



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-L13-9TC-DIM-120-RW-OF-CS-AD\_4000K.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] GEN FROM 12316380.16  
 [TESTLAB] UL Verification Services Inc.  
 [ISSUEDATE] 11 JAN 2021  
 [MANUFAC] WILLIAMS INDOOR  
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.  
 [LUMCAT] 4DR-L13-9TC-DIM-120-RW-OF-CS-AD 4000K  
 [LUMINAIRE] Black formed aluminum housing, white reflector, frosted pl  
 [MORE] astic lens enclosure  
 [LAMP] One white LED  
 [\_SEARCH\_SOURCETYPE] LED  
 [\_SEARCH\_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight  
 [\_SEARCH\_MOUNTING] Recessed

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	911
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	38
Total Luminaire Watts	24
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.22
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.38 ft (Diameter)
Luminous Width (90-270)	0.38 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	28572	28572	28572
55	20912	20912	20912
65	15033	15033	15033
75	8956	8956	8956
85	6854	6854	6854

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CANDELA TABULATION

	<u>0</u>
0.0	456.066
0.5	455.985
1.0	455.743
1.5	455.419
2.0	455.015
2.5	454.530
3.0	453.883
3.5	453.237
4.0	452.590
4.5	452.024
5.0	451.377
5.5	450.812
6.0	450.165
6.5	449.518
7.0	448.791
7.5	448.063
8.0	447.336
8.5	446.527
9.0	445.719
9.5	444.911
10.0	443.941
10.5	443.132
11.0	442.162
11.5	441.112
12.0	440.061
12.5	438.848
13.0	437.717
13.5	436.423
14.0	435.130
14.5	433.675
15.0	432.139
15.5	430.684
16.0	429.148
16.5	427.612
17.0	425.996
17.5	424.379
18.0	422.843
18.5	421.307
19.0	419.691
19.5	418.155
20.0	416.538
20.5	414.840
21.0	413.062
21.5	411.284
22.0	409.263
22.5	407.000
23.0	404.575
23.5	401.988
24.0	399.320
24.5	396.491
25.0	393.581
25.5	390.509
26.0	387.276
26.5	383.962

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**CANDELA TABULATION - (Cont.)**

27.0	380.567
27.5	377.172
28.0	373.615
28.5	370.139
29.0	366.502
29.5	362.945
30.0	359.146
30.5	355.347
31.0	351.305
31.5	347.263
32.0	343.060
32.5	338.695
33.0	334.330
33.5	329.803
34.0	325.195
34.5	320.507
35.0	315.738
35.5	310.726
36.0	305.634
36.5	300.541
37.0	295.287
37.5	290.033
38.0	284.859
38.5	279.363
39.0	273.947
39.5	268.450
40.0	262.872
40.5	257.214
41.0	251.636
41.5	246.059
42.0	240.481
42.5	234.904
43.0	229.326
43.5	223.830
44.0	218.333
44.5	212.836
45.0	207.501
45.5	202.247
46.0	196.993
46.5	191.819
47.0	186.888
47.5	181.957
48.0	177.107
48.5	172.419
49.0	168.135
49.5	163.851
50.0	159.566
50.5	155.444
51.0	151.321
51.5	147.361
52.0	143.561
52.5	140.085
53.0	136.771
53.5	133.215
54.0	129.820
54.5	126.424

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-L13-9TC-DIM-120-RW-OF-CS-AD\_4000K.IES****CANDELA TABULATION - (Cont.)**

55.0	123.191
55.5	119.958
56.0	116.805
56.5	113.734
57.0	110.743
57.5	107.752
58.0	104.761
58.5	101.851
59.0	98.941
59.5	96.112
60.0	93.283
60.5	90.453
61.0	87.624
61.5	84.714
62.0	81.966
62.5	79.145
63.0	76.356
63.5	73.543
64.0	70.762
64.5	68.006
65.0	65.249
65.5	62.525
66.0	59.809
66.5	57.142
67.0	54.514
67.5	51.936
68.0	49.414
68.5	46.932
69.0	44.507
69.5	42.163
70.0	39.900
70.5	37.733
71.0	35.777
71.5	33.983
72.0	32.261
72.5	30.604
73.0	29.011
73.5	27.508
74.0	26.126
74.5	24.913
75.0	23.806
75.5	22.739
76.0	21.680
76.5	20.653
77.0	19.643
77.5	18.648
78.0	17.670
78.5	16.716
79.0	15.787
79.5	14.890
80.0	14.000
80.5	13.136
81.0	12.295
81.5	11.462
82.0	10.654
82.5	9.854

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CANDELA TABULATION - (Cont.)

