

Throw ratio

F1+ SXGA+

	focal length (mm)		zoom factor (x)	Throw Ratio (d:w)	
Wide Angle	19.0	n/a	1	1.00	n/a
Standard Zoom	33.0	42.0	1,28	1.70	2.20
Long Zoom	n/a	n/a	n/a	n/a	n/a

F1 SXGA

	focal length (mm)		zoom factor (x)	Throw Ratio (d:w)	
Wide Angle	17.1	n/a	1	1.00	n/a
Standard Zoom	31.1	39.2	1,28	1.75	2.25
Long Zoom	44.4	62.5	1.4	2.50	3.50

F1 XGA / evo

Wide Angle	17.1	n/a	1	1.28	n/a
Standard Zoom	31.1	39.2	1,28	2.20	2.80
Long Zoom	44.4	62.5	1.4	3.10	4.40

Action! model zero five

Wide Angle	17.1	n/a	1	1.28	n/a
Standard Zoom	31.1	39.2	1,28	2.20	2.80
Long Zoom	44.4	62.5	1.4	3.10	4.40

Action! model one

Wide Angle	17.1	n/a	1	1.00	n/a
Standard Zoom	31.1	39.2	1,28	1.75	2.25
Long Zoom	44.4	62.5	1.4	2.50	3.50

Please note: all measures given within +/- 5% accuracy.

Formulas;

SXGA+

Std. Zoom: Throw Distance = 1.70 - 2.20 x Image Width
Image Width = Distance to screen / (1.70 - 2.20)

SXGA

Std. Zoom: Throw Distance = 1.75 - 2.25 x Image Width
Image Width = Distance to screen / (1.75 - 2.25)

XGA

Std. Zoom: Throw Distance = 2.20 - 2.80 x Image Width
Image Width = Distance to screen / (2.20 - 2.80)

Action! model zero five

Std. Zoom: Throw Distance = 2.20 - 2.80 x Image Width
Image Width = Distance to screen / (2.20 - 2.80)

Action! model one

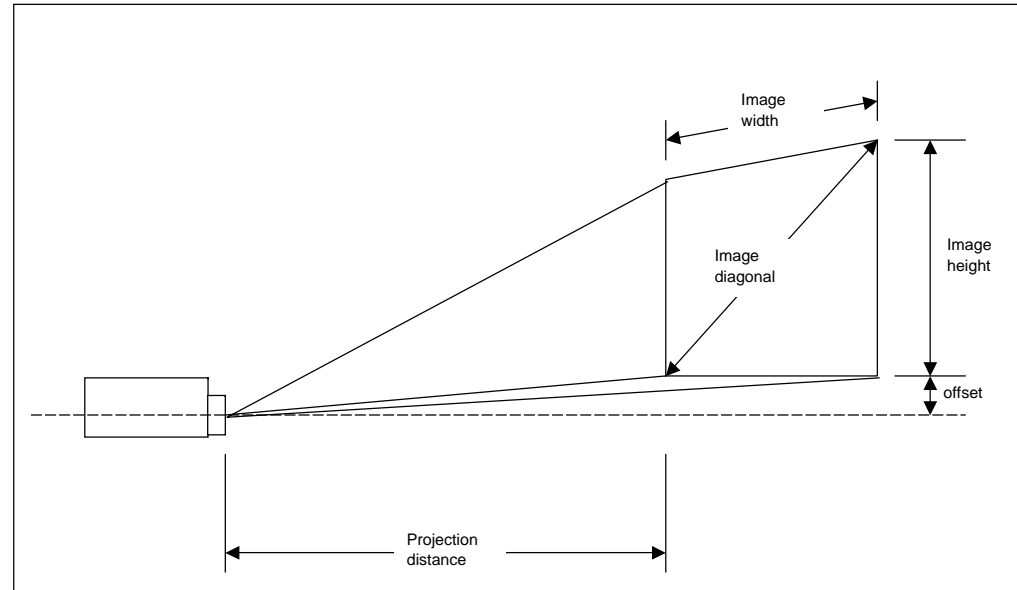
Std. Zoom: Throw Distance = 1.75 - 2.25 x Image Width
Image Width = Distance to screen / (1.75 - 2.25)

Screen Offset:

Std. Zoom: 8% of height in SXGA+
5% of height on SXGA
13% of height on XGA
16% of height on Action! model one
25% of height on Action! model zero five

