



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-827-DIM-UNV-RW-OF-BL_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.12
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 08-23-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-827-DIM-UNV-RW-OF-BL
 [LUMINAIRE] Black formed aluminum housing, black reflector, black trim/flange, clear glas
 [MORE] s patterned 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	962
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)	0.98
Spacing Criterion (90-270)	0.98
Spacing Criterion (Diagonal)	0.88
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.38 ft (Diameter)
Luminous Width (90-270)	0.38 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	22248	22248	22248
55	17964	17964	17964
65	11621	11621	11621
75	6480	6480	6480
85	3329	3329	3329

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CANDELA TABULATION

	<u>0</u>
0.0	772.588
0.5	772.588
1.0	771.862
1.5	770.408
2.0	768.954
2.5	767.501
3.0	765.320
3.5	763.140
4.0	760.960
4.5	758.052
5.0	755.872
5.5	752.965
6.0	750.058
6.5	747.150
7.0	744.243
7.5	741.336
8.0	738.429
8.5	734.795
9.0	731.888
9.5	728.980
10.0	726.219
10.5	723.239
11.0	720.186
11.5	717.206
12.0	714.372
12.5	711.537
13.0	708.703
13.5	705.795
14.0	702.888
14.5	699.981
15.0	697.001
15.5	693.949
16.0	690.751
16.5	687.553
17.0	684.282
17.5	680.794
18.0	677.087
18.5	673.089
19.0	669.237
19.5	665.095
20.0	660.589
20.5	655.428
21.0	649.468
21.5	643.000
22.0	635.587
22.5	627.374
23.0	618.071
23.5	607.605
24.0	596.121
24.5	583.112
25.0	568.576
25.5	552.513
26.0	535.143
26.5	516.682

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CANDELA TABULATION - (Cont.)

27.0	497.277
27.5	477.580
28.0	456.939
28.5	436.516
29.0	416.166
29.5	395.815
30.0	375.828
30.5	356.205
31.0	337.671
31.5	319.719
32.0	302.785
32.5	287.013
33.0	272.405
33.5	259.250
34.0	247.403
34.5	237.082
35.0	227.997
35.5	220.293
36.0	213.534
36.5	207.865
37.0	202.850
37.5	198.562
38.0	194.637
38.5	191.148
39.0	188.023
39.5	185.189
40.0	182.645
40.5	180.246
41.0	177.921
41.5	175.813
42.0	173.705
42.5	171.743
43.0	169.780
43.5	167.745
44.0	165.710
44.5	163.675
45.0	161.568
45.5	159.387
46.0	157.134
46.5	154.808
47.0	152.410
47.5	149.939
48.0	147.468
48.5	144.851
49.0	142.162
49.5	139.328
50.0	136.493
50.5	133.586
51.0	130.533
51.5	127.553
52.0	124.501
52.5	121.448
53.0	118.541
53.5	115.343
54.0	112.145
54.5	108.947

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CANDELA TABULATION - (Cont.)

55.0	105.822
55.5	102.624
56.0	99.499
56.5	96.446
57.0	93.394
57.5	90.341
58.0	87.361
58.5	84.454
59.0	81.547
59.5	78.712
60.0	75.878
60.5	73.116
61.0	70.427
61.5	67.738
62.0	65.194
62.5	62.577
63.0	60.106
63.5	57.563
64.0	55.164
64.5	52.766
65.0	50.440
65.5	48.114
66.0	45.861
66.5	43.681
67.0	41.573
67.5	39.465
68.0	37.430
68.5	35.395
69.0	33.433
69.5	31.543
70.0	29.799
70.5	28.127
71.0	26.601
71.5	25.147
72.0	23.766
72.5	22.458
73.0	21.223
73.5	20.132
74.0	19.042
74.5	18.097
75.0	17.225
75.5	16.426
76.0	15.554
76.5	14.754
77.0	13.955
77.5	13.155
78.0	12.428
78.5	11.629
79.0	10.902
79.5	10.175
80.0	9.448
80.5	8.722
81.0	8.067
81.5	7.413
82.0	6.687
82.5	6.105

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CANDELA TABULATION - (Cont.)

