



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 6CR-TL-L20-830-XXX-DIM-UNV-LM-CS-XX_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.09

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 27-JAN-2021

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 6CR-TL-L20-830-xxx-DIM-UNV-LM-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	1722
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	87
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.56
Spacing Criterion (90-270)	0.56
Spacing Criterion (Diagonal)	0.54
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	13069	13069	13069
55	10186	10186	10186
65	8513	8513	8513
75	6849	6849	6849
85	4092	4092	4092

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CANDELA TABULATION

	<u>0</u>
0.0	4456.320
0.5	4454.400
1.0	4447.680
1.5	4437.120
2.0	4423.680
2.5	4405.440
3.0	4384.320
3.5	4359.360
4.0	4330.560
4.5	4299.840
5.0	4265.280
5.5	4226.880
6.0	4184.640
6.5	4137.600
7.0	4086.720
7.5	4031.040
8.0	3970.560
8.5	3905.280
9.0	3836.160
9.5	3761.280
10.0	3680.640
10.5	3594.240
11.0	3504.000
11.5	3408.960
12.0	3308.160
12.5	3203.520
13.0	3094.080
13.5	2980.800
14.0	2862.720
14.5	2740.800
15.0	2617.920
15.5	2493.120
16.0	2368.320
16.5	2242.560
17.0	2117.760
17.5	1996.800
18.0	1876.800
18.5	1761.600
19.0	1651.200
19.5	1544.640
20.0	1443.840
20.5	1346.880
21.0	1256.640
21.5	1171.200
22.0	1090.560
22.5	1015.680
23.0	945.024
23.5	879.168
24.0	818.016
24.5	760.896
25.0	707.904
25.5	658.656
26.0	612.480
26.5	569.856

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CANDELA TABULATION - (Cont.)

27.0	530.112
27.5	493.728
28.0	459.840
28.5	428.544
29.0	399.840
29.5	373.056
30.0	348.192
30.5	325.248
31.0	304.032
31.5	284.544
32.0	266.496
32.5	249.888
33.0	234.624
33.5	220.512
34.0	207.648
34.5	195.744
35.0	184.992
35.5	175.008
36.0	165.888
36.5	157.536
37.0	149.856
37.5	142.848
38.0	136.512
38.5	130.656
39.0	125.280
39.5	120.384
40.0	115.872
40.5	111.648
41.0	107.712
41.5	104.160
42.0	100.800
42.5	97.632
43.0	94.752
43.5	91.968
44.0	89.376
44.5	86.976
45.0	84.576
45.5	82.368
46.0	80.352
46.5	78.336
47.0	76.416
47.5	74.688
48.0	72.864
48.5	71.232
49.0	69.600
49.5	67.968
50.0	66.528
50.5	65.088
51.0	63.744
51.5	62.304
52.0	60.960
52.5	59.712
53.0	58.368
53.5	57.120
54.0	55.872
54.5	54.624

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CANDELA TABULATION - (Cont.)

55.0	53.472
55.5	52.320
56.0	51.168
56.5	50.016
57.0	48.768
57.5	47.712
58.0	46.656
58.5	45.696
59.0	44.640
59.5	43.584
60.0	42.528
60.5	41.472
61.0	40.608
61.5	39.552
62.0	38.592
62.5	37.632
63.0	36.672
63.5	35.808
64.0	34.848
64.5	33.888
65.0	32.928
65.5	32.064
66.0	31.200
66.5	30.336
67.0	29.376
67.5	28.512
68.0	27.648
68.5	26.784
69.0	25.920
69.5	25.056
70.0	24.192
70.5	23.424
71.0	22.656
71.5	21.696
72.0	20.928
72.5	20.160
73.0	19.392
73.5	18.528
74.0	17.760
74.5	16.992
75.0	16.224
75.5	15.456
76.0	14.688
76.5	13.920
77.0	13.152
77.5	12.576
78.0	11.808
78.5	11.136
79.0	10.464
79.5	9.792
80.0	9.120
80.5	8.448
81.0	7.776
81.5	7.296
82.0	6.528
82.5	6.048

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CANDELA TABULATION - (Cont.)

