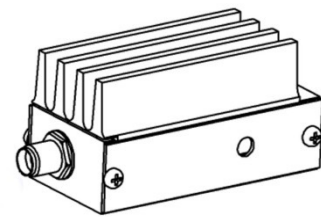


# MT110 & MDS1C

## AO Modulator

### A powerfull modulator for Tunable Ti:Sa lasers With USB Digital driver

These modulators have been specially designed for tunable Ti:Sa lasers. In association with their "tracking" driver MDS1C, they allow to get a constant high diffraction efficiency, together with a constant output angle whatever is the laser wavelength between 700 and 1060 nm. The complete adjustment can be achieved through USB or RS232 control.



#### Specifications

#### MT110-B50A1,5-IR-Hk

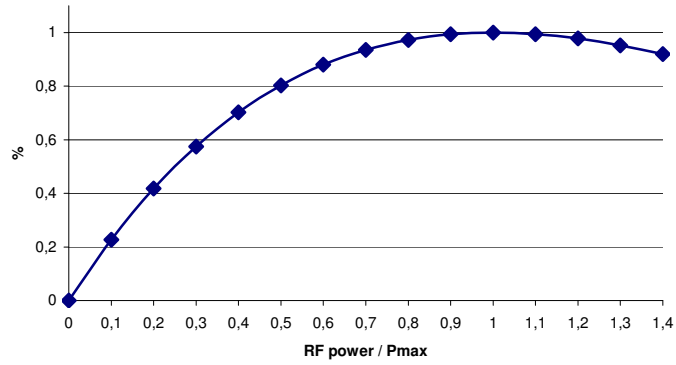
<b>Material-Acoustic mode</b>	TeO <sub>2</sub> [L]
<b>Acoustic Velocity</b>	V=4200 m/s
<b>Optical Wavelength range</b>	700-1060 nm
<b>Transmission</b>	> 95 %
<b>Optical Input / Output polarizations</b>	Linear
<b>Aperture</b>	1.5 x 2 mm <sup>2</sup>
<b>Carrier frequency / Frequency shift</b>	110 MHz +/- 25 MHz
<b>Separation angle</b>	Nom 23 mrd
<b>Diffraction efficiency (with TEM<sub>00</sub> beam, M<sup>2</sup> ≤ 1.1)</b>	Nom 85 %
<b>Rise time</b>	160 ns / beam diameter 1 mm
<b>Amplitude modulation bandwidth</b>	3 MHz (- 3 dB)
<b>Static extinction ratio</b>	> 2000/1
<b>Max optical power density</b>	> 10 W / mm <sup>2</sup>
<b>Input impedance</b>	Nom 50 Ω
<b>V.S.W.R.</b>	Nom < 1.5/1
<b>RF Power</b>	≤ 2 Watts
<b>Connector</b>	SMA
<b>Size / Weight</b>	(Lxlxh) 60.1 x 28.7 x 26.5 mm <sup>3</sup> / 50 g
<b>Operating Temperature</b>	10 to 40 °C



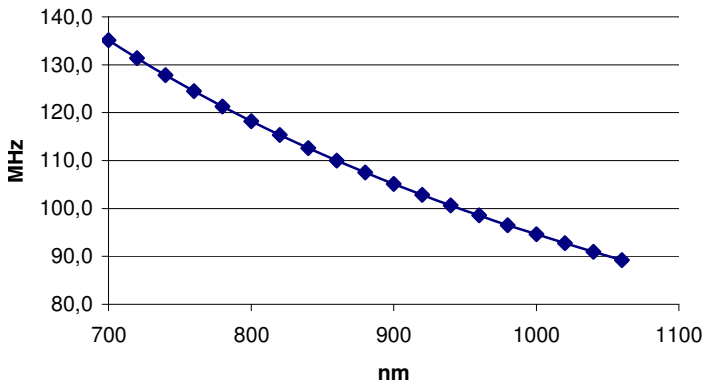
**AA Sa** 18, rue Nicolas Appert 91898 ORSAY France  
Tel : +33 (0)1 76 91 50 12 – Fax : +33 (0)1 76 91 50 31 – [www.aaoptoelectronic.com](http://www.aaoptoelectronic.com)  
**QUANTA TECH** 116 West, 23rd Street - Suite 500 New York, NY 10011 USA  
Tel: 646 375 2452 - Fax: 866 978 2682 – [www.quanta-tech.com](http://www.quanta-tech.com)