		F1+ SXGA+, 4:3 aspect ratio				F1+ XGA and evo+, 4:3 aspect ratio			
		1.70 - 2.20 : 1 (dist : width)				2.22 - 2.80 : 1 (dist : width)			
dist (m)	zoom	Height	Width	Diagonal	Offset	Height	Width	Diagonal	Offset
1.5	wide	0.66	0.88	1.10	0.053	0.51	0.68	0.85	0.066
	tele	0.51	0.68	0.85	0.041	0.40	0.54	0.67	0.052
2	wide	0.88	1.18	1.47	0.071	0.68	0.91	1.14	0.089
	tele	0.68	0.91	1.14	0.055	0.54	0.71	0.89	0.070
3	wide	1.32	1.76	2.21	0.106	1.02	1.36	1.70	0.133
	tele	1.02	1.36	1.70	0.082	0.80	1.07	1.34	0.104
4	wide	1.76	2.35	2.94	0.141	1.36	1.82	2.27	0.177
	tele	1.36	1.82	2.27	0.109	1.07	1.43	1.79	0.139
5	wide	2.21	2.94	3.68	0.176	1.70	2.27	2.84	0.222
	tele	1.70	2.27	2.84	0.136	1.34	1.79	2.23	0.174
6	wide	2.65	3.53	4.41	0.212	2.05	2.73	3.41	0.266
	tele	2.05	2.73	3.41	0.164	1.61	2.14	2.68	0.209
7	wide	3.09	4.12	5.15	0.247	2.39	3.18	3.98	0.310
	tele	2.39	3.18	3.98	0.191	1.88	2.50	3.13	0.244
8	wide	3.53	4.71	5.88	0.282	2.73	3.64	4.55	0.355
	tele	2.73	3.64	4.55	0.218	2.14	2.86	3.57	0.279
10	wide	4.41	5.88	7.35	0.353	3.41	4.55	5.68	0.443
	tele	3.41	4.55	5.68	0.273	2.68	3.57	4.46	0.348
5	wide	2.21	2.94	3.68	0.176	1.70	2.27	2.84	0.22
	tele	1.70	2.27	2.84	0.136	1.34	1.79	2.23	0.174

4:3			4:3		
Wide	Tele	Diagonal ratio	Wide	Tele	Diagonal ratio
1.70	2.20	1.25	2.20	2.80	1.25



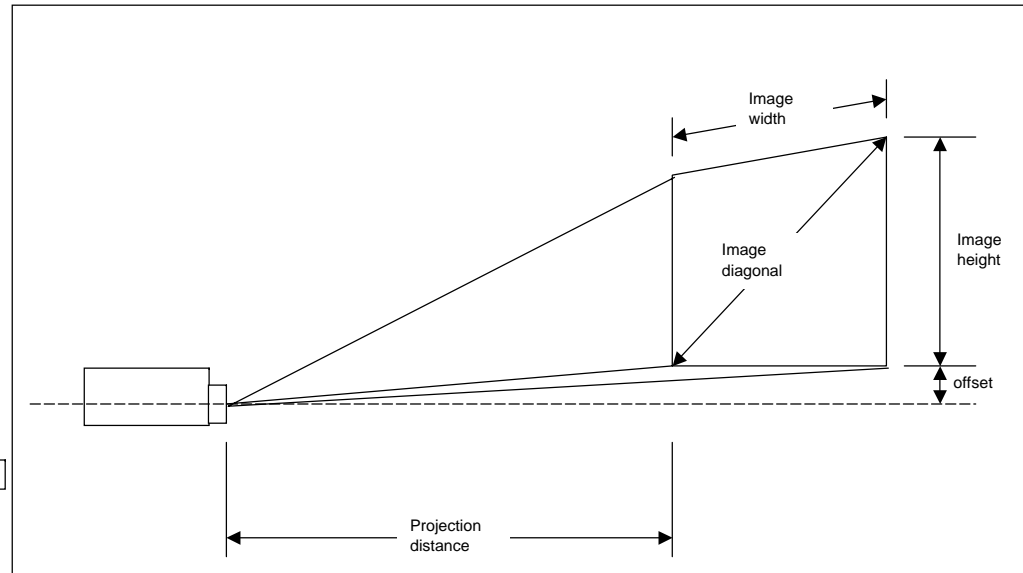
Please note: all measures given within +/- 5% accuracy.