83.0	5.376
83.5	4.896
84.0	4.320
84.5	3.744
85.0	3.264
85.5	2.688
86.0	2.304
86.5	1.824
87.0	1.536
87.5	1.248
88.0	0.960
88.5	0.768
89.0	0.576
89.5	0.384
90.0	0.288
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

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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
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127.0	0.000
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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 : 6CR-TL-L20-830-XXX-DIM-UNV-LM-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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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	1089.21	N.A.	63.20
0-30	1430.52	N.A.	83.10
0-40	1553.56	N.A.	90.20
0-60	1668.25	N.A.	96.90
0-80	1718.25	N.A.	99.80
0-90	1722.32	N.A.	100.00
10-90	1333.39	N.A.	77.40
20-40	464.35	N.A.	27.00
20-50	530.98	N.A.	30.80
40-70	147.44	N.A.	8.60
60-80	50.00	N.A.	2.90
70-80	17.26	N.A.	1.00
80-90	4.06	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	1722.32	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	388.92
10-20	700.28
20-30	341.31
30-40	123.04
40-50	66.63
50-60	48.07
60-70	32.75
70-80	17.26
80-90	4.06
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	101	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	87	90	87	85	84
4	100	93	88	84	98	92	87	84	90	86	83	88	85	82	86	83	81	80
5	96	89	83	80	94	88	83	79	86	82	79	84	81	78	83	80	77	76
6	92	84	79	75	91	84	79	75	82	78	75	81	77	74	80	76	74	72
7	89	81	76	72	88	80	75	72	79	75	71	78	74	71	77	73	71	69
8	86	77	72	69	84	77	72	69	76	71	68	75	71	68	74	70	68	67
9	83	74	69	66	82	74	69	66	73	69	66	72	68	65	71	68	65	64
10	80	72	67	63	79	71	66	63	70	66	63	70	66	63	69	65	63	62

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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

