



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-L12-9DWU-L12-9DWD-XXX-DIM-UNV-OW-CSU-LM-WHD-WM-3000K_.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] 19-APR-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-L12/9DWU-L12-9DWD-xxx-DIM-UNV-OW-CSU-LM-WHD-WM-3000k

[LUMINAIRE] 4" Square White formed aluminum housing, wide distribution reflector

[MORE] trims, frosted lens enclosures

[LAMP] Two white LEDs (one up/one down)

[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	2351
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	50
Total Luminaire Watts	46.6
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	2715	2289	2727
55	1461	1181	1491
65	859	630	859
75	394	277	403
85	79	50	84

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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	3113.485	3113.485	3113.485	3113.485	3113.485	3113.485	3113.485	3113.485	3113.485
2.5	3074.232	3062.457	3064.812	3073.447	3077.372	3073.447	3064.812	3062.457	3074.232
5.0	2950.195	2940.775	2946.270	2952.550	2955.691	2952.550	2946.270	2940.775	2950.195
7.5	2774.345	2764.140	2768.065	2769.635	2768.850	2769.635	2768.065	2764.140	2774.345
10.0	2512.926	2507.431	2514.496	2505.075	2493.300	2505.075	2514.496	2507.431	2512.926
12.5	2107.058	2118.834	2139.245	2115.694	2090.572	2115.694	2139.245	2118.834	2107.058
15.0	1594.424	1625.041	1669.004	1638.387	1601.490	1638.387	1669.004	1625.041	1594.424
17.5	1104.557	1149.304	1211.323	1177.566	1133.604	1177.566	1211.323	1149.304	1104.557
20.0	747.754	796.035	863.548	824.296	778.920	824.296	863.548	796.035	747.754
22.5	539.797	581.089	642.951	597.654	555.575	597.654	642.951	581.089	539.797
25.0	417.487	452.891	511.143	459.643	420.155	459.643	511.143	452.891	417.487
27.5	328.777	363.396	420.548	365.752	327.128	365.752	420.548	363.396	328.777
30.0	259.771	291.095	347.225	292.665	261.499	292.665	347.225	291.095	259.771
32.5	213.139	234.100	281.595	237.868	216.672	237.868	281.595	234.100	213.139
35.0	182.130	195.162	226.328	199.088	184.093	199.088	226.328	195.162	182.130
37.5	159.521	167.999	185.506	170.511	159.521	170.511	185.506	167.999	159.521
40.0	139.424	146.803	156.537	147.981	139.424	147.981	156.537	146.803	139.424
42.5	120.583	128.434	134.556	129.219	120.818	129.219	134.556	128.434	120.583
45.0	104.018	111.869	117.128	112.733	104.490	112.733	117.128	111.869	104.018
47.5	89.809	96.874	102.135	97.974	90.673	97.974	102.135	96.874	89.809
50.0	77.955	83.921	88.553	85.177	79.133	85.177	88.553	83.921	77.955
52.5	68.612	73.245	76.934	74.736	69.948	74.736	76.934	73.245	68.612
55.0	61.155	64.687	67.042	66.023	62.411	66.023	67.042	64.687	61.155
57.5	55.032	57.308	58.565	58.486	56.052	58.486	58.565	57.308	55.032
60.0	49.615	50.871	51.185	51.734	49.771	51.734	51.185	50.871	49.615
62.5	43.727	44.826	44.434	45.219	43.727	45.219	44.434	44.826	43.727
65.0	37.918	38.703	38.154	38.860	37.918	38.860	38.154	38.703	37.918
67.5	32.423	32.736	32.266	33.129	32.500	33.129	32.266	32.736	32.423
70.0	27.241	27.320	26.848	27.790	27.398	27.790	26.848	27.320	27.241
72.5	22.295	22.295	21.824	22.766	22.609	22.766	21.824	22.295	22.295
75.0	17.742	17.742	17.350	18.056	18.135	18.056	17.350	17.742	17.742
77.5	13.581	13.503	13.189	13.738	13.895	13.738	13.189	13.503	13.581
80.0	9.813	9.656	9.421	9.892	10.206	9.892	9.421	9.656	9.813
82.5	6.437	6.201	6.045	6.437	6.752	6.437	6.045	6.201	6.437
85.0	3.533	3.297	3.140	3.454	3.768	3.454	3.140	3.297	3.533
87.5	0.628	0.864	0.942	1.021	1.099	1.021	0.942	0.864	0.628
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.719	0.958	1.557	2.935	2.816	2.935	1.557	0.958	0.719
95.0	0.839	1.139	1.677	2.995	2.935	2.995	1.677	1.139	0.839
97.5	0.958	1.258	1.857	3.115	2.995	3.115	1.857	1.258	0.958
100.0	1.078	1.438	2.037	3.234	3.115	3.234	2.037	1.438	1.078
102.5	1.198	1.557	2.217	3.354	3.295	3.354	2.217	1.557	1.198
105.0	1.378	1.797	2.396	3.534	3.415	3.534	2.396	1.797	1.378
107.5	1.618	2.037	2.635	3.714	3.654	3.714	2.635	2.037	1.618
110.0	1.857	2.336	3.055	3.894	3.894	3.894	3.055	2.336	1.857
112.5	2.217	2.696	4.193	4.193	4.193	4.193	2.696	2.217	2.217
115.0	2.635	4.313	7.547	6.889	4.672	6.889	7.547	4.313	2.635
117.5	4.253	8.505	14.375	12.459	9.764	12.459	14.375	8.505	4.253
120.0	12.160	18.030	24.438	22.042	16.472	22.042	24.438	18.030	12.160
122.5	22.702	31.866	37.796	34.442	28.751	34.442	37.796	31.866	22.702
125.0	39.413	48.817	52.470	49.595	43.546	49.595	52.470	48.817	39.413
127.5	59.479	66.846	67.864	66.247	61.575	66.247	67.864	66.846	59.479
130.0	79.964	84.575	84.575	83.857	81.580	83.857	84.575	84.575	79.964
132.5	102.845	103.383	103.084	102.964	104.402	102.964	103.084	103.383	102.845