Enter distance here to calculate screen sizes.

	Std lens	F1SX+	EVO/F1XGA	Wide	F1SX+	EVO/F1XGA
INPUT	m	m				
Screen Width	2.00	2.00		2.00	2.00	
OUTPUTS						
Screen Height	1.50	1.50		1.50	1.50	
Screen Diagonal	2.50	2.50		2.50	2.50	
Short throw dist	3.40	4.40		2.00	2.56	
Long throw dist.	4.40	5.60				
Screen Offset	0.120	0.195		0.120	0.195	

		model one, 16:9 aspect ratio				model zero five, 16:9 aspect ratio			
		1.75 - 2.25 : 1 (dist : width)				2.20 - 2.80 : 1 (dist : width)			
dist (m)	zoom	Height	Width	Diagonal	Offset	Height	Width	Diagonal	Offset
1.5	wide	0.48	0.86	0.98	0.077	0.38	0.68	0.78	0.096
	tele	0.38	0.67	0.76	0.060	0.30	0.54	0.61	0.075
2	wide	0.64	1.14	1.31	0.103	0.51	0.91	1.04	0.128
	tele	0.50	0.89	1.02	0.080	0.40	0.71	0.82	0.100
3	wide	0.96	1.71	1.97	0.154	0.77	1.36	1.56	0.192
	tele	0.75	1.33	1.53	0.120	0.60	1.07	1.23	0.151
4	wide	1.29	2.29	2.62	0.206	1.02	1.82	2.09	0.256
	tele	1.00	1.78	2.04	0.160	0.80	1.43	1.64	0.201
5	wide	1.61	2.86	3.28	0.257	1.28	2.27	2.61	0.320
	tele	1.25	2.22	2.55	0.200	1.00	1.79	2.05	0.251
6	wide	1.93	3.43	3.93	0.309	1.53	2.73	3.13	0.384
	tele	1.50	2.67	3.06	0.240	1.21	2.14	2.46	0.301
7	wide	2.25	4.00	4.59	0.360	1.79	3.18	3.65	0.447
	tele	1.75	3.11	3.57	0.280	1.41	2.50	2.87	0.352
8	wide	2.57	4.57	5.25	0.411	2.05	3.64	4.17	0.511
	tele	2.00	3.56	4.08	0.320	1.61	2.86	3.28	0.402
10	wide	3.21	5.71	6.56	0.514	2.56	4.55	5.21	0.639
	tele	2.50	4.44	5.10	0.400	2.01	3.57	4.10	0.502
5	wide	1.61	2.86	3.28	0.257	1.28	2.27	2.61	0.320
	tele	1.25	2.22	2.55	0.200	1.00	1.79	2.05	0.251

16:9		
Wide	Tele	Diagonal ratio
1.75	2.25	1.147
2.20	2.80	1.147



Please note: all measures given within +/- 5% accuracy.

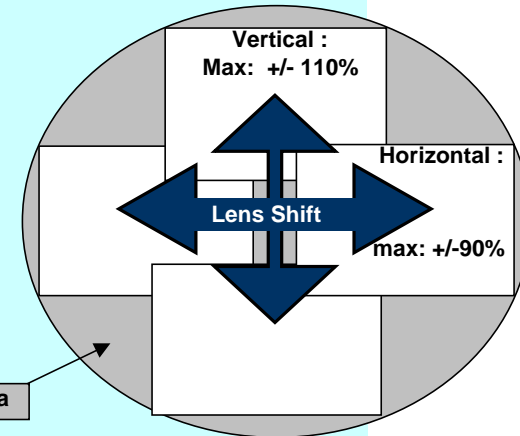
Enter distance here to calculate screen sizes.

