



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-L12-835U-L12-835D-XXX-DIM1-UNV-OW-CSU-OW-CSD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.12 and #13257153.12

[TESTLAB]

[ISSUE DATE] 9-FEB-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-L12-835U-L12-835D-xxx-DIM1-UNV-OW-CSU-OW-CSD-WM

[MORE]

[LUMINAIRE] White formed aluminum housing, wide distrib anodized aluminum reflector trim w/clear cover glass up,

[MORE] wide distrib anodized alum open reflector trim down

[LAMP] Two white LEDs (one up/one down)

[BALLAST] (2) ERP PHB30W-0700-42 Drivers

[OTHER]

[OTHER] This test was performed using the calibrated photodetector met

[MORE] hod of absolute photometry.

[\_ CONVERT] Photometric web converted from original test data

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2051
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	73
Total Luminaire Watts	28.2
Ballast Factor	1.00
CIE Type	General Diffuse
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.33 ft
Luminous Width (90-270)	0.33 ft
Luminous Height	1.42 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3136	2361	3285
55	1024	953	1070
65	31	105	31
75	9	6	9
85	2	1	2

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**CANDELA TABULATION**

	<u>0.0</u>	<u>22.5</u>	<u>45.0</u>	<u>67.5</u>	<u>90.0</u>	<u>112.5</u>	<u>135.0</u>	<u>157.5</u>	<u>180.0</u>
0.0	1179.027	1179.027	1179.027	1179.027	1179.027	1179.027	1179.027	1179.027	1179.027
2.5	1178.220	1172.571	1169.343	1168.536	1166.922	1168.536	1169.343	1172.571	1178.220
5.0	1151.589	1146.747	1143.519	1142.712	1141.905	1142.712	1143.519	1146.747	1151.589
7.5	1111.239	1106.397	1103.976	1103.976	1103.169	1103.976	1103.976	1106.397	1111.239
10.0	1059.591	1054.749	1053.942	1053.135	1052.328	1053.135	1053.942	1054.749	1059.591
12.5	994.224	991.803	990.996	990.189	989.382	990.189	990.996	991.803	994.224
15.0	917.559	916.752	917.559	915.945	914.331	915.945	917.559	916.752	917.559
17.5	834.438	833.631	835.245	834.438	832.017	834.438	835.245	833.631	834.438
20.0	746.314	746.717	747.524	747.282	744.377	747.282	747.524	746.717	746.314
22.5	657.301	658.351	658.512	658.593	655.042	658.593	658.512	658.351	657.301
25.0	572.324	574.180	575.633	573.858	569.177	573.858	575.633	574.180	572.324
27.5	483.393	488.719	493.238	488.074	481.456	488.074	493.238	488.719	483.393
30.0	397.205	406.082	414.717	405.114	397.447	405.114	414.717	406.082	397.205
32.5	321.428	329.014	341.603	329.014	322.558	329.014	341.603	329.014	321.428
35.0	259.531	263.485	276.962	265.019	261.791	265.019	276.962	263.485	259.531
37.5	211.111	211.757	222.167	214.662	215.308	214.662	222.167	211.757	211.111
40.0	173.505	172.133	177.863	176.087	179.396	176.087	177.863	172.133	173.505
42.5	144.211	141.709	144.937	146.551	150.425	146.551	144.937	141.709	144.211
45.0	120.162	117.903	120.808	122.906	125.892	122.906	120.808	117.903	120.162
47.5	98.535	97.728	101.682	102.489	103.135	102.489	101.682	97.728	98.535
50.0	78.360	79.812	85.058	84.009	81.910	84.009	85.058	79.812	78.360
52.5	59.718	63.349	69.402	66.900	62.381	66.900	69.402	63.349	59.718
55.0	42.852	47.855	54.069	50.760	44.788	50.760	54.069	47.855	42.852
57.5	28.487	33.571	39.139	35.589	29.455	35.589	39.139	33.571	28.487
60.0	16.866	21.143	25.501	22.273	16.705	22.273	25.501	21.143	16.866
62.5	7.263	10.894	14.203	10.975	6.617	10.975	14.203	10.894	7.263
65.0	1.372	3.228	6.375	2.824	1.372	2.824	6.375	3.228	1.372
67.5	1.049	0.968	2.179	0.968	1.049	0.968	2.179	0.968	1.049
70.0	0.726	0.726	0.807	0.726	0.807	0.726	0.807	0.726	0.726
72.5	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565	0.565
75.0	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403	0.403
77.5	0.323	0.323	0.323	0.323	0.323	0.323	0.323	0.323	0.323
80.0	0.242	0.242	0.242	0.242	0.242	0.242	0.242	0.242	0.242
82.5	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161	0.161
85.0	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081
87.5	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081	0.081
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.738	0.984	1.599	3.014	2.891	3.014	1.599	0.984	0.738
95.0	0.861	1.169	1.722	3.075	3.014	3.075	1.722	1.169	0.861
97.5	0.984	1.292	1.907	3.198	3.075	3.198	1.907	1.292	0.984
100.0	1.107	1.476	2.091	3.321	3.198	3.321	2.091	1.476	1.107
102.5	1.230	1.599	2.276	3.444	3.383	3.444	2.276	1.599	1.230
105.0	1.415	1.845	2.460	3.629	3.506	3.629	2.460	1.845	1.415
107.5	1.661	2.091	2.706	3.813	3.752	3.813	2.706	2.091	1.661
110.0	1.907	2.399	3.137	3.998	3.998	3.998	3.137	2.399	1.907
112.5	2.276	2.768	4.305	4.305	4.305	4.305	4.305	2.768	2.276
115.0	2.706	4.428	7.749	7.073	4.797	7.073	7.749	4.428	2.706
117.5	4.367	8.733	14.760	12.792	10.025	12.792	14.760	8.733	4.367
120.0	12.485	18.512	25.092	22.632	16.913	22.632	25.092	18.512	12.485
122.5	23.309	32.718	38.807	35.363	29.520	35.363	38.807	32.718	23.309
125.0	40.467	50.123	53.874	50.922	44.711	50.922	53.874	50.123	40.467
127.5	61.070	68.634	69.680	68.019	63.222	68.019	69.680	68.634	61.070
130.0	82.103	86.838	86.838	86.100	83.763	86.100	86.838	86.838	82.103
132.5	105.596	106.149	105.842	105.719	107.195	105.719	105.842	106.149	105.596