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135.0	127.043	124.048	123.929	124.168	128.720	124.168	123.929	124.048	127.043
137.5	153.159	148.127	149.025	148.846	155.075	148.846	149.025	148.127	153.159
140.0	182.748	178.255	182.927	180.292	185.264	180.292	182.927	178.255	182.748
142.5	219.824	217.728	229.408	222.400	224.796	222.400	229.408	217.728	219.824
145.0	267.683	272.834	291.222	277.506	275.289	277.506	291.222	272.834	267.683
147.5	333.629	347.107	367.352	350.581	342.794	350.581	367.352	347.107	333.629
150.0	423.476	440.247	456.419	441.565	429.646	441.565	456.419	440.247	423.476
152.5	540.336	548.782	554.113	540.995	531.411	540.995	554.113	548.782	540.336
155.0	667.858	668.457	660.071	647.493	638.508	647.493	660.071	668.457	667.858
157.5	794.841	793.643	776.272	763.694	755.308	763.694	776.272	793.643	794.841
160.0	916.433	914.636	899.063	887.083	879.296	887.083	899.063	914.636	916.433
162.5	1036.827	1032.634	1018.858	1006.279	997.893	1006.279	1018.858	1032.634	1036.827
165.0	1147.038	1147.637	1137.455	1123.678	1116.491	1123.678	1137.455	1147.637	1147.038
167.5	1247.666	1247.666	1241.677	1232.093	1226.103	1232.093	1241.677	1247.666	1247.666
170.0	1345.898	1342.903	1338.711	1332.721	1329.127	1332.721	1338.711	1342.903	1345.898
172.5	1424.364	1420.770	1418.374	1414.781	1412.984	1414.781	1418.374	1420.770	1424.364
175.0	1481.866	1478.871	1476.475	1474.678	1474.678	1474.678	1476.475	1478.871	1481.866
177.5	1515.408	1513.013	1510.617	1511.815	1511.216	1511.815	1510.617	1513.013	1515.408
180.0	1522.275	1522.275	1522.275	1522.275	1522.275	1522.275	1522.275	1522.275	1522.275

