



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13257153.18 & #13257153.23

[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-RN-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	2305
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	38474	46530	38784
55	22813	26285	23299
65	17814	16305	17530
75	10003	9311	9542
85	4572	4572	4572

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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>	4507.855	4507.855	4507.855	4507.855	4507.855	4507.855	4507.855	4507.855	4507.855
<b>2.5</b>	4383.660	4350.809	4347.604	4348.405	4350.008	4348.405	4347.604	4350.809	4383.660
<b>5.0</b>	3947.778	3917.330	3909.318	3907.715	3905.312	3907.715	3909.318	3917.330	3947.778
<b>7.5</b>	3267.513	3247.482	3251.488	3258.700	3258.700	3258.700	3251.488	3247.482	3267.513
<b>10.0</b>	2498.310	2485.490	2506.322	2527.155	2535.167	2527.155	2506.322	2485.490	2498.310
<b>12.5</b>	1786.796	1781.989	1814.840	1842.083	1850.095	1842.083	1814.840	1781.989	1786.796
<b>15.0</b>	1237.937	1240.341	1267.584	1296.429	1303.640	1296.429	1267.584	1240.341	1237.937
<b>17.5</b>	874.168	879.777	903.814	923.045	922.243	923.045	903.814	879.777	874.168
<b>20.0</b>	659.111	670.490	691.402	694.126	686.834	694.126	691.402	670.490	659.111
<b>22.5</b>	534.757	550.542	572.416	558.634	543.650	558.634	572.416	550.542	534.757
<b>25.0</b>	448.141	471.537	498.220	471.297	448.301	471.297	498.220	471.537	448.141
<b>27.5</b>	370.500	402.389	440.930	401.027	370.420	401.027	440.930	402.389	370.500
<b>30.0</b>	299.749	333.241	385.163	334.603	303.034	334.603	385.163	333.241	299.749
<b>32.5</b>	243.981	271.304	327.071	275.551	249.671	275.551	327.071	271.304	243.981
<b>35.0</b>	203.839	223.069	272.507	228.999	209.047	228.999	272.507	223.069	203.839
<b>37.5</b>	178.599	188.455	224.832	193.102	179.721	193.102	224.832	188.455	178.599
<b>40.0</b>	155.684	163.856	187.413	165.299	155.283	165.299	187.413	163.856	155.684
<b>42.5</b>	132.047	141.742	158.247	142.062	132.126	142.062	158.247	141.742	132.047
<b>45.0</b>	109.451	120.108	132.367	120.669	110.333	120.669	132.367	120.108	109.451
<b>47.5</b>	89.581	99.997	110.172	100.878	91.103	100.878	110.172	99.997	89.581
<b>50.0</b>	73.395	82.289	90.782	83.651	74.997	83.651	90.782	82.289	73.395
<b>52.5</b>	61.295	67.947	74.276	69.469	62.738	69.469	74.276	67.947	61.295
<b>55.0</b>	52.642	57.129	60.655	58.332	53.764	58.332	60.655	57.129	52.642
<b>57.5</b>	46.313	48.636	49.597	49.518	46.873	49.518	49.597	48.636	46.313
<b>60.0</b>	40.944	41.825	40.784	42.226	40.864	42.226	40.784	41.825	40.944
<b>62.5</b>	35.736	35.816	33.813	35.736	35.255	35.736	33.813	35.816	35.736
<b>65.0</b>	30.288	30.127	27.723	29.887	29.806	29.887	27.723	30.127	30.288
<b>67.5</b>	25.079	24.679	22.435	24.438	24.679	24.438	22.435	24.679	25.079
<b>70.0</b>	20.031	19.630	17.787	19.311	19.630	19.311	17.787	19.630	20.031
<b>72.5</b>	15.143	14.823	13.541	14.582	14.823	14.582	13.541	14.823	15.143
<b>75.0</b>	10.416	10.416	9.695	10.256	9.936	10.256	9.695	10.416	10.416
<b>77.5</b>	5.048	6.089	6.490	6.170	5.689	6.170	6.490	6.089	5.048
<b>80.0</b>	3.846	3.766	4.087	3.846	3.766	3.846	4.087	3.766	3.846
<b>82.5</b>	2.644	2.644	2.644	2.724	2.644	2.724	2.644	2.644	2.644
<b>85.0</b>	1.603	1.603	1.603	1.683	1.603	1.683	1.603	1.603	1.603
<b>87.5</b>	0.721	0.721	0.721	0.721	0.721	0.721	0.721	0.721	0.721
<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	696.85	N.A.	30.20
0-30	917.10	N.A.	39.80
0-40	1066.2	N.A.	46.30
0-60	1212.84	N.A.	52.60
0-80	1253.34	N.A.	54.40
0-90	1255.22	N.A.	54.50
10-90	927.42	N.A.	40.20
20-40	369.35	N.A.	16.00
20-50	463.31	N.A.	20.10
40-70	176.05	N.A.	7.60
60-80	40.49	N.A.	1.80
70-80	11.09	N.A.	0.50
80-90	1.89	N.A.	0.10
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.	45.50
110-180	1049.21	N.A.	45.50
0-180	2305.07	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	327.81
10-20	369.05
20-30	220.24
30-40	149.11
40-50	93.97
50-60	52.68
60-70	29.40
70-80	11.09
80-90	1.89
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	87	79	77	76	68	67	65	57	56	56	51
2	95	89	84	80	88	83	79	76	73	70	68	63	61	59	54	53	52	48
3	89	82	76	71	83	77	72	68	68	64	61	59	57	55	51	50	48	45
4	83	75	69	64	78	71	65	61	63	59	56	55	53	50	49	47	45	42
5	79	69	63	58	74	66	60	56	59	55	51	52	49	47	46	44	43	40
6	74	65	58	54	70	61	56	52	55	51	48	50	46	44	44	42	40	38
7	70	60	54	50	66	58	52	48	52	48	45	47	44	41	42	40	38	36
8	67	57	51	46	63	54	49	45	49	45	42	45	42	39	41	38	36	34
9	63	53	47	43	60	51	46	42	47	43	40	43	40	37	39	37	35	33
10	60	51	45	41	57	49	43	40	45	41	38	41	38	36	38	35	33	32

