

IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-940-DIM-UNV-SW-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.11

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 05/15/2023

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L20-940-DIM-UNV-SW-OF-WH

[LUMINAIRE] Black formed aluminum housing, white reflector, frosted pl

[MORE] astic lens enclosure

[LAMP] One white LED

[_SEARCH_SOURCETYPE] LED

[_SEARCH_APPLICATION] Indoor, Classroom, Commercial, Corridor, Hotel, Industrial, Office, Downlight

[_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	965
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	49
Total Luminaire Watts	19.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.20
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.28
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	34845	34845	34845
55	29742	29742	29742
65	25369	25369	25369
75	20978	20978	20978
85	12983	12983	12983

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CANDELA TABULATION

	<u>0</u>
0.0	406.263
0.5	406.191
1.0	405.974
1.5	405.756
2.0	405.322
2.5	404.887
3.0	404.308
3.5	403.729
4.0	403.149
4.5	402.570
5.0	402.063
5.5	401.484
6.0	400.904
6.5	400.325
7.0	399.673
7.5	398.949
8.0	398.225
8.5	397.501
9.0	396.704
9.5	395.908
10.0	395.039
10.5	394.170
11.0	393.228
11.5	392.214
12.0	391.200
12.5	390.114
13.0	388.956
13.5	387.724
14.0	386.421
14.5	385.045
15.0	383.597
15.5	382.148
16.0	380.627
16.5	379.179
17.0	377.586
17.5	375.993
18.0	374.400
18.5	372.806
19.0	371.213
19.5	369.620
20.0	368.027
20.5	366.434
21.0	364.768
21.5	363.030
22.0	361.220
22.5	359.192
23.0	357.164
23.5	354.919
24.0	352.674
24.5	350.284
25.0	347.822
25.5	345.360
26.0	342.753
26.5	340.146

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CANDELA TABULATION - (Cont.)

27.0	337.467
27.5	334.715
28.0	331.963
28.5	329.283
29.0	326.604
29.5	323.852
30.0	321.173
30.5	318.348
31.0	315.452
31.5	312.627
32.0	309.731
32.5	306.834
33.0	303.865
33.5	300.823
34.0	297.854
34.5	294.813
35.0	291.771
35.5	288.657
36.0	285.543
36.5	282.357
37.0	279.170
37.5	275.984
38.0	272.725
38.5	269.394
39.0	266.208
39.5	262.876
40.0	259.545
40.5	256.286
41.0	252.883
41.5	249.624
42.0	246.220
42.5	242.889
43.0	239.485
43.5	236.009
44.0	232.533
44.5	229.057
45.0	225.509
45.5	222.033
46.0	218.484
46.5	214.936
47.0	211.387
47.5	207.766
48.0	204.218
48.5	200.597
49.0	197.049
49.5	193.500
50.0	189.952
50.5	186.476
51.0	183.000
51.5	179.524
52.0	176.120
52.5	172.716
53.0	169.385
53.5	166.054
54.0	162.723
54.5	159.464

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CANDELA TABULATION - (Cont.)

55.0	156.133
55.5	152.874
56.0	149.905
56.5	146.718
57.0	143.677
57.5	140.635
58.0	137.594
58.5	134.552
59.0	131.655
59.5	128.759
60.0	125.862
60.5	123.110
61.0	120.286
61.5	117.389
62.0	114.565
62.5	111.741
63.0	108.989
63.5	106.237
64.0	103.485
64.5	100.805
65.0	98.126
65.5	95.447
66.0	92.767
66.5	90.160
67.0	87.625
67.5	85.091
68.0	82.556
68.5	80.094
69.0	77.632
69.5	75.170
70.0	72.707
70.5	70.318
71.0	67.942
71.5	65.581
72.0	63.250
72.5	60.954
73.0	58.666
73.5	56.399
74.0	54.154
74.5	51.909
75.0	49.693
75.5	47.506
76.0	45.319
76.5	43.154
77.0	41.017
77.5	38.888
78.0	36.788
78.5	34.724
79.0	32.675
79.5	30.647
80.0	28.670
80.5	26.722
81.0	24.796
81.5	22.884
82.0	21.008
82.5	19.162

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CANDELA TABULATION - (Cont.)

