



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-930-DIM-UNV-SM-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN FROM 12316380.09

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 27 DEC 2023

[MANUFAC] WILLIAMS INDOOR

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

[LUMCAT] 4DR-TL-L20-930-DIM-UNV-SM-OF-WH

[LUMINAIRE] Black formed aluminum housing, white reflector, clear plas

[MORE] tic optic, clear glass patterned 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	1204
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	61
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	9136	9136	9136
55	7121	7121	7121
65	5951	5951	5951
75	4788	4788	4788
85	2861	2861	2861

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CANDELA TABULATION

	<u>0</u>
0.0	3115.366
0.5	3114.024
1.0	3109.326
1.5	3101.944
2.0	3092.548
2.5	3079.797
3.0	3065.032
3.5	3047.583
4.0	3027.449
4.5	3005.973
5.0	2981.812
5.5	2954.967
6.0	2925.438
6.5	2892.553
7.0	2856.983
7.5	2818.058
8.0	2775.777
8.5	2730.140
9.0	2681.819
9.5	2629.471
10.0	2573.097
10.5	2512.695
11.0	2449.609
11.5	2383.168
12.0	2312.700
12.5	2239.547
13.0	2163.039
13.5	2083.846
14.0	2001.297
14.5	1916.064
15.0	1830.160
15.5	1742.914
16.0	1655.668
16.5	1567.750
17.0	1480.504
17.5	1395.942
18.0	1312.051
18.5	1231.516
19.0	1154.337
19.5	1079.842
20.0	1009.373
20.5	941.590
21.0	878.504
21.5	818.774
22.0	762.399
22.5	710.051
23.0	660.656
23.5	614.617
24.0	571.866
24.5	531.934
25.0	494.888
25.5	460.459
26.0	428.178
26.5	398.380

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CANDELA TABULATION - (Cont.)

27.0	370.596
27.5	345.160
28.0	321.469
28.5	299.591
29.0	279.524
29.5	260.800
30.0	243.417
30.5	227.377
31.0	212.546
31.5	198.922
32.0	186.305
32.5	174.694
33.0	164.023
33.5	154.158
34.0	145.165
34.5	136.843
35.0	129.326
35.5	122.346
36.0	115.971
36.5	110.132
37.0	104.763
37.5	99.864
38.0	95.434
38.5	91.340
39.0	87.582
39.5	84.159
40.0	81.005
40.5	78.052
41.0	75.300
41.5	72.817
42.0	70.468
42.5	68.254
43.0	66.240
43.5	64.294
44.0	62.482
44.5	60.804
45.0	59.126
45.5	57.583
46.0	56.173
46.5	54.764
47.0	53.422
47.5	52.214
48.0	50.938
48.5	49.798
49.0	48.657
49.5	47.516
50.0	46.509
50.5	45.502
51.0	44.563
51.5	43.556
52.0	42.616
52.5	41.744
53.0	40.804
53.5	39.932
54.0	39.060
54.5	38.187

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CANDELA TABULATION - (Cont.)

55.0	37.382
55.5	36.576
56.0	35.771
56.5	34.966
57.0	34.093
57.5	33.355
58.0	32.617
58.5	31.946
59.0	31.207
59.5	30.469
60.0	29.731
60.5	28.993
61.0	28.389
61.5	27.650
62.0	26.979
62.5	26.308
63.0	25.637
63.5	25.033
64.0	24.362
64.5	23.691
65.0	23.020
65.5	22.416
66.0	21.812
66.5	21.208
67.0	20.536
67.5	19.932
68.0	19.328
68.5	18.724
69.0	18.120
69.5	17.516
70.0	16.912
70.5	16.375
71.0	15.839
71.5	15.167
72.0	14.631
72.5	14.094
73.0	13.557
73.5	12.953
74.0	12.416
74.5	11.879
75.0	11.342
75.5	10.805
76.0	10.268
76.5	9.731
77.0	9.194
77.5	8.792
78.0	8.255
78.5	7.785
79.0	7.315
79.5	6.845
80.0	6.376
80.5	5.906
81.0	5.436
81.5	5.101
82.0	4.564
82.5	4.228

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CANDELA TABULATION - (Cont.)

