



C-Band 10 GHz LiNbO³ Phase Modulator PM10-C

● Description

GKER broadband phase modulator combine high linearity with low driving voltage and small footprint, covering all the frequency range up to 10 GHz.

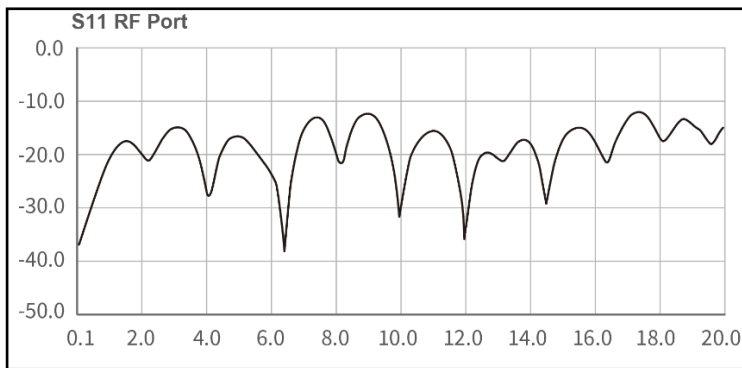
● Key Features

- Operating at C-Band
- Z-Cut LiNbO³
- Low Drive Voltage Compatible With Commercially Available Drivers
- Low Optical Insertion Loss
- Smooth Frequency Response up to > 10 GHz

● Applications

FM Spectroscopy	Frequency Shifting	Laser Linewidth Broadening
Laser Beam Combining	Quantum Key Distribution	Interferometric Fiber Sensing

● Performance Characteristics



● Absolute Maximum Ratings

Parameter	Conditions	Min	Max.	Unit
Maximum Input Power (Electrical)	RF port AC coupled	-	28	dBm
Maximum Input Power (Optical)	CW	-	20	dBm
Operating Case Temperature	-	0	+70	°C
Storage Temperature	-	-40	+85	°C
Operating Humidity	-	5	85	%
Leads Soldering Temperature	-	-	250	°C
Leads Soldering Time	-	-	10	s
Maximum Operating Temperature Variation Rate	-	-	1	°C/min

● Optical and Electrical Specifications

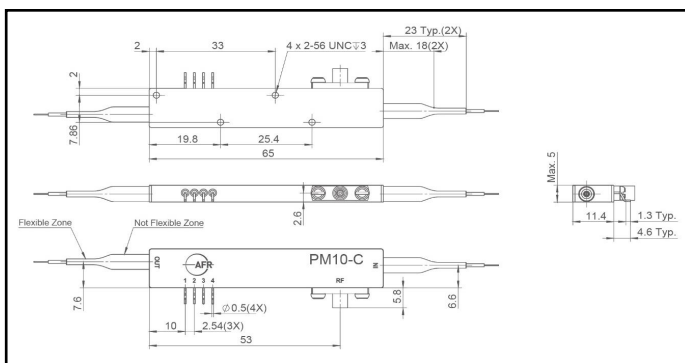
Parameter	Conditions	Min	Typ.	Max	Unit
Optical					
Operating Wavelength Range	-	1530	-	1565	nm
Insertion Loss, IL	No connectors	-	2.5	3.5	dB
	With connectors	-	3.0	4.0	
Optical Return Loss, RL ¹	No connectors	40	45	-	dB
Polarization Dependent Loss ¹	-	5	10	-	dB
Electrical					
S ₂₁ Electro-optic Bandwidth	-3 dBe	10	12	-	GHz
ΔS ₂₁ Ripple	-	-	0.5	1.0	dB
S ₁₁ Electrical Return Loss	-	-	-15	-10	dB
V _π RF Voltage	@ 50 kHz	-	4	5	V
	@ 10 GHz	-	6	7	V
RF Input Impedance	-	-	10	-	Ω

¹Without optical connectors. Adding connectors will increase IL by 0.5 dB, reduce RL by 5 dB. All requirements at Top= 25 °C, wavelength 1550 nm and BOL unless otherwise specified.

● Pinout and Fiber Specifications

RF Connector	GPO male
Ground	LEAD pins
Input Fiber	Corning/Fujikura PM15-P-8/125-UV/UV400 (Panda fiber), L1 (900 μm loose tube fiber without connector) > 1.5m & L2 (bare fiber) ≥ 5cm, or >1.4m 900 μm loose tube fiber with connectors
Output Fiber	Corning/Fujikura PM15-P-8/125-UV/UV400 (Panda fiber), L1 (900 μm loose tube fiber without connector) > 1.5m & L2 (bare fiber) ≥ 5cm, or >1.4m 900 μm loose tube fiber with connectors
Minimum Bending Radius	15mm

● Mechanical Outline



All dimension measured in mm. L1 is fiber length with 900μm loose tube. L2 is length of bare fiber.



● Pinout Information

Pin	Name	Description
1	GND	Ground
2	GND	Ground
3	GND	Ground
4	GND	Ground
5	RF	RF Input (GPO male)

● RoHS Compliance

This series of modulators are RoHS compliant.

● Reliability Requirements

The PM10-C is designed to meet Telcordia GR-468-Core and GR-326 requirements.

● Ordering Information:

For more information on this product and its availability, please contact your local GKER account manager or GKER directly at sales@GKERPhotonics.com

Product Description	Part Number
C-Band10GHz LiNbO3PhaseModulator, PM10-C PM400fiber, Corning/Fujikura PM15-P-8/125-UV/UV400, PMF(Black)-PMF(Black), >1.5m 900 μm loose tube fiber + >5cm bare fiber, no connectors	792001550
C-Band10GHz LiNbO3PhaseModulator, PM10-C PM400fiber, Corning/Fujikura PM15-P-8/125-UV/UV400, PMF(Black)-PMF(Black), >1.5m 900 μm loose tube fiber,FC/UPC connectors]	792001551