



# Ge ACOUSTO-OPTIC MODULATOR

Germanium AOM for High-Power, 9.4 $\mu$ m or 10.6 $\mu$ m Applications

I-M041-XXC11XX-P5-GH77

An acousto-optic modulator for use at 9.4 $\mu$ m or 10.6 $\mu$ m wavelength, ideal for extra-cavity modulation or power control of high power CO<sub>2</sub> lasers.

Combining optimum grade mono-crystalline germanium, high quality optical finishing, robust anti-reflection coating and high reliability transducer bonding, with novel acoustic management and opto-mechanical design techniques, we have successfully achieved exceptional thermal management whilst maintaining high RF power handling, transmission and diffraction efficiency.

In addition to the specifications indicated, we also offer alternative wavelengths, RF frequencies, active apertures & a wide range of custom housing configurations.

This product conforms to the requirements of the European Union Directive 2011/65/EU of the European Parliament and of the Council on the Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment.

Our scientists and engineers are available to assist in selecting the most appropriate Acousto-Optic device and RF driver for your application.



## Key Features

- High optical power handling
- Low insertion loss
- Excellent pointing stability
- Superior beam quality
- High diffraction efficiency

## Applications

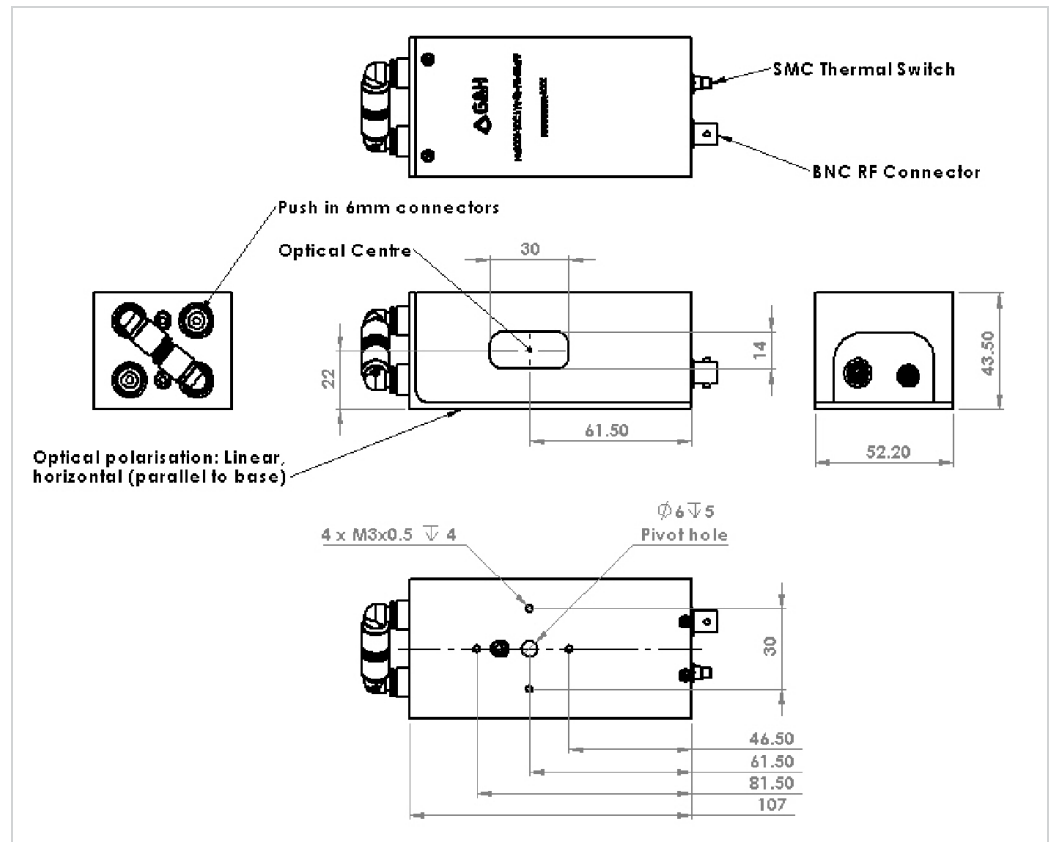
- Industrial (material processing)
  - PCB via drilling
  - Marking and engraving
  - Light guide panel processing
  - Micro-perforation
- Q-Switching

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## General Specifications

| Device:                        | AO Modulator                            |
|--------------------------------|---|
| Interaction material:          | Germanium                               |
| Wavelength:                    | 9.4 $\mu\text{m}$ or 10.6 $\mu\text{m}$ |
| Maximum optical power density: | $> 15 \text{ W/mm}^2$                   |
| AR coating reflectivity:       | $< 0.2 \%$ per surface                  |
| Transmission:                  | $> 96.5 \%$                             |
| Frequency:                     | 40.68 MHz                               |
| Optical polarisation:          | Linear, Horizontal (parallel to base)   |
| Active aperture:               | Up to 9.6 mm                            |
| Acoustic mode:                 | Compressional                           |
| Rise-time (10-90%):            | 120 ns/mm                               |
| Diffraction efficiency:        | $\geq 90 \%$                            |
| RF Power:                      | Max 120 W                               |
| Housing:                       | Refer to drawing                        |
| Recommended RF Driver:         | HP041-125ADG-A10                        |

## Device schematic



## Ordering code

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I | - | M | 0 | 4 | 1 | - | x | x | C | 1 | 1 | x | x | x | - | P | 5 | - | G | H | 7 | 7 |
|   |   |   |   |   |   |   | ▲ | ▲ |   |   |   | ▲ | ▲ | ▲ |   | ▲ |   |   |   |   |   |   |

| Code | Active aperture | Code | AR coating   | Code | Water connector           |
|------|-----------------|------|--------------|------|---------------------------|
| 7    | 7 mm            | V41  | 9.4 $\mu$ m  | P    | 6 mm OD straight push fit |
| 10   | 9.6 mm          | Q    | 10.6 $\mu$ m |      |                           |

### Ordering Information:



800 Village Walk #316  
Guilford, CT 06437  
Ph: 203-401-8093

Email orders to: [sales@xsoptix.com](mailto:sales@xsoptix.com)  
Fax orders to: 800-878-7282

For further information

E: [sales@goochandhousego.com](mailto:sales@goochandhousego.com)

[goochandhousego.com](http://goochandhousego.com)

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