



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-835-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] 11/17/2020
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4DR-TL-L20-835-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	1149
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	58
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	41475	41475	41475
55	35401	35401	35401
65	30196	30196	30196
75	24970	24970	24970
85	15452	15452	15452

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CANDELA TABULATION

	<u>0</u>
0.0	483.563
0.5	483.476
1.0	483.218
1.5	482.959
2.0	482.442
2.5	481.925
3.0	481.235
3.5	480.546
4.0	479.856
4.5	479.167
5.0	478.563
5.5	477.874
6.0	477.184
6.5	476.495
7.0	475.719
7.5	474.857
8.0	473.995
8.5	473.133
9.0	472.185
9.5	471.237
10.0	470.202
10.5	469.168
11.0	468.047
11.5	466.841
12.0	465.634
12.5	464.341
13.0	462.962
13.5	461.496
14.0	459.945
14.5	458.307
15.0	456.583
15.5	454.859
16.0	453.049
16.5	451.325
17.0	449.429
17.5	447.532
18.0	445.636
18.5	443.740
19.0	441.844
19.5	439.947
20.0	438.051
20.5	436.155
21.0	434.172
21.5	432.103
22.0	429.948
22.5	427.535
23.0	425.121
23.5	422.449
24.0	419.777
24.5	416.933
25.0	414.002
25.5	411.071
26.0	407.968
26.5	404.865

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CANDELA TABULATION - (Cont.)

27.0	401.676
27.5	398.400
28.0	395.125
28.5	391.936
29.0	388.746
29.5	385.471
30.0	382.282
30.5	378.920
31.0	375.472
31.5	372.110
32.0	368.663
32.5	365.215
33.0	361.681
33.5	358.060
34.0	354.526
34.5	350.906
35.0	347.286
35.5	343.579
36.0	339.873
36.5	336.080
37.0	332.288
37.5	328.495
38.0	324.616
38.5	320.651
39.0	316.859
39.5	312.893
40.0	308.928
40.5	305.050
41.0	300.998
41.5	297.120
42.0	293.068
42.5	289.103
43.0	285.052
43.5	280.915
44.0	276.777
44.5	272.640
45.0	268.416
45.5	264.279
46.0	260.055
46.5	255.831
47.0	251.608
47.5	247.298
48.0	243.074
48.5	238.764
49.0	234.541
49.5	230.317
50.0	226.094
50.5	221.956
51.0	217.819
51.5	213.681
52.0	209.630
52.5	205.579
53.0	201.614
53.5	197.649
54.0	193.684
54.5	189.805

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CANDELA TABULATION - (Cont.)

55.0	185.840
55.5	181.961
56.0	178.427
56.5	174.634
57.0	171.014
57.5	167.394
58.0	163.773
58.5	160.153
59.0	156.705
59.5	153.257
60.0	149.810
60.5	146.534
61.0	143.172
61.5	139.725
62.0	136.363
62.5	133.001
63.0	129.726
63.5	126.450
64.0	123.175
64.5	119.986
65.0	116.796
65.5	113.607
66.0	110.418
66.5	107.315
67.0	104.298
67.5	101.281
68.0	98.264
68.5	95.333
69.0	92.403
69.5	89.472
70.0	86.541
70.5	83.697
71.0	80.870
71.5	78.060
72.0	75.284
72.5	72.552
73.0	69.828
73.5	67.130
74.0	64.458
74.5	61.786
75.0	59.148
75.5	56.545
76.0	53.942
76.5	51.365
77.0	48.822
77.5	46.288
78.0	43.788
78.5	41.331
79.0	38.892
79.5	36.478
80.0	34.125
80.5	31.807
81.0	29.514
81.5	27.238
82.0	25.006
82.5	22.808

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CANDELA TABULATION - (Cont.)

83.0	20.635
83.5	18.489
84.0	16.395
84.5	14.334
85.0	12.326
85.5	10.404
86.0	8.611
86.5	7.042
87.0	5.611
87.5	4.327
88.0	3.224
88.5	2.353
89.0	1.638
89.5	1.060
90.0	0.655
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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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
145.0	0.000
145.5	0.000
146.0	0.000
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161.0	0.000
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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	174.11	N.A.	15.20
0-30	364.30	N.A.	31.70
0-40	581.14	N.A.	50.60
0-60	954.58	N.A.	83.10
0-80	1133.33	N.A.	98.70
0-90	1148.56	N.A.	100.00
10-90	1103.14	N.A.	96.00
20-40	407.03	N.A.	35.40
20-50	613.74	N.A.	53.40
40-70	489.43	N.A.	42.60
60-80	178.74	N.A.	15.60
70-80	62.76	N.A.	5.50
80-90	15.24	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	1148.58	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	45.42
10-20	128.68
20-30	190.19
30-40	216.83
40-50	206.71
50-60	166.74
60-70	115.98
70-80	62.76
80-90	15.24
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	109	105	101	97	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	44	39	50	44	39	49	43	39	37
8	63	49	41	36	61	49	41	35	47	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

X=2H	Y=2H	23.2	24.8	23.6	25.1	25.4	23.2	24.8	23.6	25.1	25.4
	3H	24.8	26.2	25.2	26.6	26.9	24.8	26.2	25.2	26.6	26.9
	4H	25.4	26.7	25.8	27.1	27.4	25.4	26.7	25.8	27.1	27.4
	6H	25.8	27.0	26.2	27.4	27.8	25.8	27.0	26.2	27.4	27.8
	8H	25.9	27.1	26.3	27.5	27.9	25.9	27.1	26.3	27.5	27.9
	12H	26.0	27.1	26.4	27.5	27.9	26.0	27.1	26.4	27.5	27.9

