



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 2DR-L15-9TW-DIM-UNV-OW-OF-CS (4000K).IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 13131414.32
 [TESTLAB] UL Verification Services Inc.
 [ISSUE DATE] 06 JUNE 2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 2DR-L15-9TW-DIM-UNV-OW-OF-CS (4000K)
 [LUMINAIRE] Aluminum housing and reflector, no lens enclosure
 [LAMP] 84 white LEDs

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1540
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
Total Luminaire Watts	28.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.10
Spacing Criterion (90-270)	1.10
Spacing Criterion (Diagonal)	1.02
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.21 ft (Diameter)
Luminous Width (90-270)	0.21 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	37940	37940	37940
55	11852	11852	11852
65	5807	5807	5807
75	1794	1794	1794
85	381	381	381

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CANDELA TABULATION

	<u>0</u>
0.0	1325.496
0.5	1326.544
1.0	1326.544
1.5	1327.592
2.0	1326.544
2.5	1327.592
3.0	1327.592
3.5	1328.640
4.0	1327.592
4.5	1326.544
5.0	1326.544
5.5	1327.592
6.0	1329.687
6.5	1333.879
7.0	1338.070
7.5	1342.261
8.0	1347.500
8.5	1353.787
9.0	1359.026
9.5	1364.265
10.0	1369.505
10.5	1374.744
11.0	1378.935
11.5	1383.126
12.0	1386.270
12.5	1389.413
13.0	1391.509
13.5	1393.605
14.0	1394.652
14.5	1393.605
15.0	1392.557
15.5	1389.413
16.0	1384.174
16.5	1377.887
17.0	1369.505
17.5	1361.122
18.0	1351.692
18.5	1343.309
19.0	1335.974
19.5	1330.735
20.0	1326.544
20.5	1325.496
21.0	1326.544
21.5	1328.640
22.0	1330.735
22.5	1331.783
23.0	1327.592
23.5	1319.209
24.0	1305.587
24.5	1285.679
25.0	1259.483
25.5	1230.144
26.0	1197.662
26.5	1163.083

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CANDELA TABULATION - (Cont.)

27.0	1125.362
27.5	1087.640
28.0	1047.823
28.5	1005.700
29.0	965.359
29.5	924.389
30.0	883.839
30.5	846.746
31.0	812.691
31.5	784.819
32.0	761.139
32.5	740.706
33.0	721.636
33.5	702.356
34.0	680.771
34.5	656.252
35.0	628.275
35.5	598.412
36.0	566.034
36.5	531.980
37.0	496.144
37.5	458.213
38.0	418.500
38.5	377.321
39.0	335.513
39.5	294.648
40.0	256.297
40.5	221.719
41.0	191.856
41.5	166.918
42.0	146.486
42.5	130.244
43.0	117.461
43.5	107.402
44.0	98.914
44.5	91.580
45.0	84.769
45.5	78.168
46.0	71.776
46.5	65.803
47.0	60.250
47.5	55.325
48.0	50.924
48.5	47.152
49.0	43.904
49.5	41.075
50.0	38.560
50.5	36.359
51.0	34.369
51.5	32.483
52.0	30.806
52.5	29.129
53.0	27.453
53.5	25.776
54.0	24.309
54.5	22.843

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CANDELA TABULATION - (Cont.)

55.0	21.480
55.5	20.328
56.0	19.175
56.5	18.127
57.0	17.184
57.5	16.346
58.0	15.613
58.5	14.879
59.0	14.146
59.5	13.517
60.0	12.993
60.5	12.469
61.0	11.945
61.5	11.421
62.0	10.897
62.5	10.373
63.0	9.850
63.5	9.326
64.0	8.802
64.5	8.278
65.0	7.754
65.5	7.230
66.0	6.706
66.5	6.287
67.0	5.763
67.5	5.344
68.0	4.925
68.5	4.610
69.0	4.191
69.5	3.877
70.0	3.563
70.5	3.248
71.0	3.039
71.5	2.724
72.0	2.515
72.5	2.305
73.0	2.096
73.5	1.886
74.0	1.677
74.5	1.572
75.0	1.467
75.5	1.257
76.0	1.153
76.5	1.048
77.0	0.943
77.5	0.838
78.0	0.733
78.5	0.733
79.0	0.629
79.5	0.524
80.0	0.524
80.5	0.419
81.0	0.419
81.5	0.314
82.0	0.314
82.5	0.314

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CANDELA TABULATION - (Cont.)

