Solutions for Physical and Psychological Assessment, Evaluation, and Intervention

Personnel Selection and Development Psychometric and Neuropsychological Research Traffic Psychology Clinical and Rehabilitation Aviation Performance Sports Performance



Manual Dexterity Testing

Grooved Pegboard Test Model 32025

This manipulative dexterity test contains twenty-five holes with randomly positioned slots and pegs which have a key along one side. Pegs must be rotated to match the hole before they can be inserted. This procedure measures performance speed in a fine motor task by examining both sides of the body. Inferences may be drawn regarding possible lateral brain damage.

Purdue Pegboard Dexterity Test Model 32020A

The Purdue Pegboard Test has been used extensively to aid in the selection of employees for jobs that require fine and gross motor dexterity/coordination. It measures gross movements of hands, fingers, arms, and fingertip dexterity. The Purdue Pegboard Task includes the matching of a pin to a hole in the board, as well as assembly of pins, collars, and washers. Intended for industrial use and assembly work in a factory setting, the test is now being studied for use in other special areas such as patients with Parkinson's, Multiple Sclerosis, Stroke sufferers, and similar illnesses.

Hand Tool Dexterity Test Model 32521

This test measures proficiency in using ordinary mechanical tools. The test consists of tools and two uprights with bolts, washers, and nuts. The object is to disassemble all the bolts from one upright and reassemble them on corresponding rows of the other upright with the heads of the bolts inside. This type of skill is important to many industrial jobs and apprentice training. Results of the test have been used to determine vocational interest and as an indicator of success where job/tasks require the use of these or similar tools.

O'Connor Finger Dexterity Test Model 32021

The O'Connor Finger Dexterity Test requires hand placement of 3 pins per hole. Consisting of 100 holes 3/16" diameter, holes are arranged in ten rows and spaced 1/2" apart. Primarily used as a predictive tool wherever rapid manipulation of objects is important, especially the picking up and placing of small parts.

O'Connor Tweezer Dexterity Test Model 32022

This test is the same as our O'Connor Finger Dexterity Test except the test requires the use of tweezers in placing a single pin in each 1/16" diameter hole. A high score is indicative of manual aptitude for work involving precision and steadiness of small hand tools requiring a high degree of hand-eye coordination.

Complete Minnesota Manual Dexterity Test Model 32023A

The complete Minnesota Manual Dexterity Test measures simple hand-eye coordination and gross motor skills. The CMMDT Task involves the manipluation of small disks, consisting of a battery of five tests: Placing, Turning, Displacing, One-Hand Turning/Placing, and Two-Hand Turning/Placing.



Model 32025



Model 32020A



Model 32521



Model 32021



Model 32022



Model 32023A

Reaction Time Measurement

The Multi-Operational Apparatus for Reaction Time (MOΨART) System with PsymCon Control

Model 35600

The MOWART is an integrated, versatile device used for the study of cognitive processing. The MOWART features ergonomically-placed touch sensitive keypads for ultraaccurate reaction times with no key travel errors. It also uses tri-color stimulus lights and dual tone generation, giving it a high degree of versatility in stimulus presentation. Combined with the PsymCon control panel, it can provide six highly adaptable tests (detailed below) that will find use in any motor behavior laboratory.

With MOWART, you can employ simple reaction time tasks such as Go/No Go tasks for the study of higher centers of the brain and more complex discriminate reaction time tasks to study cognitive processing. The system may also be used to study executive functioning through the use of an interference tapping task. While subjects are required to concentrate on a reaction time task they must execute a simultaneous tapping task.

MOWART's main menu allows the user to select one of the following six test types:

- 1. Simple Reaction Time: Choose either simple stimulus with response or Go/No Go reaction paradigm.
- 2. Choice Reaction Time: Choose from multiple stimuli and multiple responses.
- 3. Simple Reaction/Movement: Choose either simple stimulus with response or Go/No Go reaction paradigm with an added movement response.
- 4. Choice Reaction/Movement: Subject starts from a single key and responds to one of multiple response keys based on stimulus presented.
- 5. Simple Tap Test: The subject taps one key as quickly as possible during a timed test period.
- 6. Complex Tap Test: The subject alternately taps two separate keys as quickly as possible for a predetermined test time.



