



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 & #13257153.14

[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-LW-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	2343
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	102
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	30911	38051	31449
55	25009	27070	25428
65	21854	22186	22091
75	17184	16875	17803
85	10344	8964	11034

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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>	1492.712	1492.712	1492.712	1492.712	1492.712	1492.712	1492.712	1492.712	1492.712
<b>2.5</b>	1519.310	1497.548	1484.652	1480.622	1479.010	1480.622	1484.652	1497.548	1519.310
<b>5.0</b>	1506.414	1484.652	1472.562	1468.532	1466.920	1468.532	1472.562	1484.652	1506.414
<b>7.5</b>	1484.652	1462.890	1452.412	1449.188	1450.800	1449.188	1452.412	1462.890	1484.652
<b>10.0</b>	1456.442	1435.486	1427.426	1425.008	1424.202	1425.008	1427.426	1435.486	1456.442
<b>12.5</b>	1416.948	1398.410	1391.962	1390.350	1387.932	1390.350	1391.962	1398.410	1416.948
<b>15.0</b>	1362.140	1346.020	1343.602	1340.378	1335.542	1340.378	1343.602	1346.020	1362.140
<b>17.5</b>	1288.794	1275.898	1275.092	1270.256	1261.390	1270.256	1275.092	1275.898	1288.794
<b>20.0</b>	1185.626	1182.402	1188.850	1177.566	1155.804	1177.566	1188.850	1182.402	1185.626
<b>22.5</b>	1039.740	1057.472	1079.234	1051.830	1011.530	1051.830	1079.234	1057.472	1039.740
<b>25.0</b>	858.390	897.884	947.856	895.466	836.628	895.466	947.856	897.884	858.390
<b>27.5</b>	658.744	717.018	793.104	717.904	650.764	717.904	793.104	717.018	658.744
<b>30.0</b>	471.510	538.086	627.310	544.695	473.525	544.695	627.310	538.086	471.510
<b>32.5</b>	319.821	380.996	469.817	392.038	328.364	392.038	469.817	380.996	319.821
<b>35.0</b>	217.056	264.126	337.714	276.136	227.534	276.136	337.714	264.126	217.056
<b>37.5</b>	155.719	187.314	240.672	196.986	164.505	196.986	240.672	187.314	155.719
<b>40.0</b>	120.981	140.405	175.144	147.256	126.864	147.256	175.144	140.405	120.981
<b>42.5</b>	100.831	112.759	133.796	117.434	103.974	117.434	133.796	112.759	100.831
<b>45.0</b>	87.935	96.075	108.246	98.735	89.466	98.735	108.246	96.075	87.935
<b>47.5</b>	78.182	84.388	91.481	85.839	78.988	85.839	91.481	84.388	78.182
<b>50.0</b>	70.203	75.200	79.552	76.006	70.928	76.006	79.552	75.200	70.203
<b>52.5</b>	63.432	67.543	70.122	68.429	64.399	68.429	70.122	67.543	63.432
<b>55.0</b>	57.710	61.014	62.465	61.901	58.677	61.901	62.465	61.014	57.710
<b>57.5</b>	52.632	55.130	55.614	55.856	53.518	55.856	55.614	55.130	52.632
<b>60.0</b>	47.876	49.488	49.408	50.133	48.360	50.133	49.408	49.488	47.876
<b>62.5</b>	42.718	44.169	43.524	44.330	42.879	44.330	43.524	44.169	42.718
<b>65.0</b>	37.157	38.527	37.721	38.607	37.560	38.607	37.721	38.527	37.157
<b>67.5</b>	32.079	32.965	32.159	33.207	32.562	33.207	32.159	32.965	32.079
<b>70.0</b>	27.162	27.726	27.001	28.049	27.726	28.049	27.001	27.726	27.162
<b>72.5</b>	22.407	22.729	22.165	23.052	23.052	23.052	22.165	22.729	22.407
<b>75.0</b>	17.893	18.135	17.571	18.377	18.538	18.377	17.571	18.135	17.893
<b>77.5</b>	13.783	13.863	13.380	14.024	14.347	14.024	13.380	13.863	13.783
<b>80.0</b>	9.994	9.994	9.591	10.075	10.478	10.075	9.591	9.994	9.994
<b>82.5</b>	6.609	6.448	6.126	6.529	7.012	6.529	6.126	6.448	6.609
<b>85.0</b>	3.627	3.385	3.143	3.466	3.869	3.466	3.143	3.385	3.627
<b>87.5</b>	0.564	0.725	0.725	0.564	0.564	0.564	0.725	0.725	0.564
<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	513.07	N.A.	21.90
0-30	913.28	N.A.	39.00
0-40	1098.34	N.A.	46.90
0-60	1231.98	N.A.	52.60
0-80	1289.1	N.A.	55.00
0-90	1293.33	N.A.	55.20
10-90	1153.72	N.A.	49.20
20-40	585.26	N.A.	25.00
20-50	664.04	N.A.	28.30
40-70	171.44	N.A.	7.30
60-80	57.12	N.A.	2.40
70-80	19.33	N.A.	0.80
80-90	4.23	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.	3.00
90-150	376.21	N.A.	16.10
90-180	1049.84	N.A.	44.80
110-180	1049.21	N.A.	44.80
0-180	2343.17	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	139.61
10-20	373.46
20-30	400.21
30-40	185.06
40-50	78.78
50-60	54.87
60-70	37.79
70-80	19.33
80-90	4.23
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	101	101	101	101	86	86	86	73	73	73	61	61	61	55
1	101	98	94	92	94	91	88	86	79	77	75	68	66	65	57	56	56	51
2	94	88	83	79	88	83	78	75	72	69	66	62	60	58	53	52	51	47
3	88	80	74	69	82	75	70	66	66	62	59	58	55	53	50	48	47	43
4	82	73	67	62	77	69	63	59	61	57	54	54	51	48	47	45	43	40
5	77	67	60	56	72	64	58	53	57	52	49	50	47	44	44	42	40	37
6	72	62	55	50	68	59	53	48	53	48	45	47	44	41	42	39	37	35
7	68	57	51	46	64	55	49	44	49	45	41	44	41	38	39	37	35	32
8	64	53	47	42	60	51	45	41	46	41	38	42	38	35	37	35	33	31
9	60	50	43	39	57	48	42	38	43	39	35	39	36	33	35	33	31	29
10	57	47	40	36	54	45	39	35	41	36	33	37	33	31	34	31	29	27

