



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_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_18W_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	1529
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	18.5
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	46166	46166	46166
55	33953	33953	33953
65	26885	26885	26885
75	21265	21265	21265
85	15754	15754	15754

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CANDELA TABULATION

	<u>0</u>
0.0	1057.327
0.5	1056.400
1.0	1056.400
1.5	1055.473
2.0	1055.473
2.5	1054.547
3.0	1053.620
3.5	1051.767
4.0	1050.840
4.5	1048.987
5.0	1047.133
5.5	1045.280
6.0	1042.500
6.5	1039.720
7.0	1036.940
7.5	1034.160
8.0	1031.380
8.5	1028.600
9.0	1025.820
9.5	1022.113
10.0	1019.333
10.5	1015.627
11.0	1011.920
11.5	1008.213
12.0	1004.507
12.5	999.873
13.0	995.240
13.5	990.607
14.0	985.047
14.5	979.487
15.0	973.927
15.5	968.367
16.0	961.880
16.5	955.393
17.0	947.980
17.5	940.567
18.0	932.227
18.5	923.887
19.0	914.620
19.5	904.797
20.0	894.511
20.5	883.762
21.0	873.013
21.5	861.800
22.0	850.124
22.5	838.170
23.0	826.031
23.5	813.428
24.0	800.640
24.5	787.481
25.0	773.859
25.5	759.774
26.0	745.318
26.5	730.491

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-WH-DIM-UNV_18W_3000K_.IES****CANDELA TABULATION - (Cont.)**

27.0	715.665
27.5	701.209
28.0	686.938
28.5	672.482
29.0	657.841
29.5	643.292
30.0	628.743
30.5	614.009
31.0	599.183
31.5	584.449
32.0	569.807
32.5	555.259
33.0	541.081
33.5	526.995
34.0	513.095
34.5	499.473
35.0	485.944
35.5	472.785
36.0	459.719
36.5	446.839
37.0	433.958
37.5	421.170
38.0	408.660
38.5	396.428
39.0	384.381
39.5	372.705
40.0	361.400
40.5	350.187
41.0	339.438
41.5	329.059
42.0	318.866
42.5	309.043
43.0	299.406
43.5	290.232
44.0	281.243
44.5	272.625
45.0	264.378
45.5	256.501
46.0	249.088
46.5	241.953
47.0	235.095
47.5	228.516
48.0	222.307
48.5	216.377
49.0	210.817
49.5	205.442
50.0	200.253
50.5	195.341
51.0	190.615
51.5	186.075
52.0	181.719
52.5	177.457
53.0	173.287
53.5	169.209
54.0	165.317
54.5	161.425

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55.0	157.719
55.5	154.105
56.0	150.398
56.5	146.784
57.0	143.170
57.5	139.649
58.0	136.127
58.5	132.699
59.0	129.270
59.5	125.934
60.0	122.598
60.5	119.262
61.0	116.019
61.5	112.775
62.0	109.717
62.5	106.659
63.0	103.601
63.5	100.636
64.0	97.671
64.5	94.798
65.0	92.018
65.5	89.238
66.0	86.458
66.5	83.771
67.0	81.176
67.5	78.581
68.0	76.079
68.5	73.577
69.0	71.168
69.5	68.759
70.0	66.349
70.5	64.033
71.0	61.716
71.5	59.492
72.0	57.268
72.5	55.044
73.0	52.913
73.5	50.781
74.0	48.650
74.5	46.611
75.0	44.573
75.5	42.627
76.0	40.681
76.5	38.735
77.0	36.881
77.5	35.028
78.0	33.175
78.5	31.414
79.0	29.653
79.5	27.893
80.0	26.225
80.5	24.557
81.0	22.981
81.5	21.313
82.0	19.738
82.5	18.255

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CANDELA TABULATION - (Cont.)

83.0	16.773
83.5	15.290
84.0	13.900
84.5	12.510
85.0	11.120
85.5	9.823
86.0	8.525
86.5	7.228
87.0	6.023
87.5	4.819
88.0	3.799
88.5	2.687
89.0	1.761
89.5	1.112
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_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	371.71	N.A.	24.30
0-30	723.84	N.A.	47.30
0-40	1027.56	N.A.	67.20
0-60	1376.75	N.A.	90.00
0-80	1516.13	N.A.	99.20
0-90	1528.93	N.A.	100.00
10-90	1429.91	N.A.	93.50
20-40	655.86	N.A.	42.90
20-50	863.20	N.A.	56.50
40-70	440.95	N.A.	28.80
60-80	139.38	N.A.	9.10
70-80	47.62	N.A.	3.10
80-90	12.80	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	1528.93	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	99.02
10-20	272.69
20-30	352.13
30-40	303.73
40-50	207.34
50-60	141.85
60-70	91.76
70-80	47.62
80-90	12.80
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