83.0	5.451
83.5	4.797
84.0	4.215
84.5	3.561
85.0	2.980
85.5	2.471
86.0	1.962
86.5	1.599
87.0	1.236
87.5	0.945
88.0	0.654
88.5	0.436
89.0	0.218
89.5	0.073
90.0	0.000
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
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118.5	0.000
119.0	0.000
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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
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160.5	0.000
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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	267.42	N.A.	27.80
0-30	517.49	N.A.	53.80
0-40	669.88	N.A.	69.60
0-60	888.36	N.A.	92.40
0-80	957.88	N.A.	99.60
0-90	961.81	N.A.	100.00
10-90	890.65	N.A.	92.60
20-40	402.46	N.A.	41.80
20-50	526.45	N.A.	54.70
40-70	269.01	N.A.	28.00
60-80	69.52	N.A.	7.20
70-80	18.98	N.A.	2.00
80-90	3.93	N.A.	0.40
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	961.81	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	71.16
10-20	196.26
20-30	250.07
30-40	152.39
40-50	123.99
50-60	94.49
60-70	50.53
70-80	18.98
80-90	3.93
90-100	0.00
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	112	108	105	102	109	106	103	101	102	100	97	98	96	95	95	93	92	90
2	104	98	93	89	102	96	92	88	93	89	86	90	87	84	87	84	82	80
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	77	74	72
4	91	82	75	70	89	80	74	69	78	73	68	76	71	67	74	70	67	65
5	85	75	68	63	84	74	67	62	72	66	62	70	65	61	69	64	61	59
6	80	69	62	57	78	68	62	57	67	61	56	65	60	56	64	59	55	54
7	75	64	57	52	74	64	57	52	62	56	52	61	55	51	60	55	51	49
8	71	60	53	48	70	59	53	48	58	52	48	57	51	47	56	51	47	46
9	67	56	49	44	66	56	49	44	54	48	44	54	48	44	53	48	44	42
10	64	53	46	41	63	52	46	41	51	45	41	50	45	41	50	45	41	39

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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	19.5	20.8	19.9	21.1	21.4	19.5	20.8	19.9	21.1	21.4
	3H	20.3	21.4	20.6	21.8	22.1	20.3	21.4	20.6	21.8	22.1
	4H	20.4	21.5	20.8	21.9	22.2	20.4	21.5	20.8	21.9	22.2
	6H	20.5	21.5	21.0	21.9	22.3	20.5	21.5	21.0	21.9	22.3
	8H	20.6	21.5	21.0	21.9	22.3	20.6	21.5	21.0	21.9	22.3
	12H	20.5	21.4	21.0	21.8	22.3	20.5	21.4	21.0	21.8	22.3

