



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CR-TL-L40-940-XXX-DIM-UNV-RW-WH-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.12

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 1-FEB-2021

[MANUFAC] WILLIAMS INDOOR

[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.

[LUMCAT] 8CR-TL-L40-940-xxx-DIM-UNV-RW-WH-xx

[LUMINAIRE] 8" DIA. SURFACE CYLINDER

[LAMP] One white LED

[\_SEARCH\_SOURCE TYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Architectural, Classroom, Commercial, Healthcare, Office, Downlight

[\_SEARCH\_MOUNTING] Surface

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3284
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	90
Total Luminaire Watts	36.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.04
Spacing Criterion (90-270)	1.04
Spacing Criterion (Diagonal)	0.94
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.48 ft (Diameter)
Luminous Width (90-270)	0.48 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	44345	44345	44345
55	36981	36981	36981
65	26090	26090	26090
75	15982	15982	15982
85	12605	12605	12605

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CANDELA TABULATION

	<u>0</u>
0.0	2429.478
0.5	2427.205
1.0	2424.933
1.5	2422.660
2.0	2418.115
2.5	2411.297
3.0	2404.479
3.5	2395.388
4.0	2386.297
4.5	2379.479
5.0	2370.389
5.5	2361.298
6.0	2352.207
6.5	2343.117
7.0	2334.026
7.5	2324.935
8.0	2313.572
8.5	2304.481
9.0	2295.391
9.5	2284.027
10.0	2274.937
10.5	2263.801
11.0	2252.892
11.5	2241.983
12.0	2231.074
12.5	2220.393
13.0	2209.484
13.5	2198.121
14.0	2186.985
14.5	2176.076
15.0	2165.849
15.5	2155.395
16.0	2145.168
16.5	2135.168
17.0	2125.850
17.5	2116.532
18.0	2107.441
18.5	2098.805
19.0	2090.169
19.5	2081.306
20.0	2072.215
20.5	2062.443
21.0	2051.307
21.5	2038.580
22.0	2024.262
22.5	2008.353
23.0	1991.081
23.5	1971.536
24.0	1950.173
24.5	1926.765
25.0	1900.856
25.5	1872.902
26.0	1841.767
26.5	1807.677

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	1771.314
<b>27.5</b>	1731.770
<b>28.0</b>	1689.726
<b>28.5</b>	1644.045
<b>29.0</b>	1595.865
<b>29.5</b>	1543.593
<b>30.0</b>	1488.140
<b>30.5</b>	1429.506
<b>31.0</b>	1368.598
<b>31.5</b>	1306.327
<b>32.0</b>	1242.920
<b>32.5</b>	1179.967
<b>33.0</b>	1117.696
<b>33.5</b>	1057.471
<b>34.0</b>	999.745
<b>34.5</b>	945.428
<b>35.0</b>	895.884
<b>35.5</b>	850.431
<b>36.0</b>	810.432
<b>36.5</b>	774.978
<b>37.0</b>	743.843
<b>37.5</b>	717.253
<b>38.0</b>	693.844
<b>38.5</b>	673.163
<b>39.0</b>	655.209
<b>39.5</b>	639.300
<b>40.0</b>	624.755
<b>40.5</b>	611.574
<b>41.0</b>	599.302
<b>41.5</b>	588.165
<b>42.0</b>	577.938
<b>42.5</b>	568.166
<b>43.0</b>	558.848
<b>43.5</b>	549.985
<b>44.0</b>	541.576
<b>44.5</b>	533.622
<b>45.0</b>	525.440
<b>45.5</b>	517.713
<b>46.0</b>	509.759
<b>46.5</b>	502.031
<b>47.0</b>	494.077
<b>47.5</b>	486.123
<b>48.0</b>	477.941
<b>48.5</b>	469.760
<b>49.0</b>	462.033
<b>49.5</b>	454.078
<b>50.0</b>	445.669
<b>50.5</b>	437.033
<b>51.0</b>	428.170
<b>51.5</b>	419.307
<b>52.0</b>	410.443
<b>52.5</b>	401.352
<b>53.0</b>	392.489
<b>53.5</b>	383.853
<b>54.0</b>	374.308
<b>54.5</b>	364.763

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CANDELA TABULATION - (Cont.)