83.0	17.337
83.5	15.534
84.0	13.774
84.5	12.043
85.0	10.356
85.5	8.741
86.0	7.235
86.5	5.917
87.0	4.714
87.5	3.635
88.0	2.708
88.5	1.977
89.0	1.376
89.5	0.891
90.0	0.550
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
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117.5	0.000
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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
148.0	0.000
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152.0	0.000
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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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	146.28	N.A.	15.20
0-30	306.07	N.A.	31.70
0-40	488.24	N.A.	50.60
0-60	801.99	N.A.	83.10
0-80	952.16	N.A.	98.70
0-90	964.96	N.A.	100.00
10-90	926.80	N.A.	96.00
20-40	341.96	N.A.	35.40
20-50	515.63	N.A.	53.40
40-70	411.19	N.A.	42.60
60-80	150.17	N.A.	15.60
70-80	52.73	N.A.	5.50
80-90	12.80	N.A.	1.30
90-110	0.02	N.A.	0.00
90-120	0.02	N.A.	0.00
90-130	0.02	N.A.	0.00
90-150	0.02	N.A.	0.00
90-180	0.02	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	964.97	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	38.16
10-20	108.11
20-30	159.79
30-40	182.17
40-50	173.67
50-60	140.08
60-70	97.44
70-80	52.73
80-90	12.80
90-100	0.02
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	110	105	101	98	107	103	99	96	99	96	93	95	92	90	91	89	87	85
2	100	92	86	81	98	91	85	80	87	82	78	84	80	76	81	77	74	72
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	65	58	82	72	64	58	69	62	57	67	61	56	65	60	56	53
5	78	66	57	51	76	65	56	50	62	55	50	60	54	49	59	53	49	47
6	72	59	51	45	70	58	50	44	57	49	44	55	49	44	53	48	43	41
7	67	54	46	40	65	53	45	40	52	45	39	50	44	39	49	43	39	37
8	63	49	41	36	61	49	41	35	48	40	35	46	40	35	45	39	35	33
9	59	46	38	32	57	45	37	32	44	37	32	43	36	32	42	36	32	30
10	55	42	34	29	54	42	34	29	41	34	29	40	33	29	39	33	29	27

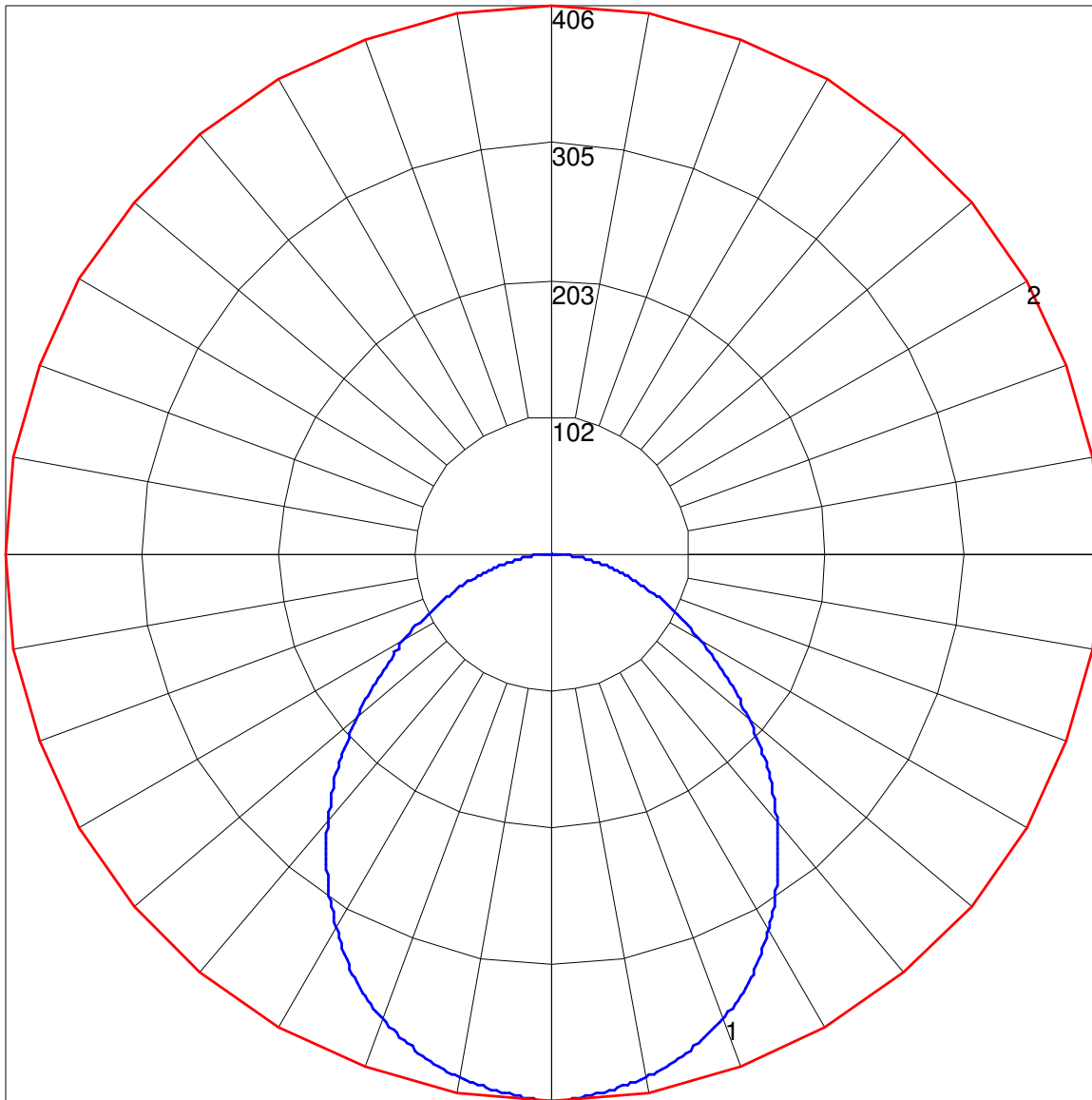
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UGR TABLE - CORRECTED

