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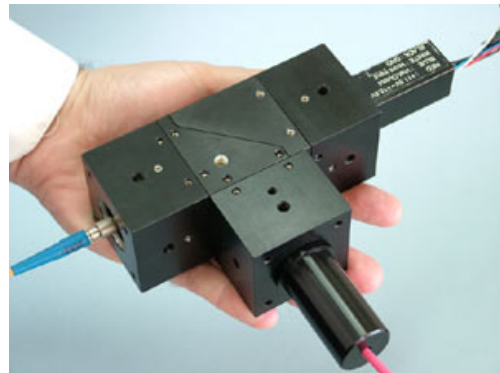
Modular OptiBlocks Prototyping System

Introduction

OptiBlocks are affordable modular building blocks that speed up the construction of various optical setups in applications such as fiber sensors, multi wavelength detection, and imaging systems. Basic OptiBlocks consist of a fiber coupler, beam splitter, light source, and detector blocks. A user builds a system by connecting these basic OptiBlocks together. OptiBlocks can be purchased with or without preinstalled optics. Later the user can install already available in-house optics inside the OptiBlocks according to specific requirements.

The system can be very useful for:

- Prototyping
- Testing a product concepts
- Initial series production



Main benefits for project manager:

- Shortened development time
- Elimination of opto-mechanics development costs
- Readily available components for first serial production

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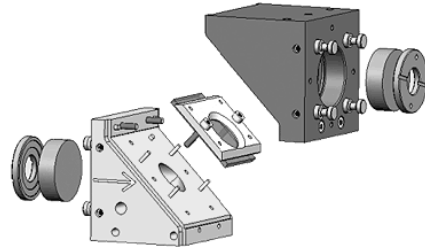
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Beam Splitter OptiBlock

The Beam Splitter OptiBlock contains a special mounting element that enables variety of optical beam splitters (round, rectangular or microscope-type dichroic mirrors) to be installed in this block. The Beam Splitter separates the input light ray into two output rays. Alternatively, the Beam Splitter can join two discrete input light sources into one output beam, which can be coupled to a single optical fiber. For increased versatility, additional optical filters can be installed at the input or the output ports of the Beam Splitter OptiBlock.

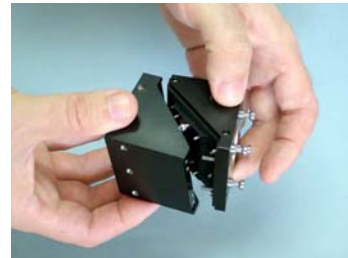
The Beam Splitter OptiBlock supports dichroic mirrors of the following dimensions:

- Round Beam Splitter:
 - Outside diameter: 12.0-25.4 mm
 - Thickness: 1.0-3.0 mm
- Rectangular Beam Splitter (A>B):
 - Long Side (A): 26.0-36.0 mm
 - Short Side (B): 18.0-26.0 mm
 - Thickness: 1.0-3.0 mm
- Square Beam Splitter (A=B):
 - Side (A=B): 18.0-36.0 mm
 - Thickness: 1.0-3.0 mm



The Beam Splitter OptiBlock input and output channels support filters of the following dimensions:

- Circular
 - Outside diameter: 12.7 mm
Thickness: 2.4-8.4 mm
 - Outside diameter: 19.1 mm
Thickness: 1.2-7.2 mm.
 - Outside diameter: 25.4 mm
Thickness: up to 6 mm



The input and output ports of the beam splitter can be connected to any other OptiBlocks family member. For instance, the input port of the Beam Splitter OptiBlock can be connected to an additional Beam Splitter OptiBlock or to a Fiber Coupler OptiBlock (see below).

The output ports of the Beam Splitter OptiBlock can be connected to any other OptiBlock-an additional Beam Splitter, a Detector (see below), or even a Fiber Coupler, which can transmit light by optical fiber to a remote site.

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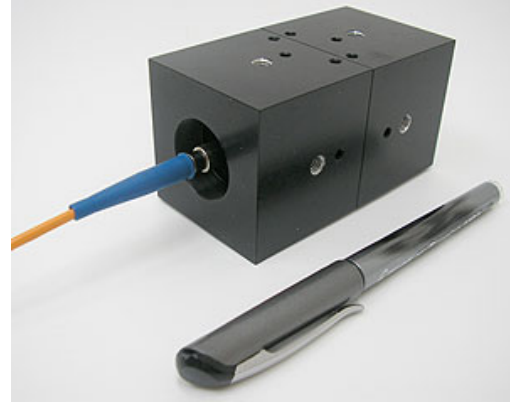
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Fiber Coupler OptiBlock

