



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 6CR-TL-L20-927-XXX-DIM-UNV-LW-CS-XX\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.07

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 27-JAN-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 6CR-TL-L20-927-xxx-DIM-UNV-LW-CS-xx

[LUMINAIRE] 6" DIA. SURFACE CYLINDER

[LAMP] One white LED

[\_SEARCH\_SOURCETYPE] LED

[\_SEARCH\_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight

[\_SEARCH\_MOUNTING] Surface

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1028
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	52
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.00
Spacing Criterion (90-270)	1.00
Spacing Criterion (Diagonal)	0.90
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.35 ft (Diameter)
Luminous Width (90-270)	0.35 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	28362	28362	28362
55	23305	23305	23305
65	17049	17049	17049
75	11803	11803	11803
85	6434	6434	6434

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CANDELA TABULATION

	<u>0</u>
0.0	721.957
0.5	721.729
1.0	721.273
1.5	720.665
2.0	720.056
2.5	719.372
3.0	718.460
3.5	717.927
4.0	717.547
4.5	717.319
5.0	717.015
5.5	716.711
6.0	716.483
6.5	716.178
7.0	715.950
7.5	715.798
8.0	715.722
8.5	715.494
9.0	715.266
9.5	714.810
10.0	714.506
10.5	713.973
11.0	713.441
11.5	712.757
12.0	711.997
12.5	711.084
13.0	710.020
13.5	708.803
14.0	707.282
14.5	705.457
15.0	703.252
15.5	700.591
16.0	697.626
16.5	694.128
17.0	690.326
17.5	686.068
18.0	681.050
18.5	675.880
19.0	670.253
19.5	663.942
20.0	657.023
20.5	649.495
21.0	641.360
21.5	632.615
22.0	622.959
22.5	612.694
23.0	601.669
23.5	589.807
24.0	577.033
24.5	563.423
25.0	548.672
25.5	533.237
26.0	516.737
26.5	499.249

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**CANDELA TABULATION - (Cont.)**

<b>27.0</b>	481.153
<b>27.5</b>	462.296
<b>28.0</b>	443.135
<b>28.5</b>	423.898
<b>29.0</b>	405.041
<b>29.5</b>	386.565
<b>30.0</b>	368.772
<b>30.5</b>	352.044
<b>31.0</b>	336.381
<b>31.5</b>	322.086
<b>32.0</b>	309.084
<b>32.5</b>	297.375
<b>33.0</b>	286.958
<b>33.5</b>	277.682
<b>34.0</b>	269.394
<b>34.5</b>	262.094
<b>35.0</b>	255.479
<b>35.5</b>	249.473
<b>36.0</b>	244.150
<b>36.5</b>	239.132
<b>37.0</b>	234.570
<b>37.5</b>	230.312
<b>38.0</b>	226.358
<b>38.5</b>	222.556
<b>39.0</b>	219.058
<b>39.5</b>	215.637
<b>40.0</b>	212.443
<b>40.5</b>	209.250
<b>41.0</b>	206.208
<b>41.5</b>	203.243
<b>42.0</b>	200.430
<b>42.5</b>	197.616
<b>43.0</b>	194.803
<b>43.5</b>	191.990
<b>44.0</b>	189.176
<b>44.5</b>	186.363
<b>45.0</b>	183.550
<b>45.5</b>	180.736
<b>46.0</b>	177.923
<b>46.5</b>	175.110
<b>47.0</b>	172.144
<b>47.5</b>	169.179
<b>48.0</b>	166.214
<b>48.5</b>	163.172
<b>49.0</b>	160.055
<b>49.5</b>	156.937
<b>50.0</b>	153.896
<b>50.5</b>	150.778
<b>51.0</b>	147.661
<b>51.5</b>	144.544
<b>52.0</b>	141.502
<b>52.5</b>	138.461
<b>53.0</b>	135.343
<b>53.5</b>	132.150
<b>54.0</b>	128.880
<b>54.5</b>	125.611

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**CANDELA TABULATION - (Cont.)**

