



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]GEN FROM 12316380.04
[TESTLAB] UL Verification Services Inc.
[ISSUEDATE] 12-02-2022
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] 4DR-TL-L20-935-DIM-UNV-OM-OF-CS
[LUMINAIRE] Black formed aluminum housing, specular reflector, no lens
[MORE] 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	1642
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
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)	0.76
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	4076	4076	4076
55	1183	1183	1183
65	416	416	416
75	185	185	185
85	92	92	92

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

CANDELA TABULATION

	<u>0</u>
0.0	3321.739
0.5	3324.199
1.0	3334.039
1.5	3343.059
2.0	3363.558
2.5	3376.678
3.0	3379.138
3.5	3379.958
4.0	3361.098
4.5	3335.679
5.0	3287.300
5.5	3225.801
6.0	3156.923
6.5	3079.845
7.0	2996.207
7.5	2909.289
8.0	2819.911
8.5	2731.353
9.0	2644.436
9.5	2559.978
10.0	2479.620
10.5	2404.181
11.0	2333.663
11.5	2267.245
12.0	2204.106
12.5	2145.068
13.0	2089.309
13.5	2036.010
14.0	1985.172
14.5	1938.433
15.0	1895.794
15.5	1858.075
16.0	1826.915
16.5	1799.036
17.0	1772.797
17.5	1749.837
18.0	1729.338
18.5	1712.118
19.0	1699.819
19.5	1689.159
20.0	1680.139
20.5	1669.479
21.0	1658.820
21.5	1647.340
22.0	1635.040
22.5	1619.461
23.0	1600.601
23.5	1577.642
24.0	1548.942
24.5	1511.223
25.0	1467.764
25.5	1421.845
26.0	1376.746
26.5	1326.728

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

CANDELA TABULATION - (Cont.)

27.0	1274.249
27.5	1214.390
28.0	1146.332
28.5	1071.714
29.0	993.816
29.5	914.278
30.0	829.820
30.5	742.328
31.0	650.736
31.5	559.472
32.0	471.735
32.5	389.655
33.0	318.234
33.5	257.310
34.0	205.979
34.5	163.340
35.0	128.737
35.5	102.661
36.0	85.934
36.5	77.160
37.0	71.912
37.5	67.320
38.0	63.302
38.5	59.613
39.0	56.251
39.5	53.217
40.0	50.347
40.5	47.641
41.0	45.099
41.5	42.803
42.0	40.589
42.5	38.539
43.0	36.489
43.5	34.685
44.0	32.881
44.5	31.159
45.0	29.601
45.5	28.043
46.0	26.485
46.5	25.009
47.0	23.451
47.5	21.975
48.0	20.581
48.5	19.270
49.0	17.958
49.5	16.646
50.0	15.334
50.5	14.104
51.0	13.038
51.5	12.054
52.0	11.070
52.5	10.250
53.0	9.430
53.5	8.774
54.0	8.118
54.5	7.462

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

CANDELA TABULATION - (Cont.)

55.0	6.970
55.5	6.478
56.0	5.986
56.5	5.576
57.0	5.166
57.5	4.838
58.0	4.510
58.5	4.182
59.0	3.936
59.5	3.690
60.0	3.444
60.5	3.198
61.0	3.034
61.5	2.788
62.0	2.624
62.5	2.460
63.0	2.296
63.5	2.214
64.0	2.050
64.5	1.886
65.0	1.804
65.5	1.722
66.0	1.558
66.5	1.476
67.0	1.394
67.5	1.312
68.0	1.230
68.5	1.148
69.0	1.066
69.5	0.984
70.0	0.902
70.5	0.902
71.0	0.820
71.5	0.738
72.0	0.656
72.5	0.656
73.0	0.574
73.5	0.574
74.0	0.492
74.5	0.492
75.0	0.492
75.5	0.410
76.0	0.410
76.5	0.328
77.0	0.328
77.5	0.328
78.0	0.246
78.5	0.246
79.0	0.246
79.5	0.246
80.0	0.164
80.5	0.164
81.0	0.164
81.5	0.164
82.0	0.164
82.5	0.164

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

CANDELA TABULATION - (Cont.)

83.0	0.164
83.5	0.082
84.0	0.082
84.5	0.082
85.0	0.082
85.5	0.082
86.0	0.082
86.5	0.082
87.0	0.082
87.5	0.082
88.0	0.000
88.5	0.000
89.0	0.000
89.5	0.000
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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

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
123.0	0.000
123.5	0.000
124.0	0.000
124.5	0.000
125.0	0.000
125.5	0.000
126.0	0.000
126.5	0.000
127.0	0.000
127.5	0.000
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 : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

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

IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	828.05	N.A.	50.40
0-30	1462.53	N.A.	89.10
0-40	1609.00	N.A.	98.00
0-60	1639.15	N.A.	99.80
0-80	1641.55	N.A.	100.00
0-90	1641.65	N.A.	100.00
10-90	1357.22	N.A.	82.70
20-40	780.94	N.A.	47.60
20-50	804.25	N.A.	49.00
40-70	32.05	N.A.	2.00
60-80	2.40	N.A.	0.10
70-80	0.51	N.A.	0.00
80-90	0.10	N.A.	0.00
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	1641.65	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	284.44
10-20	543.62
20-30	634.48
30-40	146.46
40-50	23.31
50-60	6.85
60-70	1.89
70-80	0.51
80-90	0.10
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

