## Psykinematix Features:

- Easy experimental design
  - no programming required
  - simple hierarchical structure
  - "canned" experiments
- Standard methods
  - constant stimuli
  - staircase
  - Bayesian adaptive estimation
- Standard procedures
  - nAFC
  - yes/no
  - discrimination
  - adjustment
- Large variety of stimuli
  - shape, grating, checkerboard
  - expression–based (Matlab–like)
  - 1st–, 2nd–order stimulus
  - multi–elements stimulus
  - multimedia
- Temporal properties
  - fusion, flickering, contrast reversal
  - timeline (SOA, ISI)
  - time–varying parameters
- Display calibration
- Enhanced luminance resolution
- Data plotting & fitting
- Data management & logbook
- Communication with external devices
- Easy export of stimuli, graphs & data
- Built–in documentation
- Tutorials and numerous examples

... and much more!

Fields of Application:

- Basic & Clinical Vision Research
- Experimental Psychology
- Cognitive Neuroscience
- Brain Imaging/Electrophysiology
- Human Factors

Psykinematix is a comprehensive software package **dedicated to Visual Psychophysics** running on **Mac OS X** computers that **requires no programming skills** to create and run complex experiments: Psykinematix can present spatio-temporal visual stimuli, run standard psychophysical protocols, collect subjects' responses, and analyze results on the fly. It also follows an intuitive experimental design based on the **Method / Procedure / Stimulus** paradigm illustrated below:
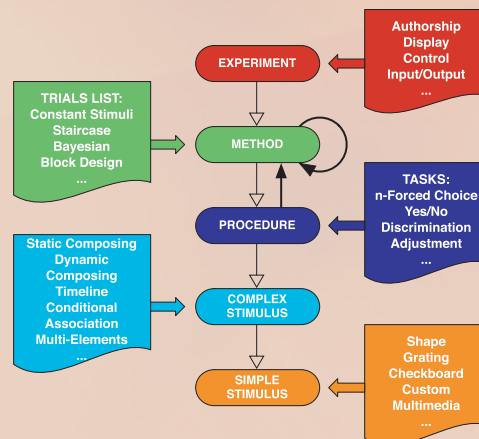
Psykinematix is a very affordable experimental package starting from **149$ USD for a Student Edition License**. Discounts for volume licensing and **support packages** are also available. To learn more about the differences between the various editions, please visit our website (www.psykinematix.com/editions).

Download a 15–day* trial version at www.psykinematix.com

* after expiration it can still be used as a **FREE educational tool** to introduce visual perception and illustrate psychophysical concepts in the classroom.

Minimum System Requirements (v1.* only)**:**
macOS 10.4, G4 800Mhz, 32MB VRAM

Recommended System Requirements (all versions)**:**
macOS 10.8, 2.4GHz Intel Core, 256MB VRAM or better

Compatible with latest macOS 10.13 "High Sierra"

KyberVision Japan LLC
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ψkinematix

Mac

Back to School 2017

5 New Editions Available:
Student | Standard | GPU Bits# / Display++ | Metropsis

Visual Psychophysics Made Easy!

- ★ No programming required
- ★ WYSIWYG stimulus creation
- ★ Experimental design in no time
- ★ Streamlined workflow
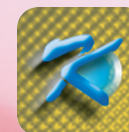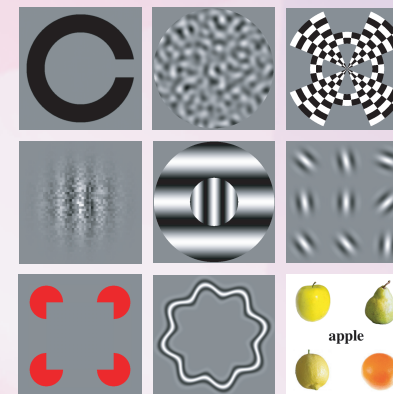
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EASY DISPLAY CALIBRATION

– **Geometry**
– **Gamma correction**
– **Color: Yxy, L(λ)**
– **Interfacing with colorimeters**

Calibration

Designer Calibration Subjects Plotter Help Store

Name: Default + –

Display #0 at 5120 x 2880 32 bits 60 Hz
Target Chromatic Mode: Generic (RGBW)

About Geometry Gamma Color Summary

Perform... with Spyder 5

Linearization Ok!
(R² = 1.000)

Readings: 32 Guns: White
Surround: Gamma: 2.31
Patch size: 1000 Min:Max Luminance:
0.36:233.0 cd/m²

