

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4RCD-LS-9CS-SS-DIM-UNV-9W-3500K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #15006535.03

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 21 NOV, 2023

[TEST DATE] 10/18/2023

[MANUFAC] H E Williams Inc

[LUMCAT] 4RCD-LS-9CS-SS-DIM-UNV-9W-3500k

[LUMINAIRE] Round plastic housing with semi-specular reflector and frosted lens

[LAMP] White LEDs

[BALLAST] LED Driver

[OTHER] 24.9 C, 120.034 V, 0.096676 A, 11.5454 W, 0.994911 PF, 59.9707

[MORE] Hz

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

[OTHER] The reported results were measured in a facility that meets th

[MORE] e requirements of ANSI/IES LM-75-19. The device under test emits no de

[MORE] tectable uplight as defined by ANSI/IES LM-75-19.

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	939
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	99
Total Luminaire Watts	9.53
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.22
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

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**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	40619	40619	40619
55	27317	27317	27317
65	14599	14599	14599
75	2175	2175	2175
85	425	425	425

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CANDELA TABULATION

	<u>0</u>
0.0	502.908
0.5	502.829
1.0	502.750
1.5	502.513
2.0	502.197
2.5	501.802
3.0	501.328
3.5	500.774
4.0	500.142
4.5	499.510
5.0	498.799
5.5	498.009
6.0	497.140
6.5	496.271
7.0	495.323
7.5	494.375
8.0	493.426
8.5	492.478
9.0	491.530
9.5	490.503
10.0	489.476
10.5	488.291
11.0	487.105
11.5	485.762
12.0	484.261
12.5	482.839
13.0	481.259
13.5	479.520
14.0	477.782
14.5	475.965
15.0	474.148
15.5	472.172
16.0	470.197
16.5	467.985
17.0	465.772
17.5	463.323
18.0	460.795
18.5	458.187
19.0	455.422
19.5	452.577
20.0	449.733
20.5	446.968
21.0	444.281
21.5	441.595
22.0	438.987
22.5	436.380
23.0	433.852
23.5	431.244
24.0	428.637
24.5	426.030
25.0	423.264
25.5	420.341
26.0	417.180
26.5	413.862

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**CANDELA TABULATION - (Cont.)**

27.0	410.385
27.5	406.830
28.0	403.116
28.5	399.403
29.0	395.531
29.5	391.581
30.0	387.472
30.5	383.284
31.0	379.018
31.5	374.593
32.0	370.169
32.5	365.744
33.0	361.240
33.5	356.579
34.0	351.917
34.5	347.176
35.0	342.357
35.5	337.537
36.0	332.638
36.5	327.502
37.0	322.209
37.5	316.757
38.0	311.384
38.5	306.011
39.0	300.559
39.5	295.108
40.0	289.577
40.5	283.967
41.0	278.436
41.5	272.826
42.0	267.138
42.5	261.528
43.0	255.760
43.5	249.992
44.0	244.224
44.5	238.377
45.0	232.610
45.5	226.921
46.0	221.153
46.5	215.464
47.0	209.854
47.5	204.245
48.0	198.635
48.5	193.104
49.0	187.573
49.5	182.121
50.0	176.749
50.5	171.455
51.0	166.240
51.5	161.104
52.0	155.969
52.5	150.912
53.0	145.934
53.5	141.035
54.0	136.295
54.5	131.554

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CANDELA TABULATION - (Cont.)

55.0	126.892
55.5	122.310
56.0	117.806
56.5	113.460
57.0	109.115
57.5	104.848
58.0	100.661
58.5	96.552
59.0	92.522
59.5	88.572
60.0	84.700
60.5	80.829
61.0	77.060
61.5	73.354
62.0	69.767
62.5	66.259
63.0	62.838
63.5	59.464
64.0	56.225
64.5	53.080
65.0	49.967
65.5	46.909
66.0	43.867
66.5	40.873
67.0	37.981
67.5	35.160
68.0	32.426
68.5	29.779
69.0	27.251
69.5	24.770
70.0	22.376
70.5	20.061
71.0	17.864
71.5	15.786
72.0	13.819
72.5	11.978
73.0	10.232
73.5	8.612
74.0	7.103
74.5	5.760
75.0	4.559
75.5	3.484
76.0	2.513
76.5	1.770
77.0	1.304
77.5	1.090
78.0	1.011
78.5	0.940
79.0	0.877
79.5	0.814
80.0	0.751
80.5	0.695
81.0	0.640
81.5	0.585
82.0	0.537
82.5	0.490

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CANDELA TABULATION - (Cont.)

