

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4RCD-LS-9CS-SS-DIM-UNV-7W-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-7W-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	680
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	97
Total Luminaire Watts	6.98
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	29403	29403	29403
55	19774	19774	19774
65	10568	10568	10568
75	1574	1574	1574
85	307	307	307

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CANDELA TABULATION

	<u>0</u>
0.0	364.046
0.5	363.989
1.0	363.931
1.5	363.760
2.0	363.531
2.5	363.245
3.0	362.902
3.5	362.502
4.0	362.044
4.5	361.586
5.0	361.072
5.5	360.500
6.0	359.871
6.5	359.241
7.0	358.555
7.5	357.869
8.0	357.182
8.5	356.496
9.0	355.810
9.5	355.066
10.0	354.323
10.5	353.465
11.0	352.607
11.5	351.635
12.0	350.548
12.5	349.518
13.0	348.374
13.5	347.116
14.0	345.858
14.5	344.542
15.0	343.227
15.5	341.797
16.0	340.367
16.5	338.766
17.0	337.164
17.5	335.391
18.0	333.561
18.5	331.674
19.0	329.672
19.5	327.613
20.0	325.554
20.5	323.552
21.0	321.607
21.5	319.663
22.0	317.775
22.5	315.888
23.0	314.057
23.5	312.170
24.0	310.283
24.5	308.395
25.0	306.393
25.5	304.277
26.0	301.989
26.5	299.587

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	297.071
<b>27.5</b>	294.497
<b>28.0</b>	291.809
<b>28.5</b>	289.120
<b>29.0</b>	286.318
<b>29.5</b>	283.458
<b>30.0</b>	280.484
<b>30.5</b>	277.453
<b>31.0</b>	274.364
<b>31.5</b>	271.161
<b>32.0</b>	267.958
<b>32.5</b>	264.755
<b>33.0</b>	261.495
<b>33.5</b>	258.121
<b>34.0</b>	254.746
<b>34.5</b>	251.315
<b>35.0</b>	247.826
<b>35.5</b>	244.337
<b>36.0</b>	240.791
<b>36.5</b>	237.073
<b>37.0</b>	233.241
<b>37.5</b>	229.295
<b>38.0</b>	225.405
<b>38.5</b>	221.516
<b>39.0</b>	217.570
<b>39.5</b>	213.623
<b>40.0</b>	209.619
<b>40.5</b>	205.559
<b>41.0</b>	201.555
<b>41.5</b>	197.494
<b>42.0</b>	193.376
<b>42.5</b>	189.315
<b>43.0</b>	185.140
<b>43.5</b>	180.965
<b>44.0</b>	176.790
<b>44.5</b>	172.557
<b>45.0</b>	168.382
<b>45.5</b>	164.264
<b>46.0</b>	160.089
<b>46.5</b>	155.971
<b>47.0</b>	151.910
<b>47.5</b>	147.849
<b>48.0</b>	143.788
<b>48.5</b>	139.784
<b>49.0</b>	135.781
<b>49.5</b>	131.834
<b>50.0</b>	127.945
<b>50.5</b>	124.113
<b>51.0</b>	120.338
<b>51.5</b>	116.620
<b>52.0</b>	112.903
<b>52.5</b>	109.242
<b>53.0</b>	105.639
<b>53.5</b>	102.093
<b>54.0</b>	98.661
<b>54.5</b>	95.230

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CANDELA TABULATION - (Cont.)

55.0	91.855
55.5	88.538
56.0	85.278
56.5	82.132
57.0	78.986
57.5	75.898
58.0	72.866
58.5	69.892
59.0	66.975
59.5	64.116
60.0	61.313
60.5	58.510
61.0	55.782
61.5	53.100
62.0	50.503
62.5	47.964
63.0	45.487
63.5	43.045
64.0	40.700
64.5	38.424
65.0	36.170
65.5	33.957
66.0	31.755
66.5	29.587
67.0	27.494
67.5	25.452
68.0	23.473
68.5	21.557
69.0	19.727
69.5	17.931
70.0	16.198
70.5	14.522
71.0	12.932
71.5	11.428
72.0	10.003
72.5	8.671
73.0	7.407
73.5	6.234
74.0	5.142
74.5	4.170
75.0	3.300
75.5	2.522
76.0	1.819
76.5	1.281
77.0	0.944
77.5	0.789
78.0	0.732
78.5	0.681
79.0	0.635
79.5	0.589
80.0	0.543
80.5	0.503
81.0	0.463
81.5	0.423
82.0	0.389
82.5	0.355

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CANDELA TABULATION - (Cont.)

