

# Ergonomics Data & Mounting Heights

## Ergonomic Ground Rules – English Units

To obtain optimum performance from a workstation, consider the following topics during installation of your Flat Panel Mounting Solutions:

- The adjustment range of the Mounting Solutions product.
- The use-mode of the Mounting Solutions product...
  - > Monitoring/viewing only?
  - > Data entry?
  - > User will be sitting?
  - > User will be standing?
  - > User will be sitting *and* standing at different times?
- Vertical mounting height of the Mounting Solutions product in respect to user(s)...
  - > Female or male only?
  - > Female and male both?
  - > Average height of users?

Using the Eye-Height / Elbow-Height Tables:

Use these tables to help determine mounting heights of Mounting Solutions products. Follow these Ergonomic Ground Rules during installation of Mounting Solutions products:

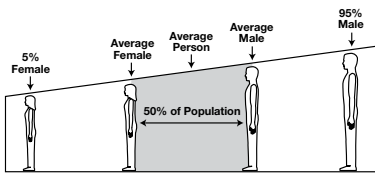
- Screen Height: Top of screen should be level with, or slightly below, Eye Height of user.
- Keyboard Height: Center-line of keyboard should be level with Elbow Height of the operator with forearms and wrists in a level position.
- Screen/Keyboard Height Variance: The distance from top of monitor screen to center-line of keyboard reflects Eye-to-Elbow Measurement of the average female to male users.

Remember that the actual attachment-point height of Mounting Solutions products varies because:

- Dimensions of monitors vary.
- Configurations of Mounting Solution products vary.

### Eye-Height / Elbow-Height Tables

For average range of users – anthropometric† data expressed in inches

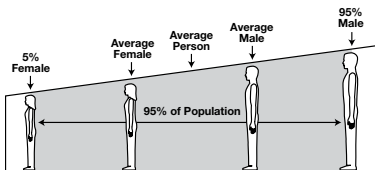


1	Eye Height 4			Elbow Height 4			Eye-to-Elbow Measurement	
	Stand	Sit	Var.	Stand	Sit	Var.	Stand	Sit
Av. Female	59.4	44.0	15.4	38.8	23.0	15.8	20.6	21.0
Av. Person	61.7	46.1	15.6	40.4	24.9	15.5	21.3	21.2
Av. Male	64.4	48.5	15.9	42.5	27.0	15.5	21.9	21.5
Variance F/M	5.0	4.5	—	3.7	4.0	—	—	—

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For 5% female to 95% male range of users



	Stand	Sit	Var.	Stand	Sit	Var.	Stand	Sit
5% Female*	55.7	40.8	14.9	36.5	20.8	15.7	19.2	20.0
95% Male**	68.6	52.1	16.5	45.4	29.5	15.9	23.2	22.6
Variance F/M	12.9	11.3	—	8.9	8.7	—	—	—

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† Anthropometry: The study of human body measurements. Data based on studies of US population.

\* Denotes the female who is at the 5% mark of a scale ranging 0% to 100%.

\*\* Denotes the male who is at the 95% mark of a scale ranging 0% to 100%.

1 Fixed-height applications: Mount at height for average person.

Height-adjustable applications...

2 Sitting *or* standing for average range of users: ≥ 5" vertical adjustment range required.

3 Sitting *or* standing for 95% range of users: ≥ 12.9" vertical adjustment range required.

4 Sitting *&* standing for average range of users: ≥ 19.5" vertical adjustment range required.

Keyboard placement...

5 Keyboard to monitor relationship: The optimal distance is 21" in all applications.

# Ergonomics Data & Mounting Heights

## Ergonomic Ground Rules – Metric Units

To obtain optimum performance from a workstation, consider the following topics during installation of your Flat Panel Mounting Solutions:

- The adjustment range of the Mounting Solutions product.
- The use-mode of the Mounting Solutions product...
  - > Monitoring/viewing only?
  - > Data entry?
  - > User will be sitting?
  - > User will be standing?
  - > User will be sitting *and* standing at different times?
- Vertical mounting height of the Mounting Solutions product in respect to user(s)...
  - > Female or male only?
  - > Female and male both?
  - > Average height of users?

Using the Eye-Height / Elbow-Height Tables:

Use these tables to help determine mounting heights of Mounting Solutions products.

Follow these Ergonomic Ground Rules during installation of Mounting Solutions products:

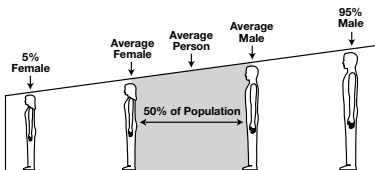
- Screen Height: Top of screen should be level with, or slightly below, *Eye Height* of user.
- Keyboard Height: Center-line of keyboard should be level with *Elbow Height* of the operator with forearms and wrists in a level position.
- Screen/Keyboard Height Variance: The distance from top of monitor screen to center-line of keyboard reflects *Eye-to-Elbow Measurement* of the average female to male users.

Remember that the actual attachment-point height of Mounting Solutions products varies because:

- Dimensions of monitors vary.
- Configurations of Mounting Solution products vary.

### Eye-Height / Elbow-Height Tables

For average range of users – anthropometric† data expressed in millimeters

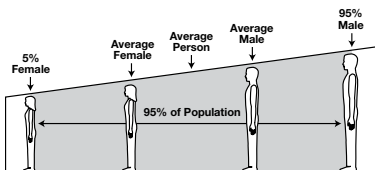


1	Eye Height 4			Elbow Height 4			Eye-to-Elbow Measurement	
	Stand	Sit	Var.	Stand	Sit	Var.	Stand	Sit
Av. Female	1509	1118	391	986	584	401	523	533
Av. Person	1567	1171	396	1026	632	394	541	538
Av. Male	1636	1232	404	1080	686	394	556	546
Variance F/M	127	114	—	94	102	—	—	—

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For 5% female to 95% male range of users



	Stand	Sit	Var.	Stand	Sit	Var.	Stand	Sit
5% Female*	1415	1036	378	927	528	399	488	508
95% Male**	1742	1323	419	1153	749	404	589	574
Variance F/M	328	287	—	226	221	—	—	—

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† Anthropometry: The study of human body measurements. Data based on studies of US population.

\* Denotes the female who is at the 5% mark of a scale ranging 0% to 100%.

\*\* Denotes the male who is at the 95% mark of a scale ranging 0% to 100%.

1 Fixed-height applications: Mount at height for average person.

Height-adjustable applications...

2 Sitting *or* standing for average range of users: ≥ 127 mm vertical adjustment range.

3 Sitting *or* standing for 95% range of users: ≥ 328 mm vertical adjustment range.

4 Sitting & standing for average range of users: ≥ 495 mm vertical adjustment range.

Keyboard placement...

5 Keyboard to monitor relationship: The optimal distance is 533 mm in all applications.