83.0	0.450
83.5	0.411
84.0	0.371
84.5	0.332
85.0	0.300
85.5	0.269
86.0	0.237
86.5	0.205
87.0	0.182
87.5	0.158
88.0	0.134
88.5	0.103
89.0	0.071
89.5	0.047
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

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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
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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
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132.0	0.000
132.5	0.000
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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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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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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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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	180.68	N.A.	19.20
0-30	374.86	N.A.	39.90
0-40	587.81	N.A.	62.60
0-60	881.04	N.A.	93.80
0-80	938.69	N.A.	100.00
0-90	939.04	N.A.	100.00
10-90	891.74	N.A.	95.00
20-40	407.13	N.A.	43.40
20-50	586.19	N.A.	62.40
40-70	343.50	N.A.	36.60
60-80	57.65	N.A.	6.10
70-80	7.37	N.A.	0.80
80-90	0.36	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	939.04	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	47.30
10-20	133.38
20-30	194.18
30-40	212.95
40-50	179.06
50-60	114.17
60-70	50.27
70-80	7.37
80-90	0.36
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	128	128	128	128	125	125	125	125	119	119	119	114	114	114	110	110	110	107
1	120	116	113	109	117	114	110	108	109	107	104	105	103	101	101	100	98	96
2	111	104	99	94	109	102	97	93	99	94	91	95	92	89	92	89	87	85
3	103	94	87	81	101	92	86	80	89	84	79	87	82	78	84	80	77	75
4	96	85	77	71	93	84	76	71	81	75	70	79	73	69	77	72	68	66
5	89	77	69	63	87	76	68	62	74	67	62	72	66	61	70	65	61	59
6	83	70	62	56	81	69	61	56	68	61	55	66	60	55	64	59	54	52
7	77	64	56	50	76	64	56	50	62	55	50	61	54	49	59	54	49	47
8	72	59	51	45	71	59	51	45	57	50	45	56	50	45	55	49	45	43
9	68	55	47	41	66	54	47	41	53	46	41	52	46	41	51	45	41	39
10	64	51	43	38	62	50	43	38	49	42	38	48	42	38	47	42	37	36

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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	21.0	22.4	21.4	22.7	23.0	UGR Viewed Endwise	21.0	22.4	21.4	22.7	23.0
	3H	21.4	22.6	21.7	22.9	23.3		21.4	22.6	21.7	22.9	23.3
	4H	21.3	22.5	21.7	22.8	23.2		21.3	22.5	21.7	22.8	23.2
	6H	21.2	22.3	21.6	22.7	23.1		21.2	22.3	21.6	22.7	23.1
	8H	21.2	22.2	21.6	22.6	23.0		21.2	22.2	21.6	22.6	23.0
	12H	21.2	22.1	21.6	22.5	22.9		21.2	22.1	21.6	22.5	22.9

