



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CR-TL-L20-835-XXX-DIM-UNV-LM-WH-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.09

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 29-JAN-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CR-TL-L20-835-xxx-DIM-UNV-LM-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	1837
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	19.1105
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.60
Spacing Criterion (90-270)	0.60
Spacing Criterion (Diagonal)	0.56
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.46 ft (Diameter)
Luminous Width (90-270)	0.46 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	8207	8207	8207
55	6009	6009	6009
65	4896	4896	4896
75	3985	3985	3985
85	2621	2621	2621

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CANDELA TABULATION

	<u>0</u>
0.0	4338.0
0.5	4336.0
1.0	4330.0
1.5	4321.0
2.0	4309.0
2.5	4292.0
3.0	4273.0
3.5	4251.0
4.0	4225.0
4.5	4198.0
5.0	4168.0
5.5	4134.0
6.0	4097.0
6.5	4056.0
7.0	4012.0
7.5	3964.0
8.0	3911.0
8.5	3854.0
9.0	3794.0
9.5	3730.0
10.0	3661.0
10.5	3588.0
11.0	3510.0
11.5	3426.0
12.0	3339.0
12.5	3247.0
13.0	3151.0
13.5	3050.0
14.0	2946.0
14.5	2838.0
15.0	2728.0
15.5	2616.0
16.0	2504.0
16.5	2391.0
17.0	2281.0
17.5	2171.0
18.0	2060.0
18.5	1951.0
19.0	1843.0
19.5	1739.0
20.0	1638.0
20.5	1541.0
21.0	1450.0
21.5	1363.0
22.0	1276.0
22.5	1194.0
23.0	1116.0
23.5	1042.0
24.0	973.1
24.5	907.9
25.0	847.0
25.5	789.6
26.0	736.4
26.5	686.6

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	640.3
<b>27.5</b>	597.4
<b>28.0</b>	557.4
<b>28.5</b>	520.4
<b>29.0</b>	486.1
<b>29.5</b>	454.1
<b>30.0</b>	424.5
<b>30.5</b>	396.9
<b>31.0</b>	371.3
<b>31.5</b>	347.5
<b>32.0</b>	325.3
<b>32.5</b>	304.7
<b>33.0</b>	285.5
<b>33.5</b>	267.6
<b>34.0</b>	251.1
<b>34.5</b>	235.8
<b>35.0</b>	221.5
<b>35.5</b>	208.4
<b>36.0</b>	196.2
<b>36.5</b>	185.1
<b>37.0</b>	174.8
<b>37.5</b>	165.4
<b>38.0</b>	156.9
<b>38.5</b>	149.0
<b>39.0</b>	141.8
<b>39.5</b>	135.2
<b>40.0</b>	129.2
<b>40.5</b>	123.6
<b>41.0</b>	118.5
<b>41.5</b>	113.8
<b>42.0</b>	109.4
<b>42.5</b>	105.4
<b>43.0</b>	101.6
<b>43.5</b>	98.1
<b>44.0</b>	94.9
<b>44.5</b>	91.8
<b>45.0</b>	88.9
<b>45.5</b>	86.2
<b>46.0</b>	83.7
<b>46.5</b>	81.3
<b>47.0</b>	79.0
<b>47.5</b>	76.8
<b>48.0</b>	74.8
<b>48.5</b>	72.8
<b>49.0</b>	70.9
<b>49.5</b>	69.1
<b>50.0</b>	67.4
<b>50.5</b>	65.7
<b>51.0</b>	64.1
<b>51.5</b>	62.5
<b>52.0</b>	61.0
<b>52.5</b>	59.6
<b>53.0</b>	58.1
<b>53.5</b>	56.7
<b>54.0</b>	55.4
<b>54.5</b>	54.1

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CANDELA TABULATION - (Cont.)

