

SOM Series

High-speed fiber modulator/shutter



ALPhA NOV

Optics & Lasers Technology Center

SOM Series

High-speed fiber modulator/shutter

This Turn-key fiber-coupled module has a Switching speed <1 ns and operates as a lossless **high dynamic range amplitude modulator**, a high-speed optical isolation switch or a full-range Variable Optical Attenuator (VOA).



Key features

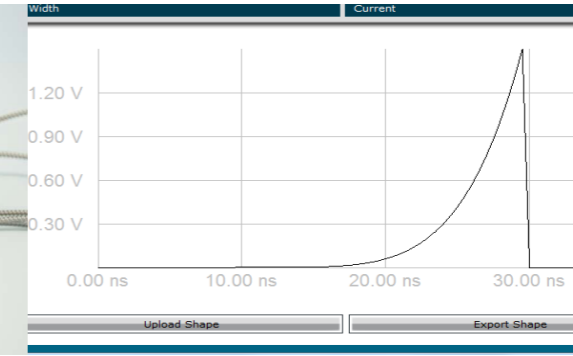
- SOM (Semiconductor Optical Modulators) are a smart alternative to AOM (Acousto optic Modulators), EOM (Electro Optics Modulators) or even direct diode modulation. It is a lossless, low noise, high speed, high dynamic range, high extinction ratio and highly polarizing solution working from 750 to 1700 nm.
- Min. pulse duration: <1 ns, timing Jitter down to 8 ps, up to 250 MHz repetition rate.
- SOM are SOA-based Amplitude Modulator. The SOA (Semiconductor Optical Amplifier) offer proven reliability and performance. Current/temperature control circuits and safety limits are pre-set and optimized to ensure the highest level of performance in pulsed mode.
- Wavelength from 750 to 1650 nm needs to be precised at the order (see table last page).
- All versions can be controlled either through USB link or through an analog signals.
- Most versions show fast delivery for immediate customer use.
- 1 version also includes 3 pulse-delay-generators for external synchronizations (SOM-Shape).

Technical Specifications

SOM-std



SOM-shape pulse GUI



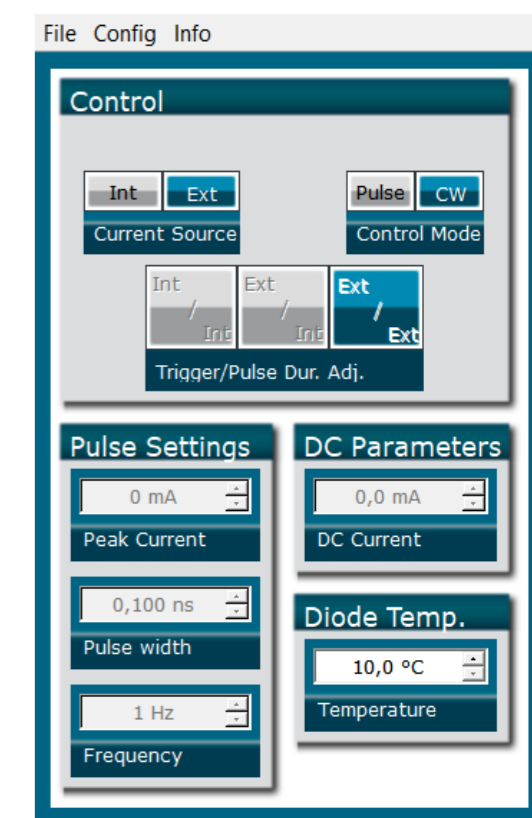
SOM-std back



Specifications

Version:	SOM-std	SOM-HPP (High Pulse Performance)	SOM-shape (Pulse shaping)
Wavelength (nm)	Any wavelength to be chosen between 700 and 1650 nm (see wavelength table next page)		
Optical Bandwidth (nm)	From 20 nm to 110 nm to be selected		
Extinction ratio (dB,typ)	>50 dB		
Switching speed	~ 1 ns	~ 0.5 ns	~ 2 ns
Dynamic Range (up to)	60 dB	60 dB	48 dB
Small signal Gain	From 22 to 40 dB depending on the selected wavelength (see wavelength table next page)		
Trigger-to-pulse Jitter	<8 ps	<20 ps	<2 ns
Pulse shaping	no	no	yes
Max repetition rate	250 MHz	250 MHz	20 MHz
Max Output Power	From 20 to 100 mW (more than 500 mW have been measured in some pulsed configuration)		
Interface/compatibilities and Libraries	USB - Windows 7/10 - DLLs - Hexa - Labview		

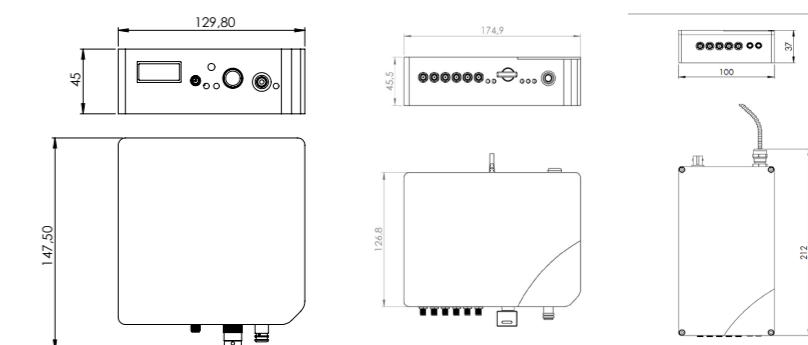
SOM-std GUI Interface



Electrical

Operating voltage	12-15 Vdc (OEM) 110/220 V (SOM-std) 24Vdc (OEM) 110/220 V (other versions) AC/DC converter included
Input impedance	50 Ω

Mechanical (SOM-Std, SOM-HPP, SOM-Shape)



Wavelength	Bandwidth	Max Input Power	Max Output Power ⁽¹⁾	Small signal Gain	Ref
	nm	mW	mW	dB	
775	20	40	30	32	H775
785	50	25	20	25	R785
800	16	25	20	30	R800
830	55	40	30	25	R830
840	25	60	50	30	R840
850	40	30	20	22	R850
870	58	30	20	25	R870
930	65	30	20	25	R930
970	40	40	30	27	R970
1000	100	70	60	33	H1000
1020	110	40	30	27	H1020
1030	20	70	60	40	H1030
1060	22	70	60	40	H1060
1060	90	70	60	30	H1060
1080	27	60	50	38	H1080
1125	25	40	30	35	H1125
1140	90	60	50	24	H1040
1190	90	40	30	20	H1190
1250	110	40	30	27	H1250
1285	85	60	50	30	S1285
1300	85	60	50	30	S1300
1310	70	40	30	23	S1310
1350	80	40	30	23	S1350
1500	35	30	25	13	S1500
1550	85	40	30	27	S1550
1550	50	70	60	30	S1550
1590	90	40	30	26	S1590
1625	80	30	20	18	S1625

Order Information :

