



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 4CSDI-L12-9DWU-L12-9DWD-XXX-DIM-UNV-LW-WHU-RW-WHD-WM-3000K_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.13 & #13257153.16

[TESTLAB] UL Verification Services Inc.

[ISSUEDATE] 19-AP-2021

[MANUFAC] H E Williams Inc

[LUMCAT] 4CSDI-L12/9DWU-L12-9DWD-xxx-DIM-UNV-LW-WHU-RW-WHD-WM-3000k

[LUMINAIRE] 4" Square 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	2711
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	58
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	2100	2140	2054
55	1083	863	1061
65	587	395	589
75	203	135	204
85	32	23	32

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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	1465.001	1465.001	1465.001	1465.001	1465.001	1465.001	1465.001	1465.001	1465.001
2.5	1462.639	1468.937	1461.852	1456.341	1454.767	1456.341	1461.852	1468.937	1462.639
5.0	1448.469	1454.767	1448.469	1442.171	1440.597	1442.171	1448.469	1454.767	1448.469
7.5	1428.002	1433.512	1427.214	1421.704	1418.555	1421.704	1427.214	1433.512	1428.002
10.0	1400.449	1406.747	1400.449	1394.152	1391.790	1394.152	1400.449	1406.747	1400.449
12.5	1362.663	1369.748	1363.450	1357.940	1354.791	1357.940	1363.450	1369.748	1362.663
15.0	1311.494	1319.366	1314.643	1309.133	1304.409	1309.133	1314.643	1319.366	1311.494
17.5	1243.794	1252.453	1250.092	1244.581	1238.284	1244.581	1250.092	1252.453	1243.794
20.0	1153.265	1165.073	1168.222	1160.350	1149.329	1160.350	1168.222	1165.073	1153.265
22.5	1035.183	1052.502	1065.097	1050.140	1032.034	1050.140	1065.097	1052.502	1035.183
25.0	886.400	915.527	941.505	914.740	884.826	914.740	941.505	915.527	886.400
27.5	720.219	759.659	798.232	757.770	716.756	757.770	798.232	759.659	720.219
30.0	557.267	599.383	643.782	592.770	546.561	592.770	643.782	599.383	557.267
32.5	404.548	448.553	495.549	439.421	387.623	439.421	495.549	448.553	404.548
35.0	270.565	321.654	366.132	310.240	257.339	310.240	366.132	321.654	270.565
37.5	179.799	219.868	267.022	211.681	170.431	211.681	267.022	219.868	179.799
40.0	126.269	152.876	196.409	146.264	120.128	146.264	196.409	152.876	126.269
42.5	97.457	112.099	146.106	107.691	93.599	107.691	146.106	112.099	97.457
45.0	80.453	89.112	109.501	86.436	78.721	86.436	109.501	89.112	80.453
47.5	68.881	74.628	85.491	73.368	67.779	73.368	85.491	74.628	68.881
50.0	59.671	64.079	69.511	63.292	58.726	63.292	69.511	64.079	59.671
52.5	51.877	55.577	58.097	54.869	51.012	54.869	58.097	55.577	51.877
55.0	45.343	48.177	48.964	47.548	44.399	47.548	48.964	48.177	45.343
57.5	39.833	41.722	41.328	41.171	39.125	41.171	41.328	41.722	39.833
60.0	35.030	35.976	34.716	35.661	34.637	35.661	34.716	35.976	35.030
62.5	30.307	30.701	29.048	30.622	30.307	30.622	29.048	30.701	30.307
65.0	25.899	25.821	23.931	25.899	25.978	25.899	23.931	25.821	25.899
67.5	21.570	21.255	19.444	21.412	21.648	21.412	19.444	21.255	21.570
70.0	17.398	17.004	15.429	17.240	17.555	17.240	15.429	17.004	17.398
72.5	13.226	12.989	11.729	13.147	13.462	13.147	11.729	12.989	13.226
75.0	9.131	9.210	8.423	9.368	9.210	9.368	8.423	9.210	9.131
77.5	4.644	5.431	5.589	5.510	5.038	5.510	5.589	5.431	4.644
80.0	3.385	3.385	3.464	3.306	3.306	3.306	3.464	3.385	3.385
82.5	2.362	2.362	2.283	2.283	2.283	2.283	2.283	2.362	2.362
85.0	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417	1.417
87.5	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630	0.630
90.0	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
92.5	0.719	1.438	2.217	3.774	3.774	3.774	2.217	1.438	0.719
95.0	2.337	3.115	3.774	5.391	5.511	5.391	3.774	3.115	2.337
97.5	5.332	5.691	6.110	7.787	7.967	7.787	6.110	5.691	5.332
100.0	8.386	8.865	9.225	10.962	11.202	10.962	9.225	8.865	8.386
102.5	11.980	12.579	12.759	14.616	14.916	14.616	12.759	12.579	11.980
105.0	15.814	16.473	16.593	18.689	18.809	18.689	16.593	16.473	15.814
107.5	19.827	20.666	20.845	23.062	23.002	23.062	20.845	20.666	19.827
110.0	24.080	25.099	25.278	27.614	27.554	27.614	25.278	25.099	24.080
112.5	28.632	29.771	29.891	32.526	32.346	32.526	29.891	29.771	28.632
115.0	33.185	34.742	34.922	37.438	37.018	37.438	34.922	34.742	33.185
117.5	37.497	39.534	39.893	42.350	41.571	42.350	39.893	39.534	37.497
120.0	41.990	44.206	44.746	46.842	45.824	46.842	44.746	44.206	41.990
122.5	46.064	48.759	49.477	50.915	49.418	50.915	49.477	48.759	46.064
125.0	49.477	52.832	54.090	54.749	52.653	54.749	54.090	52.832	49.477
127.5	53.071	57.264	59.361	58.882	56.366	58.882	59.361	57.264	53.071
130.0	57.504	63.075	65.831	64.333	60.858	64.333	63.075	63.075	57.504
132.5	64.213	71.041	74.516	71.701	67.687	71.701	74.516	71.041	64.213

