



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_10W_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_10W_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	850
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
Total Luminaire Watts	9.1
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	25665	25665	25665
55	18875	18875	18875
65	14946	14946	14946
75	11821	11821	11821
85	8758	8758	8758

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

CANDELA TABULATION

	<u>0</u>
0.0	587.788
0.5	587.273
1.0	587.273
1.5	586.758
2.0	586.758
2.5	586.242
3.0	585.727
3.5	584.697
4.0	584.182
4.5	583.151
5.0	582.121
5.5	581.091
6.0	579.545
6.5	578.000
7.0	576.455
7.5	574.909
8.0	573.364
8.5	571.818
9.0	570.273
9.5	568.212
10.0	566.667
10.5	564.606
11.0	562.545
11.5	560.485
12.0	558.424
12.5	555.848
13.0	553.273
13.5	550.697
14.0	547.606
14.5	544.515
15.0	541.424
15.5	538.333
16.0	534.727
16.5	531.121
17.0	527.000
17.5	522.879
18.0	518.242
18.5	513.606
19.0	508.455
19.5	502.994
20.0	497.276
20.5	491.300
21.0	485.324
21.5	479.091
22.0	472.600
22.5	465.955
23.0	459.206
23.5	452.200
24.0	445.091
24.5	437.776
25.0	430.203
25.5	422.373
26.0	414.336
26.5	406.094

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

27.0	397.852
27.5	389.815
28.0	381.882
28.5	373.845
29.0	365.706
29.5	357.618
30.0	349.530
30.5	341.339
31.0	333.097
31.5	324.906
32.0	316.767
32.5	308.679
33.0	300.797
33.5	292.967
34.0	285.239
34.5	277.667
35.0	270.145
35.5	262.830
36.0	255.567
36.5	248.406
37.0	241.245
37.5	234.136
38.0	227.182
38.5	220.382
39.0	213.685
39.5	207.194
40.0	200.909
40.5	194.676
41.0	188.700
41.5	182.930
42.0	177.264
42.5	171.803
43.0	166.445
43.5	161.345
44.0	156.348
44.5	151.558
45.0	146.973
45.5	142.594
46.0	138.473
46.5	134.506
47.0	130.694
47.5	127.036
48.0	123.585
48.5	120.288
49.0	117.197
49.5	114.209
50.0	111.324
50.5	108.594
51.0	105.967
51.5	103.442
52.0	101.021
52.5	98.652
53.0	96.333
53.5	94.067
54.0	91.903
54.5	89.739

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

55.0	87.679
55.5	85.670
56.0	83.609
56.5	81.600
57.0	79.591
57.5	77.633
58.0	75.676
58.5	73.770
59.0	71.864
59.5	70.009
60.0	68.155
60.5	66.300
61.0	64.497
61.5	62.694
62.0	60.994
62.5	59.294
63.0	57.594
63.5	55.945
64.0	54.297
64.5	52.700
65.0	51.155
65.5	49.609
66.0	48.064
66.5	46.570
67.0	45.127
67.5	43.685
68.0	42.294
68.5	40.903
69.0	39.564
69.5	38.224
70.0	36.885
70.5	35.597
71.0	34.309
71.5	33.073
72.0	31.836
72.5	30.600
73.0	29.415
73.5	28.230
74.0	27.045
74.5	25.912
75.0	24.779
75.5	23.697
76.0	22.615
76.5	21.533
77.0	20.503
77.5	19.473
78.0	18.442
78.5	17.464
79.0	16.485
79.5	15.506
80.0	14.579
80.5	13.652
81.0	12.776
81.5	11.848
82.0	10.973
82.5	10.148

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

83.0	9.324
83.5	8.500
84.0	7.727
84.5	6.955
85.0	6.182
85.5	5.461
86.0	4.739
86.5	4.018
87.0	3.348
87.5	2.679
88.0	2.112
88.5	1.494
89.0	0.979
89.5	0.618
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_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

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_10W_3500K_.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-WH-DIM-UNV_10W_3500K_.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-WH-DIM-UNV_10W_3500K_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	206.64	N.A.	24.30
0-30	402.39	N.A.	47.30
0-40	571.24	N.A.	67.20
0-60	765.36	N.A.	90.00
0-80	842.85	N.A.	99.20
0-90	849.96	N.A.	100.00
10-90	794.92	N.A.	93.50
20-40	364.60	N.A.	42.90
20-50	479.87	N.A.	56.50
40-70	245.13	N.A.	28.80
60-80	77.49	N.A.	9.10
70-80	26.47	N.A.	3.10
80-90	7.12	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	849.96	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	55.05
10-20	151.59
20-30	195.75
30-40	168.85
40-50	115.26
50-60	78.86
60-70	51.01
70-80	26.47
80-90	7.12
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-WH-DIM-UNV_10W_3500K_.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	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

