



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CR-TL-L20-835-XXX-DIM-UNV-OM-SG-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-L20-835-xxx-DIM-UNV-OM-SG-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	1824
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	95
Total Luminaire Watts	19.1077
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	3292	3292	3292
55	1212	1212	1212
65	477	477	477
75	214	214	214
85	173	173	173

CANDELA TABULATION

	<u>0</u>
0.0	3691.232
0.5	3696.751
1.0	3707.788
1.5	3714.227
2.0	3729.864
2.5	3736.303
3.0	3747.341
3.5	3750.100
4.0	3741.822
4.5	3697.670
5.0	3653.519
5.5	3606.608
6.0	3531.183
6.5	3455.758
7.0	3375.734
7.5	3285.592
8.0	3180.732
8.5	3073.114
9.0	2961.816
9.5	2853.277
10.0	2753.017
10.5	2664.714
11.0	2588.369
11.5	2523.062
12.0	2458.675
12.5	2395.207
13.0	2334.499
13.5	2277.471
14.0	2225.961
14.5	2179.970
15.0	2138.578
15.5	2099.026
16.0	2060.393
16.5	2019.921
17.0	1978.530
17.5	1937.138
18.0	1899.425
18.5	1866.312
19.0	1832.278
19.5	1797.325
20.0	1758.693
20.5	1717.301
21.0	1674.990
21.5	1631.758
22.0	1585.767
22.5	1541.616
23.0	1494.705
23.5	1446.875
24.0	1397.204
24.5	1347.534
25.0	1298.784
25.5	1250.033
26.0	1204.962
26.5	1161.731

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	1121.259
<b>27.5</b>	1082.626
<b>28.0</b>	1047.673
<b>28.5</b>	1016.399
<b>29.0</b>	986.965
<b>29.5</b>	958.451
<b>30.0</b>	922.578
<b>30.5</b>	877.691
<b>31.0</b>	826.181
<b>31.5</b>	769.520
<b>32.0</b>	712.032
<b>32.5</b>	654.175
<b>33.0</b>	596.318
<b>33.5</b>	535.610
<b>34.0</b>	473.982
<b>34.5</b>	417.782
<b>35.0</b>	363.788
<b>35.5</b>	312.830
<b>36.0</b>	263.804
<b>36.5</b>	219.929
<b>37.0</b>	183.964
<b>37.5</b>	158.669
<b>38.0</b>	145.055
<b>38.5</b>	135.857
<b>39.0</b>	126.659
<b>39.5</b>	116.909
<b>40.0</b>	106.515
<b>40.5</b>	95.477
<b>41.0</b>	84.899
<b>41.5</b>	75.057
<b>42.0</b>	66.687
<b>42.5</b>	60.064
<b>43.0</b>	54.913
<b>43.5</b>	50.958
<b>44.0</b>	47.647
<b>44.5</b>	44.979
<b>45.0</b>	42.496
<b>45.5</b>	40.380
<b>46.0</b>	38.356
<b>46.5</b>	36.517
<b>47.0</b>	34.677
<b>47.5</b>	32.930
<b>48.0</b>	31.182
<b>48.5</b>	29.434
<b>49.0</b>	27.687
<b>49.5</b>	26.123
<b>50.0</b>	24.651
<b>50.5</b>	23.179
<b>51.0</b>	21.800
<b>51.5</b>	20.420
<b>52.0</b>	19.040
<b>52.5</b>	17.844
<b>53.0</b>	16.649
<b>53.5</b>	15.545
<b>54.0</b>	14.533
<b>54.5</b>	13.613

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CANDELA TABULATION - (Cont.)

55.0	12.693
55.5	11.958
56.0	11.130
56.5	10.486
57.0	9.842
57.5	9.198
58.0	8.646
58.5	8.094
59.0	7.634
59.5	7.175
60.0	6.715
60.5	6.255
61.0	5.887
61.5	5.519
62.0	5.243
62.5	4.967
63.0	4.599
63.5	4.415
64.0	4.139
64.5	3.863
65.0	3.679
65.5	3.403
66.0	3.219
66.5	3.035
67.0	2.851
67.5	2.667
68.0	2.575
68.5	2.392
69.0	2.208
69.5	2.116
70.0	2.024
70.5	1.840
71.0	1.748
71.5	1.656
72.0	1.564
72.5	1.472
73.0	1.380
73.5	1.288
74.0	1.196
74.5	1.104
75.0	1.012
75.5	1.012
76.0	0.920
76.5	0.828
77.0	0.828
77.5	0.736
78.0	0.736
78.5	0.644
79.0	0.644
79.5	0.552
80.0	0.552
80.5	0.460
81.0	0.460
81.5	0.460
82.0	0.368
82.5	0.368

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CANDELA TABULATION - (Cont.)

