



IES INDOOR REPORT

PHOTOMETRIC FILENAME : 192_168_39_135-13_33_11-MERGED.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] GEN from UL #13537338.13 & 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-LW-WHU-OW-CSD-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	2354
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	51
Total Luminaire Watts	46.6
Ballast Factor	1.00
CIE Type	Semi-Indirect
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	3059	2303	3205
55	999	929	1044
65	30	103	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	1150.117	1150.117	1150.117	1150.117	1150.117	1150.117	1150.117	1150.117	1150.117
2.5	1149.330	1143.819	1140.670	1139.883	1138.309	1139.883	1140.670	1143.819	1149.330
5.0	1123.352	1118.628	1115.480	1114.692	1113.905	1114.692	1115.480	1118.628	1123.352
7.5	1083.991	1079.268	1076.906	1076.906	1076.119	1076.906	1076.906	1079.268	1083.991
10.0	1033.610	1028.886	1028.099	1027.312	1026.525	1027.312	1028.099	1028.886	1033.610
12.5	969.845	967.484	966.696	965.909	965.122	965.909	966.696	967.484	969.845
15.0	895.060	894.273	895.060	893.486	891.911	893.486	895.060	894.273	895.060
17.5	813.977	813.190	814.765	813.977	811.616	813.977	814.765	813.190	813.977
20.0	728.014	728.407	729.194	728.958	726.125	728.958	729.194	728.407	728.014
22.5	641.184	642.208	642.365	642.444	638.980	642.444	642.365	642.208	641.184
25.0	558.290	560.101	561.518	559.787	555.221	559.787	561.518	560.101	558.290
27.5	471.540	476.735	481.144	476.106	469.651	476.106	481.144	476.735	471.540
30.0	387.465	396.125	404.548	395.180	387.701	395.180	404.548	396.125	387.465
32.5	313.546	320.946	333.227	320.946	314.649	320.946	333.227	320.946	313.546
35.0	253.167	257.024	270.171	258.521	255.372	258.521	270.171	257.024	253.167
37.5	205.934	206.565	216.719	209.398	210.029	209.398	216.719	206.565	205.934
40.0	169.251	167.912	173.502	171.769	174.997	171.769	173.502	167.912	169.251
42.5	140.675	138.234	141.383	142.958	146.737	142.958	141.383	138.234	140.675
45.0	117.216	115.012	117.846	119.892	122.805	119.892	117.846	115.012	117.216
47.5	96.119	95.332	99.189	99.976	100.606	99.976	99.189	95.332	96.119
50.0	76.439	77.855	82.972	81.949	79.902	81.949	82.972	77.855	76.439
52.5	58.254	61.796	67.700	65.260	60.851	65.260	67.700	61.796	58.254
55.0	41.801	46.682	52.743	49.515	43.690	49.515	52.743	46.682	41.801
57.5	27.788	32.748	38.179	34.716	28.733	34.716	38.179	32.748	27.788
60.0	16.452	20.625	24.876	21.727	16.295	21.727	24.876	20.625	16.452
62.5	7.085	10.627	13.855	10.706	6.455	10.706	13.855	10.627	7.085
65.0	1.338	3.149	6.219	2.755	1.338	2.755	6.219	3.149	1.338
67.5	1.023	0.944	2.126	0.944	1.023	0.944	2.126	0.944	1.023
70.0	0.708	0.708	0.787	0.708	0.787	0.708	0.787	0.708	0.708
72.5	0.551	0.551	0.551	0.551	0.551	0.551	0.551	0.551	0.551
75.0	0.393	0.393	0.393	0.393	0.393	0.393	0.393	0.393	0.393
77.5	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315	0.315
80.0	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236	0.236
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	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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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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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	351.22	N.A.	14.90
0-30	605.88	N.A.	25.70
0-40	772.13	N.A.	32.80
0-60	908.19	N.A.	38.60
0-80	914.96	N.A.	38.90
0-90	915.08	N.A.	38.90
10-90	811.29	N.A.	34.50
20-40	420.90	N.A.	17.90
20-50	513.62	N.A.	21.80
40-70	142.37	N.A.	6.00
60-80	6.77	N.A.	0.30
70-80	0.46	N.A.	0.00
80-90	0.12	N.A.	0.00
90-110	23.30	N.A.	1.00
90-120	58.42	N.A.	2.50
90-130	106.26	N.A.	4.50
90-150	328.24	N.A.	13.90
90-180	1438.44	N.A.	61.10
110-180	1415.14	N.A.	60.10
0-180	2353.52	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	103.79
10-20	247.43
20-30	254.66
30-40	166.24
40-50	92.72
50-60	43.35
60-70	6.31
70-80	0.46
80-90	0.12
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	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	104	104	104	104	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	97	93	90	87	88	85	83	80	70	68	67	56	55	54	43	43	42	36
2	90	84	79	74	82	77	73	69	64	61	58	52	50	48	40	39	38	33
3	83	75	69	64	76	69	64	60	58	54	51	47	45	43	38	36	35	31
4	77	68	62	57	71	63	57	53	53	49	46	44	41	39	35	34	32	28
5	72	62	55	50	66	57	52	47	49	44	41	41	38	35	33	31	30	26
6	67	57	50	45	61	53	47	42	45	40	37	38	35	32	31	29	27	25
7	63	52	45	40	57	48	42	38	42	37	34	35	32	30	29	27	25	23
8	59	48	41	37	54	45	39	35	39	34	31	33	30	27	27	25	24	21
9	55	44	38	33	51	41	36	32	36	32	29	31	28	25	26	24	22	20
10	52	41	35	31	48	39	33	29	34	29	26	29	26	24	24	22	21	19

