



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4PR-TL-L20-940-DIM-UNV-LW-OF-CS_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12385721.04
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 08-04-2021
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] 4PR-TL-L20-940-DIM-UNV-LW-OF-CS
 [LUMINAIRE] Black formed aluminum housing, specular reflector, frosted pl
 [MORE] astic lens enclosure
 [LAMP] One white LED
 [OTHER] 24.9 C, 120.048 V, 0.095936 A, 11.3603 W, 0.986402 PF, 59.9979
 [MORE] Hz
 [OTHER] This test was performed using the calibrated photodetector met
 [MORE] hod of absolute photometry.

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1537
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	67
Total Luminaire Watts	22.8
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.24
Spacing Criterion (Diagonal)	1.32
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	57474	57474	57474
55	47026	47026	47026
65	37224	37224	37224
75	28949	28949	28949
85	18556	18556	18556

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CANDELA TABULATION

	<u>0</u>
0.0	634.190
0.5	634.190
1.0	634.426
1.5	634.663
2.0	635.136
2.5	635.609
3.0	636.081
3.5	636.554
4.0	636.791
4.5	637.264
5.0	637.264
5.5	637.264
6.0	637.264
6.5	636.791
7.0	636.318
7.5	635.609
8.0	634.663
8.5	633.717
9.0	632.535
9.5	631.116
10.0	629.933
10.5	628.515
11.0	627.096
11.5	625.441
12.0	624.022
12.5	622.603
13.0	620.948
13.5	619.293
14.0	617.874
14.5	616.219
15.0	614.563
15.5	612.908
16.0	611.017
16.5	609.125
17.0	607.233
17.5	605.105
18.0	602.977
18.5	600.612
19.0	598.011
19.5	595.174
20.0	592.573
20.5	589.499
21.0	586.661
21.5	583.823
22.0	580.749
22.5	577.912
23.0	574.838
23.5	571.764
24.0	568.690
24.5	565.616
25.0	562.305
25.5	558.759
26.0	555.212
26.5	551.665

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CANDELA TABULATION - (Cont.)

27.0	547.881
27.5	544.334
28.0	540.787
28.5	537.477
29.0	533.930
29.5	530.383
30.0	526.836
30.5	523.289
31.0	519.506
31.5	515.486
32.0	511.466
32.5	507.210
33.0	502.954
33.5	498.461
34.0	493.732
34.5	488.766
35.0	483.800
35.5	478.835
36.0	473.632
36.5	468.430
37.0	462.992
37.5	457.789
38.0	452.587
38.5	447.149
39.0	441.947
39.5	436.508
40.0	431.069
40.5	425.631
41.0	420.192
41.5	414.517
42.0	408.605
42.5	402.694
43.0	396.782
43.5	390.634
44.0	384.486
44.5	378.338
45.0	371.954
45.5	365.806
46.0	359.421
46.5	353.037
47.0	346.889
47.5	340.741
48.0	334.357
48.5	328.209
49.0	321.824
49.5	315.440
50.0	309.055
50.5	302.671
51.0	296.286
51.5	289.902
52.0	283.517
52.5	277.133
53.0	270.985
53.5	264.837
54.0	258.689
54.5	252.777

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CANDELA TABULATION - (Cont.)

55.0	246.866
55.5	241.191
56.0	235.350
56.5	229.722
57.0	224.118
57.5	218.561
58.0	213.075
58.5	207.637
59.0	202.246
59.5	196.949
60.0	192.125
60.5	186.946
61.0	181.910
61.5	177.039
62.0	172.097
62.5	167.013
63.0	162.094
63.5	157.341
64.0	152.754
64.5	148.285
65.0	143.981
65.5	139.820
66.0	135.776
66.5	131.733
67.0	127.760
67.5	123.788
68.0	119.815
68.5	115.819
69.0	111.823
69.5	107.826
70.0	103.830
70.5	99.905
71.0	96.027
71.5	92.267
72.0	88.602
72.5	85.055
73.0	81.603
73.5	78.221
74.0	74.935
74.5	71.719
75.0	68.574
75.5	65.500
76.0	62.497
76.5	59.517
77.0	56.585
77.5	53.700
78.0	50.839
78.5	48.025
79.0	45.235
79.5	42.468
80.0	39.749
80.5	37.054
81.0	34.382
81.5	31.780
82.0	29.227
82.5	26.697

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CANDELA TABULATION - (Cont.)

