



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CR-TL-L40-840-XXX-DIM-UNV-OM-CS-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.04

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 2-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CR-TL-L40-840-xxx-DIM-UNV-OM-CS-xx

[LUMINAIRE] 8" DIA. SURFACE CYLINDER

[LAMP] One white LED

[\_SEARCH\_SOURCETYPE] 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	4056
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	36.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.58
Spacing Criterion (90-270)	0.58
Spacing Criterion (Diagonal)	0.68
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.50 ft (Diameter)
Luminous Width (90-270)	0.50 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	7320	7320	7320
55	2695	2695	2695
65	1060	1060	1060
75	476	476	476
85	386	386	386

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CANDELA TABULATION

	<u>0</u>
0.0	8208.455
0.5	8220.728
1.0	8245.273
1.5	8259.591
2.0	8294.364
2.5	8308.683
3.0	8333.228
3.5	8339.365
4.0	8320.955
4.5	8222.773
5.0	8124.591
5.5	8020.272
6.0	7852.544
6.5	7684.816
7.0	7506.860
7.5	7306.404
8.0	7073.221
8.5	6833.902
9.0	6586.400
9.5	6345.035
10.0	6122.080
10.5	5925.715
11.0	5755.941
11.5	5610.713
12.0	5467.530
12.5	5326.393
13.0	5191.393
13.5	5064.574
14.0	4950.028
14.5	4847.754
15.0	4755.708
15.5	4667.753
16.0	4581.844
16.5	4491.843
17.0	4399.797
17.5	4307.751
18.0	4223.887
18.5	4150.250
19.0	4074.568
19.5	3996.840
20.0	3910.931
20.5	3818.885
21.0	3724.793
21.5	3628.657
22.0	3526.383
22.5	3428.201
23.0	3323.882
23.5	3217.518
24.0	3107.063
24.5	2996.608
25.0	2888.198
25.5	2779.788
26.0	2679.560
26.5	2583.423

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	2493.423
<b>27.5</b>	2407.513
<b>28.0</b>	2329.786
<b>28.5</b>	2260.240
<b>29.0</b>	2194.785
<b>29.5</b>	2131.376
<b>30.0</b>	2051.602
<b>30.5</b>	1951.784
<b>31.0</b>	1837.238
<b>31.5</b>	1711.237
<b>32.0</b>	1583.395
<b>32.5</b>	1454.735
<b>33.0</b>	1326.076
<b>33.5</b>	1191.075
<b>34.0</b>	1054.029
<b>34.5</b>	929.051
<b>35.0</b>	808.982
<b>35.5</b>	695.663
<b>36.0</b>	586.640
<b>36.5</b>	489.071
<b>37.0</b>	409.093
<b>37.5</b>	352.843
<b>38.0</b>	322.570
<b>38.5</b>	302.115
<b>39.0</b>	281.661
<b>39.5</b>	259.979
<b>40.0</b>	236.865
<b>40.5</b>	212.319
<b>41.0</b>	188.797
<b>41.5</b>	166.910
<b>42.0</b>	148.296
<b>42.5</b>	133.569
<b>43.0</b>	122.114
<b>43.5</b>	113.319
<b>44.0</b>	105.955
<b>44.5</b>	100.023
<b>45.0</b>	94.501
<b>45.5</b>	89.796
<b>46.0</b>	85.296
<b>46.5</b>	81.205
<b>47.0</b>	77.114
<b>47.5</b>	73.228
<b>48.0</b>	69.341
<b>48.5</b>	65.455
<b>49.0</b>	61.569
<b>49.5</b>	58.091
<b>50.0</b>	54.818
<b>50.5</b>	51.546
<b>51.0</b>	48.478
<b>51.5</b>	45.409
<b>52.0</b>	42.341
<b>52.5</b>	39.682
<b>53.0</b>	37.023
<b>53.5</b>	34.568
<b>54.0</b>	32.318
<b>54.5</b>	30.273

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CANDELA TABULATION - (Cont.)