83.0	0.210
83.5	0.210
84.0	0.210
84.5	0.210
85.0	0.105
85.5	0.105
86.0	0.105
86.5	0.105
87.0	0.105
87.5	0.105
88.0	0.105
88.5	0.000
89.0	0.000
89.5	0.000
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
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121.0	0.000
121.5	0.000
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129.0	0.000
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130.0	0.000
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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
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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	516.65	N.A.	33.50
0-30	1065.31	N.A.	69.20
0-40	1433.94	N.A.	93.10
0-60	1530.47	N.A.	99.40
0-80	1539.96	N.A.	100.00
0-90	1540.16	N.A.	100.00
10-90	1412.06	N.A.	91.70
20-40	917.29	N.A.	59.60
20-50	993.41	N.A.	64.50
40-70	104.32	N.A.	6.80
60-80	9.50	N.A.	0.60
70-80	1.70	N.A.	0.10
80-90	0.20	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	1540.16	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	128.10
10-20	388.55
20-30	548.66
30-40	368.63
40-50	76.12
50-60	20.41
60-70	7.79
70-80	1.70
80-90	0.20
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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	111	108	106	111	108	106	104	104	103	101	101	99	98	97	96	95	93
2	108	103	99	95	105	101	97	94	98	95	92	95	92	90	92	90	88	86
3	102	95	90	86	100	94	89	86	91	87	84	89	86	83	87	84	82	80
4	97	89	83	79	95	88	83	78	86	81	78	84	80	77	82	78	76	74
5	92	83	77	73	90	82	76	72	80	75	72	79	74	71	77	73	70	69
6	87	78	72	67	85	77	71	67	75	70	66	74	69	66	73	69	65	64
7	82	73	67	62	81	72	66	62	71	66	62	70	65	61	68	64	61	60
8	78	68	62	58	77	68	62	58	67	61	58	66	61	57	65	60	57	56
9	74	64	58	54	73	64	58	54	63	57	54	62	57	54	61	57	53	52
10	71	61	55	51	69	60	54	51	59	54	50	58	54	50	58	53	50	49

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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	10.4	11.4	10.8	11.7	12.0	UGR Viewed Endwise	10.4	11.4	10.8	11.7	12.0
	3H	10.8	11.6	11.1	11.9	12.3		10.8	11.6	11.1	11.9	12.3
	4H	10.7	11.5	11.1	11.8	12.2		10.7	11.5	11.1	11.8	12.2
	6H	10.6	11.3	11.0	11.7	12.1		10.6	11.3	11.0	11.7	12.1
	8H	10.6	11.2	11.0	11.6	12.0		10.6	11.2	11.0	11.6	12.0
	12H	10.5	11.2	11.0	11.5	12.0		10.5	11.2	11.0	11.5	12.0

