



## IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-P12-835U-P12-835D-XXX-POE PR-LW-WHU-RN-WHD-WM\_IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.13 & #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-LW-WHU-RN-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] 24.8 C, 120 V, 0.1986 A, 23.46 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	2730
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
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	2856	2587	2879
55	1258	1069	1284
65	686	457	675
75	231	155	221
85	36	26	36

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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>	0.737	1.474	2.272	3.868	3.868	3.868	2.272	1.474	0.737
<b>95.0</b>	2.395	3.193	3.868	5.526	5.649	5.526	3.868	3.193	2.395
<b>97.5</b>	5.465	5.833	6.263	7.982	8.166	7.982	6.263	5.833	5.465
<b>100.0</b>	8.596	9.087	9.456	11.236	11.482	11.236	9.456	9.087	8.596
<b>102.5</b>	12.280	12.894	13.078	14.982	15.289	14.982	13.078	12.894	12.280
<b>105.0</b>	16.210	16.885	17.008	19.157	19.280	19.157	17.008	16.885	16.210
<b>107.5</b>	20.323	21.183	21.367	23.639	23.578	23.639	21.367	21.183	20.323
<b>110.0</b>	24.683	25.727	25.911	28.305	28.244	28.305	25.911	25.727	24.683
<b>112.5</b>	29.349	30.516	30.639	33.340	33.156	33.340	30.639	30.516	29.349
<b>115.0</b>	34.016	35.612	35.796	38.375	37.945	38.375	35.796	35.612	34.016
<b>117.5</b>	38.436	40.524	40.892	43.410	42.612	43.410	40.892	40.524	38.436
<b>120.0</b>	43.041	45.313	45.866	48.015	46.971	48.015	45.866	45.313	43.041
<b>122.5</b>	47.217	49.980	50.716	52.190	50.655	52.190	49.980	47.217	
<b>125.0</b>	50.716	54.155	55.444	56.120	53.971	56.120	54.155	50.716	
<b>127.5</b>	54.400	58.698	60.847	60.356	57.777	60.356	58.698	54.400	
<b>130.0</b>	58.944	64.654	67.479	65.944	62.382	65.944	64.654	58.944	
<b>132.5</b>	65.821	72.820	76.382	73.496	69.382	73.496	72.820	65.821	

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<b>135.0</b>	76.443	84.425	89.521	84.548	80.373	84.548	89.521	84.425	76.443
<b>137.5</b>	92.223	101.433	110.766	100.205	96.214	100.205	110.766	101.433	92.223
<b>140.0</b>	114.572	127.282	146.193	122.800	117.765	122.800	146.193	127.282	114.572
<b>142.5</b>	146.992	167.315	207.348	158.473	149.263	158.473	207.348	167.315	146.992
<b>145.0</b>	195.436	230.004	302.825	215.944	195.436	215.944	302.825	230.004	195.436
<b>147.5</b>	269.669	325.297	437.414	308.228	264.941	308.228	437.414	325.297	269.669
<b>150.0</b>	382.031	464.307	605.097	447.053	376.566	447.053	605.097	464.307	382.031
<b>152.5</b>	551.925	652.682	791.446	632.420	544.864	632.420	791.446	652.682	551.925
<b>155.0</b>	785.920	879.248	992.224	863.898	777.938	863.898	992.224	879.248	785.920
<b>157.5</b>	1072.658	1138.970	1212.036	1130.374	1059.150	1130.374	1212.036	1138.970	1072.658
<b>160.0</b>	1377.816	1410.358	1457.636	1417.112	1371.062	1417.112	1457.636	1410.358	1377.816
<b>162.5</b>	1649.204	1668.238	1692.798	1679.904	1655.958	1679.904	1692.798	1668.238	1649.204
<b>165.0</b>	1881.296	1888.050	1900.330	1896.032	1884.366	1896.032	1900.330	1888.050	1881.296
<b>167.5</b>	2064.882	2059.970	2071.022	2069.180	2064.268	2069.180	2071.022	2059.970	2064.882
<b>170.0</b>	2199.348	2193.208	2192.594	2190.138	2188.296	2190.138	2192.594	2193.208	2199.348
<b>172.5</b>	2276.712	2273.028	2269.344	2263.818	2261.976	2263.818	2269.344	2273.028	2276.712
<b>175.0</b>	2312.938	2310.482	2308.026	2306.184	2304.956	2306.184	2308.026	2310.482	2312.938
<b>177.5</b>	2313.552	2318.464	2320.306	2323.376	2324.604	2323.376	2320.306	2318.464	2313.552
<b>180.0</b>	2322.000	2322.000	2322.000	2322.000	2322.000	2322.000	2322.000	2322.000	2322.000

