



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4FDR-LS-8CS-CS-DIM-UNV_10W_3000K_.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_10W_3000K

[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	992
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	106
Total Luminaire Watts	9.4
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	34122	34122	34122
55	11295	11295	11295
65	623	623	623
75	169	169	169
85	215	215	215

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CANDELA TABULATION

	<u>0</u>
0.0	702.772
0.5	702.772
1.0	702.772
1.5	703.280
2.0	703.280
2.5	703.787
3.0	703.787
3.5	704.295
4.0	704.295
4.5	704.802
5.0	704.802
5.5	705.309
6.0	705.817
6.5	706.324
7.0	706.832
7.5	707.847
8.0	708.861
8.5	709.369
9.0	710.384
9.5	711.398
10.0	711.906
10.5	712.413
11.0	712.413
11.5	712.921
12.0	712.921
12.5	712.413
13.0	712.413
13.5	711.906
14.0	711.398
14.5	710.384
15.0	709.369
15.5	708.354
16.0	706.832
16.5	704.802
17.0	702.772
17.5	699.728
18.0	696.683
18.5	692.624
19.0	688.057
19.5	683.491
20.0	677.909
20.5	671.820
21.0	665.224
21.5	658.627
22.0	651.016
22.5	643.405
23.0	635.286
23.5	627.167
24.0	618.541
24.5	609.408
25.0	600.782
25.5	591.141
26.0	582.007
26.5	572.366

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

27.0	562.725
27.5	552.577
28.0	542.429
28.5	532.788
29.0	522.639
29.5	512.491
30.0	502.089
30.5	491.788
31.0	481.234
31.5	470.629
32.0	460.126
32.5	449.521
33.0	438.865
33.5	428.108
34.0	417.401
34.5	406.898
35.0	397.409
35.5	387.920
36.0	378.533
36.5	368.131
37.0	357.424
37.5	346.718
38.0	336.062
38.5	325.457
39.0	314.954
39.5	304.450
40.0	293.997
40.5	283.595
41.0	273.295
41.5	263.096
42.0	252.998
42.5	242.951
43.0	233.006
43.5	223.314
44.0	213.724
44.5	204.438
45.0	195.406
45.5	186.476
46.0	177.748
46.5	169.274
47.0	161.105
47.5	153.037
48.0	145.273
48.5	137.611
49.0	130.152
49.5	122.947
50.0	115.894
50.5	109.044
51.0	102.447
51.5	95.902
52.0	89.559
52.5	83.369
53.0	77.178
53.5	71.089
54.0	64.899
54.5	58.657

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55.0	52.467
55.5	46.429
56.0	40.695
56.5	35.316
57.0	30.191
57.5	25.523
58.0	21.261
58.5	17.557
59.0	14.309
59.5	11.620
60.0	9.489
60.5	7.713
61.0	6.393
61.5	5.379
62.0	4.567
62.5	3.958
63.0	3.400
63.5	2.994
64.0	2.689
64.5	2.385
65.0	2.131
65.5	1.928
66.0	1.776
66.5	1.624
67.0	1.472
67.5	1.370
68.0	1.269
68.5	1.116
69.0	1.066
69.5	0.964
70.0	0.863
70.5	0.812
71.0	0.761
71.5	0.660
72.0	0.609
72.5	0.558
73.0	0.507
73.5	0.507
74.0	0.457
74.5	0.406
75.0	0.355
75.5	0.355
76.0	0.304
76.5	0.304
77.0	0.254
77.5	0.254
78.0	0.203
78.5	0.203
79.0	0.203
79.5	0.152
80.0	0.152
80.5	0.152
81.0	0.152
81.5	0.152
82.0	0.152
82.5	0.152

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83.0	0.152
83.5	0.152
84.0	0.152
84.5	0.152
85.0	0.152
85.5	0.152
86.0	0.203
86.5	0.203
87.0	0.203
87.5	0.203
88.0	0.203
88.5	0.203
89.0	0.203
89.5	0.152
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_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
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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	266.86	N.A.	26.90
0-30	540.68	N.A.	54.50
0-40	788.00	N.A.	79.40
0-60	988.66	N.A.	99.60
0-80	992.01	N.A.	100.00
0-90	992.19	N.A.	100.00
10-90	924.67	N.A.	93.20
20-40	521.13	N.A.	52.50
20-50	673.01	N.A.	67.80
40-70	203.57	N.A.	20.50
60-80	3.34	N.A.	0.30
70-80	0.44	N.A.	0.00
80-90	0.18	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	992.19	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	67.52
10-20	199.34
20-30	273.81
30-40	247.32
40-50	151.88
50-60	48.79
60-70	2.90
70-80	0.44
80-90	0.18
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

