



IES INDOOR REPORT

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

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.12 & #132557153.20

[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-RM-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	2332
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	2712	2362	2723
55	1234	1033	1255
65	665	448	660
75	230	152	225
85	35	25	37

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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	3117.961	3117.961	3117.961	3117.961	3117.961	3117.961	3117.961	3117.961	3117.961
2.5	3075.572	3063.012	3067.722	3077.927	3083.422	3077.927	3067.722	3063.012	3075.572
5.0	2945.264	2933.489	2939.769	2947.619	2949.189	2947.619	2939.769	2933.489	2945.264
7.5	2748.233	2742.738	2749.803	2749.803	2748.233	2749.803	2749.803	2742.738	2748.233
10.0	2464.068	2464.853	2478.198	2469.563	2463.283	2469.563	2478.198	2464.853	2464.068
12.5	2061.371	2067.651	2087.275	2080.211	2066.866	2080.211	2087.275	2067.651	2061.371
15.0	1568.400	1588.025	1615.499	1610.004	1588.810	1610.004	1615.499	1588.025	1568.400
17.5	1098.194	1135.088	1171.983	1161.778	1131.949	1161.778	1171.983	1135.088	1098.194
20.0	754.841	796.760	841.504	820.309	788.910	820.309	841.504	796.760	754.841
22.5	556.946	589.680	635.367	603.339	576.336	603.339	635.367	589.680	556.946
25.0	444.694	470.834	511.496	475.622	448.855	475.622	511.496	470.834	444.694
27.5	363.919	390.766	429.858	391.551	362.820	391.551	429.858	390.766	363.919
30.0	293.506	322.315	364.154	322.864	295.311	322.864	364.154	322.315	293.506
32.5	236.516	261.557	304.418	263.676	239.891	263.676	304.418	261.557	236.516
35.0	192.086	212.652	250.724	215.871	196.952	215.871	250.724	212.652	192.086
37.5	164.219	175.837	204.960	179.840	166.103	179.840	204.960	175.837	164.219
40.0	142.632	150.246	169.086	152.208	142.946	152.208	169.086	150.246	142.632
42.5	122.536	129.915	141.612	130.543	122.693	130.543	141.612	129.915	122.536
45.0	103.932	111.782	120.888	111.939	104.324	111.939	120.888	111.782	103.932
47.5	87.212	94.904	102.676	95.140	87.683	95.140	102.676	94.904	87.212
50.0	72.533	79.598	85.955	79.990	73.318	79.990	85.955	79.598	72.533
52.5	60.679	66.488	71.198	67.038	61.621	67.038	71.198	66.488	60.679
55.0	51.652	55.577	58.638	56.284	52.515	56.284	58.638	55.577	51.652
57.5	44.823	47.020	48.355	47.491	45.450	47.491	48.355	47.020	44.823
60.0	39.485	40.191	39.955	40.426	39.485	40.426	39.955	40.191	39.485
62.5	34.383	34.383	33.048	34.304	34.225	34.304	33.048	34.383	34.383
65.0	29.359	28.966	27.160	28.809	29.123	28.809	27.160	28.966	29.359
67.5	24.413	23.942	22.058	23.706	24.178	23.706	22.058	23.942	24.413
70.0	19.625	19.154	17.505	18.918	19.389	18.918	17.505	19.154	19.625
72.5	14.994	14.601	13.345	14.365	14.836	14.365	13.345	14.601	14.994
75.0	10.361	10.361	9.499	10.048	10.126	10.048	9.499	10.361	10.361
77.5	4.945	6.123	6.280	5.966	5.809	5.966	6.280	6.123	4.945
80.0	3.611	3.690	3.925	3.768	3.768	3.768	3.925	3.690	3.611
82.5	2.512	2.590	2.590	2.590	2.590	2.590	2.590	2.590	2.512
85.0	1.570	1.649	1.570	1.570	1.649	1.570	1.570	1.649	1.570
87.5	0.706	0.706	0.706	0.785	0.785	0.785	0.706	0.706	0.706
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	698.58	N.A.	30.00
0-30	927.99	N.A.	39.80
0-40	1068.27	N.A.	45.80
0-60	1206.59	N.A.	51.70
0-80	1246.04	N.A.	53.40
0-90	1247.89	N.A.	53.50
10-90	981.79	N.A.	42.10
20-40	369.69	N.A.	15.90
20-50	457.00	N.A.	19.60
40-70	166.84	N.A.	7.20
60-80	39.44	N.A.	1.70
70-80	10.93	N.A.	0.50
80-90	1.85	N.A.	0.10
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.	14.30
90-180	1083.7	N.A.	46.50
110-180	1079.12	N.A.	46.30
0-180	2331.59	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	266.10
10-20	432.48
20-30	229.41
30-40	140.28
40-50	87.32
50-60	51.01
60-70	28.51
70-80	10.93
80-90	1.85
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	59	59	59	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	76	72	69	67	62	60	59	53	52	51	47
3	88	81	75	71	82	76	71	67	67	63	60	58	56	54	50	49	47	44
4	83	75	68	64	77	70	65	61	62	58	55	55	52	50	48	46	44	41
5	78	69	62	58	73	65	60	55	58	54	51	52	48	46	45	43	42	39
6	74	64	58	53	69	61	55	51	54	50	47	49	46	43	43	41	39	37
7	70	60	53	49	65	57	51	47	51	47	44	46	43	40	41	39	37	35
8	66	56	50	45	62	53	48	44	48	44	41	44	41	38	40	37	35	33
9	63	53	47	42	59	50	45	41	46	42	39	42	39	36	38	36	34	32
10	60	50	44	40	56	48	42	39	44	40	37	40	37	34	36	34	32	31