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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	14.7	15.5	15.7	16.4	17.6	14.9	15.6	15.8	16.5	17.7
	3H	15.8	16.4	16.8	17.4	18.6	15.8	16.5	16.8	17.4	18.7
	4H	16.0	16.6	17.0	17.6	18.8	16.0	16.6	17.0	17.6	18.9
	6H	16.0	16.6	17.0	17.5	18.8	16.0	16.6	17.0	17.6	18.8
	8H	16.0	16.5	17.0	17.5	18.7	16.0	16.5	17.0	17.5	18.8
	12H	15.9	16.4	16.9	17.4	18.7	16.0	16.5	17.0	17.4	18.7

### UGR Viewed Endwise

4H	2H	15.0	15.6	16.0	16.5	17.8	15.1	15.7	16.1	16.6	17.9
	3H	16.2	16.7	17.2	17.7	18.9	16.2	16.7	17.2	17.7	19.0
	4H	16.5	16.9	17.5	17.9	19.2	16.5	16.9	17.5	17.9	19.2
	6H	16.5	16.9	17.5	17.9	19.2	16.5	16.9	17.5	17.9	19.2
	8H	16.5	16.8	17.5	17.8	19.1	16.5	16.9	17.5	17.9	19.2
	12H	16.4	16.8	17.5	17.8	19.1	16.5	16.8	17.5	17.8	19.1

8H	4H	16.4	16.8	17.4	17.8	19.1	16.5	16.8	17.5	17.8	19.1
	6H	16.5	16.8	17.5	17.8	19.1	16.5	16.8	17.6	17.9	19.2
	8H	16.5	16.8	17.6	17.8	19.1	16.5	16.8	17.6	17.8	19.2
	12H	16.5	16.7	17.6	17.8	19.1	16.5	16.8	17.6	17.8	19.2