83.0	9.078
83.5	8.318
84.0	7.574
84.5	6.847
85.0	6.135
85.5	5.440
86.0	4.761
86.5	4.090
87.0	3.444
87.5	2.797
88.0	2.215
88.5	1.795
89.0	1.455
89.5	1.140
90.0	0.841
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 : 4DR-L13-9TC-DIM-120-RW-OF-CS-AD\_4000K.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
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

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-L13-9TC-DIM-120-RW-OF-CS-AD\_4000K.IES****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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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



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 4DR-L13-9TC-DIM-120-RW-OF-CS-AD\_4000K.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	164.75	N.A.	18.10
0-30	345.17	N.A.	37.90
0-40	541.19	N.A.	59.40
0-60	812.52	N.A.	89.20
0-80	903.53	N.A.	99.20
0-90	910.59	N.A.	100.00
10-90	867.73	N.A.	95.30
20-40	376.44	N.A.	41.30
20-50	536.92	N.A.	59.00
40-70	336.14	N.A.	36.90
60-80	91.01	N.A.	10.00
70-80	26.19	N.A.	2.90
80-90	7.07	N.A.	0.80
90-110	0.02	N.A.	0.00
90-120	0.02	N.A.	0.00
90-130	0.02	N.A.	0.00
90-150	0.02	N.A.	0.00
90-180	0.02	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	910.62	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	42.86
10-20	121.89
20-30	180.42
30-40	196.03
40-50	160.48
50-60	110.84
60-70	64.82
70-80	26.19
80-90	7.07
90-100	0.02
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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88
2	102	95	90	85	100	93	88	84	90	86	82	87	83	80	84	81	78	76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	61	59
5	81	70	62	56	79	69	61	55	67	60	55	65	59	54	63	58	54	52
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	31

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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

