

# BML100PI

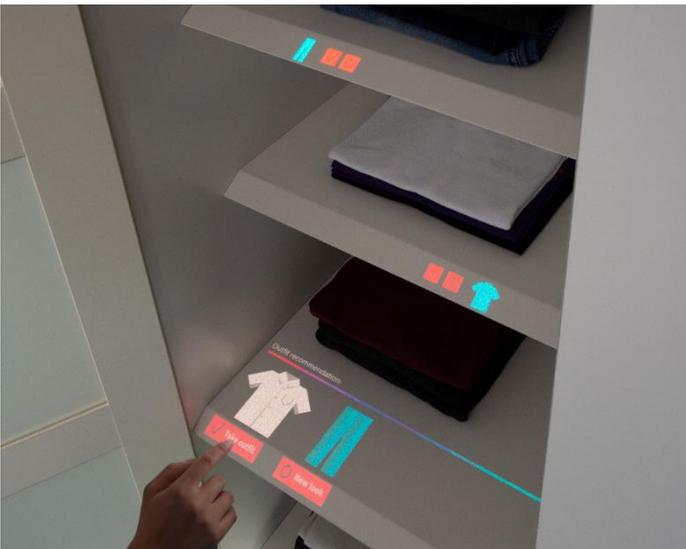
## Interactive Projection Module

### GENERAL DESCRIPTION

The BML100PI module provides a complete, ready-to-use solution for interactive projection, enabling highly flexible virtual touchscreens. The generated laser beam creates a focus-free image on any surface and then scans it line-by-line to detect any gestures or finger movements. No calibration or adjustment is required for accurate gesture and touch recognition. The BML100PI delivers a highly intuitive user experience, as a fully flexible alternative compared to a static, physical screen.

The module combines all hardware components as well as the single-/multi-touch algorithms to integrate into customer systems as a stand-alone or an embedded solution.

The BML100PI can be used to create 'smart shelves' consisting of several simultaneous projections on the individual shelves in refrigerator, cupboards, kitchen cabinets or wardrobes. One module provides touchscreen functionality on up to six surfaces. With the Interactive Projection Module, every regular shelf can turn into a personal assistant for the user, enhancing comfort in people's daily life.



Picture source: Bosch Sensortec

### TARGET APPLICATIONS

- ▶ Smart shelf with multiple layers in e.g. home appliances, kitchen cabinets or wardrobes enabling features such as stock management, shopping and social media sharing
- ▶ Augmented reality applications e.g. e-learning
- ▶ Virtual touch screens as extensions to digital assistants to e.g. support online shopping
- ▶ Primary or secondary virtual touchscreen for IoT applications, home appliances, industrial applications e.g. robotic, hand-held devices or integration in machines

### THE MAIN BENEFITS

- ▶ Focus-free virtual touchscreen on any surface independent of surface characteristics like dark, coloured, graded or curved
- ▶ Projection is always in focus – no need for adjustment or calibration
- ▶ Small size and compact design enables a flexible and efficient integration of interactive projection in smart home and IoT devices
- ▶ Ready-to use solution: projection and interactivity combined in one package
- ▶ Intuitive user experience thanks to reliable gesture or touch recognition

## KEY TECHNICAL SPECIFICATIONS

BML100PI Interactive Projection Module	
Power consumption	Typ. 2 W
Optical output power	Up to 30 lm with RRGB- IR
Aspect ratio	16:9*
Throw ratio	Standard: 1.87 Extended: 1.2**
Output resolution	Standard: 854 x 480 Extended: 1280 x 600
Interface	Video: LVDS Interactivity: MIPI-CS12
Frame rate	60 Hz
Average response latency	13 ms
Max. z-allowance	3 mm
Finger separation	8 mm
Number of touch points	Standard: 5 touch points
Wake-up time from stand by	2 s
Dimensions	
Projection module	43 mm x 47 mm x 7 mm
Sensor module	24 mm x 24 mm x 4 mm

Unless otherwise specified, all values are typical values @ Tc=25° C.

\* Customization for different flexible ratio possible depending on business conditions

\*\* With additional optic/ lens

## SYSTEM COMPONENTS

The Interactive Projection Module from Bosch Sensortec is easy to integrate into the customers' system. It could be available as:

- ▶ Plug and play solution: This is a complete solution for the customer, which includes all hardware and software components.
- ▶ Embedded solution: The embedded solution includes hardware for interactive projection and multi-touch algorithm on the customer host. This enables the full integration in the customers' host-system.

In addition to the BML100PI module, Bosch Sensortec offers the BML100P variant, which provides the same projection features but without the touch functionality.



Picture source: Bosch Sensortec

Bosch Sensortec is one of the world's leading providers of innovative MEMS sensors and actuator solutions that improve people's individual lifestyle and well-being. The Interactive Projection Module from Bosch Sensortec combines extensive experience in MEMS sensor development with advanced system knowledge.

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