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CANDELA TABULATION - (Cont.)

135.0	74.576	82.363	87.335	82.483	78.410	82.483	87.335	82.363	74.576
137.5	89.971	98.956	108.061	97.758	93.864	97.758	108.061	98.956	89.971
140.0	111.774	124.173	142.622	119.801	114.889	119.801	142.622	124.173	111.774
142.5	143.402	163.229	202.284	154.603	145.617	154.603	202.284	163.229	143.402
145.0	190.663	224.387	295.429	210.670	190.663	210.670	295.429	224.387	190.663
147.5	263.083	317.352	426.731	300.700	258.470	300.700	426.731	317.352	263.083
150.0	372.700	452.967	590.318	436.134	367.369	436.134	590.318	452.967	372.700
152.5	538.445	636.741	772.116	616.974	531.557	616.974	772.116	636.741	538.445
155.0	766.725	857.774	967.991	842.799	758.938	842.799	967.991	857.774	766.725
157.5	1046.460	1111.152	1182.434	1102.766	1033.282	1102.766	1182.434	1111.152	1046.460
160.0	1344.165	1375.912	1422.036	1382.501	1337.576	1382.501	1422.036	1375.912	1344.165
162.5	1608.925	1627.494	1651.454	1638.875	1615.514	1638.875	1651.454	1627.494	1608.925
165.0	1835.348	1841.937	1853.917	1849.724	1838.343	1849.724	1853.917	1841.937	1835.348
167.5	2014.451	2009.659	2020.441	2018.644	2013.852	2018.644	2020.441	2009.659	2014.451
170.0	2145.632	2139.642	2139.043	2136.647	2134.850	2136.647	2139.043	2139.642	2145.632
172.5	2221.107	2217.513	2213.919	2208.528	2206.731	2208.528	2213.919	2217.513	2221.107
175.0	2256.448	2254.052	2251.656	2249.859	2248.661	2249.859	2251.656	2254.052	2256.448
177.5	2257.047	2261.839	2263.636	2266.631	2267.829	2266.631	2263.636	2261.839	2257.047
180.0	2265.289	2265.289	2265.289	2265.289	2265.289	2265.289	2265.289	2265.289	2265.289

