Screen Size Measures

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Contents: 1. Introduction | 2. Screen Size | 3. Pixels per Inch | Acknowledgements

1. Introduction

The size of computer screens is measured in the length of their diagonal. However, the aspect ratio of these screens (width:height) vary among 4:3, 5:4, and 16:10. Therefore, a screen with a longer diagonal does not necessarily have a larger area. Moreover, one may be more interested in the screen height than the screen width. Manufacturers seldom indicate, whether, for example, a 14.1" screen (4:3 aspect ratio) is taller a 15.4" wide screen (16:10 aspect ratio). Perhaps surprisingly, the former is 0.3 inches taller. Also, it is worth noting that CRT screens actually have shorter diagonals than what is described.

The screen resolution determines the **number of pixels** available for use. The more the pixels, the larger the working area. A higher resolution makes text and images look smaller on the screen than they do on a lower resolution. The actual size of text and images on the screen is measured by **Pixels Per Inch (PPI)**. It simply indicates how many pixels there are per inch. The smaller PPI, the larger texts and images are. PPIs of 96 (± 10) are used in many screens, but some graphics designers and programmers work with screens that have PPI values of 117 and more, which allows them to have more workspace.

2. Screen Size

2.1. LCD Screens

The diagonal length of LCD screens is the same as in the screen description. E.g. a 17" LCD screen has a 17" long diagonal.

		4:3 Screens 5:4 Screens										
Diagonal Length	10.4"	12.1"	13.3"	14.1"	15"	16.1"	20.1"	21.3"	16"	17"	18.1"	19"
Width	8.3"	9.7"	10.6"	11.3"	12.0"	12.9"	16.1"	17.0"	12.5"	13.3"	14.1"	14.8"
Height	6.2"	7.3"	8.0"	8.5"	9.0"	9.7"	12.1"	12.8"	10.0"	10.6"	11.3"	11.9"
Area	52	70	85	95	108	124	194	218	125	141	160	176

Regular LCDs (4:3 and 5:4)

(inch ²)						1

		1	16:10 S	creens				5:3 Sc	reens		16:9 Screens
Diagonal Length	12.1"	13.3"	15.4"	17"	22.2	23"	10.6"	12.1"	15"	17"	13.3"
Width	10.3"	11.3"	13.1"	14.4"	18.8"	19.5"	9.1"	10.4"	12.9"	14.6"	11.6"
Height	6.4"	7.0"	8.2"	9.0"	11.8"	12.2"	5.5"	6.2"	7.7"	8.7"	6.5"
Area (inch ²)	66	80	107	130	222	238	50	65	99	128	76

Wide Screen LCDs (16:10, 5:3, and 16:9)

2.2. CRT Screens

All normal CRT screens are have 4:3 proportions. The length of the diagonal of CRT screens is actually shorter than described. For example, a 19" CRT screen may have 17.5" long diagonal on the visible screen. You must measure the length of the diagonal manually.

Diagonal Length	14"	14.5"	15"	15.5"	16"	16.5"	17.0"	17.5"	18"	18.5"	19"	19.5"	20"	20.5"	21"
Width	11.2"	11.6"	12.0"	12.4"	12.8"	13.2"	13.6"	14.0"	14.4"	14.8"	15.2"	15.6"	16.0"	16.4"	16.8"
Height	8.4"	8.7"	9.0"	9.3"	9.6"	9.9"	10.2"	10.5"	10.8"	11.1"	11.4"	11.7"	12.0"	12.3"	12.6"
Area (inch ²)	94	101	108	115	123	131	139	147	156	164	173	183	192	202	212

3. Pixels per Inch

Note: The diagonal length of LCD screens is the same as in the screen description. E.g. a 17" LCD screen has a 17" long diagonal. The length of the diagonal of CRT screens is actually shorter than described. For example, a 19" CRT screen may have 17.5" long diagonal. You must measure the length of the diagonal manually.

3.1. 4:3 Screens

The table below can be used for 4:3 LCD screens.

				Pixe	ls per]	[nch / I	Diago	nal Le	ngth	
Resolution	Abbr.	No. of pixels	10.4"	12.1"	13.3"	14.1"	15"	16.1"	20.1"	21.3"
640 x 480	VGA	307.2 k	77	66	60	57	53	50	40	38
800 x 600	SVGA	480.0 k	96	83	75	71	67	62	50	47

1024 x 768	XGA	786.4 k	123	106	96	91	85	80	64	60
1152 x 864	*	995.3 k	138	119	108	102	96	89	72	68
1280 x 960	QVGA	1.228 M	154	132	120	113	107	99	80	75
1400 x 1050	SXGA+	1.470 M	168	145	132	124	117	109	87	82
1600 x 1200	UXGA	1.920 M	192	165	150	142	133	124	100	94
2048 x 1536	QXGA	3.146 M	246	212	192	182	171	159	127	120

*) No official abbreviation for this resolution.

The table below is to be used for CRT screens. It lists diagonal lengths in 0.5" increments and presents appropriate PPIs.

								Pixels l	Per Inc	h / Diag	onal	Length					
Resolution	Abbr.	No. of pixels	14"	14.5"	15"	15.5"	16"	16.5"	17.0"	17.5"	18"	18.5"	19"	19.5"	20"	20.5"	21"
640 x 480	VGA	307.2 k	57	55	53	52	50	48	47	46	44	43	42	41	40	39	38
800 x 600	SVGA	480.0 k	71	69	67	65	63	61	59	57	56	54	53	51	50	49	48
1024 x 768	XGA	786.4 k	91	88	85	83	80	78	75	73	71	69	67	66	64	62	61
1152 x 864	*	995.3 k	103	99	96	93	90	87	85	82	80	78	76	74	72	70	69
1280 x 960	QVGA	1.228 M	114	110	107	103	100	97	94	91	89	86	84	82	80	78	76
1400 x 1050	SXGA+	1.470 M	125	121	117	113	109	106	103	100	97	95	92	90	88	85	83
1600 x 1200	UXGA	1.920 M	143	138	133	129	125	121	118	114	111	108	105	103	100	98	95

*) No official abbreviation for this screen size.

3.2. 5:4 Screens

			Pixels p	er Inch	/ Diagonal	Length
Resolution	Abbr.	No. of pixels	16"	17"	18.1"	19"
1280 x 1024	SXGA	1.311 M	102	96	91	86

3.3. 16:10 Screens (Wide Screen)

			Pixel	s Per I	nch / I	Diagor	nal Ler	ngth
Resolution	Abbr.	No. of pixels	12.1"	13.3"	15.4"	17"	22.2"	23"
1280 x 800	WXGA	1.024 M	125	113	98	89	68	66
1440 x 900	WXGA+	1.296 M	140	128	110	100	76	74

1680 x 1050	WSXGA+	1.764 M	164	149	129	117	89	86
1920 x 1200	WUXGA	2.304 M	187	170	147	133	102	98

3.4. 5:3 Screens (Wide Screen 15:9)

			Pixels Per	· Inch / Di	agonal	Length
Resolution	Abbr.	No. of pixels	10.6"	12.1"	15"	17"
1280 x 768	WXGA	983.0 k	141	123	100	88

3.5. 16:9 Screens (Wide Screen)

			Pixels Per Inch / Diagonal Length
Resolution	Abbr.	No. of pixels	13.3"
1366 x 768	WXGA	1.049 M	118

Acknowledgements

Enderet for pointing out that 13.3" wide screens (16:10) and 12.1" wide screens (5:3) exist. **KCK** for pointing out that TFT screens that use SXGA resolution have 5:4 dimensions and that 15" and 17" 5:3 screens exist.