



## IES INDOOR REPORT

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

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.12 & #13257153.19

[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-LM-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	2404
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
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	2776	2341	2789
55	1494	1208	1525
65	879	644	879
75	403	283	412
85	81	51	86

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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	3184.311	3184.311	3184.311	3184.311	3184.311	3184.311	3184.311	3184.311	3184.311
2.5	3144.166	3132.122	3134.531	3143.363	3147.377	3143.363	3134.531	3132.122	3144.166
5.0	3017.307	3007.672	3013.293	3019.716	3022.927	3019.716	3013.293	3007.672	3017.307
7.5	2837.457	2827.019	2831.034	2832.640	2831.837	2832.640	2831.034	2827.019	2837.457
10.0	2570.091	2564.470	2571.696	2562.061	2550.018	2562.061	2571.696	2564.470	2570.091
12.5	2154.990	2167.034	2187.909	2163.822	2138.129	2163.822	2187.909	2167.034	2154.990
15.0	1630.695	1662.008	1706.970	1675.657	1637.921	1675.657	1706.970	1662.008	1630.695
17.5	1129.684	1175.449	1238.878	1204.354	1159.391	1204.354	1238.878	1175.449	1129.684
20.0	764.765	814.143	883.193	843.048	796.640	843.048	883.193	814.143	764.765
22.5	552.076	594.308	657.577	611.250	568.214	611.250	657.577	594.308	552.076
25.0	426.984	463.194	522.770	470.099	429.713	470.099	522.770	463.194	426.984
27.5	336.256	371.663	430.115	374.072	334.569	374.072	430.115	371.663	336.256
30.0	265.680	297.716	355.124	299.322	267.447	299.322	355.124	297.716	265.680
32.5	217.988	239.425	288.001	243.279	221.601	243.279	288.001	239.425	217.988
35.0	186.273	199.602	231.477	203.616	188.281	203.616	231.477	199.602	186.273
37.5	163.150	171.821	189.726	174.390	163.150	174.390	189.726	171.821	163.150
40.0	142.596	150.143	160.098	151.347	142.596	151.347	160.098	150.143	142.596
42.5	123.326	131.355	137.617	132.158	123.566	132.158	137.617	131.355	123.326
45.0	106.385	114.414	119.793	115.297	106.867	115.297	119.793	114.414	106.385
47.5	91.852	99.078	104.458	100.202	92.735	100.202	104.458	99.078	91.852
50.0	79.728	85.830	90.568	87.115	80.933	87.115	90.568	85.830	79.728
52.5	70.173	74.911	78.684	76.436	71.539	76.436	78.684	74.911	70.173
55.0	62.546	66.159	68.567	67.524	63.831	67.524	68.567	66.159	62.546
57.5	56.284	58.612	59.897	59.816	57.327	59.816	59.897	58.612	56.284
60.0	50.743	52.028	52.349	52.911	50.904	52.911	52.349	52.028	50.743
62.5	44.721	45.846	45.445	46.248	44.721	46.248	45.445	45.846	44.721
65.0	38.780	39.583	39.021	39.744	38.780	39.744	39.021	39.583	38.780
67.5	33.160	33.481	33.000	33.882	33.240	33.882	33.000	33.481	33.160
70.0	27.861	27.941	27.459	28.422	28.021	28.422	27.459	27.941	27.861
72.5	22.802	22.802	22.321	23.284	23.124	23.284	22.321	22.802	22.802
75.0	18.146	18.146	17.745	18.467	18.547	18.467	17.745	18.146	18.146
77.5	13.890	13.810	13.489	14.051	14.211	14.051	13.489	13.810	13.890
80.0	10.036	9.876	9.635	10.117	10.438	10.117	9.635	9.876	10.036
82.5	6.584	6.343	6.182	6.584	6.905	6.584	6.182	6.343	6.584
85.0	3.613	3.372	3.212	3.532	3.854	3.532	3.212	3.372	3.613
87.5	0.643	0.884	0.963	1.044	1.124	1.044	0.963	0.884	0.643
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	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	724.07	N.A.	30.10
0-30	951.33	N.A.	39.60
0-40	1083.88	N.A.	45.10
0-60	1232.9	N.A.	51.30
0-80	1291.46	N.A.	53.70
0-90	1295.77	N.A.	53.90
10-90	1021.95	N.A.	42.50
20-40	359.80	N.A.	15.00
20-50	448.70	N.A.	18.70
40-70	188.13	N.A.	7.80
60-80	58.57	N.A.	2.40
70-80	19.45	N.A.	0.80
80-90	4.31	N.A.	0.20
90-110	4.69	N.A.	0.20
90-120	12.49	N.A.	0.50
90-130	57.24	N.A.	2.40
90-150	341.03	N.A.	14.20
90-180	1108.7	N.A.	46.10
110-180	1104.01	N.A.	45.90
0-180	2404.47	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	273.83
10-20	450.24
20-30	227.25
30-40	132.55
40-50	88.90
50-60	60.13
60-70	39.11
70-80	19.45
80-90	4.31
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	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	88	86	78	77	75	67	66	65	56	56	55	50
2	94	89	84	80	88	83	79	75	72	69	67	62	60	59	53	52	51	47
3	88	81	75	70	82	76	71	67	67	63	60	58	56	53	50	49	47	43
4	83	74	68	63	77	70	65	60	62	58	55	54	52	49	48	46	44	41
5	78	69	62	57	73	65	59	55	58	54	50	51	48	46	45	43	41	39
6	73	64	57	53	69	60	55	51	54	50	47	48	45	43	43	41	39	37
7	69	59	53	49	65	57	51	47	51	47	43	46	43	40	41	39	37	35
8	66	56	49	45	62	53	48	44	48	44	41	44	40	38	39	37	35	33
9	62	52	46	42	59	50	45	41	46	41	38	42	38	36	38	35	34	32
10	59	50	44	40	56	47	42	39	44	39	36	40	37	34	36	34	32	30

