

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4RCD-LS-9CS-SS-DIM-UNV-9W-4000K\_.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-4000k

[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	960
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	101
Total Luminaire Watts	9.54
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	41522	41522	41522
55	27924	27924	27924
65	14923	14923	14923
75	2223	2223	2223
85	435	435	435

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CANDELA TABULATION

	<u>0</u>
0.0	514.088
0.5	514.007
1.0	513.926
1.5	513.684
2.0	513.361
2.5	512.957
3.0	512.472
3.5	511.907
4.0	511.261
4.5	510.615
5.0	509.888
5.5	509.080
6.0	508.192
6.5	507.303
7.0	506.334
7.5	505.365
8.0	504.395
8.5	503.426
9.0	502.457
9.5	501.407
10.0	500.357
10.5	499.146
11.0	497.934
11.5	496.561
12.0	495.026
12.5	493.573
13.0	491.957
13.5	490.180
14.0	488.403
14.5	486.546
15.0	484.688
15.5	482.669
16.0	480.650
16.5	478.388
17.0	476.127
17.5	473.623
18.0	471.038
18.5	468.373
19.0	465.546
19.5	462.638
20.0	459.731
20.5	456.904
21.0	454.158
21.5	451.412
22.0	448.746
22.5	446.081
23.0	443.496
23.5	440.831
24.0	438.166
24.5	435.500
25.0	432.674
25.5	429.685
26.0	426.454
26.5	423.062

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**CANDELA TABULATION - (Cont.)**

27.0	419.508
27.5	415.874
28.0	412.078
28.5	408.282
29.0	404.324
29.5	400.286
30.0	396.086
30.5	391.805
31.0	387.444
31.5	382.921
32.0	378.398
32.5	373.875
33.0	369.271
33.5	364.505
34.0	359.740
34.5	354.894
35.0	349.967
35.5	345.040
36.0	340.033
36.5	334.783
37.0	329.371
37.5	323.798
38.0	318.306
38.5	312.814
39.0	307.241
39.5	301.668
40.0	296.014
40.5	290.280
41.0	284.626
41.5	278.892
42.0	273.076
42.5	267.342
43.0	261.446
43.5	255.550
44.0	249.654
44.5	243.677
45.0	237.781
45.5	231.965
46.0	226.069
46.5	220.254
47.0	214.520
47.5	208.785
48.0	203.050
48.5	197.397
49.0	191.743
49.5	186.170
50.0	180.678
50.5	175.266
51.0	169.936
51.5	164.686
52.0	159.436
52.5	154.267
53.0	149.178
53.5	144.171
54.0	139.325
54.5	134.479

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CANDELA TABULATION - (Cont.)

55.0	129.713
55.5	125.029
56.0	120.425
56.5	115.983
57.0	111.540
57.5	107.179
58.0	102.898
58.5	98.698
59.0	94.579
59.5	90.541
60.0	86.583
60.5	82.626
61.0	78.773
61.5	74.985
62.0	71.318
62.5	67.732
63.0	64.235
63.5	60.786
64.0	57.474
64.5	54.260
65.0	51.078
65.5	47.952
66.0	44.842
66.5	41.781
67.0	38.825
67.5	35.942
68.0	33.147
68.5	30.441
69.0	27.857
69.5	25.321
70.0	22.873
70.5	20.507
71.0	18.262
71.5	16.137
72.0	14.126
72.5	12.244
73.0	10.459
73.5	8.804
74.0	7.261
74.5	5.888
75.0	4.660
75.5	3.562
76.0	2.568
76.5	1.809
77.0	1.333
77.5	1.115
78.0	1.034
78.5	0.961
79.0	0.897
79.5	0.832
80.0	0.767
80.5	0.711
81.0	0.654
81.5	0.598
82.0	0.549
82.5	0.501

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CANDELA TABULATION - (Cont.)

83.0	0.460
83.5	0.420
84.0	0.380
84.5	0.339
85.0	0.307
85.5	0.275
86.0	0.242
86.5	0.210
87.0	0.186
87.5	0.162
88.0	0.137
88.5	0.105
89.0	0.073
89.5	0.048
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
119.5	0.000
120.0	0.000
120.5	0.000
121.0	0.000
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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
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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	184.70	N.A.	19.20
0-30	383.19	N.A.	39.90
0-40	600.88	N.A.	62.60
0-60	900.62	N.A.	93.80
0-80	959.55	N.A.	100.00
0-90	959.92	N.A.	100.00
10-90	911.56	N.A.	95.00
20-40	416.18	N.A.	43.40
20-50	599.22	N.A.	62.40
40-70	351.14	N.A.	36.60
60-80	58.93	N.A.	6.10
70-80	7.54	N.A.	0.80
80-90	0.37	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	959.92	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	48.35
10-20	136.34
20-30	198.50
30-40	217.69
40-50	183.04
50-60	116.71
60-70	51.39
70-80	7.54
80-90	0.37
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	131	131	131	131	128	128	128	128	122	122	122	117	117	117	112	112	112	110
1	123	119	115	112	120	116	113	110	112	109	107	107	105	103	104	102	100	98
2	114	107	101	96	111	105	99	95	101	96	93	98	94	91	94	91	89	87
3	106	96	89	83	103	94	88	82	91	86	81	89	84	80	86	82	78	76
4	98	87	79	73	96	85	78	72	83	76	71	80	75	70	78	73	69	67
5	91	79	70	64	89	78	70	64	75	69	63	73	67	63	72	66	62	60
6	85	72	63	57	83	71	63	57	69	62	57	67	61	56	66	60	56	54
7	79	66	57	51	77	65	57	51	63	56	51	62	55	51	61	55	50	48
8	74	61	52	46	72	60	52	46	59	51	46	57	51	46	56	50	46	44
9	69	56	48	42	68	55	48	42	54	47	42	53	47	42	52	46	42	40
10	65	52	44	39	64	51	44	39	50	43	39	49	43	38	48	43	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	21.0	22.4	21.4	22.7	23.0
	3H	21.4	22.6	21.7	22.9	23.3
	4H	21.3	22.5	21.7	22.8	23.2
	6H	21.2	22.3	21.6	22.7	23.1
	8H	21.2	22.2	21.6	22.6	23.0
	12H	21.2	22.1	21.6	22.5	22.9