83.0	24.214
83.5	21.778
84.0	19.390
84.5	17.049
85.0	14.802
85.5	12.603
86.0	10.499
86.5	8.442
87.0	6.503
87.5	4.895
88.0	3.618
88.5	2.388
89.0	1.419
89.5	0.993
90.0	0.662
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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PHOTOMETRIC FILENAME : 4PR-TL-L20-940-DIM-UNV-LW-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
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126.5	0.000
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130.5	0.000
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132.5	0.000
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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 : 4PR-TL-L20-940-DIM-UNV-LW-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
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150.0	0.000
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151.0	0.000
151.5	0.000
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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

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PHOTOMETRIC FILENAME : 4PR-TL-L20-940-DIM-UNV-LW-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

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	233.96	N.A.	15.20
0-30	492.72	N.A.	32.00
0-40	794.35	N.A.	51.70
0-60	1302.23	N.A.	84.70
0-80	1519.57	N.A.	98.80
0-90	1537.4	N.A.	100.00
10-90	1476.79	N.A.	96.10
20-40	560.40	N.A.	36.50
20-50	846.70	N.A.	55.10
40-70	651.79	N.A.	42.40
60-80	217.34	N.A.	14.10
70-80	73.42	N.A.	4.80
80-90	17.83	N.A.	1.20
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	1537.42	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	60.61
10-20	173.35
20-30	258.76
30-40	301.64
40-50	286.31
50-60	221.56
60-70	143.92
70-80	73.42
80-90	17.83
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	102	98	107	103	100	96	99	96	93	95	93	91	92	90	88	86
2	101	93	87	81	98	91	85	81	88	83	79	84	80	77	81	78	75	73
3	92	83	75	69	90	81	74	68	78	72	67	75	70	66	73	69	65	63
4	85	74	65	59	83	72	65	59	70	63	58	68	62	57	66	61	56	54
5	78	66	58	51	76	65	57	51	63	56	51	61	55	50	59	54	50	48
6	73	60	51	45	71	59	51	45	57	50	45	56	49	44	54	48	44	42
7	68	55	46	40	66	54	46	40	52	45	40	51	44	40	50	44	39	37
8	63	50	42	36	61	49	41	36	48	41	36	47	40	36	46	40	35	34
9	59	46	38	33	58	45	38	33	44	37	32	43	37	32	42	36	32	30
10	55	43	35	30	54	42	35	30	41	34	30	40	34	29	39	33	29	28

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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	24.1	25.6	24.4	25.9	26.3	24.1	25.6	24.4	25.9	26.3
	3H	25.5	26.9	25.9	27.2	27.6	25.5	26.9	25.9	27.2	27.6
	4H	26.0	27.2	26.4	27.6	28.0	26.0	27.2	26.4	27.6	28.0
	6H	26.3	27.5	26.7	27.9	28.2	26.3	27.5	26.7	27.9	28.2
	8H	26.4	27.5	26.8	27.9	28.3	26.4	27.5	26.8	27.9	28.3
	12H	26.4	27.5	26.9	27.9	28.3	26.4	27.5	26.9	27.9	28.3