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					UGR Viewed Endwise				
X=2H	Y=2H	22.6	24.2	23.0	24.5	24.8	22.6	24.2	23.0	24.5	24.8
	3H	24.2	25.6	24.6	26.0	26.3	24.2	25.6	24.6	26.0	26.3
	4H	24.8	26.1	25.2	26.5	26.8	24.8	26.1	25.2	26.5	26.8
	6H	25.2	26.4	25.6	26.8	27.2	25.2	26.4	25.6	26.8	27.2
	8H	25.3	26.5	25.7	26.9	27.3	25.3	26.5	25.7	26.9	27.3
	12H	25.4	26.5	25.8	26.9	27.3	25.4	26.5	25.8	26.9	27.3
4H	2H	23.2	24.5	23.6	24.9	25.2	23.2	24.5	23.6	24.9	25.2
	3H	25.0	26.1	25.4	26.5	26.9	25.0	26.1	25.4	26.5	26.9
	4H	25.7	26.7	26.1	27.1	27.5	25.7	26.7	26.1	27.1	27.5
	6H	26.2	27.1	26.6	27.5	28.0	26.2	27.1	26.6	27.5	28.0
	8H	26.3	27.2	26.8	27.6	28.1	26.3	27.2	26.8	27.6	28.1
	12H	26.4	27.2	26.9	27.6	28.1	26.4	27.2	26.9	27.6	28.1
8H	4H	25.9	26.7	26.4	27.2	27.7	25.9	26.7	26.4	27.2	27.7
	6H	26.5	27.2	27.0	27.7	28.2	26.5	27.2	27.0	27.7	28.2
	8H	26.8	27.4	27.3	27.9	28.4	26.8	27.4	27.3	27.9	28.4
	12H	26.9	27.4	27.4	27.9	28.5	26.9	27.4	27.4	27.9	28.5
12H	4H	26.0	26.7	26.4	27.2	27.6	26.0	26.7	26.4	27.2	27.6
	6H	26.6	27.2	27.1	27.7	28.2	26.6	27.2	27.1	27.7	28.2
	8H	26.8	27.4	27.4	27.9	28.4	26.8	27.4	27.4	27.9	28.4

Maximum UGR = 28.5

POLAR GRAPH



Maximum Candela = 406.263 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)