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Zone	Lumens	%Lamp	%Fixt
0-20	707.97	N.A.	30.10
0-30	930.17	N.A.	39.60
0-40	1059.77	N.A.	45.10
0-60	1205.48	N.A.	51.30
0-80	1262.74	N.A.	53.70
0-90	1266.95	N.A.	53.90
10-90	999.21	N.A.	42.50
20-40	351.80	N.A.	15.00
20-50	438.72	N.A.	18.70
40-70	183.95	N.A.	7.80
60-80	57.26	N.A.	2.40
70-80	19.02	N.A.	0.80
80-90	4.21	N.A.	0.20
90-110	4.58	N.A.	0.20
90-120	12.21	N.A.	0.50
90-130	55.95	N.A.	2.40
90-150	333.35	N.A.	14.20
90-180	1083.7	N.A.	46.10
110-180	1079.12	N.A.	45.90
0-180	2350.66	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	267.74
10-20	440.23
20-30	222.20
30-40	129.60
40-50	86.92
50-60	58.79
60-70	38.24
70-80	19.02
80-90	4.21
90-100	1.88
100-110	2.71
110-120	7.63
120-130	43.74
130-140	97.86
140-150	179.53
150-160	300.39
160-170	313.43
170-180	136.54

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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	85	85	85	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	88	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	48	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	4.7	5.4	5.6	6.3	7.6	4.8	5.5	5.8	6.5	7.7
	3H	5.6	6.2	6.6	7.2	8.4	5.7	6.3	6.7	7.3	8.6
	4H	5.8	6.4	6.8	7.4	8.6	5.9	6.5	6.9	7.5	8.8
	6H	5.9	6.4	6.9	7.4	8.7	6.0	6.6	7.0	7.5	8.8
	8H	5.9	6.4	6.9	7.4	8.7	6.0	6.5	7.0	7.5	8.8
	12H	5.8	6.3	6.8	7.3	8.6	6.0	6.4	7.0	7.4	8.7