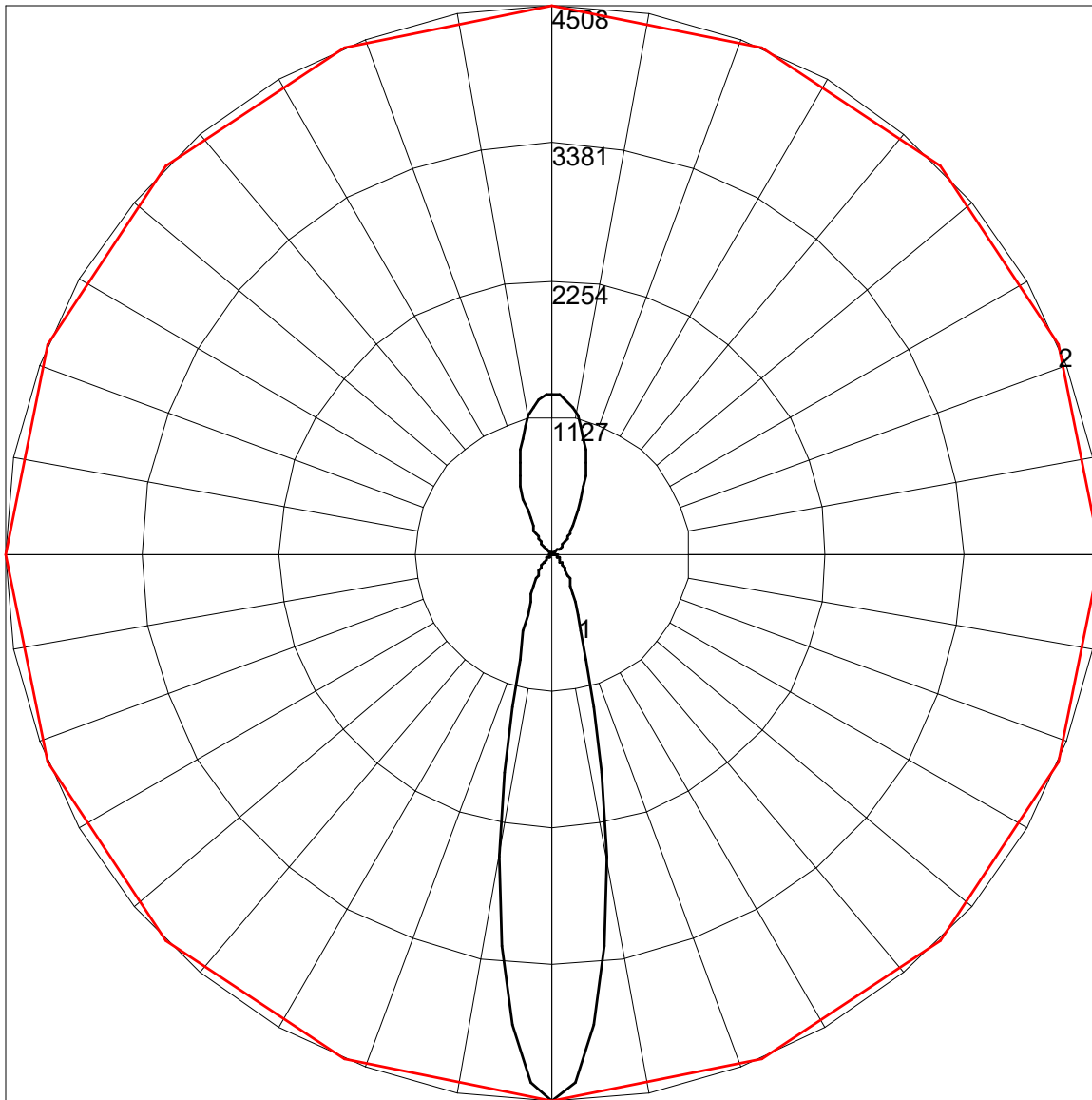
12H	4H	16.4	16.7	17.4	17.7	19.0	16.4	16.7	17.4	17.7	19.0
	6H	16.5	16.7	17.5	17.7	19.1	16.5	16.8	17.5	17.8	19.1
	8H	16.5	16.7	17.5	17.7	19.1	16.5	16.7	17.6	17.8	19.1

Maximum UGR = 19.2

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POLAR GRAPH



Maximum Candela = 4507.855 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.)