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<b>135.0</b>	130.442	127.367	127.244	127.490	132.164	127.490	127.244	127.367	130.442
<b>137.5</b>	157.256	152.090	153.012	152.828	159.224	152.828	153.012	152.090	157.256
<b>140.0</b>	187.637	183.024	187.821	185.115	190.220	185.115	187.821	183.024	187.637
<b>142.5</b>	225.705	223.553	235.545	228.350	230.810	228.350	235.545	223.553	225.705
<b>145.0</b>	274.844	280.133	299.013	284.930	282.654	284.930	299.013	280.133	274.844
<b>147.5</b>	342.555	356.393	377.180	359.960	351.965	359.960	377.180	356.393	342.555
<b>150.0</b>	434.805	452.025	468.630	453.378	441.140	453.378	468.630	452.025	434.805
<b>152.5</b>	554.792	563.463	568.937	555.468	545.628	555.468	568.937	563.463	554.792
<b>155.0</b>	685.725	686.340	677.730	664.815	655.590	664.815	677.730	686.340	685.725
<b>157.5</b>	816.105	814.875	797.040	784.125	775.515	784.125	797.040	814.875	816.105
<b>160.0</b>	940.950	939.105	923.115	910.815	902.820	910.815	923.115	939.105	940.950
<b>162.5</b>	1064.565	1060.260	1046.115	1033.200	1024.590	1033.200	1046.115	1060.260	1064.565
<b>165.0</b>	1177.725	1178.340	1167.885	1153.740	1146.360	1153.740	1167.885	1178.340	1177.725
<b>167.5</b>	1281.045	1281.045	1274.895	1265.055	1258.905	1265.055	1274.895	1281.045	1281.045
<b>170.0</b>	1381.905	1378.830	1374.525	1368.375	1364.685	1368.375	1374.525	1378.830	1381.905
<b>172.5</b>	1462.470	1458.780	1456.320	1452.630	1450.785	1452.630	1456.320	1458.780	1462.470
<b>175.0</b>	1521.510	1518.435	1515.975	1514.130	1514.130	1514.130	1515.975	1518.435	1521.510
<b>177.5</b>	1555.950	1553.490	1551.030	1552.260	1551.645	1552.260	1551.030	1553.490	1555.950
<b>180.0</b>	1563.000	1563.000	1563.000	1563.000	1563.000	1563.000	1563.000	1563.000	1563.000

