

High-speed fiber modulator/shutter



Aero  ODE

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

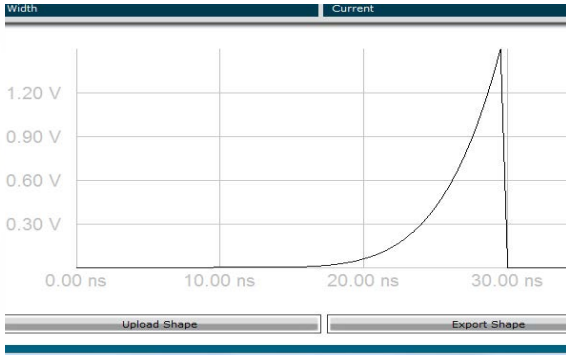
- SOM (Semicondustor Optical Modulators) are a smart alternative to AOM (Acousto optic Modulators), EOM (Electro Optics Modulators) or even direct diode modulation. It is a lossless, low noise, high speed, high dynamic range, high extinction ratio and highly polarizing solution working from 750 to 1700 nm.
- Min. pulse duration: <1.5 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-HPP



SOM-shape pulse GUI



SOM-shape

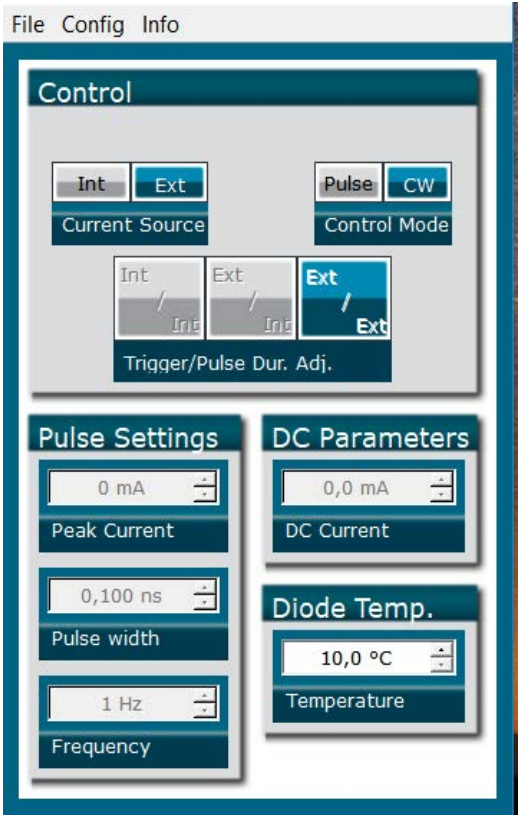


Specifications

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 - 70 dB*		40 - 70 dB*
Switching speed (typ)	1 ns	1 ns	2 ns
Dynamic Range (up to)	60 dB	60 dB	48 dB
Small signal Gain	From 22 to 40 dB (see wavelength table next page)		
Trigger-to-pulse Jitter	<20 ps	<8 ps	<2 ns
Pulse shaping	no	no	yes
CW offset (in pulse mode)	no	yes	no
Max repetition rate	10 MHz	250 MHz	20 MHz
Max Input power	5 dBm		
Max Output Power	From 20 to 100 mW (more than 500 mW have been measured in some pulsed configuration)		
Compatibilities and Libraries	USB - Windows 7/10 - DLLs - Hexa - Labview		

(* : For best extinction ratio performance, keep the input power low and the gain of the SOM high

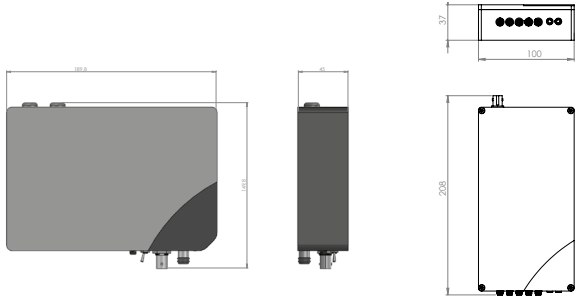
SOM-std GUI Interface



Electrical

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

Mechanical (SOM-Std & HPP; SOM-Shape)



Wavelength	Bandwidth	Max Output Power *	Small signal Gain	Ref
	nm	mW	dB	
780	20	30	32	H780
800	16	20	30	R800
830	55	30	25	R830
840	25	50	30	R840
850	40	20	22	R850
870	58	20	25	R870
930	65	20	25	R930
970	40	30	27	R970
1000	100	60	33	H1000
1020	110	30	27	H1020
1030	20	60	40	H1030
1060	22	60	40	H1060/1
1060	90	60	30	H1060/2
1080	27	50	38	H1080
1125	25	30	35	H1125
1140	90	50	24	H1140
1190	90	30	20	H1190
1250	110	30	27	H1250
1285	85	50	30	S1285
1300	85	50	30	S1300
1310	70	30	23	S1310
1350	80	30	23	S1350
1500	35	25	13	S1500
1550	85	30	27	S1550/1
1550	50	60	30	S1550/2
1590	90	30	26	S1590
1625	80	20	18	S1625

*More than 500mW have been measured in some special pulsed configurations