INPUT	Std lens	one	zero five	Wide	one	zero five
Screen Width		2.00	2.00		2.00	2.00
OUTPUTS						
Screen Height		1.13	1.13		1.13	1.13
Screen Diagonal		2.29	2.29		2.29	2.29
Short throw dist		3.50	4.40		2.00	2.56
Long throw dist.		4.50	5.60		n/a	n/a
Screen Offset		0.180	0.281		0.180	0.281

Standard Zoom Lens (EN11)

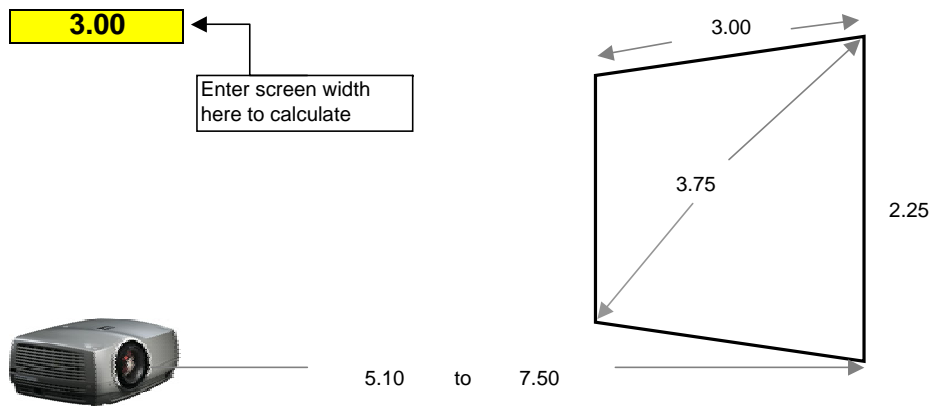
		Standard Zoom Lens			
		Wide	Tele	Diagonal ratio	
dist (m)	zoom	1.7	2.5	1.25	
		Height	Width	Diagonal	Offset
1.5	wide	0.66	0.88	1.10	0.033
	tele	0.45	0.60	0.75	0.023
2	wide	0.88	1.18	1.47	0.044
	tele	0.60	0.80	1.00	0.030
3	wide	1.32	1.76	2.21	0.066
	tele	0.90	1.20	1.50	0.045
4	wide	1.76	2.35	2.94	0.088
	tele	1.20	1.60	2.00	0.060
5	wide	2.21	2.94	3.68	0.110
	tele	1.50	2.00	2.50	0.075
6	wide	2.65	3.53	4.41	0.132
	tele	1.80	2.40	3.00	0.090
7	wide	3.09	4.12	5.15	0.154
	tele	2.10	2.80	3.50	0.105
8	wide	3.53	4.71	5.88	0.176
	tele	2.40	3.20	4.00	0.120
10	wide	4.41	5.88	7.35	0.221
	tele	3.00	4.00	5.00	0.150

Technical :	
Working F/#	F 2.1
	Motorized Iris F# 2.1-6.5
Zoom Ratio	1.5 Motorized zoom & Focus
Focal Length	32.5 - 49 mm
Focus Range	Standard : 2m - 15m
MTF	38lp/mm
	Center: 60% min
	Corner 50% min
Lateral color	<3/4 pixel
TV Distortion	Less than 1% optical
	Optimize for 8m throw dist.



