

Multi-Wavelength Beam Combiner for LED Collimator Sources

(Part Numbers: LCS-BC25-XXXX)

FEATURES

- Combines two LED collimator sources into a single collimated beam
- Cascadable for more than two sources
- Precision locking tilt adjustment on each port
- High-efficiency dichroic beam splitters
- Low-cost neutral beam splitters available
- Integrated filter well for each beam
- Wide range of available wavelengths
- Multiple mounting features for lab and OEM applications
- Microscope adapters available

APPLICATIONS

- Illumination for photonics applications
- Fiber coupling w/ optional focusing module
- Microscope illuminator
- General purpose beam combiner or splitter

PRODUCT DESCRIPTION

Goptica beam combiners combine two LED collimators of different wavelengths into a single collimated beam. Multiple combiners can be cascaded to combine more than two LED collimator sources. At the heart of the beam combiner is a high-performance dichroic beam splitter that combines two wavelengths with >95% efficiency. A neutral beam splitter is also available as a lower-cost solution for applications where maximum light throughput is not required.

Each input port features a fine 2-axis tilt adjustment to allow precise alignment of the LED collimator sources relative to system optical axis. A robust locking mechanism is also provided to maintain alignment over time.

A filter well is integrated into each input port so that a $\phi 1"$ or $\phi 25\text{mm}$ optical filter can be inserted in between the LED source and the beam splitter. Narrowband filters and polarizers may be used to clean up LED spectrum or change the polarization state of the output beam. The beam combiner also includes multiple mounting holes and threads so that it can be easily integrated into a system. Additionally, adapters are also available for major brands of microscopes. Beam combiners are characterized by the edge wavelengths of their dichroic beam splitters. Please use the following diagram and table to select the correct beam combiner for intended LED collimator sources.



Figure-1 Photograph of a beam combiner .

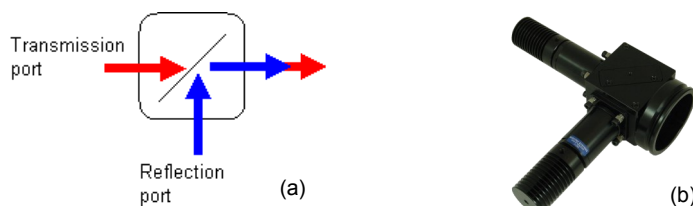


Figure-2: (a) Schematic of beam combiner; and (b) Photograph, assembly of beam combiner and LED collimator sources.

PERFORMANCE SPECIFICATIONS

Clear Aperture: $\phi 25\text{mm}$

Compatible LED collimator sources: LCS-xxxx-xx-22, $\phi 22\text{mm}$ LED collimator sources

| Part Number | Reflection Port | %R | Transmission Port | %T |
|---------------|---|-----|---|-----|
| LCS-BC25-0350 | 255, 260, 275, 280, 285, 295, 310 or 325nm | >95 | 365, 385, 400, 420, 455, 470, 505, 530, 590, 617, 625, 656, 680, 740, 780nm | >95 |
| LCS-BC25-0365 | 255, 260, 275, 280, 285, 295, 310, 325 or 340nm | >95 | 385, 400, 420, 455, 470nm | >95 |
| LCS-BC25-0379 | 365nm | >95 | 385, 400, 420nm | >95 |
| LCS-BC25-0380 | 340 or 365nm | >95 | 400, 455, 470, 505, 530, 590, 617, 625, 657, 680, 740, 780, 850, 870 or 940nm | >95 |
| LCS-BC25-0400 | 365 or 385nm | >95 | 455, 470, 505, 530, 590, 617, 625, 657, 680, 740, 780, 850, 870 or 940nm | >95 |
| LCS-BC25-0409 | 340, 365, 385 or 400nm | >95 | 455, 470, 505, 530, 590, 617, 625, 657, 680, 740, 780, 850, 870 or 940nm | >95 |
| LCS-BC25-0410 | 365 or 380nm | >95 | 455, 470, 505, 530, 590, 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0425 | 365, 385 or 400nm | >95 | 455, 470, 505, 530, 590, 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0460 | 400nm | >95 | 470, 505, 530, 590, 617, 625 or 657nm | >95 |
| LCS-BC25-0480 | 365, 385, 400, 455, or 470nm | >95 | 505, 530, 590, 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0495 | 400, 455 or 470nm | >95 | 530, 590, 617, 625 or 657nm | >95 |
| LCS-BC25-0505 | 455 or 470nm | >95 | 530, 590, 617, 625, 657 or 740nm | >95 |
| LCS-BC25-0515 | 365, 385, 455, 470, or 505nm | >95 | 530, 590, 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0520 | 455, 470 or 505nm | >95 | 590, 617, 625, 657 or 740nm | >95 |
| LCS-BC25-0550 | 365, 385, 455, 470, 505, or 530nm | >95 | 590, 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0560 | 470, 505 or 530nm | >95 | 590, 617, 625, 657 or 740nm | >95 |
| LCS-BC25-0595 | 505 or 530nm | >95 | 617, 625, 657, 740 or 850nm | >95 |
| LCS-BC25-0605 | 365, 385, 455, 470, 505, 530 or 590nm | >95 | 617, 625, 657, 680, 740, 780 or 850nm | >95 |
| LCS-BC25-0635 | 470, 505, 530, 590, 617 or 625nm | >95 | 657, 740 or 850nm | >95 |
| LCS-BC25-0660 | 590, 617 or 630nm | >95 | 740 or 850nm | >95 |
| LCS-BC25-0685 | 590, 617, 630 or 657nm | >95 | 740 or 850nm | >95 |

