



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-P12-835U-P12-835D-XXX-POE PR-OM-CSU-OS-CSD-WM\_.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 & #13257153.24

[TESTLAB] UL Verification Services Inc.

[ISSUE DATE] 20-APR-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-P12-835U-P12-835D-xxx-PoE PR-OM-CSU-OS-CSD-WM

[LUMINAIRE] Aluminum housing, optics, and trim enclosure

[LAMP] Two white LEDs

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

[MORE] hod of absolute photometry.

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

[\_ CONVERT] Luminaire test position and photometric web converted from original test data

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1988
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
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
Luminous Length (0-180)	0.21 ft
Luminous Width (90-270)	0.21 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	46146	40593	47901
55	24589	24117	25415
65	801	4966	801
75	349	349	349
85	260	260	260

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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>
<b>0.0</b>	1349.075	1349.075	1349.075	1349.075	1349.075	1349.075	1349.075	1349.075	1349.075
<b>2.5</b>	1334.549	1331.825	1331.825	1333.641	1335.457	1333.641	1331.825	1331.825	1334.549
<b>5.0</b>	1288.248	1285.525	1284.617	1284.617	1286.433	1284.617	1284.617	1285.525	1288.248
<b>7.5</b>	1219.251	1217.435	1214.712	1213.804	1214.712	1213.804	1214.712	1217.435	1219.251
<b>10.0</b>	1133.005	1133.005	1130.281	1127.558	1126.650	1127.558	1130.281	1133.005	1133.005
<b>12.5</b>	1033.141	1034.048	1033.141	1027.693	1024.062	1027.693	1033.141	1034.048	1033.141
<b>15.0</b>	926.014	929.645	929.645	923.290	917.843	923.290	929.645	929.645	926.014
<b>17.5</b>	823.698	828.691	831.324	825.332	821.428	825.332	831.324	828.691	823.698
<b>20.0</b>	728.555	734.093	735.999	730.461	725.559	730.461	735.999	734.093	728.555
<b>22.5</b>	632.957	638.949	637.678	632.413	625.513	632.413	637.678	638.949	632.957
<b>25.0</b>	532.549	540.447	538.631	531.641	523.288	531.641	538.631	540.447	532.549
<b>27.5</b>	438.767	449.117	449.570	441.037	431.776	441.037	449.570	449.117	438.767
<b>30.0</b>	357.423	368.317	374.037	363.143	354.336	363.143	374.037	368.317	357.423
<b>32.5</b>	292.057	300.319	309.761	298.594	292.602	298.594	309.761	300.319	292.057
<b>35.0</b>	242.398	246.574	255.562	247.300	245.484	247.300	255.562	246.574	242.398
<b>37.5</b>	204.903	204.812	209.352	207.082	209.715	207.082	209.352	204.812	204.903
<b>40.0</b>	175.670	171.494	170.314	174.944	181.208	174.944	170.314	171.494	175.670
<b>42.5</b>	151.612	144.985	139.174	149.161	157.241	149.161	139.174	144.985	151.612
<b>45.0</b>	131.276	123.378	115.479	127.826	136.269	127.826	115.479	123.378	131.276
<b>47.5</b>	112.393	104.857	96.959	109.034	116.569	109.034	96.959	104.857	112.393
<b>50.0</b>	93.872	88.153	81.798	91.784	97.050	91.784	88.153	88.153	93.872
<b>52.5</b>	75.171	72.901	68.362	75.988	77.622	75.988	68.362	72.901	75.171
<b>55.0</b>	56.741	58.648	55.652	61.099	58.648	61.099	55.652	58.648	56.741
<b>57.5</b>	39.855	44.757	43.123	46.664	40.672	46.664	43.123	44.757	39.855
<b>60.0</b>	23.150	30.595	30.867	31.412	22.787	31.412	30.867	30.595	23.150
<b>62.5</b>	8.806	15.434	19.065	14.980	7.898	14.980	19.065	15.434	8.806
<b>65.0</b>	1.362	3.995	8.443	3.450	1.362	3.450	8.443	3.995	1.362
<b>67.5</b>	0.999	0.908	2.270	0.908	0.999	0.908	2.270	0.908	0.999
<b>70.0</b>	0.726	0.635	0.817	0.726	0.726	0.726	0.817	0.635	0.726
<b>72.5</b>	0.545	0.454	0.454	0.545	0.545	0.545	0.454	0.454	0.545
<b>75.0</b>	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363	0.363
<b>77.5</b>	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272	0.272
<b>80.0</b>	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
<b>82.5</b>	0.091	0.091	0.091	0.091	0.182	0.091	0.091	0.091	0.091
<b>85.0</b>	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
<b>87.5</b>	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091	0.091
<b>90.0</b>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
<b>92.5</b>	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
<b>95.0</b>	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096	0.096
<b>97.5</b>	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191	0.191
<b>100.0</b>	0.191	0.191	0.191	0.191	0.286	0.191	0.191	0.191	0.191
<b>102.5</b>	0.286	0.286	0.286	0.286	0.381	0.286	0.286	0.286	0.286
<b>105.0</b>	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477	0.477
<b>107.5</b>	0.572	0.572	0.572	0.572	0.668	0.572	0.572	0.572	0.572
<b>110.0</b>	0.858	0.763	1.049	0.858	0.858	0.858	1.049	0.763	0.858
<b>112.5</b>	1.144	1.049	3.527	1.144	1.240	1.144	3.527	1.049	1.144
<b>115.0</b>	1.525	4.766	11.153	5.147	1.621	5.147	11.153	4.766	1.525
<b>117.5</b>	10.676	18.874	22.687	19.161	9.914	19.161	22.687	18.874	10.676
<b>120.0</b>	28.693	35.460	35.651	36.795	28.884	36.795	35.651	35.460	28.693
<b>122.5</b>	47.090	50.999	49.568	53.381	48.902	53.381	49.568	50.999	47.090
<b>125.0</b>	65.964	66.823	64.153	70.158	68.729	70.158	64.153	66.823	65.964
<b>127.5</b>	86.363	83.313	79.309	87.507	89.891	87.507	79.309	83.313	86.363
<b>130.0</b>	107.240	101.425	95.420	106.096	111.910	106.096	95.420	101.425	107.240
<b>132.5</b>	128.497	121.538	113.817	126.686	134.693	126.686	113.817	121.538	128.497