83.0	0.326
83.5	0.297
84.0	0.269
84.5	0.240
85.0	0.217
85.5	0.194
86.0	0.172
86.5	0.149
87.0	0.132
87.5	0.114
88.0	0.097
88.5	0.074
89.0	0.051
89.5	0.034
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
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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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	130.79	N.A.	19.20
0-30	271.35	N.A.	39.90
0-40	425.50	N.A.	62.60
0-60	637.77	N.A.	93.80
0-80	679.50	N.A.	100.00
0-90	679.76	N.A.	100.00
10-90	645.52	N.A.	95.00
20-40	294.71	N.A.	43.40
20-50	424.33	N.A.	62.40
40-70	248.65	N.A.	36.60
60-80	41.73	N.A.	6.10
70-80	5.34	N.A.	0.80
80-90	0.26	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	679.76	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	34.24
10-20	96.55
20-30	140.56
30-40	154.15
40-50	129.61
50-60	82.65
60-70	36.39
70-80	5.34
80-90	0.26
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	127	127	127	127	124	124	124	124	118	118	118	113	113	113	109	109	109	106
1	119	115	111	108	116	112	109	107	108	106	103	104	102	100	100	99	97	95
2	110	103	98	93	108	101	96	92	98	93	90	94	91	88	91	88	86	84
3	102	93	86	80	100	91	85	80	88	83	78	86	81	77	83	79	76	74
4	95	84	76	70	93	83	76	70	80	74	69	78	73	68	76	71	67	65
5	88	76	68	62	86	75	68	62	73	66	61	71	65	61	69	64	60	58
6	82	70	61	55	80	69	61	55	67	60	55	65	59	54	64	58	54	52
7	76	64	56	50	75	63	55	50	61	54	49	60	54	49	59	53	49	47
8	72	59	51	45	70	58	50	45	57	50	45	55	49	44	54	49	44	42
9	67	54	46	41	66	54	46	41	52	46	41	51	45	41	50	45	40	39
10	63	50	43	38	62	50	42	37	49	42	37	48	42	37	47	41	37	35

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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