Calculate based on Image Width

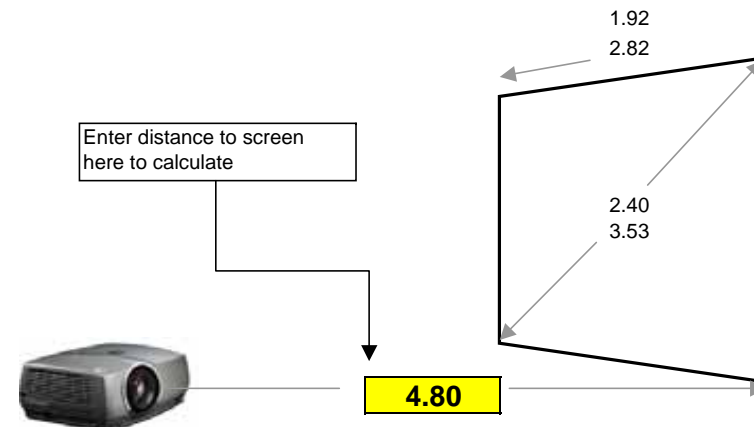
Standard Zoom Lens



Please note: all measures given within +/- 5%

Calculate based on Distance to Screen

Standard Zoom Lens



Please note: all measures given within +/- 5%

Screen Diagonal Reference Chart

Diagonal		4:3 Width		4:3 Height		16:9 Width		16:9 Height	
Diag Inch	Diag Cm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
25	635	20.0	508	15.0	381	21.8	555	12.3	311
26	660	20.8	528	15.6	396	22.7	577	12.7	324
27	686	21.6	549	16.2	411	23.6	599	13.2	336
28	711	22.4	569	16.8	427	24.5	621	13.7	349
29	737	23.2	589	17.4	442	25.3	643	14.2	361
30	762	24.0	610	18.0	457	26.2	666	14.7	374
31	787	24.8	630	18.6	472	27.1	688	15.2	386
32	813	25.6	650	19.2	488	27.9	710	15.7	398
33	838	26.4	671	19.8	503	28.8	732	16.2	411
34	864	27.2	691	20.4	518	29.7	754	16.7	423
35	889	28.0	711	21.0	533	30.6	776	17.2	436
36	914	28.8	732	21.6	549	31.4	799	17.6	448
37	940	29.6	752	22.2	564	32.3	821	18.1	461
38	965	30.4	772	22.8	579	33.2	843	18.6	473
39	991	31.2	792	23.4	594	34.1	865	19.1	486
40	1016	32.0	813	24.0	610	34.9	887	19.6	498
41	1041	32.8	833	24.6	625	35.7	908	20.1	511
42	1067	33.6	853	25.2	640	36.6	930	20.6	523
43	1092	34.4	874	25.8	655	37.5	952	21.1	535
44	1118	35.2	894	26.4	671	38.3	974	21.6	548
45	1143	36.0	914	27.0	686	39.2	996	22.1	560
46	1168	36.8	935	27.6	701	40.1	1018	22.6	573
47	1194	37.6	955	28.2	716	41.0	1040	23.0	585
48	1219	38.4	975	28.8	732	41.8	1063	23.5	598
49	1245	39.2	996	29.4	747	42.7	1085	24.0	610
50	1270	40.0	1016	30.0	762	43.6	1107	24.5	622
51	1295	40.8	1036	30.6	777	44.5	1130	25.0	635
52	1321	41.6	1057	31.2	792	45.3	1151	25.5	648
53	1346	42.4	1077	31.8	808	46.2	1173	26.0	660
54	1372	43.2	1097	32.4	823	47.1	1196	26.5	673
55	1397	44.0	1118	33.0	838	47.9	1217	27.0	686
56	1422	44.8	1138	33.6	853	48.8	1240	27.5	699
57	1448	45.6	1158	34.2	869	49.7	1262	27.9	709
58	1473	46.4	1179	34.8	884	50.6	1285	28.4	721
59	1499	47.2	1199	35.4	899	51.4	1306	28.9	734
60	1524	48.0	1219	36.0	914	52.3	1328	29.4	747
61	1549	48.8	1240	36.6	930	53.2	1351	29.9	759
62	1575	49.6	1260	37.2	945	54	1372	30.4	772
63	1600	50.4	1280	37.8	960	54.9	1394	30.9	785
64	1626	51.2	1300	38.4	975	55.8	1417	31.4	798
65	1651	52.0	1321	39.0	991	56.7	1440	31.9	810
66	1676	52.8	1341	39.6	1006	57.5	1461	32.4	823
67	1702	53.6	1361	40.2	1021	58.4	1483	32.8	833
68	1727	54.4	1382	40.8	1036	59.3	1506	33.3	846
69	1753	55.2	1402	41.4	1052	60.1	1527	33.8	859
70	1778	56.0	1422	42.0	1067	61	1549	34.3	871
71	1803	56.8	1443	42.6	1082	61.9	1572	34.8	884
72	1829	57.6	1463	43.2	1097	62.8	1595	35.3	897
73	1854	58.4	1483	43.8	1113	63.6	1615	35.8	909
74	1880	59.2	1504	44.4	1128	64.5	1638	36.3	922
75	1905	60.0	1524	45.0	1143	65.4	1661	36.8	935
76	1930	60.8	1544	45.6	1158	66.2	1681	37.3	947
77	1956	61.6	1565	46.2	1173	67.1	1704	37.8	960
78	1981	62.4	1585	46.8	1189	68	1727	38.2	970
79	2007	63.2	1605	47.4	1204	68.9	1750	38.7	983
80	2032	64.0	1626	48.0	1219	69.7	1770	39.2	996
81	2057	64.8	1646	48.6	1234	70.6	1793	39.7	1008
82	2083	65.6	1666	49.2	1250	71.5	1816	40.2	1021