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<b>135.0</b>	150.898	144.130	135.932	149.468	158.238	149.468	135.932	144.130	150.898
<b>137.5</b>	175.777	170.535	164.625	176.064	183.784	176.064	164.625	170.535	175.777
<b>140.0</b>	205.805	203.231	202.945	208.283	213.526	208.283	202.945	203.231	205.805
<b>142.5</b>	242.600	244.220	252.418	248.129	249.272	248.129	252.418	244.220	242.600
<b>145.0</b>	288.259	295.600	311.328	297.888	293.693	297.888	311.328	295.600	288.259
<b>147.5</b>	347.075	360.611	378.532	361.183	351.173	361.183	378.532	360.611	347.075
<b>150.0</b>	422.571	440.206	453.456	438.871	424.478	438.871	453.456	440.206	422.571
<b>152.5</b>	513.986	529.048	534.482	526.474	512.176	526.474	534.482	529.048	513.986
<b>155.0</b>	611.313	620.464	622.370	617.985	607.309	617.985	622.370	620.464	611.313
<b>157.5</b>	704.349	711.688	713.976	709.782	700.345	709.782	713.976	711.688	704.349
<b>160.0</b>	796.336	803.867	807.870	803.104	794.716	803.104	807.870	803.867	796.336
<b>162.5</b>	891.088	898.142	903.671	897.475	891.184	897.475	903.671	898.142	891.088
<b>165.0</b>	985.649	990.415	997.088	990.415	984.696	990.415	997.088	990.415	985.649
<b>167.5</b>	1075.254	1078.113	1081.926	1077.160	1074.300	1077.160	1081.926	1078.113	1075.254
<b>170.0</b>	1156.279	1157.232	1156.279	1156.279	1155.326	1156.279	1156.279	1157.232	1156.279
<b>172.5</b>	1223.006	1223.006	1221.099	1221.099	1222.052	1221.099	1221.099	1223.006	1223.006
<b>175.0</b>	1274.480	1275.434	1273.527	1273.527	1274.480	1273.527	1273.527	1275.434	1274.480
<b>177.5</b>	1310.704	1310.704	1307.844	1308.797	1309.750	1308.797	1307.844	1310.704	1310.704
<b>180.0</b>	1321.122	1321.122	1321.122	1321.122	1321.122	1321.122	1321.122	1321.122	1321.122

