



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 & #13257153.22

[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-LN-WHD-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	2304
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	100
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	37669	42821	37077
55	27488	29085	26551
65	22327	22139	22233
75	16922	16075	16383
85	10050	8681	9366

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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>	4517.023	4517.023	4517.023	4517.023	4517.023	4517.023	4517.023	4517.023	4517.023
<b>2.5</b>	4353.641	4350.438	4354.442	4361.650	4362.451	4361.650	4354.442	4350.438	4353.641
<b>5.0</b>	3926.767	3917.957	3919.559	3918.758	3915.554	3918.758	3919.559	3917.957	3926.767
<b>7.5</b>	3275.643	3271.638	3263.629	3256.421	3252.417	3256.421	3263.629	3271.638	3275.643
<b>10.0</b>	2539.624	2533.217	2523.606	2508.389	2505.186	2508.389	2523.606	2533.217	2539.624
<b>12.5</b>	1851.659	1840.447	1830.836	1810.814	1805.207	1810.814	1830.836	1840.447	1851.659
<b>15.0</b>	1299.845	1293.438	1284.629	1259.801	1245.385	1259.801	1284.629	1293.438	1299.845
<b>17.5</b>	916.219	917.821	915.418	886.586	868.966	886.586	915.418	917.821	916.219
<b>20.0</b>	676.833	687.885	695.733	664.899	646.399	664.899	695.733	687.885	676.833
<b>22.5</b>	525.144	546.928	570.795	535.235	510.648	535.235	570.795	546.928	525.144
<b>25.0</b>	418.625	449.219	491.666	443.373	409.175	443.373	491.666	449.219	418.625
<b>27.5</b>	331.328	368.009	424.472	362.963	324.201	362.963	424.472	368.009	331.328
<b>30.0</b>	268.379	297.611	357.838	292.325	261.410	292.325	357.838	297.611	268.379
<b>32.5</b>	225.691	245.392	292.966	239.707	219.844	239.707	292.966	245.392	225.691
<b>35.0</b>	194.135	208.472	237.064	204.468	191.894	204.468	237.064	208.472	194.135
<b>37.5</b>	169.629	180.281	195.818	178.679	169.228	178.679	195.818	180.281	169.629
<b>40.0</b>	147.204	156.894	165.544	156.574	146.643	156.574	165.544	156.894	147.204
<b>42.5</b>	125.740	135.751	141.598	135.431	124.779	135.431	141.598	135.751	125.740
<b>45.0</b>	107.159	116.610	121.816	115.809	105.477	115.809	121.816	116.610	107.159
<b>47.5</b>	91.942	100.111	104.757	98.670	89.299	98.670	104.757	100.111	91.942
<b>50.0</b>	80.009	86.496	89.860	84.494	77.045	84.494	89.860	86.496	80.009
<b>52.5</b>	70.798	75.604	77.366	73.522	68.076	73.522	77.366	75.604	70.798
<b>55.0</b>	63.430	66.714	67.115	64.953	61.268	64.953	67.115	66.714	63.430
<b>57.5</b>	57.023	59.025	58.465	57.745	55.581	57.745	58.465	59.025	57.023
