



IES INDOOR REPORT

PHOTOMETRIC FILENAME : HM6DR-TL-L20-840-DIM-UNV-LW-OF-WH_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] GEN FROM 12326812.07
 [TESTLAB] UL Verification Services Inc.
 [ISSUEDATE] 9-15-2023
 [MANUFAC] WILLIAMS INDOOR
 [OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
 [LUMCAT] HM6DR-TL-L20-840-DIM1-UNV-LW-OF-WH
 [LUMINAIRE] Black formed aluminum housing, white reflector, clear glas
 [MORE] s patterned lens enclosure
 [LAMP] One white LED
 [_SEARCH_SOURCETYPE] LED
 [_SEARCH_APPLICATION] Indoor, Architectural, Classroom, Commercial, Healthcare, Office, Downlight
 [_SEARCH_MOUNTING] Recessed

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2060
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	89
Total Luminaire Watts	23.1
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.08
Spacing Criterion (90-270)	1.08
Spacing Criterion (Diagonal)	0.98
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.46 ft (Diameter)
Luminous Width (90-270)	0.46 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	34241	34241	34241
55	28507	28507	28507
65	21657	21657	21657
75	15706	15706	15706
85	10235	10235	10235

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CANDELA TABULATION

	<u>0</u>
0.0	1310.240
0.5	1309.976
1.0	1308.921
1.5	1307.338
2.0	1305.360
2.5	1302.721
3.0	1300.083
3.5	1297.049
4.0	1294.279
4.5	1291.509
5.0	1289.531
5.5	1287.684
6.0	1285.969
6.5	1284.254
7.0	1282.408
7.5	1280.693
8.0	1278.978
8.5	1277.395
9.0	1275.812
9.5	1274.493
10.0	1273.174
10.5	1272.119
11.0	1271.195
11.5	1270.668
12.0	1269.744
12.5	1268.821
13.0	1267.502
13.5	1265.787
14.0	1263.677
14.5	1261.302
15.0	1258.796
15.5	1255.630
16.0	1252.201
16.5	1248.771
17.0	1245.342
17.5	1241.780
18.0	1237.955
18.5	1233.602
19.0	1228.721
19.5	1223.313
20.0	1217.113
20.5	1210.386
21.0	1202.076
21.5	1192.183
22.0	1180.971
22.5	1168.307
23.0	1154.457
23.5	1139.420
24.0	1122.799
24.5	1104.860
25.0	1085.469
25.5	1065.287
26.0	1043.786
26.5	1021.362

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CANDELA TABULATION - (Cont.)

27.0	997.487
27.5	972.952
28.0	947.098
28.5	919.793
29.0	891.433
29.5	861.622
30.0	831.019
30.5	799.493
31.0	767.967
31.5	736.177
32.0	705.311
32.5	675.764
33.0	647.403
33.5	620.890
34.0	596.487
34.5	574.327
35.0	554.540
35.5	536.337
36.0	520.376
36.5	505.734
37.0	492.676
37.5	480.936
38.0	470.251
38.5	460.490
39.0	451.257
39.5	442.946
40.0	434.900
40.5	427.381
41.0	420.390
41.5	413.531
42.0	406.936
42.5	400.868
43.0	394.668
43.5	388.600
44.0	382.665
44.5	376.861
45.0	370.925
45.5	365.253
46.0	359.449
46.5	353.645
47.0	347.709
47.5	341.905
48.0	335.969
48.5	330.033
49.0	324.097
49.5	317.898
50.0	311.962
50.5	305.894
51.0	299.826
51.5	293.627
52.0	287.427
52.5	281.227
53.0	275.028
53.5	268.828
54.0	262.892
54.5	256.824

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CANDELA TABULATION - (Cont.)

55.0	250.493
55.5	244.293
56.0	238.094
56.5	232.290
57.0	226.486
57.5	220.418
58.0	214.350
58.5	208.414
59.0	202.610
59.5	196.806
60.0	191.266
60.5	185.726
61.0	180.318
61.5	174.910
62.0	169.765
62.5	164.621
63.0	159.608
63.5	154.596
64.0	149.715
64.5	144.967
65.0	140.218
65.5	135.601
66.0	130.998
66.5	126.473
67.0	122.002
67.5	117.622
68.0	113.322
68.5	109.009
69.0	104.827
69.5	100.685
70.0	96.662
70.5	92.771
71.0	88.959
71.5	85.265
72.0	81.704
72.5	78.248
73.0	74.884
73.5	71.586
74.0	68.421
74.5	65.321
75.0	62.274
75.5	59.332
76.0	56.443
76.5	53.607
77.0	50.850
77.5	48.146
78.0	45.521
78.5	42.949
79.0	40.430
79.5	38.003
80.0	35.589
80.5	33.254
81.0	30.946
81.5	28.650
82.0	26.408
82.5	24.179

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CANDELA TABULATION - (Cont.)

