



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-P12-835U-P12-835D-XXX-POE PR-OW-CSU-RM-WHD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.12 & #13257153.20

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 20-APR-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-P12-835U-P12-835D-xxx-PoE PR-OW-CSU-RM-WHD-WM

[LUMINAIRE] White formed aluminum housing, wide distribution reflector

[MORE] trims, frosted lens enclosures

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

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

[OTHER] 24.9 C, 120 V, 0.1984 A, 23.44 W, 0.983 PF, 60 Hz

[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	2047
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	89
Total Luminaire Watts	23
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	0.735	0.980	1.593	3.003	2.881	3.003	1.593	0.980	0.735
95.0	0.858	1.165	1.716	3.064	3.003	3.064	1.716	1.165	0.858
97.5	0.980	1.287	1.900	3.187	3.064	3.187	1.900	1.287	0.980
100.0	1.103	1.471	2.083	3.309	3.187	3.309	2.083	1.471	1.103
102.5	1.226	1.593	2.268	3.432	3.371	3.432	2.268	1.593	1.226
105.0	1.410	1.838	2.451	3.616	3.493	3.616	2.451	1.838	1.410
107.5	1.655	2.083	2.696	3.799	3.739	3.799	2.696	2.083	1.655
110.0	1.900	2.390	3.126	3.984	3.984	3.984	3.126	2.390	1.900
112.5	2.268	2.758	4.290	4.290	4.290	4.290	2.758	2.268	
115.0	2.696	4.412	7.721	7.048	4.780	7.048	7.721	4.412	2.696
117.5	4.351	8.702	14.707	12.746	9.989	12.746	14.707	8.702	4.351
120.0	12.440	18.445	25.002	22.551	16.852	22.551	25.002	18.445	12.440
122.5	23.225	32.600	38.668	35.236	29.414	35.236	38.668	32.600	23.225
125.0	40.322	49.943	53.680	50.739	44.550	50.739	53.680	49.943	40.322
127.5	60.851	68.387	69.430	67.775	62.995	67.775	69.430	68.387	60.851
130.0	81.808	86.526	86.526	85.791	83.462	85.791	86.526	86.526	81.808
132.5	105.216	105.768	105.462	105.339	106.810	105.339	105.462	105.768	105.216

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<b>135.0</b>	129.973	126.909	126.787	127.032	131.689	127.032	126.787	126.909	129.973
<b>137.5</b>	156.691	151.543	152.462	152.279	158.652	152.279	152.462	151.543	156.691
<b>140.0</b>	186.963	182.366	187.146	184.450	189.536	184.450	187.146	182.366	186.963
<b>142.5</b>	224.894	222.750	234.698	227.529	229.980	227.529	234.698	222.750	224.894
<b>145.0</b>	273.856	279.126	297.938	283.906	281.638	283.906	297.938	279.126	273.856
<b>147.5</b>	341.324	355.112	375.824	358.666	350.700	358.666	375.824	355.112	341.324
<b>150.0</b>	433.242	450.400	466.946	451.749	439.555	451.749	466.946	450.400	433.242
<b>152.5</b>	552.798	561.438	566.892	553.472	543.667	553.472	566.892	561.438	552.798
<b>155.0</b>	683.261	683.873	675.294	662.426	653.234	662.426	675.294	683.873	683.261
<b>157.5</b>	813.172	811.946	794.176	781.307	772.728	781.307	794.176	811.946	813.172
<b>160.0</b>	937.568	935.730	919.797	907.542	899.575	907.542	919.797	935.730	937.568
<b>162.5</b>	1060.739	1056.450	1042.355	1029.487	1020.908	1029.487	1042.355	1056.450	1060.739
<b>165.0</b>	1173.492	1174.105	1163.688	1149.594	1142.240	1149.594	1163.688	1174.105	1173.492
<b>167.5</b>	1276.441	1276.441	1270.313	1260.509	1254.381	1260.509	1270.313	1276.441	1276.441
<b>170.0</b>	1376.939	1373.875	1369.585	1363.457	1359.780	1363.457	1369.585	1373.875	1376.939
<b>172.5</b>	1457.214	1453.537	1451.086	1447.409	1445.571	1447.409	1451.086	1453.537	1457.214
<b>175.0</b>	1516.042	1512.978	1510.527	1508.688	1508.688	1508.688	1510.527	1512.978	1516.042
<b>177.5</b>	1550.358	1547.907	1545.456	1546.681	1546.069	1546.681	1545.456	1547.907	1550.358
<b>180.0</b>	1557.383	1557.383	1557.383	1557.383	1557.383	1557.383	1557.383	1557.383	1557.383

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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.	38.70
0-60	931.02	N.A.	45.50
0-80	937.96	N.A.	45.80
0-90	938.08	N.A.	45.80
10-90	831.68	N.A.	40.60
20-40	431.49	N.A.	21.10
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	4.69	N.A.	0.20
90-120	12.49	N.A.	0.60
90-130	57.24	N.A.	2.80
90-150	341.03	N.A.	16.70
90-180	1108.7	N.A.	54.20
110-180	1104.01	N.A.	53.90
0-180	2046.78	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	1.92
100-110	2.77
110-120	7.80
120-130	44.75
130-140	100.12
140-150	183.67
150-160	307.32
160-170	320.66
170-180	139.69

