

# MEMS BIOMEDICAL OPTICAL ATTENUATOR

DiCon's MEMS Biomedical Optical Attenuator is based on DiCon's proven MEMS technology. The attenuator utilizes a lens to collect and collimate light from the input fiber, which then travels to DiCon's high precision, ultra-stable MEMS mirror. The MEMS mirror reflects the light and directs it back through the lens, and launches it into the output fiber. Attenuation is achieved by steering the light onto or off of the output fiber by tilting the MEMS mirror via an analog control voltage.



## FEATURES

- Fast Response Time
- Proven DiCon MEMS Technology
- High Reliability
- Lifetime > 1 Billion Cycles

## APPLICATIONS

MEMS Biomedical Optical Attenuators are ideal for providing accurate and precise control of power levels in biomedical applications such as Optical Coherence Tomography (OCT).



# MEMS BIOMEDICAL OPTICAL ATTENUATOR

## OPTICAL SPECIFICATIONS<sup>1</sup>

PARAMETER	RATING	
Excess Loss <sup>2</sup>	0.8 dB max	
WDL Flatness <sup>3</sup>	0 to 5 dB	0.4 dB max.
	5 to 10 dB	0.9 dB max.
	10 to 15 dB	1.3 dB max.
PDL	15 to 20 dB	1.9 dB max.
	0 to 10 dB	0.20 dB max.
	10 to 15 dB	0.30 dB max.
	15 to 20 dB	0.35 dB max.
Attenuation Slope	20 dB/V max.	
Back Reflection	-50 dB max.	
Optical Power	500 mW max.	
Response Time	2 ms max.	
Repeatability <sup>4</sup>	0.1 dB max.	
Durability	10 <sup>9</sup> cycles min.	
Fiber Type	9/125 single mode fiber	

- All Specifications at room temperature, without connectors.
- Insertion loss is measured at 1310nm, 23°C.
- WDL is measured from 1260 - 1360nm.
- Repeatability is defined after 100 cycles

## ORDERING INFORMATION

MT- C-□ -12/13-□ -□ -9-□ -□ -□ -□

### Housing Type

C Cylindrical

### Attenuator Type

T Transparent<sup>1</sup>  
O Opaque<sup>2</sup>

### Wavelength Range

12/13 1260 - 1360 nm

### Attenuator Range

20 20 dB min.  
X Specify X dB min. (X <= 20)

### Flatness Type

S Superior broad band flatness

### Fiber Type

9 9/125 μm Singlemode

### Jacket Type

2B 250 μm barefiber  
9L 900 μm looSetube

### Connector Type

FC FC/SPC  
FC/APC FC/APC  
N None

*Also Available: FC/UPC, SC, SC/APC, SC/UPC, ST, ST/UPC, LC, LC/APC*

### Pigtail Length

1 1 meter  
X Specify X meters

### Pin Bending

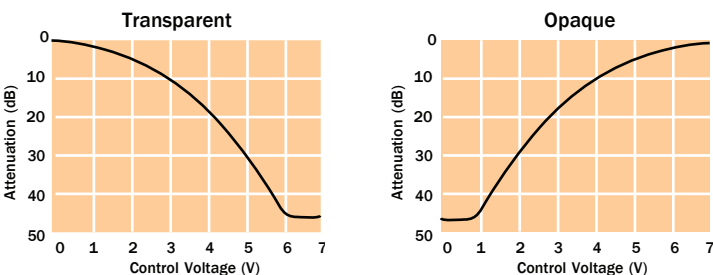
S Straight Pins  
B Bent Pins

- Minimum insertion loss at 0 V.
- Minimum insertion loss at 6 - 7 V (high isolation at 0 V).

## ELECTRICAL SPECIFICATIONS

PARAMETER	RATING
Actuation type	Non-latching
DC Drive Voltage	0-7 VDC
Voltage Damage Threshold	10 VDC max.
Resistance	2 MΩ min.
Power Consumption	20 uWatt max.

## OPTICAL PERFORMANCE



## MECHANICAL DIMENSIONS