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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	4.8	5.5	5.7	6.4	7.7	4.9	5.6	5.9	6.6	7.8
	3H	5.7	6.3	6.7	7.3	8.5	5.8	6.4	6.8	7.4	8.7
	4H	5.9	6.5	6.9	7.5	8.7	6.0	6.6	7.0	7.6	8.9
	6H	6.0	6.5	7.0	7.5	8.8	6.1	6.7	7.1	7.6	8.9
	8H	6.0	6.5	7.0	7.5	8.8	6.1	6.6	7.1	7.6	8.9
	12H	5.9	6.4	6.9	7.4	8.7	6.1	6.5	7.1	7.5	8.8

### UGR Viewed Endwise

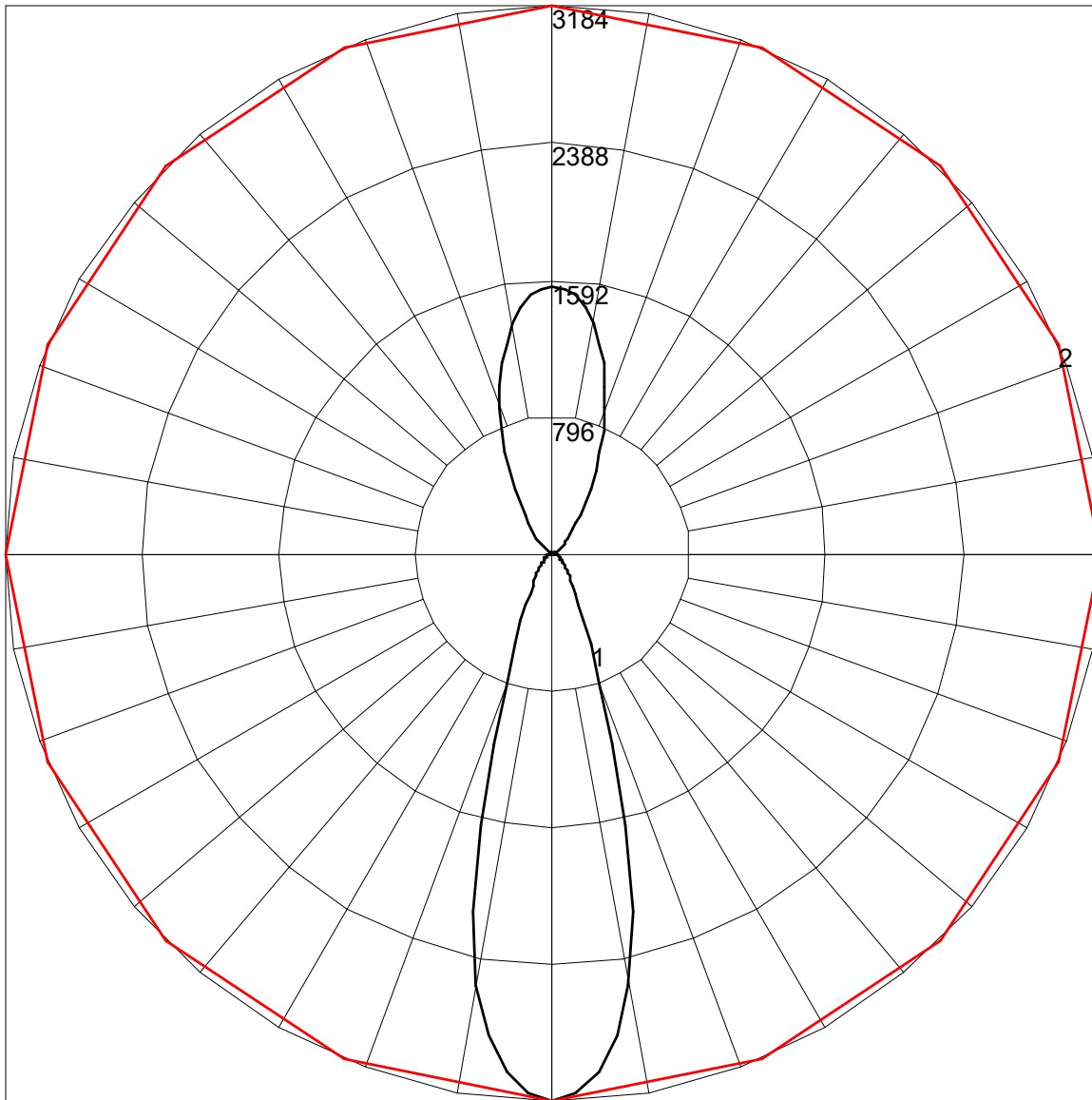
4H	2H	5.0	5.6	5.9	6.5	7.8	5.1	5.7	6.1	6.6	7.9
	3H	6.0	6.5	7.0	7.5	8.8	6.1	6.6	7.1	7.6	8.9
	4H	6.3	6.8	7.3	7.7	9.0	6.4	6.9	7.4	7.8	9.1
	6H	6.4	6.8	7.4	7.8	9.1	6.5	6.9	7.6	7.9	9.2
	8H	6.4	6.8	7.5	7.8	9.1	6.5	6.9	7.6	7.9	9.2
	12H	6.4	6.7	7.4	7.7	9.0	6.5	6.8	7.5	7.8	9.2
8H	4H	6.3	6.7	7.3	7.7	9.0	6.4	6.8	7.4	7.8	9.1
	6H	6.5	6.8	7.5	7.8	9.1	6.6	6.9	7.6	7.9	9.2
	8H	6.5	6.7	7.5	7.8	9.1	6.6	6.8	7.6	7.9	9.2
	12H	6.5	6.7	7.5	7.7	9.1	6.6	6.8	7.6	7.8	9.2
12H	4H	6.2	6.6	7.3	7.6	8.9	6.3	6.7	7.4	7.7	9.0
	6H	6.4	6.7	7.5	7.7	9.1	6.5	6.8	7.6	7.8	9.2
	8H	6.4	6.7	7.5	7.7	9.1	6.5	6.8	7.6	7.8	9.2

Maximum UGR = 9.2

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## POLAR GRAPH



Maximum Candela = 3184.311 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.)