IES INDOOR REPORT
 PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

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	112	109	107	112	110	108	106	106	104	103	102	101	99	98	98	97	95
2	109	105	102	99	107	103	100	97	100	98	95	97	95	93	95	93	91	90
3	105	99	95	91	103	98	94	91	95	92	89	93	90	88	91	88	87	85
4	100	94	89	85	99	93	88	85	91	87	84	89	86	83	87	84	82	81
5	96	89	84	80	95	88	83	80	86	82	79	85	81	78	83	80	78	76
6	92	85	79	76	91	84	79	75	82	78	75	81	77	74	80	76	74	73
7	89	80	75	72	87	80	75	71	79	74	71	78	74	71	76	73	70	69
8	85	77	72	68	84	76	71	68	75	71	68	74	70	67	73	70	67	66
9	82	73	68	65	81	73	68	65	72	67	64	71	67	64	70	67	64	63
10	79	70	65	62	78	70	65	62	69	64	61	68	64	61	67	64	61	60

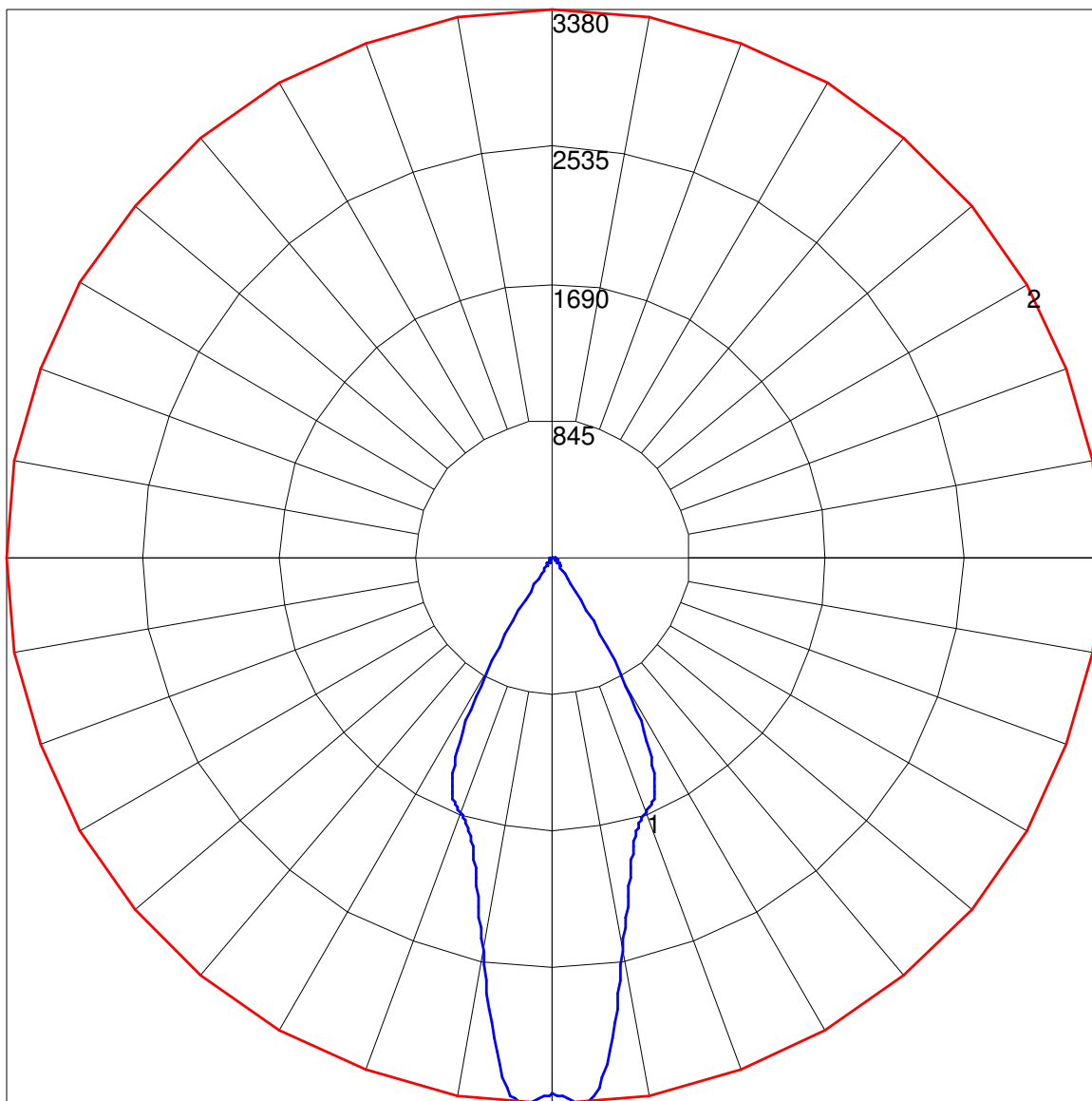
IES INDOOR REPORT
PHOTOMETRIC FILENAME : 4DR-TL-L20-935-DIM-UNV-OM-OF-CS_.IES

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	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	3H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	4H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	6H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	8H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	12H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
4H	2H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	3H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	4H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	6H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	8H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	12H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
8H	4H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	6H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	8H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	12H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
12H	4H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	6H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
	8H	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8

Maximum UGR = 1.8

POLAR GRAPH



Maximum Candela = 3379.958 Located At Horizontal Angle = 0, Vertical Angle = 3.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (3.5) (Through Max. Cd.)