






## SPECIFICATIONS COMPARISON FOR THE PHANTOM® PREMIUM 1.0, 1.5, 1.5 HIGH FORCE, AND 3.0 HAPTIC DEVICES

	Premium 1.0	Premium 1.5	Premium 1.5 High Force	Premium 3.0
				
<b>Workspace</b>	10 W x 7 H x 5 D inches 254 W x 178 H x 127 D mm	15 W x 10.5 H x 7.5 D inches 381 W x 267 H x 191 D mm		33 W x 23 H x 16 D inches 838 W x 584 H x 406 D mm
<b>Footprint</b>	13 W x 10 D inches 330 W x 254 D mm	13 W x 10 D inches 330 W x 254 D mm	Detachable portion	8 W x 8 D inches 203 W x 203 D mm
			Electronics console (AMP box)	15 W x 20 D inches 381 W x 508 D mm
<b>Range of motion</b>	Hand movement pivoting at wrist	Lower arm movement pivoting at elbow		Full arm movement pivoting at shoulder
<b>Nominal position resolution</b>	860 dpi 0.03 mm	860 dpi 0.03 mm	3784 dpi 0.007 mm	> 1000 dpi ~ 0.02 mm
<b>Backdrive friction</b>	0.15 oz 0.04 N	0.15 oz 0.04 N	0.75 oz 0.2 N	0.75 oz 0.2 N
<b>Maximum exertable force (nominal position)</b>	1.9 lbf 8.5 N	1.9 lbf 8.5 N	8.4 lbf 37.5 N	4.9 lbf 22 N
<b>Continuous exertable force (nominal position)</b>	0.3 lbf 1.4 N	0.3 lbf 1.4 N	1.4 lbf 6.2N	0.7 lbf 3 N
<b>Stiffness</b>	20 lbf in <sup>-1</sup> 3.5 N mm <sup>-1</sup>	20 lbf in <sup>-1</sup> 3.5 N mm <sup>-1</sup>		5.7 lbf in <sup>-1</sup> 1 N mm <sup>-1</sup>
<b>Inertia (apparent mass at tip) - without encoder gimbal</b>	< 0.17 lbm < 75 g	< 0.17 lbm < 75 g	< 0.33 lbm < 150 g	< 0.35 lbm < 159 g
<b>Force feedback</b>	x, y, z	x, y, z		x, y, z
<b>Position sensing</b>	x, y, z (roll, pitch, yaw optional)	x, y, z (roll, pitch, yaw optional)	x, y, z (roll, pitch, yaw upon special request)	x, y, z (roll, pitch, yaw optional)
<b>Interface</b>	Parallel Port	Parallel Port		Parallel Port
<b>Supported platforms</b>	Intel-based PCs	Intel-based PCs		Intel-based PCs
<b>GHOST® SDK Compatibility</b>	Yes	Yes	Upon special request	Yes
<b>OpenHaptics™ Toolkit Compatibility</b>	Yes	Yes		Yes