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Zone	Lumens	%Lamp	%Fixt
0-20	375.20	N.A.	18.90
0-30	620.29	N.A.	31.20
0-40	778.99	N.A.	39.20
0-60	928.92	N.A.	46.70
0-80	937.82	N.A.	47.20
0-90	937.92	N.A.	47.20
10-90	820.19	N.A.	41.30
20-40	403.79	N.A.	20.30
20-50	501.64	N.A.	25.20
40-70	158.41	N.A.	8.00
60-80	8.90	N.A.	0.40
70-80	0.42	N.A.	0.00
80-90	0.10	N.A.	0.00
90-110	0.63	N.A.	0.00
90-120	11.01	N.A.	0.60
90-130	71.17	N.A.	3.60
90-150	376.21	N.A.	18.90
90-180	1049.84	N.A.	52.80
110-180	1049.21	N.A.	52.80
0-180	1987.76	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	117.73
10-20	257.47
20-30	245.09
30-40	158.70
40-50	97.85
50-60	52.09
60-70	8.48
70-80	0.42
80-90	0.10
90-100	0.13
100-110	0.50
110-120	10.38
120-130	60.15
130-140	114.47
140-150	190.57
150-160	281.29
160-170	274.48
170-180	117.87

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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	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	99	96	93	90	91	88	86	83	75	73	71	62	61	60	50	50	49	44
2	92	86	81	77	85	80	76	72	68	65	63	57	55	54	47	46	45	40
3	86	78	72	67	79	73	68	63	62	59	56	53	50	48	44	43	41	37
4	80	71	64	59	74	66	61	56	57	53	50	49	46	44	41	40	38	35
5	75	65	58	53	69	61	55	50	53	49	45	46	43	40	39	37	35	32
6	70	59	53	48	65	56	50	46	49	44	41	43	39	37	36	34	33	30
7	65	55	48	43	61	52	46	41	45	41	38	40	36	34	34	32	30	28
8	61	51	44	40	57	48	42	38	42	38	35	37	34	31	32	30	28	26
9	58	47	41	36	54	45	39	35	40	35	32	35	32	29	31	28	27	25
10	55	44	38	34	51	42	36	32	37	33	30	33	30	27	29	27	25	23

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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	14.3	14.9	15.3	15.9	17.3	14.5	15.2	15.5	16.2	17.5
	3H	14.1	14.7	15.1	15.7	17.0	14.3	14.9	15.3	15.9	17.3
	4H	13.9	14.5	15.0	15.5	16.9	14.2	14.8	15.2	15.8	17.1
	6H	13.8	14.4	14.9	15.4	16.7	14.1	14.6	15.1	15.6	17.0
	8H	13.8	14.3	14.8	15.3	16.7	14.0	14.5	15.1	15.6	16.9
	12H	13.7	14.2	14.8	15.2	16.6	14.0	14.5	15.0	15.5	16.9

### UGR Viewed Endwise

4H	2H	14.0	14.6	15.1	15.6	17.0	14.3	14.9	15.3	15.9	17.2
	3H	13.8	14.3	14.9	15.3	16.7	14.1	14.6	15.1	15.6	17.0
	4H	13.7	14.1	14.8	15.2	16.6	14.0	14.4	15.0	15.4	16.8
	6H	13.6	14.0	14.7	15.0	16.4	13.9	14.2	14.9	15.3	16.7
	8H	13.5	13.9	14.6	14.9	16.3	13.8	14.1	14.8	15.2	16.6
	12H	13.5	13.8	14.5	14.8	16.2	13.7	14.0	14.8	15.1	16.5

8H	4H	13.5	13.9	14.6	14.9	16.3	13.8	14.1	14.8	15.2	16.6
	6H	13.4	13.7	14.5	14.8	16.2	13.7	14.0	14.7	15.0	16.4
	8H	13.4	13.6	14.5	14.7	16.1	13.6	13.9	14.7	14.9	16.3
	12H	13.3	13.5	14.4	14.6	16.0	13.6	13.8	14.6	14.8	16.3