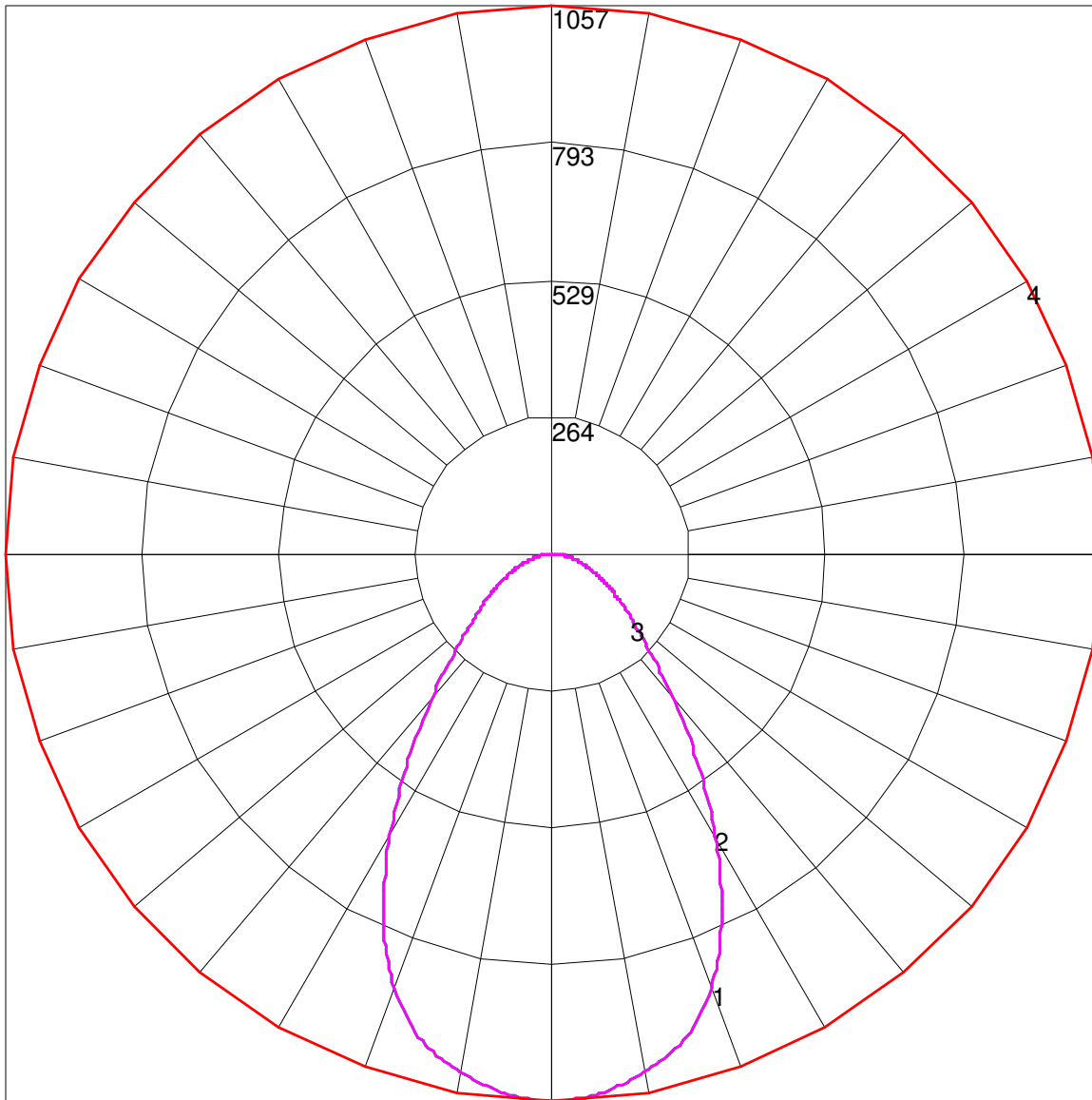
X=2H	Y=2H	21.7	23.0	22.0	23.3	23.6	21.7	23.0	22.0	23.3	23.6
	3H	23.0	24.2	23.4	24.6	24.9	23.0	24.2	23.4	24.6	24.9
	4H	23.5	24.6	23.9	25.0	25.4	23.5	24.6	23.9	25.0	25.4
	6H	23.8	24.9	24.3	25.3	25.6	23.8	24.9	24.3	25.3	25.6
	8H	23.9	24.9	24.4	25.3	25.7	23.9	24.9	24.4	25.3	25.7
	12H	24.0	24.9	24.4	25.3	25.8	24.0	24.9	24.4	25.3	25.8

UGR Viewed Endwise

4H	2H	22.1	23.2	22.5	23.6	24.0	22.1	23.2	22.5	23.6	24.0
	3H	23.7	24.6	24.1	25.0	25.4	23.7	24.6	24.1	25.0	25.4
	4H	24.3	25.1	24.7	25.5	26.0	24.3	25.1	24.7	25.5	26.0
	6H	24.7	25.5	25.2	25.9	26.4	24.7	25.5	25.2	25.9	26.4
	8H	24.9	25.5	25.3	26.0	26.5	24.9	25.5	25.3	26.0	26.5
	12H	25.0	25.6	25.5	26.0	26.5	25.0	25.6	25.5	26.0	26.5
8H	4H	24.5	25.1	24.9	25.6	26.1	24.5	25.1	24.9	25.6	26.1
	6H	25.0	25.6	25.5	26.1	26.6	25.0	25.6	25.5	26.1	26.6
	8H	25.2	25.7	25.7	26.2	26.7	25.2	25.7	25.7	26.2	26.7
	12H	25.4	25.8	25.9	26.3	26.9	25.4	25.8	25.9	26.3	26.9
12H	4H	24.5	25.1	25.0	25.6	26.0	24.5	25.1	25.0	25.6	26.0
	6H	25.1	25.6	25.6	26.0	26.6	25.1	25.6	25.6	26.0	26.6
	8H	25.3	25.7	25.8	26.2	26.8	25.3	25.7	25.8	26.2	26.8

Maximum UGR = 26.9

POLAR GRAPH



Maximum Candela = 1057.327 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.)