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## COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	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	71	61	60	59	49	49	48	43
2	92	86	81	77	84	79	75	72	67	65	62	56	54	53	46	45	44	39
3	85	78	72	67	79	72	67	63	62	58	55	52	50	48	43	42	40	36
4	79	71	64	59	73	66	60	56	57	53	49	48	45	43	40	39	37	34
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	36	33	32	29
7	65	54	48	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	32	29	27	25
9	57	47	40	36	53	44	38	34	39	35	31	34	31	29	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	4.0	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	2.8	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	3.5	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	3.8
	12H	2.5	2.5	2.5	2.5	3.3	2.5	2.5	2.5	2.5	3.7

### UGR Viewed Endwise

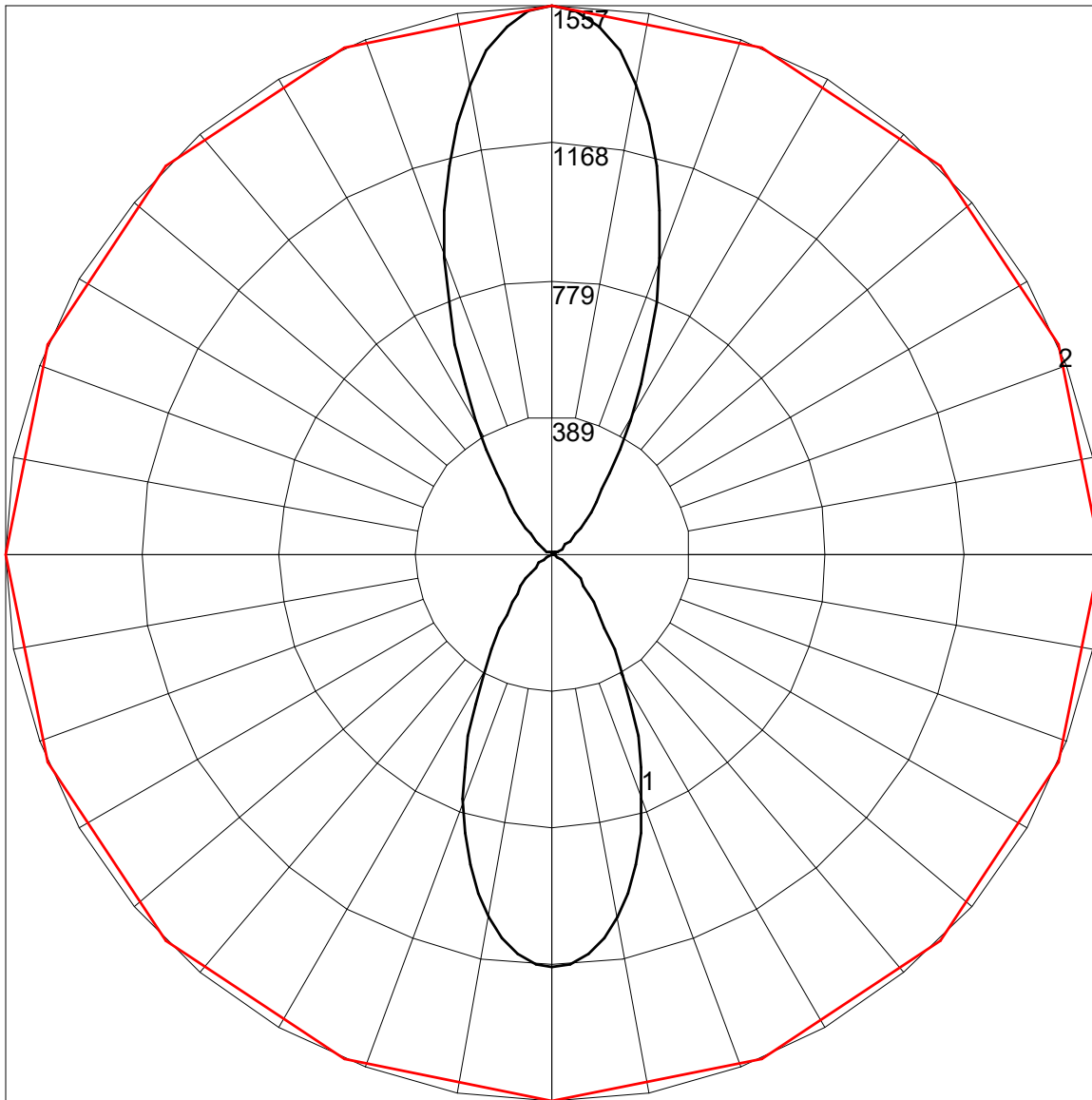
4H	2H	2.5	2.5	2.5	2.5	3.7	2.5	2.5	2.5	2.7	4.0
	3H	2.5	2.5	2.5	2.5	3.4	2.5	2.5	2.5	2.5	3.8
	4H	2.5	2.5	2.5	2.5	3.3	2.5	2.5	2.5	2.5	3.6
	6H	2.5	2.5	2.5	2.5	3.1	2.5	2.5	2.5	2.5	3.5
	8H	2.5	2.5	2.5	2.5	3.0	2.5	2.5	2.5	2.5	3.4
	12H	2.5	2.5	2.5	2.5	2.9	2.5	2.5	2.5	2.5	3.3
8H	4H	2.5	2.5	2.5	2.5	3.0	2.5	2.5	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	3.2
	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	3.2
	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 = 1557.383 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.)