55.0	355.445
55.5	345.899
56.0	336.582
56.5	327.264
57.0	317.946
57.5	308.628
58.0	299.764
58.5	290.674
59.0	281.810
59.5	273.174
60.0	264.538
60.5	255.902
61.0	247.493
61.5	239.312
62.0	231.130
62.5	223.176
63.0	215.221
63.5	207.267
64.0	199.767
64.5	192.040
65.0	184.768
65.5	177.268
66.0	170.223
66.5	163.177
67.0	156.359
67.5	149.541
68.0	142.951
68.5	136.360
69.0	130.224
69.5	123.860
70.0	117.951
70.5	112.042
71.0	106.361
71.5	100.906
72.0	95.452
72.5	90.452
73.0	85.679
73.5	81.361
74.0	77.043
74.5	73.180
75.0	69.316
75.5	65.907
76.0	62.498
76.5	59.544
77.0	56.817
77.5	54.089
78.0	51.362
78.5	48.635
79.0	46.135
79.5	43.635
80.0	41.135
80.5	38.635
81.0	36.135
81.5	33.863
82.0	31.363
82.5	29.090

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CANDELA TABULATION - (Cont.)

83.0	26.817
83.5	24.772
84.0	22.499
84.5	20.454
85.0	18.409
85.5	16.363
86.0	14.318
86.5	12.272
87.0	10.454
87.5	8.409
88.0	6.818
88.5	5.454
89.0	4.318
89.5	3.182
90.0	2.273
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  
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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
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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	834.82	N.A.	25.40
0-30	1687.68	N.A.	51.40
0-40	2277.75	N.A.	69.40
0-60	3001.86	N.A.	91.40
0-80	3263.27	N.A.	99.40
0-90	3284.23	N.A.	100.00
10-90	3061.06	N.A.	93.20
20-40	1442.93	N.A.	43.90
20-50	1850.04	N.A.	56.30
40-70	908.61	N.A.	27.70
60-80	261.41	N.A.	8.00
70-80	76.91	N.A.	2.30
80-90	20.96	N.A.	0.60
90-110	0.06	N.A.	0.00
90-120	0.06	N.A.	0.00
90-130	0.06	N.A.	0.00
90-150	0.06	N.A.	0.00
90-180	0.06	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	3284.29	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	223.17
10-20	611.64
20-30	852.86
30-40	590.07
40-50	407.11
50-60	317.00
60-70	184.50
70-80	76.91
80-90	20.96
90-100	0.06
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	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89
2	104	98	92	88	102	96	91	87	92	88	85	89	86	83	86	84	81	79
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	66	64
5	85	74	67	62	83	73	66	61	71	65	61	69	64	60	68	63	59	58
6	79	68	61	56	78	68	61	56	66	60	55	64	59	55	63	58	54	53
7	75	63	56	51	73	63	56	51	61	55	50	60	54	50	59	54	50	48
8	70	59	52	47	69	58	51	47	57	51	46	56	50	46	55	50	46	44
9	66	55	48	43	65	54	48	43	53	47	43	52	47	43	51	46	43	41
10	63	51	45	40	62	51	44	40	50	44	40	49	44	40	48	43	40	38

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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

