



IES INDOOR REPORT

PHOTOMETRIC FILENAME : HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12316380.16
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] AUGUST 2022
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD
 [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	2932
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	53
Total Luminaire Watts	55.4
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.18
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.22
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	91990	91990	91990
55	67327	67327	67327
65	48398	48398	48398
75	28833	28833	28833
85	22067	22067	22067

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CANDELA TABULATION

	<u>0</u>
0.0	1468.319
0.5	1468.059
1.0	1467.278
1.5	1466.237
2.0	1464.936
2.5	1463.374
3.0	1461.292
3.5	1459.210
4.0	1457.129
4.5	1455.307
5.0	1453.225
5.5	1451.403
6.0	1449.321
6.5	1447.239
7.0	1444.897
7.5	1442.555
8.0	1440.212
8.5	1437.610
9.0	1435.007
9.5	1432.405
10.0	1429.282
10.5	1426.680
11.0	1423.557
11.5	1420.173
12.0	1416.790
12.5	1412.886
13.0	1409.243
13.5	1405.079
14.0	1400.915
14.5	1396.230
15.0	1391.286
15.5	1386.601
16.0	1381.657
16.5	1376.712
17.0	1371.507
17.5	1366.302
18.0	1361.357
18.5	1356.413
19.0	1351.208
19.5	1346.263
20.0	1341.058
20.5	1335.593
21.0	1329.867
21.5	1324.142
22.0	1317.636
22.5	1310.349
23.0	1302.541
23.5	1294.213
24.0	1285.625
24.5	1276.516
25.0	1267.147
25.5	1257.258
26.0	1246.848
26.5	1236.178

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CANDELA TABULATION - (Cont.)

27.0	1225.248
27.5	1214.317
28.0	1202.866
28.5	1191.676
29.0	1179.964
29.5	1168.513
30.0	1156.282
30.5	1144.050
31.0	1131.038
31.5	1118.025
32.0	1104.492
32.5	1090.439
33.0	1076.386
33.5	1061.812
34.0	1046.978
34.5	1031.883
35.0	1016.529
35.5	1000.393
36.0	983.998
36.5	967.602
37.0	950.686
37.5	933.770
38.0	917.114
38.5	899.417
39.0	881.980
39.5	864.284
40.0	846.326
40.5	828.109
41.0	810.152
41.5	792.195
42.0	774.238
42.5	756.281
43.0	738.324
43.5	720.627
44.0	702.930
44.5	685.233
45.0	668.057
45.5	651.140
46.0	634.224
46.5	617.568
47.0	601.693
47.5	585.818
48.0	570.203
48.5	555.109
49.0	541.316
49.5	527.523
50.0	513.730
50.5	500.457
51.0	487.184
51.5	474.432
52.0	462.200
52.5	451.010
53.0	440.340
53.5	428.889
54.0	417.958
54.5	407.028

IES INDOOR REPORT**PHOTOMETRIC FILENAME : HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD_.IES****CANDELA TABULATION - (Cont.)**

55.0	396.618
55.5	386.208
56.0	376.058
56.5	366.169
57.0	356.540
57.5	346.911
58.0	337.281
58.5	327.912
59.0	318.544
59.5	309.435
60.0	300.326
60.5	291.218
61.0	282.109
61.5	272.740
62.0	263.891
62.5	254.809
63.0	245.830
63.5	236.774
64.0	227.821
64.5	218.947
65.0	210.072
65.5	201.302
66.0	192.557
66.5	183.969
67.0	175.511
67.5	167.209
68.0	159.090
68.5	151.100
69.0	143.293
69.5	135.745
70.0	128.458
70.5	121.484
71.0	115.186
71.5	109.408
72.0	103.865
72.5	98.530
73.0	93.403
73.5	88.562
74.0	84.112
74.5	80.208
75.0	76.643
75.5	73.208
76.0	69.799
76.5	66.493
77.0	63.240
77.5	60.039
78.0	56.890
78.5	53.819
79.0	50.826
79.5	47.938
80.0	45.075
80.5	42.290
81.0	39.584
81.5	36.903
82.0	34.301
82.5	31.724