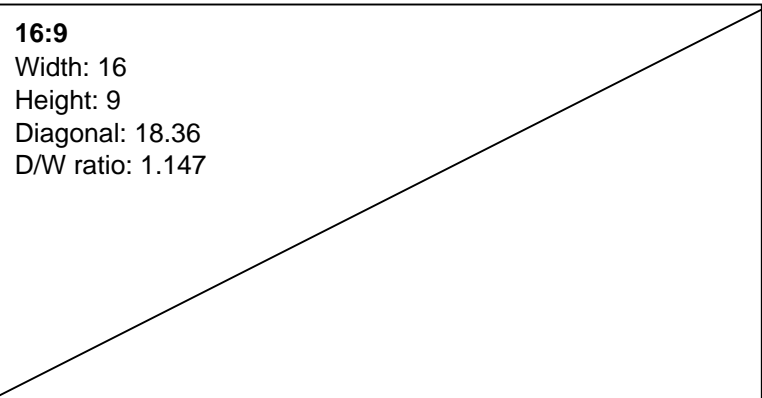
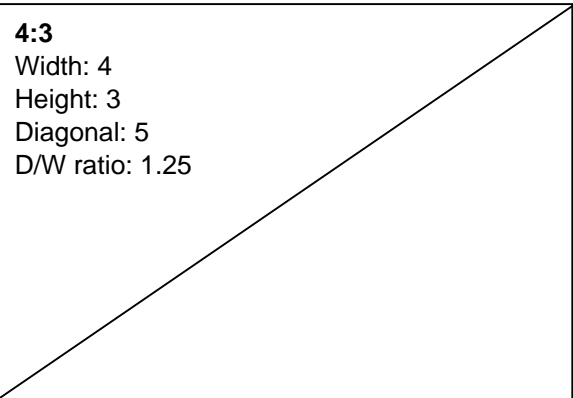
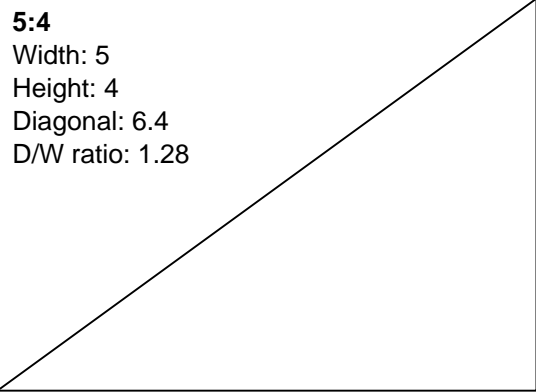
Screen Diagonal Reference Chart

