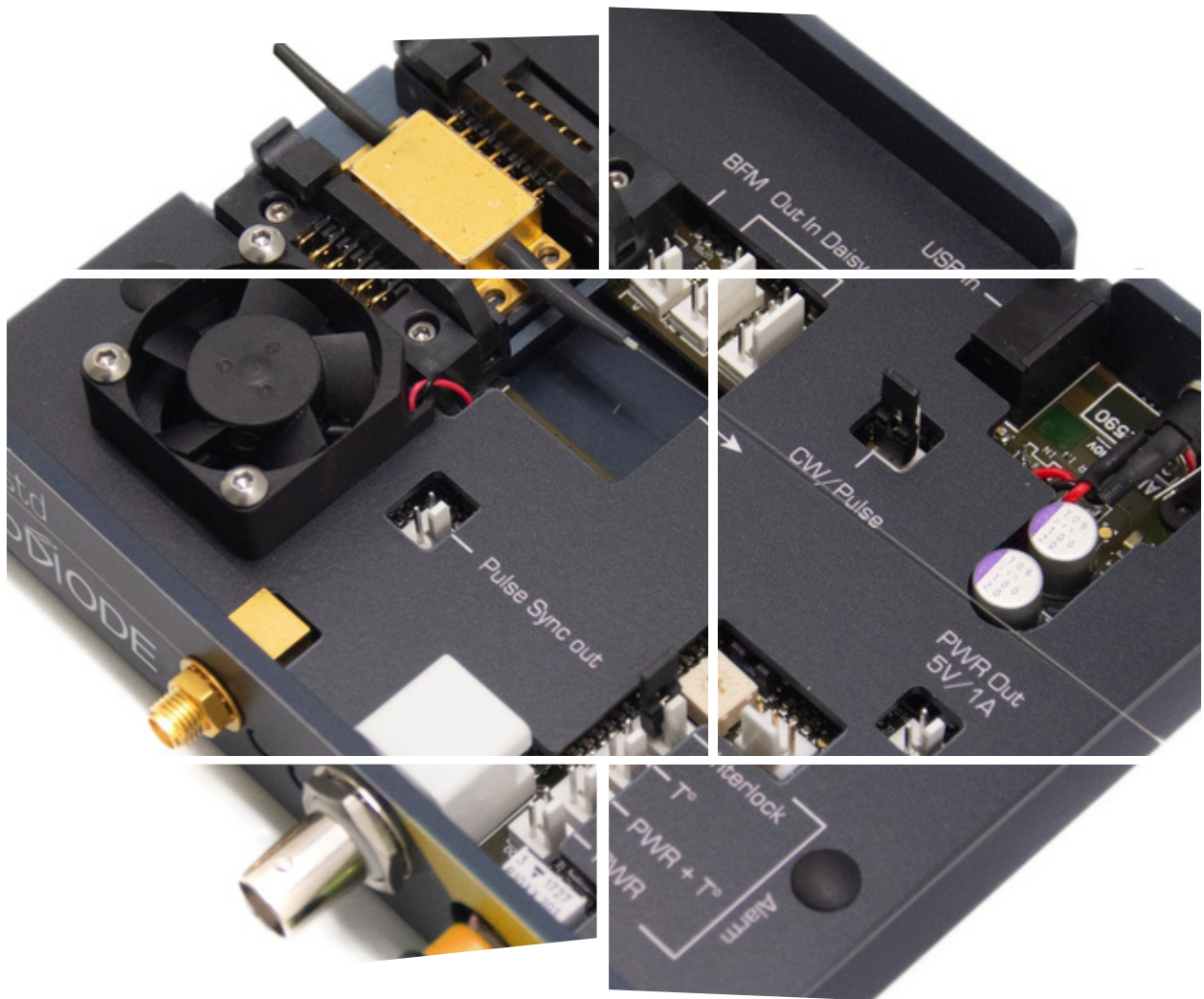# SOA : Semiconductor Optical Amplifiers & turn-key solutions

AeroDIODE

Semiconductor Optical Amplifier

Choose your own **fiber-coupled SOA** + turn-key driver solution

SOAs are offered as stock items or associated with a low-noise CW or various high-speed pulsed drivers. An SOA driven in CW or pulse mode operates as a full-range variable optical attenuator, lossless high dynamic range amplitude modulator or isolation switch.

