

## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4RCD-LS-9CS-WH-DIM-UNV-9W-2700K\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #15006535.02

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 21-NOV-2023

[TEST DATE] 10/18/2023

[MANUFAC] H E Williams Inc

[LUMCAT] 4RCD-LS-9CS-WH-DIM-UNV-9W-2700k

[LUMINAIRE] Round plastic housing with white trim and frosted lens

[LAMP] White LEDs

[BALLAST] LED Driver

[OTHER] 24.8 C, 120.036 V, 0.0936374 A, 11.1785 W, 0.994546 PF, 59.971

[MORE] 3 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	783
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	84
Total Luminaire Watts	9.3
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.16
Spacing Criterion (90-270)	1.16
Spacing Criterion (Diagonal)	1.24
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

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4RCD-LS-9CS-WH-DIM-UNV-9W-2700K\_.IES****LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	33057	33057	33057
55	26317	26317	26317
65	18408	18408	18408
75	9843	9843	9843
85	6938	6938	6938

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CANDELA TABULATION

	<u>0</u>
0.0	370.742
0.5	370.742
1.0	370.599
1.5	370.385
2.0	370.170
2.5	369.956
3.0	369.599
3.5	369.241
4.0	368.741
4.5	368.240
5.0	367.668
5.5	367.096
6.0	366.453
6.5	365.738
7.0	365.023
7.5	364.308
8.0	363.522
8.5	362.807
9.0	362.092
9.5	361.377
10.0	360.591
10.5	359.733
11.0	358.804
11.5	357.803
12.0	356.730
12.5	355.658
13.0	354.514
13.5	353.299
14.0	352.012
14.5	350.654
15.0	349.224
15.5	347.794
16.0	346.293
16.5	344.720
17.0	343.005
17.5	341.217
18.0	339.359
18.5	337.357
19.0	335.355
19.5	333.282
20.0	331.137
20.5	329.064
21.0	327.063
21.5	325.132
22.0	323.202
22.5	321.343
23.0	319.485
23.5	317.626
24.0	315.696
24.5	313.766
25.0	311.764
25.5	309.619
26.0	307.403
26.5	304.972

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	302.542
<b>27.5</b>	299.968
<b>28.0</b>	297.466
<b>28.5</b>	294.892
<b>29.0</b>	292.176
<b>29.5</b>	289.388
<b>30.0</b>	286.600
<b>30.5</b>	283.669
<b>31.0</b>	280.738
<b>31.5</b>	277.735
<b>32.0</b>	274.804
<b>32.5</b>	271.730
<b>33.0</b>	268.727
<b>33.5</b>	265.653
<b>34.0</b>	262.579
<b>34.5</b>	259.505
<b>35.0</b>	256.431
<b>35.5</b>	253.286
<b>36.0</b>	250.069
<b>36.5</b>	246.852
<b>37.0</b>	243.492
<b>37.5</b>	240.132
<b>38.0</b>	236.772
<b>38.5</b>	233.412
<b>39.0</b>	230.052
<b>39.5</b>	226.620
<b>40.0</b>	223.260
<b>40.5</b>	219.900
<b>41.0</b>	216.540
<b>41.5</b>	213.180
<b>42.0</b>	209.749
<b>42.5</b>	206.389
<b>43.0</b>	203.029
<b>43.5</b>	199.597
<b>44.0</b>	196.166
<b>44.5</b>	192.735
<b>45.0</b>	189.303
<b>45.5</b>	185.872
<b>46.0</b>	182.440
<b>46.5</b>	179.009
<b>47.0</b>	175.649
<b>47.5</b>	172.289
<b>48.0</b>	168.857
<b>48.5</b>	165.497
<b>49.0</b>	162.066
<b>49.5</b>	158.706
<b>50.0</b>	155.274
<b>50.5</b>	151.986
<b>51.0</b>	148.626
<b>51.5</b>	145.266
<b>52.0</b>	141.906
<b>52.5</b>	138.546
<b>53.0</b>	135.257
<b>53.5</b>	131.969
<b>54.0</b>	128.752
<b>54.5</b>	125.463

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CANDELA TABULATION - (Cont.)