Normalized Luminance

Gun Normalized Intensity

8-bit Gamma correction
8.0 bits per component
Last Calibration/Checking: 0/0 days ago

Unique Display Name: 100 % Completed Next Step
iMac APP SN: ********12/2014 Geometry: ✓ Gamma: ✓ Color: ✓

Complete Streamlined Workflow

Calibrate
Design
Analyze

EASY EXPERIMENTAL DESIGN

– **No programming required**
– **Simple hierarchical structure**
– **Design wizard**

Experiment Designer

Designer Calibration Subjects Plotter Help Store
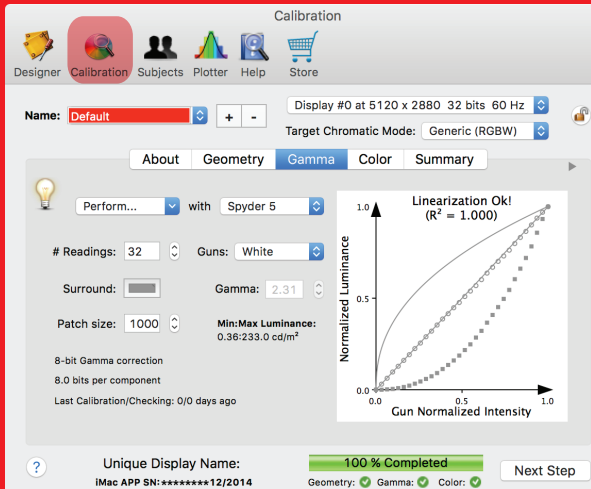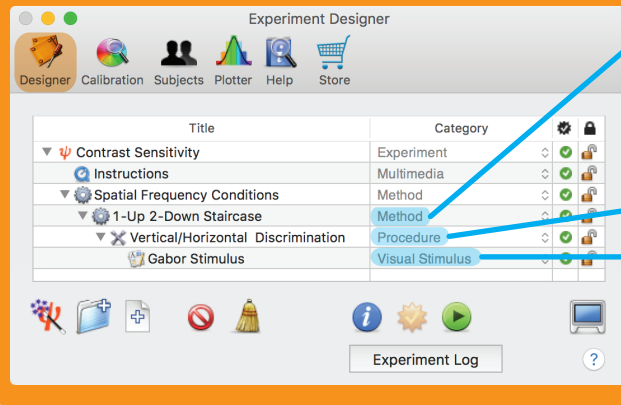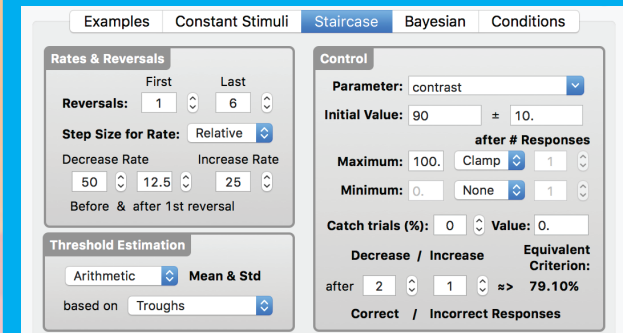
Title	Category		
▼ ψ Contrast Sensitivity	Experiment	✓	
Instructions	Multimedia	✓	
▼ Spatial Frequency Conditions	Method	✓	
▼ 1-Up 2-Down Staircase	Method	✓	
▼ ✕ Vertical/Horizontal Discrimination	Procedure	✓	
Gabor Stimulus	Visual Stimulus	✓	

Experiment Log

Standard Methods

Examples Constant Stimuli **Staircase** Bayesian Conditions

Rates & Reversals

	First	Last
Reversals:	1	6

Step Size for Rate: Relative
Decrease Rate Increase Rate
50 12.5 25
Before & after 1st reversal

Threshold Estimation

Arithmetic **Mean & Std**
based on Troughs

Control

Parameter: contrast
Initial Value: 90 ± 10.
after # Responses
Maximum: 100. Clamp 1
Minimum: 0. None
Catch trials (%): 0 Value: 0.