Diagonal		4:3 Width		4:3 Height		16:9 Width		16:9 Height	
Diag Inch	Diag Cm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
83	2108	66.4	1687	49.8	1265	72.3	1836	40.7	1034
84	2134	67.2	1707	50.4	1280	73.2	1859	41.2	1046
85	2159	68.0	1727	51.0	1295	74.1	1882	41.7	1059
86	2184	68.8	1748	51.6	1311	75	1905	42.2	1072
87	2210	69.6	1768	52.2	1326	75.8	1925	42.7	1085
88	2235	70.4	1788	52.8	1341	76.7	1948	43.1	1095
89	2261	71.2	1808	53.4	1356	77.6	1971	43.6	1107
90	2286	72.0	1829	54.0	1372	78.4	1991	44.1	1120
91	2311	72.8	1849	54.6	1387	79.3	2014	44.6	1133
92	2337	73.6	1869	55.2	1402	80.2	2037	45.1	1146
93	2362	74.4	1890	55.8	1417	81.1	2060	45.6	1158
94	2388	75.2	1910	56.4	1433	81.9	2080	46.1	1171
95	2413	76.0	1930	57.0	1448	82.8	2103	46.6	1184
96	2438	76.8	1951	57.6	1463	83.7	2126	47.1	1196
97	2464	77.6	1971	58.2	1478	84.5	2146	47.6	1209
98	2489	78.4	1991	58.8	1494	85.4	2169	48.0	1219
99	2515	79.2	2012	59.4	1509	86.3	2192	48.5	1232
100	2540	80.0	2032	60.0	1524	87.2	2215	49.0	1245
101	2565	80.8	2052	60.6	1539	88	2235	49.5	1257
102	2591	81.6	2073	61.2	1554	88.9	2258	50.0	1270
103	2616	82.4	2093	61.8	1570	89.8	2281	50.5	1283
104	2642	83.2	2113	62.4	1585	90.6	2301	51.0	1295
105	2667	84.0	2134	63.0	1600	91.5	2324	51.5	1308
106	2692	84.8	2154	63.6	1615	92.4	2347	52.0	1321
107	2718	85.6	2174	64.2	1631	93.3	2370	52.5	1334
108	2743	86.4	2195	64.8	1646	94.1	2390	52.9	1344
109	2769	87.2	2215	65.4	1661	95	2413	53.4	1356
110	2794	88.0	2235	66.0	1676	95.9	2436	53.9	1369
111	2819	88.8	2256	66.6	1692	96.7	2456	54.4	1382
112	2845	89.6	2276	67.2	1707	97.6	2479	54.9	1394
113	2870	90.4	2296	67.8	1722	98.5	2502	55.4	1407
114	2896	91.2	2316	68.4	1737	99.4	2525	55.9	1420
115	2921	92.0	2337	69.0	1753	100.2	2545	56.4	1433
116	2946	92.8	2357	69.6	1768	101.1	2568	56.9	1445
117	2972	93.6	2377	70.2	1783	102	2591	57.4	1458
118	2997	94.4	2398	70.8	1798	102.8	2611	57.9	1471
119	3023	95.2	2418	71.4	1814	103.7	2634	58.3	1481
120	3048	96.0	2438	72.0	1829	104.8	26620	59.0	14974
125	3175	100.0	2540	75.0	1905	109.2	27729	61.4	15598
130	3302	104.0	2642	78.0	1981	113.5	28838	63.9	16222
135	3429	108.0	2743	81.0	2057	117.9	29948	66.3	16846
140	3556	112.0	2845	84.0	2134	122.3	31057	68.8	17469
150	3810	120.0	3048	90.0	2286	131.0	33275	73.7	18717
160	4064	128.0	3251	96.0	2438	139.7	35493	78.6	19965
165	4191	132.0	3353	99.0	2515	144.1	36603	81.1	20589
170	4318	136.0	3454	102.0	2591	148.5	37712	83.5	21213
175	4445	140.0	3556	105.0	2667	152.8	38821	86.0	21837
180	4572	144.0	3658	108.0	2743	157.2	39930	88.4	22461
185	4699	148.0	3759	111.0	2819	161.6	41039	90.9	23085
190	4826	152.0	3861	114.0	2896	165.9	42148	93.3	23709
195	4953	156.0	3962	117.0	2972	170.3	43258	95.8	24332
200	5080	160.0	4064	120.0	3048	174.7	44367	98.3	24956
205	5207	164.0	4166	123.0	3124	179.0	45476	100.7	25580
210	5334	168.0	4267	126.0	3200	183.4	46585	103.2	26204
215	5461	172.0	4369	129.0	3277	187.8	47694	105.6	26828
220	5588	176.0	4470	132.0	3353	192.1	48803	108.1	27452
225	5715	180.0	4572	135.0	3429	196.5	49913	110.5	28076
230	5842	184.0	4674	138.0	3505	200.9	51022	113.0	28700
235	5969	188.0	4775	141.0	3581	205.2	52131	115.4	29324