55.0	52.8
55.5	51.5
56.0	50.3
56.5	49.1
57.0	47.9
57.5	46.7
58.0	45.6
58.5	44.5
59.0	43.4
59.5	42.4
60.0	41.4
60.5	40.3
61.0	39.3
61.5	38.3
62.0	37.3
62.5	36.4
63.0	35.4
63.5	34.5
64.0	33.6
64.5	32.7
65.0	31.7
65.5	30.8
66.0	29.9
66.5	29.1
67.0	28.2
67.5	27.3
68.0	26.5
68.5	25.7
69.0	24.8
69.5	24.0
70.0	23.2
70.5	22.4
71.0	21.7
71.5	20.9
72.0	20.1
72.5	19.4
73.0	18.6
73.5	17.9
74.0	17.2
74.5	16.5
75.0	15.8
75.5	15.1
76.0	14.4
76.5	13.7
77.0	13.0
77.5	12.4
78.0	11.7
78.5	11.1
79.0	10.5
79.5	9.8
80.0	9.2
80.5	8.6
81.0	8.0
81.5	7.4
82.0	6.8
82.5	6.2

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CANDELA TABULATION - (Cont.)

83.0	5.7
83.5	5.1
84.0	4.6
84.5	4.0
85.0	3.5
85.5	3.0
86.0	2.5
86.5	2.1
87.0	1.7
87.5	1.4
88.0	1.1
88.5	0.9
89.0	0.7
89.5	0.5
90.0	0.3
90.5	0.0
91.0	0.0
91.5	0.0
92.0	0.0
92.5	0.0
93.0	0.0
93.5	0.0
94.0	0.0
94.5	0.0
95.0	0.0
95.5	0.0
96.0	0.0
96.5	0.0
97.0	0.0
97.5	0.0
98.0	0.0
98.5	0.0
99.0	0.0
99.5	0.0
100.0	0.0
100.5	0.0
101.0	0.0
101.5	0.0
102.0	0.0
102.5	0.0
103.0	0.0
103.5	0.0
104.0	0.0
104.5	0.0
105.0	0.0
105.5	0.0
106.0	0.0
106.5	0.0
107.0	0.0
107.5	0.0
108.0	0.0
108.5	0.0
109.0	0.0
109.5	0.0
110.0	0.0
110.5	0.0

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CANDELA TABULATION - (Cont.)

111.0	0.0
111.5	0.0
112.0	0.0
112.5	0.0
113.0	0.0
113.5	0.0
114.0	0.0
114.5	0.0
115.0	0.0
115.5	0.0
116.0	0.0
116.5	0.0
117.0	0.0
117.5	0.0
118.0	0.0
118.5	0.0
119.0	0.0
119.5	0.0
120.0	0.0
120.5	0.0
121.0	0.0
121.5	0.0
122.0	0.0
122.5	0.0
123.0	0.0
123.5	0.0
124.0	0.0
124.5	0.0
125.0	0.0
125.5	0.0
126.0	0.0
126.5	0.0
127.0	0.0
127.5	0.0
128.0	0.0
128.5	0.0
129.0	0.0
129.5	0.0
130.0	0.0
130.5	0.0
131.0	0.0
131.5	0.0
132.0	0.0
132.5	0.0
133.0	0.0
133.5	0.0
134.0	0.0
134.5	0.0
135.0	0.0
135.5	0.0
136.0	0.0
136.5	0.0
137.0	0.0
137.5	0.0
138.0	0.0
138.5	0.0

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CANDELA TABULATION - (Cont.)

139.0	0.0
139.5	0.0
140.0	0.0
140.5	0.0
141.0	0.0
141.5	0.0
142.0	0.0
142.5	0.0
143.0	0.0
143.5	0.0
144.0	0.0
144.5	0.0
145.0	0.0
145.5	0.0
146.0	0.0
146.5	0.0
147.0	0.0
147.5	0.0
148.0	0.0
148.5	0.0
149.0	0.0
149.5	0.0
150.0	0.0
150.5	0.0
151.0	0.0
151.5	0.0
152.0	0.0
152.5	0.0
153.0	0.0
153.5	0.0
154.0	0.0
154.5	0.0
155.0	0.0
155.5	0.0
156.0	0.0
156.5	0.0
157.0	0.0
157.5	0.0
158.0	0.0
158.5	0.0
159.0	0.0
159.5	0.0
160.0	0.0
160.5	0.0
161.0	0.0
161.5	0.0
162.0	0.0
162.5	0.0
163.0	0.0
163.5	0.0
164.0	0.0
164.5	0.0
165.0	0.0
165.5	0.0
166.0	0.0
166.5	0.0

CANDELA TABULATION - (Cont.)