1st
Choose your SOA Module :
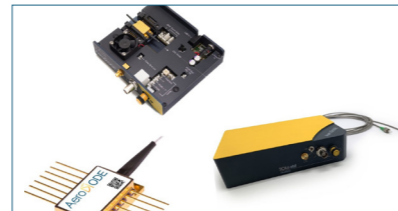
Model	Wavelength range	Max Power (CW / Pulse)*	Small signal gain*	Operating current (CW/Pulse mode)	Noise Figure	3dB Gain bandwidth (typ.)*	Extinction ratio* (Pin=-25 dBm)**	Package (mm)
1	750 -796 nm	18/23 dBm	32 dB	250 / 1000 mA	6.5 dB	15 nm	75 dB	14 pin Butterfly-type 1 - (L=36.5 mm) (cf module datasheet)
2	1000-1100 nm	20/23 dBm	33 dB	400 / 1000 mA	5.0 dB	90 nm	75 dB	
3	1270-1330 nm	18/20 dBm	30 dB	500 / 1000 mA	7.0 dB	60 nm	75 dB	14 pin Butterfly-type 1 -standard (L=30 mm) - cf module data-sheet)
4	1520-1580 nm	18/20 dBm	25 dB	500 / 1000 mA	8.0 dB	40 nm	75 dB	

* Typical values ; ** contact us to suggest how to optimise the extinction ratio

3rd
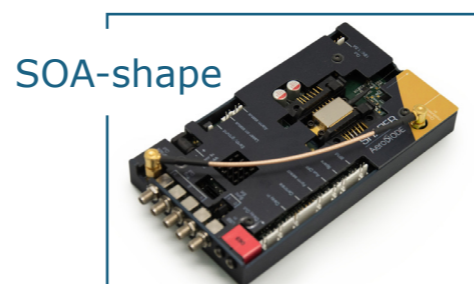## Choose your product form factor : OPEN-FRAME or INTEGRATED

2nd
Choose your Driver performance :

SOA DRIVER VERSION :

	CW SOA Driver	Pulse & CW SOA Driver (from 1 ns to CW)-		Pulse SOA driver with user-design pulse shape
	«SOA-CW» is the open driver and «SOAI-CW» is the integrated version	**Standard** version : «SOA-std » is the open driver and «SOM-std» is the integrated version.	**High Pulse Performance** version : «SOA-HPP » is the open driver and «SOM-HPP» is the integrated turn-key version.	**Pulse shaping** : «SOA-SHAPE» is the open driver and SOM-Shape is the integrated turn-key version
Max current CW / Pulse (Note : for integrated versions, the max levels are set according to the SOA nominal levels)	800 mA (CW only) (1500 mA optional)	800 mA (CW) / 1500 mA (Pulse)	800 mA (CW) / 3500 mA (Pulse)	1600 mA (pulse)
User design Pulse shape	No (CW only)	No (On/Off only)		YES
SOA Chip T° regulation range	15 - 50 °C			
Pulse duration (Ext trigger)	CW only	0.5 ns - CW		0.5 ns - 8 µs
Pulse duration (Internal pulse generator)		0.5 ns - 500 ns		
Typ rise/fall time ; Typ min pulse duration		<3 (ns/A) ; 1.5 ns		< 1ns/A ; 1.5 ns
Internal rep rate adjustment		1 Hz - 10 MHz	1 Hz - 250 MHz	1 Hz - 20 MHz
Temporal Jitter	< 35 ps		< 15 ps	< 2 ns (optional internal clock synchronization with 10 MHz external clock to reduce the Jitter level)
Adj. CW offset (pulse regime)	No	Yes		No
Software Libraries	Hexa, DLLs, LabVIEW, **Python**; Linux Compatible...			

OPEN-FRAME VERSIONS :

SOA-CW

➤ Open-frame CW driver optimized for all types of SOAs.

SOA-std SOA-HPP

➤ Open-frame pulse & CW driver with optimal performances down to 1 ns in ON/OFF regime with adjustable peak current level and pulse width.

SOA-shape

➤ Open-frame driver with an embedded AWG (Arbitrary Waveform Generator) for ns temporal pulse shaping.

