



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 8CR-TL-L20-835-(L16)-XXX-DIM-UNV-RN-CS-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #12326812.15

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 1-FEB-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 8CR-TL-L20-835-(L16)-xxx-DIM-UNV-RN-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	1610
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	106
Total Luminaire Watts	15.2
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.44
Spacing Criterion (90-270)	0.44
Spacing Criterion (Diagonal)	0.46
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	5272	5272	5272
55	3448	3448	3448
65	2346	2346	2346
75	1516	1516	1516
85	1217	1217	1217

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## CANDELA TABULATION

	<u>0</u>
0.0	5978.858
0.5	5973.527
1.0	5956.645
1.5	5927.324
2.0	5886.452
2.5	5833.140
3.0	5769.167
3.5	5695.420
4.0	5612.787
4.5	5520.381
5.0	5419.978
5.5	5309.802
6.0	5190.740
6.5	5064.570
7.0	4931.292
7.5	4790.905
8.0	4644.299
8.5	4492.362
9.0	4334.206
9.5	4172.495
10.0	4006.341
10.5	3839.299
11.0	3670.480
11.5	3500.773
12.0	3331.954
12.5	3163.135
13.0	2997.870
13.5	2832.605
14.0	2672.671
14.5	2517.180
15.0	2365.243
15.5	2220.414
16.0	2082.693
16.5	1952.081
17.0	1825.911
17.5	1705.960
18.0	1592.230
18.5	1486.496
19.0	1386.093
19.5	1295.464
20.0	1206.612
20.5	1123.091
21.0	1045.789
21.5	973.819
22.0	905.403
22.5	841.074
23.0	781.365
23.5	725.833
24.0	674.032
24.5	625.785
25.0	580.915
25.5	539.332
26.0	500.948
26.5	465.318

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CR-TL-L20-835-(L16)-XXX-DIM-UNV-RN-CS-XX\_.IES****CANDELA TABULATION - (Cont.)**

27.0	432.443
27.5	402.233
28.0	374.423
28.5	348.833
29.0	325.288
29.5	303.696
30.0	283.705
30.5	265.401
31.0	248.608
31.5	233.059
32.0	218.754
32.5	205.515
33.0	193.342
33.5	182.058
34.0	171.662
34.5	161.977
35.0	153.003
35.5	144.740
36.0	137.099
36.5	129.902
37.0	123.327
37.5	117.107
38.0	111.421
38.5	106.178
39.0	101.291
39.5	96.671
40.0	92.495
40.5	88.497
41.0	84.854
41.5	81.389
42.0	78.190
42.5	75.169
43.0	72.326
43.5	69.660
44.0	67.083
44.5	64.684
45.0	62.463
45.5	60.331
46.0	58.287
46.5	56.332
47.0	54.466
47.5	52.600
48.0	50.912
48.5	49.224
49.0	47.714
49.5	46.203
50.0	44.781
50.5	43.360
51.0	42.027
51.5	40.783
52.0	39.539
52.5	38.384
53.0	37.229
53.5	36.163
54.0	35.097
54.5	34.119

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55.0	33.142
55.5	32.164
56.0	31.276
56.5	30.387
57.0	29.410
57.5	28.522
58.0	27.722
58.5	26.833
59.0	26.034
59.5	25.145
60.0	24.345
60.5	23.457
61.0	22.657
61.5	21.858
62.0	21.058
62.5	20.347
63.0	19.547
63.5	18.837
64.0	18.037
64.5	17.326
65.0	16.615
65.5	15.905
66.0	15.283
66.5	14.661
67.0	14.039
67.5	13.417
68.0	12.795
68.5	12.262
69.0	11.728
69.5	11.195
70.0	10.662
70.5	10.218
71.0	9.685
71.5	9.241
72.0	8.796
72.5	8.352
73.0	7.997
73.5	7.641
74.0	7.286
74.5	6.930
75.0	6.575
75.5	6.220
76.0	5.953
76.5	5.687
77.0	5.420
77.5	5.153
78.0	4.887
78.5	4.709
79.0	4.443
79.5	4.176
80.0	3.998
80.5	3.732
81.0	3.465
81.5	3.288
82.0	3.021
82.5	2.843