<b>55.0</b>	122.341
<b>55.5</b>	119.072
<b>56.0</b>	115.878
<b>56.5</b>	112.761
<b>57.0</b>	109.643
<b>57.5</b>	106.526
<b>58.0</b>	103.484
<b>58.5</b>	100.519
<b>59.0</b>	97.554
<b>59.5</b>	94.664
<b>60.0</b>	91.851
<b>60.5</b>	89.038
<b>61.0</b>	86.300
<b>61.5</b>	83.639
<b>62.0</b>	80.978
<b>62.5</b>	78.317
<b>63.0</b>	75.777
<b>63.5</b>	73.253
<b>64.0</b>	70.774
<b>64.5</b>	68.333
<b>65.0</b>	65.946
<b>65.5</b>	63.619
<b>66.0</b>	61.323
<b>66.5</b>	59.087
<b>67.0</b>	56.905
<b>67.5</b>	54.761
<b>68.0</b>	52.685
<b>68.5</b>	50.655
<b>69.0</b>	48.625
<b>69.5</b>	46.663
<b>70.0</b>	44.755
<b>70.5</b>	42.876
<b>71.0</b>	41.044
<b>71.5</b>	39.257
<b>72.0</b>	37.531
<b>72.5</b>	35.828
<b>73.0</b>	34.170
<b>73.5</b>	32.558
<b>74.0</b>	30.977
<b>74.5</b>	29.449
<b>75.0</b>	27.958
<b>75.5</b>	26.514
<b>76.0</b>	25.099
<b>76.5</b>	23.723
<b>77.0</b>	22.408
<b>77.5</b>	21.100
<b>78.0</b>	19.838
<b>78.5</b>	18.613
<b>79.0</b>	17.412
<b>79.5</b>	16.256
<b>80.0</b>	15.123
<b>80.5</b>	14.021
<b>81.0</b>	12.934
<b>81.5</b>	11.877
<b>82.0</b>	10.843
<b>82.5</b>	9.839

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CANDELA TABULATION - (Cont.)

83.0	8.843
83.5	7.877
84.0	6.934
84.5	6.014
85.0	5.132
85.5	4.281
86.0	3.467
86.5	2.699
87.0	2.023
87.5	1.460
88.0	1.019
88.5	0.646
89.0	0.403
89.5	0.274
90.0	0.190
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
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129.5	0.000
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131.0	0.000
131.5	0.000
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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
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148.5	0.000
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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
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158.0	0.000
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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	265.19	N.A.	25.80
0-30	508.66	N.A.	49.50
0-40	674.51	N.A.	65.60
0-60	925.20	N.A.	90.00
0-80	1021.31	N.A.	99.40
0-90	1027.73	N.A.	100.00
10-90	959.35	N.A.	93.30
20-40	409.32	N.A.	39.80
20-50	550.68	N.A.	53.60
40-70	316.64	N.A.	30.80
60-80	96.10	N.A.	9.40
70-80	30.16	N.A.	2.90
80-90	6.43	N.A.	0.60
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	1027.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	68.38
10-20	196.81
20-30	243.47
30-40	165.85
40-50	141.36
50-60	109.34
60-70	65.94
70-80	30.16
80-90	6.43
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

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	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89
2	103	97	91	87	101	95	90	86	92	87	84	89	85	82	86	83	80	78
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70
4	90	80	73	67	88	79	72	67	76	70	66	74	69	65	72	68	64	62
5	84	73	66	60	82	72	65	60	70	64	59	68	63	59	67	62	58	56
6	79	67	60	54	77	66	59	54	65	58	54	63	58	53	62	57	53	51
7	74	62	55	50	72	62	54	49	60	54	49	59	53	49	58	52	49	47
8	69	58	51	46	68	57	50	45	56	50	45	55	49	45	54	49	45	43
9	66	54	47	42	64	53	47	42	52	46	42	51	46	42	50	45	41	40
10	62	51	44	39	61	50	43	39	49	43	39	48	43	39	47	42	39	37

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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