The Fiber Coupler OptiBlock conveniently enables the coupling of multimode optical fibers to the OptiBlock system. By working either with light sources or in detection systems, the Fiber Coupler can carry a light beam to an optical fiber or can collimate the light from an optical fiber to the OptiBlock system. The Fiber Coupler OptiBlock



supports various lenses and most standard optical connectors (SMA, FC, ST). No additional adaptors required. The Fiber Coupler OptiBlock supports lenses with the following dimensions:

| Part Number | Fiber Coupler Type | Lens Outside Diameter | Clear Aperture | Back Focal Length |
|-------------|--------------------|-----------------------|----------------|-------------------|
| FCB-S-X | Standard | 12.0-19.0 mm | 11.0 mm | 10-16mm |
| FCB-E-X | Extended | 12.0-19.0 mm | 11.0 mm | 10-24mm |

The Multi mode fiber optic Coupler OptiBlocks are manufactured in three versions:

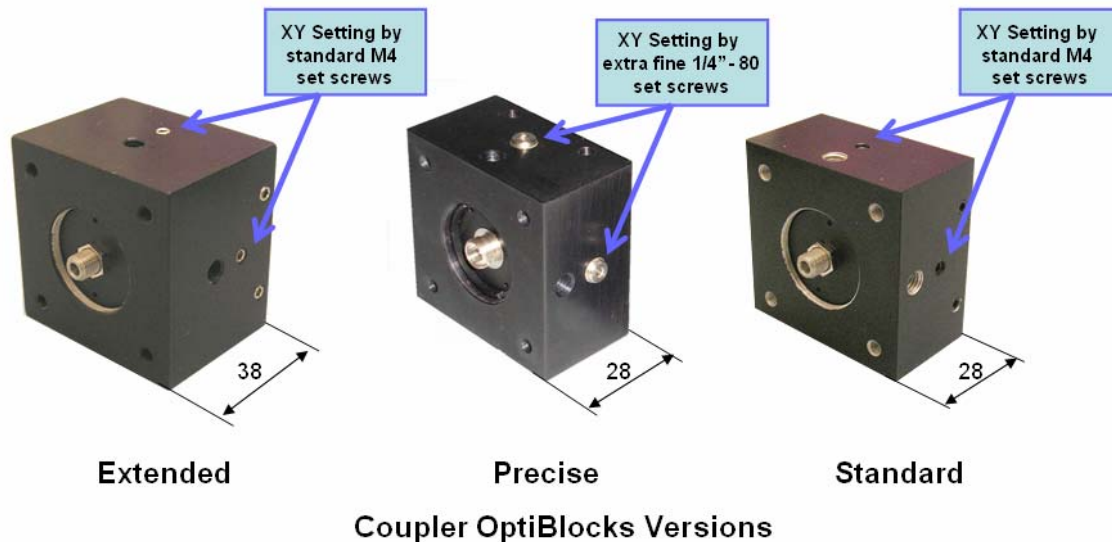
- Standard – OptiBlock length is 28 mm
- Extended – OptiBlock length is 38 mm
- Precise – XY setting by 1/4"-80 extra fine set screws

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When ordering, specify options as follows:

FCB-Y-X

Y: S- Standard, E-Extended Fiber Coupler OptiBlock type

X: Connector type SMA, FC, ST

P: Optional suffix for Precise XY extra fine screws for ≤ 100 micron core fibers

For example:

FCB-S-SMA – Fiber Coupler OptiBlock, Standard length, SMA connector

FCB-E-FC-P – Fiber Coupler OptiBlock, Extended length, FC connector, Precise XY

* **Remark:** When user intend to install short (< 16 mm) focal length lenses the Standard type OptiBlock Coupler is more convenient

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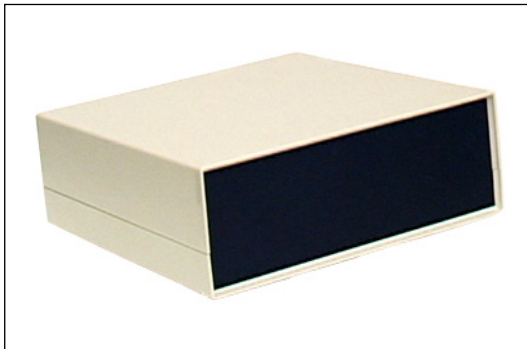
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OptiBlocks Enclosures

Laboratory style standard black ABS plastic enclosures are suitable for hosting of various OptiBlocks constructions. These equipment enclosures can be used as desktop test equipment, medical, scientific, communications and lab equipment.



Lab style enclosure enables building a comprehensive desktop system of light sources and detectors. The enclosure is equipped with specially designed Aluminum plate breadboard, which is designated to place and hold various optional OptiBlocks constructions using short M6 bolts.

External dimensions:

| | |
|-------|----------------------------------|
| PDM-3 | 11.4" x 10.4" x 3.3" (L x W x H) |
| PDM-4 | 11.4" x 10.4" x 4.3" (L x W x H) |

The plate has additional holes for fixation of:

- Electronic control boards.
- Ocean Optics USB2000 / USB4000 family mini spectrometers.
- National Instruments USB-6009 14 bit 48kS/s Multifunction A/D D/A data acquisition module.

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