<b>60.0</b>	50.697	51.977	50.937	51.257	49.736	51.257	50.937	51.977	50.697
<b>62.5</b>	44.049	45.250	44.049	45.090	43.889	45.090	44.049	45.250	44.049
<b>65.0</b>	37.962	38.763	37.642	38.843	37.802	38.843	37.642	38.763	37.962
<b>67.5</b>	32.436	32.837	31.716	32.677	32.036	32.677	31.716	32.837	32.436
<b>70.0</b>	27.070	27.311	26.349	27.070	26.670	27.070	26.349	27.311	27.070
<b>72.5</b>	22.184	22.105	21.384	21.944	21.624	21.944	21.384	22.105	22.184
<b>75.0</b>	17.620	17.379	16.738	17.219	17.059	17.219	16.738	17.379	17.620
<b>77.5</b>	13.455	13.215	12.654	12.974	12.895	12.974	12.654	13.215	13.455
<b>80.0</b>	9.691	9.451	9.050	9.291	9.291	9.291	9.050	9.451	9.691
<b>82.5</b>	6.407	6.087	5.766	6.007	6.087	6.007	5.766	6.087	6.407
<b>85.0</b>	3.524	3.204	3.044	3.204	3.284	3.204	3.044	3.204	3.524
<b>87.5</b>	0.560	0.881	1.041	1.201	1.282	1.201	1.041	0.881	0.560
<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	699.31	N.A.	30.40
0-30	908.87	N.A.	39.50
0-40	1044.03	N.A.	45.30
0-60	1193.23	N.A.	51.80
0-80	1249.82	N.A.	54.30
0-90	1253.88	N.A.	54.40
10-90	925.33	N.A.	40.20
20-40	344.73	N.A.	15.00
20-50	434.74	N.A.	18.90
40-70	187.32	N.A.	8.10
60-80	56.60	N.A.	2.50
70-80	18.48	N.A.	0.80
80-90	4.05	N.A.	0.20
90-110	0.63	N.A.	0.00
90-120	11.01	N.A.	0.50
90-130	71.17	N.A.	3.10
90-150	376.21	N.A.	16.30
90-180	1049.84	N.A.	45.60
110-180	1049.21	N.A.	45.50
0-180	2303.72	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	328.55
10-20	370.76
20-30	209.56
30-40	135.16
40-50	90.02
50-60	59.18
60-70	38.12
70-80	18.48
80-90	4.05
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	108	108	108	108	100	100	100	100	86	86	86	72	72	72	60	60	60	54
1	101	98	95	92	94	91	89	86	79	77	75	67	66	65	57	56	56	51
2	95	89	84	80	88	83	79	76	73	70	67	63	61	59	54	52	51	47
3	89	81	75	71	83	76	71	67	67	64	61	59	56	54	51	49	48	44
4	83	75	68	64	78	70	65	61	62	58	55	55	52	50	48	46	45	42
5	78	69	63	58	73	65	60	56	58	54	51	52	49	46	46	44	42	39
6	74	64	58	53	69	61	55	51	55	51	47	49	46	44	44	42	40	37
7	70	60	54	49	66	57	52	48	52	47	44	47	43	41	42	40	38	36
8	66	56	50	46	62	54	48	44	49	45	42	44	41	39	40	38	36	34
9	63	53	47	43	60	51	46	42	47	42	39	43	39	37	39	36	35	33
10	60	50	45	41	57	48	43	40	44	40	37	41	38	35	37	35	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	16.0	16.7	17.0	17.7	18.9	15.8	16.6	16.8	17.5	18.7
	3H	17.3	17.9	18.2	18.9	20.1	17.1	17.8	18.1	18.7	20.0
	4H	17.7	18.3	18.6	19.2	20.5	17.5	18.2	18.5	19.1	20.4
	6H	17.9	18.5	18.9	19.4	20.7	17.8	18.3	18.8	19.3	20.6
	8H	18.0	18.5	19.0	19.5	20.7	17.8	18.4	18.8	19.3	20.6
	12H	18.0	18.5	19.0	19.5	20.7	17.8	18.3	18.8	19.3	20.6

