

# PRECISION VARIABLE ATTENUATOR

DiCon's Precision Variable Attenuator operates by precisely controlling the position of a neutral density filter in the light path. The neutral density filter varies in attenuation along its length, and its position in the light path for a requested attenuation level is controlled by a high precision stepper motor.



## FEATURES

- Stable attenuation level with changes in mode distribution
- Multiple calibration wavelength available
- Absolute attenuation setting
- Linear response

## APPLICATIONS

Precision Variable Attenuators is ideal for multimode fiber applications because the neutral density filter attenuates all modes equally, and results in stable attenuation and linear response.



# PRECISION VARIABLE ATTENUATOR

## SPECIFICATIONS<sup>1</sup>

| PARAMETER                        |             | RATING                   |
|----------------------------------|-------------|--------------------------|
| Attenuation Range                |             | 0-30 dB max.             |
| Tuning Resolution                |             | 0.01 dB max.             |
| Tuning Speed                     |             | 50 ms min., 1400 ms max. |
| Excess Loss                      |             | 0.8 dB typ., 1.3 dB max. |
| Flatness <sup>2</sup>            |             | ±0.1 dB max.             |
| PDL <sup>3</sup>                 |             | 0.2 dB max.              |
| Back Reflection                  | 9um         | -50 dB max.              |
|                                  | 50um/62.5um | -20 dB max.              |
| Repeatability                    | 9um         | ±0.01 dB max.            |
|                                  | 50um/62.5um | ±0.1 dB max.             |
| Absolute Accuracy <sup>4,5</sup> | 9um         | ±0.1 dB max.             |
|                                  | 50um/62.5um | ±0.2 dB max.             |
| Optical Power                    |             | 300 mW max.              |
| Fiber Jacket                     |             | 0.9 mm tight buffer      |
| Power Requirement <sup>6</sup>   |             | +12 VDC, 250 mA max.     |
| Control Interface                |             | I <sup>2</sup> C         |
| Operating Temperature            |             | 0°C to +50°C             |
| Storage Temperature              |             | -20°C to +70°C           |
| Humidity                         |             | 40°C / 90% RH / 5 days   |

- All Specifications at room temperature, without connectors
- With ±25 nm centered around calibration wavelength at 23°C.
- Single mode fiber only.
- At calibration wavelength.
- Accuracy is specified over an attenuation range of 0-20 dB.
- +5 VDC, 500 mA version available upon request.

## ORDERING INFORMATION

NAT500 - □ - □ - □ - □

### Calibration Wavelength

|       |                              |
|-------|------------------------------|
| 8     | 850 nm <sup>1</sup>          |
| 9     | 980 nm <sup>1</sup>          |
| 8/13  | 850 and 1310 nm <sup>1</sup> |
| 13    | 1310 nm                      |
| 13/15 | 1310 and 1550 nm             |
| 15    | 1550 nm                      |
| 15/16 | 1550 and 1610 nm             |
| 16    | 1610 nm                      |

### Fiber Type

|    |                          |
|----|--------------------------|
| 9  | 9/125 Corning SMF-28     |
| 50 | 50/125 multimode fiber   |
| 62 | 62.5/125 multimode fiber |

### Connector Type

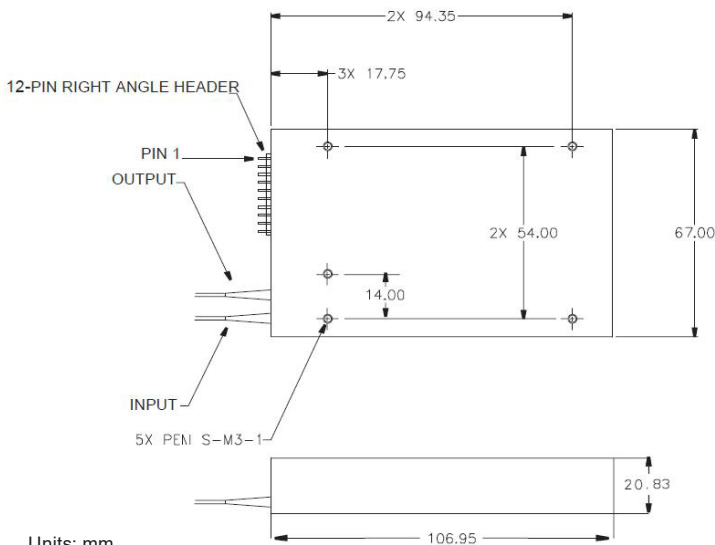
|        |        |
|--------|--------|
| FC     | FC/SPC |
| FC/APC | FC/APC |
| FC/UPC | FC/UPC |
| SC     | SC/SPC |
| SC/APC | SC/APC |
| SC/UPC | SC/UPC |
| ST     | ST/SPC |
| ST/UPC | ST/UPC |
| LC     | LC/UPC |
| N      | None   |

### Pigtail Length

|   |                  |
|---|------------------|
| 1 | 1 meter          |
| X | Specify X meters |

- Multimode fiber only.

## MECHANICAL DIMENSIONS



Units: mm

Electrical connector is 12-pin right-angle header (Molex part number 22-12-2124).  
Mate with Molex part number 22-01-3127 or equivalent.