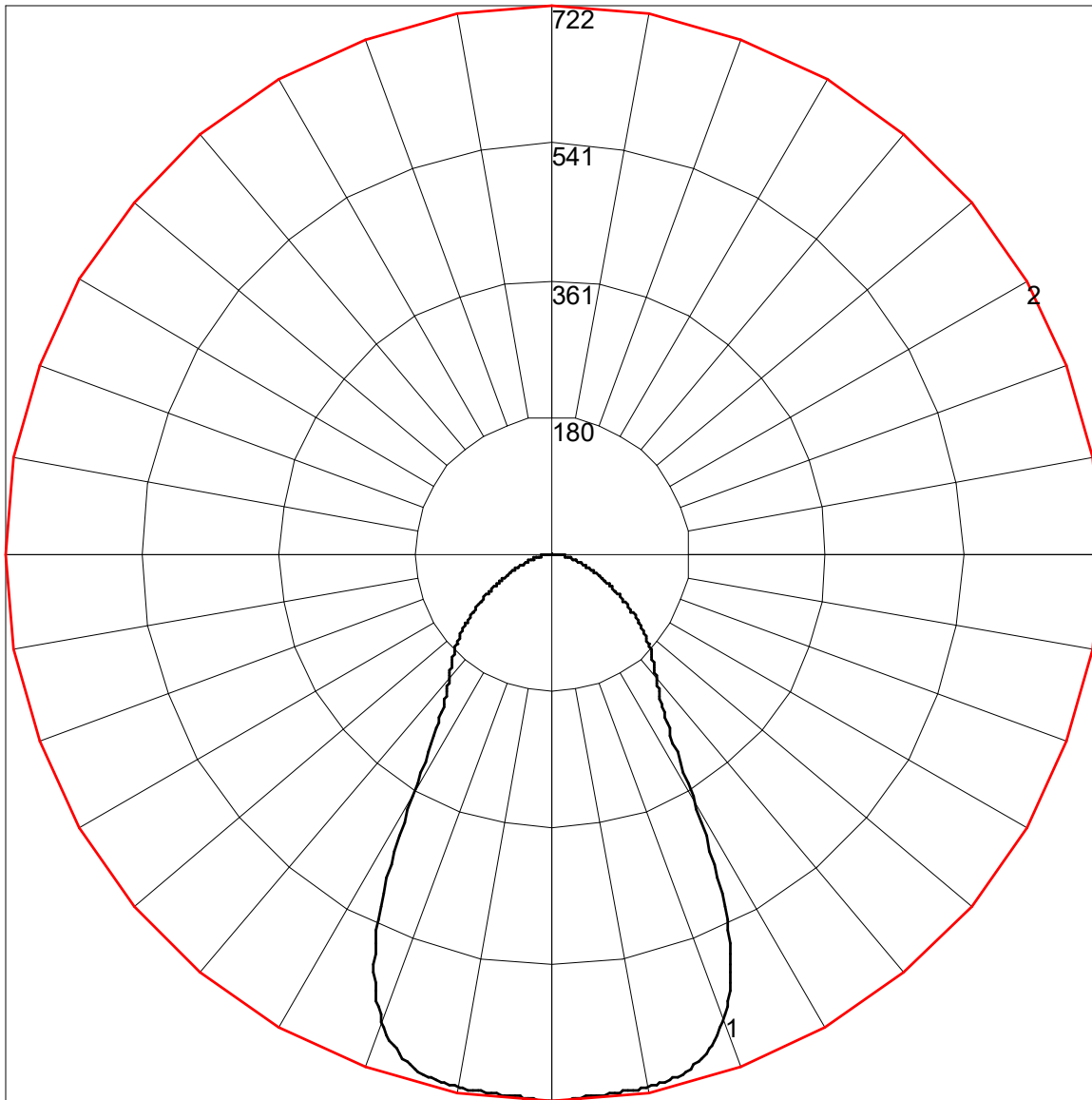
X=2H	Y=2H	20.7	22.1	21.1	22.4	22.7	20.7	22.1	21.1	22.4	22.7
	3H	21.8	23.0	22.2	23.4	23.7	21.8	23.0	22.2	23.4	23.7
	4H	22.2	23.3	22.6	23.7	24.0	22.2	23.3	22.6	23.7	24.0
	6H	22.4	23.4	22.8	23.8	24.2	22.4	23.4	22.8	23.8	24.2
	8H	22.4	23.4	22.9	23.8	24.2	22.4	23.4	22.9	23.8	24.2
	12H	22.4	23.4	22.9	23.8	24.2	22.4	23.4	22.9	23.8	24.2

### UGR Viewed Endwise

4H	2H	21.1	22.2	21.5	22.6	22.9	21.1	22.2	21.5	22.6	22.9
	3H	22.4	23.3	22.8	23.7	24.1	22.4	23.3	22.8	23.7	24.1
	4H	22.8	23.7	23.2	24.1	24.5	22.8	23.7	23.2	24.1	24.5
	6H	23.1	23.9	23.6	24.3	24.8	23.1	23.9	23.6	24.3	24.8
	8H	23.2	23.9	23.7	24.3	24.8	23.2	23.9	23.7	24.3	24.8
	12H	23.2	23.8	23.7	24.3	24.8	23.2	23.8	23.7	24.3	24.8
8H	4H	22.9	23.6	23.4	24.1	24.5	22.9	23.6	23.4	24.1	24.5
	6H	23.3	23.9	23.8	24.4	24.9	23.3	23.9	23.8	24.4	24.9
	8H	23.4	23.9	24.0	24.5	24.9	23.4	23.9	24.0	24.5	24.9
	12H	23.5	24.0	24.0	24.4	25.0	23.5	24.0	24.0	24.4	25.0
12H	4H	22.9	23.5	23.4	24.0	24.5	22.9	23.5	23.4	24.0	24.5
	6H	23.3	23.8	23.9	24.3	24.8	23.3	23.8	23.9	24.3	24.8
	8H	23.5	23.9	24.0	24.4	25.0	23.5	23.9	24.0	24.4	25.0

Maximum UGR = 25.0

POLAR GRAPH



Maximum Candela = 721.957 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.)