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Zone	Lumens	%Lamp	%Fixt
0-20	501.93	N.A.	18.50
0-30	911.03	N.A.	33.60
0-40	1118.31	N.A.	41.20
0-60	1236.19	N.A.	45.60
0-80	1271.32	N.A.	46.90
0-90	1272.97	N.A.	46.90
10-90	1136.33	N.A.	41.90
20-40	616.38	N.A.	22.70
20-50	691.23	N.A.	25.50
40-70	143.21	N.A.	5.30
60-80	35.13	N.A.	1.30
70-80	9.80	N.A.	0.40
80-90	1.65	N.A.	0.10
90-110	23.30	N.A.	0.90
90-120	58.42	N.A.	2.20
90-130	106.26	N.A.	3.90
90-150	328.24	N.A.	12.10
90-180	1438.44	N.A.	53.10
110-180	1415.14	N.A.	52.20
0-180	2711.41	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	136.63
10-20	365.30
20-30	409.10
30-40	207.27
40-50	74.85
50-60	43.04
60-70	25.33
70-80	9.80
80-90	1.65
90-100	4.87
100-110	18.44
110-120	35.11
120-130	47.84
130-140	66.39
140-150	155.59
150-160	395.75
160-170	503.04
170-180	211.41

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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC RW	80				70				50			30			10			0
	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
0	106	106	106	106	98	98	98	98	82	82	82	67	67	67	53	53	53	47
1	99	96	92	90	91	88	86	83	74	73	71	62	61	60	50	50	49	44
2	92	86	81	77	85	80	76	72	68	65	63	57	55	54	47	46	45	40
3	86	78	72	67	79	73	68	63	62	59	56	53	50	48	44	43	41	37
4	80	71	65	60	74	66	61	56	57	53	50	49	46	44	41	40	38	35
5	75	65	58	53	69	61	55	51	53	49	45	46	43	40	39	37	35	32
6	70	60	53	48	65	56	50	46	49	45	41	43	39	37	37	34	33	30
7	66	55	48	44	61	52	46	42	46	41	38	40	37	34	35	32	31	28
8	62	51	44	40	57	48	42	38	43	38	35	38	34	32	33	30	29	26
9	58	48	41	37	54	45	39	35	40	36	32	35	32	30	31	29	27	25
10	55	44	38	34	51	42	36	33	38	33	30	33	30	28	29	27	25	24

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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	3.5	3.5	4.8	3.5	3.5	3.5	3.5	4.7
	3H	3.5	3.5	3.6	4.1	5.5	3.5	3.5	3.5	4.1	5.4
	4H	3.5	3.5	3.7	4.2	5.6	3.5	3.5	3.6	4.1	5.5
	6H	3.5	3.5	3.6	4.1	5.5	3.5	3.5	3.5	4.0	5.4
	8H	3.5	3.5	3.6	4.0	5.4	3.5	3.5	3.5	4.0	5.3
	12H	3.5	3.5	3.5	3.9	5.3	3.5	3.5	3.5	3.9	5.3

