



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L15-935-DIM-UNV-OM-OF-CS_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.04
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 31 MARCH 2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L15-935-DIM-UNV-OM-OF-CS
 [LUMINAIRE] Black formed aluminum housing, specular reflector
 [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	1206
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	14
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.76
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	2995	2995	2995
55	869	869	869
65	305	305	305
75	136	136	136
85	67	67	67

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CANDELA TABULATION

	<u>0</u>
0.0	2440.313
0.5	2442.120
1.0	2449.349
1.5	2455.975
2.0	2471.035
2.5	2480.673
3.0	2482.481
3.5	2483.083
4.0	2469.228
4.5	2450.554
5.0	2415.012
5.5	2369.832
6.0	2319.231
6.5	2262.605
7.0	2201.161
7.5	2137.307
8.0	2071.645
8.5	2006.586
9.0	1942.732
9.5	1880.685
10.0	1821.650
10.5	1766.230
11.0	1714.424
11.5	1665.629
12.0	1619.245
12.5	1575.872
13.0	1534.909
13.5	1495.753
14.0	1458.405
14.5	1424.068
15.0	1392.743
15.5	1365.033
16.0	1342.142
16.5	1321.660
17.0	1302.384
17.5	1285.517
18.0	1270.457
18.5	1257.806
19.0	1248.770
19.5	1240.939
20.0	1234.313
20.5	1226.482
21.0	1218.650
21.5	1210.217
22.0	1201.181
22.5	1189.735
23.0	1175.880
23.5	1159.013
24.0	1137.929
24.5	1110.219
25.0	1078.292
25.5	1044.557
26.0	1011.426
26.5	974.679

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CANDELA TABULATION - (Cont.)

27.0	936.126
27.5	892.151
28.0	842.152
28.5	787.334
29.0	730.106
29.5	671.673
30.0	609.626
30.5	545.351
31.0	478.063
31.5	411.016
32.0	346.559
32.5	286.259
33.0	233.791
33.5	189.032
34.0	151.322
34.5	119.998
35.0	94.576
35.5	75.420
36.0	63.131
36.5	56.686
37.0	52.830
37.5	49.457
38.0	46.505
38.5	43.794
39.0	41.324
39.5	39.096
40.0	36.987
40.5	34.999
41.0	33.132
41.5	31.445
42.0	29.819
42.5	28.313
43.0	26.807
43.5	25.481
44.0	24.156
44.5	22.891
45.0	21.747
45.5	20.602
46.0	19.457
46.5	18.373
47.0	17.229
47.5	16.144
48.0	15.120
48.5	14.156
49.0	13.193
49.5	12.229
50.0	11.265
50.5	10.361
51.0	9.578
51.5	8.855
52.0	8.132
52.5	7.530
53.0	6.928
53.5	6.446
54.0	5.964
54.5	5.482

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CANDELA TABULATION - (Cont.)

55.0	5.120
55.5	4.759
56.0	4.398
56.5	4.096
57.0	3.795
57.5	3.554
58.0	3.313
58.5	3.072
59.0	2.892
59.5	2.711
60.0	2.530
60.5	2.349
61.0	2.229
61.5	2.048
62.0	1.928
62.5	1.807
63.0	1.687
63.5	1.626
64.0	1.506
64.5	1.386
65.0	1.325
65.5	1.265
66.0	1.145
66.5	1.084
67.0	1.024
67.5	0.964
68.0	0.904
68.5	0.843
69.0	0.783
69.5	0.723
70.0	0.663
70.5	0.663
71.0	0.602
71.5	0.542
72.0	0.482
72.5	0.482
73.0	0.422
73.5	0.422
74.0	0.361
74.5	0.361
75.0	0.361
75.5	0.301
76.0	0.301
76.5	0.241
77.0	0.241
77.5	0.241
78.0	0.181
78.5	0.181
79.0	0.181
79.5	0.181
80.0	0.120
80.5	0.120
81.0	0.120
81.5	0.120
82.0	0.120
82.5	0.120

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CANDELA TABULATION - (Cont.)

83.0	0.120
83.5	0.060
84.0	0.060
84.5	0.060
85.0	0.060
85.5	0.060
86.0	0.060
86.5	0.060
87.0	0.060
87.5	0.060
88.0	0.000
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
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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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	608.33	N.A.	50.40
0-30	1074.45	N.A.	89.10
0-40	1182.05	N.A.	98.00
0-60	1204.2	N.A.	99.80
0-80	1205.97	N.A.	100.00
0-90	1206.04	N.A.	100.00
10-90	997.08	N.A.	82.70
20-40	573.72	N.A.	47.60
20-50	590.84	N.A.	49.00
40-70	23.54	N.A.	2.00
60-80	1.76	N.A.	0.10
70-80	0.38	N.A.	0.00
80-90	0.07	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	1206.04	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	208.96
10-20	399.37
20-30	466.12
30-40	107.60
40-50	17.12
50-60	5.03
60-70	1.39
70-80	0.38
80-90	0.07
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	114	112	110	108	112	110	108	106	106	104	103	102	101	100	98	98	97	95
2	109	105	102	99	107	103	100	97	100	98	95	97	95	93	95	93	91	90
3	105	99	95	91	103	98	94	91	95	92	89	93	90	88	91	88	87	85
4	100	94	89	85	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	83	80	86	82	79	85	81	78	83	80	78	76
6	92	85	79	76	91	84	79	75	82	78	75	81	77	74	80	77	74	73
7	89	80	75	72	87	80	75	71	79	74	71	78	74	71	76	73	70	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	73	70	67	66
9	82	73	68	65	81	73	68	65	72	67	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	64	61	68	64	61	67	64	61	60

