

## Universal Design Information Sheet on Body Size – Body Size Range

### Recommended Design Range for Universal Design (values in cm)

Dimension	Small	Source	Large	Source	Design Range
Abdominal Depth, Sitting	16.9	Korea <sup>1</sup>	35.8	Netherlands <sup>2</sup>	18.9
Buttock-Knee Length	49.7	Japan <sup>3</sup>	70.3	Netherlands	20.6
Buttock-Popliteal Length (Seat Depth)	41	Korea	56.5	Netherlands	15.5
Elbow Grip Length	27	Thailand <sup>4</sup>	39.3	Netherlands	12.3
Elbow Height	88.9	Japan	123.9	Netherlands	35
Elbow Height, Sitting	18.6	Italy <sup>5</sup>	30	Netherlands	11.4
Elbow-Elbow Breadth	32.2	Japan	57.1	Italy	24.9
Eye Height	136.3	Thailand	184.2	Netherlands	47.9
Eye Height, Sitting	66.8	Thailand	89.2	Netherlands	22.4
Foot Breadth	8.1	Thailand	11.6	Netherlands	3.5
Foot Length	21	Thailand	29.6	Netherlands	8.6
Forearm-Fingertip Length	38.2	Japan	53	Netherlands	14.8
Grip Reach (Forward Reach)	58.8	Japan	82.3	Netherlands	23.5
Hand Breadth	6.3	Thailand	11	Italy	4.7
Hand Length	16.1	Korea	22.1	Netherlands	6
Head Breadth	13.4	Italy	17.3	Japan	3.9
Head Circumference	51.3	Thailand	60.6	Netherlands	9.3
Head Length	15.8	Thailand	21.2	United States	5.4
Hip Breadth, Sitting	30.1	Thailand	50.1	United States	20
Knee Height	41.8	Japan	61.7	Netherlands	19.9
Lower Leg Length (Popliteal Height)	33.3	Korea	53.8	Netherlands	20.5
Shoulder (Bideloid) Breadth	35.4	Thailand	55	United States <sup>6</sup>	19.6
Shoulder Elbow Length	27	Italy	41.5	Netherlands	14.5
Shoulder Height	118.2	Japan	162.5	Netherlands	44.3
Shoulder Height, Sitting	50.1	Italy	68.8	Netherlands	18.7
Sitting Height	77.5	Italy	101.2	Netherlands	23.7
Stature	147.3	Thailand	195.9	Netherlands	48.6
Thigh Clearance	11	Italy	17.9	Korea	6.9
Weight (Kg)	40	Thailand	117	Netherlands	77

<sup>1</sup> Korean Agency for Tech and Standards, 2004

<sup>2</sup> Daanen & Robinette, 2001

<sup>3</sup> HQL Laboratory, 2007

<sup>4</sup> Thai Industrial Standards Institute (TISI), 2001

<sup>5</sup> Fubini et al., 1993

<sup>6</sup> Harrison & Robinette, 2002