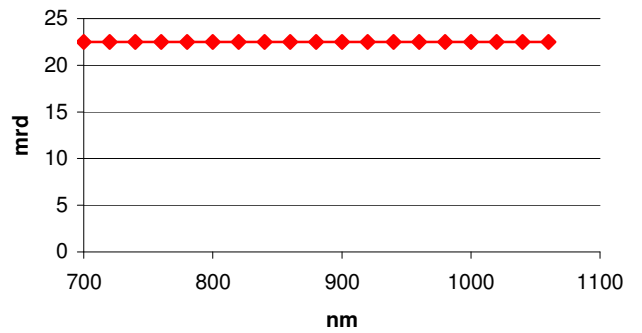
Relative Diffraction Efficiency vs RF Power



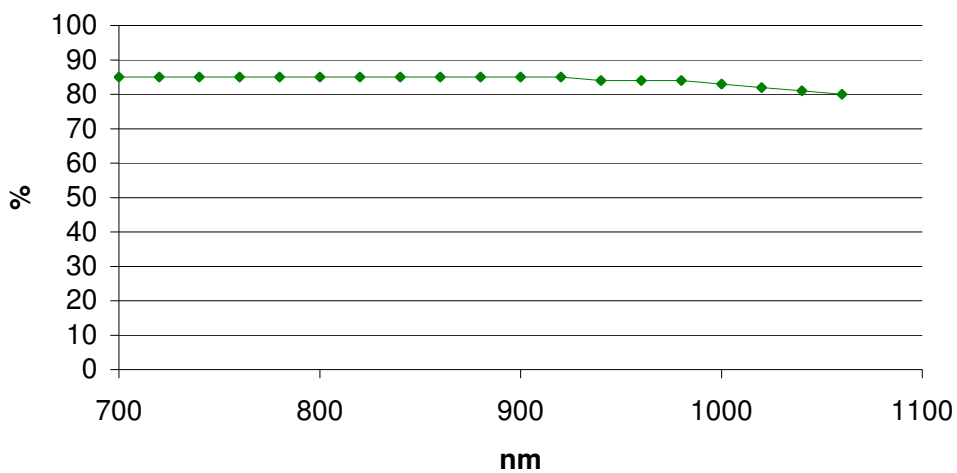
Frequency tracking versus wavelength



Output Angle versus wavelength



Efficiency versus wavelength without input angle readjustment



## Associated RF driver MDS1C

The MDS1C driver is based on Direct Digital Synthesizers (**DDS**). They produce a tuneable, stable and accurate RF frequency signal for the Ti:Sa modulator. Its design with “on the edge” technology offers unique performance in term of **accuracy, speed and stability, thanks to its internal temperature correction and high linearity design.**

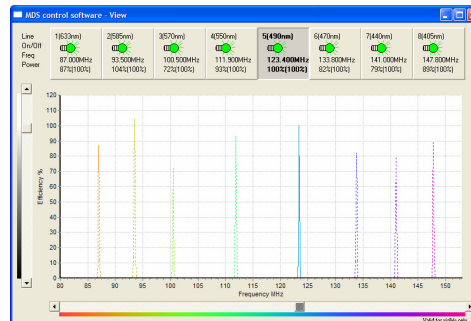
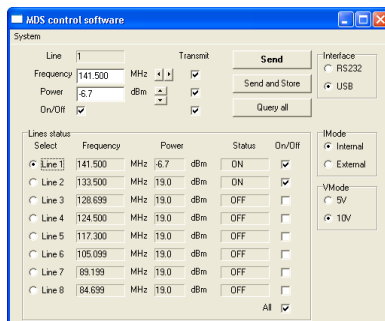
The built in amplifier delivers the necessary RF power to drive the acousto-optic device, with reduced power consumption (**AA “COLD DESIGN”**).

The adjustments of the driver (Frequency & Power) can be done with a remote control, USB or through RS 232 communication to allow user flexibility in power control or frequency scanning.

