



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV_18W_4000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 15248898.03

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 2024-04-30

[TESTDATE] 4/15/2024

[MANUFAC] H.E. WILLIAMS, INC.

[MORE] CARTHAGE, MO. 64836

[LUMCAT] 4FDR-LS-8CS-CS-DIM-UNV_18W_4000K

[LUMINAIRE] 4 INCH ROUND, RECESSED LED DOWNLIGHT

[MORE] W/SEMI-SPECULAR TRIM. WATTAGE & COLOR SELECTABLE

[LAMP] LED

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1888
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	104
Total Luminaire Watts	18.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.12
Spacing Criterion (90-270)	1.12
Spacing Criterion (Diagonal)	1.08
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	64942	64942	64942
55	21497	21497	21497
65	1185	1185	1185
75	323	323	323
85	411	411	411

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CANDELA TABULATION

	<u>0</u>
0.0	1337.534
0.5	1337.534
1.0	1337.534
1.5	1338.500
2.0	1338.500
2.5	1339.466
3.0	1339.466
3.5	1340.432
4.0	1340.432
4.5	1341.397
5.0	1341.397
5.5	1342.363
6.0	1343.329
6.5	1344.295
7.0	1345.260
7.5	1347.192
8.0	1349.123
8.5	1350.089
9.0	1352.020
9.5	1353.952
10.0	1354.918
10.5	1355.883
11.0	1355.883
11.5	1356.849
12.0	1356.849
12.5	1355.883
13.0	1355.883
13.5	1354.918
14.0	1353.952
14.5	1352.020
15.0	1350.089
15.5	1348.158
16.0	1345.260
16.5	1341.397
17.0	1337.534
17.5	1331.740
18.0	1325.946
18.5	1318.220
19.0	1309.528
19.5	1300.837
20.0	1290.214
20.5	1278.625
21.0	1266.071
21.5	1253.516
22.0	1239.030
22.5	1224.544
23.0	1209.093
23.5	1193.641
24.0	1177.224
24.5	1159.840
25.0	1143.423
25.5	1125.074
26.0	1107.691
26.5	1089.342

IES INDOOR REPORT**PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV_18W_4000K_.IES****CANDELA TABULATION - (Cont.)**

27.0	1070.993
27.5	1051.679
28.0	1032.364
28.5	1014.015
29.0	994.701
29.5	975.386
30.0	955.589
30.5	935.984
31.0	915.897
31.5	895.714
32.0	875.723
32.5	855.539
33.0	835.259
33.5	814.785
34.0	794.409
34.5	774.418
35.0	756.359
35.5	738.300
36.0	720.434
36.5	700.636
37.0	680.259
37.5	659.883
38.0	639.602
38.5	619.419
39.0	599.428
39.5	579.437
40.0	559.543
40.5	539.746
41.0	520.142
41.5	500.730
42.0	481.512
42.5	462.391
43.0	443.463
43.5	425.017
44.0	406.765
44.5	389.092
45.0	371.902
45.5	354.905
46.0	338.295
46.5	322.167
47.0	306.619
47.5	291.264
48.0	276.488
48.5	261.906
49.0	247.709
49.5	233.996
50.0	220.572
50.5	207.535
51.0	194.981
51.5	182.523
52.0	170.451
52.5	158.669
53.0	146.887
53.5	135.299
54.0	123.517
54.5	111.638

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55.0	99.856
55.5	88.364
56.0	77.451
56.5	67.215
57.0	57.461
57.5	48.576
58.0	40.464
58.5	33.414
59.0	27.234
59.5	22.115
60.0	18.059
60.5	14.679
61.0	12.168
61.5	10.237
62.0	8.692
62.5	7.533
63.0	6.470
63.5	5.698
64.0	5.118
64.5	4.539
65.0	4.056
65.5	3.670
66.0	3.380
66.5	3.090
67.0	2.801
67.5	2.607
68.0	2.414
68.5	2.125
69.0	2.028
69.5	1.835
70.0	1.642
70.5	1.545
71.0	1.449
71.5	1.255
72.0	1.159
72.5	1.062
73.0	0.966
73.5	0.966
74.0	0.869
74.5	0.773
75.0	0.676
75.5	0.676
76.0	0.579
76.5	0.579
77.0	0.483
77.5	0.483
78.0	0.386
78.5	0.386
79.0	0.386
79.5	0.290
80.0	0.290
80.5	0.290
81.0	0.290
81.5	0.290
82.0	0.290
82.5	0.290

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CANDELA TABULATION - (Cont.)