Additional Tests with PsymLab Software

Reaction Time + Tapping Test: The subject is instructed to perform a reaction time test while simultaneously performing a tapping task.

Within each of these test types, the user can set several variable parameters to meet their needs. These parameters include: Choice of Stimulus, Reaction Method, Cue Type, Length of Cue, Error Types, Response Time Out, and Random Presentation.



Psychomotor Experiment Design Software

PsymLab Psychomotor Control Software

Model 35800

PsymLab is Lafayette Instrument's psychomotor experiment software. The new software provides researchers with a powerful tool for organizing subject information, designing/building customized experiments, and generating unique data reports. Keep all your data organized in one complete database for individual or group statistical analysis. All data is exportable to Excel[®] or other statistical packages. Incorporate any of these devices into your psychomotor experiments: MOWART Reaction & Movement Time Panel, Bassin Anticipation Timer, Stability Platform, Flicker Fusion, and Rotary Pursuit. Results are displayed in real time and a session report is automatically generated for each experiment. The PsymLab software, with easy interface and versatile options, is great for student labs as well as groundbreaking research!



PsymLab Software

Features and Benefits

- Easily organizes subjects and experiments to a familiar format
- Adds flexibility to the experimental design and enhances the test experience
- Provides on-screen instructions during inter-trial delays
- Automatically re-programs the device for added flexibility and error-free setup
- Easily follows the progress of each experiment and displays relevant results
- Assists the experiment coordinator with management of the test protocol and subjects
- Linear regression line helps to quickly determine if there is a practice effect or fatigue
- Intra-subject statistics give readily usable results
- Data follows the subject regardless of group association, which adds flexibility to data analysis

Currently Supported Lafayette Instrument Devices

MOWART Panel, Model 35600

The Multi-Operational Apparatus for Reaction Time Panel can be used for various reaction time and tapping studies. When operating the unit with the PsymLab software, standardized templates for Simple RT, Choice RT, Simple RT/MT, Choice RT/MT, Single Key Tapping, and Dual Key Tapping schedules are included. Customized schedules can also be added; contact Lafayette Instrument for more details.

Bassin Anticipation Timer, Model 35575

Lafayette's classic model for anticipatory time studies, which includes added features for runway blanking, target selection, ramped speeds, and more. The Bassin system has been used extensively in research related to human visual acuity as well as hand-eye coordination.

Stability Platform, Model 16030

The Stability Platform is a key measurement tool for balancing and core strength assessment. Easily adjust the test time, angle limits, and number of trials from the handheld PsymCon controller or PsymLab control software. A fully integrated timing and electronic angle measurement system provides unsurpassed accuracy every time.

Rotary Pursuit, Model 30014C

The Photoelectric Rotary Pursuit may be used to assess general perceptual motor learning across such parameters as handedness, transfer of training, distribution of practice, and hand-eye coordination. Used with the PsymLab control software, the Rotary Pursuit is a great teaching tool for motor learning labs!

Flicker Fusion System, Model 12021A

The Flicker Fusion System provides the user with a variety of versatile controls to perform accurate and timely measurements of Critical Flicker Frequency (CFF). The user options include five modes of operation to cover virtually any test requirement: Ascending Auto Frequency, Descending Auto Frequency, Continuous, Discrete, and Analog Control Mode.

Research-Validated System for Pre-Employment and Return-to-Work Testing

Physical Work Capacity (PWC) and Functional Capacity (FC) Evaluation System

Model 32601PWCFC

This system tests an individual's physical capabilities through a battery of strength, flexiblity, and general fitness tests. Input the physical ability test results with demographic data, and the system outputs a computergenerated report that assesses Physical Work Capacity. The report helps employers make either of two employment decisions:

Pre-employment: The PWC report evaluates a job applicant's capacity to perform physically demanding work tasks.

Return-to-Work: The FC report evaluates an employee's capacity to perform physically demanding tasks at a level that allows for the safe return to work.

