



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_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_18W_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	1638
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	93
Total Luminaire Watts	17.6
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	49457	49457	49457
55	36373	36373	36373
65	28802	28802	28802
75	22780	22780	22780
85	16878	16878	16878

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_3500K_.IES

CANDELA TABULATION

	<u>0</u>
0.0	1132.702
0.5	1131.709
1.0	1131.709
1.5	1130.716
2.0	1130.716
2.5	1129.724
3.0	1128.731
3.5	1126.745
4.0	1125.753
4.5	1123.767
5.0	1121.782
5.5	1119.796
6.0	1116.818
6.5	1113.840
7.0	1110.862
7.5	1107.884
8.0	1104.905
8.5	1101.927
9.0	1098.949
9.5	1094.978
10.0	1092.000
10.5	1088.029
11.0	1084.058
11.5	1080.087
12.0	1076.116
12.5	1071.153
13.0	1066.189
13.5	1061.225
14.0	1055.269
14.5	1049.313
15.0	1043.356
15.5	1037.400
16.0	1030.451
16.5	1023.502
17.0	1015.560
17.5	1007.618
18.0	998.684
18.5	989.749
19.0	979.822
19.5	969.299
20.0	958.280
20.5	946.764
21.0	935.248
21.5	923.236
22.0	910.728
22.5	897.922
23.0	884.917
23.5	871.416
24.0	857.716
24.5	843.620
25.0	829.027
25.5	813.937
26.0	798.451
26.5	782.567

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_3500K_.IES****CANDELA TABULATION - (Cont.)**

27.0	766.683
27.5	751.197
28.0	735.909
28.5	720.422
29.0	704.737
29.5	689.151
30.0	673.565
30.5	657.781
31.0	641.897
31.5	626.113
32.0	610.428
32.5	594.842
33.0	579.653
33.5	564.564
34.0	549.673
34.5	535.080
35.0	520.586
35.5	506.489
36.0	492.492
36.5	478.693
37.0	464.894
37.5	451.195
38.0	437.793
38.5	424.689
39.0	411.783
39.5	399.275
40.0	387.164
40.5	375.152
41.0	363.636
41.5	352.517
42.0	341.597
42.5	331.075
43.0	320.750
43.5	310.922
44.0	301.293
44.5	292.060
45.0	283.225
45.5	274.787
46.0	266.845
46.5	259.201
47.0	251.855
47.5	244.807
48.0	238.155
48.5	231.802
49.0	225.845
49.5	220.088
50.0	214.528
50.5	209.267
51.0	204.204
51.5	199.340
52.0	194.674
52.5	190.107
53.0	185.640
53.5	181.272
54.0	177.103
54.5	172.933

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_3500K_.IES****CANDELA TABULATION - (Cont.)**

55.0	168.962
55.5	165.091
56.0	161.120
56.5	157.248
57.0	153.376
57.5	149.604
58.0	145.832
58.5	142.159
59.0	138.485
59.5	134.912
60.0	131.338
60.5	127.764
61.0	124.289
61.5	120.815
62.0	117.539
62.5	114.263
63.0	110.987
63.5	107.810
64.0	104.633
64.5	101.556
65.0	98.578
65.5	95.600
66.0	92.621
66.5	89.743
67.0	86.963
67.5	84.183
68.0	81.503
68.5	78.823
69.0	76.241
69.5	73.660
70.0	71.079
70.5	68.597
71.0	66.116
71.5	63.733
72.0	61.351
72.5	58.968
73.0	56.685
73.5	54.401
74.0	52.118
74.5	49.934
75.0	47.750
75.5	45.665
76.0	43.581
76.5	41.496
77.0	39.511
77.5	37.525
78.0	35.540
78.5	33.653
79.0	31.767
79.5	29.881
80.0	28.094
80.5	26.307
81.0	24.620
81.5	22.833
82.0	21.145
82.5	19.557

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_3500K_.IES****CANDELA TABULATION - (Cont.)**

83.0	17.968
83.5	16.380
84.0	14.891
84.5	13.402
85.0	11.913
85.5	10.523
86.0	9.133
86.5	7.743
87.0	6.453
87.5	5.162
88.0	4.070
88.5	2.879
89.0	1.886
89.5	1.191
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_18W_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_18W_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_18W_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_18W_3500K_.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	398.21	N.A.	24.30
0-30	775.44	N.A.	47.30
0-40	1100.82	N.A.	67.20
0-60	1474.9	N.A.	90.00
0-80	1624.22	N.A.	99.20
0-90	1637.93	N.A.	100.00
10-90	1531.85	N.A.	93.50
20-40	702.61	N.A.	42.90
20-50	924.73	N.A.	56.50
40-70	472.38	N.A.	28.80
60-80	149.32	N.A.	9.10
70-80	51.02	N.A.	3.10
80-90	13.71	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	1637.93	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	106.08
10-20	292.13
20-30	377.23
30-40	325.38
40-50	222.12
50-60	151.96
60-70	98.30
70-80	51.02
80-90	13.71
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_18W_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_18W_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	21.9	23.2	22.2	23.5	23.8	21.9	23.2	22.2	23.5	23.8
	3H	23.2	24.4	23.6	24.8	25.1	23.2	24.4	23.6	24.8	25.1
	4H	23.7	24.8	24.1	25.2	25.6	23.7	24.8	24.1	25.2	25.6
	6H	24.0	25.1	24.5	25.4	25.8	24.0	25.1	24.5	25.4	25.8
	8H	24.1	25.1	24.6	25.5	25.9	24.1	25.1	24.6	25.5	25.9
	12H	24.2	25.1	24.6	25.5	26.0	24.2	25.1	24.6	25.5	26.0