UGR Viewed Endwise

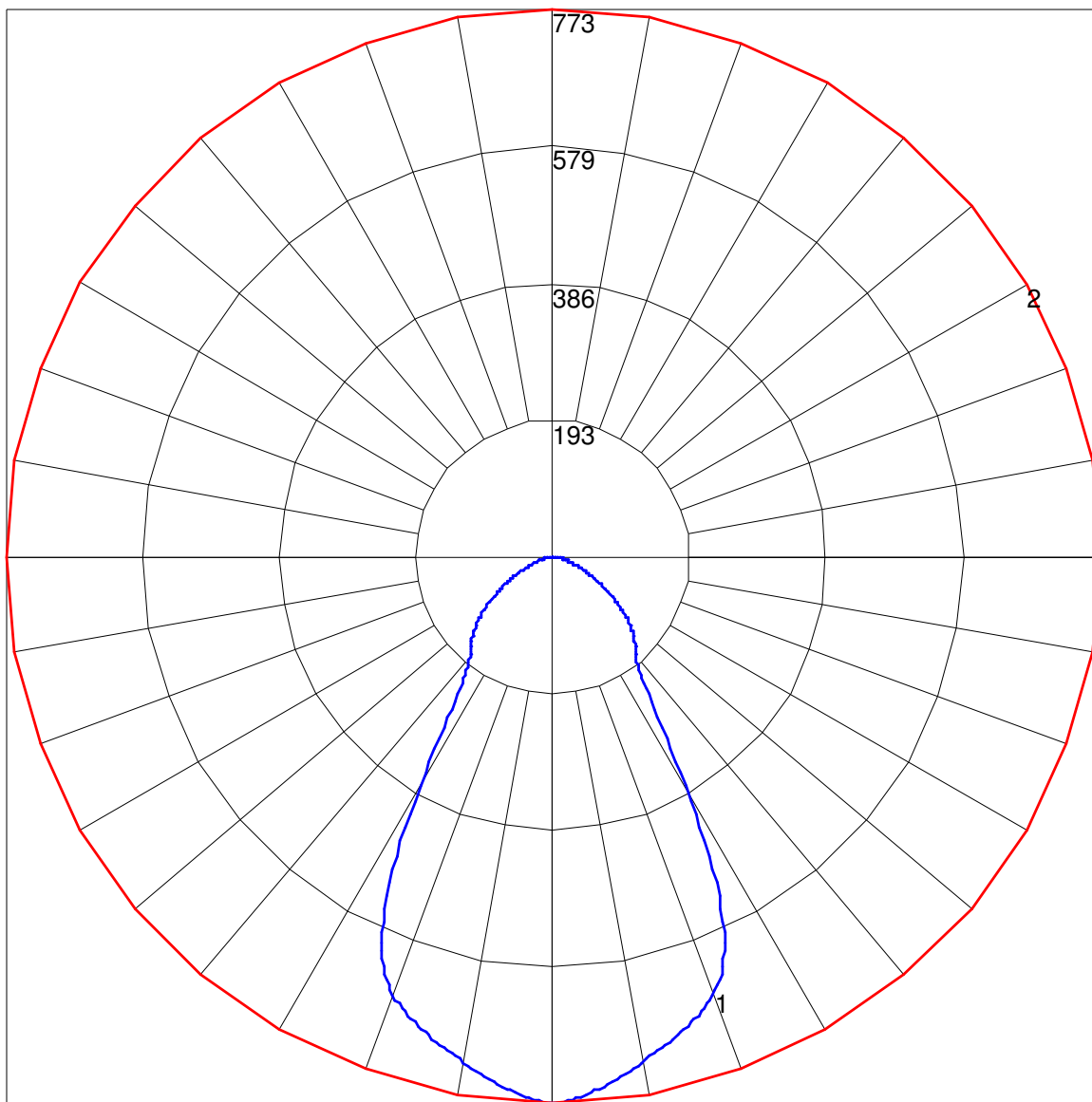
4H	2H	19.8	20.9	20.2	21.2	21.6	19.8	20.9	20.2	21.2	21.6
	3H	20.7	21.6	21.1	22.0	22.4	20.7	21.6	21.1	22.0	22.4
	4H	20.9	21.7	21.3	22.1	22.6	20.9	21.7	21.3	22.1	22.6
	6H	21.1	21.8	21.5	22.2	22.7	21.1	21.8	21.5	22.2	22.7
	8H	21.1	21.7	21.6	22.2	22.7	21.1	21.7	21.6	22.2	22.7
	12H	21.1	21.7	21.6	22.2	22.6	21.1	21.7	21.6	22.2	22.6

8H	4H	21.0	21.6	21.4	22.0	22.5	21.0	21.6	21.4	22.0	22.5
	6H	21.2	21.7	21.7	22.2	22.7	21.2	21.7	21.7	22.2	22.7
	8H	21.2	21.7	21.8	22.2	22.7	21.2	21.7	21.8	22.2	22.7
	12H	21.3	21.7	21.8	22.2	22.7	21.3	21.7	21.8	22.2	22.7

12H	4H	20.9	21.5	21.4	22.0	22.4	20.9	21.5	21.4	22.0	22.4
	6H	21.2	21.6	21.7	22.1	22.6	21.2	21.6	21.7	22.1	22.6
	8H	21.2	21.6	21.8	22.1	22.7	21.2	21.6	21.8	22.1	22.7

Maximum UGR = 22.7

POLAR GRAPH



Maximum Candela = 772.588 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.)