83.0	0.368
83.5	0.276
84.0	0.276
84.5	0.276
85.0	0.276
85.5	0.184
86.0	0.184
86.5	0.184
87.0	0.184
87.5	0.184
88.0	0.092
88.5	0.092
89.0	0.092
89.5	0.092
90.0	0.092
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
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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

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

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	920.52	N.A.	50.50
0-30	1516.8	N.A.	83.20
0-40	1769.12	N.A.	97.00
0-60	1818.7	N.A.	99.70
0-80	1823.7	N.A.	100.00
0-90	1823.98	N.A.	100.00
10-90	1505.93	N.A.	82.60
20-40	848.60	N.A.	46.50
20-50	886.00	N.A.	48.60
40-70	53.40	N.A.	2.90
60-80	4.99	N.A.	0.30
70-80	1.18	N.A.	0.10
80-90	0.28	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	1823.98	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	318.05
10-20	602.48
20-30	596.28
30-40	252.32
40-50	37.40
50-60	12.18
60-70	3.81
70-80	1.18
80-90	0.28
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	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

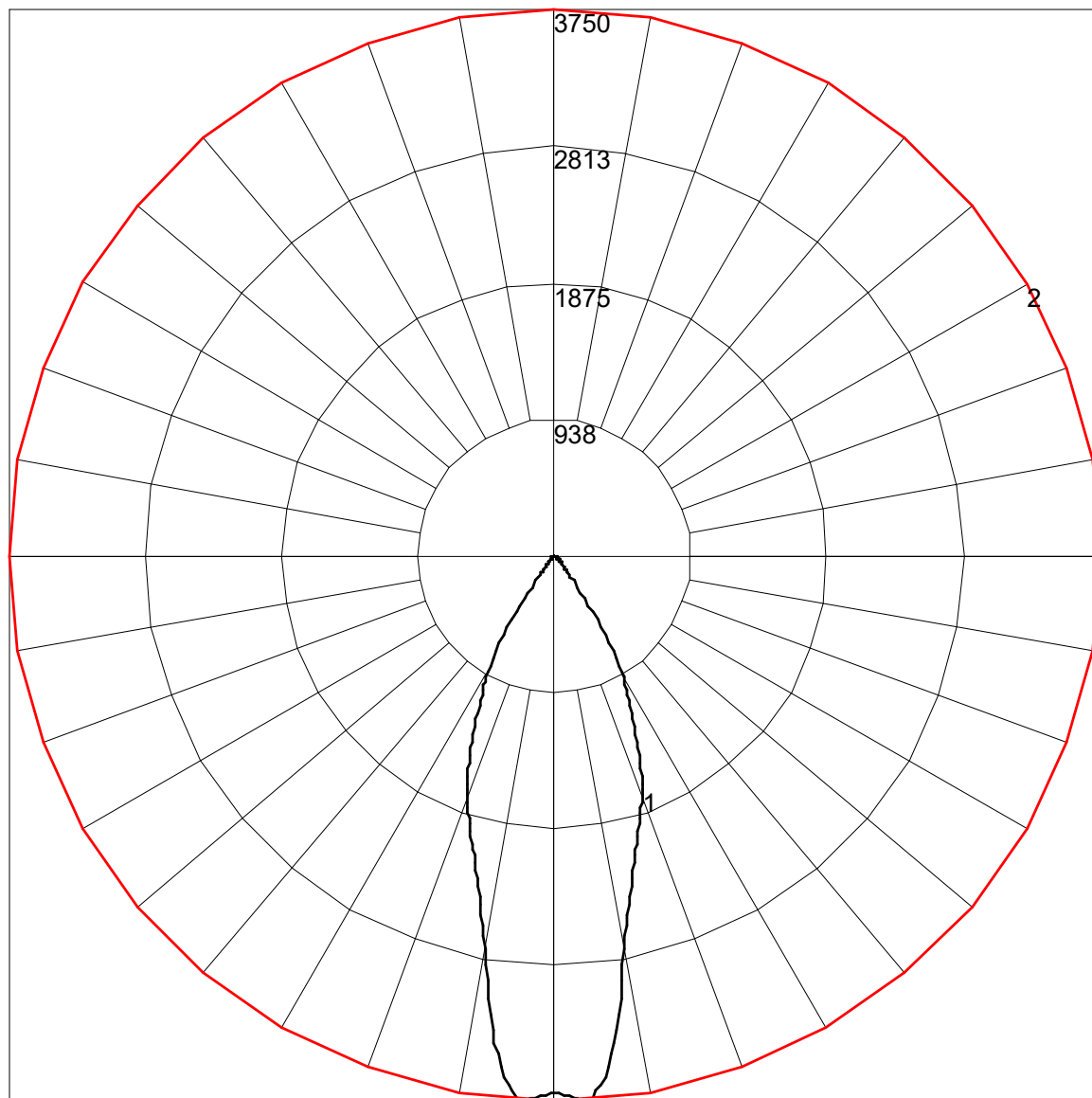
X=2H	Y=2H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

### UGR Viewed Endwise

4H	2H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	3H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
8H	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	12H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
12H	4H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	6H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
	8H	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2

Maximum UGR = 2.2

POLAR GRAPH



Maximum Candela = 3750.1 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.)