



Specifications for the PHANTOM® Desktop™ and PHANTOM Omni® haptic devices

The SensAble Technologies PHANTOM® product line of haptic devices makes it possible for users to touch and manipulate virtual objects. Different PHANTOM devices meet varying needs. The Premium models are high-precision instruments and, within the PHANTOM product line, provide the largest workspaces and highest forces, and some offer 6DOF (6 degrees of freedom) output capabilities. The PHANTOM Desktop and PHANTOM Omni devices offer affordable desktop solutions. Of the two devices, the PHANTOM Desktop delivers higher fidelity, stronger forces, and lower friction, while the PHANTOM Omni is our lowest-priced haptic device. Below is a comparison between the PHANTOM Desktop and the PHANTOM Omni haptic devices.



Model	<u>The PHANTOM Desktop Device</u>	<u>The PHANTOM Omni Device</u>
Force feedback workspace	~ 6.4 W x 4.8 H x 4.8 D in > 160 W x 120 H x 120 D mm	~ 6.4 W x 4.8 H x 2.8 D in > 160 W x 120 H x 70 D mm
Footprint Physical area the base of device occupies on the desk	5 5/8 W x 7 1/4 D in ~ 143 W x 184 D mm	6 5/8 W x 8 D in ~ 168 W x 203 D mm
Weight (device only)	6 lb 5oz	3 lb 15 oz
Range of motion	Hand movement pivoting at wrist	Hand movement pivoting at wrist
Nominal position resolution	> 1100 dpi ~ 0.023 mm	> 450 dpi ~ 0.055 mm
Backdrive friction	< 0.23 oz (0.06 N)	< 1 oz (0.26 N)
Maximum exertable force at nominal (orthogonal arms) position	1.8 lbf. (7.9 N)	0.75 lbf. (3.3 N)
Continuous exertable force (24 hrs.)	0.4 lbf. (1.75 N)	> 0.2 lbf. (0.88 N)
Stiffness	X axis > 10.8 lb/in (1.86 N/mm) Y axis > 13.6 lb/in (2.35 N/mm) Z axis > 8.6 lb/in (1.48 N/mm)	X axis > 7.3 lb/in (1.26 N/mm) Y axis > 13.4 lb/in (2.31 N/mm) Z axis > 5.9 lb/in (1.02 N/mm)
Inertia (apparent mass at tip)	~ 0.101 lbm. (45 g)	~ 0.101 lbm. (45 g)
Force feedback	x, y, z	x, y, z
Position sensing [Stylus gimbal]	x, y, z (digital encoders) [Pitch, roll, yaw (± 3% linearity potentiometers)]	x, y, z (digital encoders) [Pitch, roll, yaw (± 5% linearity potentiometers)]
Interface	Parallel port and FireWire® option*	IEEE-1394 FireWire® port: 6-pin to 6-pin*
Supported platforms	Intel or AMD-based PCs	Intel or AMD-based PCs
OpenHaptics® Toolkit compatibility	Yes	Yes

*Please visit the Support and Resources section of our website for more information: www.sensable.com/support-overview.htm.

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Rev 01/07/09