55.0	122.246
55.5	118.958
56.0	115.812
56.5	112.738
57.0	109.593
57.5	106.519
58.0	103.445
58.5	100.371
59.0	97.297
59.5	94.294
60.0	91.292
60.5	88.360
61.0	85.429
61.5	82.498
62.0	79.567
62.5	76.779
63.0	73.920
63.5	71.175
64.0	68.394
64.5	65.691
65.0	63.003
65.5	60.387
66.0	57.806
66.5	55.275
67.0	52.802
67.5	50.400
68.0	48.041
68.5	45.717
69.0	43.422
69.5	41.156
70.0	38.926
70.5	36.724
71.0	34.622
71.5	32.606
72.0	30.676
72.5	28.789
73.0	26.973
73.5	25.221
74.0	23.599
74.5	22.062
75.0	20.632
75.5	19.323
76.0	18.122
76.5	17.029
77.0	16.056
77.5	15.199
78.0	14.412
78.5	13.683
79.0	12.968
79.5	12.239
80.0	11.510
80.5	10.781
81.0	10.073
81.5	9.379
82.0	8.700
82.5	8.028

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CANDELA TABULATION - (Cont.)

83.0	7.385
83.5	6.741
84.0	6.105
84.5	5.490
85.0	4.897
85.5	4.318
86.0	3.746
86.5	3.188
87.0	2.624
87.5	2.059
88.0	1.501
88.5	0.951
89.0	0.493
89.5	0.200
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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122.0	0.000
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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
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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	133.10	N.A.	17.00
0-30	276.22	N.A.	35.30
0-40	436.13	N.A.	55.70
0-60	691.40	N.A.	88.30
0-80	777.80	N.A.	99.30
0-90	783.38	N.A.	100.00
10-90	748.52	N.A.	95.60
20-40	303.03	N.A.	38.70
20-50	448.88	N.A.	57.30
40-70	318.19	N.A.	40.60
60-80	86.41	N.A.	11.00
70-80	23.49	N.A.	3.00
80-90	5.57	N.A.	0.70
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	783.38	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	34.86
10-20	98.24
20-30	143.13
30-40	159.91
40-50	145.85
50-60	109.42
60-70	62.92
70-80	23.49
80-90	5.57
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	172	172	172	172	168	168	168	168	160	160	160	153	153	153	147	147	147	144
1	159	154	148	144	156	150	146	141	144	140	137	139	136	133	134	131	129	126
2	147	137	128	121	143	134	126	119	129	122	117	124	119	114	120	116	112	109
3	135	122	111	103	132	120	110	102	115	107	100	112	105	99	108	102	97	94
4	125	109	98	89	122	107	97	89	104	95	87	101	93	86	98	91	85	82
5	116	99	87	78	113	97	86	78	94	84	77	91	83	76	89	81	75	72
6	107	90	78	69	105	88	77	69	86	76	68	83	74	68	81	73	67	64
7	100	82	70	62	97	81	69	62	78	68	61	76	67	61	75	66	60	58
8	93	75	64	56	91	74	63	55	72	62	55	70	61	55	69	61	55	52
9	87	69	58	50	85	68	58	50	67	57	50	65	56	50	64	56	50	47
10	82	64	53	46	80	63	53	46	62	52	46	61	52	46	59	51	45	43

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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

