



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-L12-9DWU-L12-9DWD-XXX-DIM-UNV-OW-CSU-OW-CSD-WM-3000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.12 & #13257153.12

[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-OW-CSD-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	1950
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	42
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	3251	2193	3409
55	1301	933	1356
65	29	152	30
75	9	6	9
85	2	1	2

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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	1090.698	1090.698	1090.698	1090.698	1090.698	1090.698	1090.698	1090.698	1090.698
2.5	1082.041	1082.041	1079.681	1080.467	1081.254	1080.467	1079.681	1082.041	1082.041
5.0	1052.138	1052.925	1051.351	1051.351	1052.138	1051.351	1051.351	1052.925	1052.138
7.5	1009.643	1009.643	1008.069	1008.069	1008.856	1008.069	1008.069	1009.643	1009.643
10.0	954.557	955.344	954.557	954.557	953.770	954.557	954.557	955.344	954.557
12.5	887.667	890.028	893.176	889.241	886.880	889.241	893.176	890.028	887.667
15.0	813.695	817.630	823.138	817.630	812.908	817.630	823.138	817.630	813.695
17.5	735.631	741.454	746.018	740.903	735.709	740.903	746.018	741.454	735.631
20.0	657.409	663.626	666.931	662.996	656.071	662.996	666.931	663.626	657.409
22.5	581.469	587.529	589.417	585.955	578.164	585.955	589.417	587.529	581.469
25.0	504.664	512.218	513.792	510.173	501.359	510.173	513.792	512.218	504.664
27.5	424.317	436.751	441.237	434.627	422.823	434.627	441.237	436.751	424.317
30.0	348.850	363.409	374.347	362.306	350.424	362.306	374.347	363.409	348.850
32.5	286.525	297.699	312.494	298.171	289.908	298.171	312.494	297.699	286.525
35.0	237.970	244.030	257.015	245.918	242.456	245.918	257.015	244.030	237.970
37.5	200.276	201.614	208.382	204.840	205.785	204.840	208.382	201.614	200.276
40.0	169.900	167.775	167.539	171.946	176.274	171.946	167.539	167.775	169.900
42.5	145.111	140.783	135.904	145.347	151.722	145.347	135.904	140.783	145.111
45.0	124.573	118.985	112.218	123.392	130.632	123.392	112.218	118.985	124.573
47.5	106.080	100.335	93.960	104.584	111.195	104.584	93.960	100.335	106.080
50.0	88.531	83.730	78.773	87.587	92.386	87.587	78.773	83.730	88.531
52.5	71.297	68.778	65.473	72.241	74.209	72.241	65.473	68.778	71.297
55.0	54.456	55.165	52.961	57.919	56.739	57.919	52.961	55.165	54.456
57.5	38.874	42.101	40.921	44.069	40.370	44.069	40.921	42.101	38.874
60.0	23.687	29.274	29.431	30.376	23.844	30.376	29.431	29.274	23.687
62.5	8.814	15.582	18.729	15.818	8.184	15.818	18.729	15.582	8.814
65.0	1.259	3.935	9.207	4.249	1.338	4.249	9.207	3.935	1.259
67.5	0.944	0.866	2.911	0.944	1.023	0.944	2.911	0.866	0.944
70.0	0.708	0.630	0.866	0.708	0.708	0.708	0.866	0.630	0.708
72.5	0.473	0.473	0.473	0.473	0.551	0.473	0.473	0.473	0.473
75.0	0.393	0.393	0.393	0.393	0.393	0.393	0.393	0.393	0.393
77.5	0.236	0.236	0.236	0.236	0.314	0.236	0.236	0.236	0.236
80.0	0.157	0.157	0.157	0.157	0.236	0.157	0.157	0.157	0.157
82.5	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157	0.157
85.0	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079
87.5	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079	0.079
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	4.193	2.696	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	323.90	N.A.	16.60
0-30	556.12	N.A.	28.50
0-40	713.44	N.A.	36.60
0-60	857.60	N.A.	44.00
0-80	866.58	N.A.	44.40
0-90	866.69	N.A.	44.40
10-90	769.38	N.A.	39.40
20-40	389.54	N.A.	20.00
20-50	484.04	N.A.	24.80
40-70	152.73	N.A.	7.80
60-80	8.98	N.A.	0.50
70-80	0.41	N.A.	0.00
80-90	0.11	N.A.	0.00
90-110	4.58	N.A.	0.20
90-120	12.21	N.A.	0.60
90-130	55.95	N.A.	2.90
90-150	333.35	N.A.	17.10
90-180	1083.7	N.A.	55.60
110-180	1079.12	N.A.	55.30
0-180	1950.39	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	97.30
10-20	226.60
20-30	232.21
30-40	157.32
40-50	94.50
50-60	49.66
60-70	8.57
70-80	0.41
80-90	0.11
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	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44
1	98	95	92	89	90	87	85	82	73	71	70	60	59	58	48	47	47	41
2	91	85	80	76	84	79	75	71	67	64	61	55	53	52	45	44	43	38
3	85	77	71	66	78	71	66	62	61	57	54	51	48	46	42	40	39	35
4	79	70	63	58	73	65	59	55	56	52	48	47	44	42	39	37	36	32
5	73	64	57	52	68	59	53	49	51	47	43	44	40	38	37	34	33	30
6	68	58	51	46	63	54	48	44	47	43	39	41	37	35	34	32	30	28
7	64	53	47	42	59	50	44	40	44	39	36	38	34	32	32	30	28	26
8	60	49	43	38	56	46	40	36	41	36	33	35	32	30	30	28	26	24
9	56	46	39	35	52	43	37	33	38	34	30	33	30	27	29	26	25	23
10	53	43	36	32	49	40	35	31	36	31	28	31	28	26	27	25	23	21