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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	15.6	16.3	16.6	17.3	18.5	UGR Viewed Endwise	15.7	16.4	16.7	17.4	18.6
	3H	17.0	17.7	18.0	18.6	19.9		17.1	17.8	18.1	18.7	20.0
	4H	17.5	18.1	18.5	19.1	20.3		17.6	18.2	18.6	19.2	20.4
	6H	17.8	18.4	18.8	19.3	20.6		17.9	18.5	18.9	19.4	20.7
	8H	17.9	18.4	18.9	19.4	20.6		18.0	18.5	19.0	19.5	20.7
	12H	17.9	18.4	18.9	19.3	20.6		18.0	18.5	19.0	19.5	20.7

4H	2H	16.0	16.6	17.0	17.6	18.8	16.1	16.7	17.1	17.7	18.9
	3H	17.7	18.2	18.6	19.1	20.4	17.7	18.2	18.7	19.2	20.5
	4H	18.2	18.7	19.2	19.7	20.9	18.3	18.8	19.3	19.8	21.0
	6H	18.6	19.0	19.6	20.0	21.3	18.7	19.1	19.7	20.1	21.4
	8H	18.7	19.1	19.7	20.1	21.4	18.8	19.2	19.8	20.2	21.5
	12H	18.8	19.1	19.8	20.1	21.4	18.9	19.2	19.9	20.2	21.5

8H	4H	18.4	18.8	19.4	19.7	21.0	18.5	18.8	19.5	19.8	21.1
	6H	18.9	19.2	19.9	20.2	21.5	19.0	19.3	20.0	20.3	21.6
	8H	19.0	19.3	20.1	20.3	21.6	19.1	19.4	20.2	20.4	21.7
	12H	19.1	19.3	20.2	20.4	21.7	19.2	19.5	20.3	20.5	21.8