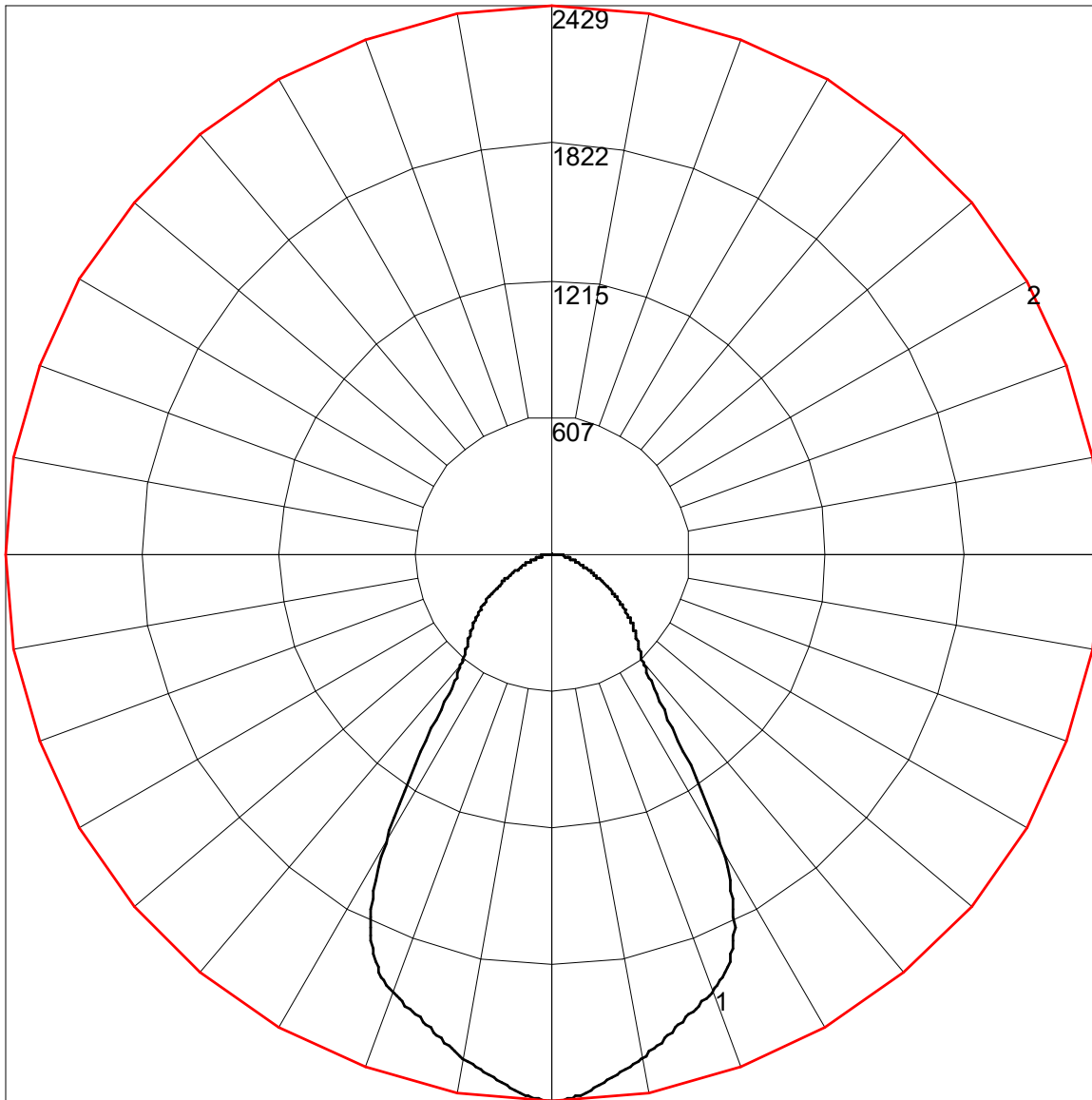
X=2H	Y=2H	21.9	23.3	22.3	23.6	23.9	21.9	23.3	22.3	23.6	23.9
	3H	22.9	24.1	23.3	24.4	24.8	22.9	24.1	23.3	24.4	24.8
	4H	23.2	24.3	23.6	24.6	25.0	23.2	24.3	23.6	24.6	25.0
	6H	23.3	24.4	23.8	24.7	25.1	23.3	24.4	23.8	24.7	25.1
	8H	23.4	24.4	23.8	24.8	25.2	23.4	24.4	23.8	24.8	25.2
	12H	23.4	24.3	23.9	24.7	25.2	23.4	24.3	23.9	24.7	25.2

### UGR Viewed Endwise

4H	2H	22.3	23.4	22.7	23.7	24.1	22.3	23.4	22.7	23.7	24.1
	3H	23.4	24.3	23.8	24.7	25.1	23.4	24.3	23.8	24.7	25.1
	4H	23.8	24.6	24.2	25.0	25.4	23.8	24.6	24.2	25.0	25.4
	6H	24.0	24.7	24.5	25.2	25.6	24.0	24.7	24.5	25.2	25.6
	8H	24.1	24.7	24.6	25.2	25.7	24.1	24.7	24.6	25.2	25.7
	12H	24.2	24.7	24.6	25.2	25.7	24.2	24.7	24.6	25.2	25.7
8H	4H	23.8	24.5	24.3	24.9	25.4	23.8	24.5	24.3	24.9	25.4
	6H	24.2	24.7	24.7	25.2	25.7	24.2	24.7	24.7	25.2	25.7
	8H	24.3	24.8	24.8	25.3	25.8	24.3	24.8	24.8	25.3	25.8
	12H	24.4	24.8	24.9	25.3	25.9	24.4	24.8	24.9	25.3	25.9
12H	4H	23.8	24.4	24.3	24.9	25.4	23.8	24.4	24.3	24.9	25.4
	6H	24.2	24.7	24.7	25.1	25.7	24.2	24.7	24.7	25.1	25.7
	8H	24.3	24.8	24.9	25.3	25.8	24.3	24.8	24.9	25.3	25.8

Maximum UGR = 25.9

POLAR GRAPH



Maximum Candela = 2429.478 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.)