INTEGRATED VERSIONS :

SOAI-CW SOM-std/SOM-HPP

➤ Integrated version for CW, std and HP electronics Boards.

SOM-SHAPE

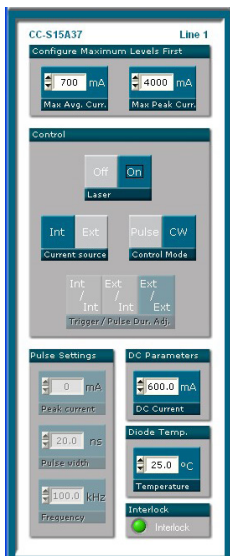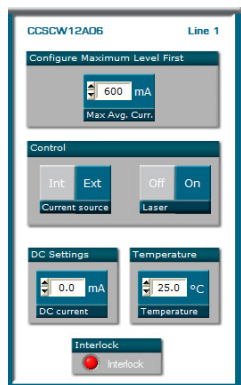➤ Integrated version for Shaper electronics Board.

AeroDIODE

www.aerodiode.com

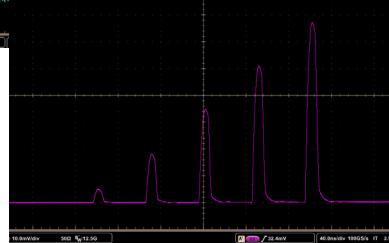# Technical Specifications

GUI (examples)

Mechanical (examples) :
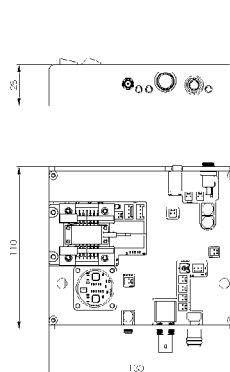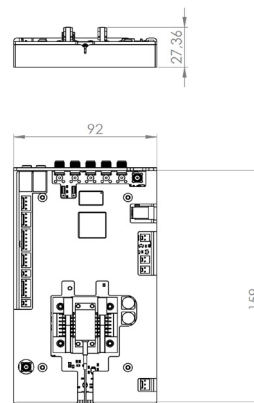
CW & Pulsed   SHAPER
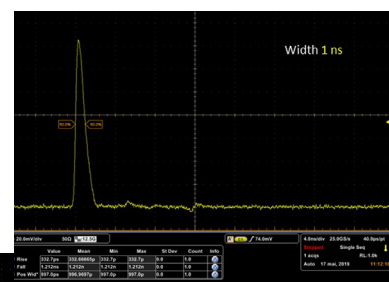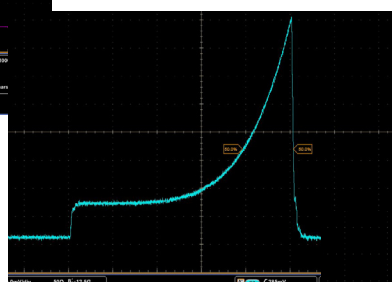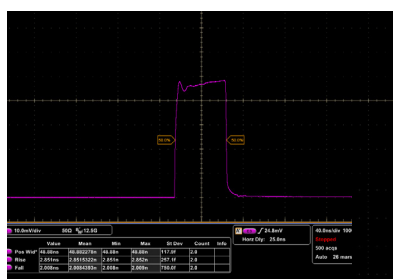
Classification :

Name	SOA
SOA type	1 : 785 nm 2 : 1030/1053/1064 nm 3 : 1310 nm 4 : 1550 nm
Driver Electronics :	0 : No driver (SOA butterfly module only) 1 : CW (CW laser emission driver) 2 : Pulse & CW (standard version) 3 : Pulse & CW (High pulse performance version) 4 : SHAPER (User design temporal pulse shape driver) LN : Ultra-low noise CW driver (contact us)
Form Factor	0 : No driver (SOA only) 1 : Open frame 2 : Integrated turn-key version,

Ordering information :

SOA - [_] - [_] - [_]

SOA type	Driver type	Form Factor
1	0	0
2	1	1
3	2	2
4	3	
	4	
	LN	

AeroDiODE

Product Manager : sales.aerodiode@aerodiode.com
+33 (0)6 27 69 41 52
www.aerodiode.com