UGR Viewed Endwise

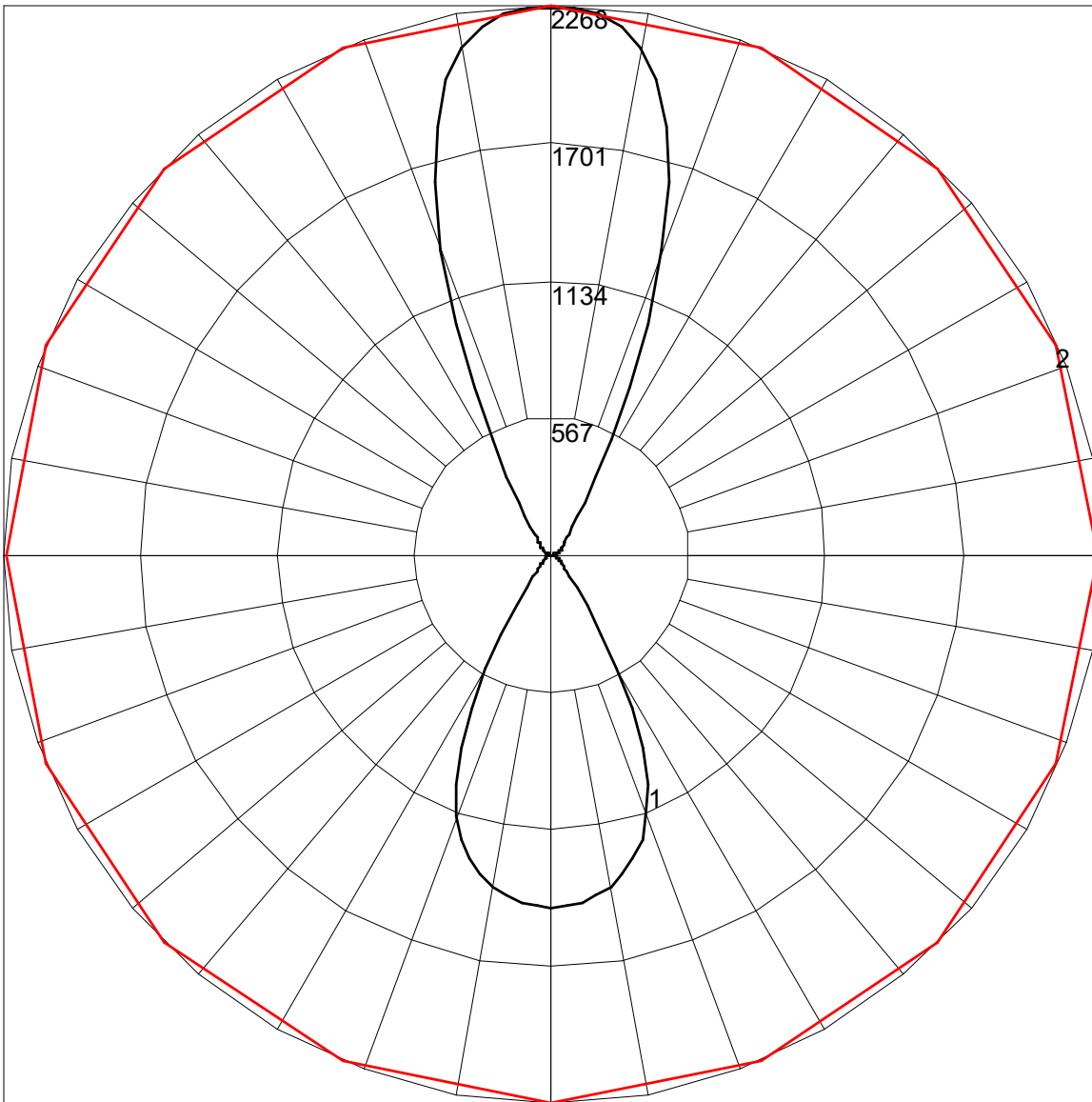
4H	2H	3.5	3.5	3.5	3.5	4.8	3.5	3.5	3.5	3.5	4.7
	3H	3.5	3.5	3.7	4.2	5.6	3.5	3.5	3.7	4.2	5.5
	4H	3.5	3.5	3.9	4.3	5.7	3.5	3.5	3.8	4.3	5.6
	6H	3.5	3.5	3.8	4.2	5.6	3.5	3.5	3.8	4.2	5.6
	8H	3.5	3.5	3.8	4.1	5.5	3.5	3.5	3.8	4.1	5.5
	12H	3.5	3.5	3.8	4.0	5.4	3.5	3.5	3.7	4.0	5.4
8H	4H	3.5	3.5	3.8	4.1	5.5	3.5	3.5	3.8	4.1	5.5
	6H	3.5	3.5	3.8	4.1	5.5	3.5	3.5	3.7	4.0	5.4
	8H	3.5	3.5	3.8	4.0	5.4	3.5	3.5	3.7	4.0	5.4
	12H	3.5	3.5	3.7	3.9	5.4	3.5	3.5	3.7	3.9	5.3
12H	4H	3.5	3.5	3.8	4.0	5.4	3.5	3.5	3.7	4.0	5.4
	6H	3.5	3.5	3.7	4.0	5.4	3.5	3.5	3.7	3.9	5.4
	8H	3.5	3.5	3.7	3.9	5.4	3.5	3.5	3.7	3.9	5.3

Maximum UGR = 5.7

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POLAR GRAPH



Maximum Candela = 2267.829 Located At Horizontal Angle = 90, Vertical Angle = 177.5

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

2 - Horizontal Cone Through Vertical Angle (177.5) (Through Max. Cd.)