## Specifications

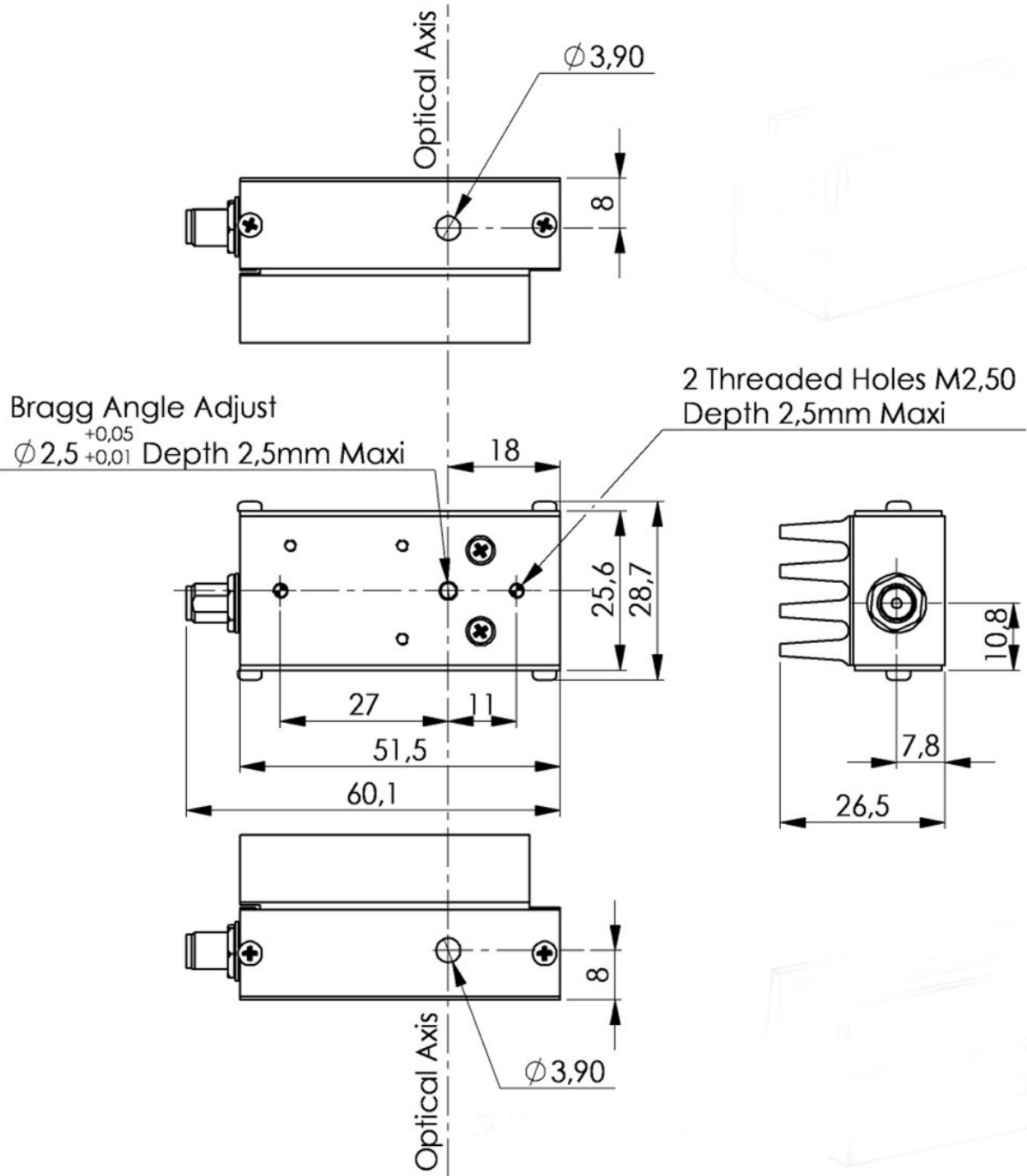
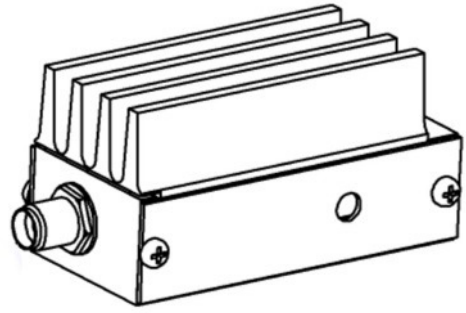
## MDS1C-B6-33-85.135