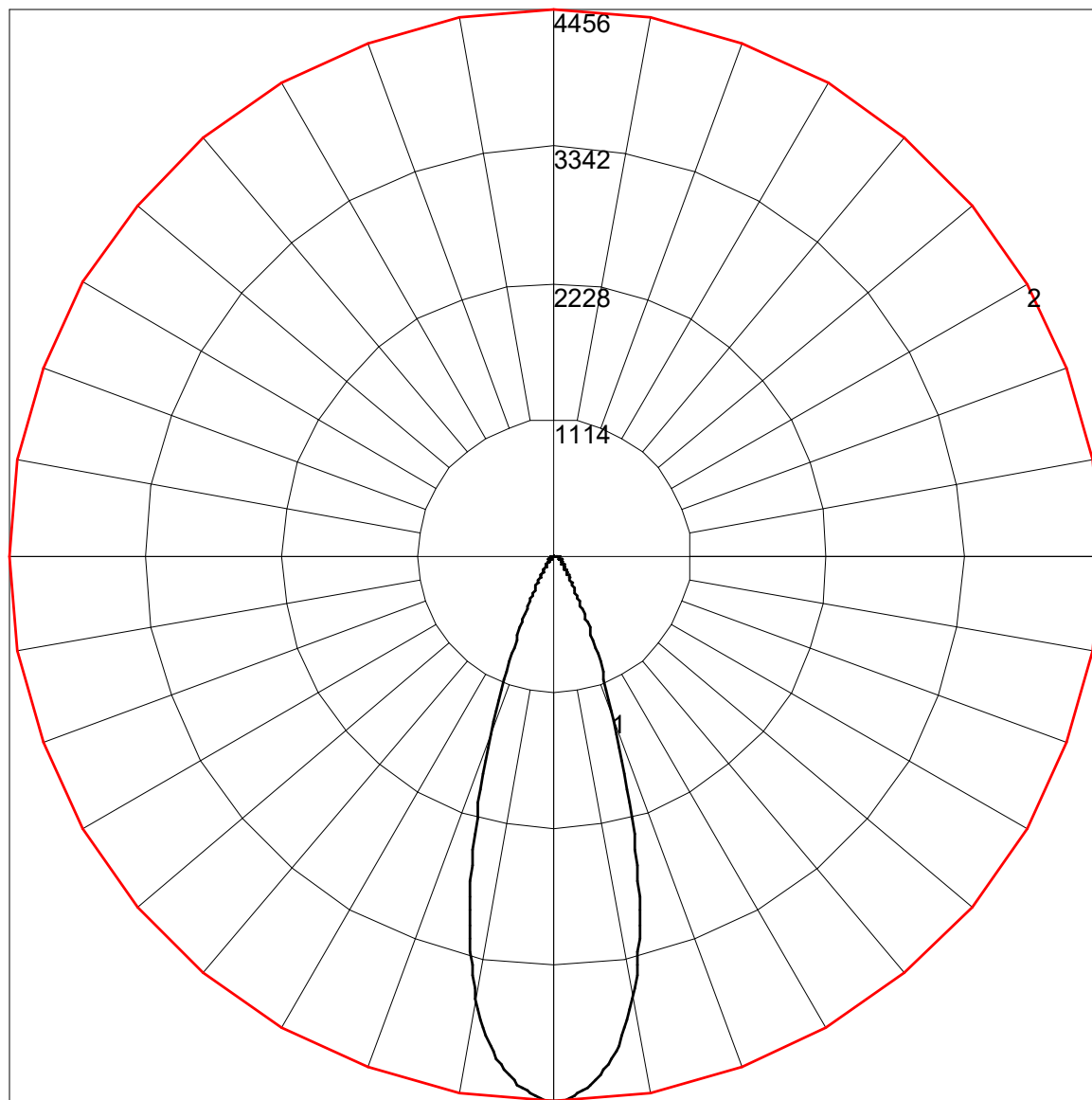
X=2H	Y=2H	13.8	14.9	14.2	15.2	15.5	13.8	14.9	14.2	15.2	15.5
	3H	15.3	16.2	15.7	16.5	16.9	15.3	16.2	15.7	16.5	16.9
	4H	15.8	16.6	16.2	17.0	17.4	15.8	16.6	16.2	17.0	17.4
	6H	16.1	16.9	16.5	17.3	17.7	16.1	16.9	16.5	17.3	17.7
	8H	16.2	16.9	16.7	17.3	17.7	16.2	16.9	16.7	17.3	17.7
	12H	16.2	16.9	16.7	17.3	17.7	16.2	16.9	16.7	17.3	17.7

UGR Viewed Endwise

4H	2H	14.3	15.1	14.7	15.5	15.9	14.3	15.1	14.7	15.5	15.9
	3H	15.9	16.6	16.3	17.0	17.4	15.9	16.6	16.3	17.0	17.4
	4H	16.6	17.2	17.0	17.6	18.0	16.6	17.2	17.0	17.6	18.0
	6H	17.0	17.5	17.5	18.0	18.4	17.0	17.5	17.5	18.0	18.4
	8H	17.1	17.6	17.6	18.0	18.5	17.1	17.6	17.6	18.0	18.5
	12H	17.1	17.6	17.6	18.0	18.5	17.1	17.6	17.6	18.0	18.5
8H	4H	16.7	17.2	17.2	17.7	18.1	16.7	17.2	17.2	17.7	18.1
	6H	17.2	17.6	17.8	18.1	18.6	17.2	17.6	17.8	18.1	18.6
	8H	17.4	17.8	17.9	18.3	18.8	17.4	17.8	17.9	18.3	18.8
	12H	17.5	17.8	18.0	18.3	18.9	17.5	17.8	18.0	18.3	18.9
12H	4H	16.7	17.1	17.2	17.6	18.1	16.7	17.1	17.2	17.6	18.1
	6H	17.3	17.6	17.8	18.1	18.6	17.3	17.6	17.8	18.1	18.6
	8H	17.4	17.8	18.0	18.2	18.8	17.4	17.8	18.0	18.2	18.8

Maximum UGR = 18.9

POLAR GRAPH



Maximum Candela = 4456.32 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.)