167.0	0.0
167.5	0.0
168.0	0.0
168.5	0.0
169.0	0.0
169.5	0.0
170.0	0.0
170.5	0.0
171.0	0.0
171.5	0.0
172.0	0.0
172.5	0.0
173.0	0.0
173.5	0.0
174.0	0.0
174.5	0.0
175.0	0.0
175.5	0.0
176.0	0.0
176.5	0.0
177.0	0.0
177.5	0.0
178.0	0.0
178.5	0.0
179.0	0.0
179.5	0.0
180.0	0.0



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CR-TL-L20-835-XXX-DIM-UNV-LM-WH-XX\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1115.67	N.A.	60.70
0-30	1519.73	N.A.	82.70
0-40	1666.66	N.A.	90.70
0-60	1784.78	N.A.	97.10
0-80	1833.11	N.A.	99.80
0-90	1837.38	N.A.	100.00
10-90	1455.37	N.A.	79.20
20-40	550.99	N.A.	30.00
20-50	621.53	N.A.	33.80
40-70	149.66	N.A.	8.10
60-80	48.33	N.A.	2.60
70-80	16.78	N.A.	0.90
80-90	4.27	N.A.	0.20
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	1837.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	382.01
10-20	733.66
20-30	404.06
30-40	146.93
40-50	70.54
50-60	47.57
60-70	31.55
70-80	16.78
80-90	4.27
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	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	107	103	99	96	99	97	94	96	94	92	94	92	90	89
3	104	98	94	90	102	97	93	89	94	91	88	92	89	86	90	87	85	84
4	100	93	88	84	98	92	87	84	90	86	83	88	84	82	86	83	81	79
5	96	88	83	79	94	87	82	79	85	81	78	84	80	77	82	79	77	75
6	92	84	79	75	90	83	78	75	82	77	74	80	77	74	79	76	73	72
7	88	80	75	71	87	79	74	71	78	74	71	77	73	70	76	73	70	69
8	85	77	71	68	84	76	71	68	75	71	67	74	70	67	73	70	67	66
9	82	74	68	65	81	73	68	65	72	68	65	71	67	64	71	67	64	63
10	79	71	66	62	78	70	65	62	69	65	62	69	65	62	68	64	62	61

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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