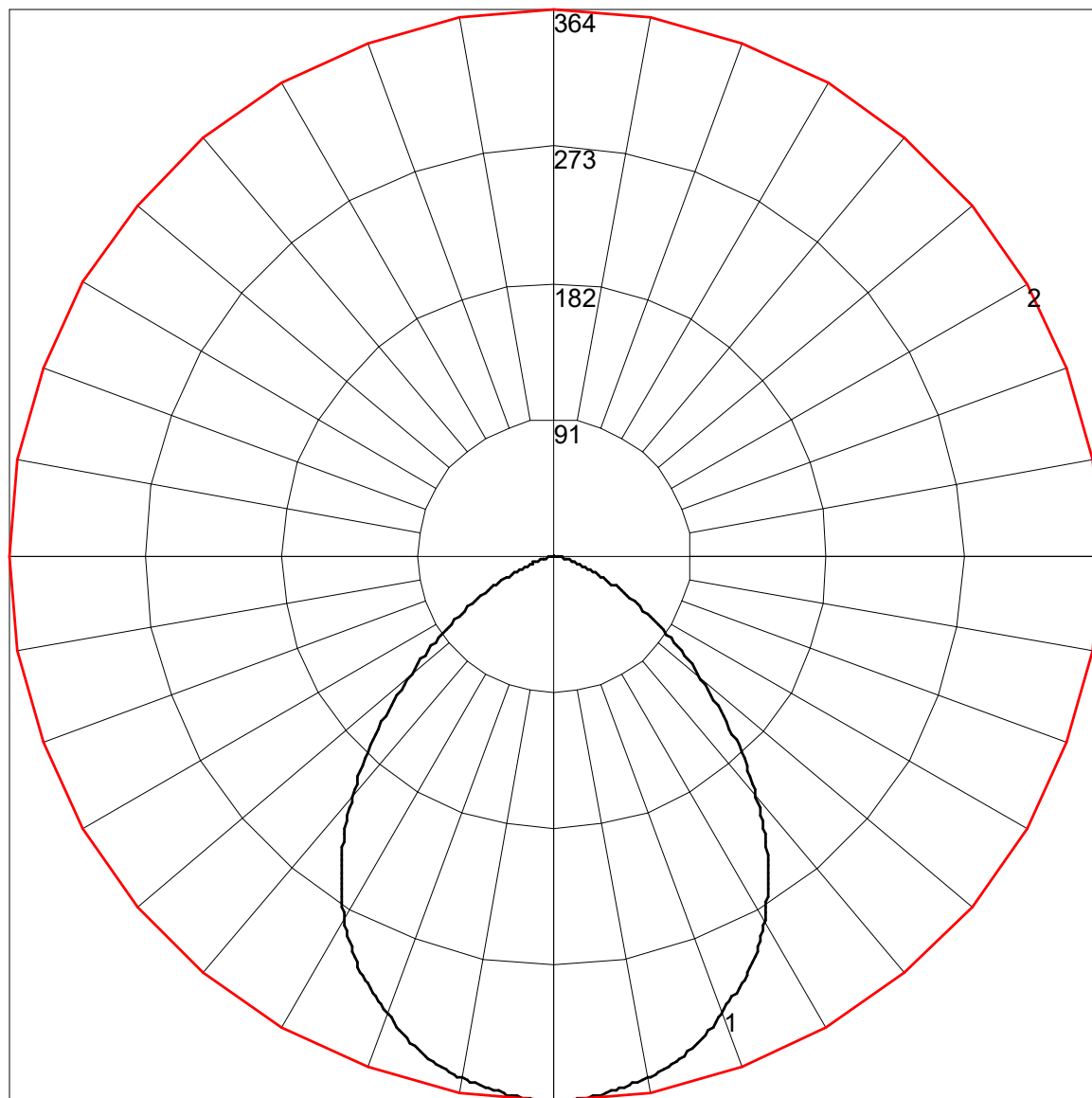
X=2H	Y=2H	20.0	21.4	20.3	21.7	22.0	20.0	21.4	20.3	21.7	22.0
	3H	20.4	21.6	20.7	21.9	22.3	20.4	21.6	20.7	21.9	22.3
	4H	20.3	21.5	20.7	21.8	22.2	20.3	21.5	20.7	21.8	22.2
	6H	20.2	21.3	20.6	21.7	22.1	20.2	21.3	20.6	21.7	22.1
	8H	20.2	21.2	20.6	21.6	22.0	20.2	21.2	20.6	21.6	22.0
	12H	20.2	21.1	20.6	21.5	21.9	20.2	21.1	20.6	21.5	21.9

### UGR Viewed Endwise

4H	2H	20.2	21.3	20.6	21.7	22.0	20.2	21.3	20.6	21.7	22.0
	3H	20.6	21.5	21.0	21.9	22.3	20.6	21.5	21.0	21.9	22.3
	4H	20.5	21.4	21.0	21.8	22.2	20.5	21.4	21.0	21.8	22.2
	6H	20.5	21.2	20.9	21.6	22.1	20.5	21.2	20.9	21.6	22.1
	8H	20.4	21.1	20.9	21.5	22.0	20.4	21.1	20.9	21.5	22.0
	12H	20.4	21.0	20.8	21.4	21.9	20.4	21.0	20.8	21.4	21.9
8H	4H	20.4	21.1	20.9	21.5	22.0	20.4	21.1	20.9	21.5	22.0
	6H	20.3	20.9	20.8	21.4	21.9	20.3	20.9	20.8	21.4	21.9
	8H	20.3	20.8	20.8	21.3	21.8	20.3	20.8	20.8	21.3	21.8
	12H	20.2	20.7	20.7	21.2	21.7	20.2	20.7	20.7	21.2	21.7
12H	4H	20.4	21.0	20.9	21.5	21.9	20.4	21.0	20.9	21.5	21.9
	6H	20.3	20.8	20.8	21.2	21.8	20.3	20.8	20.8	21.2	21.8
	8H	20.2	20.7	20.7	21.2	21.7	20.2	20.7	20.7	21.2	21.7

Maximum UGR = 22.3

POLAR GRAPH



Maximum Candela = 364.046 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.)