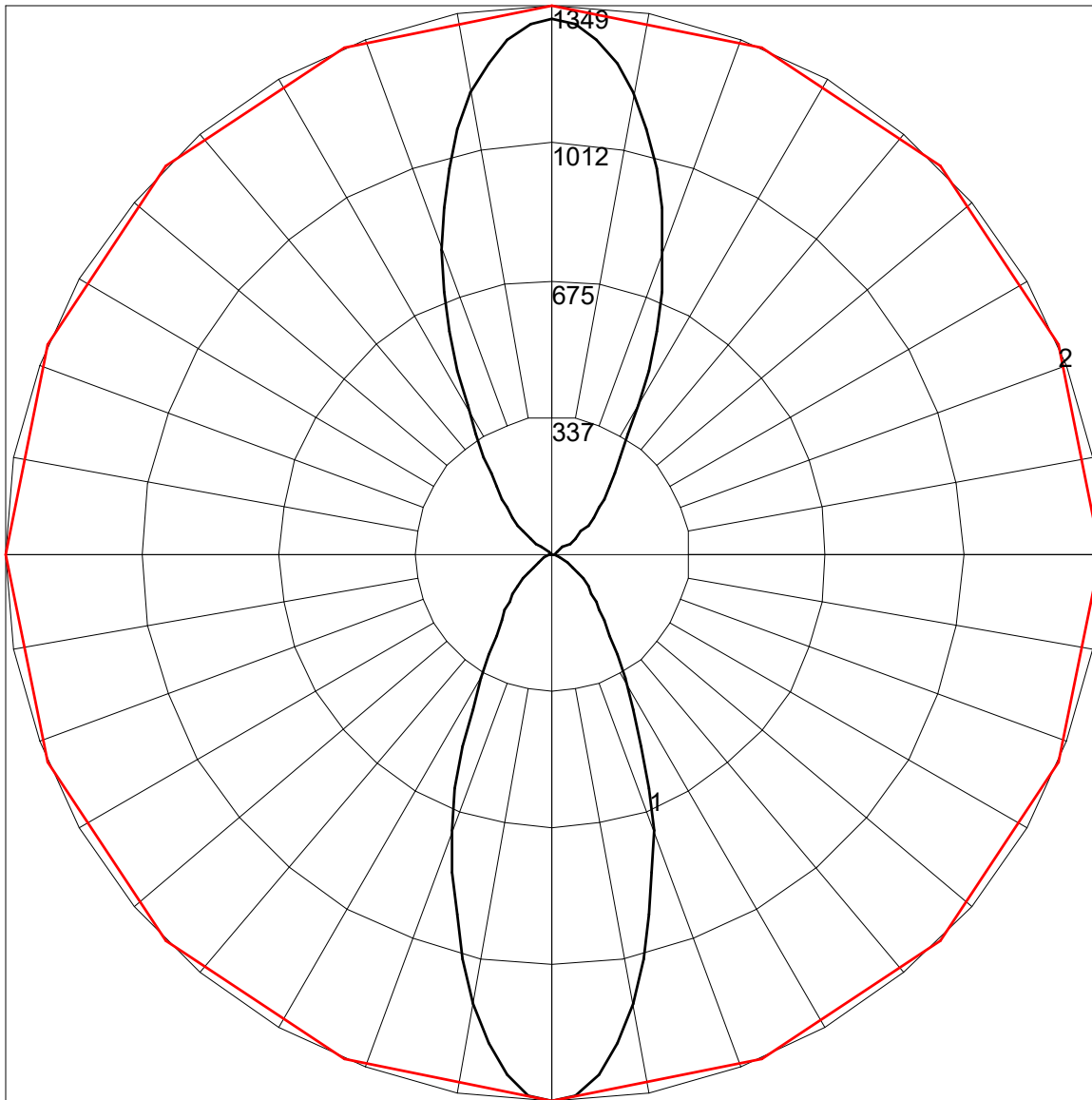
12H	4H	13.5	13.8	14.5	14.8	16.2	13.7	14.0	14.8	15.1	16.5
	6H	13.4	13.6	14.4	14.7	16.1	13.6	13.9	14.7	14.9	16.4
	8H	13.3	13.5	14.4	14.6	16.0	13.6	13.8	14.6	14.8	16.3

Maximum UGR = 17.5

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## POLAR GRAPH



Maximum Candela = 1349.075 Located At Horizontal Angle = 0, Vertical Angle = 0

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

# 2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)