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Zone	Lumens	%Lamp	%Fixt
0-20	696.85	N.A.	25.50
0-30	917.10	N.A.	33.60
0-40	1066.2	N.A.	39.10
0-60	1212.84	N.A.	44.40
0-80	1253.34	N.A.	45.90
0-90	1255.22	N.A.	46.00
10-90	927.42	N.A.	34.00
20-40	369.35	N.A.	13.50
20-50	463.31	N.A.	17.00
40-70	176.05	N.A.	6.40
60-80	40.49	N.A.	1.50
70-80	11.09	N.A.	0.40
80-90	1.89	N.A.	0.10
90-110	23.89	N.A.	0.90
90-120	59.88	N.A.	2.20
90-130	108.92	N.A.	4.00
90-150	336.45	N.A.	12.30
90-180	1474.45	N.A.	54.00
110-180	1450.57	N.A.	53.10
0-180	2729.68	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	4.99
100-110	18.90
110-120	35.99
120-130	49.04
130-140	68.05
140-150	159.48
150-160	405.66
160-170	515.63
170-180	216.70

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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	97	97	97	97	81	81	81	66	66	66	52	52	52	46
1	99	96	93	90	91	88	86	83	74	73	71	61	60	59	50	49	48	43
2	92	86	82	78	85	80	76	73	68	65	63	57	55	54	47	46	45	40
3	86	79	73	68	79	73	68	64	63	59	56	53	51	49	44	43	42	38
4	81	72	66	61	74	67	62	58	58	54	51	50	47	45	42	40	39	36
5	76	66	60	55	70	62	56	52	54	50	47	47	44	42	40	38	37	34
6	71	61	55	50	66	58	52	48	51	46	43	44	41	39	38	36	35	32
7	67	57	51	46	62	54	48	44	48	43	40	42	39	37	36	34	33	30
8	63	53	47	43	59	50	45	41	45	41	38	40	37	34	35	33	31	29
9	60	50	44	40	56	48	42	38	43	38	35	38	35	33	33	31	30	28
10	57	47	41	37	54	45	40	36	40	36	34	36	33	31	32	30	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	3.5	3.5	3.8	4.4	5.7	3.5	3.5	3.9	4.5	5.9
	3H	3.5	4.0	4.5	5.0	6.4	3.5	4.1	4.5	5.1	6.5
	4H	3.5	4.1	4.6	5.1	6.5	3.6	4.1	4.6	5.2	6.5
	6H	3.5	4.0	4.5	5.0	6.4	3.5	4.0	4.6	5.0	6.4
	8H	3.5	3.9	4.5	4.9	6.3	3.5	3.9	4.5	5.0	6.4
	12H	3.5	3.8	4.4	4.8	6.2	3.5	3.9	4.5	4.9	6.3