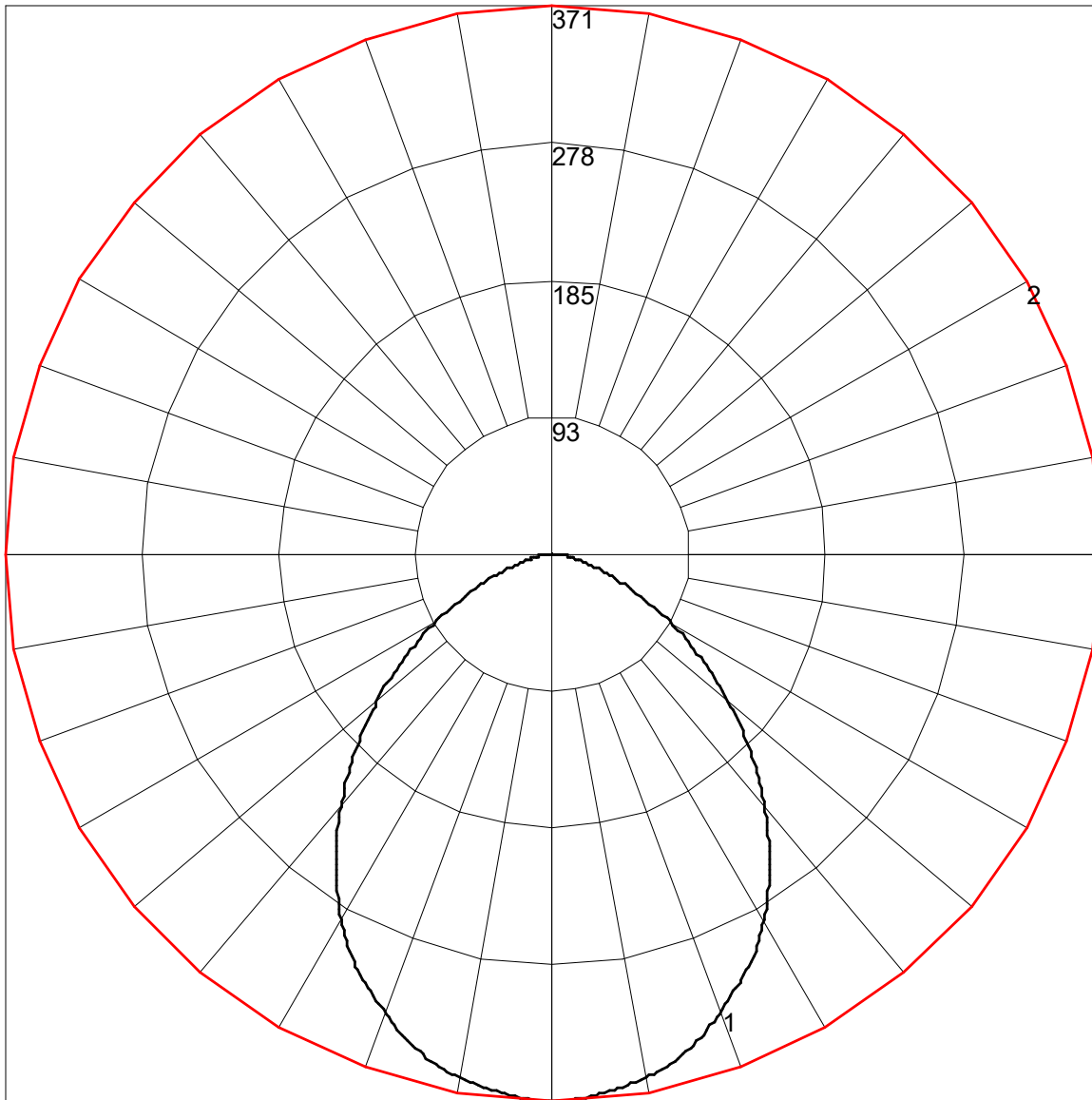
X=2H	Y=2H	20.7	22.1	21.0	22.5	22.8	20.7	22.1	21.0	22.5	22.8
	3H	21.6	22.9	22.0	23.3	23.6	21.6	22.9	22.0	23.3	23.6
	4H	21.8	23.0	22.2	23.4	23.8	21.8	23.0	22.2	23.4	23.8
	6H	21.9	23.1	22.3	23.4	23.8	21.9	23.1	22.3	23.4	23.8
	8H	21.9	23.0	22.4	23.4	23.8	21.9	23.0	22.4	23.4	23.8
	12H	22.0	23.0	22.4	23.4	23.8	22.0	23.0	22.4	23.4	23.8

### UGR Viewed Endwise

4H	2H	21.0	22.3	21.4	22.6	23.0	21.0	22.3	21.4	22.6	23.0
	3H	22.1	23.1	22.5	23.5	23.9	22.1	23.1	22.5	23.5	23.9
	4H	22.4	23.3	22.8	23.7	24.1	22.4	23.3	22.8	23.7	24.1
	6H	22.5	23.3	23.0	23.8	24.2	22.5	23.3	23.0	23.8	24.2
	8H	22.6	23.3	23.0	23.8	24.2	22.6	23.3	23.0	23.8	24.2
	12H	22.6	23.3	23.1	23.8	24.2	22.6	23.3	23.1	23.8	24.2
8H	4H	22.4	23.2	22.9	23.6	24.1	22.4	23.2	22.9	23.6	24.1
	6H	22.6	23.3	23.1	23.8	24.2	22.6	23.3	23.1	23.8	24.2
	8H	22.7	23.3	23.2	23.8	24.3	22.7	23.3	23.2	23.8	24.3
	12H	22.8	23.3	23.3	23.8	24.4	22.8	23.3	23.3	23.8	24.4
12H	4H	22.4	23.1	22.9	23.5	24.0	22.4	23.1	22.9	23.5	24.0
	6H	22.6	23.2	23.2	23.7	24.2	22.6	23.2	23.2	23.7	24.2
	8H	22.8	23.2	23.3	23.7	24.3	22.8	23.2	23.3	23.7	24.3

Maximum UGR = 24.4

POLAR GRAPH



Maximum Candela = 370.742 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.)