83.0	3.758
83.5	3.423
84.0	3.020
84.5	2.617
85.0	2.282
85.5	1.879
86.0	1.611
86.5	1.275
87.0	1.074
87.5	0.872
88.0	0.671
88.5	0.537
89.0	0.403
89.5	0.268
90.0	0.201
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
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
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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
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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	761.45	N.A.	63.20
0-30	1000.06	N.A.	83.10
0-40	1086.07	N.A.	90.20
0-60	1166.26	N.A.	96.90
0-80	1201.21	N.A.	99.80
0-90	1204.05	N.A.	100.00
10-90	932.16	N.A.	77.40
20-40	324.62	N.A.	27.00
20-50	371.20	N.A.	30.80
40-70	103.08	N.A.	8.60
60-80	34.96	N.A.	2.90
70-80	12.06	N.A.	1.00
80-90	2.84	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	1204.06	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	271.89
10-20	489.56
20-30	238.61
30-40	86.01
40-50	46.58
50-60	33.60
60-70	22.89
70-80	12.06
80-90	2.84
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	88	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	74	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

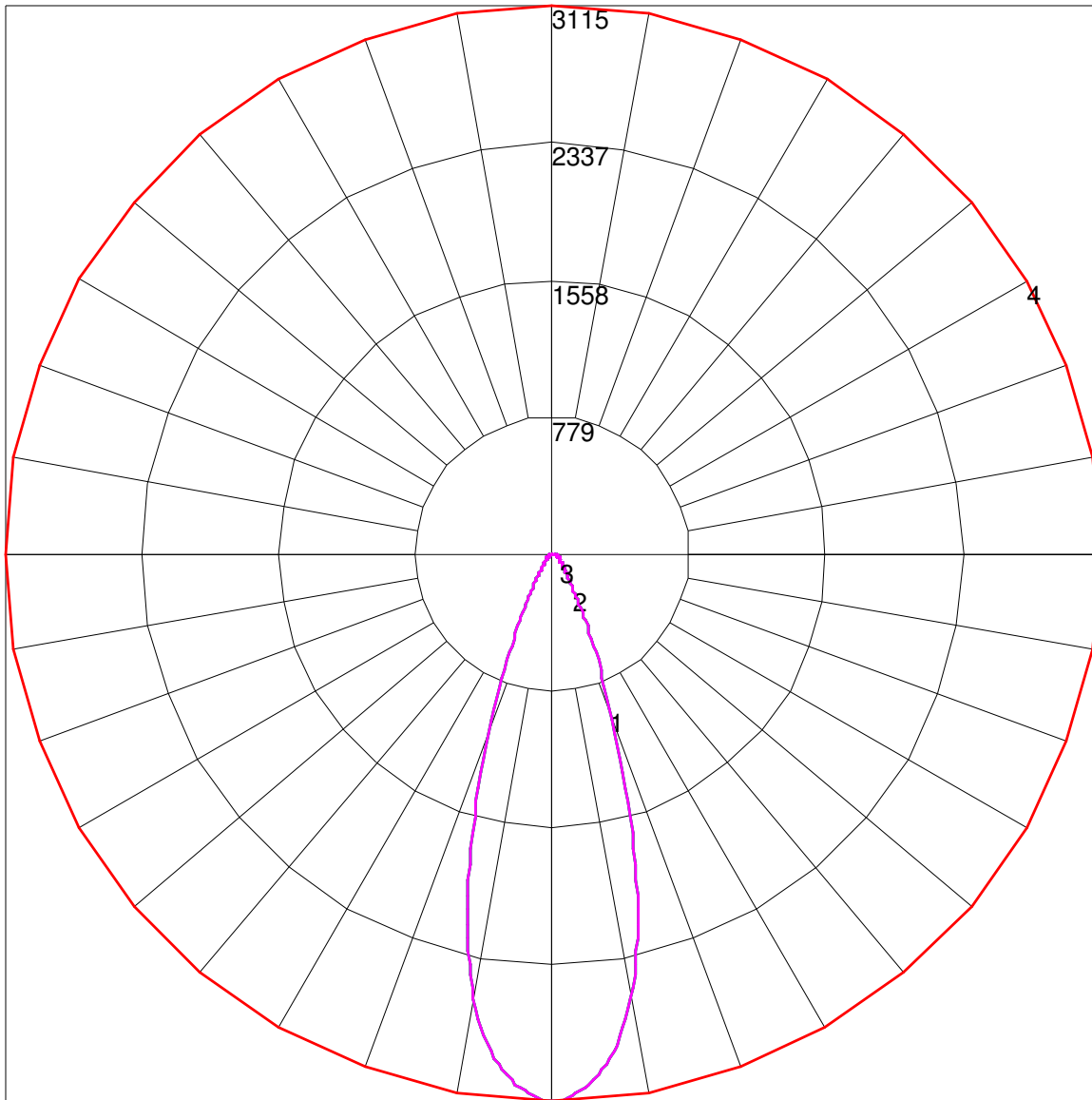
Reflectances

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					UGR Viewed Endwise				