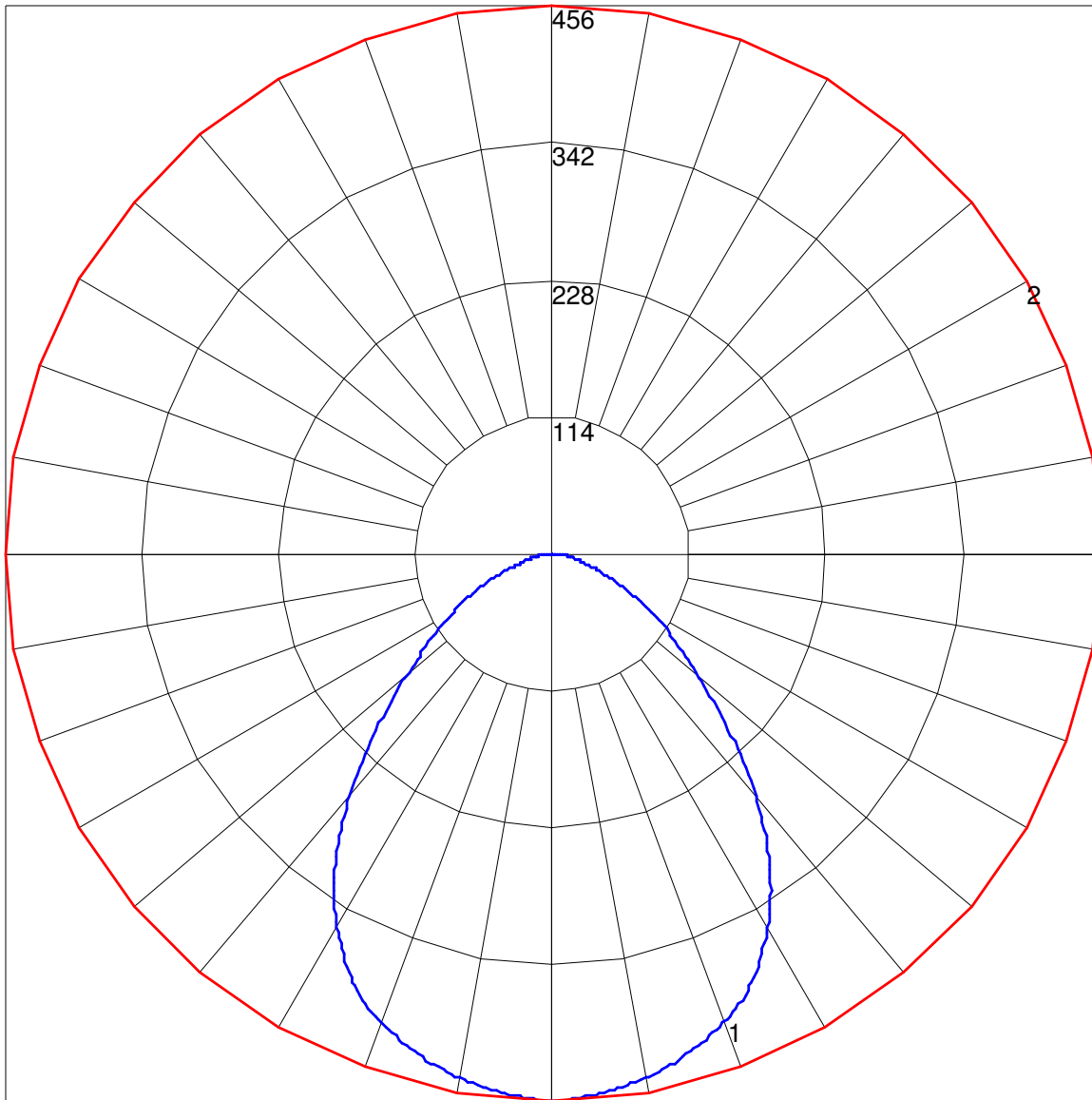
X=2H	Y=2H	20.7	22.2	21.1	22.5	22.8	20.7	22.2	21.1	22.5	22.8
	3H	21.7	23.0	22.1	23.3	23.7	21.7	23.0	22.1	23.3	23.7
	4H	21.9	23.1	22.3	23.5	23.9	21.9	23.1	22.3	23.5	23.9
	6H	22.1	23.2	22.5	23.6	24.0	22.1	23.2	22.5	23.6	24.0
	8H	22.2	23.2	22.6	23.6	24.0	22.2	23.2	22.6	23.6	24.0
	12H	22.2	23.2	22.6	23.6	24.0	22.2	23.2	22.6	23.6	24.0

### UGR Viewed Endwise

4H	2H	21.1	22.3	21.5	22.7	23.0	21.1	22.3	21.5	22.7	23.0
	3H	22.2	23.2	22.6	23.6	24.0	22.2	23.2	22.6	23.6	24.0
	4H	22.5	23.4	23.0	23.8	24.3	22.5	23.4	23.0	23.8	24.3
	6H	22.8	23.6	23.3	24.0	24.5	22.8	23.6	23.3	24.0	24.5
	8H	22.9	23.6	23.3	24.0	24.5	22.9	23.6	23.3	24.0	24.5
	12H	22.9	23.6	23.4	24.1	24.5	22.9	23.6	23.4	24.1	24.5
8H	4H	22.6	23.3	23.1	23.8	24.3	22.6	23.3	23.1	23.8	24.3
	6H	23.0	23.6	23.5	24.0	24.5	23.0	23.6	23.5	24.0	24.5
	8H	23.1	23.6	23.6	24.1	24.6	23.1	23.6	23.6	24.1	24.6
	12H	23.2	23.7	23.7	24.2	24.7	23.2	23.7	23.7	24.2	24.7
12H	4H	22.6	23.3	23.1	23.7	24.2	22.6	23.3	23.1	23.7	24.2
	6H	23.0	23.5	23.5	24.0	24.5	23.0	23.5	23.5	24.0	24.5
	8H	23.1	23.6	23.6	24.1	24.7	23.1	23.6	23.6	24.1	24.7

Maximum UGR = 24.7

POLAR GRAPH



Maximum Candela = 456.066 Located At Horizontal Angle = 0, Vertical Angle = 0  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)