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StandardGuide for Instrumentation, Sensors and Operating Software Used in Forensic Psychophysiological Detection of Deception (Polygraph) Examinations[1]

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1. Scope

1.1 This guide covers the minimum requirements for instrumentation (both analog and computerized systems), sensors and operating software used in the forensic psychophysiological detection of deception (*PDD*). As a minimum, such instrumentation shall simultaneously record an individual's respiratory, electrodermal, and cardiovascular activity.

1.2 This guide does not prohibit additional components, which may be offered as supplemental measurements of physiological change. Additional recording components may be used in addition to but not to replace the required minimum components.

2. Referenced Documents

2.1 *ASTM Standards:*[2]

E1954 Practice for Conduct of Research in Psychophysiological Detection of Deception (Polygraph)

E2000 Guide for Minimum Basic Education and Training of Individuals Involved in the Detection of Deception (PDD)

E2035 Terminology Relating to Forensic Psychophysiology

2.2 *Other Document:*

Manufacturer Manual(s) for System(s) in Use

3. Terminology

3.1 *Definitions of Terms*—See E2035.

3.2 Terminology may vary according to different manufacturers.

4. Significance and Use

4.1 This guide sets forth the minimum requirements for instrumentation and software when conducting PDD examinations. For additional information see Practice E1954 and Guide E2000.

5. Minimum Requirements for Polygraph Instrumentation and Software

5.1 A minimum of two channels of respiratory activity shall be simultaneously recorded, one thoracic and one abdominal.

5.1.1 A minimum of one channel of exosomatic electrodermal activity, via resistance or conductance, shall be recorded.

5.1.2 A minimum of one channel of cardiovascular activity shall be recorded.

5.1.3 Additional channels may be recorded but shall not be used in place of respiration, electrodermal and cardiovascular activity.

5.1.4 The instrumentation and software shall allow a way to mark the recorded information with the following minimum notations: identity of examinee, date and time, start of recording, pressure settings (when appropriate), gain settings, any instructions given examinee, stimulus onset, stimulus identification, end of stimulus, any answer given by examinee, standardized chart markings, end of recording and any changes made to the instrumentation or software during recording (such as pressure changes, centering adjustments and gain adjustments).

5.1.5 All mandatory channels shall be recorded within the same instrument.

5.1.6 All polygraphs shall include a separate data channel specifically designed to record covert body movements.

6. Respiratory Activity

6.1 Respiratory activity shall be recorded via pneumatic bellows or other transducers that give continuous measure of abdominal and thoracic girth.

7. Electrodermal Activity

7.1 Electrodermal activity shall be recorded via skin resistance or skin conductance.

[1] This guide is under the jurisdiction of ASTM Committee E52 on Forensic Psychophysiology and is the direct responsibility of Subcommittee E52.02 on Instrumentation.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

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