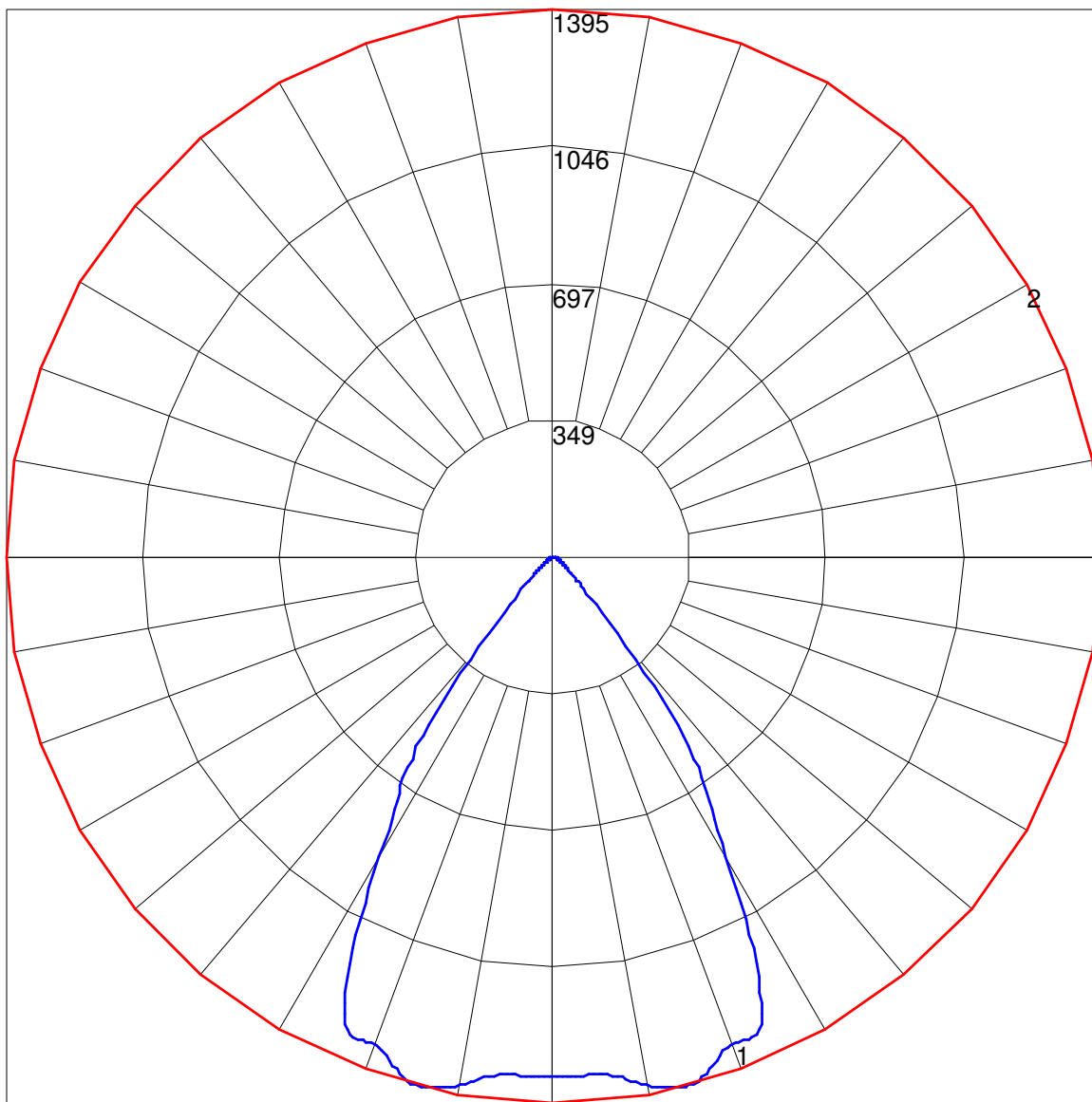
4H	2H	10.5	11.3	10.9	11.7	12.0	10.5	11.3	10.9	11.7	12.0
	3H	10.9	11.5	11.3	11.9	12.3	10.9	11.5	11.3	11.9	12.3
	4H	10.8	11.4	11.3	11.8	12.3	10.8	11.4	11.3	11.8	12.3
	6H	10.8	11.3	11.3	11.7	12.2	10.8	11.3	11.3	11.7	12.2
	8H	10.7	11.2	11.2	11.6	12.1	10.7	11.2	11.2	11.6	12.1
	12H	10.6	11.0	11.1	11.5	12.0	10.6	11.0	11.1	11.5	12.0

8H	4H	10.7	11.2	11.2	11.6	12.1	10.7	11.2	11.2	11.6	12.1
	6H	10.6	11.0	11.1	11.5	12.0	10.6	11.0	11.1	11.5	12.0
	8H	10.6	10.9	11.1	11.4	11.9	10.6	10.9	11.1	11.4	11.9
	12H	10.5	10.8	11.1	11.3	11.9	10.5	10.8	11.1	11.3	11.9

12H	4H	10.6	11.0	11.1	11.5	12.0	10.6	11.0	11.1	11.5	12.0
	6H	10.6	10.9	11.1	11.3	11.9	10.6	10.9	11.1	11.3	11.9
	8H	10.5	10.8	11.1	11.3	11.9	10.5	10.8	11.1	11.3	11.9

Maximum UGR = 12.3

POLAR GRAPH



Maximum Candela = 1394.652 Located At Horizontal Angle = 0, Vertical Angle = 14
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (14) (Through Max. Cd.)