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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	3.3	4.0	4.3	5.0	6.2	3.4	4.1	4.4	5.1	6.3
	3H	4.0	4.7	5.0	5.6	6.9	4.1	4.7	5.1	5.7	6.9
	4H	4.1	4.7	5.1	5.7	7.0	4.2	4.8	5.2	5.7	7.0
	6H	4.1	4.6	5.1	5.6	6.9	4.1	4.7	5.1	5.6	6.9
	8H	4.0	4.5	5.0	5.5	6.8	4.1	4.6	5.1	5.6	6.8
	12H	4.0	4.5	5.0	5.4	6.7	4.0	4.5	5.0	5.5	6.8

UGR Viewed Endwise

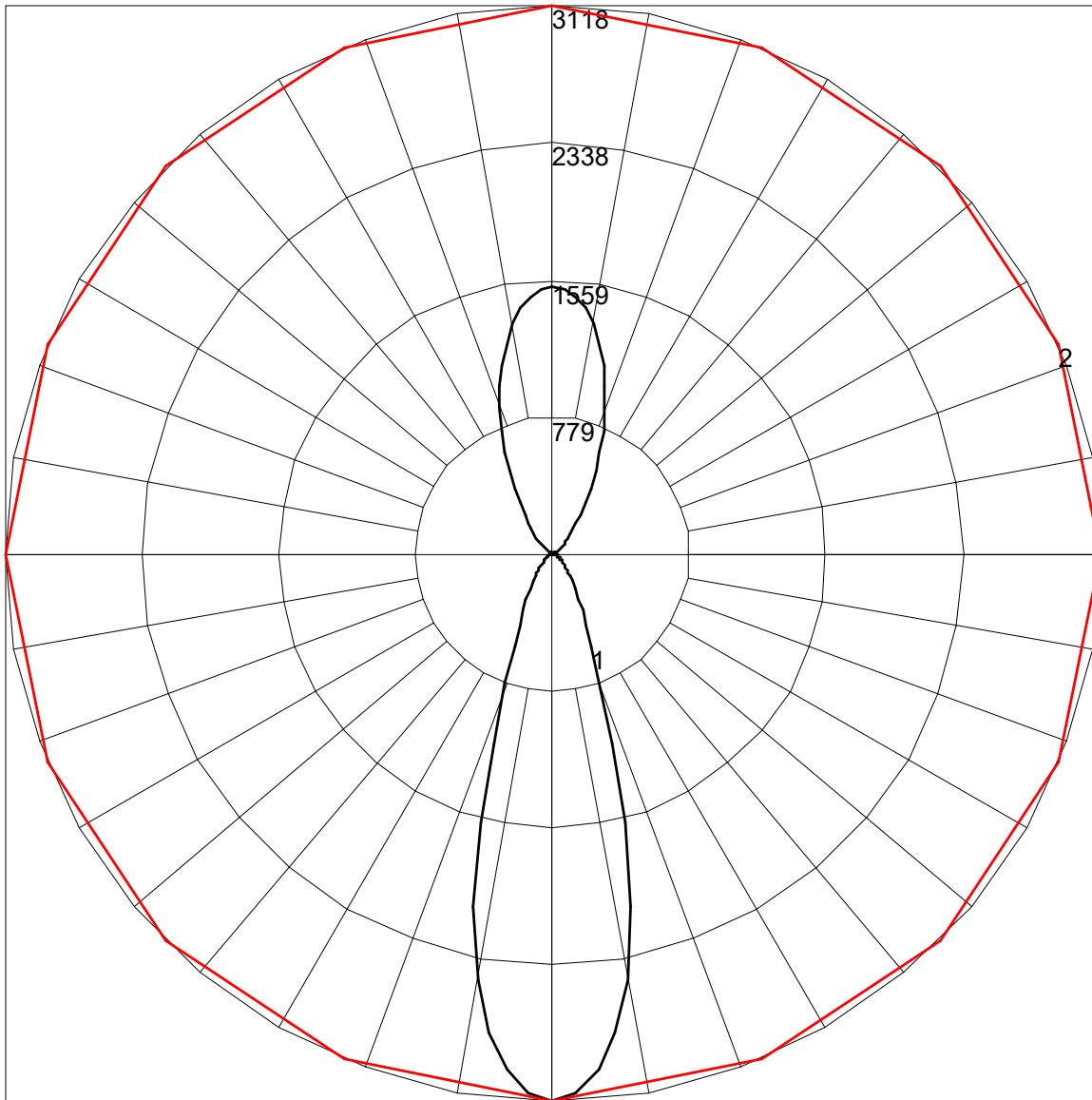
4H	2H	3.4	4.0	4.4	5.0	6.2	3.5	4.1	4.5	5.0	6.3
	3H	4.2	4.7	5.2	5.7	7.0	4.3	4.8	5.3	5.7	7.0
	4H	4.4	4.8	5.4	5.8	7.1	4.4	4.8	5.4	5.8	7.1
	6H	4.3	4.7	5.3	5.7	7.0	4.3	4.7	5.4	5.7	7.0
	8H	4.3	4.6	5.3	5.6	6.9	4.3	4.7	5.3	5.7	7.0
	12H	4.2	4.5	5.2	5.5	6.9	4.2	4.6	5.3	5.6	6.9
8H	4H	4.3	4.6	5.3	5.6	7.0	4.3	4.7	5.3	5.7	7.0
	6H	4.2	4.5	5.3	5.6	6.9	4.3	4.6	5.3	5.6	6.9
	8H	4.2	4.5	5.3	5.5	6.8	4.2	4.5	5.3	5.5	6.9
	12H	4.2	4.4	5.2	5.4	6.8	4.2	4.4	5.2	5.4	6.8
12H	4H	4.2	4.5	5.2	5.6	6.9	4.2	4.5	5.3	5.6	6.9
	6H	4.2	4.4	5.2	5.5	6.8	4.2	4.5	5.3	5.5	6.8
	8H	4.1	4.4	5.2	5.4	6.8	4.2	4.4	5.2	5.4	6.8

Maximum UGR = 7.1

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POLAR GRAPH



Maximum Candela = 3117.961 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.)