55.0	28.227
55.5	26.591
56.0	24.750
56.5	23.318
57.0	21.886
57.5	20.455
58.0	19.227
58.5	18.000
59.0	16.977
59.5	15.955
60.0	14.932
60.5	13.909
61.0	13.091
61.5	12.273
62.0	11.659
62.5	11.046
63.0	10.227
63.5	9.818
64.0	9.205
64.5	8.591
65.0	8.182
65.5	7.568
66.0	7.159
66.5	6.750
67.0	6.341
67.5	5.932
68.0	5.727
68.5	5.318
69.0	4.909
69.5	4.705
70.0	4.500
70.5	4.091
71.0	3.886
71.5	3.682
72.0	3.477
72.5	3.273
73.0	3.068
73.5	2.864
74.0	2.659
74.5	2.455
75.0	2.250
75.5	2.250
76.0	2.045
76.5	1.841
77.0	1.841
77.5	1.636
78.0	1.636
78.5	1.432
79.0	1.432
79.5	1.227
80.0	1.227
80.5	1.023
81.0	1.023
81.5	1.023
82.0	0.818
82.5	0.818

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CR-TL-L40-840-XXX-DIM-UNV-OM-CS-XX\_.IES****CANDELA TABULATION - (Cont.)**

83.0	0.818
83.5	0.614
84.0	0.614
84.5	0.614
85.0	0.614
85.5	0.409
86.0	0.409
86.5	0.409
87.0	0.409
87.5	0.409
88.0	0.205
88.5	0.205
89.0	0.205
89.5	0.205
90.0	0.205
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
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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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	2047.03	N.A.	50.50
0-30	3373.01	N.A.	83.20
0-40	3934.12	N.A.	97.00
0-60	4044.38	N.A.	99.70
0-80	4055.48	N.A.	100.00
0-90	4056.11	N.A.	100.00
10-90	3348.85	N.A.	82.60
20-40	1887.08	N.A.	46.50
20-50	1970.26	N.A.	48.60
40-70	118.74	N.A.	2.90
60-80	11.10	N.A.	0.30
70-80	2.63	N.A.	0.10
80-90	0.63	N.A.	0.00
90-110	0.01	N.A.	0.00
90-120	0.01	N.A.	0.00
90-130	0.01	N.A.	0.00
90-150	0.01	N.A.	0.00
90-180	0.01	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	4056.12	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	707.26
10-20	1339.77
20-30	1325.98
30-40	561.10
40-50	83.18
50-60	27.09
60-70	8.47
70-80	2.63
80-90	0.63
90-100	0.01
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	109	107	112	109	107	106	105	104	102	102	100	99	98	97	96	95
2	109	105	101	98	107	103	100	97	100	97	95	97	95	93	94	92	91	89
3	104	99	94	91	103	97	93	90	95	91	89	92	90	87	90	88	86	84
4	100	93	88	84	98	92	88	84	90	86	83	88	85	82	86	83	81	80
5	96	88	83	79	94	87	82	79	86	81	78	84	80	77	82	79	77	75
6	92	84	78	75	90	83	78	74	81	77	74	80	76	73	79	75	73	72
7	88	80	74	70	87	79	74	70	78	73	70	77	73	70	75	72	69	68
8	84	76	70	67	83	75	70	67	74	70	66	73	69	66	72	69	66	65
9	81	72	67	63	80	72	67	63	71	66	63	70	66	63	69	65	63	62
10	78	69	64	60	77	69	64	60	68	63	60	67	63	60	66	63	60	59

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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