Data used to develop the Physical Work Capacity evaluation comes from 20 years of pre-employment research completed at the University of Houston. The purpose of this research was to validate pre-employment tests and define physiologically justified standards or "cut scores." The ergonomic principle is to match the worker to the demands of the job. This validation research is the linkage between test results and job tasks.



Products that comprise the PWC-FC System

The Functional Capacity component assesses Work Capacity and physical fitness. The fitness components include maximum aerobic capacity (VO_2 max), body composition, and flexibility. These are the common components included in adult fitness test batteries (Baumgartner & Jackson, 1999; Golding, Meyers & Sinning, 1989).

Return on Investment in the form of reduction in

- Compensation claims
- Days away from work
- OSHA recordables
- Repetitive motion claims
- Back injuries claims

PWC-FC Complete System includes

- Jackson Strength Evaluation System Model 32728
- Lafayette Hydraulic Hand Dynamometer Model J00105
- Sit and Reach Flexibility Tester Model 121086
- Lafayette Skinfold Caliper Model 01128
- PWC-FC Version 3.0 Software for Windows[®] Model 32600-PWC

Psychological Assessment

Vienna Test System (VTS)

The Vienna Test System is configurable test battery software that allows for computerized versions of paper-pencil-tests, adaptive and multimedia tests, as well as tests generated by the end user. There are more than 80 tests available! For more information on what specific tests are available visit our website: www. lafayetteinstrument.com/vts.

Test Types

- Intelligence tests
- Ability tests
- Personality tests
- Attitude tests
- Clinical tests

VTS offers the highest precision in administration and evaluation due to the use of computers. The powerful administration software is acclaimed for the clarity of its user interface and useful additional functions. Standardized instructions and interactive practice items ensure that each respondent is optimally prepared for the test session. A high standard of test quality is maintained through continual test maintenance and norm updates.

Test presentation takes place without the administrator's involvement, thereby guaranteeing the highest level of objectivity. All test results are printed out concisely and are saved in a database immediately upon completion of the test, saving administrators the time and effort of scoring.

Special input devices, such as the light pen and specialized response panels, can be used and are also suitable for respondents with little computer experience. If a large number of respondents are to be tested, a Vienna Test System group system can be setup.

In choosing the Vienna Test System you acquire an innovative and high-quality product that is the only one of its type on the market!







VTS Software with Universal Response Panel

Cognitive Rehabilitation

CogniPlus

CogniPlus is a modern, scientifically based software package with which cognitive abilities can be effectively and efficiently trained.

The training programs use realistic scenarios, making it easy for users to integrate the progress they have made into their everyday lives. Trainees are met with an adaptable system that is never too easy or too difficult to complete. The content of CogniPlus is closely linked to the Vienna Test System, meaning that diagnosis, treatment, and evaluation can be conveniently and efficiently tested.

Available Training Programs (among others)

- ALERT: Alertness
- VIG: Vigilance
- SPACE: Visuo-spatial attention
- SELECT: Selective attention
- FOCUS: Focused attention
- DIVID: Divided attention



CogniPlus setup with Standard Response Panel and ALERT Training Module

Biofeedback

Biofeedback Xpert

Biofeedback can be used in nearly any area of treatment or therapy. Biofeedback Xpert allows wireless data transmission through small compact modules. The system's modular design enables a more personalized and flexible training program, with any combination of the above physiological parameters being able to be measured and displayed. For example, athletes can be monitored while on training equipment, or individuals with a fear of heights can be trained from a balcony or on stairs in order to better resemble real life situations.

Available Modules

MULTI: Skin Conductance Heart Rate Variability Temperature Motility (Movement) Blood Pressure RESP: Respiration EMG: Electromyography (Muscle Tension)



Modules

The Biofeedback software was designed to be simple enough to begin training after just a few clicks of the mouse. The Basic software module provides several training programs (Line Feedback, Resp Relaxation Exercises, Threshold Training, Volume Feedback, and Audio Feedback); many additional special training programs can be added and combined as required. Biofeedback Xpert is also compatible with the Vienna Test System (VTS) for simplified data recording and evaluation.

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