

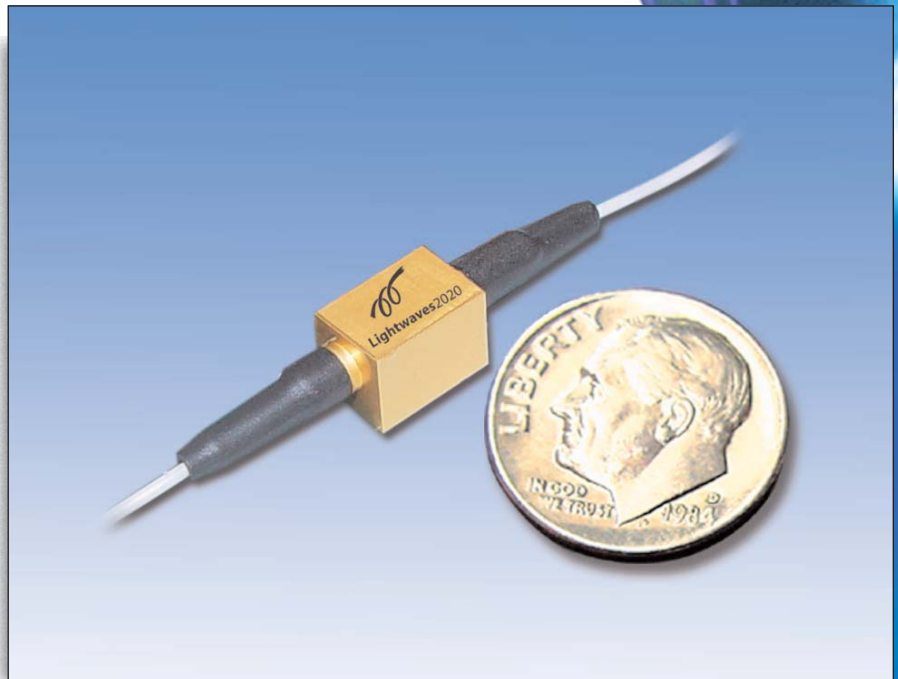
# High Speed Variable Optical Attenuator (VOA)

## Features / Benefits

- High Speed ( $\mu$ s) attenuation control
- Broadband wavelength range
- No moving parts and continuous tuning
- Low insertion loss
- Low PDL over operating wavelength range
- Solid state technology

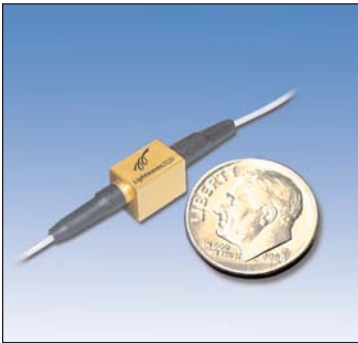
## Applications

- Channel balance in DWDM systems
- Power equalization in optical add/drop and optical cross-connects
- Gain-tilt and power adjustment in EDFAs
- Receiver protection



The Lightwaves2020's high-speed Variable Optical Attenuator (VOA) is based on novel optical material offering fast response in  $\mu$ s, in contrast with conventional LC-based VOA with speed in *ms*. The dramatic increase in response speed enables the new VOA suitable for demanding 40Gbs applications.

An optional driver-PCB, on which the VOA is mounted, is provided. The device is driven by 0-5 VDC voltage to produce required optical power attenuation and switching



# High Speed Variable Optical Attenuator (VOA)

## Optical Specifications

Parameters	Unit	Performance
Operating Wavelength Range	nm	C+L band
Insertion Loss	dB	< 0.9
Attenuation Range	dB	> 30
PDL @ 1550nm at 15dB attenuation	dB	< 0.3
Response Time	μs	< 10
Return Loss	dB	> 55
PMD	ps	< 0.1
Maximum Optical Power	mW	500
Maximum Power Consumption @ 65°C	W	< 0.5
Driving Voltage (with driver)	V	0 to 5

Note: 1. All specification referred without connectors  
 2. Measured at wavelength 1550nm  
 3. Operation mode: normal on

## Mechanical and Package Specifications

Parameters	Unit	Performance
Dimensions	mm	28 x 15 x 6.3
Driver PCB Dimension	mm	45 x 22 x 12

## Ordering Information

V	O	A	-	H	S	P	2			0	0	0	0	0
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**Wavelength Range**  
 C = 1525 - 1565nm  
 L = 1570 - 1615nm  
 E = 1525 - 1615nm

0 = w/o driver  
 1 = with driver

**Connector**  
 0= None  
 1= FC/UPC  
 2= FC/APC  
 3= SC/UPC  
 4= SC/APC  
 5= LC/UPC  
 6= MU/UPC



1323 Great Mall Drive, Milpitas, CA 95035-8037  
 Tel.408.503.8888 Fax. 408.503.8988  
[www.lightwaves2020.com](http://www.lightwaves2020.com)