UGR Viewed Endwise

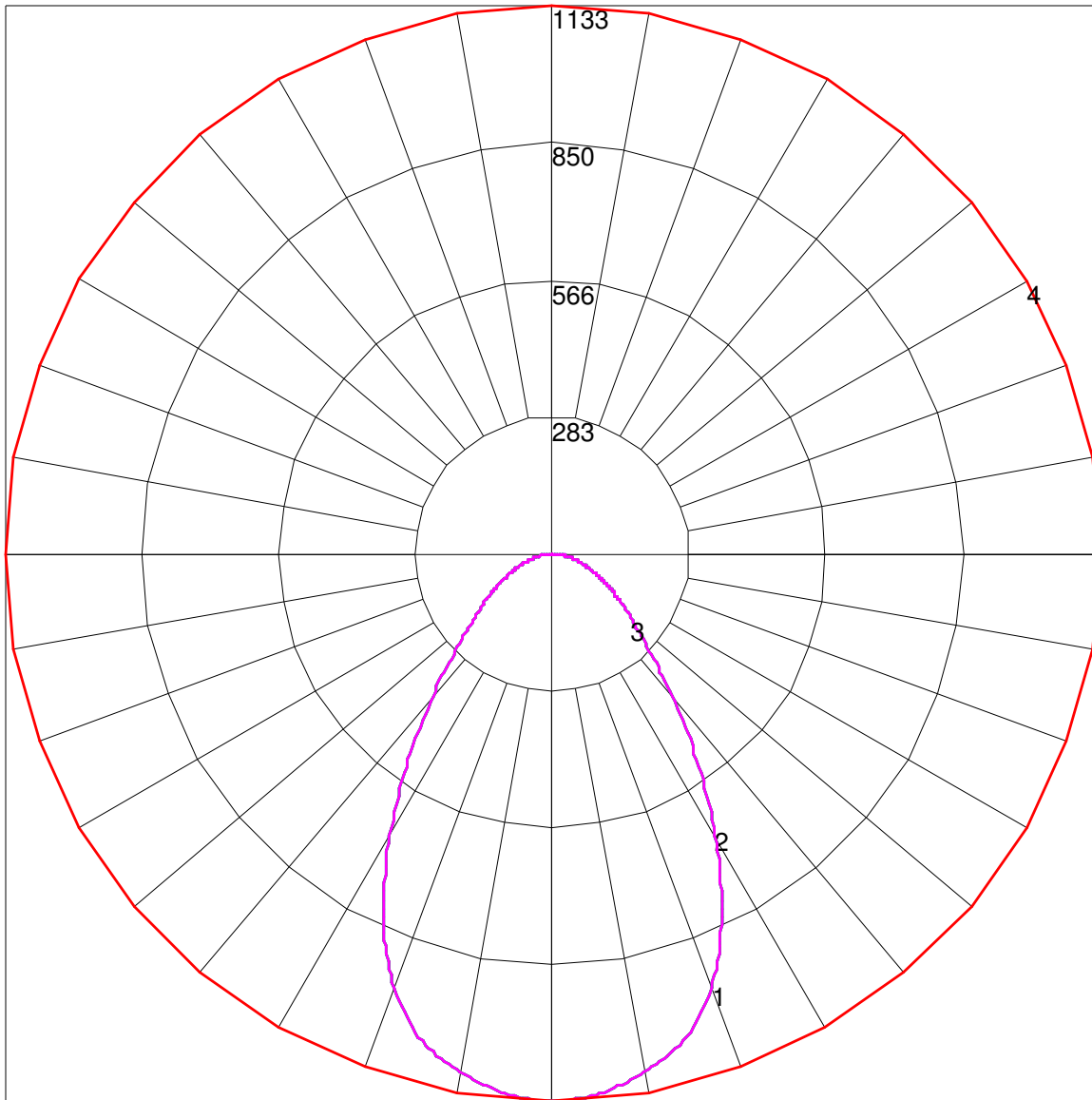
4H	2H	22.3	23.4	22.7	23.8	24.2	22.3	23.4	22.7	23.8	24.2
	3H	23.9	24.8	24.3	25.2	25.6	23.9	24.8	24.3	25.2	25.6
	4H	24.5	25.3	24.9	25.7	26.2	24.5	25.3	24.9	25.7	26.2
	6H	24.9	25.7	25.4	26.1	26.6	24.9	25.7	25.4	26.1	26.6
	8H	25.1	25.7	25.5	26.2	26.7	25.1	25.7	25.5	26.2	26.7
	12H	25.2	25.8	25.7	26.2	26.7	25.2	25.8	25.7	26.2	26.7

8H	4H	24.7	25.3	25.1	25.8	26.3	24.7	25.3	25.1	25.8	26.3
	6H	25.2	25.8	25.7	26.3	26.8	25.2	25.8	25.7	26.3	26.8
	8H	25.4	25.9	25.9	26.4	26.9	25.4	25.9	25.9	26.4	26.9
	12H	25.6	26.0	26.1	26.5	27.1	25.6	26.0	26.1	26.5	27.1

12H	4H	24.7	25.3	25.2	25.7	26.2	24.7	25.3	25.2	25.7	26.2
	6H	25.3	25.8	25.8	26.2	26.8	25.3	25.8	25.8	26.2	26.8
	8H	25.5	25.9	26.0	26.4	27.0	25.5	25.9	26.0	26.4	27.0

Maximum UGR = 27.1

POLAR GRAPH



Maximum Candela = 1132.702 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.)