IES INDOOR REPORT**PHOTOMETRIC FILENAME : HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD_.IES****CANDELA TABULATION - (Cont.)**

83.0	29.226
83.5	26.780
84.0	24.385
84.5	22.043
85.0	19.753
85.5	17.515
86.0	15.329
86.5	13.169
87.0	11.087
87.5	9.005
88.0	7.131
88.5	5.778
89.0	4.684
89.5	3.669
90.0	2.707
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 : HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD_.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
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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 : HS4DR-TL-L40-835-DIM-UNV-RW-OF-WH-AD_.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

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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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Zone	Lumens	%Lamp	%Fixt
0-20	530.42	N.A.	18.10
0-30	1111.27	N.A.	37.90
0-40	1742.39	N.A.	59.40
0-60	2615.92	N.A.	89.20
0-80	2908.93	N.A.	99.20
0-90	2931.69	N.A.	100.00
10-90	2793.7	N.A.	95.30
20-40	1211.97	N.A.	41.30
20-50	1728.64	N.A.	59.00
40-70	1082.22	N.A.	36.90
60-80	293.01	N.A.	10.00
70-80	84.32	N.A.	2.90
80-90	22.75	N.A.	0.80
90-110	0.07	N.A.	0.00
90-120	0.07	N.A.	0.00
90-130	0.07	N.A.	0.00
90-150	0.07	N.A.	0.00
90-180	0.07	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2931.76	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	137.99
10-20	392.43
20-30	580.85
30-40	631.12
40-50	516.67
50-60	356.86
60-70	208.69
70-80	84.32
80-90	22.75
90-100	0.07
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	111	107	103	100	108	105	101	98	100	98	95	97	94	92	93	91	90	88
2	102	95	90	85	100	93	88	84	90	86	82	87	83	80	84	81	78	76
3	95	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	69	67
4	87	77	69	63	85	76	68	63	73	67	62	71	66	61	69	64	61	59
5	81	70	62	56	79	69	61	56	67	60	55	65	59	54	63	58	54	52
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42
8	66	53	46	40	64	53	45	40	51	45	40	50	44	40	49	44	39	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34
10	58	46	38	34	57	45	38	33	44	38	33	43	37	33	43	37	33	31

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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	24.7	26.2	25.1	26.5	26.8	24.7	26.2	25.1	26.5	26.8
	3H	25.7	27.0	26.1	27.3	27.7	25.7	27.0	26.1	27.3	27.7
	4H	25.9	27.1	26.3	27.5	27.9	25.9	27.1	26.3	27.5	27.9
	6H	26.1	27.2	26.5	27.6	28.0	26.1	27.2	26.5	27.6	28.0
	8H	26.2	27.2	26.6	27.6	28.0	26.2	27.2	26.6	27.6	28.0
	12H	26.2	27.2	26.6	27.6	28.0	26.2	27.2	26.6	27.6	28.0