IES INDOOR REPORT

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

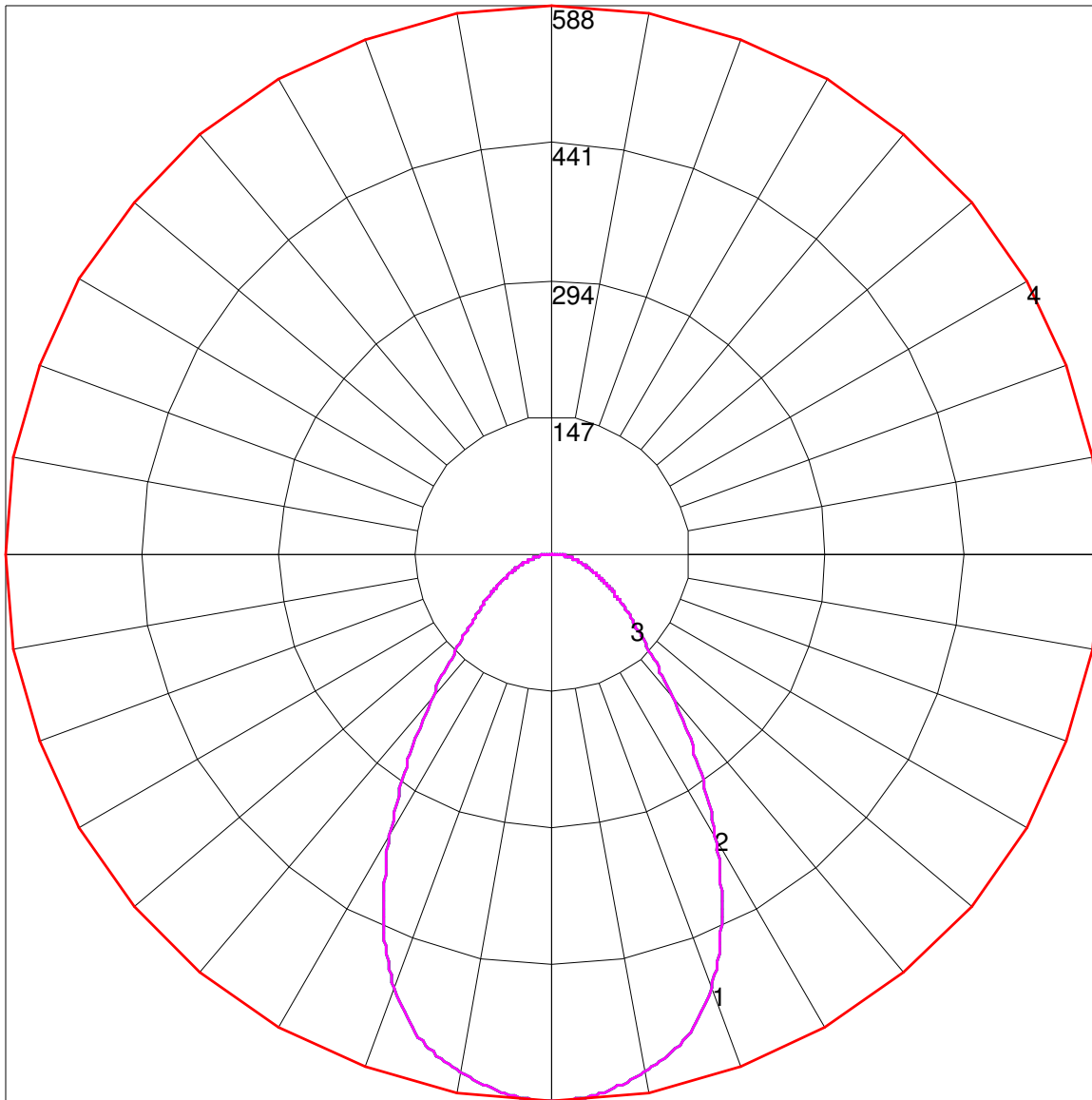
X=2H	Y=2H	19.6	20.9	19.9	21.2	21.6	19.6	20.9	19.9	21.2	21.6
	3H	20.9	22.1	21.3	22.5	22.8	20.9	22.1	21.3	22.5	22.8
	4H	21.4	22.5	21.8	22.9	23.3	21.4	22.5	21.8	22.9	23.3
	6H	21.7	22.8	22.2	23.2	23.5	21.7	22.8	22.2	23.2	23.5
	8H	21.8	22.8	22.3	23.2	23.6	21.8	22.8	22.3	23.2	23.6
	12H	21.9	22.9	22.3	23.2	23.7	21.9	22.9	22.3	23.2	23.7

UGR Viewed Endwise

4H	2H	20.0	21.1	20.4	21.5	21.9	20.0	21.1	20.4	21.5	21.9
	3H	21.6	22.5	22.0	22.9	23.3	21.6	22.5	22.0	22.9	23.3
	4H	22.2	23.0	22.6	23.4	23.9	22.2	23.0	22.6	23.4	23.9
	6H	22.6	23.4	23.1	23.8	24.3	22.6	23.4	23.1	23.8	24.3
	8H	22.8	23.4	23.2	23.9	24.4	22.8	23.4	23.2	23.9	24.4
	12H	22.9	23.5	23.4	24.0	24.4	22.9	23.5	23.4	24.0	24.4
8H	4H	22.4	23.0	22.8	23.5	24.0	22.4	23.0	22.8	23.5	24.0
	6H	22.9	23.5	23.4	24.0	24.5	22.9	23.5	23.4	24.0	24.5
	8H	23.1	23.6	23.6	24.1	24.6	23.1	23.6	23.6	24.1	24.6
	12H	23.3	23.7	23.8	24.2	24.8	23.3	23.7	23.8	24.2	24.8
12H	4H	22.4	23.0	22.9	23.5	23.9	22.4	23.0	22.9	23.5	23.9
	6H	23.0	23.5	23.5	23.9	24.5	23.0	23.5	23.5	23.9	24.5
	8H	23.2	23.6	23.7	24.1	24.7	23.2	23.6	23.7	24.1	24.7

Maximum UGR = 24.8

POLAR GRAPH



Maximum Candela = 587.788 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.)