



Human Nose	Portable Odor Monitor
<p>Range: about 10,000 different molecules Sensitivity: 1 ppt (part / trillion) Portability: hardly know you're carrying it Communication: human voice, written word</p>	<p>Range: almost 1,000 different molecules Sensitivity: 10 ppb (parts / billion) Portability: very cumbersome. Communication: digital or millivolt output</p>
<p>Operation: On inhaling, airborne molecules are drawn to a patch of olfactory neurons perched in the warm, moist recesses of the upper nose which contain about 1000 types of molecule-specific receptors which trap molecules and pass information to the olfactory bulbs on the underside of the brain. The olfactory bulbs then relay the odor signals to parts of the higher brain which interpret the signals.</p>	<p>Operation: A pump draws air into the instrument, past the non-molecule specific sensor - a heated, semiconducting, metal oxide-coated platinum coil - which detects the sum effect of all substances which create electrical and thermal effects when they contact the sensor. The intensity is displayed in arbitrary units.</p>
<p>Development Time: 3,500,000 years Production Time: 9 months Cost: Production = almost nothing, but up keep very expensive.</p> <p>“In my experience the human nose is the clear winner.” -Richard Kunz, chemist</p>	<p>Development Time: 12 years Production Time: 1 day Cost: Odor Monitor = \$2850, Chart Recorder = \$1560</p>