UGR Viewed Endwise

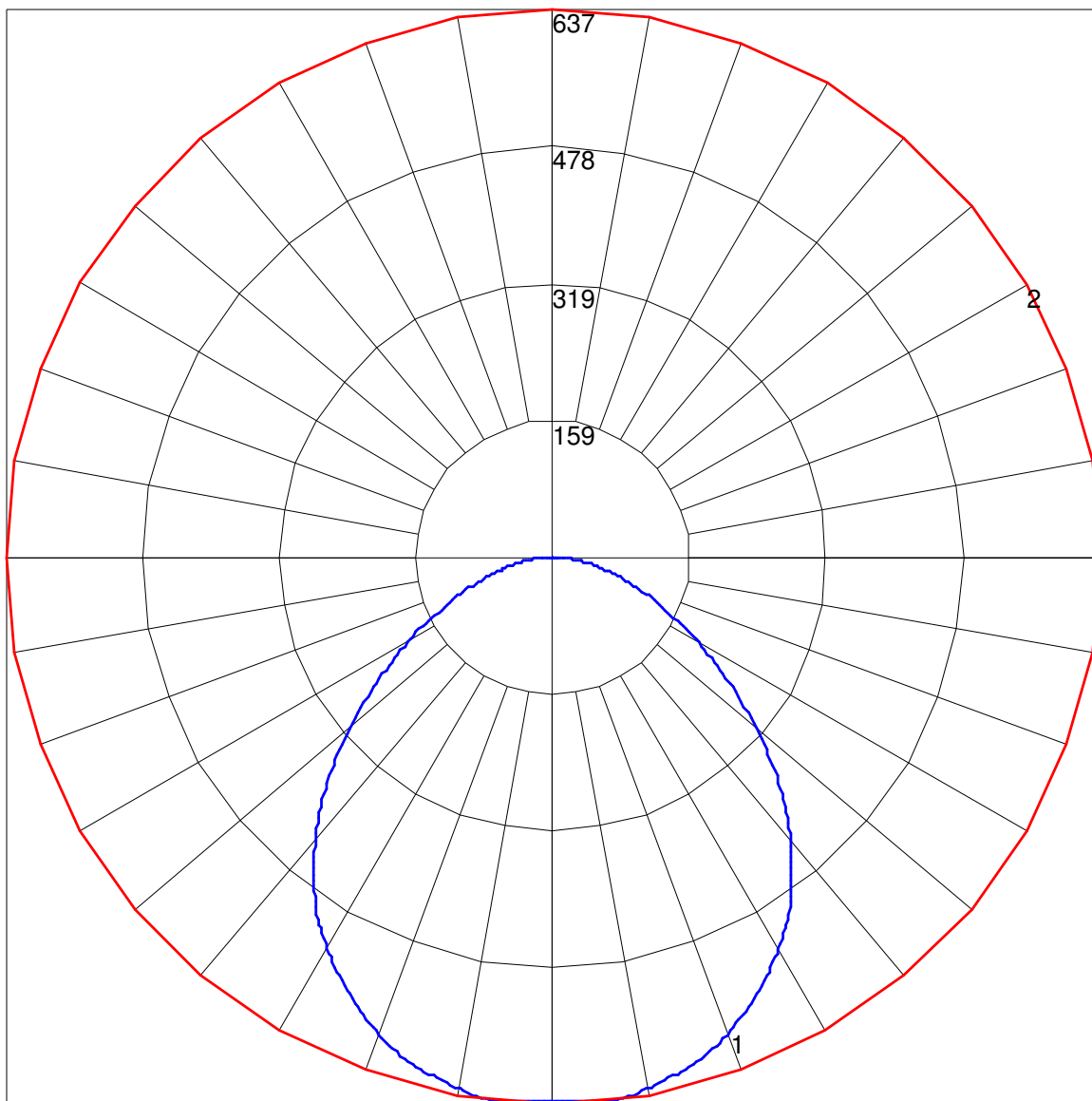
4H	2H	24.6	25.9	25.0	26.2	26.6	24.6	25.9	25.0	26.2	26.6
	3H	26.2	27.2	26.6	27.6	28.0	26.2	27.2	26.6	27.6	28.0
	4H	26.7	27.7	27.2	28.1	28.6	26.7	27.7	27.2	28.1	28.6
	6H	27.2	28.1	27.7	28.5	29.0	27.2	28.1	27.7	28.5	29.0
	8H	27.3	28.1	27.8	28.6	29.0	27.3	28.1	27.8	28.6	29.0
	12H	27.4	28.1	27.9	28.6	29.1	27.4	28.1	27.9	28.6	29.1

8H	4H	27.0	27.8	27.4	28.2	28.7	27.0	27.8	27.4	28.2	28.7
	6H	27.5	28.2	28.0	28.7	29.1	27.5	28.2	28.0	28.7	29.1
	8H	27.7	28.3	28.2	28.8	29.3	27.7	28.3	28.2	28.8	29.3
	12H	27.9	28.4	28.4	28.9	29.4	27.9	28.4	28.4	28.9	29.4

12H	4H	27.0	27.7	27.5	28.2	28.6	27.0	27.7	27.5	28.2	28.6
	6H	27.6	28.2	28.1	28.6	29.2	27.6	28.2	28.1	28.6	29.2
	8H	27.8	28.3	28.3	28.8	29.4	27.8	28.3	28.3	28.8	29.4

Maximum UGR = 29.4

POLAR GRAPH



Maximum Candela = 637.264 Located At Horizontal Angle = 0, Vertical Angle = 4.5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (4.5) (Through Max. Cd.)