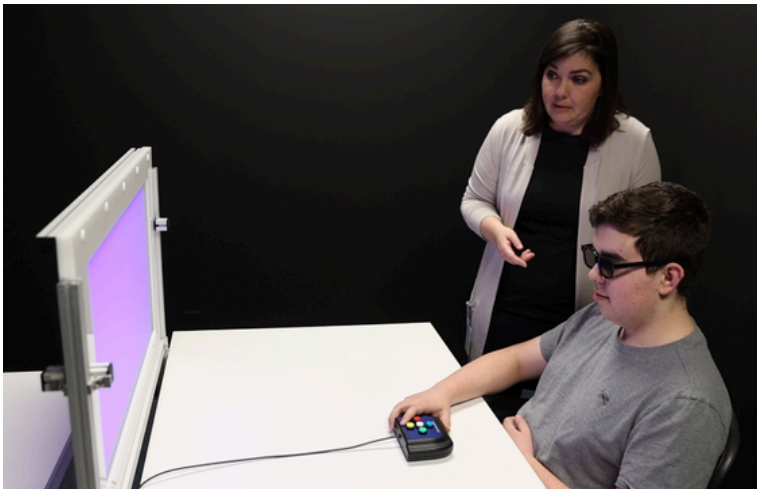

PROPixx

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PROPixx

VideoBahn™
The NEW fast road to SUPERIOR data


## PROPixx System

The PROPixx is a unique DLP LED projector which has been designed to be the most flexible display possible for vision research. The PROPixx features a native resolution of 1920 x 1080, and can be driven with refresh rates up to 480 Hz in RGB mode (1440 Hz greyscale) with deterministic timing. The PROPixx uses high brightness LEDs as a light source, giving a larger color gamut, better stability and much longer lifetime than halogen light sources (60,000 hrs vs 2,000 hrs).

## PROPixx projector

- Up to 12 bits of RGB intensity
- Up to 1920 x 1080 resolution
- Up to 480 Hz refresh rate (color)
- Up to 1440 Hz refresh rate (greyscale)
- Linear gamma
- RGB LED light source
- Lamp life: 60 000 hours
- Multiple lenses available

## DATAPixx3 video I/O hub

- Button box interface
- 24 TTL trigger inputs and outputs
- Stereo audio input and output
- Analog inputs and outputs
- DisplayPort output for console monitor

All digital, analog, and audio inputs and outputs feature microsecond synchronization to video refresh

PROPixx

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MRI


TABLETOP


MEG

# 1440 Hz Projector

Learn more with
VOCAL
VPixx Online Classroom and Library

Our LEDs also support high bit depth, and high frequency full color stimulation, which would not be possible with a color-wheel/halogen architecture. For stereo vision applications, our high speed circular polarizer can project stereoscopic stimuli for passive polarizing glasses at up to 480 Hz.

In addition, the PROPixx includes an array of peripherals which often need to be synchronized to video during an experiment, including a stereo audio stimulator, a button box port for precise reaction-time measurement, triggers for electrophysiology and eye-tracking equipment, and even a complete analog I/O subsystem.

You can now successfully synchronize all of your subject I/O to video refresh with microsecond precision. The PROPixx is available with multiple projection lens options including short-throw lenses for desktop applications, and long-throw lenses for MRI/MEG applications.

## GENERAL SPECIFICATIONS

- Display resolution: 1920(H) x 1080(V) pixels
- Aspect ratio: 16×9
- Illumination system: RGB LED
- Contrast: 2 000:1
- Brightness: 400-600 lumens
- Lamp life: 60 000 hours via solid state illumination
- Up to 12 bits of resolution on each of the RGB channels
- Up to 480 Hz refresh rate (RGB), 1440 Hz refresh rate (Greyscale)
- IR remote control

## VIDEO PROCESSING

- Video input: 1920 x 1080 pixels, 24 bits
- Deterministic timing between reception of video signal and update of display pixels
- Completely bypass all image processing "enhancements" prevalent in standard consumer projectors

## POWER

- Power consumption: 280 W
- Input voltage: 48 VDC – 5.83 A
- International AC adaptor input: 90 VAC – 264 VAC (47 Hz – 63 Hz)

## MECHANICAL MOUNTING

- Front or rear table
- Front or rear ceiling
- Adjustable front/rear feet

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## LENSES AVAILABLE

| Type | Throw Ratio | Focus Range |
|---|---|---|
| Super short-throw lens | 0.73 : 1 | 3.18 – 4.27 ft |
| Super short-throw lens | 0.9 – 1.2 : 1 | 2.5 – 7.5 ft |
| Short-throw lens | 1.56 – 1.86 : 1 | 4.0 – 23.0 ft |
| Long-throw lens | 1.85 – 2.40 : 1 | 4.0 – 32.0 ft |
| Super long-throw lens | 2.4 – 4.0 : 1 | 5.0 – 39.0 ft |
| Super long-throw lens | 3.3 – 5.94 : 1 | 4.0 – 40.0 ft |
| Super long-throw lens | 4.0 – 7.0 : 1 | 4.0 – 40.0 ft |
| Super long-throw lens | 6.3 – 11.0 : 1 | 5.0 – 40.0 ft |
| Super long-throw lens | 8.9 – 14.83 : 1 | 5.0 – 40.0 ft |

Lens shift (maximum)
Vertical: 0.6 of frame if horizontal is at 0% position
Horizontal: 0.15 of frame if vertical is at 0% position
NOTE: 0.73 super short-throw lens has NO LENS SHIFT

## AUDIO CODEC

- Audio line in, microphone in, speaker out, on 3.5 mm jacks
- Stereo microphone input amplifier resistance: 20 kΩ
- Microphone sampling rate: 96 kHz
- Programmable microphone bias voltage range: 2.0 V to 3.1 V
- Stereo DAC sampling rate 96 kHz

## DIGITAL INPUT

- Number of digital inputs: 24 on db-25 connector
- Input termination: > 20 kΩ pullup to 3.3 V
- Input tolerance: 5 V

## DIGITAL OUTPUT

- Number of digital outputs: 24 on db-25 connector
- Output drive stage: 5 V through 25 kΩ series resistor
- Maximum output current:
  - Source: 15 mA
  - Sink: 12 mA

## ANALOG TO DIGITAL CONVERTER

- Number of channels: 16 (or 8 differential), on DB-25 connector
- Converter resolution: 16 bits
- Maximum sampling rate: 200 kSPS per channel
- Frequency programming modes:
  - Samples per second
  - Samples per video frame
  - Nanoseconds per sample
- Simultaneous sampling across all channels
- Input range: ±10 V
- Input impedance: 1.6*10  Ω // 3 pF
- Absolute maximum input tolerance: ±12 V

## DIGITAL TO ANALOG CONVERTER

- Number of channels: 4 on DB-25 connector
- Converter resolution: 16 bits
- Maximum sampling rate: 1 MSPS per channel
- Frequency programming modes:
  - Samples per second
  - Samples per video frame
  - Nanoseconds per sample
- Simultaneous output updates
- Output range: ±10 V
- Drive capability: ±25 mA, 250 mW per channel

## SOFTWARE

- Supports Windows, Ubuntu/Linux and macOS
- High level LabMeastro software utility for calibration and visualization
- MATLAB and Python libraries
- Editable demo scripts for calibration in MATLAB/Python
- Demos and tutorials available