83.0	0.290
83.5	0.290
84.0	0.290
84.5	0.290
85.0	0.290
85.5	0.290
86.0	0.386
86.5	0.386
87.0	0.386
87.5	0.386
88.0	0.386
88.5	0.386
89.0	0.386
89.5	0.290
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-CS-DIM-UNV_18W_4000K_.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
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123.5	0.000
124.0	0.000
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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-CS-DIM-UNV_18W_4000K_.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

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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	507.90	N.A.	26.90
0-30	1029.03	N.A.	54.50
0-40	1499.73	N.A.	79.40
0-60	1881.65	N.A.	99.60
0-80	1888.01	N.A.	100.00
0-90	1888.36	N.A.	100.00
10-90	1759.85	N.A.	93.20
20-40	991.83	N.A.	52.50
20-50	1280.9	N.A.	67.80
40-70	387.44	N.A.	20.50
60-80	6.36	N.A.	0.30
70-80	0.84	N.A.	0.00
80-90	0.35	N.A.	0.00
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	1888.36	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	128.51
10-20	379.39
20-30	521.13
30-40	470.70
40-50	289.07
50-60	92.85
60-70	5.52
70-80	0.84
80-90	0.35
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	113	110	107	105	110	108	105	103	103	102	100	100	98	97	96	95	94	92
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86	84
3	100	93	87	83	98	91	86	82	89	84	80	86	82	79	84	81	78	76
4	94	85	79	74	92	84	78	74	82	77	73	80	75	72	78	74	71	69
5	88	79	72	67	86	78	71	67	76	70	66	74	69	66	72	68	65	63
6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60	58
7	78	67	61	56	77	67	60	56	65	60	55	64	59	55	63	58	55	53
8	74	63	56	51	72	62	56	51	61	55	51	60	55	51	59	54	51	49
9	69	59	52	47	68	58	52	47	57	51	47	56	51	47	55	50	47	45
10	66	55	48	44	65	54	48	44	53	48	44	53	47	44	52	47	43	42