X=2H	Y=2H	12.5	13.6	12.9	13.9	14.2	12.5	13.6	12.9	13.9	14.2
	3H	14.0	14.9	14.4	15.2	15.6	14.0	14.9	14.4	15.2	15.6
	4H	14.5	15.3	14.9	15.7	16.1	14.5	15.3	14.9	15.7	16.1
	6H	14.8	15.6	15.2	16.0	16.4	14.8	15.6	15.2	16.0	16.4
	8H	14.9	15.6	15.3	16.0	16.4	14.9	15.6	15.3	16.0	16.4
	12H	14.9	15.6	15.4	16.0	16.4	14.9	15.6	15.4	16.0	16.4
4H	2H	13.0	13.8	13.4	14.2	14.6	13.0	13.8	13.4	14.2	14.6
	3H	14.6	15.3	15.0	15.7	16.1	14.6	15.3	15.0	15.7	16.1
	4H	15.3	15.9	15.7	16.3	16.7	15.3	15.9	15.7	16.3	16.7
	6H	15.7	16.2	16.2	16.7	17.1	15.7	16.2	16.2	16.7	17.1
	8H	15.8	16.3	16.3	16.7	17.2	15.8	16.3	16.3	16.7	17.2
	12H	15.8	16.3	16.3	16.7	17.2	15.8	16.3	16.3	16.7	17.2
8H	4H	15.4	15.9	15.9	16.3	16.8	15.4	15.9	15.9	16.3	16.8
	6H	15.9	16.3	16.5	16.8	17.3	15.9	16.3	16.5	16.8	17.3
	8H	16.1	16.5	16.6	17.0	17.5	16.1	16.5	16.6	17.0	17.5
	12H	16.2	16.5	16.7	17.0	17.6	16.2	16.5	16.7	17.0	17.6
12H	4H	15.4	15.8	15.9	16.3	16.8	15.4	15.8	15.9	16.3	16.8
	6H	16.0	16.3	16.5	16.8	17.3	16.0	16.3	16.5	16.8	17.3
	8H	16.1	16.5	16.7	16.9	17.5	16.1	16.5	16.7	16.9	17.5

Maximum UGR = 17.6

POLAR GRAPH



Maximum Candela = 3115.366 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Vertical Plane Through Horizontal Angles (5 - 185)
3 - Vertical Plane Through Horizontal Angles (10 - 190)
4 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)