



PART NUMBER 40A-48A-XXY-XXY-11
 ITEM NAME DIODE LASER COMBINER; FREE-SPACE (405 NM, 488 NM)

PRODUCT DATASHEET



DESCRIPTION

A widely configurable 2-wavelength dichroic combiner featuring precisely co-aligned optical paths in a free-space output configuration. All optics and electronics fitted into the ultra compact 'Matchbox' housing. This particular configuration provides up to two wavelengths, which are standard for use in Life Sciences, Food, Metrology and Medical applications. An easy to use PC interface and separate TTL inputs allows full control over the individual wavelengths.

Features:

- Two wavelengths
- Plug-and-play
- Single user interface for all 2 lasers

Advantages:

- Space saving design
- No optics realignment
- Remote PC control

Applications:

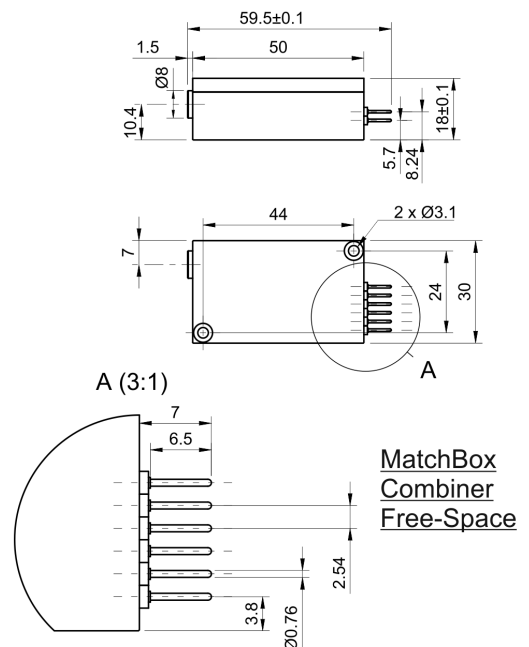
- Wide field and Fluorescence Microscopy
- Flow cytometry
- Food sorting and quality
- Particle characterization

SPECIFICATIONS

Specifications updated: 1 October 2020

| Parameter | Minimum Value | Typical Value | Maximum Value |
|--|----------------------------|------------------------------|-----------------|
| Output power, mW | - | 405 nm - 120 488 nm - 40 | - |
| Wavelength Tolerance | - | +/-3 nm | - |
| Longitudinal Modes | - | Multiple | - |
| Spectral line width FWHM, nm | - | 1 | 2 |
| Power stability, % (RMS, 8 hrs) at 20 °C | - | 0.2 | 0.5 |
| Noise, % (RMS, 20 Hz to 20 MHz) | - | 0.5 ¹ | 1 |
| Transversal Mode | - | TEM00 | - |
| Polarization direction | - | Horizontal | - |
| Polarization contrast | 405 nm - 50 488 nm - 50 | 405 nm - 300 488 nm - 400 | - |
| Control Interface | - | UART ² | - |
| Operation Mode | - | ACC (CW) | - |
| Input voltage, VDC | 8 | 9 | 12 |
| External Power Supply Requirement | - | +9 V DC, 1.5 A ³ | +12 V DC, 1.5 A |
| Dimensions, mm | - | 50 x 30 x 18 | - |
| Beam height from the base, mm | - | 10.4 | - |
| Heat-sinking requirement, °C/W | - | <0.5 | - |
| Optimum heatsink temperature, °C | - | 20 | 25 |

DRAWING



**MatchBox
Combiner
Free-Space**

| | | | |
|--|---|--|----|
| Warm-up Time (Cold Start) | - | < 1 | 2 |
| Temperature Stabilization | - | Internal TEC | - |
| Overheat Protection | - | Yes | - |
| Storage temperature, °C (non-condensing) | - | - | - |
| Net weight, kg | - | 0.3 | - |
| Max. power consumption, W | - | 2 ⁴ | 18 |
| Warranty, months (op. hrs) | - | 14 (10000) ⁵ | - |
| RoHS | - | Yes | - |
| CE Compliance | - | - General Product Safety Directive (GPSD) 2001/95/EC - (EMC) Directive 2004/108/EC | - |
| OEM Lasers Are Not Compliant With | - | IEC60825-1:2014 (compliant using additional accessories) | - |

¹Noise level is measured with a fast photodiode connected to an oscilloscope. The overall system bandwidth is from 2 kHz to 20 MHz.

²The break-out-box AM-C9 can be used for conversion of UART communication to USB.

³If the break-out-box AM-C9 is used, a PD (Power Delivery) type of power supply can be used.

⁴For single enabled wavelength.

⁵Whichever occurs first.

Note: Product specifications are subject to change without prior notice to improve reliability, function or design or otherwise.