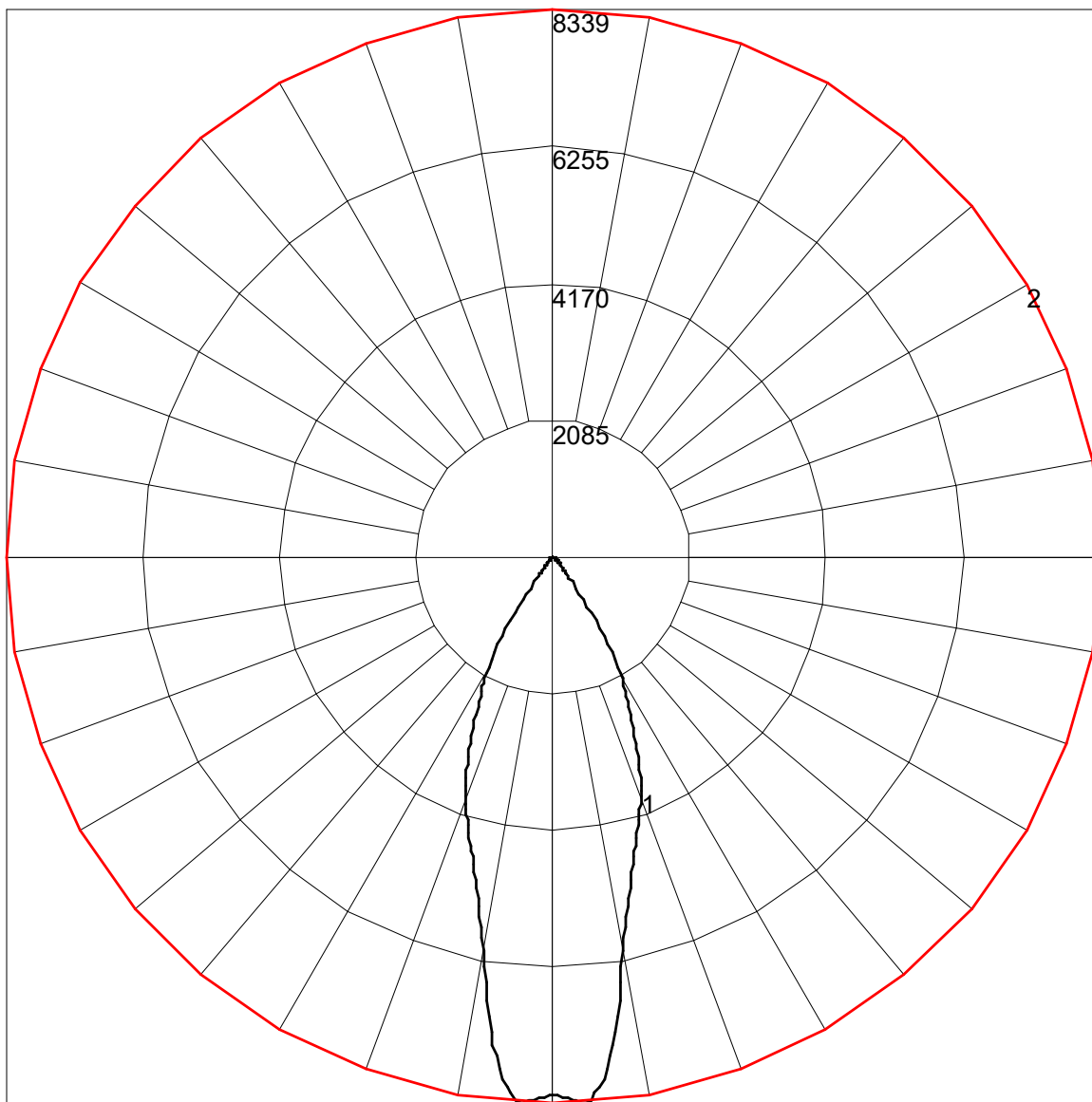
X=2H	Y=2H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	3H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	4H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	6H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	8H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	12H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9

### UGR Viewed Endwise

4H	2H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	3H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	4H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	6H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	8H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	12H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
8H	4H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	6H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	8H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	12H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
12H	4H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	6H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
	8H	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9

Maximum UGR = 4.9

POLAR GRAPH



Maximum Candela = 8339.365 Located At Horizontal Angle = 0, Vertical Angle = 3.5  
# 1 - Vertical Plane Through Horizontal Angles (90 - 270)  
# 2 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)