-80	819.05	N.A.	99.20
0-90	825.96	N.A.	100.00
10-90	772.47	N.A.	93.50
20-40	354.31	N.A.	42.90
20-50	466.32	N.A.	56.50
40-70	238.21	N.A.	28.80
60-80	75.30	N.A.	9.10
70-80	25.73	N.A.	3.10
80-90	6.92	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	825.96	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	53.49
10-20	147.31
20-30	190.23
30-40	164.08
40-50	112.01
50-60	76.63
60-70	49.57
70-80	25.73
80-90	6.92
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

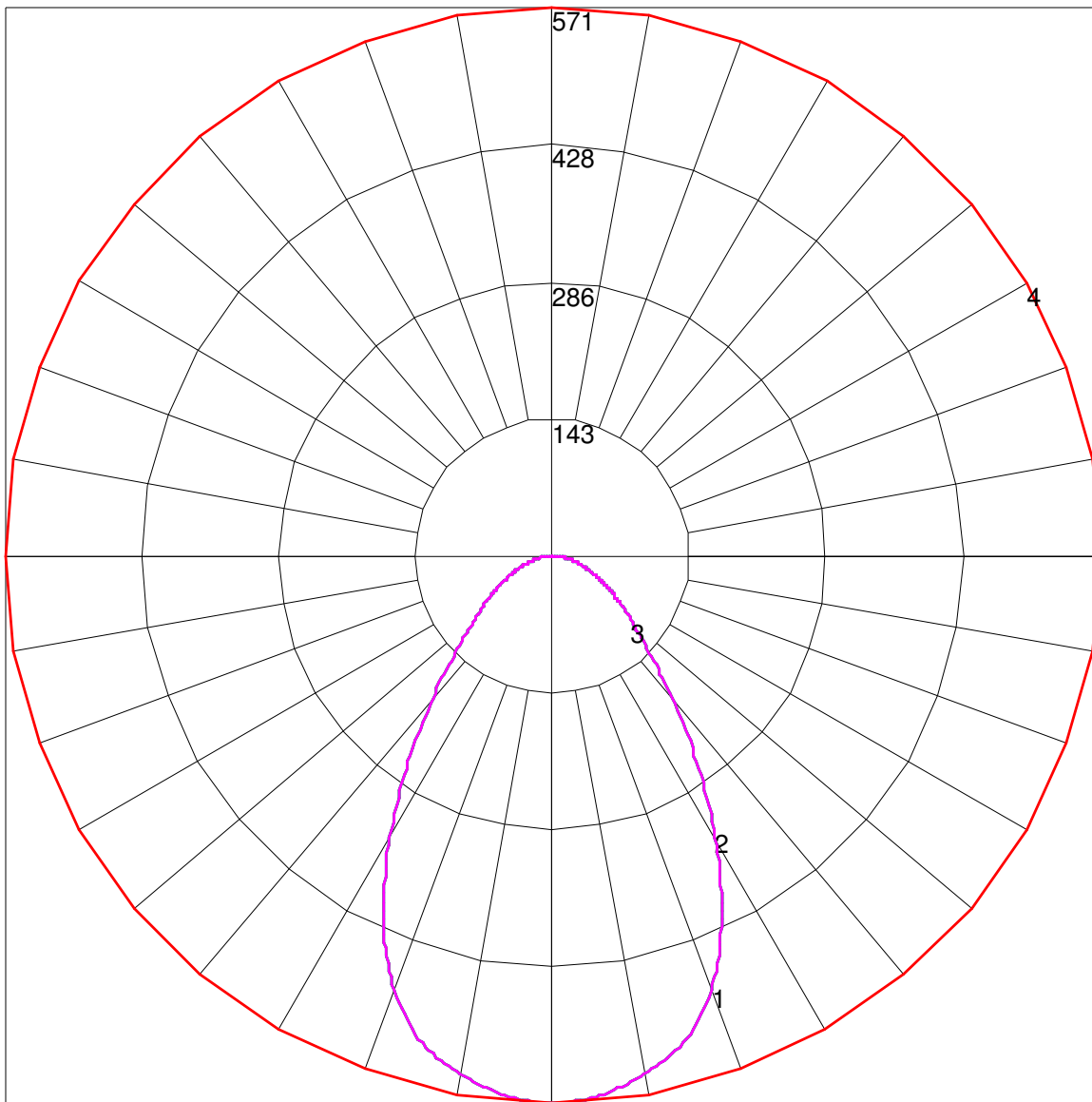
X=2H	Y=2H	19.5	20.8	19.8	21.1	21.4	19.5	20.8	19.8	21.1	21.4
	3H	20.8	22.0	21.2	22.4	22.7	20.8	22.0	21.2	22.4	22.7
	4H	21.3	22.4	21.7	22.8	23.2	21.3	22.4	21.7	22.8	23.2
	6H	21.6	22.7	22.1	23.1	23.4	21.6	22.7	22.1	23.1	23.4
	8H	21.7	22.7	22.2	23.1	23.5	21.7	22.7	22.2	23.1	23.5
	12H	21.8	22.8	22.2	23.1	23.6	21.8	22.8	22.2	23.1	23.6

UGR Viewed Endwise

4H	2H	19.9	21.0	20.3	21.4	21.8	19.9	21.0	20.3	21.4	21.8
	3H	21.5	22.4	21.9	22.8	23.2	21.5	22.4	21.9	22.8	23.2
	4H	22.1	22.9	22.5	23.3	23.8	22.1	22.9	22.5	23.3	23.8
	6H	22.5	23.3	23.0	23.7	24.2	22.5	23.3	23.0	23.7	24.2
	8H	22.7	23.3	23.1	23.8	24.3	22.7	23.3	23.1	23.8	24.3
	12H	22.8	23.4	23.3	23.9	24.3	22.8	23.4	23.3	23.9	24.3
8H	4H	22.3	22.9	22.7	23.4	23.9	22.3	22.9	22.7	23.4	23.9
	6H	22.8	23.4	23.3	23.9	24.4	22.8	23.4	23.3	23.9	24.4
	8H	23.0	23.5	23.5	24.0	24.5	23.0	23.5	23.5	24.0	24.5
	12H	23.2	23.6	23.7	24.1	24.7	23.2	23.6	23.7	24.1	24.7
12H	4H	22.3	22.9	22.8	23.4	23.8	22.3	22.9	22.8	23.4	23.8
	6H	22.9	23.4	23.4	23.8	24.4	22.9	23.4	23.4	23.8	24.4
	8H	23.1	23.5	23.6	24.0	24.6	23.1	23.5	23.6	24.0	24.6

Maximum UGR = 24.7

POLAR GRAPH



Maximum Candela = 571.192 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.)