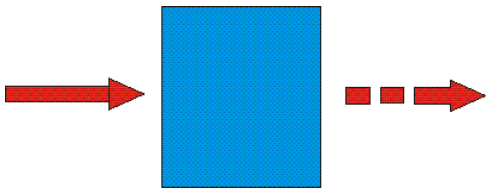
SANOS™ – Saturable Noise Suppressor



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Product Overview

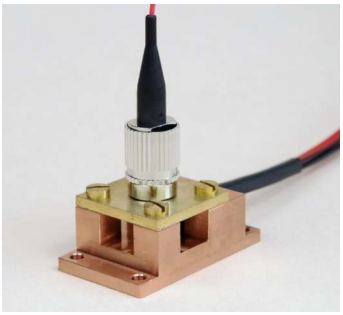
- Cleaning of optical noise between consecutive pulses after a pulse picker or optical amplifier
- Wavelength conversion of pulsed optical signals

SANOS 1064	Laser wavelength	λ = 1050 - 1064 nm
	FWHM	17 nm / 15 nm *
	Noise suppression ratio	12 dB / 20 dB *
	Insertion loss	3 dB / 6 dB *
	Relaxation time	τ ~ 9 ps
	pulse fluence for saturation	F = 4 µJ/cm² / 10 µJ/cm² *
	*	Two-stage FS-SANOS
SANOS 1550	Laser wavelength	λ = 1530 nm .. 1560 nm
	FWHM	15 nm
	Noise suppression ratio	up to 18 dB **
	Insertion loss	3 dB
	Relaxation time	τ ~ 5 ps
	Saturation energy	F = 25 pJ
	**	dependent on the input SNR

For other wavelengths and parameters please ask!

Mounting Options

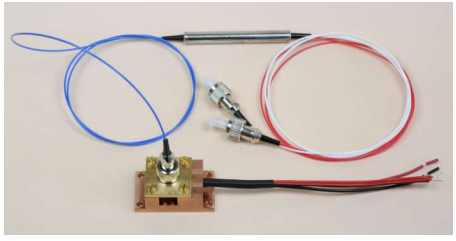
Free space (FS) SANOS™

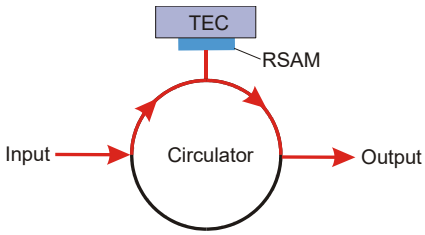


Fiber coupled (FC) SANOS™ with TEC cooler

Fiber coupled SANOS™

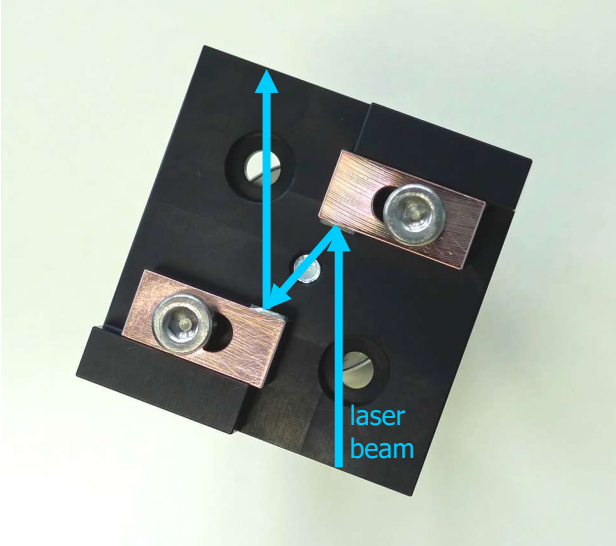
FC-SANOS™ with thermoelectric cooler (TEC)

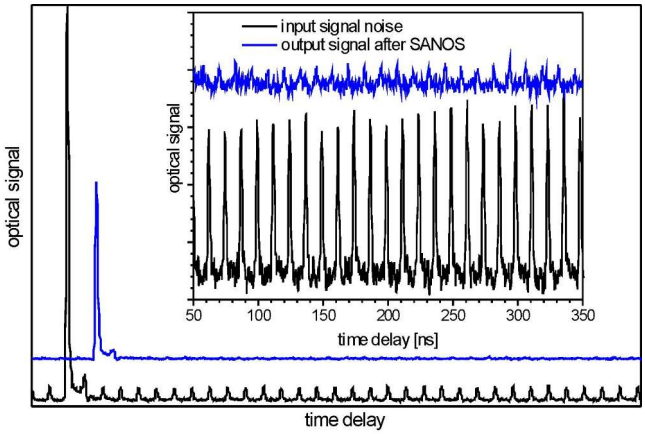




A FC-SANOS is a resonant saturable absorber mirror (RSAM), mounted on a circulator. The RSAM has a strong non-linear reflectance, therefore the low level input signal transmittance of the FC-SANOS is only 3% (97% loss), whereas high intensity pulses are transmitted with a lower loss of 50%. Because the RSAM is a resonant device, the noise is only suppressed at the resonance wavelength. The RSAM can be temperature controlled using a thermoelectric cooler/heater (TEC) for fine tuning of the resonance wavelength with a maximum shift of 6 nm.

FS-SANOS™



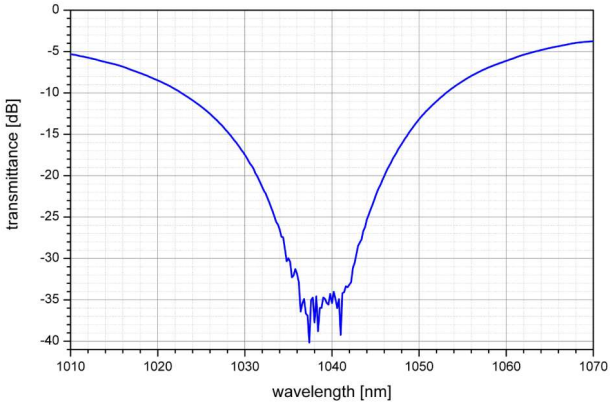


Measured suppression of small pulses (after a pulse picker) using a SANOS. The black curve is the time dependent optical signal, which hits the SANOS and the blue curve is the SANOS output signal.

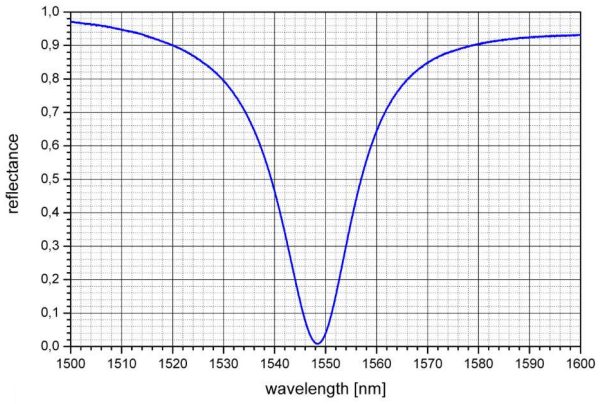
A FS-SANOS consists of a resonant saturable absorber mirror (RSAM) and a conventional 100% mirror (optional with second RSAM). The beam propagates through the FS-SANOS without changing of the direction, but with a parallel offset of about 2 mm. The RSAM has a strong non-linear reflectance, therefore the low level input signal transmittance is only 2 % (98 % loss), whereas high intensity pulses are transmitted with a lower loss of 50 %.

Spectral transmission:

FS-SANOS-1040-2



FC-SANOS-1550



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