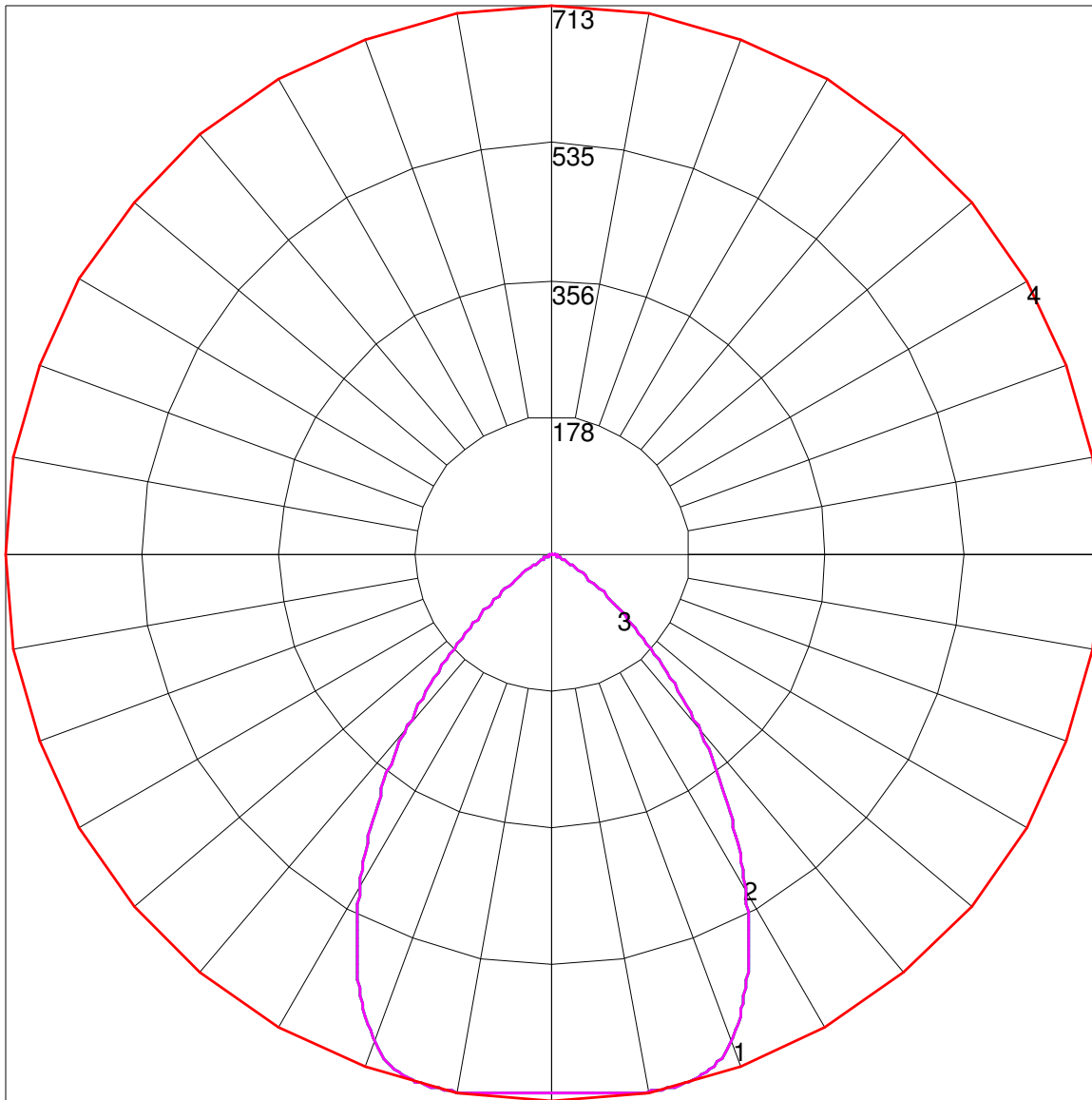
Reflectances

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	11.2	12.4	11.6	12.7	13.0	11.2	12.4	11.6	12.7	13.0
	3H	11.1	12.1	11.5	12.4	12.8	11.1	12.1	11.5	12.4	12.8
	4H	11.0	11.9	11.4	12.3	12.7	11.0	11.9	11.4	12.3	12.7
	6H	10.9	11.7	11.3	12.1	12.5	10.9	11.7	11.3	12.1	12.5
	8H	10.8	11.6	11.3	12.0	12.4	10.8	11.6	11.3	12.0	12.4
	12H	10.8	11.6	11.2	11.9	12.4	10.8	11.6	11.2	11.9	12.4
4H	2H	11.0	11.9	11.4	12.3	12.7	11.0	11.9	11.4	12.3	12.7
	3H	10.8	11.6	11.2	12.0	12.4	10.8	11.6	11.2	12.0	12.4
	4H	10.7	11.4	11.2	11.8	12.3	10.7	11.4	11.2	11.8	12.3
	6H	10.6	11.2	11.1	11.7	12.1	10.6	11.2	11.1	11.7	12.1
	8H	10.5	11.1	11.0	11.5	12.0	10.5	11.1	11.0	11.5	12.0
	12H	10.5	11.0	11.0	11.5	11.9	10.5	11.0	11.0	11.5	11.9
8H	4H	10.5	11.1	11.0	11.5	12.0	10.5	11.1	11.0	11.5	12.0
	6H	10.5	10.9	11.0	11.4	11.9	10.5	10.9	11.0	11.4	11.9
	8H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8
	12H	10.3	10.7	10.8	11.2	11.7	10.3	10.7	10.8	11.2	11.7
12H	4H	10.5	11.0	11.0	11.5	11.9	10.5	11.0	11.0	11.5	11.9
	6H	10.4	10.8	10.9	11.2	11.8	10.4	10.8	10.9	11.2	11.8
	8H	10.3	10.7	10.8	11.2	11.7	10.3	10.7	10.8	11.2	11.7

Maximum UGR = 13.0

POLAR GRAPH



Maximum Candela = 712.921 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.)