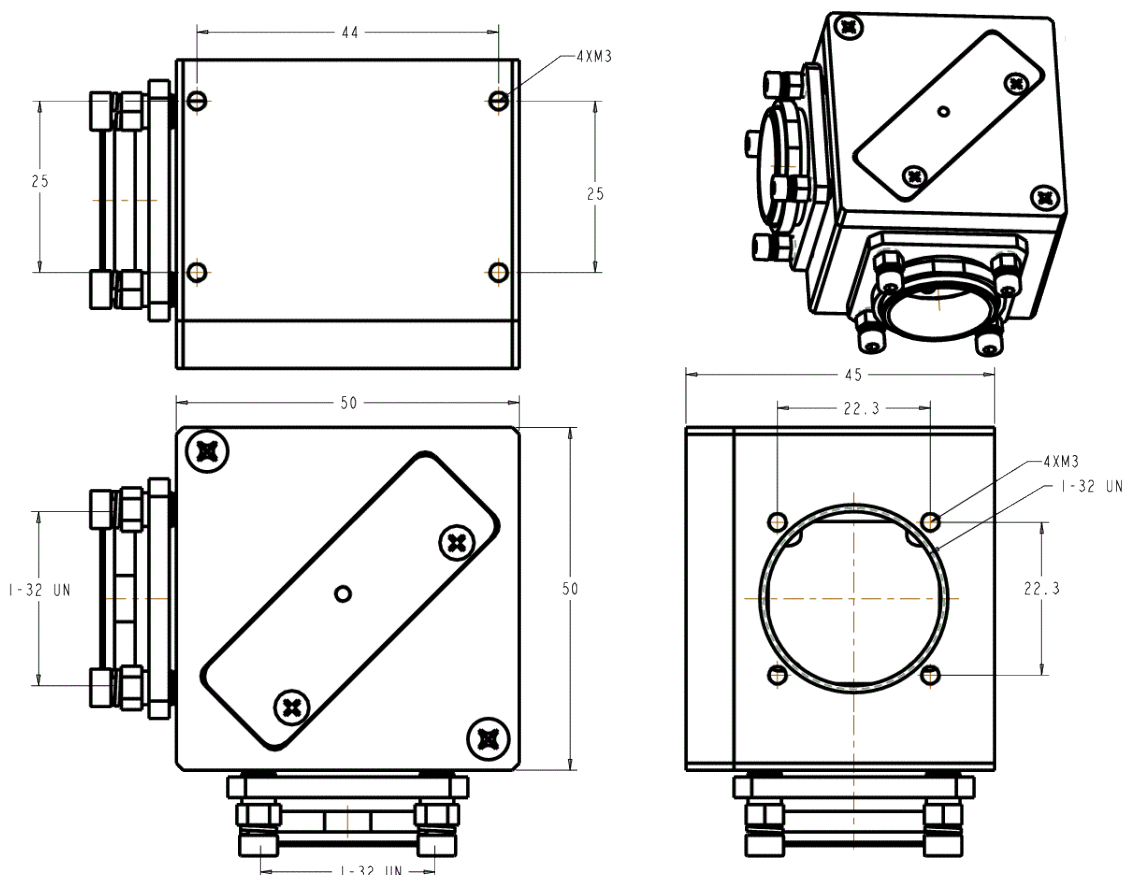
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(Part Numbers: LCS-BC25-XXXX)

| Part Number | Reflection Port | %R | Transmission Port | %T |
|---------------|---|-----|--|-----|
| LCS-BC25-0700 | 530, 590, 617, 625, 656 or 680 | >95 | 740, 780 | >95 |
| LCS-BC25-0760 | 455, 470, 505, 530, 590, 617, 625, 656 or 740nm | >95 | 780, 850, 870, 940 | >95 |
| LCS-BC25-0800 | 455, 470, 505, 530, 590, 617, 625, 657, 680, 740 or 780nm | >95 | 850, 870 or 940nm | >95 |
| LCS-BC25-0810 | 740 or 780nm | >95 | 850 or 940nm | >95 |
| LCS-BC25-0000 | 400, 455, 470, 505, 530, 590, 617, 630, 657 or white | ~45 | 400, 455, 470, 505, 530, 590, 617, 630, 657 or white | ~45 |
| LCS-BC25-0070 | 400, 455, 470, 505, 530, 590, 617, 625, 657 or white | ~30 | 400, 455, 470, 505, 530, 590, 617, 625, 657 or white | ~70 |

Weight: 190g

INSTALLATION DRAWING



PART NUMBER AND ORDERING INFORMATION

LCS - BC25 -

Edge Wavelength

For example, LCS-BC25-0495 has an edge wavelength of 495nm. According to the table above any one of the 400, 455 or 470nm wavelengths can be connected to the reflection port, and any one of the 530, 590, 617, 625 or 657nm wavelengths may be connected to the transmission port.

With a world-class OEM design team, Goptica offers a broad range of customized solutions in order to meet individual customer's unique requirements. Please call +86-150-0085-3620 or email sales@goptica.com for details.