83.0	22.002
83.5	19.865
84.0	17.755
84.5	15.684
85.0	13.666
85.5	11.713
86.0	9.827
86.5	8.007
87.0	6.239
87.5	4.762
88.0	3.641
88.5	2.665
89.0	1.847
89.5	1.161
90.0	0.739
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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128.0	0.000
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129.0	0.000
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133.5	0.000
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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

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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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147.0	0.000
147.5	0.000
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150.5	0.000
151.0	0.000
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153.5	0.000
154.0	0.000
154.5	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	477.28	N.A.	23.20
0-30	964.77	N.A.	46.80
0-40	1326.25	N.A.	64.40
0-60	1836.66	N.A.	89.20
0-80	2043.4	N.A.	99.20
0-90	2059.74	N.A.	100.00
10-90	1937.13	N.A.	94.00
20-40	848.98	N.A.	41.20
20-50	1135.42	N.A.	55.10
40-70	650.17	N.A.	31.60
60-80	206.74	N.A.	10.00
70-80	66.97	N.A.	3.30
80-90	16.34	N.A.	0.80
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	2059.76	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	122.61
10-20	354.67
20-30	487.49
30-40	361.48
40-50	286.44
50-60	223.97
60-70	139.77
70-80	66.97
80-90	16.34
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	111	107	104	101	108	105	102	99	101	98	96	97	95	93	93	92	90	88
2	103	96	91	86	101	94	89	85	91	87	83	88	84	81	85	82	79	78
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	70	69
4	89	79	72	66	87	78	71	65	75	69	65	73	68	64	71	67	63	61
5	83	72	64	59	81	71	64	58	69	63	58	67	62	57	65	61	57	55
6	78	66	58	53	76	65	58	53	64	57	52	62	56	52	61	55	51	50
7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45
8	68	57	49	44	67	56	49	44	55	48	44	54	48	43	52	47	43	42
9	64	53	45	40	63	52	45	40	51	45	40	50	44	40	49	44	40	38
10	61	49	42	37	60	49	42	37	48	42	37	47	41	37	46	41	37	35

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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	21.5	22.9	21.9	23.2	23.5	21.5	22.9	21.9	23.2	23.5
	3H	22.7	24.0	23.1	24.3	24.6	22.7	24.0	23.1	24.3	24.6
	4H	23.1	24.3	23.5	24.6	25.0	23.1	24.3	23.5	24.6	25.0
	6H	23.4	24.4	23.8	24.8	25.2	23.4	24.4	23.8	24.8	25.2
	8H	23.4	24.5	23.9	24.9	25.3	23.4	24.5	23.9	24.9	25.3
	12H	23.5	24.4	23.9	24.8	25.3	23.5	24.4	23.9	24.8	25.3

