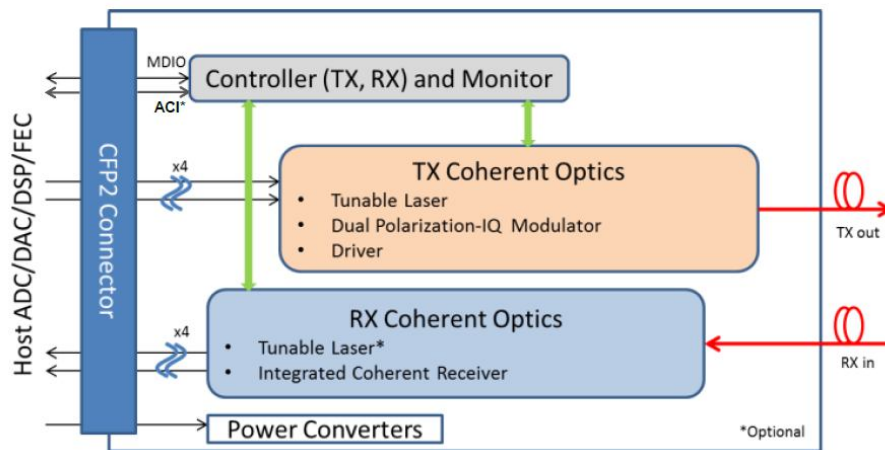


## Mini MEMS Tunable Filter with VOA

The Optoplex mini tunable filter described is specifically designed for 100G tunable transceiver analog coherent optics (CFP2-ACO) application. The main purpose of this tunable filter is to suppress the noise to improve the sensitivity and OSNR performance.

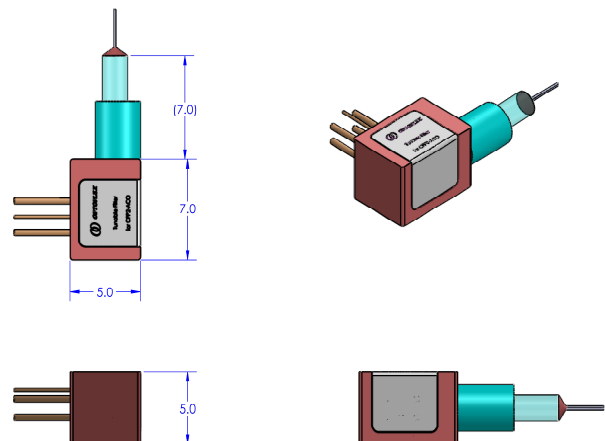
A VOA is integrated in the tunable filter to provide a max attenuation larger than 30dB.



The integrated TF-VOA features a compact size, **5x5x7mm**, and the use of tight-bend ZBL fibers, is specifically suited for the communication SFP transceiver package. A 2-dimensional MEMS is used here as the active tuning element so that the tuning time for both TF and VOA is as short as 50 msec.

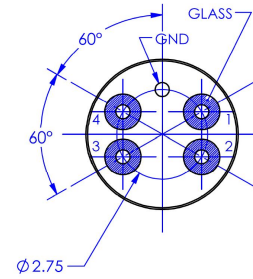
### Mechanical Specifications

| Parameter      | Specification                           |
|----------------|---|
| Fiber Type     | 9/125 Corning ZBL                       |
| Fiber Jacket   | 250 um bare fiber                       |
| Fiber Length   | 1000 ± 100 mm (input and output fibers) |
| Connector Type | LC/UPC (with fusion sleeves)            |
| Connector Type | 5.4dia x 15 mm                          |



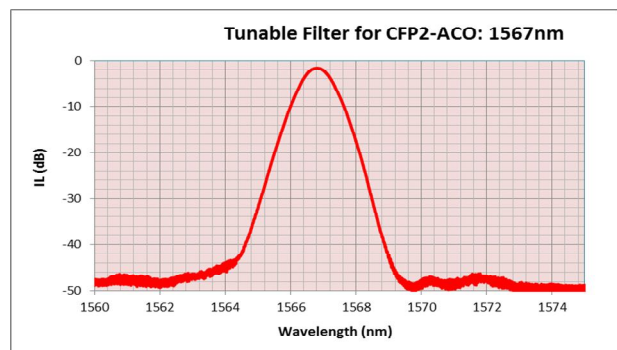
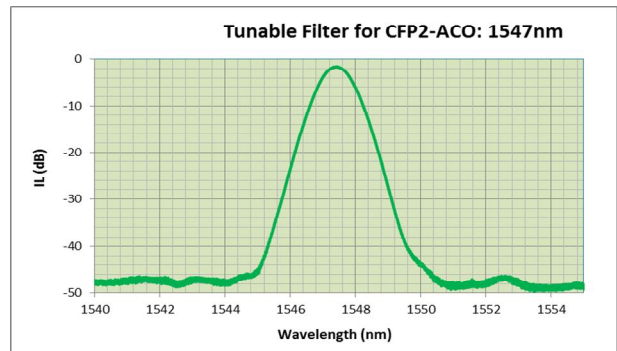
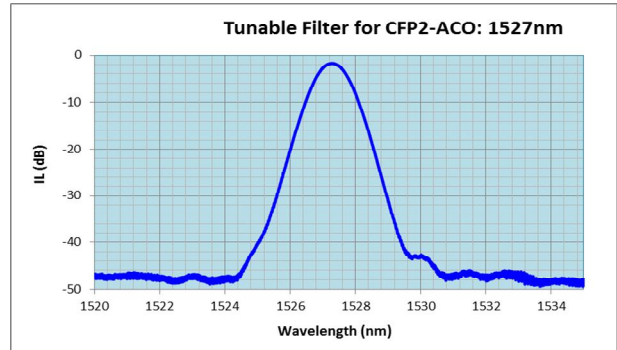
## Electrical Pin Assignment (4+1 TO-46 header)

| Pin# | Function                                |
|------|---|
| 1    | tune to shorter wavelength on voltage   |
| 2    | attenuation (voltage on or voltage off) |
| 3    | Tune to longer wavelength on voltage    |
| 4    | attenuation (voltage on or voltage off) |



## Performance of the Mini TF-VOA

|   | Parameter             | Unit |           |
|---|-----------------------|------|-----------|
| 1 | FWHM                  | GHz  | 125 ~ 175 |
| 2 | 20dB BW               | GHz  | 325 ~ 455 |
| 3 | Max IL                | dB   | < 3.5     |
| 4 | Tuning Speed          | ms   | < 50      |
| 5 | VOA Attenuation Range | dB   | > 30      |
| 6 | VOA Response Time     | ms   | < 50      |
| 7 | TF Driving Voltage    | V    | < 30      |
| 8 | VOA Driving Voltage   | V    | < 15      |



## Environmental Specifications

| Parameter                   | Unit | Specification |
|-----------------------------|------|---------------|
| Operating Temperature       | °C   | -5 ~ 75       |
| Storage Temperature         | °C   | -40 ~ 85      |
| Operating Relative Humidity | %    | 5 ~ 85        |
| Storage Relative Humidity   | %    | 5 ~ 95 @ RT   |