Decrease / Increase Equivalent Criterion:
after 2 1 ≈> 79.10%
Correct Incorrect Responses

Standard Procedures

Which? nFC Yes/No **Disc** Adjust

n: 2 Choice Inputs 1 left_arrow, rig

Correlated with Expressions	= Value
[orientation]	0

+ – &

RT Pedestal Multi-Responses Intervals

☐ Collect Reaction Times
◉ Uniform (±) Pre-stimulus delay (s):
○ Gaussian (sigma) Mean: 0.500 Range: 0.250

Trial Properties

Subject's Response with:
Keyboard
☑ In post-stimulus interval
☑ Ends Stimulus/Trial
☐ Time-limited

Options:
☑ Auditory Indicators
☑ Response Feedback
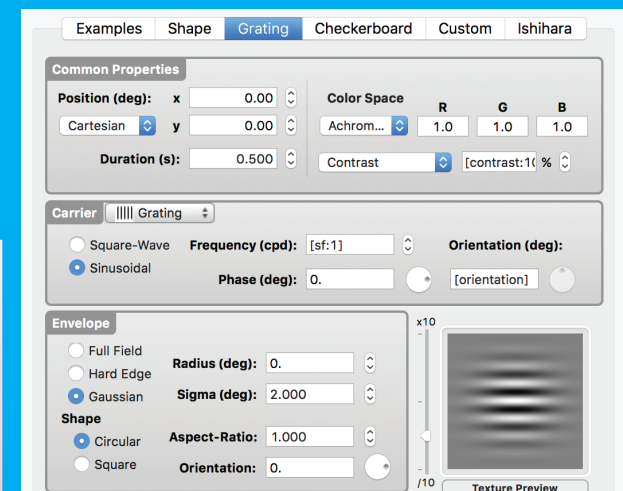☐ Fixation Mark

Temporal Modulation:
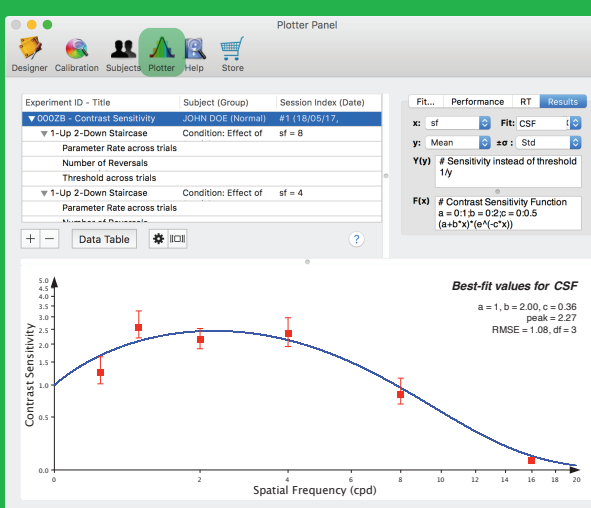None

ISI/ITI (s): 0.500

CREATE COMPLEX STIMULI

– **Static & dynamic composing**
– **Timeline, conditional**
– **RDK, multi-elements field**
– **Text, image, movie & sound**
– **Time-varying parameters**

DATA PLOTTING & FITTING

Plotter Panel

Designer Calibration Subjects Plotter Help Store

Fit... Performance RT **Results**

Experiment ID - Title Subject (Group) Session Index (Date)
▼ 000ZB - Contrast Sensitivity JOHN DOE (Normal) #1 (18/05/17,
▼ 1-Up 2-Down Staircase Condition: Effect of sf = 8
Parameter Rate across trials
Number of Reversals
Threshold across trials
▼ 1-Up 2-Down Staircase Condition: Effect of sf = 4
Parameter Rate across trials

x: sf Fit: CSF
y: Mean ±σ: Std
Y(y) # Sensitivity instead of threshold
1/y
F(x) # Contrast Sensitivity Function
a = 0:1;b = 0:2;c = 0:0.5
(a+b*x)*(e^(-c*x))

+ – Data Table

Best-fit values for CSF
a = 1, b = 2.00, c = 0.36
peak = 2.27
RMSE = 1.08, df = 3

Contrast Sensitivity

Spatial Frequency (cpd)

– **Reaction time histogram**
– **Threshold & slope**
– **Graph customization**
– **Choice of psychometric functions**

A Large Variety of Visual Stimuli

Examples Shape **Grating** Checkerboard Custom Ishihara

Common Properties

Position (deg):	x	0.00	Color Space	R	G	B
Cartesian	y	0.00	Achrom...	1.0	1.0	1.0

Duration (s): 0.500 Contrast [contrast:10 %

Carrier ||||| Grating
○ Square-Wave Frequency (cpd): [sf:1] Orientation (deg):
◉ Sinusoidal Phase (deg): 0. [orientation]

Envelope
○ Full Field Radius (deg): 0.
○ Hard Edge
◉ Gaussian Sigma (deg): 2.000

Shape
◉ Circular Aspect-Ratio: 1.000
○ Square Orientation: 0.

x10 /10 Texture Preview