UGR Viewed Endwise

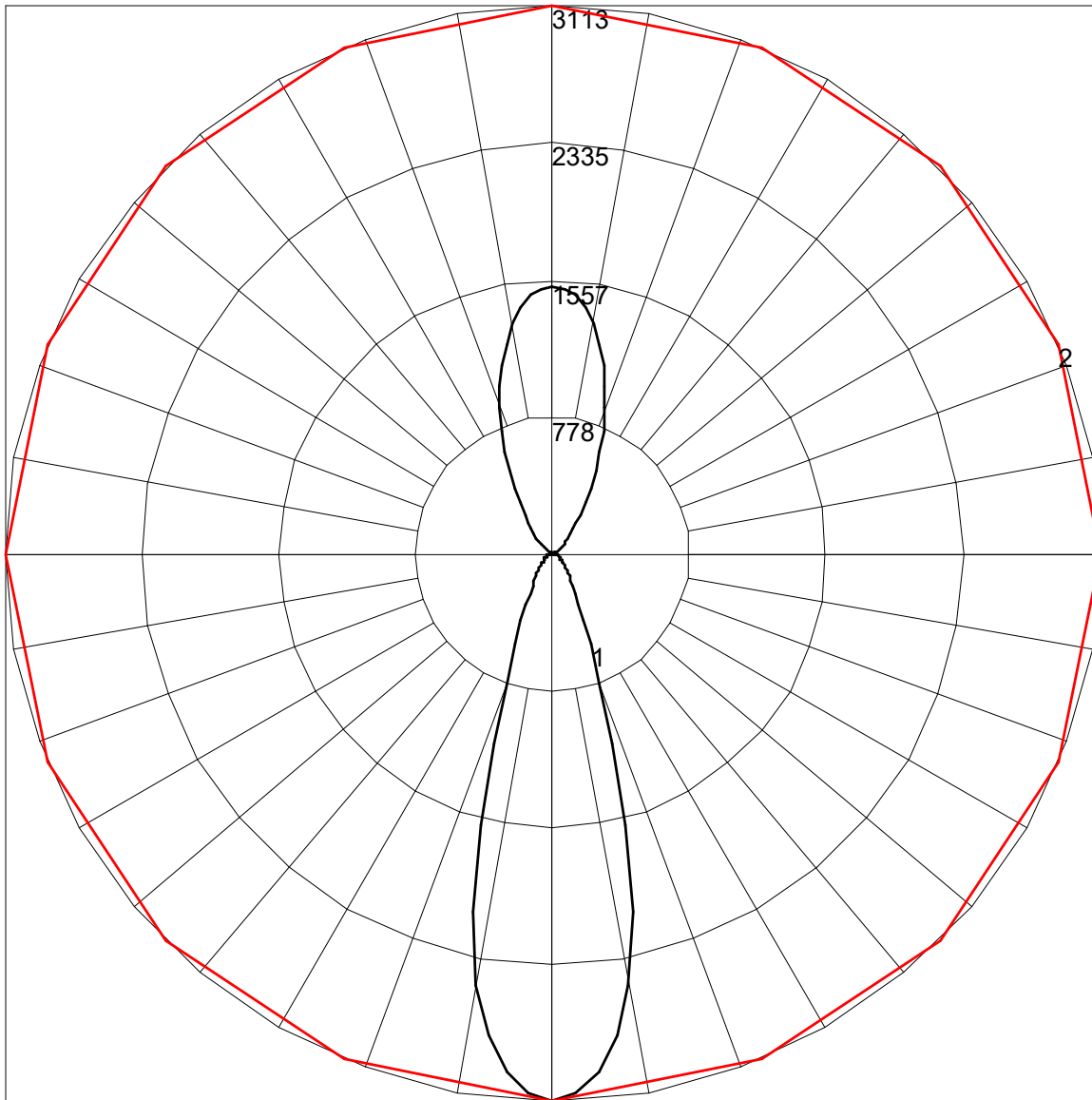
4H	2H	4.9	5.5	5.8	6.4	7.7	5.0	5.6	6.0	6.5	7.8
	3H	5.9	6.4	6.9	7.4	8.7	6.0	6.5	7.0	7.5	8.8
	4H	6.2	6.7	7.2	7.6	8.9	6.3	6.8	7.3	7.7	9.0
	6H	6.3	6.7	7.3	7.7	9.0	6.4	6.8	7.5	7.8	9.1
	8H	6.3	6.7	7.4	7.7	9.0	6.4	6.8	7.5	7.8	9.1
	12H	6.3	6.6	7.3	7.6	8.9	6.4	6.7	7.4	7.7	9.1
8H	4H	6.2	6.6	7.2	7.6	8.9	6.3	6.7	7.3	7.7	9.0
	6H	6.4	6.7	7.4	7.7	9.0	6.5	6.8	7.5	7.8	9.1
	8H	6.4	6.6	7.4	7.7	9.0	6.5	6.7	7.5	7.8	9.1
	12H	6.4	6.6	7.4	7.6	9.0	6.5	6.7	7.5	7.7	9.1
12H	4H	6.1	6.5	7.2	7.5	8.8	6.2	6.6	7.3	7.6	8.9
	6H	6.3	6.6	7.4	7.6	9.0	6.4	6.7	7.5	7.7	9.1
	8H	6.3	6.6	7.4	7.6	9.0	6.4	6.7	7.5	7.7	9.1

Maximum UGR = 9.1

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POLAR GRAPH



Maximum Candela = 3113.485 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.)