Optical Isolator
for Fiber Laser Application

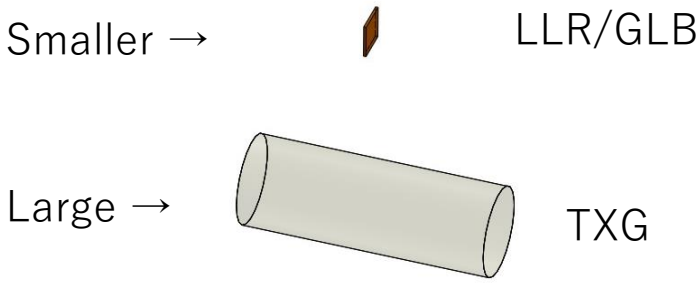
2023/7/28

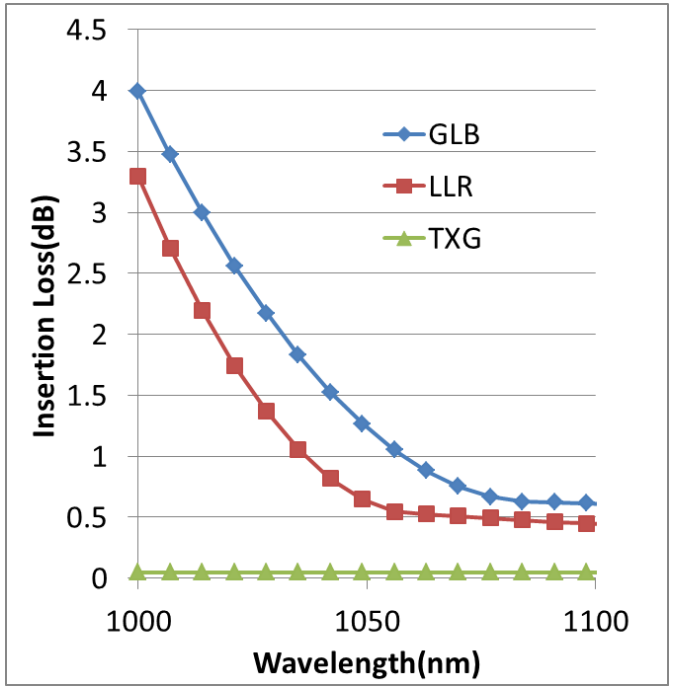
SMM Precision Co., Ltd.

SMMP's OI for fiber laser

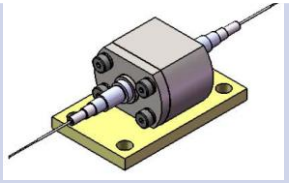
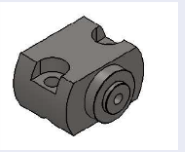
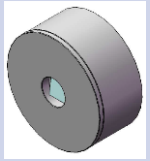
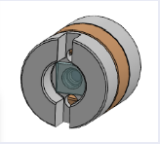
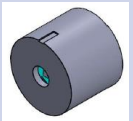
- SMMP's OI(Optical Isolators) for fiber lasers uses original faraday rotator material, that has low insertion loss at 1μm wavelength band(LLR).
- LLR exhibits lower insertion loss compared to conventional RIG and has very small outline compared to TXG.
- Ideal as an isolator for lower power fiber laser application.

* TXG: TGG / TSAG / etc





1 μm band-OI for fiber lasers

Status	Specification	Configuration	Dimension	Outline
Production	λ : 1064nm IL: ≦1.5dB ISO: ≦28dB Power: ≦2W(CW)	Isolator with fiber (Fiber : HI1060)	WDH: 22*37*18 Fiber length : ≧1m	
Production	λ :1064nm IL: ≦0.7dB ISO: ≦30dB Power: ≦2W(CW)	Isolator with housing	WDH: 21*20*12	
Production	λ :1030nm IL: ≦2.0dB ISO: ≦25dB Power: ≦2W(CW) CA : Φ0.6mm	Isolator core	Diameter: 12mm Length : 6mm	
Production	λ :1030nm IL: ≦1.6dB ISO: ≦25dB Power: ≦0.3W(CW) CA : Φ0.3	Isolator core	Diameter: 6mm Length : 6mm	
ES	λ :1550nm IL: ≦0.5dB ISO: ≦20dB Power: ≦1W(CW)	Isolator core	Diameter: 6mm Length : 5mm	

Common specifications

	Items	Specification		
Optical	Wavelength	1064 nm	1050nm	1030nm
	Insertion loss(LLR)	0.5 dB max.	0.7dB max.	1.3 dB max.
	Isolation(LLR bare)	38 dB min.		
	TDC *1	0.07 deg./°C		
	WDC *2	0.13 deg./nm		
Reliability	Low temperature storage	-40°C、100hrs		
	High temperature storage	85°C、1000hrs		
	Dump heat	85°C、85%.R.H. 500hrs		
	Temperature cycling	-85～85°C、 100 times		
	Mechanical shock and Vibration	Mil Std 883 Test method 2007 Condition A Mil Std 883 Test method 2002 Condition B		
	Thermal shock	0°C 10min. 100°C 10min. 15 cycles		

*1 TDC: Temperature Dependence Coefficient
*2 WDC: Wavelength Dependence Coefficient

※ Isolator for 1550nm wavelength uses conventional RIG instead.