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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

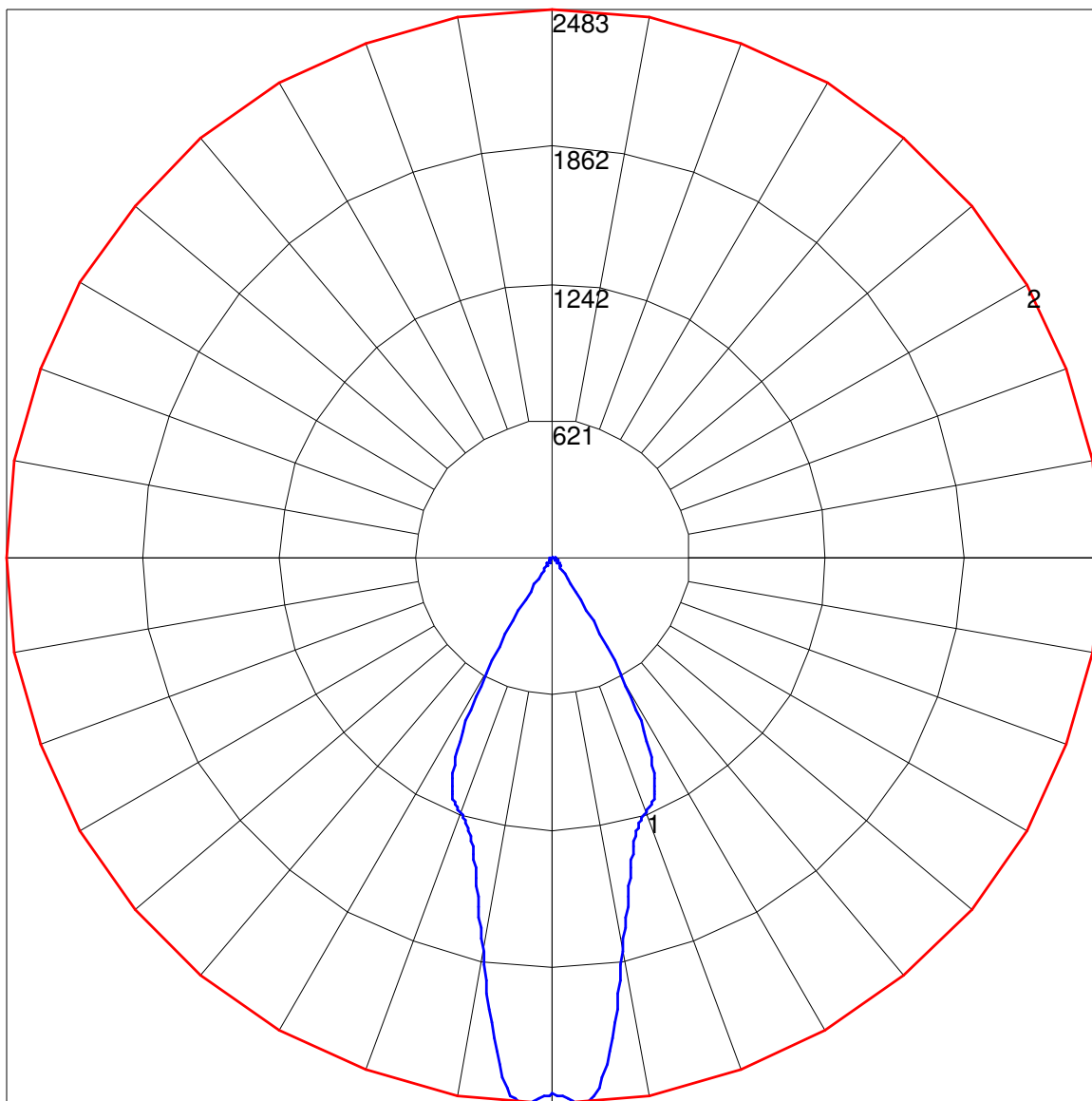
X=2H	Y=2H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	3H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	4H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	6H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	8H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	12H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

UGR Viewed Endwise

4H	2H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	3H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	4H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	6H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	8H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	12H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
8H	4H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	6H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	8H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	12H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
12H	4H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	6H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
	8H	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

Maximum UGR = 0.7

POLAR GRAPH



Maximum Candela = 2483.083 Located At Horizontal Angle = 0, Vertical Angle = 3.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)