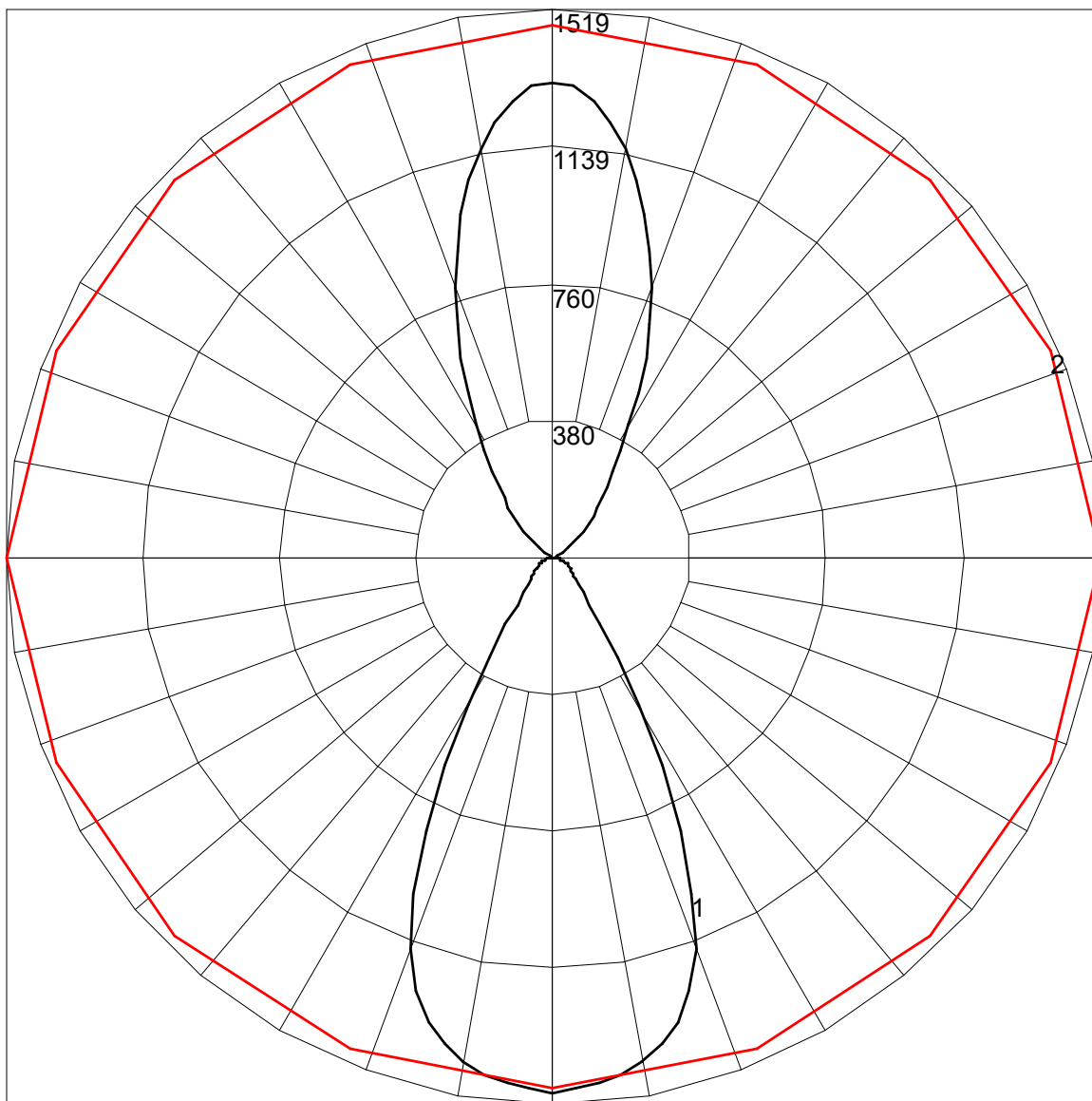
12H	4H	18.4	18.7	19.4	19.7	21.0	18.4	18.8	19.5	19.8	21.1
	6H	18.9	19.1	19.9	20.2	21.5	19.0	19.2	20.0	20.2	21.6
	8H	19.1	19.3	20.1	20.3	21.7	19.2	19.4	20.2	20.4	21.8

Maximum UGR = 21.8

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## POLAR GRAPH



Maximum Candela = 1519.31 Located At Horizontal Angle = 0, Vertical Angle = 2.5

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

# 2 - Horizontal Cone Through Vertical Angle (2.5) (Through Max. Cd.)