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Zone	Lumens	%Lamp	%Fixt
0-20	360.05	N.A.	17.60
0-30	621.11	N.A.	30.30
0-40	791.54	N.A.	38.60
0-60	931.02	N.A.	45.40
0-80	937.96	N.A.	45.70
0-90	938.08	N.A.	45.70
10-90	831.68	N.A.	40.60
20-40	431.49	N.A.	21.00
20-50	526.53	N.A.	25.70
40-70	145.95	N.A.	7.10
60-80	6.94	N.A.	0.30
70-80	0.47	N.A.	0.00
80-90	0.12	N.A.	0.00
90-110	4.71	N.A.	0.20
90-120	12.54	N.A.	0.60
90-130	57.45	N.A.	2.80
90-150	342.26	N.A.	16.70
90-180	1112.7	N.A.	54.30
110-180	1107.99	N.A.	54.00
0-180	2050.78	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	106.40
10-20	253.65
20-30	261.06
30-40	170.42
40-50	95.05
50-60	44.44
60-70	6.47
70-80	0.47
80-90	0.12
90-100	1.93
100-110	2.78
110-120	7.83
120-130	44.91
130-140	100.48
140-150	184.34
150-160	308.42
160-170	321.81
170-180	140.19

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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	106	106	106	106	97	97	97	97	81	81	81	66	66	66	52	52	52	46
1	99	95	92	89	91	88	85	83	74	72	70	61	60	59	49	49	48	43
2	92	86	81	77	84	79	75	72	67	64	62	56	54	53	46	45	44	39
3	85	78	72	67	79	72	67	63	62	58	55	52	50	47	43	42	40	36
4	79	70	64	59	73	66	60	56	57	53	49	48	45	43	40	38	37	33
5	74	64	58	53	68	60	54	50	52	48	44	45	42	39	38	36	34	31
6	69	59	52	47	64	55	49	45	48	44	40	42	38	36	35	33	32	29
7	65	54	47	43	60	51	45	41	45	40	37	39	36	33	33	31	29	27
8	61	50	44	39	56	47	41	37	42	37	34	36	33	31	31	29	27	25
9	57	47	40	36	53	44	38	34	39	34	31	34	31	28	30	27	26	24
10	54	43	37	33	50	41	35	32	37	32	29	32	29	27	28	26	24	22

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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	2.5	2.5	2.5	2.6	3.9	2.5	2.5	2.5	3.0	4.3
	3H	2.5	2.5	2.5	2.5	3.7	2.5	2.5	2.5	2.7	4.1
	4H	2.5	2.5	2.5	2.5	3.6	2.5	2.5	2.5	2.6	4.0
	6H	2.5	2.5	2.5	2.5	3.4	2.5	2.5	2.5	2.5	3.8
	8H	2.5	2.5	2.5	2.5	3.4	2.5	2.5	2.5	2.5	3.7
	12H	2.5	2.5	2.5	2.5	3.3	2.5	2.5	2.5	2.5	3.7

