

2x4 40G Coherent Mixer

Features

- Free-space bulk-optics design
- Purely passive component
- Low phase error
- Wavelength and Data-rate independent

Applications

- For 40G optical Transmission system
- Key component for the optical coherent detection

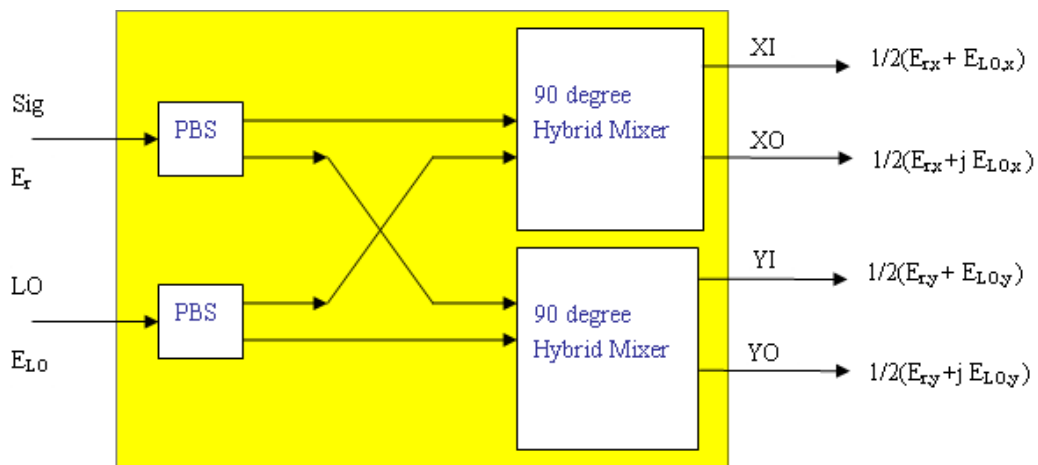


Figure 1. Functional Diagram of 40G Coherent Mixer

Operating and storage condition

Parameters	Symbol	Min	Max	Unit
Storage temperature range	T _{stg}	-40	+85	C
Operating case temperature range	T _{op}	-10	+80	C
Operating Humidity	RH	5	95	%
Optical input power	Pin		+21	dBm
Operation Shock		35g, 1ms, half-sine shock		
Mechanical vibration		5-50Hz, 0.1oct/min, 0.5g		
		50-500Hz, 0.25oct/min, 3g		

Optical Parameter

Notes	Parameter	Condition	MIN	MAX	Units
1	Operating Wavelength Range	C-band	1525	1567	nm
2	Phase Difference	Between XI and XQ, between YI and YQ	80	100	deg
3	Insertion Loss	SI (polarization scrambled) to XI,XQ,YI,YQ		10.5	dB
		LO (linear polarized) to XI,XQ,YI,YQ			
4	Insertion loss Uniformity	SI (polarization scrambled) to XI,XQ,YI,YQ		0.8	dB
		LO (linear polarized) to XI,XQ,YI,YQ			
5	Differential Sig-LO Imbalance		0	1.2	dB
6	Relative Beat Efficiency		96		%
7	Beat Imbalance		-0.5	0.5	dB
8	Skew channel	between XI,XQ,YI,YQ		5	ps
9	Shew channel variation	Temporal variation in the skew between in the skew among any 2 channels over case temperature variation and lifetime		2	ps
10	Polarization Extinction Eatio	for either SI or LO	18		dB
11	Optical Return Loss	SI input and LO input	40		dB
12	Directivity		50		dB

Mechanical dimension

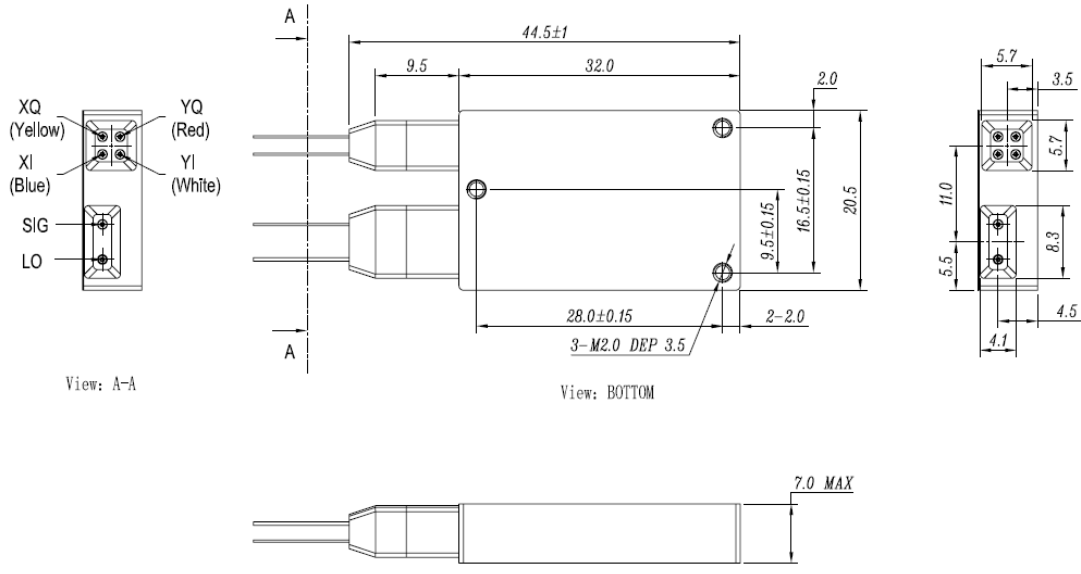


Figure 2 Coherent Mixer Port Definitions

Fiber Pigtail Requirements

Item	Ports	Parameters	Fiber/Connector Type	Diameter			Units
				Min	Typical	Max	
1	SIG and LO	Fiber Cladding	PANDA PM 200 KPSI		125		um
2		Fiber Core			10.5		um
3		Fiber Coating			250		um
4		Pigtail Length		0.95	1	1.05	m
5		Minimum Bend Radius		20			mm
6	Connector	NAN					
7	Outputs	Fiber Cladding	SM NDSF 200 KPSI		125		um
8		Fiber Core			9.6		um
9		Fiber Coating			900		um
10		Pigtail Length		0.95	1	1.05	m
11		Minimum Bend Radius		15			mm
12	Connector	LC Plugs with Ceramic Ferrule (Molex Snapmate)					