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UGR TABLE - CORRECTED

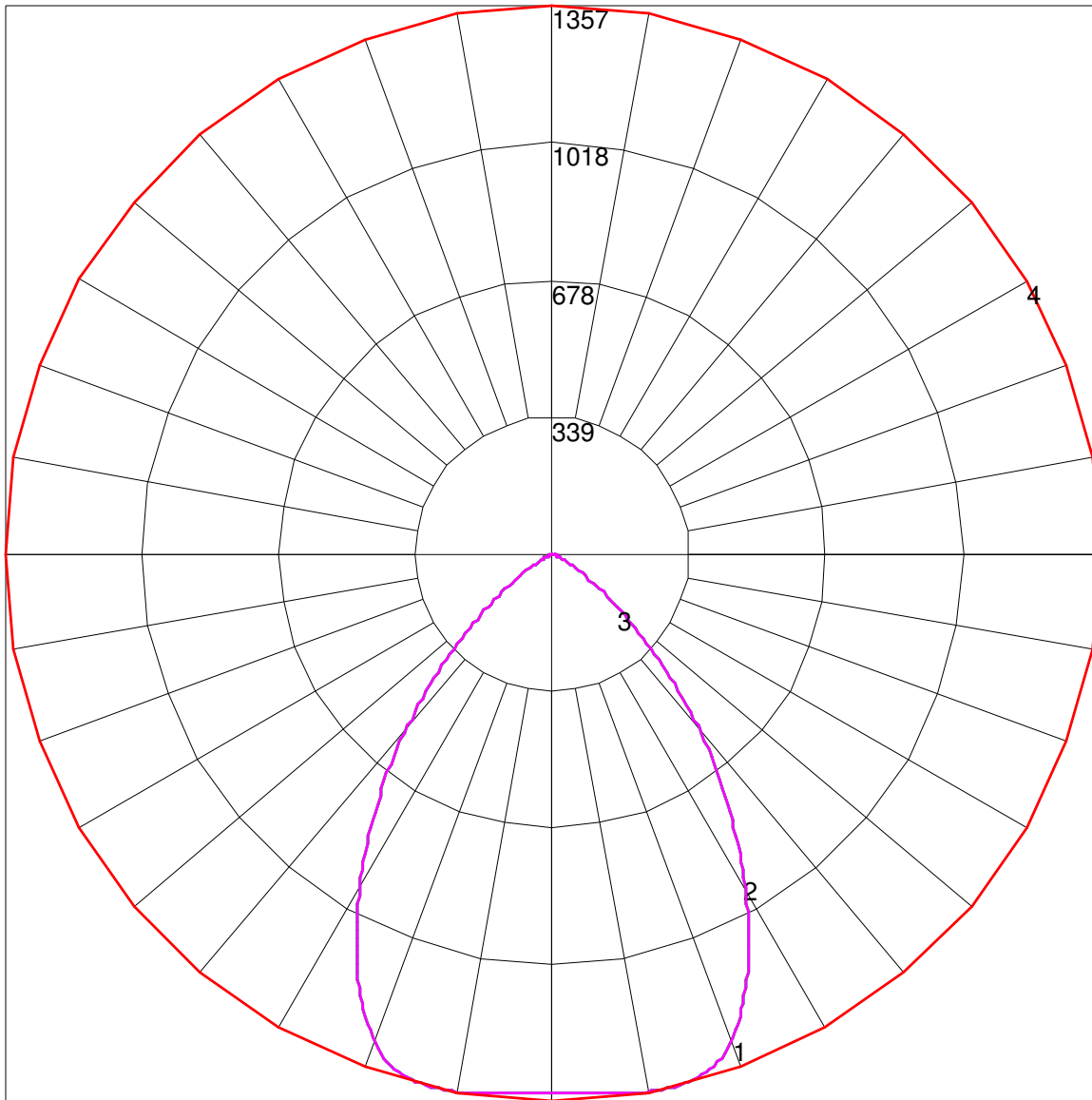
Reflectances

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	13.4	14.6	13.8	14.9	15.2	13.4	14.6	13.8	14.9	15.2
	3H	13.3	14.3	13.7	14.6	15.0	13.3	14.3	13.7	14.6	15.0
	4H	13.2	14.1	13.6	14.5	14.9	13.2	14.1	13.6	14.5	14.9
	6H	13.1	13.9	13.5	14.3	14.7	13.1	13.9	13.5	14.3	14.7
	8H	13.0	13.8	13.5	14.2	14.6	13.0	13.8	13.5	14.2	14.6
	12H	13.0	13.8	13.4	14.1	14.6	13.0	13.8	13.4	14.1	14.6
4H	2H	13.2	14.1	13.6	14.5	14.9	13.2	14.1	13.6	14.5	14.9
	3H	13.0	13.8	13.4	14.2	14.6	13.0	13.8	13.4	14.2	14.6
	4H	12.9	13.6	13.4	14.0	14.5	12.9	13.6	13.4	14.0	14.5
	6H	12.8	13.4	13.3	13.9	14.3	12.8	13.4	13.3	13.9	14.3
	8H	12.7	13.3	13.2	13.7	14.2	12.7	13.3	13.2	13.7	14.2
	12H	12.7	13.2	13.2	13.7	14.1	12.7	13.2	13.2	13.7	14.1
8H	4H	12.7	13.3	13.2	13.7	14.2	12.7	13.3	13.2	13.7	14.2
	6H	12.7	13.1	13.2	13.6	14.1	12.7	13.1	13.2	13.6	14.1
	8H	12.6	13.0	13.1	13.5	14.0	12.6	13.0	13.1	13.5	14.0
	12H	12.5	12.9	13.0	13.4	13.9	12.5	12.9	13.0	13.4	13.9
12H	4H	12.7	13.2	13.2	13.7	14.1	12.7	13.2	13.2	13.7	14.1
	6H	12.6	13.0	13.1	13.4	14.0	12.6	13.0	13.1	13.4	14.0
	8H	12.5	12.9	13.0	13.4	13.9	12.5	12.9	13.0	13.4	13.9

Maximum UGR = 15.2

POLAR GRAPH



Maximum Candela = 1356.849 Located At Horizontal Angle = 0, Vertical Angle = 11.5
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 (11.5) (Through Max. Cd.)