UGR Viewed Endwise

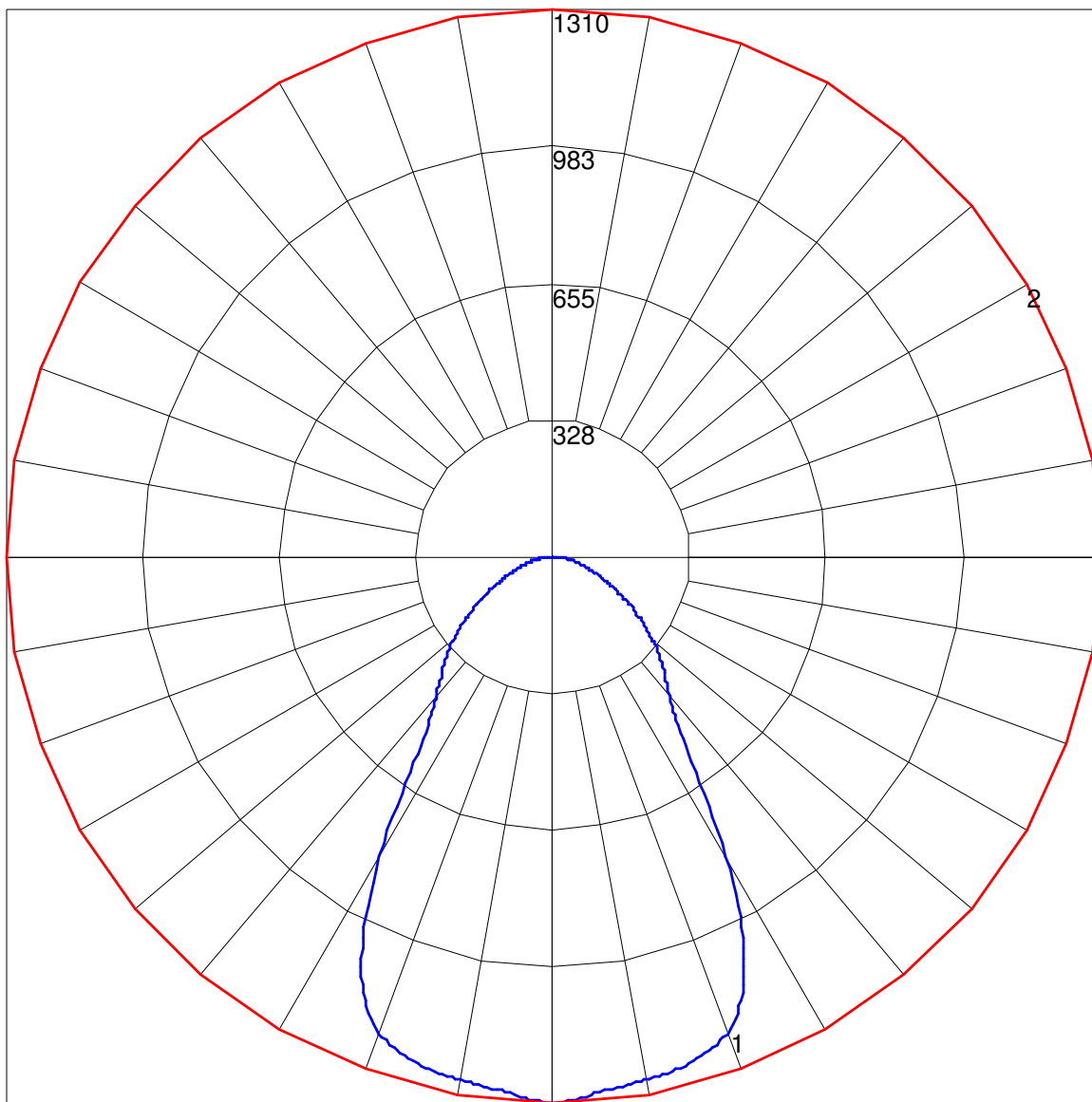
4H	2H	21.9	23.1	22.3	23.4	23.8	21.9	23.1	22.3	23.4	23.8
	3H	23.3	24.3	23.7	24.7	25.1	23.3	24.3	23.7	24.7	25.1
	4H	23.8	24.7	24.2	25.1	25.5	23.8	24.7	24.2	25.1	25.5
	6H	24.2	24.9	24.7	25.4	25.8	24.2	24.9	24.7	25.4	25.8
	8H	24.3	25.0	24.7	25.4	25.9	24.3	25.0	24.7	25.4	25.9
	12H	24.4	25.0	24.8	25.5	25.9	24.4	25.0	24.8	25.5	25.9

8H	4H	24.0	24.7	24.4	25.1	25.6	24.0	24.7	24.4	25.1	25.6
	6H	24.4	25.0	24.9	25.5	26.0	24.4	25.0	24.9	25.5	26.0
	8H	24.6	25.1	25.1	25.6	26.1	24.6	25.1	25.1	25.6	26.1
	12H	24.7	25.2	25.2	25.7	26.2	24.7	25.2	25.2	25.7	26.2

12H	4H	24.0	24.6	24.4	25.1	25.5	24.0	24.6	24.4	25.1	25.5
	6H	24.5	25.0	25.0	25.4	26.0	24.5	25.0	25.0	25.4	26.0
	8H	24.7	25.1	25.2	25.6	26.2	24.7	25.1	25.2	25.6	26.2

Maximum UGR = 26.2

POLAR GRAPH



Maximum Candela = 1310.24 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.)