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83.0	2.666
83.5	2.399
84.0	2.221
84.5	1.955
85.0	1.777
85.5	1.599
86.0	1.422
86.5	1.244
87.0	1.066
87.5	0.889
88.0	0.711
88.5	0.533
89.0	0.444
89.5	0.355
90.0	0.267
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****PHOTOMETRIC FILENAME : 8CR-TL-L20-835-(L16)-XXX-DIM-UNV-RN-CS-XX\_.IES****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

**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CR-TL-L20-835-(L16)-XXX-DIM-UNV-RN-CS-XX\_.IES****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



**IES INDOOR REPORT****PHOTOMETRIC FILENAME : 8CR-TL-L20-835-(L16)-XXX-DIM-UNV-RN-CS-XX\_.IES****ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	1122.63	N.A.	69.70
0-30	1403.92	N.A.	87.20
0-40	1504.84	N.A.	93.50
0-60	1584.19	N.A.	98.40
0-80	1608.1	N.A.	99.90
0-90	1610.15	N.A.	100.00
10-90	1138.71	N.A.	70.70
20-40	382.20	N.A.	23.70
20-50	431.59	N.A.	26.80
40-70	96.06	N.A.	6.00
60-80	23.91	N.A.	1.50
70-80	7.20	N.A.	0.40
80-90	2.05	N.A.	0.10
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	1610.16	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	471.45
10-20	651.19
20-30	281.28
30-40	100.92
40-50	49.39
50-60	29.96
60-70	16.71
70-80	7.20
80-90	2.05
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	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	102	100	108	104	101	98	101	98	96	98	96	94	95	94	92	91
3	106	100	96	93	104	99	95	92	97	93	91	94	92	89	92	90	88	87
4	102	96	91	88	100	95	90	87	93	89	86	91	88	85	89	86	84	83
5	98	91	87	83	97	91	86	83	89	85	82	87	84	82	86	83	81	80
6	95	88	83	80	94	87	83	79	86	82	79	84	81	78	83	80	78	77
7	92	84	80	76	91	84	79	76	83	79	76	81	78	75	80	77	75	74
8	89	81	77	73	88	81	76	73	80	76	73	79	75	73	78	75	72	71
9	86	78	74	71	85	78	74	71	77	73	70	76	73	70	76	72	70	69
10	83	76	71	68	83	76	71	68	75	71	68	74	70	68	73	70	68	67

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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	8.5	9.4	8.8	9.7	10.1	8.5	9.4	8.8	9.7	10.1
	3H	9.3	10.2	9.7	10.5	10.9	9.3	10.2	9.7	10.5	10.9
	4H	9.6	10.4	10.0	10.7	11.1	9.6	10.4	10.0	10.7	11.1
	6H	9.7	10.5	10.2	10.8	11.2	9.7	10.5	10.2	10.8	11.2
	8H	9.8	10.5	10.2	10.9	11.3	9.8	10.5	10.2	10.9	11.3
	12H	9.8	10.4	10.2	10.8	11.3	9.8	10.4	10.2	10.8	11.3