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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

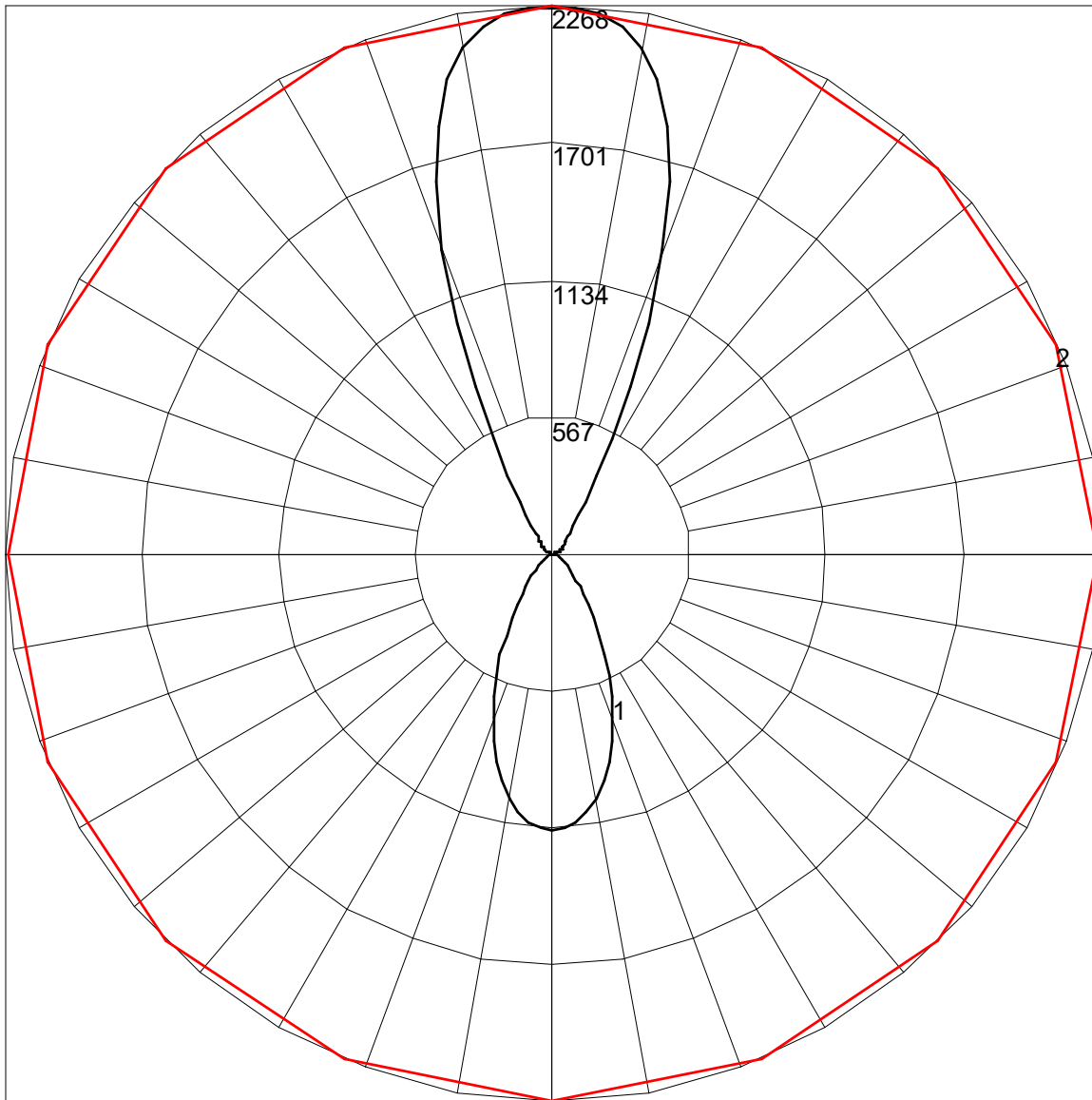
X=2H	Y=2H	3.0	3.0	3.0	3.0	3.2	3.0	3.0	3.0	3.0	3.6
	3H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.4
	4H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.2
	6H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.1
	8H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	12H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

UGR Viewed Endwise

4H	2H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.3
	3H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	4H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	6H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	8H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	12H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
8H	4H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	6H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	8H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	12H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
12H	4H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	6H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
	8H	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0

Maximum UGR = 3.6

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.)