

## Technical Specification

### *Electro-Optic Modulators with Bias Controller*

<b>A. Intensity Modulator:</b> A broadband LiNbO3 Z-cut intensity modulator (Qty:2)	
<b>Optical Specifications:</b>	
Operating Wavelength	1525 nm - 1605 nm
Optical Insertion Loss	4.5 dB
Optical Return Loss	40 dB
Optical Extinction Ratio (@ DC)	20 dB
Optical Input Power	100 mW
<b>Electrical Specifications:</b>	
E/O Bandwidth (-3 dB)	35 GHz
Operating Frequency Range	DC to 40 GHz (Min)
RF $V\pi$ (@ 1 GHz)	5.5 V
DC Bias $V\pi$ (@ 1 kHz)	3.5 V
S11 (DC to 30 GHz)	12 dB
S11 (30 to 40 GHz)	10 dB
RF Port Input Power	24 dBm
<b>Mechanical Specifications</b>	
Crystal Orientation-	Z-Cut
RF Connection Female	1.85 mm (V)
Fiber Type:	Input: PANDA Polarization Maintaining Output: SMF-28 Single Mode
Fiber Lead Length	1.5 m (Typ.)

<b>B. Phase Modulator:</b> Modulator with phase modulation from DC to 40 GHz (Qty:2)	
<b>Optical Specifications:</b>	
Operating Wavelength	1525 nm - 1605 nm
Optical Insertion Loss	4dB
Optical Return Loss	40 dB
Optical Input Power	100 mW
<b>Electrical Specifications:</b>	
E/O Bandwidth (-3 dB)	35 GHz
Operating Frequency Range	DC to 40 GHz (Min)
RF $V\pi$ (@ 30 GHz)	7.5 V
S11 (DC to 30 GHz)	(-12 dB)
S11 (30 to 40 GHz)	(-10 dB)
RF Port Input Power	24 dBm
<b>Mechanical Specifications</b>	
Crystal Orientation-	Z-Cut
RF Connection Female	1.85 mm (V)
Fiber Type:	Input: PANDA Polarization Maintaining Output: SMF-28 Single Mode
Fiber Lead Length	1.5 m (Typ.)

<b>C. Modulator Bias Controller: (Qty:1)</b>	
<b>Optical Input Power</b>	20 dBm (Maximum)
	22 dBm (Absolute Max.)
<b>External Laser Wavelength Range</b>	1250 - 1610 nm
<b>Power Calibration Points</b>	1310 nm, 1550 nm, and 1590 nm
<b>Bias Voltage Range</b>	±10 V
<b>Bias modes</b>	Quad/peak/null
<b>Internal Control</b>	
Power Monitor Accuracy	±0.5 dBm at Power Calibration Points
Power Monitor Resolution	0.01 dBm
Power Monitor Insertion Loss (Typical)	0.1 dB per Monitor
VOA Insertion Loss (Typical)	0.4 dB
VOA Attenuation	20 dB (Max)
VOA Response Time	1 s

**ELIGIBILITY CRITERIA:**

- 1.0 The Bidder's firm should be registered in India. (Necessary document proof should be submitted).
- 2.0 They should have at least 10 users in the south region of India in the last 5 years. Necessary document proof should be submitted along with minimum 3 performance certificates from the south region purchases (Purchase order copies should be attached).
- 3.0 There should be a minimum of 5 users of the quoted model. (Necessary purchase order copies should be attached).