



## CReSS™

CReSS is the first commercial product to unite data collection for smoking topography, subjective measures, performance tasks, and physiological measures. Now, one solution brings computerized automation to these aspects of clinical research.

### Smoking Topography

CReSS includes all of the hardware necessary to measure smoking topography. Researchers have the option of measuring ad-lib smoking or controlling participant smoking using any set of desired topography parameters.

### Subjective Measures

Subjective measures are gathered through computer-based questionnaires that research staff can customize using up to six different scale types.

### Performance Tasks

Motor skills and time perception are evaluated with an interactive performance task.

### Physiological Data Collection

CReSS supports the collection of vital signs from two different third-party monitors. Adding these measures allows for correlation of physiological response with other measured characteristics.

## Product Information

Integrating data from the four different measurement areas provides a rich view of participant response. Raw data are collected and stored automatically on the system hard drive in comma-delimited text files for effortless import into spreadsheets, databases, and statistics packages.

CReSS gives researchers a multipurpose tool with which to create new evaluative instruments or reuse proven instruments from prior work. CReSS also allows the user to create linkages between the different measurement types – thus creating a logical grouping of tasks, and enforcing an operational sequence in accordance with the protocol being run.

### Features

- Smoking Topography
- Subjective Measures
- Performance Tasks
- Physiological Data Collection

### Platform

- Windows® 95/98/Me/NT4/2000/XP
- Desktop or Notebook PC

### Applications

- Smoking Cessation Studies
- Harm Reduction Models
- Drug Efficacy Studies
- Behavioral Research
- Pharmacology Research
- Abuse Liability Studies

## CReSS provides the following tools for the clinical researcher:

### Topography Measures (optional)

Used to assess smoking behavior precisely.

- Puff Volume
- Puff Duration
- Number of Puffs per Cigarette
- Inter-Puff Interval
- Maximum Flow Rate During Puff
- Number of Cigarettes

### Subjective Measures

Used to assess craving, withdrawal, and/or any other subjective effects. A variety of item formats are available.

- True/False
- 5-Point Scale
- 7-Point Scale
- 7-Point Scale (w/Anchors)
- Visual Analog Scale (VAS)
- N-Item Scale

### Performance Measures

Used to assess the effect of drugs or drug withdrawal on cognitive function.

- Digit Symbol Substitution Task (DSST)
- Time Estimation Task (TET)

### Physiological Measures (optional)

- Heart Rate
- Blood Pressure (Systolic, Diastolic, Mean Arterial)
- Skin Temperature
- Oximetry

*Physio measures require a third party monitor. Check our Website for compatible monitors.*

## To fit into any lab environment, CReSS is available in these flexible configurations:

### Model #3000 – Software Only

- Requires Desktop or Notebook PC\*
  - Supports Subjective, Performance, and Physio Measures Only
  - CReSS Software CDROM
- 60-days free installation support.*

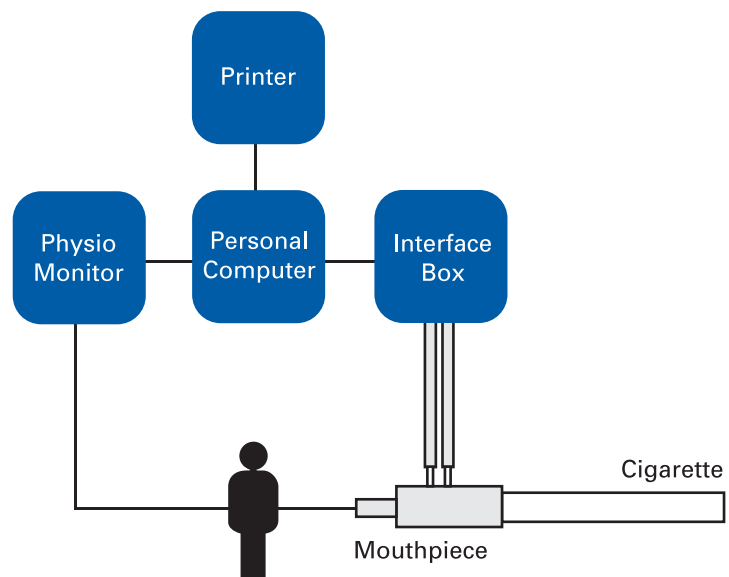
### Model #4000/4010 – System without PC

- Requires Desktop (4000) or Notebook (4010) PC\*
  - Interface Box (IB01) for Topography
  - Mouthpiece and Tubing for Topography
  - Interface Board with Software
  - CReSS Software CDROM
- 60-days free installation support.*

### Model #8000/8010 – System with PC

- Dell<sup>®</sup> PC (8000-Desktop or 8010-Notebook)
  - Interface Box (IB01) for Topography
  - Mouthpiece and Tubing for Topography
  - Interface Board with Software
  - CReSS Software CDROM
- All components installed and tested. 60-days free installation support.*

\*Minimum PC Requirements: 500MHz Pentium<sup>®</sup>III, Windows<sup>®</sup> 95/98/Me/NT4/2000/XP, 32MB RAM, 10GB Hard Disk, 800 X 600 Video, Sound Card, CD Drive, Open PCI or PCCard slot (not required for Model 3000)



### Measurement Methodology

CRcSS uses a flow-meter style mouthpiece where differential pressure is measured and converted to flow using a power equation. From measured flow, CReSS derives puff volume, puff duration, and all other smoking measures listed above.