### UGR Viewed Endwise

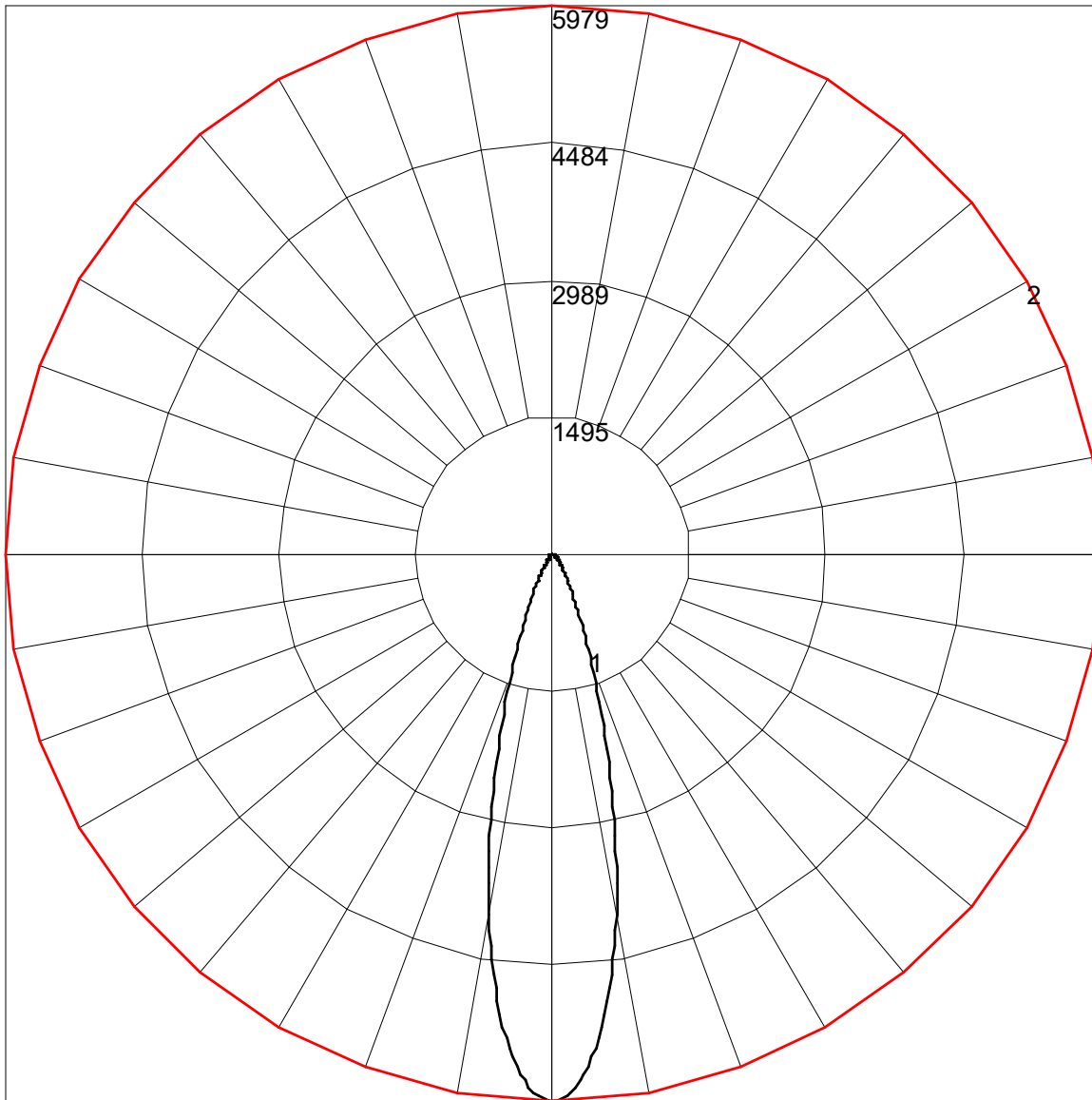
4H	2H	8.7	9.5	9.1	9.8	10.2	8.7	9.5	9.1	9.8	10.2
	3H	9.7	10.4	10.1	10.8	11.2	9.7	10.4	10.1	10.8	11.2
	4H	10.1	10.6	10.5	11.0	11.5	10.1	10.6	10.5	11.0	11.5
	6H	10.3	10.8	10.8	11.2	11.7	10.3	10.8	10.8	11.2	11.7
	8H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8
	12H	10.4	10.8	10.9	11.3	11.8	10.4	10.8	10.9	11.3	11.8

8H	4H	10.1	10.5	10.6	11.0	11.5	10.1	10.5	10.6	11.0	11.5
	6H	10.4	10.8	11.0	11.3	11.8	10.4	10.8	11.0	11.3	11.8
	8H	10.6	10.9	11.1	11.4	11.9	10.6	10.9	11.1	11.4	11.9
	12H	10.7	11.0	11.2	11.5	12.0	10.7	11.0	11.2	11.5	12.0

12H	4H	10.1	10.4	10.5	10.9	11.4	10.1	10.4	10.5	10.9	11.4
	6H	10.4	10.8	11.0	11.2	11.8	10.4	10.8	11.0	11.2	11.8
	8H	10.6	10.9	11.1	11.4	12.0	10.6	10.9	11.1	11.4	12.0

Maximum UGR = 12.0

POLAR GRAPH



Maximum Candela = 5978.858 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.)