UGR Viewed Endwise

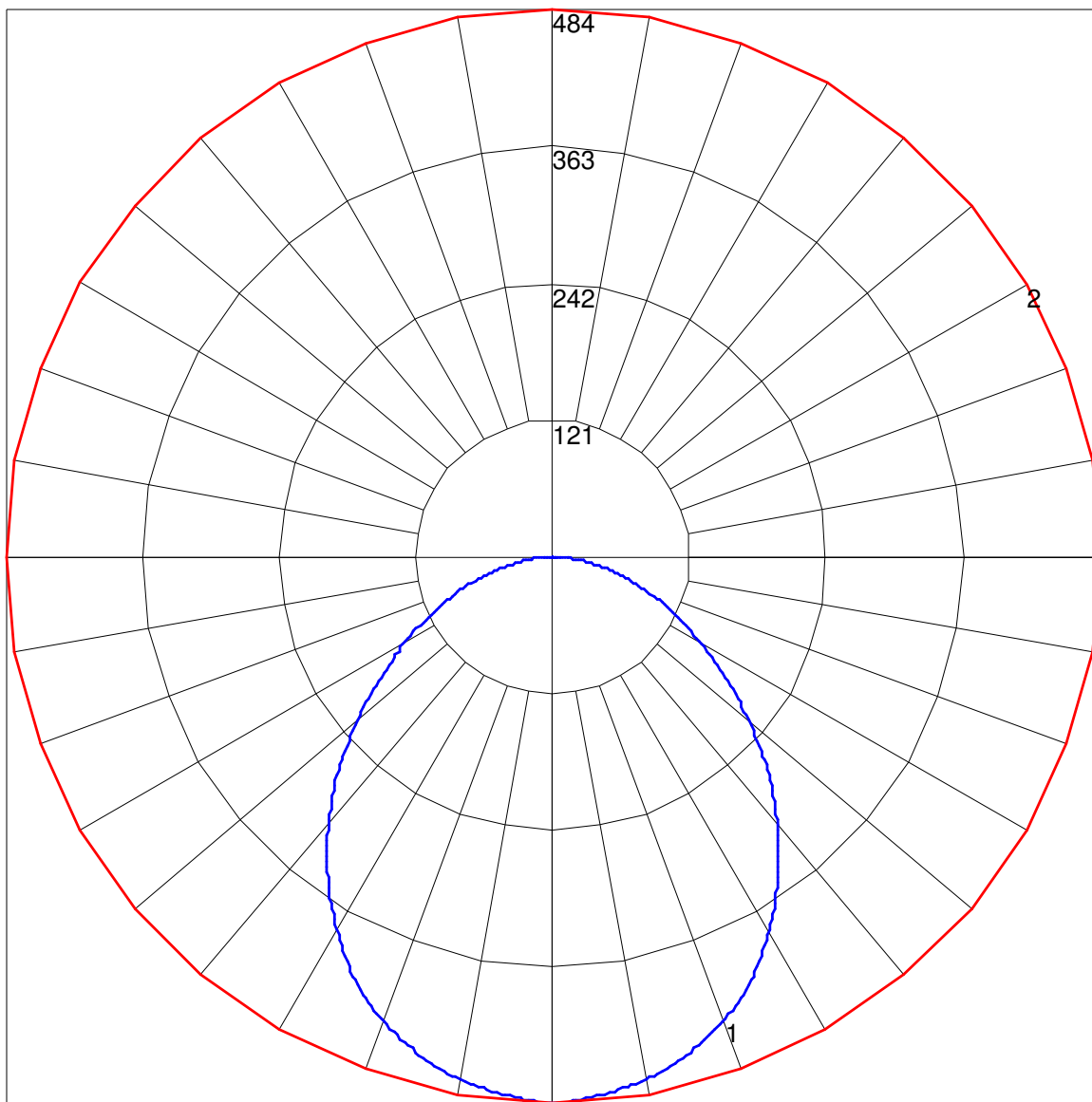
4H	2H	23.8	25.1	24.2	25.5	25.8	23.8	25.1	24.2	25.5	25.8
	3H	25.6	26.7	26.0	27.1	27.5	25.6	26.7	26.0	27.1	27.5
	4H	26.3	27.3	26.7	27.7	28.1	26.3	27.3	26.7	27.7	28.1
	6H	26.8	27.7	27.2	28.1	28.6	26.8	27.7	27.2	28.1	28.6
	8H	26.9	27.8	27.4	28.2	28.7	26.9	27.8	27.4	28.2	28.7
	12H	27.0	27.8	27.5	28.2	28.7	27.0	27.8	27.5	28.2	28.7

8H	4H	26.5	27.3	27.0	27.8	28.3	26.5	27.3	27.0	27.8	28.3
	6H	27.1	27.8	27.6	28.3	28.8	27.1	27.8	27.6	28.3	28.8
	8H	27.4	28.0	27.9	28.5	29.0	27.4	28.0	27.9	28.5	29.0
	12H	27.5	28.0	28.0	28.5	29.1	27.5	28.0	28.0	28.5	29.1

12H	4H	26.6	27.3	27.0	27.8	28.2	26.6	27.3	27.0	27.8	28.2
	6H	27.2	27.8	27.7	28.3	28.8	27.2	27.8	27.7	28.3	28.8
	8H	27.4	28.0	28.0	28.5	29.0	27.4	28.0	28.0	28.5	29.0

Maximum UGR = 29.1

POLAR GRAPH



Maximum Candela = 483.563 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.)