### UGR Viewed Endwise

21.0	22.4	21.4	22.7	23.0
21.4	22.6	21.7	22.9	23.3
21.3	22.5	21.7	22.8	23.2
21.2	22.3	21.6	22.7	23.1
21.2	22.2	21.6	22.6	23.0
21.2	22.1	21.6	22.5	22.9

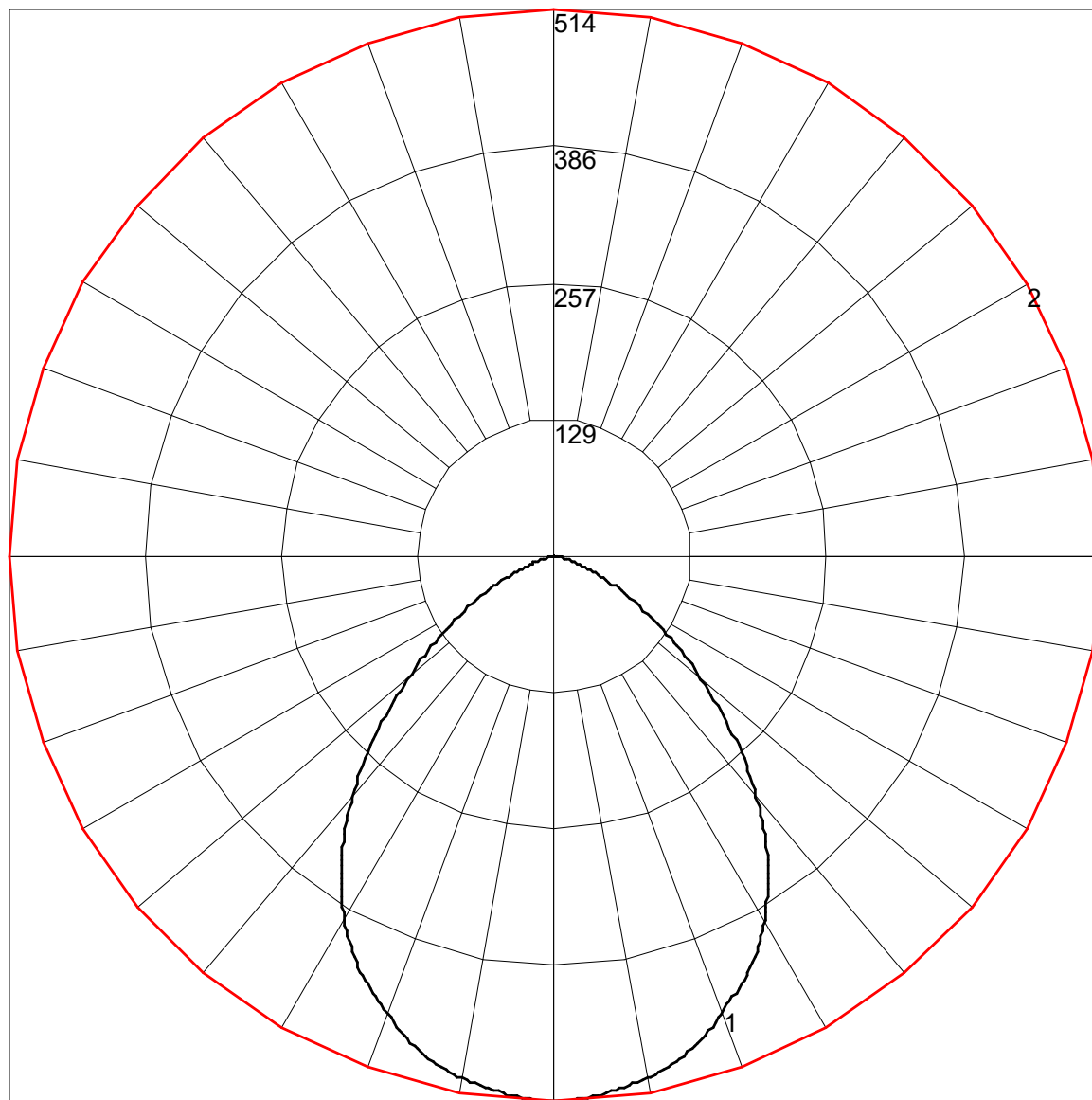
4H	2H	21.2	22.3	21.6	22.7	23.0	21.2	22.3	21.6	22.7	23.0
	3H	21.6	22.5	22.0	22.9	23.3	21.6	22.5	22.0	22.9	23.3
	4H	21.5	22.4	22.0	22.8	23.2	21.5	22.4	22.0	22.8	23.2
	6H	21.5	22.2	21.9	22.6	23.1	21.5	22.2	21.9	22.6	23.1
	8H	21.4	22.1	21.9	22.5	23.0	21.4	22.1	21.9	22.5	23.0
	12H	21.4	22.0	21.8	22.4	22.9	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 = 514.088 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.)