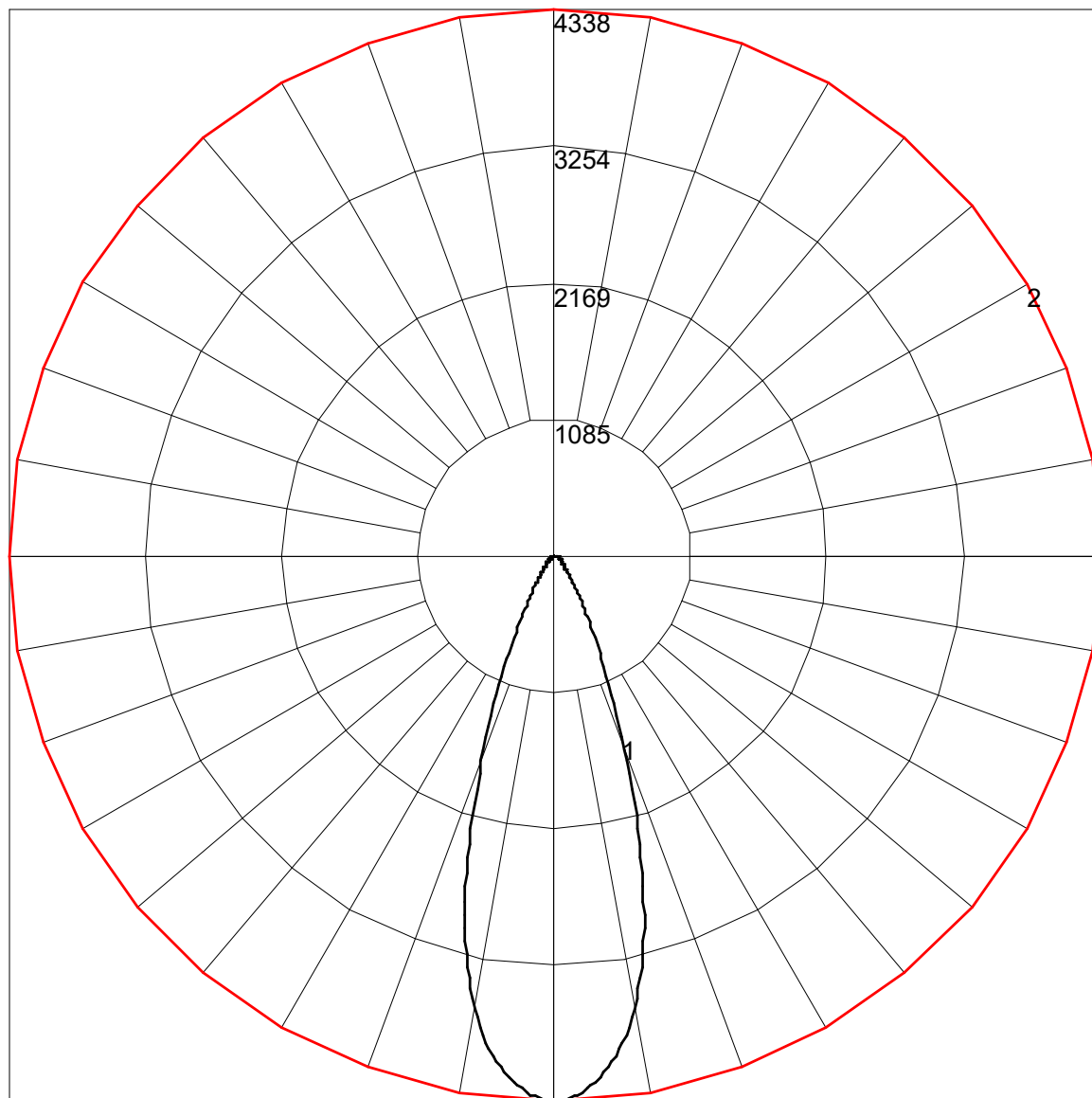
X=2H	Y=2H	11.7	12.7	12.0	13.0	13.3	11.7	12.7	12.0	13.0	13.3
	3H	13.1	14.0	13.5	14.3	14.7	13.1	14.0	13.5	14.3	14.7
	4H	13.6	14.4	14.0	14.8	15.2	13.6	14.4	14.0	14.8	15.2
	6H	13.9	14.7	14.4	15.1	15.5	13.9	14.7	14.4	15.1	15.5
	8H	14.0	14.7	14.4	15.1	15.5	14.0	14.7	14.4	15.1	15.5
	12H	14.1	14.7	14.5	15.1	15.6	14.1	14.7	14.5	15.1	15.6

### UGR Viewed Endwise

4H	2H	12.1	12.9	12.5	13.3	13.7	12.1	12.9	12.5	13.3	13.7
	3H	13.7	14.4	14.1	14.8	15.2	13.7	14.4	14.1	14.8	15.2
	4H	14.3	14.9	14.7	15.3	15.8	14.3	14.9	14.7	15.3	15.8
	6H	14.8	15.3	15.2	15.7	16.2	14.8	15.3	15.2	15.7	16.2
	8H	14.9	15.4	15.4	15.8	16.3	14.9	15.4	15.4	15.8	16.3
	12H	15.0	15.4	15.4	15.9	16.3	15.0	15.4	15.4	15.9	16.3
8H	4H	14.5	15.0	15.0	15.4	15.9	14.5	15.0	15.0	15.4	15.9
	6H	15.0	15.4	15.6	15.9	16.4	15.0	15.4	15.6	15.9	16.4
	8H	15.2	15.6	15.8	16.1	16.6	15.2	15.6	15.8	16.1	16.6
	12H	15.4	15.7	15.9	16.2	16.7	15.4	15.7	15.9	16.2	16.7
12H	4H	14.5	14.9	15.0	15.4	15.8	14.5	14.9	15.0	15.4	15.8
	6H	15.1	15.4	15.6	15.9	16.4	15.1	15.4	15.6	15.9	16.4
	8H	15.3	15.6	15.8	16.1	16.7	15.3	15.6	15.8	16.1	16.7

Maximum UGR = 16.7

POLAR GRAPH



Maximum Candela = 4338 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.)