Screen Diagonal Reference Chart

Diagonal		4:3 Width		4:3 Height		16:9 Width		16:9 Height	
Diag Inch	Diag Cm	Inches	mm	Inches	mm	Inches	mm	Inches	mm
240	6096	192.0	4877	144.0	3658	209.6	53240	117.9	29948
245	6223	196.0	4978	147.0	3734	214.0	54349	120.4	30572
250	6350	200.0	5080	150.0	3810	218.3	55459	122.8	31195
255	6477	204.0	5182	153.0	3886	222.7	56568	125.3	31819
260	6604	208.0	5283	156.0	3962	227.1	57677	127.7	32443
265	6731	212.0	5385	159.0	4039	231.4	58786	130.2	33067
270	6858	216.0	5486	162.0	4115	235.8	59895	132.6	33691
275	6985	220.0	5588	165.0	4191	240.2	61004	135.1	34315
280	7112	224.0	5690	168.0	4267	244.5	62114	137.6	34939
285	7239	228.0	5791	171.0	4343	248.9	63223	140.0	35563
290	7366	232.0	5893	174.0	4420	253.3	64332	142.5	36187
295	7493	236.0	5994	177.0	4496	257.6	65441	144.9	36811
300	7620	240.0	6096	180.0	4572	262.0	66550	147.4	37434
325	8255	260.0	6604	195.0	4953	283.8	72096	159.7	40554
350	8890	280.0	7112	210.0	5334	305.7	77642	171.9	43674
375	9525	300.0	7620	225.0	5715	327.5	83188	184.2	46793
400	10160	320.0	8128	240.0	6096	349.3	88734	196.5	49913
425	10795	340.0	8636	255.0	6477	371.2	94279	208.8	53032
450	11430	360.0	9144	270.0	6858	393.0	99825	221.1	56152
475	12065	380.0	9652	285.0	7239	414.8	105371	233.4	59271
500	12700	400.0	10160	300.0	7620	436.7	110917	245.6	62391
550	13970	440.0	11176	330.0	8382	480.3	122009	270.2	68630
600	15240	480.0	12192	360.0	9144	524.0	133100	294.8	74869
650	16510	520.0	13208	390.0	9906	567.7	144192	319.3	81108
700	17780	560.0	14224	420.0	10668	611.4	155284	343.9	87347

All figures are +/- 5mm. Reference only.



		F1 SXGA, 5:4 aspect ratio				F1 XGA and evo, 4:3 aspect ratio			
		1.75 - 2.25 : 1 (dist : width)				2.22 - 2.80 : 1 (dist : width)			
dist (m)	zoom	Height	Width	Diagonal	Offset	Height	Width	Diagonal	Offset
1.5	wide	0.69	0.86	1.10	0.034	0.51	0.68	0.85	0.066
	tele	0.53	0.67	0.85	0.027	0.40	0.54	0.67	0.052
2	wide	0.91	1.14	1.46	0.046	0.68	0.91	1.14	0.089
	tele	0.71	0.89	1.14	0.036	0.54	0.71	0.89	0.070
3	wide	1.37	1.71	2.20	0.069	1.02	1.36	1.70	0.133
	tele	1.07	1.33	1.71	0.053	0.80	1.07	1.34	0.104
4	wide	1.83	2.29	2.93	0.091	1.36	1.82	2.27	0.177
	tele	1.42	1.78	2.28	0.071	1.07	1.43	1.79	0.139
5	wide	2.29	2.86	3.66	0.114	1.70	2.27	2.84	0.222
	tele	1.78	2.22	2.85	0.089	1.34	1.79	2.23	0.174
6	wide	2.74	3.43	4.39	0.137	2.05	2.73	3.41	0.266
	tele	2.13	2.67	3.41	0.107	1.61	2.14	2.68	0.209
7	wide	3.20	4.00	5.12	0.160	2.39	3.18	3.98	0.310
	tele	2.49	3.11	3.98	0.124	1.88	2.50	3.13	0.244
8	wide	3.66	4.57	5.85	0.183	2.73	3.64	4.55	0.355
	tele	2.84	3.56	4.55	0.142	2.14	2.86	3.57	0.279
10	wide	4.57	5.71	7.32	0.229	3.41	4.55	5.68	0.443
	tele	3.56	4.44	5.69	0.178	2.68	3.57	4.46	0.348
3.5	wide	1.60	2.00	2.56	0.080	1.19	1.59	1.99	0.16
	tele	1.24	1.56	1.99	0.062	0.94	1.25	1.56	0.122

Please note: all measures given within +/- 5% accuracy.

Enter distance here to calculate screen sizes.

INPUT	Std lens	SXGA	evo / XGA	Wide	SXGA	XGA
		m	m			
Screen Width		2.00	2.00		2.00	2.00
OUTPUTS						
Screen Height		1.60	1.50		1.60	1.50
Screen Diagonal		2.56	2.50		2.56	2.50
Short throw dist		3.50	4.40		2.00	2.56
Long throw dist.		4.50	5.60			
Screen Offset		0.080	0.195		0.080	0.195

5:4			4:3		
Wide	Tele	Diagonal ratio	Wide	Tele	Diagonal ratio
1.75	2.25	1.28	2.20	2.80	1.25