<b>Number of channels</b>	1
<b>Frequency range</b>	85-135
<b>Frequency stability</b>	+/- 2 ppm/°C
<b>Frequency accuracy</b>	Nom 1 KHz
<b>Frequency step</b>	Nom 1 KHz
<b>Frequency control</b>	Remote Control or USB, Option : RS232
<b>Power Supply</b>	OEM version : 24 VDC - < 0.7A Laboratory version : 110/230 VAC - 50-60 Hz
<b>Rise Time / Fall time (10-90 %)</b>	< 50ns
<b>Modulation Input Control</b>	External : Analog 0-5 V / 10 KΩ or Analog 0-10 V / 10 KΩ Internal : Remote Control or USB, Option : RS232
<b>Extinction ratio</b>	Nom 70 dB
<b>Output RF power</b>	33 dBm (2 Watts)
<b>Output Impedance</b>	50 Ω
<b>V.S.W.R.</b>	Nom < 1.5/1
<b>Input / Output connectors</b>	DB25 / SMA (DB9 for RS232)
<b>Size</b>	OEM version : 207 x 99 x 27.7 mm <sup>3</sup> Laboratory version : Rack 19", 1U
<b>Weight</b>	OEM version : nom 0.6 kg Laboratory version : nom 4 kg
<b>Heat exchange</b>	OEM version : Conduction through baseplate Laboratory version : stand alone
<b>Operating temperature</b>	10 to 40 °C
<b>Maximum case temperature</b>	OEM version : 50 °C



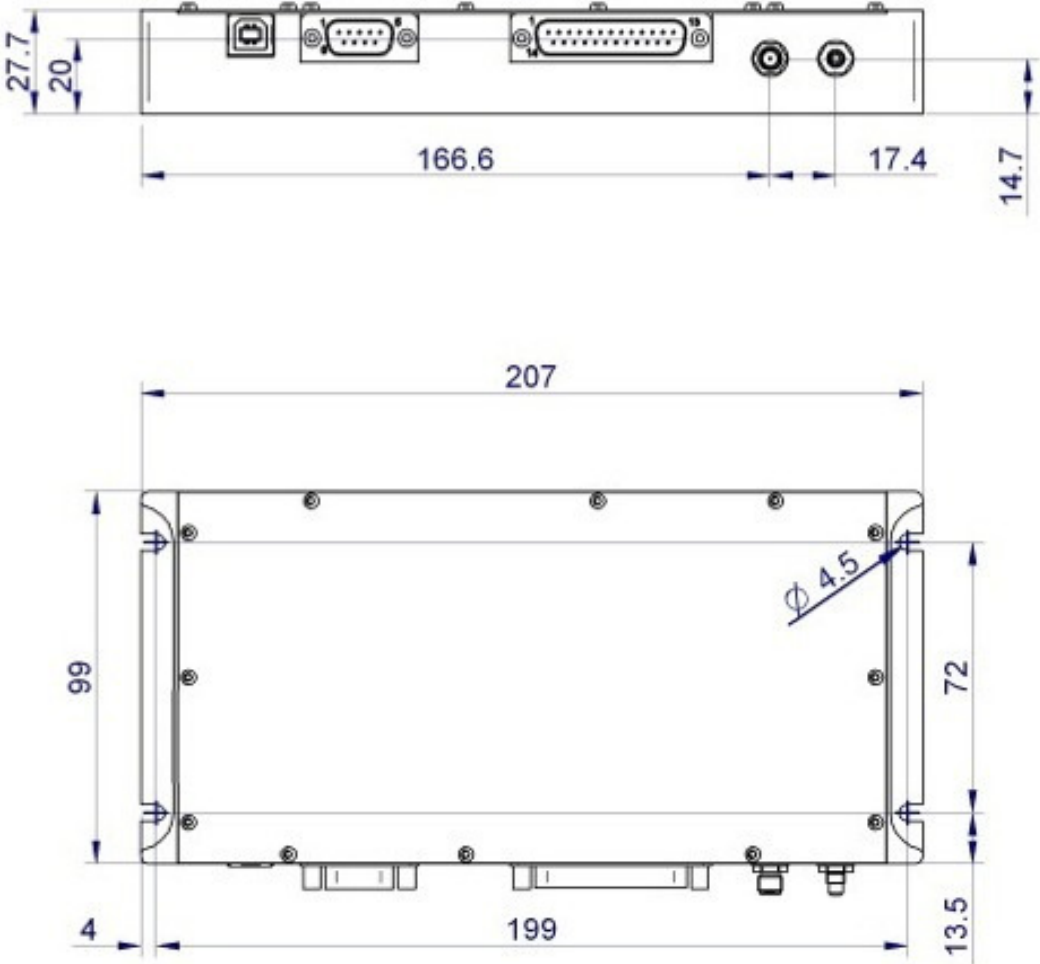
Outline Drawing

sizes in mm



Outline Drawing

sizes in mm



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