UGR Viewed Endwise

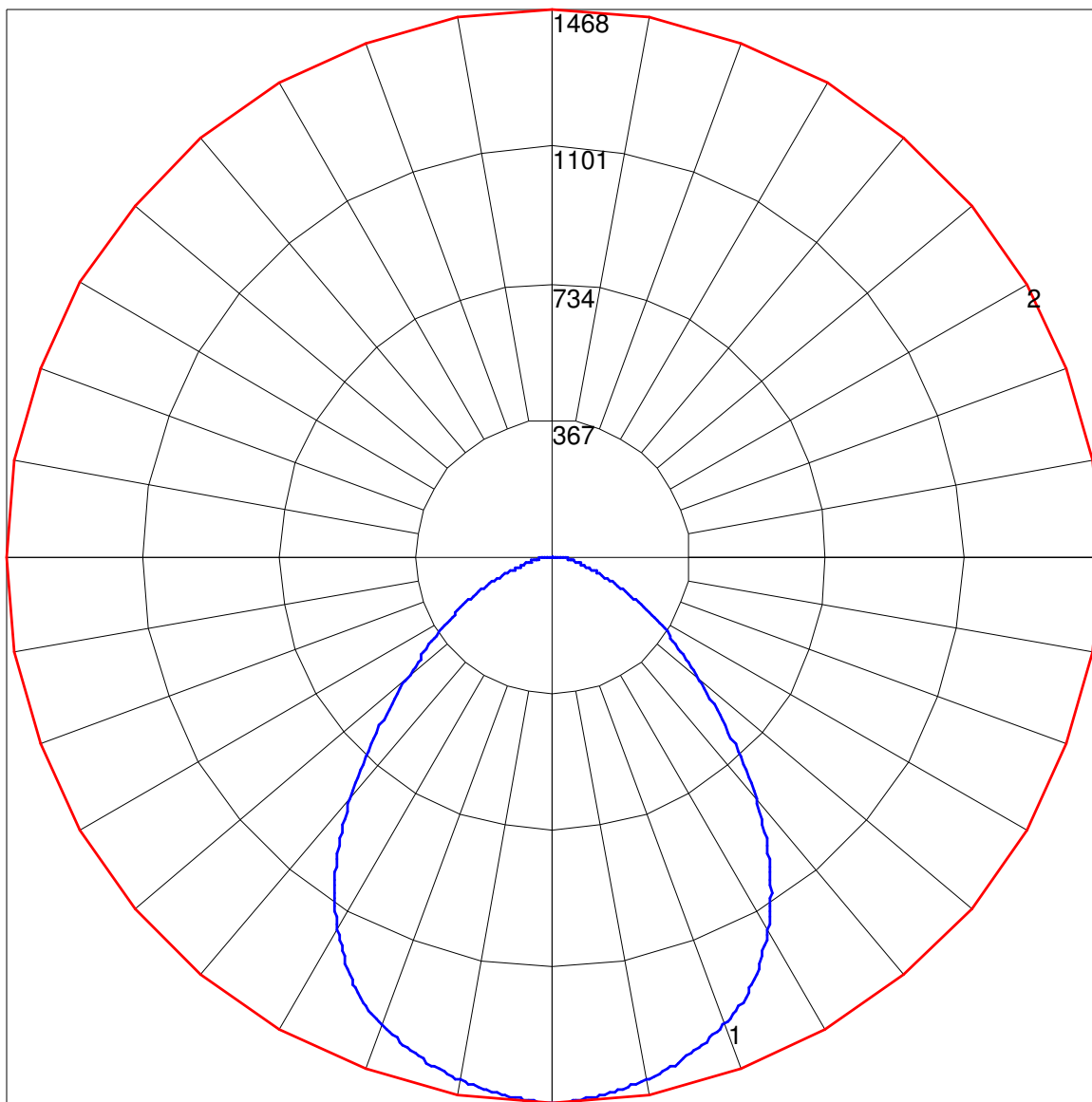
4H	2H	25.1	26.3	25.5	26.7	27.0	25.1	26.3	25.5	26.7	27.0
	3H	26.2	27.2	26.6	27.6	28.0	26.2	27.2	26.6	27.6	28.0
	4H	26.5	27.4	27.0	27.8	28.3	26.5	27.4	27.0	27.8	28.3
	6H	26.8	27.6	27.3	28.0	28.5	26.8	27.6	27.3	28.0	28.5
	8H	26.9	27.6	27.3	28.0	28.5	26.9	27.6	27.3	28.0	28.5
	12H	26.9	27.6	27.4	28.1	28.5	26.9	27.6	27.4	28.1	28.5

8H	4H	26.6	27.3	27.1	27.8	28.3	26.6	27.3	27.1	27.8	28.3
	6H	27.0	27.6	27.5	28.0	28.5	27.0	27.6	27.5	28.0	28.5
	8H	27.1	27.6	27.6	28.1	28.6	27.1	27.6	27.6	28.1	28.6
	12H	27.2	27.7	27.7	28.2	28.7	27.2	27.7	27.7	28.2	28.7

12H	4H	26.6	27.2	27.1	27.7	28.2	26.6	27.2	27.1	27.7	28.2
	6H	27.0	27.5	27.5	28.0	28.5	27.0	27.5	27.5	28.0	28.5
	8H	27.1	27.6	27.6	28.1	28.7	27.1	27.6	27.6	28.1	28.7

Maximum UGR = 28.7

POLAR GRAPH



Maximum Candela = 1468.319 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.)