

TSD204A Vaginal Photoplethysmogram Transducer

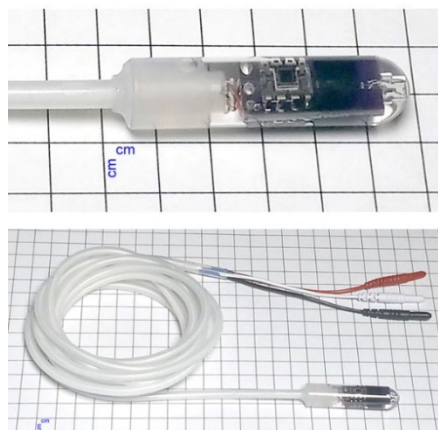


Fig. 1



Fig. 2

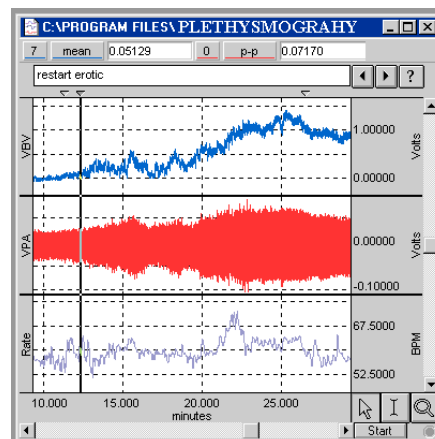


Fig. 3

TSD204A VPG insert tip and full device (Fig.1) on 1 cm grid. Insert tip and cable (Fig.2).
HR, VPA, and VBV measurements in AcqKnowledge (Fig.3).

The TSD204A vaginal photoplethysmogram (VPG) transducer measures vaginal pulse amplitude (VPA) and vaginal blood volume (VBV). Within the transducer housing is a printed circuit board (PCB) with a pair of photodiodes, one on each face. An LED at the top of the PCB emits light that is reflected to the photodiodes. The amplitude of light received is modulated by the amount of blood scattering light from the emitter to the detectors. A baffle within the device prevents light from scattering from the LED to the photodiodes within the sensor housing.

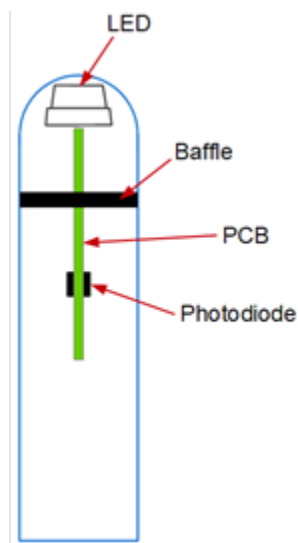


Fig. 4

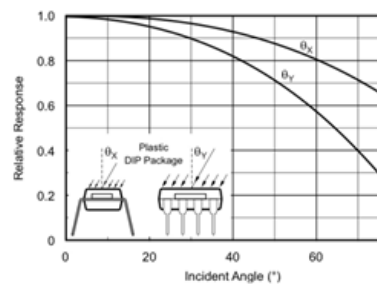
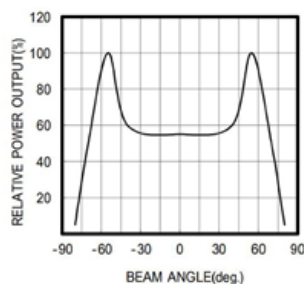


Fig. 5

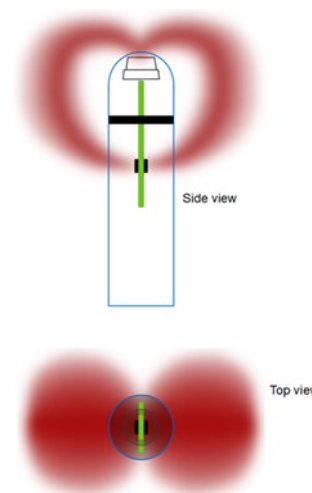


Fig. 6

Diagram of major components of transducer (Fig.4). Emission LED/Absorption pattern of photodiodes (Fig. 5). Photons may take many paths from LED to photodiodes (Fig. 6). Diagrams show relative density of expected photon paths through surrounding tissue with device in situ.

Add a variety of physiological sexual arousal parameters including temperature, EDA, respiration, and pulse. Monitor pulse rate, respiration rate, pulse amplitude, and area under the pulse curve with *AcqKnowledge* calculation channels.

Present a wide range of videos or images and send marker/trigger information to the MP System with a stimulus presentation package. Use automated analysis features, triggering by the image markers, to determine the onset timing, duration, and amplitude of the subject's response. Add subject feedback via the Variable Assessment Transducer TSD115.

VPG Transducer Specifications

General

Insert tip:	length 50 mm; diameter 12.6 mm
Cable:	3 m cable; terminates in 3 x touchproof connectors
Interface:	Connects directly to PPG100C for MP160/150 System.; NOT suitable for MRI
Weight:	82.2 g
Sterilization:	Device may be sterilized with CIDEX™ OPA Solution*, but BIOPAC strongly recommends the device be used inside a condom for maximum safety. Condoms should be transparent so as not to interfere with the passage of light from the device to surrounding tissue and vice versa. If CIDEX™ OPA is used, it achieves high-level disinfection in 12-minutes at 68 °F (20 °C) and 5 minutes at 77 °F (25 °C) for manual reprocessing.

Electronics

Photodiode:	Photodiode with integrated amplifier 400-950 nm response 450 mV/uW Typical output voltage 3.6 V
Sensor area	2.9 x 2.9 mm, 5.2 mm ²
LED:	3 mm Red/Orange LED
(Visible red probe)	4 mW @ 20 mA, peak wavelength 660 nm View angle 70°

Materials

Probe housing:	Polystyrene
Connecting cable:	Silicone Sheeting Quality 7480/061

*CIDEX™ OPA is a high-level disinfectant for reprocessing reusable heat-sensitive research medical devices such as immersion sensors, endoscopic, respiratory therapy, and anesthesia equipment.