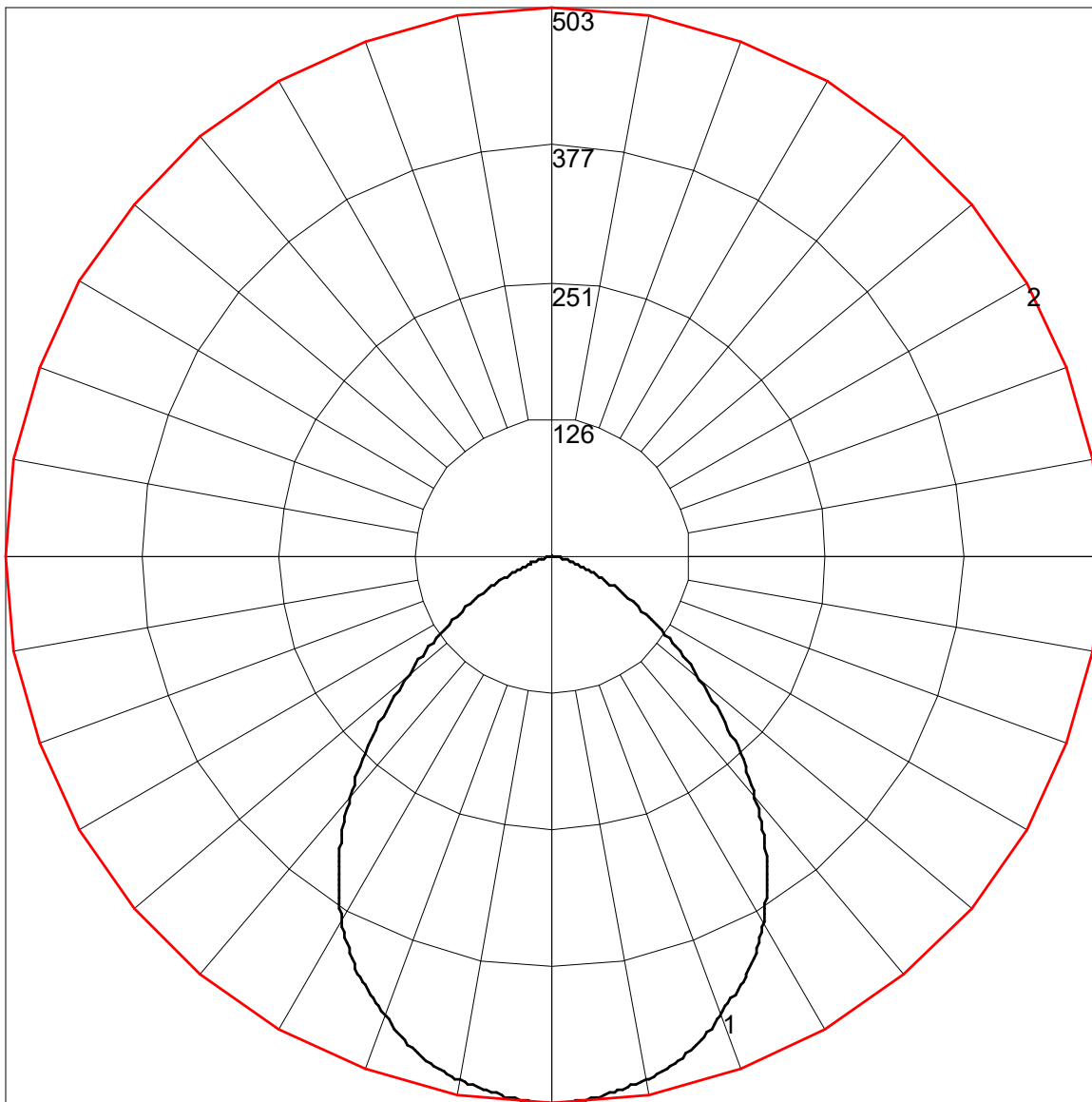
4H	2H	21.2	22.3	21.6	22.7	23.0	21.2	22.3	21.6	22.7	23.0
	3H	21.6	22.5	22.0	22.9	23.3	21.6	22.5	22.0	22.9	23.3
	4H	21.5	22.4	22.0	22.8	23.2	21.5	22.4	22.0	22.8	23.2
	6H	21.5	22.2	21.9	22.6	23.1	21.5	22.2	21.9	22.6	23.1
	8H	21.4	22.1	21.9	22.5	23.0	21.4	22.1	21.9	22.5	23.0
	12H	21.4	22.0	21.8	22.4	22.9	21.4	22.0	21.8	22.4	22.9

8H	4H	21.4	22.1	21.9	22.5	23.0	21.4	22.1	21.9	22.5	23.0
	6H	21.3	21.9	21.8	22.4	22.9	21.3	21.9	21.8	22.4	22.9
	8H	21.3	21.8	21.8	22.3	22.8	21.3	21.8	21.8	22.3	22.8
	12H	21.2	21.7	21.7	22.2	22.7	21.2	21.7	21.7	22.2	22.7

12H	4H	21.4	22.0	21.9	22.5	22.9	21.4	22.0	21.9	22.5	22.9
	6H	21.3	21.8	21.8	22.2	22.8	21.3	21.8	21.8	22.2	22.8
	8H	21.2	21.7	21.7	22.2	22.7	21.2	21.7	21.7	22.2	22.7

Maximum UGR = 23.3

POLAR GRAPH



Maximum Candela = 502.908 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)