### UGR Viewed Endwise

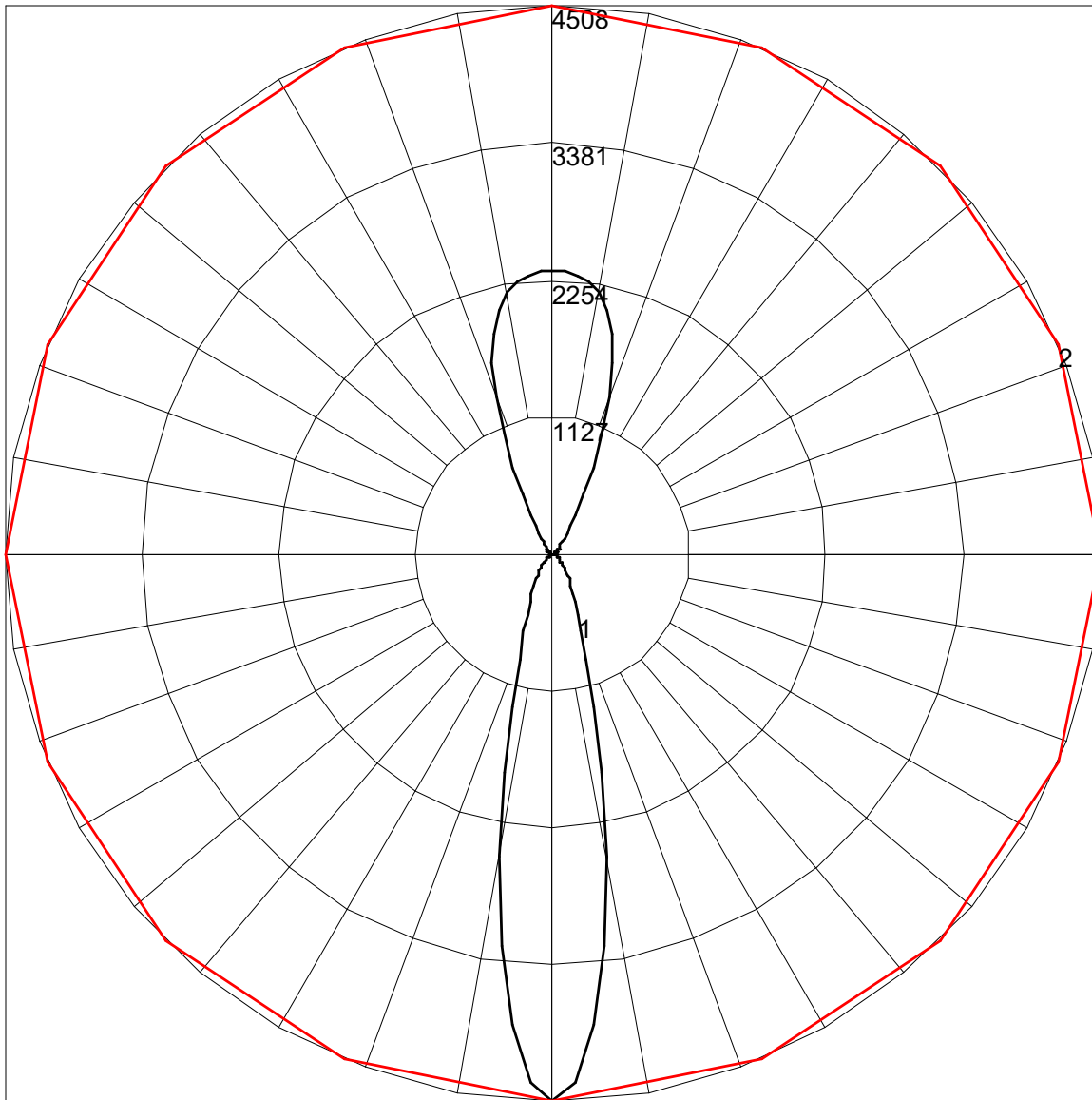
4H	2H	3.5	3.5	3.8	4.4	5.8	3.5	3.5	3.9	4.5	5.9
	3H	3.6	4.1	4.7	5.1	6.5	3.7	4.1	4.7	5.2	6.6
	4H	3.7	4.1	4.8	5.2	6.6	3.7	4.2	4.8	5.2	6.6
	6H	3.7	4.0	4.7	5.1	6.5	3.7	4.1	4.8	5.1	6.5
	8H	3.6	4.0	4.7	5.0	6.4	3.7	4.0	4.7	5.1	6.5
	12H	3.6	3.9	4.6	4.9	6.4	3.6	3.9	4.7	5.0	6.4
8H	4H	3.6	4.0	4.7	5.0	6.4	3.7	4.0	4.7	5.1	6.5
	6H	3.6	3.9	4.7	5.0	6.4	3.6	3.9	4.7	5.0	6.4
	8H	3.6	3.8	4.7	4.9	6.3	3.6	3.8	4.7	4.9	6.4
	12H	3.5	3.7	4.6	4.8	6.3	3.5	3.8	4.7	4.8	6.3
12H	4H	3.6	3.9	4.6	4.9	6.4	3.6	3.9	4.7	5.0	6.4
	6H	3.5	3.8	4.6	4.9	6.3	3.6	3.8	4.7	4.9	6.4
	8H	3.5	3.7	4.6	4.8	6.3	3.5	3.8	4.6	4.8	6.3

Maximum UGR = 6.6

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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.)