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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	2.7	3.4	3.8	4.4	5.8	3.0	3.7	4.1	4.7	6.1
	3H	2.5	3.1	3.6	4.2	5.5	2.8	3.4	3.9	4.5	5.8
	4H	2.4	3.0	3.5	4.0	5.4	2.7	3.3	3.8	4.3	5.7
	6H	2.3	2.8	3.4	3.9	5.3	2.6	3.1	3.7	4.2	5.6
	8H	2.3	2.7	3.3	3.8	5.2	2.6	3.0	3.6	4.1	5.5
	12H	2.3	2.7	3.3	3.7	5.1	2.5	3.0	3.6	4.0	5.4

UGR Viewed Endwise

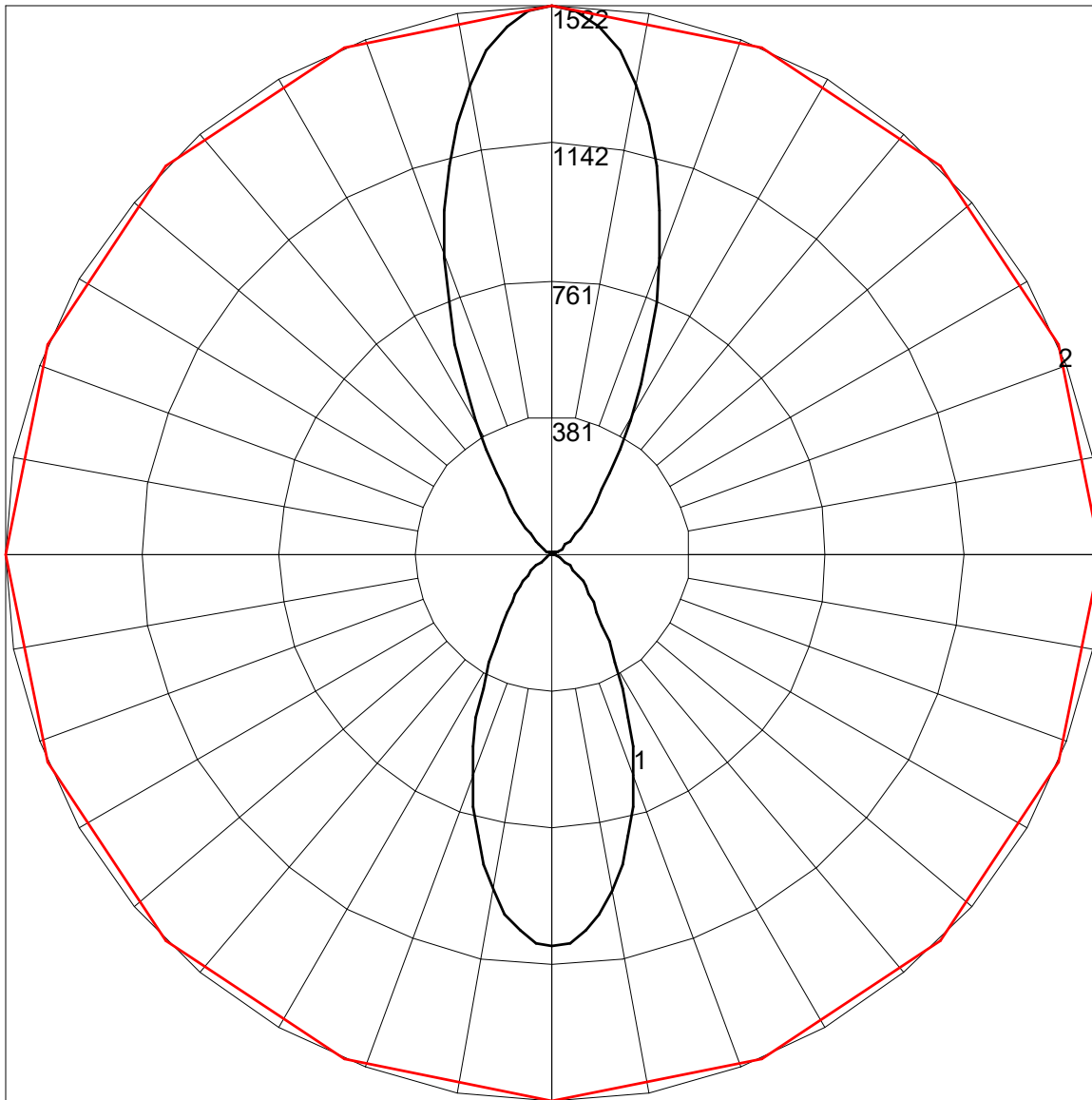
4H	2H	2.5	3.1	3.6	4.1	5.5	2.8	3.4	3.9	4.4	5.8
	3H	2.3	2.8	3.4	3.8	5.2	2.6	3.1	3.7	4.1	5.5
	4H	2.3	2.6	3.2	3.7	5.1	2.5	2.9	3.5	4.0	5.4
	6H	2.3	2.4	3.1	3.5	4.9	2.4	2.7	3.4	3.8	5.2
	8H	2.3	2.3	3.1	3.4	4.8	2.3	2.6	3.4	3.7	5.1
	12H	2.3	2.3	3.0	3.3	4.7	2.3	2.5	3.3	3.6	5.0
8H	4H	2.3	2.3	3.1	3.4	4.8	2.3	2.6	3.4	3.7	5.1
	6H	2.3	2.3	3.0	3.3	4.7	2.3	2.5	3.3	3.6	5.0
	8H	2.3	2.3	2.9	3.2	4.6	2.3	2.4	3.2	3.5	4.9
	12H	2.3	2.3	2.9	3.1	4.5	2.3	2.3	3.2	3.4	4.8
12H	4H	2.3	2.3	3.0	3.3	4.7	2.3	2.5	3.3	3.6	5.0
	6H	2.3	2.3	2.9	3.1	4.6	2.3	2.4	3.2	3.4	4.9
	8H	2.3	2.3	2.9	3.1	4.5	2.3	2.3	3.2	3.4	4.8

Maximum UGR = 6.1

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POLAR GRAPH



Maximum Candela = 1522.275 Located At Horizontal Angle = 0, Vertical Angle = 180

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

2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)