### UGR Viewed Endwise

4H	2H	16.3	17.0	17.3	17.9	19.2	16.2	16.8	17.2	17.8	19.0
	3H	17.8	18.3	18.8	19.3	20.6	17.7	18.2	18.7	19.2	20.5
	4H	18.3	18.8	19.3	19.8	21.0	18.2	18.7	19.2	19.6	20.9
	6H	18.6	19.0	19.7	20.1	21.3	18.5	18.9	19.5	19.9	21.2
	8H	18.7	19.1	19.7	20.1	21.4	18.6	19.0	19.6	20.0	21.3
	12H	18.8	19.1	19.8	20.1	21.4	18.6	19.0	19.7	20.0	21.3

8H	4H	18.4	18.8	19.4	19.8	21.1	18.3	18.7	19.3	19.7	21.0
	6H	18.8	19.2	19.9	20.2	21.5	18.7	19.0	19.8	20.1	21.4
	8H	19.0	19.3	20.0	20.3	21.6	18.9	19.1	19.9	20.2	21.5
	12H	19.1	19.3	20.1	20.3	21.7	18.9	19.2	20.0	20.2	21.6

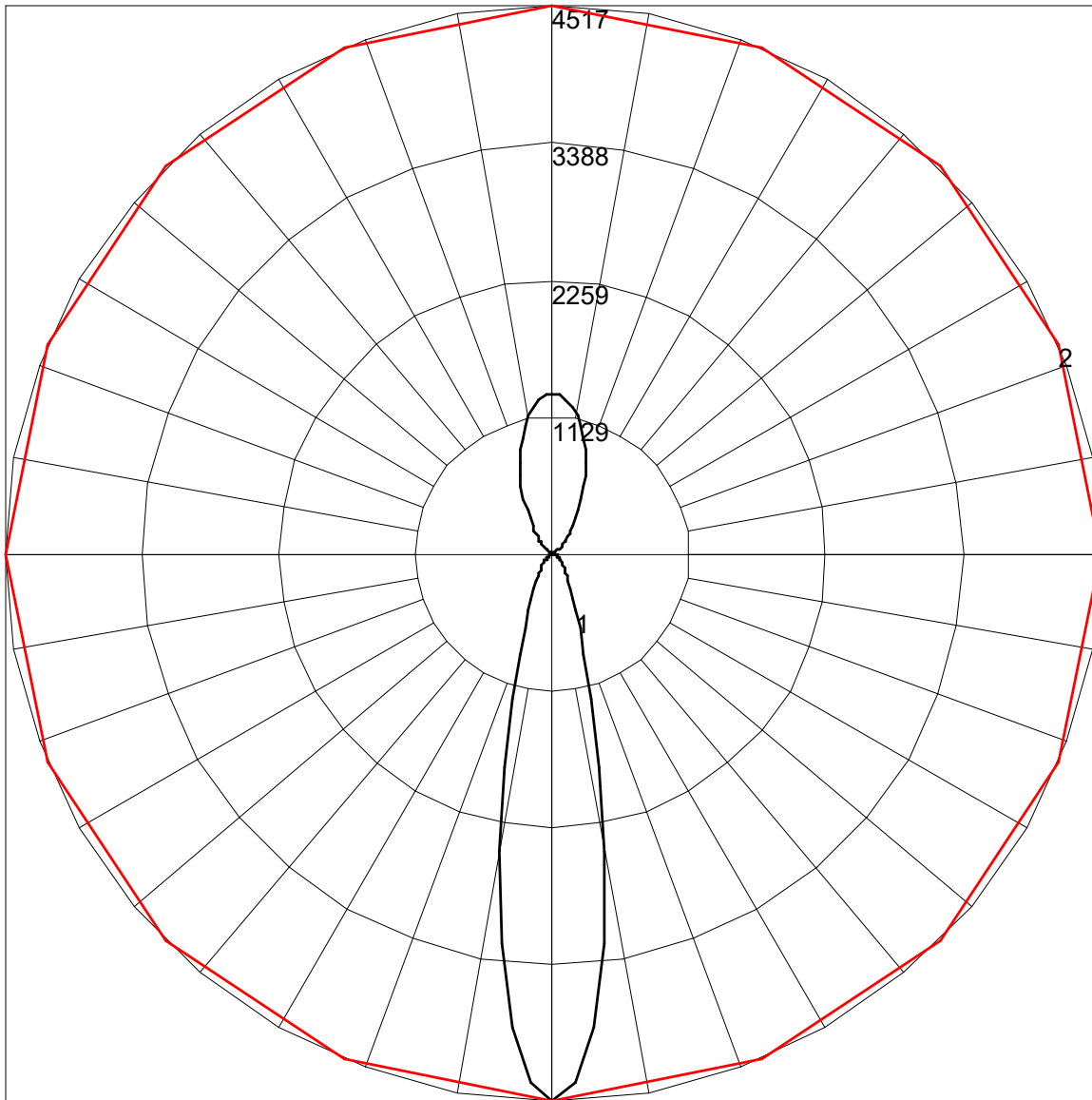
12H	4H	18.4	18.7	19.4	19.7	21.0	18.3	18.6	19.3	19.6	20.9
	6H	18.8	19.1	19.9	20.1	21.5	18.7	19.0	19.8	20.0	21.4
	8H	19.0	19.2	20.0	20.3	21.6	18.9	19.1	19.9	20.1	21.5

Maximum UGR = 21.7

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POLAR GRAPH



Maximum Candela = 4517.023 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.)