### UGR Viewed Endwise

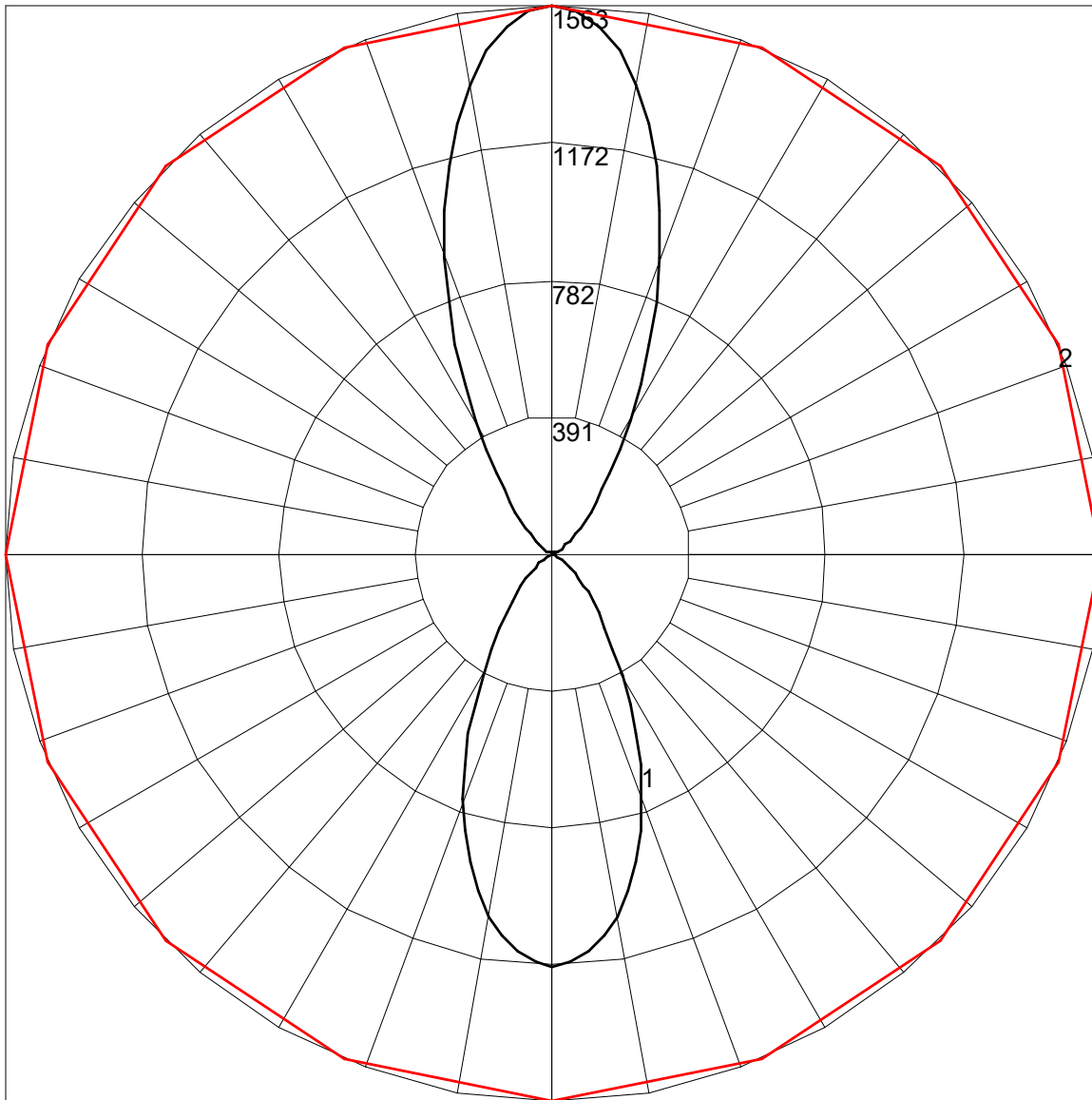
4H	2H	2.5	2.5	2.5	2.5	3.6	2.5	2.5	2.5	2.6	4.0
	3H	2.5	2.5	2.5	2.5	3.4	2.5	2.5	2.5	2.5	3.7
	4H	2.5	2.5	2.5	2.5	3.2	2.5	2.5	2.5	2.5	3.6
	6H	2.5	2.5	2.5	2.5	3.1	2.5	2.5	2.5	2.5	3.4
	8H	2.5	2.5	2.5	2.5	3.0	2.5	2.5	2.5	2.5	3.4
	12H	2.5	2.5	2.5	2.5	2.9	2.5	2.5	2.5	2.5	3.3
8H	4H	2.5	2.5	2.5	2.5	3.0	2.5	2.5	2.5	2.5	3.4
	6H	2.5	2.5	2.5	2.5	2.9	2.5	2.5	2.5	2.5	3.2
	8H	2.5	2.5	2.5	2.5	2.8	2.5	2.5	2.5	2.5	3.1
	12H	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	3.1
12H	4H	2.5	2.5	2.5	2.5	2.9	2.5	2.5	2.5	2.5	3.3
	6H	2.5	2.5	2.5	2.5	2.8	2.5	2.5	2.5	2.5	3.1
	8H	2.5	2.5	2.5	2.5	2.7	2.5	2.5	2.5	2.5	3.1

Maximum UGR = 4.3

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## POLAR GRAPH



Maximum Candela = 1563 Located At Horizontal Angle = 0, Vertical Angle = 180

# 1 - Vertical Plane Through Horizontal Angles (90 - 270)

# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)