

## KB2D Interactive Device 2D detection, laser sensitive

The KB2D Interactive Device is a detection system working as a MIDI controller. It enables to send customizable MIDI messages just by touching / interacting with lasers, and can be used with any laser projector system in order to create an interactive projection.

With the various detection modes available, it can be adapted to any show, from the easiest laser Harp system to the most complete Interactive “laserman” show. The KB2D also works for laser tracking applications.

Thanks to an exclusive and innovative detection system (patent pending), it is actually the most compact, competitive and versatile Laser interactive device on the market.

The KB2D Interactive device can be combined with a 45° mirror to project the beams vertically for a Laser Harp configuration. Lightdiction proposes a special Mirror Holder for this purpose. It can be fixed both on KB2D device and on KVANT laser projectors.

Footswitches or other external MIDI controllers can be used to improve the flexibility of the device during shows.

### FEATURES

- **Compact and light design**
- **Easy installation**
- **Up to 130 FPS detection rate**
- **Polyphonic detection**
- **Discrete mode** with up to 16 notes, or **Continuous mode** (127 positions) for **laser tracking**
- **2D detection** (angle and height)
- **Power and communication through USB**
  - **Dual MIDI In and Out** via USB
  - **Low power consumption:** 50mA (5V)
- **Laser sensitive**
  - **Not sensitive to ambient light**
  - **Highly resistant to parasitic lights**
- **Highly versatile system**
  - **Can be used with any laser projector**
  - **No synchronization or communication with the laser**
  - **Detection parameters highly configurable**
  - **Can be connected to a Footswitch or any external MIDI device**
- **High detection range**
- **Can be combined with Lightdiction’s Mirror Holder** to project the beams vertically



### TYPICAL APPLICATIONS

- **Laser Harp & Laser Tracking**
- **Laserman shows**
- **Interactive shows and entertainments**

## TECHNICAL SPECIFICATIONS

Parameter	Comment	Min	Typ	Max
<b>Electrical Specifications</b>				
$V_{in}$	Voltage, USB Powered	4.5V	5V	6V
$I_{in}$	Current consumption	-	50mA	-
<b>Detection Specifications</b>				
FPS	Frames Per Second on detection (set by User)	50	-	130
BW	Bandwidth on beam detection (works with scanning systems)	5 Hz		50 kHz
$D_{det}$	Detection distance of interactions (*)	0.3m (1) 0.15m (2)	-	6m (1) 3m (2)
$\Phi_x$	Detection angle (Beams are still detected outside of this range, but cannot be differentiated).	-35°	-	35°
$\lambda$	Wavelength detected (3) - By default	510nm	520nm	535nm
$\lambda$	Wavelength detected (3) - Optional	625nm	635nm	-
$\lambda$	Wavelength detected (3) - Optional	370nm	445nm	470nm
<b>Mechanical / Housing Specifications</b>				
L x W x H	Length x Width x Height (mm) (Without the Handle)		100 x 32 x 58	
$m_{sys}$	Weight		155g	
IP	Ingress Protection		IP44	

(\*) Other sensibilities available on demand. Distance is proportional to the square root of the laser power used.

(1) With a 1W (green) laser projector, white gloves “Standard sensibility” version

(2) With a 1W (green) laser projector, typical human hand “Standard sensibility” version

(3) By default, the system is using a green-centered bandpass dichroic window to reduce the impact of parasitic lights. It can be replaced on demand with another bandpass dichroic window or with a clear window to be able to detect the chosen wavelengths in the visible range.

## COMMUNICATION FORMAT

The KB2D interactive module is using MIDI protocol to communicate. The user can change parameters by sending MIDI commands to the module (see [KB2D User Manual](#)). It is possible for instance to adapt detection parameters like sensitivity threshold or to activate / deactivate any detection mode.

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## Revision History

Date	Information	Version
30.08.2017	Basic KB2D information	1.0
28.10.2018	Detection specifications updated	1.1
23.03.2019	Features and detection specifications updated	1.2
14.04.2019	Description updated	1.3
22.09.2019	Specifications updated	1.4
09.05.2020	Specifications updated	1.5